UNITED NATIONS ENVIRONMENT PROGRAMME

DAMS AND DEVELOPMENT PROJECT
COMPENDIUM ON RELEVANT PRACTICES
Social Impact Assessment of Affected People
Final Report

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EXECUTIVE SUMMARY

INTRODUCTION

The United Nations Environment Programme: Dams and Development Project is presently engaged in the compilation of the first edition of a Compendium of Relevant Practice. One of the key issues identified for inclusion in the Compendium is Social Impact Assessment of Affected People. The overall objective of the assignment was to identify, collect information and compile examples of relevant practice concerning the integration into policy/normative frameworks and the implementation of Social Impact Assessment. This Extended Executive Summary addresses Social Impact Assessment and covers four primary aspects:

- Characterisation of the state of the art of Social Impact Assessment.
- Examination of 15 case studies that illustrate aspects of relevant practice in the implementation of Social Impact Assessment.
- A database of source material for each case study.
- A summary of key findings and recommendations.

APPROACH, METHODOLOGY AND LIMITATIONS

The assignment was undertaken entirely as a desktop exercise, where applicable, drawing on the personal experience of the Consultant. A key aspect of the assignment was the identification and evaluation of 15 case studies. The criteria that were applied for the selection of case studies included geographic distribution, stage in the project lifecycle, usefulness of each case study to illustrate at least one element of the characterisation of Social Impact Assessment considered relevant practice, accessibility of information (preferably in English), and, where possible, taking into account comments made by civil society representatives of the Dams and Development Project Steering Committee. In the final analysis, the 15 case studies covered all six continents, and developed and developing economies. Also, apart from decommissioning (although one case study did cover the revamp/redevelopment of a dam), each stage in the project lifecycle was covered. Furthermore, all elements that characterise Social Impact Assessment were covered in the 15 case studies. For each case study, the elements and outcomes of Social Impact Assessment are described (as relevant). Both aspects are important and both provide keys as to what is required for the different elements that constitute relevant practice in Social Impact Assessment. Where possible, the case studies provide examples of the kinds of methodologies used, the range of data that are usually collected as well as the kinds of outputs that can be expected/produced. Importantly, however, no raw data are provided, as these are unavailable on the Internet.

The Consultant is aware that some of the case studies are considered problematic to some members of the Dams and Development Project Steering Committee. In this regard, the selection of a particular case study is to illustrate one or more elements of Social Impact Assessment. This does not necessarily mean the whole Social Impact Assessment was relevant, does not mean that elements of the Social Impact Assessment were done at the appropriate time, does not suggest that mitigation measures post the assessment are relevant, and does not endorse any project in any way.

In terms of limitations, the primary ones constraining this assignment can be summarised as: a relatively limited time period of 30 days that were allocated to complete the work, difficulties in accessing information (original project documentation, especially for older projects, and unbiased/objective information on dams and dam projects), reliance on the availability of information on the Internet or electronically, and language constraints (although, where possible, translations were undertaken).

CHARACTERISATION OF THE STATE OF THE ART OF SOCIAL IMPACT ASSESSMENT

Social Impact Assessment is a process of research, planning and the management of social change or consequences (positive and negative, intended and unintended) arising from policies, plans, programmes and projects. It is one of many tools in the toolbox of Integrated Environmental Management that focuses on the human element of development interventions. However, the human element cannot be examined and assessed in isolation of the biophysical and economic dimensions that, together with the social dimension, contribute to attaining sustainability, i.e. all three dimensions that constitute the environment must be examined and assessed in an integrated manner.

Over the past few decades, Social Impact Assessment has become reasonably well defined as a process of incremental information gathering, involving multiple, inter-related disciplines, to enable analysis and assessment, for the purpose of defining actions, either to remedy negative impacts or to enhance benefits[1].

Therefore, it is somewhat surprising that there are few normative frameworks that directly govern Social Impact Assessment[2][3]. Rather, it appears that Social Impact Assessment is implicitly embedded in normative frameworks governing Environmental Impact Assessment (perhaps as an outflow of Social Impact Assessment having evolved from Environmental Impact Assessment). Further, it would appear as though socially orientated normative frameworks are geared toward the management of social effects, for example, normative frameworks for resettlement, effects on cultural property and effects on indigenous peoples. Considering the afore-mentioned, the Consultant submits that there is a gap in normative frameworks, with the need for a framework covering Social Impact Assessment directly, taking care to provide a seamless interface with those frameworks that cover the management of social change.

Considering the normative frameworks that do exist (direct or embedded), there are important central messages that are found in most normative frameworks:

- The importance of considering the social and socio-economic environments (i.e. people) for all stages of the project lifecycle.
- The importance of understanding the receiving social and socio-economic environments as early as possible in the project lifecycle.
- The necessity of understanding the baseline social and socio-economic environments prior to project intervention, firstly, to understand the social and socio-economic environments, and, secondly, to serve as a yardstick against which effects of a project and mitigation actions can be measured.
- The need to consider alternatives and, wherever possible, to apply impact avoidance and impact minimisation as preferred alternatives.
- The need to understand and assess indirect, downstream and cumulative impacts.
- The need to involve potentially affected communities from as early as possible in the project lifecycle.

1 It is the Consultant's opinion and experience that, for the most part, Social Impact Assessments deal with project-specific impacts on communities and people directly affected by proposed projects. Social Impact Assessments are seldom applied on a wider scale, for example, on a national scale. In such cases, development proponents usually commission Economic Assessments to understand and evaluate wider economic and societal benefits that may accrue from a proposed project. The outcomes of such assessments need to be read and understood alongside the outcomes of Social Impact Assessments of Affected People.

2 Sample lists of international (for example, African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, European Union, Equator Principles, Inter-American Development Bank, International Association for Impact Assessment, United Nations and the World Bank Group) and country-specific normative frameworks are provided in the main report.

3 The International Finance Corporation of the World Bank Group recently published new *Policy and Performance Standards on Social and Environmental Sustainability* (April, 30, 2006) comprising eight Performance Standards: (1) – Social and Environmental Assessment and Management System (2) – Labour and Working Conditions (3) – Pollution Prevention and Abatement (4) – Community Health, Safety and Security (5) – Land Acquisition and Involuntary Resettlement (6) – Biodiversity Conservation and Sustainable Natural Resource Management (7) – Indigenous Peoples (8) – Cultural Heritage.

- Resettlement is usually the largest and single most important negative impact on the social environment, necessitating the formulation of resettlement programmes, preferably within a development paradigm to encompass wider community benefits whilst attaining the restoration of livelihoods of the directly affected people.
- The desirability to improve peoples' livelihoods (or at least restore them to a before project status).
- Within all social mitigation/development planning, the ability of the development proponent to mobilise the necessary resources to manage negative impacts and to optimise benefits needs to be appraised and, where relevant, management constraints need to be identified and addressed.
- The need for the monitoring, evaluation and auditing of performance during and post the implementation of mitigation plans.

As is evident from the key messages that characterise normative frameworks, Social Impact Assessment needs to be applied at all stages of the project lifecycle (generally at differing levels of detail for different decision-making purposes at different stages in the lifecycle) (refer to table overleaf).

The approach and methodology for Social Impact Assessment vary depending on the purpose and application for which the assessment is being undertaken. However, based on the Consultant's experience and drawing from the literature, a generalised process involves the following:

- Characterisation of the social environment, and the definition of boundaries.
- Understanding of the intervention (whether policy, plan, programme or project) to enable the projection of effects.
- Estimating the severity of effects, and the formulation of management actions, either to remedy negative aspects or to enhance benefits.
- Active management of social change (with review and feedback loops to enable remedial actions if the need for these is indicated).
- On-going monitoring (post-construction, i.e. during operation) to determine whether or not the desired outcomes have been achieved.
- Evaluation (at an agreed point in the project lifecycle) to inform future initiatives.

Based on the Consultant's experience and drawing from the literature, specific elements that characterise Social Impact Assessment and which lead to tasks that need to be carried out (in varying degrees of intensity) are the following:

- Public involvement/participation.
- The identification and consideration of alternatives.
- Profiling of baseline conditions.
- Scoping.
- Projection of estimated effects.
  - Prediction and evaluation of responses to impacts.
  - Mitigation of negative impacts and the optimisation of benefits.
  - Assessment of indirect and cumulative impacts.
- Monitoring, auditing and evaluation.

These elements are elaborated hereunder, with the specific consideration of relevant material from the 15 case studies that were investigated as part of this assignment.

Generalised description of Social Impact Assessment and the project lifecycle

Stage in Project Cycle	Key Social Impact Assessment Features	Outputs
Policy Strategic Planning River Basin Planning	The Social Impact Assessment process undertaken at these stages in the project lifecycle is essentially the same as would be undertaken at project-specific level. However, there would be reliance on higher-order information addressing higher order decision-making needs	Key outputs at a macro level include the identification of alternatives, the identification of key social issues and a first order assessment of impacts, and the manageability thereof
Project Planning		
Conceptualisation	Conceptual input based on past experience and the professional opinion of the Social Impact Assessment practitioner	Identification of possible key issues, red flags and fatal flaws associated with different conceptual options
Pre-Feasibility	Desktop study and analysis	Confirmation of key issues and red flags, at a better level of assurance
Feasibility	Desktop and field studies, interpretation, analysis, integration, projection of effects, and management actions	Comprehensive Social Impact Assessment Report covering all social aspects related to particular development options
Design	Intensive, iterative process of avoiding, minimising and/or managing social effects. Holistic and integrated approach that results in the formulation of management plans (to manage negative effects, e.g. a resettlement action plan, and benefits, e.g. a social development plan)	Socially friendly/acceptable designs, and management plans to be implemented during construction
Implementation		
Construction Commissioning	Hands-on, in-field implementation of plans	Restoration of livelihood strategies (within a development paradigm) of people negatively affected by development. Realisation of benefits. Monitor, review and evaluate, and make changes as indicated by outcomes
Operation	Monitoring, auditing and evaluation	Continued restoration of livelihood strategies, with additional or new mitigation/management actions as indicated by monitoring, auditing and evaluation outcomes
Decommissioning		
Closure	The whole Social Impact Assessment process should recommence to cater for decommissioning, closure and the management of residual impacts	As above
Residual	Hands-on, in-field implementation of plans	As above

Public involvement/participation

Public involvement/participation aims to provide a process of improved decision-making whereby interested and affected parties, technical specialists, authorities and the development proponent work together to produce better decisions than if they had worked independently, and is defined by the International Association of Public Participation (IAP2) as *any process that involves the public in problem-solving or decision making and that uses public input to make better decisions.*

In terms of relevant practice, IAP2 has developed a set of core values crossing national, cultural and religious boundaries, which aim to *help make better decisions, which reflect the interests and concerns of potentially affected people and entities*), as follows:

- *The public should have a say in decisions about actions that affect their lives.*
- *Public participation includes the promise that the public's contribution will influence the decision.*
- *The public participation process communicates the interests and meets the process needs of participants.*
- *The public participation process actively seeks out and facilitates the involvement of those potentially affected.*
- *The public participation process involves participants in defining how they participate.*
- *The public participation process provides participants with the information they need to participate in a meaningful way.*
- *The public participation process communicates to participants how their input affected the decision*.

In addition to the IAP2 core values, there are other principles of relevant practice that can be applied to public involvement/participation, ensuring that all participants are fairly heard and that their views are considered, that the process needs of participants are met and that the process itself is not unjustly attacked or delayed. From the Consultant's own experience on various projects (covering various sectors) in South and Southern Africa, and the literature, the following apply:

- Public involvement/participation is founded on transparency, honesty and the integrity of all persons involved in the process. To assist, all role-players should agree on roles, rights and responsibilities early in any public involvement/participation process.
- Consultation should be inclusive (i.e. it should take place within all sectors of society, and afford a broad range of stakeholders the opportunity to become involved, bearing in mind that it may not be practically possible to personally consult with every individual in a project area).
- The opportunity to comment should be announced in various ways over a period of time (for example, by way of letters addressed to stakeholders personally, advertisements, documents left in public places, radio announcements, and personal visits to vulnerable individuals and/or groups).
- Information should be easily accessible and sufficient to enable meaningful contributions (and information should be in a language that stakeholders can understand and should be written or presented in a non-technical way).
- Opportunities for involvement/participation should be afforded according to the ability and interest level of different stakeholders (highly technical documents for technically orientated people and simplified versions for lay people).
- Information should be presented in different ways to facilitate assimilation (for example, by way of discussion documents, presentations at meetings and workshops, visual displays, and print and broadcast media releases).
- Similarly, stakeholders should be afforded all possible practical means of providing inputs and comments (for example, written submissions, comment sheets, e-mail, fax, briefing meetings, workshops, public meetings and personal contact with study team members).
- Special efforts should be made for vulnerable groups (for example, the elderly and infirm, mentally ill, youth, non-main stream language speakers, etc).
- Sufficient time should be allowed for comment. Equally, however, time should not be wasted on options/alternatives that have been shown to be unviable.

- Involvement/participation should be ongoing throughout an investigative process, whether an Environmental Impact Assessment, Social Impact Assessment, a feasibility study or the like. In this regard, stakeholders should receive ongoing feedback and acknowledgement, and the opportunity to understand how their contributions have been considered.
- Stakeholders should be afforded sufficient opportunity to exchange information and viewpoints (for example, at workshops and public meetings).

From the Consultant's experience, to achieve the afore-mentioned, it is necessary to identify stakeholders (directly affected and those with a wider interest in the development proposal) as early as possible within the project lifecycle, taking cognisance that stakeholder identification should be an on-going process for the duration of a project (as a project configuration changes, new stakeholders may emerge). Following stakeholder identification, it is necessary to develop a communications strategy that is customised to different stakeholder groups, for example, by sector, in order that meaningful information exchange can be facilitated. Taking note of customised communications strategies, it is critical that there is consistency in central messages contained within these strategies. Through active involvement with the public in a meaningful way, environmental (bio-physical), social (cultural, political, socio-economic, etc) and economic issues relevant to a development proposal should be identified, and should feed into the assessment regime.

It must be noted that, while there are linkages between public involvement/participation and Social Impact Assessment, and that they provide mutual support, each process has a distinctly different purpose and subsequent set of outcomes.

> The Odra River Basin Flood Protection Project in Poland serves as a useful example of relevant practice in public involvement/participation. The proposed project was opposed by a number of affected communities. To address community concerns, the development proponent, the Polish Regional Water Board, undertook extensive and intensive consultation over a number of years. Although the outcomes were not agreed by all parties (and this should not be the aim or expected result of public involvement/participation), the consultation that did occur serves as a useful example of relevant practice in terms of how public participation can be conducted, and how public participation can contribute to improved decision-making.

The identification and consideration of alternatives

Drawing on the experience of the Consultant and the literature, taking cognisance that a Social Impact Assessment should commence as early as possible within the project lifecycle, Social Impact Assessment should be used to assist with the identification and consideration of alternatives. All practical alternatives, including the "no-change" alternative and non-infrastructural alternatives, need to be identified and examined to the same level of detail, with social effects carrying the same weight in decision-making as inputs from other disciplines. Where applicable, alternatives that minimise and/or avoid impacts should be given special attention. Furthermore, it is critical to examine alternatives, and their impacts/benefits (negative/positive) in relation to other projects (existing and planned for the future) in order to identify and deal with potential downstream and cumulative impacts.

From the Consultant's experience, there are examples where social aspects have positively influenced the consideration of alternatives, with alternatives with obvious social impacts being discarded early on in the project lifecycle. This usually occurs during screening, an early project planning activity that has, as its objective, the identification of (social) environmental fatal flaws and red flags, where a fatal flaw is defined as a significant long-term negative consequence on the affected social environment that is extremely difficult to mitigate or undesirable to promote, and a red flag is defined as a potentially serious impact that could have medium- to long-term negative consequences on the affected social or biophysical environments that can only be mitigated at significant will, effort and cost (by this is meant the total cost and not only financial and economic considerations). In this regard, an alternative with a fatal flaw should not be considered further.

The Screening Phase for the Olifants River Water Resources Development Project (Phase 2) in South Africa serves as a useful example of relevant practice in identifying and assessing alternatives. For this proposed development, alternatives comprised both dam and non-dam alternatives. For dam alternatives, potential social impacts were examined in detail and contributed to the selection of a preferred dam alternative (that avoided potentially serious social impacts). For non-dam alternatives, aspects such as water conservation, water demand management, ground water options and the trading of water allocations were investigated. From a social perspective, water trading was examined in detail because of potential negative effects on small-scale irrigators as well as potential negative social effects on agricultural employment associated with larger, commercial irrigators. In both cases, potential social effects related to loss of employment, loss of income, decreased food security and the possibility of contributing to increased poverty. The examination of dam and non-dam alternatives contributed to a proposed project that is not focused only on a large storage dam but which also addresses non-dam options that can contribute to greater water resource stability and availability in a water management area where water demand exceeds the available water that has been allocated to competing sectors (including the natural environment for which ecological water requirements must be met).

Profiling of baseline conditions

Profiling aims to document the relevant human environment within the area of influence of a development proposal. It is against this existing base of social conditions and trends that the effects of change need to be understood, assessed and measured. Profiles provide the following kind of information: descriptions of the social environment (political context, institutional structure, arrangements and capacity, demographics, socio-economics, land-uses, current conditions and social trends); local and regional economics; descriptions and analyses of existing social and cultural values; and a framework and plan for the assessment of social effects, including social factors to be used as measurable indicators during subsequent monitoring, evaluation and auditing. There are many data sources that can be used (existing secondary data or new primary data) and include statistical-, written social-, observational-, survey- and public involvement/participation-data, and information obtained from locally recruited project personnel and from maps. It is always important to understand the reliability of data, and inconsistencies and gaps that may affect analyses and projections. Particular attention should be paid to profiling vulnerable groups, for example, the youth, elderly, women, the infirm and the disabled. While vulnerable groups will differ from project to project, it is important that they are identified and profiled for each project. This will enable the customised scoping of these vulnerable groups, enabling customised solutions to be formulated and documented in mitigation plans. It is the Consultant's experience that the collection of baseline data is time consuming and can be costly. Therefore, sufficient resources need to be committed to enable the task to be completed to the desired outcomes, taking due cognisance that the baseline is against which project effects will eventually be measured (as part of monitoring, evaluation and auditing).

The Bumbuna Hydroelectric Project in Sierra Leone serves as a useful example of the profiling of baseline conditions. This project was first proposed in the 1970s and construction occurred between 1982 and 1997. For most of the time, the country was plagued by civil war. Despite this, extensive baseline data were collected over a protracted period of time, even following the construction of the dam when a post facto Environmental Impact Assessment was undertaken. Methods used to gather data included questionnaire surveys with heads of households, focus group discussions with the youth, women, men, elders and chiefs, and consultative meetings with the community. The baseline information that was gathered was comprehensive with text, data and/or illustrations being provided on general socio-economic conditions, demographics, settlements and infrastructure, ethnic groups, household structure, village size, water supply, solid waste disposal, public health, attitude to resettlement, culture, history and archaeology, social organisation and traditions, religion, sacred sites, secret societies, tourism and recreation. Household surveys were conducted in the 54 villages in the reservoir area and data were collected from a total of 872 households. Importantly, the baseline data served to inform planning and decision-making for the management of social change arising from the dam, and, into the future, can serve as the yardstick against which monitoring, evaluation and auditing can be undertaken.

Scoping

This is a process of identifying issues and, in the experience of the Consultant, can take various forms, for example, technical, authority, specialist and public scoping. It is an analytical process that, in the experience of the Consultant, is designed to describe the boundaries of a particular project and then focus the assessment on key issues. To achieve this, scoping must be both comprehensive and flexible. It is particularly important that scoping identifies sensitive aspects of the receiving environment (negative and positive) to enable the formulation of appropriate management plans to mitigate negative impacts and to optimise benefits. In this regard, arising from profiling is the necessity to undertake customised scoping to deal with issues related to vulnerable groups. These should be regarded as sensitive components of the receiving environment, requiring their own specific analysis of potential effects to enable the formulation of customised mitigation measures.

Scoping should also identify sensitive or important elements of the receiving environment, main policies, plans, programmes and projects/operations that may affect the social and socio-economic environments within the boundaries chosen, and the appropriate information and data that are available or may have to be obtained, that should be used to effectively analyse and deal with potential effects.

A range of data can be collected during scoping, covering multiple, yet integrated, social elements, including: lifestyle (for example, behaviour and relationships), cultural aspects (for example, traditions, customs, values and religious beliefs) and sense of place (involving tangible and intangible aspects), archaeological aspects, community, institutional and infrastructural impacts (for example, infrastructure, services, networks, capacity, etc), amenities and/or quality of life (such as sense of security), health considerations (such as mental and physical well-being, pollution, HIV/AIDS, etc.), aesthetic, visual and/or other sensory impacts (for example, noise, light, dust, obstructions, etc), demographics (such as gender, age, sexual orientation. etc), development impacts, economic and fiscal impacts, impacts on indigenous rights, leisure and tourism impacts, political impacts (such as human rights, governance, democratisation, etc), poverty (for example, social upliftment and employment opportunities), physiological impacts, resource use impacts (for example, access and the ownership of resources), impacts on social and human capital, vulnerable groups (such as the elderly and infirm, children and the youth, minorities (for example, ethnic), indigenous groups, women, etc), expectations (the creation and management thereof), other societal and indirect impacts, and cumulative aspects).

A range of methodologies can be adopted for scoping, utilising primary and secondary information and data, including: discussions, workshops and/or interviews with potentially affected people and/or entities (closely linked to public involvement/participation), the collection and review of literature, plans, maps and other relevant material, questionnaires and surveys. Gaps in information can be closed using information collected as part of profiling. Furthermore, the Social Impact Assessment must evaluate all impacts (direct and indirect) on humans and all the ways that people and communities interact (directly or indirectly) with their socio-cultural, economic and biophysical surroundings.

It is important to note, however, that the extent and intensity of scoping must be consistent with the type, size, extent, reach, etc, of a proposed project and, therefore, it is logical that not every project will require the entire range of disciplines. There is a close link between scoping and public involvement/participation. As a minimum, scoping would involve communication and consultation with representatives of the following: government (local, provincial, national)[4], development proponent (and sector represented), affected public[5], environmental lobby and interest groups, independent experts and civil society. Furthermore, it is important to recognise that there is a close link between scoping and profiling, with the identification of issues being contextualised within baseline conditions. Equally, the social assessment practitioner must have a sound understanding of the development proposal (and alternatives) in order that issues can be identified and correctly understood.

[4] Care should be exercised to avoid the situation where power elites become gatekeepers.

[5] It is important to note that “communities” comprise groups of people with similar interests. The notion that a single “community” viewpoint can emerge is usually fallacious.

The Driekoppies Dam in South Africa serves as a useful example of scoping. This project commenced in the mid-1990s, with extensive scoping being undertaken of communities affected by the proposed dam. Scoping was undertaken within a well-defined policy framework and identified a range of issues, including the loss of productive resources and consequent effects on economic activities, effects on settlements and housing, necessitating resettlement, effects on community facilities and services (in particular, as related to improved services), community organisations and institutional relationships, historical and archaeological sites, population pressure and social dislocation. It would appear that scoping was comprehensive and enabled the assessment of the significance of potential impacts. Each impact was classified as positive or negative, and rated in terms of magnitude, significance, probability and duration. The significant impacts were identified as loss of productive resources (negative), social dislocation (negative), improved domestic water supply (positive) and sub-regional development potential (positive). The outcomes of scoping, as contexualised within the profile of baseline conditions, informed future project activities concerning the management of social change, notably, the formulation and implementation of a Resettlement Action Plan within a development paradigm.

Projection of estimated effects

Scoping, profiling and public involvement/participation provide a sound basis (baseline) from which to project the potential social effects of a proposed project, for all feasible and/or realistic project alternatives, including the “no change” alternative, taking particular account of potential effects on vulnerable groups. This is usually undertaken in a matrix, assessing the scale, intensity, duration and probability of occurrence of both negative impacts and benefits, that leads to the assessment of significance of a potential impact/benefit for a particular project alternative. It is important that a risk assessment is not undertaken in isolation for each project alternative. Rather, the assessment must take into consideration all baseline conditions, including unrelated but potentially synergistic, ancillary or downstream development proposals, in order to account for potential cumulative impacts/benefits.

In undertaking this exercise, it should be recognised that accurate projections are difficult to make and, therefore, use should be made of projection techniques (some of which are economically based), for example, the analysis of trends, the use of population multipliers, computer modelling, consulting experts, drawing comparisons between communities, input-output modelling, cost benefit analyses, quantifying externalities, econometric modelling, the use of social accounting matrices and the formulation of scenarios. However, it should also be noted that complex techniques are not an end to themselves and, rather, as suggested in the literature, emphasis should be placed on experience, logic and common sense.

It is the Consultant’s experience that the projection of estimated effects relies significantly on baseline data previously collected. Furthermore, the same baseline data, as well as the outcomes of the assessment, are used to identify variables that can be measured for purposes of monitoring, evaluation and auditing.

The outcomes of the projection and estimation of effects should be presented in well-written and illustrated reports (or as otherwise indicated by particular normative frameworks applicable to a particular development and Social Impact Assessment).

The Kandadji Dam Project in Niger serves as a useful example of the projection and estimation of social effects, which appears to have been widely encompassing, covering both negative impacts and benefits, including resettlement (35,000 people from 15 villages), loss of infrastructure (a national road, boreholes, clinics, schools, mosques, slaughterhouses, markets and grain mills), loss of agricultural land (approximately 7,000 ha), a guaranteed water supply (for urban and rural domestic water, irrigation, livestock and aquaculture), a reduction in dependence on energy imports, food security and opportunities for sustainable development, impacts on public health, and indirect impacts (reduced rural migration, up- and down-stream industrial opportunities, employment opportunities during dam construction and a contribution towards the attenuation of desertification). For the Kandadji Dam Project, these potential effects were projected at an early stage in project planning, enabling issues and potential impacts to be addressed in subsequent planning phases. It is also pertinent to note that the projection of potential effects did not only focus on negative aspects, but also included the estimation of benefits, thereby informing planning to enable the realisation of benefits over time.

Prediction and evaluation of responses to impacts

There are a number of methods that can be used for the purpose of impact prediction and evaluation, including: analogues, expert opinion, literature reviews and cause-effect relationships. When selecting methods, consideration should be given to criteria such as: the appropriateness of the method for the proposed development, its acceptability to relevant interested and affected parties, whether it is professionally acceptable, its relative ease of application, management limitations, its applicability to the range of key issues and the provision of results that enables professional judgement to be made in evaluating the impacts.

The Thukela Water Project (Feasibility Study) in South Africa serves as a useful example of the prediction and evaluation of responses to impacts. For this proposed project, the Social Impact Assessment identified and discussed potential social issues and effects at two levels. Firstly, it examined a number of contextual issues, relevant to the proposed project, which had come to the fore during the course of the investigation. Of these, the most critical were the potential impact of HIV/AIDS, population trends in potentially erodible areas, the potential impact of sedimentation, land reform and land restitution, impacts on the downstream environment, and impacts on the receiving environment. Thereafter, the study focused on the potential effects of each of the major project components, viz. Jana Dam, Mielietuin Dam, and the conveyance routes (canals and steel pipe lines). The assessment was carried out in detail, with the outputs seamlessly interfacing with the formulation of future social management plans (to deal with macro issues, negative social impacts, and the optimisation of project benefits on a local and regional scale).

Mitigation of negative impacts and the optimisation of benefits

A key aspect of this element of Social Impact Assessment concerns the mitigation of negative impacts and the optimisation of benefits. Mitigation is the avoidance or minimization of negative impacts associated with a project, in a manner that is sustainable. In short, mitigation involves implementing the outcomes of a Social Impact Assessment, which can be achieved through the formulation and implementation of Social Management Plans that, critically, must also address the optimisation of benefits. The Consultant submits that there are two categories of Social Management Plans; those that deal with negative impacts and those that deal with benefits. In each case, however, the over-riding consideration should be the sustainable development of people affected by a project. In this regard, Social Management Plans should be formulated within a development paradigm, and, in the opinion of the Consultant, should move beyond “leaving project affected people at least as well-off as before the project intervention”.

Moving beyond this requires, firstly, the restoration of livelihoods and livelihood strategies, and, secondly, the sustainable social and socio-economic advancement of people and their societies. It is also important to note that Social Management Plans, whether dealing with the mitigation of negative impacts or the optimisation of benefits, need to make special provision for dealing with the needs and aspirations of vulnerable people. These provisions can either be documented within the overall plan, or separate plans can be produced, for example, a Gender Action Plan, to deal with gender-specific aspects.

There are many examples of potential impacts that may arise from a proposed project. For the most part, these can usually be managed via a technical solution, for example, the realignment of a road, suppressing dust on a construction site, limiting noise, etc. However, there is one single impact that is significantly more difficult to manage and for which technical solutions do not exist, viz. resettlement (including aspects such as economic displacement and loss of access (to areas of interest, sacred and/or religious sites, natural resources, etc)). Where resettlement is unavoidable, careful attention needs to be paid to the formulation of a Resettlement Action Plan with the intimate involvement of affected people (and with all resettlement activities being closely aligned to those of the primary development project). As a minimum, a Resettlement Action Plan should contain the following: the identification of the impacts of a project on affected populations, a legal framework for land acquisition and compensation, a compensation framework (with eligibility criteria and entitlement matrices), a description of resettlement assistance and the restoration of livelihood activities, a detailed budget, an implementation schedule, a description of organisational responsibilities, a framework for public consultation, participation and development planning, a description of the provisions for the redress of grievances and a framework for monitoring, evaluation and reporting.

Great care is required in the formulation of Resettlement Action Plans. Also, importantly, resettlement plans and their implementation should receive the same priority (planning, resources, etc) as the primary development intervention, and should be implemented concurrently with the primary project.

In terms of planning to optimise benefits, it should be noted that, in many cases, the area of influence of a project is wider than the people directly affected by, for example, resettlement. In all cases, Social Development Plans should be formulated. Importantly, in the opinion of the Consultant, these plans need to be aligned with government strategies to ensure the optimisation of benefits (from the primary as well as downstream developments) in a sustainable manner as well as to ensure that individual projects receive the necessary government support into the future (be it from staffing of schools to the provisioning of clinics). In this regard, the Consultant believes that it is critical for development proponents to clearly understand the influences of a proposed project on the social environment, and the converse, viz. the influences of the social environment on a proposed project. In this regard, it is the Consultant's opinion that social investment is a necessity and not a luxury. To this end, corporate social responsibility programmes need to build relationships for enduring mutual benefit rather than for promotional value. As with Social Development Plans, social responsibility programmes need to be aligned with government strategies to optimise benefits. Therefore, the Consultant submits that Social Development Plans should be developed to the same extent and level of detail, with budgets and implementation schedules, as plans that are developed to mitigate negative impacts. To this end, the greater the commitment and involvement of the development proponent, the more likely that these social interventions will be successful and sustainable. It is the experience of the Consultant that Social Development Plans need to be formulated prior to the development intervention and *inter alia* should contain the following information: purpose and need, philosophy and underlying principles, organisational structures and responsibilities, including channels of communication and a grievance process, accountability, responsibility and reporting procedures, development programmes and sub-projects (with implementation schedules and budgets), management actions (per programme and per sub-project), the definition of performance indicators against which outcomes can be measured and the definition of a monitoring and evaluation framework to measure social environmental performance and to apply remedial actions, if necessary.

The Upper Seti Storage Hydroelectric Project in Nepal serves as a useful example of the mitigation of negative impacts and the optimisation of benefits. This is illustrated by a number of mitigation measures that were recommended to deal with negative social and socio-economic impacts, including resettlement and acquisition principles (two methods of compensation: "land for land" and "cash", the valuation of individual households and their effects before determining compensation packages, the development of an Acquisition, Compensation and Rehabilitation Plan, the formation of a Compensation Committee, the provision of compensation before land is acquired, and resettlement options based on peoples' preferences), a code of conduct applicable to outside construction workers (to minimize impacts on the cultural practices of local communities), the protection of ancient archaeological sites, and the provision of additional social infrastructure and services to accommodate the influx of 500 – 1,000 workers into the project area. In addition, several enhancement measures, which aimed to enhance positive impacts of the proposed project or to compensate for negative impacts, were also suggested, including improvement in agricultural practices, training, skills development, loan assistance programmes for small businesses (such as cage fish culture, livestock and poultry rearing and retail shops), environmental awareness for conservation, and other community development initiatives (such as rural electrification, education, health, sanitation and water supply). The aforementioned are illustrative of the level and detail of planning that are required to mitigate negative social effects and to optimise benefits that may accrue from a project of this nature.

Assessment of indirect and cumulative impacts

In terms of indirect and cumulative impacts, their assessment essentially follows a cause-effect model that establishes the way in which "resources of value" are affected by multiple impact sources. It employs a systems approach when defining cumulative effects and impact relationships. The Consultant's experience is that usually this kind of impact assessment is undertaken within a broader strategic framework (at national, provincial, district or local level). Mitigation measures must be proposed for the negative cumulative effects and recommendations made for the enhancement of the resources of value. In essence, the same elements that characterise Social Impact Assessment, characterise the assessment of indirect and cumulative effects, viz. public involvement/participation, profiling, scoping, projection of estimated effects, and monitoring, evaluation and auditing, for all alternatives under consideration. The Consultant's experience is that the cumulative effects assessment process is an iterative one, and the precautionary principle should be applied in recognition of the limits of current knowledge about the consequences of decisions or actions.

The Tuyen Quang Dam and Flood Prevention Project in Vietnam serves as a useful example of the assessment of indirect and cumulative impacts. Project documentation suggest that the completion of the dam and the flooding of the reservoir would significantly change patterns of land and water use in the Na Hang District. It is estimated that the dam should fill up within a year. Thereafter, the reservoir would stabilise over the next few years as conditions change and submerged vegetation degrades. Within five to ten years it might be expected that conditions would be suitable for the development of both water-related tourism activities and fisheries (although no plans have yet been produced for these developments). Nevertheless, it was anticipated that both tourism development and the development of fisheries might be long-term positive socio-economic effects arising from the dam. Equally important was the projection that there would be no potential negative effects of an indirect nature arising from the proposed project.

Monitoring, auditing and evaluation

In terms of compliance, monitoring serves to identify discrepancies between the expected and actual effects of a project, thereby facilitating adjustments that may be necessary to the management of the change or the change being implemented itself, to help reduce unanticipated and unwanted effects or to enhance benefits. Hence, monitoring is informative to a project and should be initiated early, and should continue for the duration of the project, and beyond the completion of physical implementation, paying particular attention to the outcomes of provisions made to cater for the needs of vulnerable

groups. It is important to note that often, the description and management of social change, and the assessment of its significance, are major methodological problems in monitoring, and that it is difficult to differentiate among the various origins of specific social changes. Thus, monitoring requires that some criteria be established to focus the effort around key variables and to concentrate on key issues. In the Consultant's experience, these criteria, key variables and key issues should be sourced from data gathered during profiling and scoping. Therefore, the monitoring system (data collection, storage and analysis) must be compatible with that already established during profiling and scoping, and, also, must be designed in such a way so as to facilitate simple and rapid reporting so that changes can be effected quickly before severe or irreparable damage is caused or benefits are lost.

Monitoring is also an important component of project evaluation. However, in this context, evaluation is summative, at some point towards the end/conclusion of a project process, with a view to informing other projects (rather than the project at hand which is being evaluated). In this sense, evaluation is viewed as the final part of the Social Impact Assessment process (albeit that it is not necessarily only undertaken at the conclusion of a project). Furthermore, it is seen to be separate from monitoring and the management of social impacts, although it is complimentary. Evaluation has also be defined as a periodic assessment of the relevance, performance, efficiency and impact of the project in the context of its stated objectives. In order to achieve this, it is necessary to make use of monitoring data, but it may also require additional data collection, and can involve comparisons with other projects of a similar nature. In this regard, evaluation should take place three times during a project: in the middle of project implementation (but at a time when the social effects have started to have an impact), at the end of project implementation and, finally, at a considerable time after project conclusion, in order to identify long-term effects.

In addition to monitoring social change as a result of a development (both direct and indirect), it is the Consultant's experience that it can prove useful to undertake external, independent audits of Social Impact Assessment processes and outcomes. Apart from providing a completely external perspective, an audit also demonstrates to all role-players that project activities are totally transparent and open to scrutiny.

For the most part, monitoring and evaluation tend to focus on the management of social change and the respective Social Management Plans developed to minimise and/or enhance these changes. However, it should also be considered that the Social Impact Assessment process itself needs to be monitored and evaluated in order to inform future work and to also advance Social Impact Assessment concepts and methods for new projects.

The Brilliant Expansion Project in Canada serves as a useful example of monitoring. In order to monitor and report on the social and economic impacts and benefits associated with the expansion of the generating capacity at the Brilliant Dam, and to identify deviations from outcomes anticipated, the Columbia Power Corporation hired an independent, third-party contractor to serve as the Socio-Economic Monitor for the project. The Socio-Economic Monitor objectively monitored and reported on both the impacts and benefits that occurred as a result of the expansion project. Through investigating a range of social and socio-economic variables, the Socio-Economic Monitor could gauge the impact of the expansion project on the local communities and the region (i.e. within a 100 km radius of the project site). The Socio-Economic Monitor used various indicators to measure the benefits and impacts of the project. Aspects investigated in terms of employment and expenditure included the number of local hires, trades, female workers, First Nation workers by Nation and by Band, and disabled workers, the number of apprenticeships, the ratio of project employment to the regional labour force, the direct and induced expenditures by communities, and the number of local firms that befitted from the project.

CASE STUDIES

A total of 15 case studies are described and discussed, with a reasonable coverage of the world, developed and developing economies, and covering all stages within the project lifecycle (except decommissioning but one example of revamping/redevelopment is presented). The 15 case studies are as follows:

- Alborz Dam and Alborz Integrated Land and Water Resource Management Project, Iran.
- Brilliant Expansion Project, Canada.
- Bumbuna Hydroelectric Project, Sierra Leone.
- Burnett River Dam, Australia.
- Campos Novos Hydroelectric Power Project, Brazil.
- Driekoppies Dam, South Africa.
- Kandadji Dam Project, Niger.
- Odra Dam, Poland.
- Olifants River Water Resources Development Project, South Africa.
- Salto Caxias Hydroelectric Power Plant, Brazil.
- Son La Hydroelectric Power Project, Vietnam.
- Thukela Water Project, South Africa.
- Tuyen Quang Dam and Flood Prevention Project, Vietnam.
- Upper Seti Storage Hydroelectric Power Project, Nepal.
- Xiaolangdi Dam Project, China.

The case studies were selected to illustrate elements of Social Impact Assessment that can be regarded as relevant practice. The table overleaf shows which elements of Social Impact Assessment are addressed in each of the case studies (blue shading). The table also highlights where the Consultant is of the opinion that a particular case study serves as a useful example of one element that characterises Social Impact Assessment (yellow shading). These case studies are described in more detail in text boxes in the appropriate section of this Extended Executive Summary.

For each case study, material is provided on the following:

- Aspects of Social Impact Assessment Addressed.
- Normative Frameworks.
- Project Identification.
- Stage in the Project Lifecycle.
- General Description of the Country Institutional Set-up.
- Detailed Description of the Specific Policy/Normative Framework.
- Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring.
- Brief Description of the Implementation History of the Norm, including Enforcement and Compliance.
- Project Description.
- Implementation of Key Issues (as described in the characterisation of Social Impact Assessment).
- Outcomes and Results.
- Assessment of Outcomes/Results by Involved Stakeholders[6].
- Consultant's Conclusions.

[6] Within the plethora of information that is available, it is difficult to source unbiased/objective opinions on dams and dam projects. Given this constraint, one item of the terms of reference that has not been adequately dealt with concerns the assessment of outcomes/results by involved stakeholders. Indeed, it is questionable whether or not this information is available and perhaps the only way this can be done is to undertake an independent, on-site assessment.

Analysis of the characterisation of Social Impact Assessment by case study

Dam	Public Involvement	Alternatives	Profile of Baseline	Scoping	Projection of Effects	Prediction and Evaluation of Response to Impacts	Mitigation	Indirect and Cumulative Impacts	Monitoring
Alborz									
Brilliant									Socio-Economic Monitor (Independent), Focus on local benefits
Bumbuna			Extensive over many years (despite civil war)						
Burnett									
Campos Novos									
Driekoppies				Loss of resources, homes and economic displacement, and community infrastructure and services					
Kandadji					Resettlement, loss of productive resources and loss of infrastructure				
Odra	Extensive and intensive (Outcomes not agreed by all)								

Covered	
Useful Example	

Dam	Public Involvement	Alternatives	Profile of Baseline	Scoping	Projection of Effects	Prediction and Evaluation of Response to Impacts	Mitigation	Indirect and Cumulative Impacts	Monitoring
Olifants		Dam and non-dam (implement concurrently)							
Salto Caxias									
Son La									
Tuyen Quang								Tourism and fisheries opportunities	
Thukela						Significant quantification of impacts associated with dams and appurtenant works			
Upper Seti							Resettlement, acquisition, influx, enhancement		
Xiaolangdi									

Covered	
Useful Example	

DATA BASE

The database is a compilation of information sources utilised for purposes of preparing the main report and this Extended Executive Summary.

SUMMARY OF KEY FINDINGS AND RECOMMENDATIONS

Arising from the case studies are ten key findings:

- At the commencement of a project, it is advisable to adopt the widest possible set of normative and planning frameworks, so as to enable the widest possible examination of the proposed project and its alternatives, within the widest possible consideration of the receiving environment. Over time, as project planning progresses, the frameworks can be narrowed down.
- Considering the long lead time required for the planning of projects, such as large dams, there is merit in adopting an incremental approach to project planning (including Social Impact Assessment), with the level of detail of information increasing as planning progresses.
- Similarly, there is a need and it is desirable to streamline institutional arrangements for the lifespan of project planning and implementation, to facilitate continuity over a long period of time.
- Further, there is merit and benefit in sharing information, expertise and experience between nations (be it from developed economies to developing economies, or *vice versa*).
- The investigation and assessment of alternatives should be undertaken to comparable levels of detail, to enable informed decision-making between alternatives.
- Given that Social Impact Assessment is about people, it is critical that people are involved in the planning of their own futures, sooner rather than later in the project lifecycle.
- For all projects, particular attention should be paid to the needs of vulnerable groups that, while different for each project, could include the youth, elderly, women, the infirm and the disabled.
- Allied to the above, there is merit in communication (open, transparent and on-going), commencing as early as possible within the project lifecycle.
- It is submitted that the single largest social and socio-economic impact of large projects, such as dams, is involuntary resettlement (physical and/or economic displacement). The implementation of Resettlement Action Plans takes time and requires considerable resources. Three aspects of resettlement deserve highlighting:
  - Resettlement should be undertaken within a development paradigm that aims to improve peoples' livelihoods and to advance them beyond pre-project conditions.
  - Host communities need to receive comparable developmental support so that their livelihoods are also advanced (alongside those of the resettlers).
  - The use of resettlement pilot projects appears to have merit and is worthy of wider application.
- Independent monitoring is valuable as it enables corrective action to be applied on a particular project as soon as the need for corrective action is indicated. It also informs future projects thereby applying lessons learned and continuously increasing the knowledge base, and the application of relevant practice.

Arising from the characterisation of the state of the art of Social Impact Assessment, it is evident that there are few normative frameworks covering the subject. Indeed, it would appear that, for the most part, Social Impact Assessment is embedded within normative frameworks governing other elements of law, from overarching constitutional law, to specific laws governing Environmental Impact Assessments. Of importance is that there appears to be a gap in normative frameworks, with those of a social orientation focussing on the management of social impacts without due consideration and specification for the identification and assessment of impacts. Therefore, it can be argued that without a normative framework that specifically addresses Social Impact Assessment and its requirements, the practise of Social Impact Assessment will fall short of that considered adequate and necessary by society (interested in or affected by a development proposal).

Nevertheless, even in the relative absence of normative frameworks, Social Impact Assessment is practised widely. Similarly, there appears to be a sound understanding and agreement on the elements that constitute relevant practice in Social Impact Assessment. However, what is also apparent is that there are differing approaches and opinions as to the level of detail of information that is required. This influences the accuracy of assessments and the eventual outcomes of mitigation measures.

Although not a focus of this study, it is readily apparent from the material presented in this report that involuntary resettlement is the most significant social impact arising from most projects that requires significant planning and implementation of mitigation measures. (Many other social impacts can be avoided and/or managed through changes in technical layout, design, etc). The history of implementing mitigation measures by way of, for example, a Resettlement Action Plan is not good (time delays, over-expenditures, unfavourable outcomes, aspects not addressed, and the like). In many cases, this poor history is despite a Social Impact Assessment having been undertaken, and leads to questions concerning the interface between a Social Impact Assessment and subsequent mitigation plans/programmes. Considering that the latter are covered by a number of different normative frameworks, and considering the suggestion above that there may be a need for a normative framework covering Social Impact Assessment, there is definitely a need to better link the assessment task with the task of implementing mitigation plans and managing social change.

Therefore, arising from the afore-mentioned are four specific recommendations:

- Formulate a normative framework covering Social Impact Assessment, and provide linkages to existing normative frameworks covering the implementation of the management of social change, for example, those covering involuntary resettlement.
- Formally define the process of Social Impact Assessment that must be adopted to achieve compliance with the proposed normative framework.
- Develop evaluation criteria to assist in assessing whether or not a particular Social Impact Assessment meets the requirements of the proposed normative framework and the proposed assessment process.
- Review the normative framework and assessment process after five years and effect refinements as necessary.

Notwithstanding the need for a normative framework that specifically governs Social Impact Assessment, it does need to be acknowledged that, increasingly, Social Impact Assessment is being practised globally, for dam and other projects. Furthermore, it is apparent from the literature that, for the most part, Social Impact Assessment is generally being undertaken to acceptable standards and levels of detail to enable the formulation of appropriate management plans (to mitigate negative impacts and to optimise benefits). Therefore, within the literature, there exists a reasonable body of experience upon which readers can draw. Importantly, persons interested or involved in dams and development should not confine their literature reviews to dam projects only – there is considerable experience from developments in other sectors that is of application to future dam projects.

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ACRONYMS

ADB	Asian Development Bank
ACRP	Acquisition, Compensation and Rehabilitation Plan
AILWMP	Alborz Integrated Land and Water Management Project
BP	Bank Procedure
Code	Code de l'Environnement (The Code of the Environment (Niger))
CONAMA	Conselho Nacional do Meio Ambiente (Brazilian National Environmental Council)
COPEL	Companhia Paranaese de Energia (electric utility for the Brazilian State of Paraná)
CRABI	The Regional Movement for the People Affected by the Construction of Dams in the Iguaçu River, Brazil
DEAT	Department of Environmental Affairs and Tourism (South Africa)
EU	European Union
FSL	Full Supply Level
GEM-CX	The Multidisciplinary Study Group (established by COPEL as a mechanism for participation between various stakeholder groups) (Brazil)
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IAP2	International Association of Public Participation
IFC	International Finance Corporation
IFI	Institute de la Francophonie pour l'informatique (Francophone Institute of Informatics) (Vietnam)
JICA	Japan International Cooperation Agency
KOBWA	Komati Basin Water Authority
NEA	Nepal Electricity Authority
NGO	Non Government Organisation
OP	Operational Policy
OPN	Operational Policy Note
ORWRDP	Olifants River Water Resources Development Project (South Africa)
RIMA	Relatório de Impacto Ambiental (Environmental Impact Statement) (Brazil)
RSA	Republic of South Africa
SADC	Southern African Development Community
SEBRAE	Serviço Brasileiro de Apoio às Micro é Pequenas Empresas (a Government organisation that assists and supports the creation and development of small business) (Brazil)
SIA	Social Impact Assessment
UNEP DDP	United Nations Environment Programme Dams and Development Programme
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VND	Vietnamese Dong (currency)

[For the Xiaolangdi Dam Project in China, the Consultant was unable to determine the meaning of the acronym, CIPM. However, it is believed to indicate an institution responsible for project planning and implementation].

TRANSLATIONS

Banco Nacional de Desenvolvimento Economico e Social	National Bank for Economic and Social Development (Brazil)
Centro de Atendimento ao Migrante	Reception centre for migrants (established by Enercan in the Campos Novas region, Brazil)
Code de l'Environnement	The Code of the Environment (Niger)
Comité Directeur du Suivi de l'Exécution des Etudes de Faisabilité du Barrage de Kandadji	Directing Committee for the Follow-up of the Execution of the Feasibility Study for Kandadji Dam (Niger)
Comité Technique de Coordination des Etudes de Faisabilité du Barrage de Kandadji	Technical Committee for the Co-ordination of the Feasibility Study for Kandadji Dam (Niger)
Département de la Gestion du Barrage	Department of Dam Operation (Niger)
Département de la Production de l'Energie	Department of Energy Generation (Niger)
Département des Etudes Générales	Department of General Studies (Niger)
Département des Services Logistiques, Administratifs et Financiers	Department of Logistics, Administration and Finance (Niger)
Direction du Genie Rural	Management of Rural Engineering (Niger)
Etude de l'Aspect Institutionnel	Institutional Study (prepared for the Kandadji Dam Project, Niger)
Haut Commissariat au Barrage de Kandadji	High Commission of the Kandadji Dam (Niger)
Haut Commissaire	High Commissioner (Niger)
Instituto Brasileiro de Meio Ambiente e dos Recursos Naturais Renovaveis	Brazilian Institute for the Environment and Renewable Resources
Licença de Instalação	Installation License (Brazil)
Licença de Operação	Operating License (Brazil)
Licença Prévia	Preliminary License (Brazil)
Ministere de l'Agriculture	Ministry of Agriculture (Niger)
Ministre chargé de l'Environnement	The Minister charged with the Environment (Niger)
Ministere de la Sante	Ministry of Health (Niger)
Ministere des Mines et de l'Energie	Ministry of Mines and Energy (Niger)
Office des Amenagements Hydro-Agricoles	Bureau for the Development of Hydro-Agriculture (Niger)
Posseiros	People with occupancy rights, but who lack full legal land title (Brazil)
Projeto Básico Ambiental	Environmental Management Plan (Brazil)
Recensement Général de la Population	General Census of the Population (Niger)
Relatório de Impacto Ambiental	Environmental Impact Statement (Brazil)
Sistema Nacional do Meio Ambiente	National Environmental System (Brazil)
Société Nationale du Barrage de Kandadji	National Kandadji Dam Company (Niger)

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INTRODUCTION

Dr R-D Heinsohn (the Consultant) was contracted by the United Nations Environment Programme to provide inputs into the Dams and Development Project: Compendium of Relevant Practises. The particular key issue being addressed by the Consultant is Social Impact Assessment (SIA).

The overall objective of the assignment was to identify, collect information and compile examples of relevant practices concerning the integration into policy/normative frameworks and implementation of SIA. This compilation of examples is intended to be a substantive element leading to the elaboration of a compendium on relevant practices for improved decision-making, planning and management of dams and their alternatives.

The specific outputs of this assignment are presented in this report in five main sections:

- An Executive Summary.
- Characterisation of the state of the art of Social Impact Assessment.
- Presentation of 15 case studies that illustrate aspects of relevant practice in the implementation of Social Impact Assessment.
- A summary of key findings and recommendations.
- A database of source material for each case study.

APPROACH, METHODOLOGY AND LIMITATIONS

The assignment was undertaken entirely as a desk-top exercise, where possible, drawing on the personal experience of the Consultant, both in respect of the characterisation of the state of the art of Social Impact Assessment as well as in respect of three case studies from South Africa.

A key aspect of the assignment was the identification and evaluation of 15 case studies that illustrate relevant practice in Social Impact Assessment. The criteria that were applied for the selection of case studies were as follows:

- Geographic distribution, to include developed and developing economies, and to enable a wide coverage of different normative frameworks from around the world (Annexure 1).
- Stage in the project lifecycle to illustrate each stage at least once (Annexure 1).
- Usefulness of each case study to illustrate at least one element of the characterisation of Social Impact Assessment considered relevant practice (whilst also ensuring that all elements that characterise Social Impact Assessment are covered by the 15 case studies).
- Accessibility of information (preferably in English) from the Internet or electronically. Where possible, limited translations were undertaken.
- Where possible, comments from civil society representatives of the Dams and Development Project Steering Committee were taken into account in the selection of case studies.

In the final analysis, the 15 case studies covered all six continents, and developed and developing economies. Apart from decommissioning[7], each stage in the project lifecycle was covered. Also, importantly, all elements that characterise Social Impact Assessment were covered in the 15 case studies.

In examining the case studies it is important to note the following:

- Despite there being a plethora of information on dams and dam projects available, in many instances it is not possible to access original project documentation, especially for older projects.
- Within the plethora of information that is available, it is difficult to source unbiased/objective opinions on dams and dam projects. Given this constraint, one item of the terms of reference that has not been adequately dealt with concerns the assessment of outcomes/results by involved stakeholders. Indeed, it is questionable whether or not this information is available and perhaps the only way this can be done is to undertake an independent, on-site assessment.
- The selection of a particular case study is to illustrate one or more elements of Social Impact Assessment. This does not necessarily mean the whole Social Impact Assessment was relevant, does not mean that elements of the Social Impact Assessment were done at the appropriate time, does not suggest that mitigation measures post the assessment are relevant, and does not endorse any project in any way.
- For some case studies there is information available but not in English. Where possible, this information has been translated into English. However, this was not possible for all languages.

[7] Although the Brilliant Expansion Project in Canada does represent the revamp or redevelopment of an existing dam.

For each case study, the elements and outcomes of Social Impact Assessment are described (as relevant). Both aspects are important and both provide keys as to what is required for the different elements that constitute relevant practice in Social Impact Assessment. Where possible, the case studies provide examples of the kinds of methodologies used, the range of data that are usually collected as well as the kinds of outputs that can be produced. Importantly, however, no raw data are provided, as these are not available on the Internet.

The primary limitations constraining this assignment can be summarised as follows:

- A relatively limited time period of 30 days that were allocated to complete the work.
- Accessibility of information electronically and/or on the Internet.
- Difficulties in sourcing unbiased/objective information on dams and dam projects.
- Language constraints.

Unfortunately, the reader will notice quite a bit of repetition of information. For example, where a normative framework is applicable to more than one case study, discussions on the normative framework are repeated. This is unavoidable given the format in which the case studies were prepared. However, repetition was chosen over cross-referencing which would make the document difficult to read.

CHARACTERISATION OF THE STATE OF THE ART OF SOCIAL IMPACT ASSESSMENT

1. Introduction

Social Impact Assessment is a **process** of research, planning and management of social change or consequences (positive and negative, intended and unintended) arising from policies, plans, programmes and projects (Taylor, Bryan and Goodrich, 1995). It is one of the tools in the toolbox of Integrated Environmental Management that focuses on the human element of development interventions. However, the human element cannot be examined and assessed in isolation of the biophysical and economic dimensions that, together with the social dimension, contribute to attaining sustainability, i.e. all three dimensions that constitute the environment must be examined and assessed in an integrated manner. Social Impact Assessment is closely related to a variety of disciplines, such as cultural heritage, socio-economics, gender, politics, resource utilisation, and the like. In particular, during the Environmental Impact Assessment process, Social Impact Assessment often runs in close association with public participation. Therefore, by its nature, Social Impact Assessment is widely encompassing and requires a team approach, covering multi-disciplines in an integrated manner.

Social Impact Assessment has become relatively well-defined over the past few decades. It is a process of incremental information gathering to enable analysis and the projection of affects, for the purpose of defining actions, either to remedy negative impacts or to enhance benefits. In some countries, the word “environment” is interpreted in its broadest context comprising all dimensions of the environment (social, biophysical, economic, political, cultural, governance, etc). In other countries, the interpretation is narrower, equating mainly to the biophysical elements of the environment. In such cases, the social environment is viewed separately. These interpretations are relevant as they lead to two different approaches to Social Impact Assessment. In the case of the former, Social Impact Assessment becomes a study within a larger Environmental Impact Assessment, while, in the latter, the Social Impact Assessment takes on the proportions of an Environmental Impact Assessment[8]. The level and intensity of the Social Impact Assessment in each case are not comparable, and can lead to different outcomes or, indeed, different emphases being placed on the outcomes.

It is important to note that, for the most part, Social Impact Assessments deal with project-specific impacts on communities and people directly affected by proposed projects. Social Impact Assessments are seldom applied on a wider scale, say, strategic or national. In such cases, development proponents usually commission Economic Assessments to understand and evaluate wider economic and societal benefits that may accrue from a proposed project. The outcomes of such assessments need to be read and understood alongside the outcomes of Social Impact Assessments of Affected People.

[8] It should be noted that in many instances Social Impact Assessment grew up around the Environmental Impact Assessment and, as such, the description and assessment of social impacts closely follows the conventions devised for Environmental Impact Assessment. However, a critical difference is that social environment is adaptive and mitigation sometimes means that negative impacts can be transformed, with sufficient mitigation, to positive outcomes. However, the limit is resource capacity to effect mitigation.

2. Social Impact Assessment Normative Frameworks

There are a very limited number of normative frameworks that deal exclusively and specifically with Social Impact Assessment (examples below and in Table 1 are highlighted). However, Social Impact Assessment is implicitly captured within many international frameworks (Table 1). Furthermore, Social Impact Assessment is often guided by country-specific policies and legislation of national governments (national policy or policies housed within different line-function departments), and provincial/state/district/local governments (as overarching policy or individual policies housed within different departments). Examples are provided in Table 2.
In addition, following the Rio Earth Summit in 1992, elements of Social Impact Assessment are also covered by international corporations (for example, industry, mining and power generation) for application in their activities. Similarly, Non Governmental Organisations, AID Agencies, parastatals (various), National Government Funding Agencies (various) and Professional Organisations/Associations (various) also apply normative frameworks to their activities, including those that cover Social Impact Assessment or elements of it.

2.1 Central messages of normative frameworks

Some of the central messages[9] relevant to Social Impact Assessment within normative frameworks are as follows:

- The importance of considering the social and socio-economic environments (i.e. people) when conceptualising, planning, implementing, operating and maintaining, and decommissioning projects.
- The importance of obtaining a detailed understanding of the receiving social and socio-economic environments early in the project lifecycle.
- Baseline social and socio-economic conditions should be surveyed, established and understood prior to project intervention. This is important to understand the social and socio-economic environments, and, also, to serve as yardstick against which affects of a project and mitigation actions can be measured.
- Alternatives need to be identified and considered to the same level of detail for each. Wherever possible, impact avoidance and impact minimisation are preferred alternatives.
- Indirect, downstream and cumulative impacts should be identified and assessed for each alternative.
- The involvement/participation of potentially affected communities is important in:
  - Understanding and quantifying the potential affects of a project.
  - The planning and implementing of mitigation measures, such as resettlement.
- Considering that resettlement (including economic displacement) is probably the single most important negative impact on the social environment, resettlement programmes should address not only the directly affected resettlers but also the population in host areas and potential affects on these people. Furthermore, resettlement programmes should be undertaken within a development paradigm to promote the attainment of sustainable livelihoods for those affected by resettlement (resettlers and hosts).
- After the completion of a project (usually construction completed), affected people's social and socio-economic circumstances should be at least the same, but preferably improved, when compared to their baseline conditions.
- As with the management of negative impacts, for example, resettlement, the optimization of benefits for the wider community within which a project is undertaken should also be conceptualised, planned and implemented as sustainable development projects.

[9] Please note that this does not provide a summary or treatise of central messages; rather, important ones are lifted out for purposes of illustrating how Social Impact Assessment links to the normative frameworks.

Table 1 Sample list of international normative frameworks that govern Social Impact Assessment

Organisation	Normative Frameworks	References
African Development Bank	❑ **Environmental and Social Assessment Procedures** ❑ Involuntary Resettlement Policy ❑ Policy on Environment ❑ Strategic Impact Assessment Guidelines	❑ www.afdb.org
Asian Development Bank	❑ Environment Policy (2002) ❑ Policy on Indigenous Peoples ❑ Involuntary Resettlement (1995)	❑ www.adb.org
European Bank for Reconstruction and Development	❑ Public Information Policy (2003) ❑ Environmental Policy (2003)	❑ www.ebrd.com
European Union	❑ EU Council Directive 85/337/EEC – Environmental Impact Assessment (1985) ❑ EU Council Directive 2001/42/EC – Strategic Environmental Assessment Directive ❑ EU Guidelines for Assessment of Indirect and Cumulative Impact ❑ Convention of Environmental Impact Assessment in A Trans-boundary Context (1991)	❑ www.ec.europa.eu
Equator Principles	❑ An Industry Approach for Financial Institutions in Determining, Assessing and Managing Environmental and Social Risk in Project Financing (June 2003) ❑ A Financial Industry Benchmark for Determining, Assessing and Managing Social and Environmental Risk in Project Financing (July 2006)	❑ www.equator-principles.com
Inter-American Development Bank	❑ Inter-American Development Bank Involuntary Resettlement: Operational Policy 7-10 ❑ Inter-American Development Bank Environment and Safeguards Compliance Policy (2006) ❑ Private Sector Department Environmental and Social Guideline (2004)	❑ www.iadb.org
International Association for Impact Assessment	❑ **Social Impact Assessment: International Principles (May 2003)**	❑ Vanclay, F. (2003) ❑ www.iaia.org

Organisation	Normative Frameworks	References
United Nations	❑ Espoo Convention (1997) ❑ Guidelines on Environmental Due Diligence of Renewable Energy Projects	❑ www.un.org
World Bank Group (World Bank, International Finance Corporation[10] and Multilateral Investment Guarantee Agency)	❑ Operational Policy and Bank Procedure 4.01 - Environmental Assessment ❑ Operational Policy and Bank Procedure 4.12 – Involuntary Resettlement ❑ Operational Directive 4.20 – Indigenous Peoples ❑ Operational Policy 4.11 (Operational Policy Note 11.03) – Cultural Property ❑ Policy on Social and Environmental Sustainability ❑ Performance and Standards on Social and Environmental Sustainability ❑ Bank Policy 17.50 – Public Disclosure	❑ www.worldbank.org ❑ www.ifc.org ❑ www.miga.org

[10] It should be noted that the International Finance Corporation has a new *Policy and Performance Standards on Social and Environmental Sustainability* (April, 30, 2006) comprising eight Performance Standards: (1) – Social and Environmental Assessment and Management System (2) – Labour and Working Conditions (3) – Pollution Prevention and Abatement (4) – Community Health, Safety and Security (5) – Land Acquisition and Involuntary Resettlement (6) – Biodiversity Conservation and Sustainable Natural Resource Management (7) – Indigenous Peoples (8) – Cultural Heritage.

Table 2 Sample list of country-specific normative frameworks that govern Social Impact Assessment

Organisation	Normative Frameworks	References
Australia	❑ Commonwealth Environmental Protection and Biodiversity Conservation Act (1999) ❑ Queensland Environmental Protection Act (1994) ❑ Queensland Heritage Act (1992) ❑ Integrated Planning Act (1997) ❑ **Holroyd City (2002) (How to Complete a Social Impact Assessment)** ❑ **Holroyd City (2004) (Social Impact Assessment Policy for Development Applications)**	❑ www.deh.gov.au/epbc/index.html ❑ www.legislation.qld.gov.au ❑ www.randwick.nsw.gov.au/attachments/SIAguidelines30062006.pdf ❑ www.holroyd.nsw.gov.au/html/cfs/policies/siapolicy.pdf
Brazil	❑ Brazilian National Environment Policy Act (Law 6938/81)	❑ Cited in the Campos Novos Hydroelectric Power Project – Environmental and Social Management Report. Inter-American Development Bank. (2004)
Canada	❑ Canadian Environmental Assessment Act (1992) ❑ British Columbia Environmental Assessment Act (1995)	❑ http://laws.justice.gc.ca
China	❑ Environmental Protection Law of the People's Republic of China (1989)	❑ http://www.china.org.cn ❑ http://www.zhb.gov.cn
Iran	❑ Article 50 of the Constitution of the Islamic Republic of Iran ❑ Land Acquisition Law (1980) ❑ Law on Economical, Cultural, Societal Development (1989) ❑ Law for Environmental Protection and Development (1991)	❑ www.parstimes.com/law/iran ❑ Laws cited in Alborz Integrated Land and Water Management Project - Supplementary Environmental and Social Assessment: Executive Summary. Mahab Ghodss Consulting Engineers. (2004)
Nepal	❑ Environment Protection Act (1996) ❑ Water Resources Act (1992) ❑ Nepal Environmental Policy and Action Plan (1993) ❑ Environmental Protection Rule (1997) (as amended in 1999) ❑ National Environmental Impact Assessment Guidelines (1993)	❑ Cited in the Upgrading Feasibility Study on Upper Seti (Damauli) Storage Hydroelectric Project. NEA. (2004)

Organisation	Normative Frameworks	References
	❑ Guide to Environmental Assessment in Nepal (2002) ❑ Acquisition, Compensation and Rehabilitation Plan (ACRP) (Nepal) (1999)	
Niger	❑ Niger "Code de l'Environnement"	❑ http://www.ibimet.cnr.it/Case/den/Documents/Code_environment.pdf
Poland	❑ Polish Environmental Protection Law (2001) ❑ Polish Historical Conservation and Protection Act (2003)	❑ Law and Act cited in the ODRA River Basin Flood Protection Project Environmental Assessment. Regional Water Board Gliwice, Government of Poland. (2005)
Sierra Leone	❑ National Environmental Policy (1990) ❑ Environment Protection Act (2000)	❑ Policy and Act cited in the Bumbuna Hydroelectric Project Environmental Impact Assessment: Draft Final Report. Nippon Koei UK. (2005)
South Africa	❑ Constitution of the Republic of South Africa Act (Act 108 of 1996) as amended by the Constitution of Republic of South Africa Amendment Act (Act 35 of 1997) ❑ National Environmental Management Act (Act 107 of 1998) ❑ Environment Conservation Act (Act 73 of 1989) ❑ National Water Act (Act 36 of 1998) ❑ National Heritage Resources Act (Act 25 of 1999)	❑ www.info.gov.za/documents/constitution/index.htm ❑ www.info.gov.za/gazette/acts/1998/a107-98.pdf ❑ www.acts.co.za/enviro ❑ www.info.gov.za/gazette/acts/1998/a36-98 ❑ www.dac.gov.za/acts/a25-99.pdf
Swaziland	❑ The Swaziland Environment Authority Act, 1992	❑ www.ecs.co.sz/leg_sd_files/env_leg_sd_seaact.htm
Vietnam	❑ Law on Environmental Protection (1993) ❑ Decree on Providing Guidance for the Implementation of the Law on Environmental Protection (1994) ❑ Guidelines for Resettlement and Rehabilitation in Vietnam	Cited in: ❑ Bladh, U. & Nilsson, E-L. (2005). How to Plan for Involuntary Resettlement? The Case of the Son La Hydroelectric Power Project in Vietnam ❑ United Nations Development Programme. (2000). Gam River Dam Preliminary Environmental Impact Assessment. (http://www.undp.org.vn/projects/parc/docs/bn6-eia.pdf)

It should be noted that this list is not intended to be comprehensive. Rather, it draws on country-specific normative frameworks examined as part of the examination of case studies. Indeed, there are many more normative frameworks that could be listed. However, this is not the purpose of the characterization of the state of the art of Social Impact Assessment.

- The ability of the development proponent to mobilise the necessary resources to manage negative impacts and optimise benefits needs to be appraised and, where relevant, management constraints need to be identified and addressed.
- Mitigation and management should be monitored during and post implementation to determine whether or not desired outcomes are being achieved, and, if not, to undertake remedial interventions to achieve them.

Importantly, within these aforementioned normative frameworks, there is an understanding of the different levels and intensities at which Social Impact Assessment is applied for different initiatives (large vs small, complex vs simple, national vs international, developing economies vs developed economies, etc). Indeed, country characterisation often results in normative frameworks being adapted for specific application in specific countries.

3. Social Impact Assessment and the Project Lifecycle

As with any environmental investigation, a lifecycle approach should be adopted for SIA and, in this regard, it is crucial that Social Impact Assessment commences as **early** as practically possible within the lifecycle of a project, and should continue throughout, acknowledging that approaches and activities will differ at different stages in the project lifecycle. A generalised impression is provided in Table 3.

4. Social Impact Assessment Process and Constituent Elements

The approach and methodology for Social Impact Assessment vary depending on the purpose and application for which the Social Impact Assessment is being undertaken. However, a generalised process involves the following:

- Characterisation of the social environment, and definition of boundaries.
- Understanding of the intervention (whether policy, plan, programme or project) to enable the projection of affects.
- Estimating the severity of affects, and the development of management actions, either to remedy negative aspects or to enhance benefits.
- Active management of social change (with review and feedback loops to enable changes if the need for these is indicated).
- On-going monitoring (post-construction, i.e. during operation) to determine whether or not the desired outcomes have been achieved.
- Evaluation (at an agreed point in the project life-cycle) to inform future initiatives.

Specific elements that characterise Social Impact Assessment and which lead to tasks that need to be carried out (in varying degrees of intensity) in a Social Impact Assessment are the following:

- Public involvement/participation.
- The identification and consideration of alternatives.
- Profiling of baseline conditions.
- Scoping.
- Projection of estimated effects.
  - Prediction and evaluation of responses to impacts.
  - Mitigation of negative impacts and the optimisation of benefits.
  - Assessment of indirect and cumulative impacts.
- Monitoring, auditing and evaluation.

Table 3 Generalised impression of Social Impact Assessment and the project lifecycle

Stage in Project Cycle	Key Social Impact Assessment Features	Outputs
Policy Strategic Planning River Basin Planning	The Social Impact Assessment process undertaken at these stages in the project lifecycle is essentially the same as would be undertaken at project-specific level. However, there would be reliance on higher-order information addressing higher order decision-making needs	Key outputs at a macro level include the identification of alternatives, the identification of key social issues and a first order assessment of impacts, and the manageability thereof
Project Planning		
Conceptualisation	Conceptual input based on past experience and professional opinion of Social Impact Assessment practitioner	Identification of possible key issues, red flags and fatal flaws associated with different conceptual options
Pre-Feasibility	Desk-top study and analysis	Confirmation of key issues and red flags, at a better level of assurance
Feasibility	Desk-top and field studies, interpretation, analysis, integration, projection of affects, and management actions	Comprehensive Social Assessment Report covering all social aspects related to particular development options
Design	Intensive, iterative process of avoiding, minimising and/or managing social affects. Holistic and integrated approach that results in the formulation of management plans (to manage negative affects, e.g. a resettlement action plan, and benefits, e.g. a social development plan)	Socially friendly/acceptable designs, and management plans to be implemented during construction
Implementation		
Construction Commissioning	Hands-on, in-field implementation of plans	Restoration of livelihood strategies (within a development paradigm) of people negatively affected by development. Realisation of benefits. Monitor, review and evaluate, and make changes as indicated by outcomes
Operation	Monitoring, auditing and evaluation	Continued restoration of livelihood strategies, with additional or new mitigation/management actions as indicated by monitoring, auditing and evaluation outcomes
Decommissioning		
Closure	The whole Social Impact Assessment process should recommence to cater for decommissioning, closure and the management of residual impacts	As above
Residual	Hands-on, in-field implementation of plans	As above

4.1 Public involvement/participation

Public involvement/participation aims to provide a process of improved decision-making whereby interested and affected parties, technical specialists, authorities and the development proponent work together to produce better decisions than if they had worked independently and is defined by the International Association of Public Participation (IAP2) as *any process that involves the public in problem-solving or decision-making and that uses public input to make better decisions* (www.iap2.org/associations/4748/files/foundations-bro.pdf).

In terms of relevant practice, IAP2 has developed a set of core values crossing national, cultural and religious boundaries, which aim to *help make better decisions which reflect the interests and concerns of potentially affected people and entities* (www.iap2.org/associations/4748/files/foundations-bro.pdf) as follows:

- *The public should have a say in decisions about actions that affect their lives.*
- *Public participation includes the promise that the public's contribution will influence the decision.*
- *The public participation process communicates the interests and meets the process needs of participants.*
- *The public participation process actively seeks out and facilitates the involvement of those potentially affected.*
- *The public participation process involves participants in defining how they participate.*
- *The public participation process provides participants with the information they need to participate in a meaningful way.*
- *The public participation process communicates to participants how their input affected the decision* (www.iap2.org/associations/4748/files/foundations-bro.pdf).

In addition to the IAP2 core values, there are other principles of relevant practice that can be applied to public involvement/participation, ensuring that all participants are fairly heard and their views considered, that the process needs of participants are met and that the process itself is not unjustly attacked or delayed. From the Consultant's own experience on various projects (covering various sectors, i.e. not just water resource development) in South and Southern Africa, the following apply:

- Public involvement/participation is founded on transparency, honesty and the integrity of all persons involved in the process. To assist, all role-players should agree on roles, rights and responsibilities early in any public involvement/participation process.
- Consultation should be inclusive (i.e. it should take place within all sectors of society, and afford a broad range of stakeholders the opportunity to become involved, bearing in mind that it may not be practically possible to personally consult with every individual in a project area).
- The opportunity to comment should be announced in various ways over a period of time (for example, by way of letters addressed to stakeholders personally, advertisements, documents left in public places, radio announcements, and personal visits to vulnerable individuals and/or groups).
- Information should be easily accessible and sufficient to allow meaningful contributions (and information should be in a language that stakeholders can understand and written or presented in a non-technical way).
- Opportunities for involvement/participation should be afforded according to the ability and interest level of different stakeholders (highly technical documents for technically orientated people; and simplified versions for lay people).

- Information should be presented in different ways to facilitate assimilation (for example, by way of discussion documents, presentations at meetings and workshops, visual displays, and print and broadcast media releases).
- Similarly, stakeholders should be afforded all possible practical means of providing inputs and comments (for example, written submissions, comment sheets, e-mail, fax, briefing meetings, workshops, public meetings and personal contact with study team members).
- Special efforts should be made for vulnerable groups (for example, the elderly and infirm, mentally ill, youth, non-main stream language speakers, etc).
- Sufficient time should be allowed for comment. Equally, however, time should not be wasted on options that have been shown to be unviable.
- Involvement/participation should be ongoing throughout an investigative process, whether an environmental impact assessment, social impact assessment, a feasibility study or the like. In this regard, stakeholders should receive ongoing feedback and acknowledgement, and the opportunity to understand how their contributions have been considered.
- Stakeholders should be afforded sufficient opportunity to exchange information and viewpoints (for example, at workshops and public meetings).

To achieve the afore-mentioned, it is necessary to identify stakeholders (directly affected and those with a wider interest in the development proposal) as early as possible within the project cycle, taking cognisance that stakeholder identification should be an on-going process for the duration of a project (for example, as the project configuration changes, new stakeholders may emerge). (Stakeholder identification early on in a project cycle also assists in determining eligibility and entitlement rights later on in the project cycle when mitigation measures, for example, involuntary resettlement, are to be implemented) (Section 4.5.2).

Following stakeholder identification, it is necessary to develop a communications strategy that is customised to different stakeholder groups, for example, by sector, in order that meaningful information exchange can be facilitated. Taking note of customised communications strategies, it is critical that there is consistency in central messages contained within these strategies.

Through active involvement with the public in a meaningful way, both environmental (bio-physical) and social (cultural, political, socio-economic, etc) issues relevant to a development proposal should be identified.

The Odra River Basin Flood Protection Project in Poland serves as a useful example of relevant practice in public participation. The proposed project was opposed by a number of affected communities. To address community concerns, the development proponent, the Polish Regional Water Board, undertook extensive and intensive consultation over a number of years. Although the outcomes were not agreed by all parties (and this should not be the aim or expected result of public participation), the consultation that did occur serves as a useful example of relevant practice in terms of how public participation can be conducted, and how public participation can contribute to improved decision-making.

It must be noted that, while there are linkages between public involvement/participation and Social Impact Assessment, and that they provide mutual support, each process has a distinctly different purpose and subsequent set of outcomes, regardless of whether the Social Impact Assessment undertakes its own public involvement/participation or whether it is incorporated into a larger public involvement/participation process. Importantly, for both, a primary objective is that a two-way channel of communication is maintained throughout the lifecycle of a project. As such, although Social Impact Assessment and public involvement/participation are sometimes conceptualised as synonymous, they are in fact not.

4.2 Identification and consideration of alternatives

Taking cognisance that a Social Impact Assessment should commence as early as possible within the project lifecycle, Social Impact Assessment should be used to assist with the identification and consideration of alternatives.

- In addition to alternatives identified at project conceptualisation (usually by the development proponent), other realistic and feasible alternatives arising from scoping (including baseline surveys and profiling) should be considered, with social aspects contributing on an equal basis (with other disciplines) to decision-making.
- The "no-change" alternative must always be included as a realistic and feasible alternative. Similarly, alternatives need not be variations of the same theme, for example, the need to provide additional bulk water assurance need not only be met by means of a new impoundment where alternatives may relate to different dam sites and sizes. In such a case, consideration should be given to non-infrastructural alternatives, such as water use efficiencies, water conservation and water demand management.
- Importantly, all alternatives must be examined to the same level of detail to enable meaningful comparisons.
- Alternatives must be viewed seen in context, at the international, national, regional and local levels, as applicable to the size, complexity and potential impacts of a project.
- Alternatives that minimise and/or avoid impacts should be given special attention. This is particularly important when considering financial aspects related to each alternative. While social impacts may seem manageable, true costs for social management plans need to be developed and extrapolated over time, to enable meaningful comparisons with possible additional capital costs associated with other alternatives.
- It is critical to examine alternatives, and their impacts/benefits (negative and positive) in relation to other projects (existing and planned for the future) in order to identify and deal with potential cumulative impacts. For example, air emissions from a proposed factory may be considered acceptable if taken in isolation, but, when added to emissions from surrounding factories, may escalate air pollution to unacceptable levels. Similarly, a policy or plan may be useful in isolation but, without consideration for other policies or plans, may contradict these. In this manner, an alternative may appear favourable in isolation, but not so when cumulative affects are considered.

There are many examples where social aspects have positively influenced the consideration of alternatives, with alternatives with obvious social impacts being discarded early on in the project lifecycle. This usually occurs during screening, an early project planning activity that has as its objective, the identification of (social) environmental fatal flaws and red flags, where a fatal flaw is defined as a significant long-term negative consequence on the affected social environment that is extremely difficult to mitigate or undesirable to promote, and a red flag is defined as a potentially serious impact that could have medium to long-term negative consequences on the affected social or biophysical environment that can only be mitigated at significant will, effort and cost (total cost, i.e. not only financial and economic considerations). In this regard, an alternative with a fatal flaw should not be considered further.

The Screening Phase for the Olifants River Water Resources Development Project (Phase 2) in South Africa serves as a useful example of relevant practice in identifying and assessing alternatives. For this proposed development, alternatives comprised both dam and non-dam alternatives. For dam alternatives, potential social impacts were examined in detail and contributed to the selection of a preferred dam alternative (thereby avoiding potential social impacts). For non-dam alternatives, aspects such as water conservation, water demand management, ground water options and the trading of water allocations were investigated. From a social perspective, water trading was examined in detail because of potential negative effects on small-scale irrigators as well as potential negative social effects on agricultural employment associated with larger, commercial irrigators. In both cases, potential social effects related to loss of employment, loss of income, decreased food security and increased poverty. The examination of dam and non-dam alternatives contributed to a proposed project that is not focused only on a large storage dam but which also addresses non-dam options that can contribute to greater water resource stability and availability in a water management area where water demand exceeds the available water that has been allocated to competing sectors (including the natural environment for which ecological water requirements must be met).

4.3 Profiling of baseline conditions

Profiling, which involves the undertaking of baseline surveys, aims to document the relevant human environment within the area of influence of a development proposal. It is against this existing base of social conditions and trends against which affects of change need to be understood, assessed and measured.

Profiling, which usually occurs simultaneously with scoping, should provide the following:

- A description of the social environment (political context, institutional structure, arrangements and capacity, demographics, socio-economics, land-uses, current conditions and social trends). Use should be made of maps and narrative descriptions of public agencies, such as local authority areas and their land use zones, tribal boundaries, and the like.
- Local and regional economics, and an analysis of potential economic links between the proposed development and the current situation.
- A description and analysis of existing social and cultural values and the relationship of these to the proposed development (and change).
- A framework and plan for the assessment of social affects, including social factors to be used as measurable indicators (Taylor *et al.*, 1995).

Particular attention should be paid to profiling vulnerable groups, for example, the youth, elderly, women, the infirm and the disabled. While vulnerable groups will differ from project to project, it is important that they are identified and profiled for each project. This will enable the customised scoping of these vulnerable groups, enabling customised solutions to be formulated and documented in mitigation plans.

Underlying the aforementioned should be the documentation of data sources and assumptions underlying their analysis and projection. This should include a discussion on the reliability of data, and inconsistencies or gaps that might affect the analyses (Taylor *et al.*, 1995).

According to Taylor *et al.*, 1995, potential data sources (secondary (existing) or primary (new)) for profiling include:

- Statistical data.
  These include census reports and data compiled by government agencies and private organisations.
- Written social data.
  These include letters to editors, newspaper articles, written testimonies, histories, graduate theses, annual reports and research studies specific to the project area.
- Observation and respondent contact data.
  This can be derived from talking and interacting with people in the area, in their work environment, at leisure and under other social settings.
- Survey data.
  This involves the undertaking of structured interviews and/or administering questionnaires (applied to a representative sample rather than as a complete census and/or inventory). Prior to undertaking these activities, it is important to undertake preliminary investigations in order to validate the selection of questions and the social variables the questions represent.
- Public involvement/participation data.
  As elucidated in Section 4.1, public involvement/participation is designed to identify key issues in the public domain. These need to feed into the SIA for analysis and the estimation of projected affects.
- Agency or project personnel.
  Project representatives are a source of data for the communities within which they live and work.
- Maps.
  Topographical maps, aerial and ortho photos often give clues as to the types of people likely to be impacted and their land use patterns.

Based on the Consultant's experience, it is important to note that baseline surveys are time consuming and, consequently, they can become expensive. Furthermore, careful planning is required, as people and communities interviewed/surveyed should not be disturbed any more than what is necessary to gather all the necessary information. This is particularly critical for large projects, or areas where much development is occurring, as people can become weary of providing inputs (so-called stakeholder fatigue) albeit that the intention is to assist stakeholders in the long-term. Also, careful planning allows for pre-identified/known impacts to be presented up front with a view to impact avoidance or determining mitigation measures early on, with the active involvement of the potentially affected people.

The Bumbuna Hydroelectric Project in Sierra Leone serves as a useful example of the profiling of baseline conditions. This project was first proposed in the 1970s and construction occurred between 1982 and 1997. For most of the time, the country was plagued by civil war. Despite this, extensive baseline data were collected over a protracted period of time, even following the construction of the dam when a post facto Environmental Impact Assessment was undertaken. Methods used to gather data included questionnaire surveys with heads of households, focus group discussions with the youth, women, men and chiefs and elders, and consultative meetings with the community. Baseline information gathered was comprehensive with text, data and/or illustrations being provided on general socio-economic conditions, demographics, settlements and infrastructure, ethnic groups, household structure, village size, water supply, solid waste disposal, public health, attitude to resettlement, culture, history and archaeology, social organisation and traditions, religion and sacred sites, secret societies, and tourism and recreation. Household surveys were conducted in the 54 villages in the reservoir area and data were collected from a total of 872 households. Importantly, the baseline data served to inform planning and decision-making for the management of social change arising from the dam, and, into the future, can serve as the yardstick against which monitoring can be undertaken[11].

Finally, it should be noted that baseline data form the basis from which potential impacts are assessed, mitigation/management actions are formulated and, importantly, from which variables/indicators are derived for purposes of monitoring and evaluation.

4.4 Scoping

Scoping, as a process of identifying **issues**, can take various forms:

- **Technical** scoping, with the development proponent and technical experts.
- **Authority** scoping, with the different authorities that may have an interest in the proposed project (perhaps even as authorising authority).
- **Specialist** scoping, with discipline-specific specialists.
- **Public** scoping, in the public domain with members of the public either interested in or affected by a proposed project.

Scoping is an **analytical** process that ensures the assessment is performed at an appropriate level of detail, compatible with the scale and significance of the proposed project. If well done, scoping will ensure that there is a focus on relevant issues and information. It will ensure that important issues are not forgotten and will focus data collection and stakeholder information exchange (public involvement/participation). In this respect, scoping is indispensable because it focuses the study on **key issues**. Hence, it is essential that the scoping exercise is comprehensive yet flexible.

Scoping also involves a description of the **boundaries** (temporal and physical) of the study, an assessment of the variables to be measured or described and an evaluation of possible impacts (negative and benefits) that may impact on or be impacted by a proposed project. In this regard, arising from profiling is the necessity to undertake customised scoping to deal with issues related to vulnerable groups. These should be regarded as sensitive components of the receiving environment, requiring their own specific analysis of potential effects to enable the formulation of customised mitigation measures.

[11] The Consultant is aware that the Ministry of Energy and Power, Sierra Leone, has received a grant from the World Bank to implement aspects such as terrain-, soil-, agricultural crop-, water-, livestock-, forest-and labour-management for the Bumbuna Hydroelectric Completion Project.

Scoping should also identify sensitive or important elements of the receiving environment, main policies, plans, programmes and projects/operations that may affect the social and socio-economic environments within the boundaries chosen, and the appropriate information and data that are available or may have to be obtained, that should be used to effectively analyse and deal with the potential affects.

During scoping, the following elements are usually attended to:

- Determination of the social environmental characteristics of the areas that will be affected by a proposed development.
- Identification and involvement of relevant parties so that they have an opportunity to express their views about the proposed activities (public involvement/participation).
- Identification of key issues likely to arise as a result of the development or have an impact on the proposed development.

A range of methodologies can be adopted for scoping, utilising primary and secondary information and data, including: discussions, workshops and/or interviews with potentially affected people and/or entities (closely linked to public involvement/participation), the collection and review of literature, plans, maps and other relevant material, questionnaires and surveys. Gaps in information can be closed using information collected as part of profiling. Furthermore, the Social Impact Assessment must evaluate all impacts (direct and indirect) on humans and all the ways that people and communities interact (directly or indirectly) with their socio-cultural, economic and biophysical surroundings (Vanclay, 2003). Thus, according to Taylor *et al.*, 1995, scoping covers multiple, yet integrated, social elements, such as:

- Lifestyle (for example, behaviour and relationships).
- Cultural aspects (for example, traditions, customs, values and religious beliefs) and sense of place (involving tangible and intangible aspects).
- Archaeological aspects.
- Community, institutional and infrastructural impacts (for example, infrastructure, services and networks, capacity, etc).
- Amenities and/or quality of life (such as sense of security).
- Health considerations (such as mental and physical well being, pollution affects, HIV/AIDS, etc.).
- Aesthetic, visual and/or other sensory impacts (for example, noise, light, dust, obstructions, etc).
- Demographics (such as gender, age, sexual orientation).
- Development impacts.
- Economic and fiscal impacts.
- Gender impacts.
- Impacts on indigenous rights.
- Leisure and tourism impacts.
- Political impacts (such as human rights, governance, democratisation, etc).
- Poverty (for example, social upliftment and employment opportunities).
- Physiological impacts.
- Resource use (for example, access and ownership of resources).
- Impacts on social and human capital.
- Vulnerable groups (such as the elderly and infirm, children and the youth, minorities (for example, ethnic), indigenous groups, women, etc).
- Expectations (the creation and management thereof).
- Other societal and indirect impacts.
- Cumulative aspects (as previously discussed) (Vanclay, 2003).

It is important to note, however, that the extent and intensity of scoping must be consistent with the type, size, extent, reach, etc, of a proposed project and, therefore, it is logical that not every project will require the entire range of disciplines.

There is a close link between scoping and public involvement/participation. As a minimum, scoping would involve communication and consultation with representatives of the following:

- Government (local, provincial, national)[12].
- Development proponent (and sector represented).
- Affected public[13].
- Environmental lobby and interest groups.
- Independent experts.
- Civil society.

Furthermore, it is important to recognise that there is a close link between scoping and profiling, with the identification of issues being contextualised within baseline conditions. Equally, the social assessment practitioner must have a sound understanding of the development proposal (and alternatives) in order that issues can be identified and correctly understood.

The Driekoppies Dam in South Africa serves as a useful example of scoping. This project commenced in the mid-1990s, with extensive scoping being undertaken of communities affected by the then proposed dam. Scoping was undertaken within a well-defined policy framework and identified a range of issues, including the loss of productive resources and consequent effects on economic activities, effects on settlements and housing, necessitating resettlement, effects on community facilities and services (in particular, as related to improved services), community organisations and institutional relationships, historical and archaeological sites, and population pressure and social dislocation. It would appear that scoping was comprehensive and enabled the assessment of significance of potential impacts. Each impact was classified as positive or negative and rated in terms of magnitude, significance, probability and duration. The significant impacts were identified as loss of productive resources (negative), social dislocation (negative), improved domestic water supply (positive) and sub-regional development potential (positive). The outcomes of scoping, as contexualised within the profile of baseline conditions informed future project activities concerning the management of social change, notably, the formulation and implementation of a Resettlement Action Plan within a development paradigm.

4.5 Projection of estimated affects

Scoping, profiling and public involvement/participation provide a sound basis (baseline conditions) from which to project the potential social affects of a proposed project, for all feasible and/or realistic project alternatives, including the “no change” alternative, taking particular account of potential effects on vulnerable groups.

Arising from experience in South Africa, the projection and estimation of affects should be undertaken in a matrix, assessing the **scale, intensity, duration** and **probability of occurrence** of both negative impacts and benefits. For each project alternative and for each potential impact/benefit, a risk analysis is undertaken (using standardised conventions (Table 4)) that leads to the assessment of **significance** of a potential impact/benefit for a particular project alternative.

[12] Care should be exercised to avoid the situation where the power elite become gatekeepers.

[13] It is important to note that “communities” comprise groups of people with similar interests. The notion that a single “community” viewpoint can emerge is usually fallacious.

Table 4 Example of conventions used in the assessment of potential impacts/benefits

Descriptive Adjective	Definition
Nature of Impact	
Positive	The type of affect an activity would have on the social environment
Negative	
Scale of Impact	
Local	Limited to the project site and immediate surroundings
Regional	Limited to the region
National	Limited to the country
International	Across international borders
Duration of Impact	
Short-term	>0-5 years
Medium-term	5-15 years
Long-term	Will cease only after cessation of the activity
Permanent	Will occur forever
Intensity	
Low	Minor affects
Medium	Major affects
High	High severity affects
Probability	
Definite	Definite
Highly probable	Most likely
Probable	Distinct possibility
Improbable	Unlikely to occur
Significance	
Low	No influence on project
Medium	Could influence project
High	Significant enough to block project

Adapted from the South African Department of Environmental Affairs & Tourism (1998)

When assessing potential social impacts, it is advisable to formulate a mitigation strategy that includes aspects such as what can be done, how should it be done, what are the constraints, and what follow-up monitoring and evaluation are required, and for how long.

It is important that a risk assessment is not undertaken in isolation for each project alternative. Rather, the assessment must take into consideration all baseline conditions, including unrelated but potentially synergistic, ancillary or downstream development proposals, in order that potential cumulative impacts/benefits are accounted for.

When undertaking an assessment, it should be recognised that accurate projections are difficult to make and, therefore, use should be made of projection techniques (some of which are economically based) (Taylor *et al.*, 1995):

- Trend extensions.
  This involves the projection of a current trend into the future.
- Population multiplier approaches.
  Using this technique, the current population size is multiplied by a coefficient to account for the amount of change in another variable.
- Computer modelling.
  This involves the mathematical formulation of premises and a process of quantitative weighting of variables.
- Consulting "experts".
  This involves the drawing on experience of others, where these consultations make use of and apply other people's knowledge. In this regard, it is important to note that "experts" does not refer exclusively to professionals but also includes local/traditional community members that hold a wealth of local knowledge, which should not be under estimated.
- Comparison between communities.
  This technique involves comparing communities (i.e. comparing a community potentially affected by a proposed project with another community that has experienced similar affects).
- Economic base models.
  These can be used when local areas derive economic vitality (for example, employment) from a particular activity.
- Input-output models.
  This involves calculating and understanding the relationship between what must go into producing particular goods or services (inputs) and the level of production that results (output).
- Cost-benefit analysis.
  This economic modelling involves weighing up costs and benefits (including "hidden" costs and benefits) to understand economic affects that are not just quantifiable affects measured by market prices.
- Quantifying externalities.
  This involves calculating the indirect value of an impact where the impact cannot be directly accounted for in the operational economics of a particular project (for example, health-care costs attributable to the air emissions of a factory). This is also known as contingent valuation and is a measure of the willingness of a developer to pay for externalities associated with a proposed project or project alternative.
- Econometric models.
  These comprise a system of mathematical equations designed to capture the structure, complexities and interrelationships of a particular economy.
- Social accounting matrices.
  These are complex economic models designed to quantify social benefits and costs (more socially orientated than traditional cost-benefit analyses).
- Scenarios.
  This involves "thinking the unthinkable" to enable the formulation of theoretical models of possible outcomes.

For many projects, project alternatives and potential impacts, it is unnecessary to use difficult and complex techniques. Rather, as suggested by Taylor, *et al.*, 1995, emphasis should be placed on **experience, logic** and **common sense**. This does not trivialise the assessment of social impacts/benefits as, it must always be remembered, Social Impact Assessment deals with humans and human nature. Many of these aspects are not always quantifiable. Rather, they are more qualitative in nature and, therefore, scientifically and/or economically based techniques are not always appropriate.

As stated previously, the projection of estimated affects relies significantly on baseline data previously collected. Furthermore, the same baseline data, as well as the outcomes of the assessment, are used to identify variables that can be measured for purposes of monitoring and evaluation.

The outcomes of the projection and estimation of affects should be presented in well-written and illustrated reports (or as otherwise indicated by particular normative frameworks applicable to a particular development and Social Impact Assessment).

The Kandadji Dam Project in Niger serves as a useful example of the projection and estimation of social effects, which appears to have been widely encompassing, covering both negative impacts and benefits, including resettlement (35,000 people from 15 villages), loss of infrastructure (a national road, boreholes, clinics, schools, mosques, slaughterhouses, markets and grain mills), loss of agricultural land (approximately 7,000 ha), a guaranteed water supply (for urban and rural domestic water, irrigation, livestock and aquaculture), a reduction in dependence on energy imports, food security and opportunities for sustainable development, impacts on public health, and indirect impacts (reduced rural migration, up- and down-stream industrial opportunities, employment opportunities during dam construction and a contribution towards the attenuation of desertification). For the Kandadji Dam Project, these potential effects were projected at an early stage in project planning, enabling issues and potential impacts to be addressed in subsequent planning phases. It is also pertinent that the projection of potential effects did not only focus on negative aspects, but also included the estimation of benefits, thereby informing planning to enable the realisation of benefits over time.

4.5.1 Prediction and evaluation of responses to impacts

There are a number of methods that can be used for the purpose of impact prediction and evaluation, including: analogues, expert opinion, literature reviews and cause-effect relationships. When selecting methods, consideration should be given to the following criteria:

- Appropriateness for the proposed development.
- Acceptability to relevant interested and affected parties.
- Professionally acceptable.
- Relative ease of application and management limitations.
- Applicability to the range of key issues.
- Provision of results that enables professional judgement to be made in evaluating the impacts.

As stated previously, significance of a particular impact is a function of understanding its scale, intensity, duration and probability of occurrence.

There are many examples of potential impacts that may arise from a proposed project. For the most part, these can usually be managed via a technical solution, for example, the realignment of a road, suppressing dust on a construction site, limited noise, etc.

However, there is one single impact that is significantly more difficult to manage and for which technical solutions do not exist, viz. resettlement (inclusion of aspects such as economic displacement, loss of access (to areas of interest, sacred and/or religious sites, natural resources, etc). Where avoidance is unavoidable, careful attention needs to be paid to the formulation of a Resettlement Action Plan with the intimate involvement of affected people (and with all resettlement activities being closely aligned to those of the primary development project).

The Thukela Water Project (Feasibility Study) in South Africa serves as a useful example of the prediction and evaluation of responses to impacts. For this proposed project, the Social Impact Assessment identified and discussed potential social issues and effects at two levels. Firstly, it examined a number of contextual issues, relevant to the proposed project, which had come to the fore during the course of the investigation. Of these, the most critical were the potential impact of HIV/AIDS, population trends in potential erodible areas and the potential impact of sedimentation, land reform and restitution issues, impacts on the downstream environment, and impacts on the receiving environment. Thereafter, the study focused on the potential effects of each of the major project components, viz. Jana Dam (the left and right banks were dealt with separately), Mielietuin Dam, and the conveyance routes (canals and steel pipelines). The assessment was carried out in detail, with the outputs seamlessly interfacing with the formulation of future social management plans (to deal with macro issues, negative social impacts, and the optimisation of project benefits on a local and regional scale).

4.5.2 Mitigation of negative impacts and the optimisation of benefits

Mitigation is the avoidance or minimization of negative impacts associated with a project, in a manner that is sustainable. In short, mitigation involves implementing the outcomes of a Social Impact Assessment, which can be achieved through the formulation and implementation of Social Management Plans that, critically, must also address the optimisation of benefits.

Essentially, there are two categories of Social Management Plans; those that deal with negative impacts and those that deal with benefits. In each case, however, the over-riding consideration should be the sustainable development of people affected by a project. In this regard, Social Management Plans should be formulated within a development paradigm, and should move beyond “leaving project affected people at least as well-off as before the project intervention”. Moving beyond this requires, firstly, the restoration of livelihoods and livelihood strategies, and, secondly, the sustainable social and socio-economic advancement of people and their societies. It is also important to note that Social Management Plans, whether dealing with the mitigation of negative impacts or the optimisation of benefits, need to make special provision for dealing with the needs and aspirations of vulnerable people. These provisions can either be documented within the overall plan, or separate plans can be produced, for example, a Gender Action Plan, to deal with gender-specific aspects.

In terms of negative social impacts, most have a technical solution that either completely avoids the impact or, as a minimum, reduces the impact. In most cases, if acceptable levels of avoidance or reduction are not possible, resettlement becomes the preferred mitigation/management action. In these cases, resettlement is undertaken within the provisions of a Resettlement Action Plan. The ultimate goal of a Resettlement Action Plan is *to enable those displaced by a project to improve their standard of living* (IFC, 2002), i.e. moving beyond "leaving project affected people at least as well-off as before the project intervention".

As a minimum, a Resettlement Action Plan, should contain the following:

- *Identification of the impacts of a project and affected populations.*
- *A legal framework for land acquisition and compensation.*
- *A compensation framework (with eligibility criteria and entitlement matrices).*
- *A description of resettlement assistance and restoration of livelihood activities.*
- *A detailed budget.*
- *An implementation schedule.*
- *A description of organisational responsibilities.*
- *A framework for public consultation, participation and development planning.*
- *A description of provisions for redress of grievances.*
- *A framework for monitoring, evaluation and reporting* (IFC, 2002).

Great care is required in the formulation of Resettlement Action Plans. Following the early identification of affected populations it is necessary to ensure that eligibility rights and entitlements are agreed as early on as possible in the resettlement planning process. This will require negotiations with affected peoples that clearly spell out the rights and responsibilities of all parties involved. In terms of responsibilities, affected people need to assist the development proponent to counter false or spurious claims, either by directly affected people or newcomers entering a project-affected area with a view to obtaining compensation.

Importantly, resettlement plans and their implementation should receive the same priority (planning, resources, etc) as the primary development intervention, and should be implemented concurrently with the primary project.

In many cases, the area of influence of a project is wider than the people directly affected by, for example, resettlement. In all cases, Social Development Plans should be formulated for the optimisation of project benefits. Importantly, these plans need to be aligned with government strategies to ensure the optimisation of benefits (from the primary as well as downstream developments) in a sustainable manner as well as to ensure that individual projects receive the necessary government support into the future (be it from staffing of schools to the provisioning of clinics). In this regard, it is critical for development proponents to clearly understand the influences of a proposed project on the social environment, and the converse, viz. the influences of the social environment on a proposed project.

Social investment is a necessity and not a luxury. To this end, corporate social responsibility programmes need to build relationships for enduring mutual benefit rather than for promotional value. As with the Social Development Plan, social responsibility programmes need to be aligned with government strategies to optimise benefits.

Therefore, it is submitted that Social Development Plans should be developed to the same extent and level of detail, with budgets and implementation schedules, as plans that are developed to mitigate negative impacts. To this end, the greater the commitment and involvement of the development proponent, the more likely that these social interventions will be successful and sustainable.

As with mitigation plans, Social Development Plans need to be formulated prior to the development intervention and *inter alia* should contain the following information:

- Purpose and need statements (including aspects such as the encouragement of the application of sound social environmental management practices for the lifecycle of the proposed project), the provision of practical guidelines to facilitate and manage social change (dealing with both positive and negative aspects arising from the proposed development) and overarching aims and objectives.
- Philosophy and underlying principles.
- Organisational structure and responsibilities, including channels of communication and a grievance process.
- Accountability, responsibility and reporting procedures.
- Development programmes and sub-projects (with implementation schedules and budgets).
- Management actions (per programme and per sub-project).
- The definition of performance indicators against which aims can be measured.
- The definition of a Monitoring and Evaluation framework to measure social environmental performance and to apply remedial actions, if necessary.

The Upper Seti Storage Hydroelectric Project in Nepal serves as a useful example of the mitigation of negative impacts and the optimisation of benefits. This is illustrated by a number of mitigation measures that were recommended to deal with negative social and socio-economic impacts, including resettlement and acquisition principles (two methods of compensation: “land for land” and “cash”, the valuation of individual households and their effects before determining compensation packages, the development of an Acquisition, Compensation and Rehabilitation Plan, the formation of a Compensation Committee, the provision of compensation before land is acquired, and resettlement options based on peoples’ preferences), a code of conduct applicable to outside construction workers (to minimize impacts on the cultural practices of local communities), the protection of ancient archaeological sites, and the provision of additional social infrastructure and services to accommodate the influx of 500 – 1,000 workers into the project area. In addition, several enhancement measures, which aimed to enhance positive impacts of the proposed project or to compensate for negative impacts, were also suggested, including improvement in agricultural practices, training for small scale skills development, loan assistance programmes for small businesses (such as cage fish culture, livestock and poultry rearing and retail shops), environmental awareness for conservation, and other community development initiatives (such as rural electrification, education, health, sanitation and water supply). The aforementioned are illustrative of the level and detail of planning that are required to mitigate negative social effects and to optimise benefits that may accrue from a project of this nature.

4.5.3 Assessment of indirect and cumulative impacts

The assessment of indirect and cumulative impacts essentially follows a cause-effect model that establishes the way in which "resources of value" (in this case, social and socio-economic in nature) are affected by multiple impact sources. It employs a systems approach when defining cumulative effects and impact relationships. The resulting trends are evaluated against identified objectives and indicators (monitoring). Usually this kind of impact assessment is undertaken within a broader strategic framework (at national, provincial, district or local level). Mitigation measures must be proposed for the negative cumulative affects identified and recommendations made for the enhancement of the resources of value. Consistent with the principles of Integrated Environmental Management, the appropriate involvement of interested parties and stakeholders is essential.

The cumulative affects assessment process is an iterative one and the precautionary principle should be applied in recognition of the limits of current knowledge about the consequences of decisions or actions.

Essentially, the same elements that characterise Social Impact Assessment characterise the assessment of indirect and cumulative affects, viz. public involvement/participation, profiling, scoping, projection of estimated effects, and monitoring, auditing and evaluation, for all alternatives under consideration.

> The Tuyen Quang Dam and Flood Prevention Project in Vietnam serves as a useful example of the assessment of indirect and cumulative impacts. Project documentation suggest that the completion of the dam and the flooding of the reservoir will change patterns of land and water use in the Na Hang district significantly. It is estimated that the dam should fill up within a year. Thereafter, the reservoir will stabilise over the next few years as conditions change and submerged vegetation degrades. Within five to ten years it may be expected that conditions will be suitable for the development of both water-related tourism activities and fisheries (although no plans have been produced for these developments yet). Nevertheless, it was anticipated that both tourism development and the development of fisheries might be long-term positive socio-economic effects arising from the dam. Equally important was the projection that there would be no potential negative affects of an indirect nature arising from the proposed project.

4.6 Monitoring, auditing and evaluation

In terms of compliance, **monitoring** serves to identify discrepancies between the expected and actual affects of a project (Taylor *et al.*, 1995), thereby facilitating adjustments that may be necessary to the management of the change or the change being implemented itself, to help reduce unanticipated and unwanted affects or to enhance benefits. Hence, monitoring is informative to a project.

Monitoring programmes are best initiated as early as possible in the SIA process and must continue throughout the period of change so as to assess the effectiveness of the mitigation measures, and to provide feedback on the trends, impacts and current issues in order to modify the Social Management Plans as necessary (Taylor *et al*, 1995). This is especially important when monitoring the outcomes of provisions made to cater for the needs of vulnerable groups.

Taylor *et al.* (1995) notes that often, the description and management of social change, and the assessment of its significance, are major methodological problems in monitoring, and that it is difficult to differentiate among the various origins of specific social changes. Thus, monitoring requires that some criteria be established to focus the effort around key variables and to concentrate on key issues. These criteria, key variables and key issues should be sourced from data gathered during profiling and scoping.

Therefore, the monitoring system (data collection, storage and analysis) must be compatible with that already established during profiling and scoping, and, also, must be designed in such a way so as to facilitate simple and rapid reporting so that changes can be effected quickly before severe or irreparable damage is caused or to optimise benefits.

Again, it is necessary for the monitoring programme to link with public involvement/participation in order to ensure that key issues are monitored and addressed.

Monitoring is an important component of project **evaluation**. However, in this context, evaluation is summative, at some point towards the end/conclusion of a project process, with a view to informing other projects (rather than the project at hand which is being evaluated). In this sense, evaluation is viewed as the final part of the Social Impact Assessment process, albeit that it is not only undertaken at project conclusion. Furthermore, it is seen to be separate from monitoring and management of social impacts, although it is complimentary (Taylor *et al.*, 1995).

Casely and Kumar (1987) have defined evaluation as *a periodic assessment of the relevance, performance, efficiency and impact of the project in the context of its stated objectives*. In order to achieve this, it is necessary to make use of monitoring data, but may also require additional data collection, and can involve comparisons with other projects of a similar nature (Taylor *et al.*, 1995). In this regard, Casely and Kumar (1987) believe that evaluation should take place three times during a project:

- Firstly, in the middle of project implementation, but at a time when the social affects have started to have an impact.
- Secondly, at the end of project implementation.
- Finally, at a considerable time after project conclusion, in order to identify the long-term affects.

In addition to monitoring social change, as a result of a project (both directly and indirectly), it can prove useful to undertake external, independent **audits** of Social Impact Assessment processes and outcomes. Apart from providing a completely external perspective, an audit also demonstrates to all role-players that project activities are totally transparent and open to scrutiny.

For the most part, monitoring and evaluation tend to focus on the management of social change and the respective Social Management Plans developed to minimise and/or enhance these changes. However, it should also be considered that the Social Impact Assessment process itself be monitored and evaluated in order to inform future work and to also advance Social Impact Assessment concepts and methods for new projects (Taylor *et al.*, 1995).

The Brilliant Expansion Project in Canada serves as a useful example for monitoring. In order to monitor and report on the social and economic benefits associated with the expansion of the generating capacity at the Brilliant Dam and identify deviations from outcomes anticipated, the Columbia Power Corporation hired an independent, third-party contractor to serve as the Socio-Economic Monitor for the project. The Socio-Economic Monitor objectively monitored and reported on both the benefits and impacts that occurred as a result of the expansion project. Through investigating a range of social and socio-economic variables, the Socio-Economic Monitor could gauge the impact of the expansion project on the local communities and the region (i.e. within a 100 km radius of the project site). The Socio-Economic Monitor used various indicators to measure the benefits and impacts of the project. Aspects investigated in terms of employment and expenditure included the number of local hires, trades, female workers, First Nation workers by Nation and by Band, and disabled workers, the number of apprenticeships, the ratio of project employment to regional labour force, the direct and induced expenditures by communities, and the number of local firms that befitted from the project.

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CASE STUDIES

1. Alborz Dam and Alborz Integrated Land and Water Resource Management Project

Mazandaran Province, Islamic Republic of Iran (Figure 1).

1.1 Aspects of Social Impact Assessment Addressed

- Profile of Baseline Conditions.
  - Document the relevant human environment, and existing social conditions and trends.
- Prediction and evaluation of responses to impacts.
  - Involuntary resettlement.
- Mitigation.
  - Avoidance/minimisation of negative impacts.
  - Optimisation of benefits.

1.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects form part of normative frameworks, amongst others, covering Environmental Assessment:

- Article 50 of the Constitution of the Islamic Republic of Iran.
- Land Acquisition Law (1980).
- Law on Economical, Cultural, Societal Development (1989).
- Law for Environmental Protection and Development (1991).
- World Bank Operational Policy 4.01 Environmental Assessment.
- World Bank Operational Policy 4.12 Involuntary Resettlement.

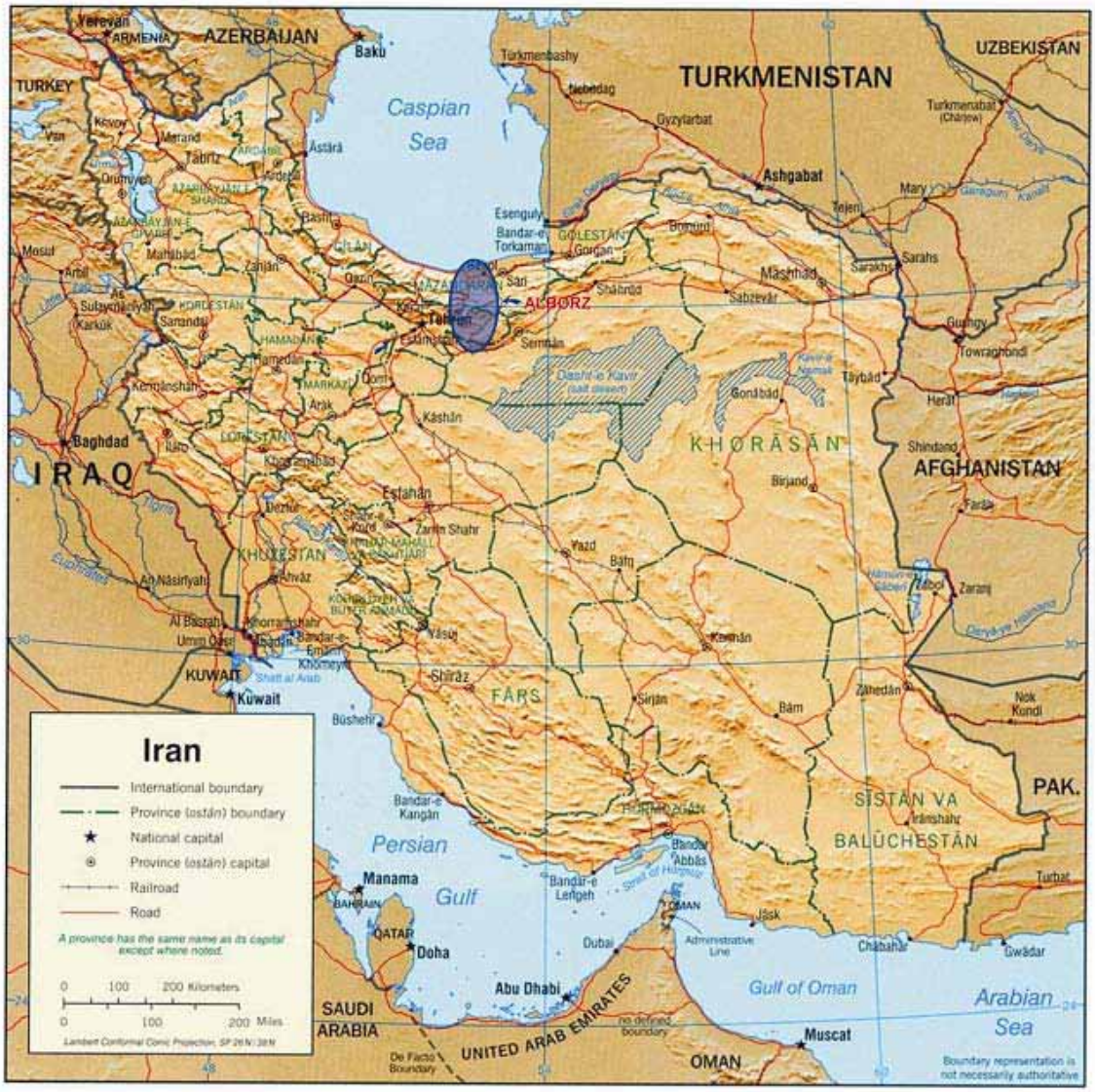
1.3 Project Identification

Name	Alborz Dam and Alborz Integrated Land and Water Management Project (AILWMP).
Country	Iran (Islamic Republic of Iran).
Dates	Dam construction commenced in 1999 and is expected to be complete by 2006. The AILWMP has a seven year implementation period.
Developer	Government of Iran.

1.4 Stage in the Project Lifecycle

Construction (Alborz Dam) and development (AILWMP).

Figure 1 Indicative location of the Alborz Project in Iran



www.geography.about.com/library/maps

Table 5 Selected technical details of the Alborz Project in Iran

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Alborz	Iran	The upstream impact zone (including catchments) is 24,000 ha	Babol	The dam wall is 78 m above the lowest foundation. Storage volume is 150 million cubic litres	Irrigation	Government of Iran

1.5 General Description of the Country Institutional Set-up

The information provided below has been sourced largely from the web site of the Iranian Department of Environment (www.irandoe.org). Formal environmental conservation in Iran commenced with the formation of the Iranian Wildlife Association in 1956. This Association was an independent body overseeing the protection and preservation of the country's wildlife, as well as, compliance with pertinent laws. Following the approval of the Hunting and Fishing Bill in 1967, the Hunting and Fishing Organization replaced the Iranian Wildlife Association. The law stipulated that the Hunting and Fishing Organization was to be supervised by a director and its activities monitored by the High Council of Hunting and Fishing comprising the Ministers of Agriculture, Treasury and Defence, along with six experts. Paragraph 6 of the Hunting and Fishing Bill, stipulated that the Hunting and Fishing Organization was responsible for more than just the administration and enforcement of the hunting and fishing laws, but included research activities in the areas of national wildlife, wildlife breeding, wildlife preserves, designation of regions as wildlife parks and setting up zoological museums.

In 1971, the Hunting and Fishing Organization was transformed into the Department of the Environment, and the High Council of Hunting and Fishing was reformed into the High Council for Environment Protection. The re-organization added environmental activities, such as, preventing actions detrimental to environmental balance, to its mandate. Following the Stockholm Conference on the Environment and the passing of the Environment Protection and Enhancement Act of June 1972, the organization (i.e. the Department of the Environment) was given new legal authority and its organisational structure was to some extent made compatible with the exigencies of development plans. The Environment Protection and Enhancement Act made the Department of the Environment an entity affiliated with the Prime Minister's Office.

Following the exclusion of the position of Prime Minister during the review of the Constitution of the Islamic Republic of Iran in 1989, and pursuant to the 1992 amendment to the Environment Protection and Enhancement Act of 1972, and the change in the composition of members of the High Council for Environment Protection, the Department of the Environment became affiliated with the Office of the President. The President chairs the Council and the Vice-president heads the Department of the Environment.

The Department of the Environment comprises a number of Divisions, further divided into Bureaus, as follows:

- The Division of Education and Planning.
- Division of the Human Environment.
- Division of the Natural Environment and Biodiversity.
- Division of Administrative and Parliamentary Affairs.
- Bureau of the Marine Environment.

Furthermore, the need to downsize government, as well as, the importance of public partnership for promotion of civic duties has secured public participation in the management, formation and reinforcement of civil institutions. Civil society encompasses all grass-root, not-for-profit and philanthropic groups working towards national development. In 1998 the Department of the Environment formed a "Participation Bureau" to assist environmental non-governmental organisations (NGOs) and provides legal counsel and logistical support for NGOs. According to the bureau's data bank, more than 460 environmental NGOs were formed during 1998 and 2003. The establishment of this bureau is in the direction of new government policies to promote public participation in environmental affairs.

Iran comprises twenty-eight provinces and 252 townships (as at 2001 data), each with a Department of the Environment Provincial Directorate that monitors all aspects of environmental protection and implements departmental programmes (www.irandoe.org).

Provincial ministry offices prepare and submit Regional Development Plans to central government and the respective ministries, after which the plans are incorporated into the National Development Programme from which individual programmes are passed onto the respective ministries for implementation (Mahab Ghodss Consulting Engineers, 2004).

1.6 Detailed Description of the Specific Policy/Normative Framework

Construction of the Alborz Dam is entirely funded by the Government of Iran and implemented in accordance with Iranian law. The World Bank has provided loan financing for the construction of the associated irrigation and drainage network the dam will feed, as part of the Alborz Integrated Land and Water Management Project. The project is classified as a Category A project according to the World Bank's Operational Policy 4.01 (OP 4.01), requiring an Environmental Assessment and the development of an Environmental and Social Management Plan. Furthermore, the AILWMP is also bound to an additional six World Bank environmental and social safeguard policies. In addition to World Bank guidelines and policies, OP 4.01 clearly states that the World Bank takes into account a country's overall policy framework and national legislation, and that the World Bank will not finance projects which contravene these. Therefore, relevant environmental legislation for the Islamic Republic of Iran is an important part of the normative framework applicable to the AILWMP.

1.6.1 National Legal Framework (Environmental Legislation: The Islamic Republic of Iran)

Iran has a fairly well developed legal framework to guide water resource management and environmental[14] management and protection (Mahab Ghodss Consulting Engineers, 2004).

Article 50 of the Constitution of the Islamic Republic of Iran is probably the guiding legislation with regard to the environment, and states *the preservation of the environment, in which the present as well as the future generations have a right to flourishing societal existence, is regarded as a public duty in the Islamic Republic. Economic and other activities that inevitably involve pollution of the environment or cause irreparable damage to it are therefore forbidden*. Further to this, Articles 19, 20, 21 and 22 deal with the social rights of citizens (www.parstimes.com/law/iran).

As listed by Mahab Ghodss Consulting Engineers, 2004 in the Supplementary Environmental and Social Assessment Executive Summary for the AILWMP, the following laws are also of importance to the construction of the Alborz Dam and the AILWMP:

- The Plant Protection Act (1967) and the Plant Protection Implementation Regulation.
- Law on the Protection of Forests and Range Lands (1967)[15].
- Environmental Protection and Enhancement Act (1974).
- Law for Endangered Species of Wild Fauna and Flora (1974).
- Law for the Protection of the Natural Parks, Protected Areas and Sensitive Areas (1975).
- Land Acquisition Law (1980).
- Law for Proper Use of Water Resources (1982).

[14] Where the environment covers physical, natural, social, economic, etc dimensions and, importantly, in Iran, cultural and historical aspects, i.e. it is the Consultant's interpretation that the environment is viewed as all encompassing.

[15] Under review (2004) to make provision for more community involvement/participation.

- Law for Environmental Protection against Water Pollution (1984).
- Law on Economical, Cultural, Societal Development (1989).
- Law for Protection against Natural Environmental Damages (1991).
- Law for Environmental Protection and Development (1991).

As far as could be ascertained, environmental laws in Iran do not make specific provision for the undertaking of a Social Impact Assessment for a proposed development. However, it is evident that the social environment is considered and assessed within the wider ambit of an Environmental Impact Assessment (indeed, for this project, the report was entitled Environmental and Social Assessment). This is reinforced by the 1997 "By-laws (guidelines) of Environmental Impact Assessments" (Department of the Environment and United Nations Development Programme (UNDP) seminar report) (www.eiairan.org/eia) that notes in Article 10 that *the dimensions to be studied for the environmental impacts, …., after studying the existing environmental situation* must include the physical, natural, social and cultural environment (i.e. impacts on people's health and environment, on the social environment (housing, employment and education), impacts on the cultural environment (i.e. people's religious and cultural beliefs and cultural heritage)), and impacts on development plans.

In addition, Iran's third Five Year Development Plan (2000 – 2004) also addresses relevant water and environmental aspects. Further to this, the 1993 approved National Strategy for Environmental Sustainable Development also applies, containing a framework of environmentally-orientated policies (coming from the second Five Year Development Plan (1994 – 1999)) that aimed to increase public awareness on sustainable development issues and the link to international environmental concerns (Mahab Ghodss Consulting Engineers, 2004).

The Ministry of Jihad and Reconstruction under Order No 1948/S10/V (of 1996, and amendments of 2001 and 2003) is responsible for resettlement. This Order specifically guides the resettlement process for forest dwellers (including the relocation of livestock herders from degraded rangelands and forests) and is applicable to all settlements and animal husbandry units located within designated forests as approved by the Forest, Range and Watershed Management Organisation (Mahab Ghodss Consulting Engineers, 2004).

1.6.2 Relevant World Bank Policies

The project is classified as a Category A project according to the World Bank's Operational Policy 4.01 (OP 4.01), requiring an Environmental Assessment and the development of an Environmental and Social Management Plan. Furthermore, the AILWMP is bound to an additional five World Bank environmental and social safeguard policies (Table 6).

In the opinion of the Consultant, of most relevance to this case study are World Bank Operational Policy 4.01 – Environmental Assessment and World Bank Operational Policy 4.12 – Involuntary Resettlement.

1.6.2.1 World Bank Operational Policy 4.01 - Environmental Assessment

The World Bank requires an Environmental Assessment of projects proposed for World Bank financing, to help ensure that they are environmentally sound and sustainable, thereby improving decision-making. According to the World Bank, an environmental assessment is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impacts of a proposed project. In this regard, an environmental assessment:

Table 6 Additional World Bank Safeguard Policies applicable to the AILWMP

Number	World Bank Safeguard Policy	AILWMP Action
1	OP 4.09: Pest Management	A Pest Management Report and Plan has been prepared as part of the Environmental and Social Management Plan, and includes Integrated Pest Management and biological pest control activities
2	OPN[16] 11.03: Cultural Property (being revised as OP 4.11)	The Sari Cultural Heritage Office has confirmed that there are no valuable cultural and/or religious sites within the Alborz Dam or AILWMP area. However, "chance find" procedures have been put in place in accordance with Government of Iran and World Bank Safeguard Policies
3	OP 4.36: Forests	A participatory community-based forest management programme is to be designed for the AILWMP Upper Watershed and Forest Management component
4	OP 4.37: Safety of Dams	A Dam Safety Plan was under preparation and a Dam Safety Panel of Independent Experts undertook their first site visit in February 2004. On-going recommendations and guidance will be provided by regular dam safety reports on construction supervision, operation and maintenance instrumentation and emergency preparedness
5	OP 7.50: Project on International Waterways	This OP is triggered as rivers originating within the AILWMP enter the Caspian Sea. An assessment has been done, and the impacts found to be insignificant in terms of water quality and quantity. Riparian countries (namely, Azerbaijan, Russia, Kazakhstan and Turkmenistan) will (have) receive(d) project notification

Sourced from the Alborz Integrated Land and Water Management Project's Supplementary Environmental and Social Assessment Executive Summary (Mahab Ghodss Consulting Engineers, 2004).

[16] OPN – Operational Policy Note.

- Evaluates a project's potential environmental risks and impacts in its area of influence.
- Examines project alternatives.
- Identifies ways of improving project selection, siting, planning, design, and implementation, by preventing, minimizing, mitigating, or compensating for adverse environmental impacts, and enhancing benefits.
- Includes the process of mitigating and managing adverse environmental impacts throughout project implementation. In this regard, the World Bank favors preventive measures over mitigatory or compensatory measures, wherever feasible.

An Environmental Assessment takes into account the natural environment (air, water and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples and cultural property); and trans-boundary and global environmental aspects. An Environmental Assessment also considers natural and social aspects in an integrated way. It also takes into account:

- Variations in project and country conditions.
- The findings of country environmental studies.
- National environmental action plans.
- The country's overall policy framework, national legislation, and institutional capabilities, related to the environment and social aspects.
- Obligations of the country pertaining to project activities, under relevant international environmental treaties and agreements. The World Bank does not finance project activities that would contravene such country obligations, as identified during an Environmental Assessment. Therefore, an Environmental Assessment is initiated as early as possible in project processing, and is integrated closely with the economic, financial, institutional, social, and technical analyses undertaken for a proposed project.

The World Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of Environmental Assessment required. The World Bank classifies a proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project, and the nature and magnitude of its potential environmental impacts. The AILWMP was classified as a 'Category A' project, which implies the following:

- A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. An Environmental Assessment for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. For a Category A project, the borrower is responsible for preparing an Environmental Assessment Report.

As stated, the AILWMP is bound to an additional five World Bank environmental and social safeguard policies that have been addressed by the AILWMP as per the actions described in Table 5.

1.6.2.2. WORLD BANK OPERATIONAL POLICY 4.12 – INVOLUNTARY RESETTLEMENT

The current World Bank safeguards relating to involuntary resettlement are Operational Policy 4.12 (OP 4.12) and Bank Procedure 4.12 (BP 4.12) (which replaced Operational Directive 4.30 (OD 4.30) on 1 January 2002) and have the following policy objectives:

- Involuntary resettlement should be avoided or minimized where feasible, exploring all viable alternative project designs.
- Where displacement is unavoidable, resettlement activities should be conceived and implemented as sustainable development programmes, providing sufficient investment resources to enable the persons displaced to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programmes.
- Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of the project, which ever is higher (World Bank, 2001).

Where the resettlement of large groups of people is unavoidable, as is applicable to the construction and inundation area of the Alborz Dam, a detailed Resettlement Action Plan, timetable, and budget are required. With regard to the AILWMP, it was necessary to compile Resettlement Policy Frameworks for areas in which there may be involuntary resettlement (i.e. specifically for the upper and lower watershed areas).

1.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

According to Mahab Ghodss Consulting Engineers, 2004, the Environmental and Social Management Plan comprises six components (in order to ensure that all World Bank safeguard policies are adequately addressed). The Project Implementation Unit and the Basin Wide Committee have overall responsibility for institutional co-ordination between all the agencies involved in the project and with the implementation of the Environmental and Social Management Plan, in co-ordination with the Central Liaison Office.

Specific Environmental and Social Management Plan activities (or components) will be implemented by the institution most suitable, as follows:

- The Ministry of Jihad Agriculture, through the Mazandaran Plant Protection Office, is responsible for pest management and the biological pest control programme, as well as forest and watershed management.
- The Ministry of Jihad Agriculture and the Mazandaran and Golestan Regional Water Company have overall responsibility for the implementation of the AILWMP, and will be responsible for procurement of the Environmental and Social Management Plan activities to be implemented solely by the Department of Environment, or by the Department together with other agencies, such as the Forest, Rangeland and Watershed Organisation (of the Ministry) and the Regional Water Company. The Ministry and the Regional Water Company are also responsible for the procurement of equipment and other financial arrangements as required.
- The Central Liaison Office's functions include:
  - Liasing with the World Bank on behalf of the Government of Iran.
  - Serving as secretariat to the National Steering Committee.
  - Project management and co-ordination of the agencies involved.
  - Co-ordination of procurement actions.
  - Financial management and reporting.
  - Carrying out technical studies and training programmes.
  - Preparing annual progress reports and work plans.

- The Steering Committee has been established to oversee project implementation and co-ordination between the various institutions involved. The Steering Committee comprises various vice-Ministers, the General Director of Water Resources (from the Management and Planning Organisation) and the General Director of the Central Bank of Iran.

With regard to the AILWMP, the Ministry of Energy and Water is responsible for water supply and resource management issues, facilitated through the Regional Water Company, with irrigation facilitated through the Operation and Maintenance Company.

1.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

Examples of the implementation of the provisions of World Bank safeguards are available for numerous projects world-wide (dam and other large-scale infrastructure projects). It is also pertinent to note that World Bank safeguards are updated periodically, suggesting the incorporation of experience and learning into newer safeguards. However, there is little or no readily available literature on the implementation history of Iranian national normative frameworks.

With regard to World Bank safeguards, there appears to be some controversy regarding their implementation. Some writers perceive the norm and its implementation positively, for example, Bekhechi (1999) states that *since 1984, major environmental policies have been issued and implemented by the World Bank and constitute the most comprehensive environmental policy that frames investment and other development activities of any development agency*. Others, predominantly from non governmental organisations and civil society have reservations regarding the norm. For example, the International Rivers Network (2005) states that *in spite of their many shortcomings, the World Bank's social and environmental safeguard policies are an important achievement of the past twenty years.* However, the International Rivers Network (2005) continues by stating *… the Bank has not mainstreamed social and environmental concerns throughout its business model. As a consequence, the Bank has repeatedly developed unsustainable projects within which the objectives of the safeguard policies cannot be achieved. The Bank may go through the motions of implementing safeguard policies, but it often fails to comply with their objectives. For example, the Bank rarely explores alternative options in any balanced way as part of the environmental assessments of projects. And people who are displaced by Bank projects almost invariably end off poorer as a result, rather than becoming project beneficiaries*.

In the interpretation of the Consultant, the implementation of World Bank safeguards, therefore, appears not to have been free of disappointment. However, as stated above, the World Bank seems to be constantly striving towards the improvement of its policies and guidelines in an attempt to address shortcomings.

1.9 Project Description

The Alborz Dam is located just downstream of the confluence of the tributaries Azar, Karsang and Eskelim, on the Babol River, Mazandaran Province, Iran. The purpose of the dam is to provide a reliable supply of water for irrigation to the agricultural plains between the Alborz Mountains and the Caspian Sea and is entirely funded by the Government of Iran. In addition, the Government of Iran requested a loan from the World Bank in support of the construction of an irrigation and drainage network to be irrigated by the dam in Mazandaran.

It was agreed by the Government of Iran, that the irrigation and drainage network be integrated with the dam to form a comprehensive project that introduces an integrated river basin approach to land and water resources management. It is this integrated project that is referred to as the AILWMP, which is the first of its kind in Iran.

The project is divided into three areas as follows:

- The upper watershed (also known as the Pasha Kola watershed) (346 km^2) area, which includes the dam site.
- The middle lands (110 km^2).
- The lower lands (891 km^2).

While the Alborz Dam falls within the project area, it is not a component of the AILWMP. The AILWMP was developed to mitigate potential negative impacts and enhance benefits of the dam on the surrounding environment. The extended project area encompasses the entire catchment of the Talar and Siah Rivers, in addition to the upper catchments of the Babol River.

This case study does not focus on the Social Impact Assessment carried out for the dam, but rather looks at downstream project components and the supplementary assessments done for the AILWMP, which do include the dam basin. In this regard, the Government of Iran recognised that there was a need for the assessment of downstream impacts brought about by construction of the dam, and the important need to manage the country's land and water resources in a sustainable manner by:

- Sustainably increasing agricultural productivity through improved irrigation and drainage systems and participatory management mechanisms.
- Reducing soil erosion and sediment yields into the Alborz Dam, through improved upper watershed management.
- Protecting the water environment downstream of the Babol River and other water bodies through improved hydrological/water quality monitoring, reservoir operation and pest management (Mahab Ghodss Consulting Engineers, 2004).

Secondary objectives, achieved through project design, include attempts to solve inter-sectoral water conflicts over ground and surface water allocation and usage in an efficient economic and equitable manner for long-term implementation.

An Environmental Impact Assessment was first prepared for the Alborz Dam in 1997. This Environmental Impact Assessment was revised several times and finally approved by the Iranian Department of Environment in 2003. As part of the preparation for the AILWMP (and the subsequent involvement of the World Bank), the Government of Iran undertook additional studies to compliment the 2003 Environmental Impact Assessment, and prepared a Supplementary Environmental and Social Assessment, which was completed in March 2004. These two reports together constitute the full Environmental and Social Assessment.

The main civil works commenced in 1999 and construction is expected to be complete by 2006. The AILWMP is to be implemented over a period of seven years in three phases:

- Phase 1: Planning, training and start-up activities.
- Phase 2: Full implementation of activities.
- Phase 3: Emphasis on operational capacity building.

The project comprises five components:

- Component 1: Upper Watershed, Forestry and Rangeland Management.
- Component 2: Irrigation and Drainage Management.
- Component 3: Integrated Water Resources Management.
- Component 4: Environmental Management.
- Component 5: Project Implementation and Co-ordination Support.

In terms of Social Impact Assessment (and as identified in the Environmental and Social Management Plan) (Mahab Ghodss Consulting Engineers, 2004), the following subjects within Component 4: Environmental Management are the most important:

- Resettlement instruments.
- A dam safety plan.
- Physical cultural property.
- Public involvement/participation and awareness training.

Other subjects, relating to the biophysical and natural environment included water quality monitoring in rivers, aquifers and abbandans, river ecology monitoring and mitigation, forest monitoring and management and an integrated pest management plan.

1.10 Implementation of Key Issues

1.10.1 Profile of baseline conditions

This example serves to illustrate the documentation of the relevant human environment, and existing social conditions and trends. The information presented is illustrative of the kind of information that should be collected and collated for purposes of understanding and profiling baseline conditions. Unfortunately, the literature reviewed does not provide an indication of the methods and tools used.

As part of supplementary studies undertaken by Mahab Ghodss Consulting Engineers, 2004 (particularly Volume 3: Annexes of the Supplementary Environmental and Social Assessment for the Alborz Integrated Land and Water Management Project), comprehensive investigations in each of the three project areas, viz. the upper or Pasha Kola watershed, the middle lands and the lower lands, were undertaken in order to obtain baseline information with regard to the study area. In terms of social aspects, there are numerous maps and diagrams that detail the project area in relation to the location of villages and vulnerable communities, agricultural lands and other infrastructure and services. In addition, a detailed questionnaire (entitled Life Quality, Cultural, Social and Economic Questionnaire (Questionnaire No. 1)) was administered in the project area (covering 1,091 households), covering aspects such as, family size and composition, infrastructure and services, income and expenditure, employment, health and sanitation, vulnerable members, education, religious and cultural values, organisations and societies, etc. As part of the Public Participation Programme stakeholder workshops were held, with all the findings used to refine the project design, particularly with regard to participatory forest management and resettlement. These workshops also highlighted the need for further workshops and awareness campaigns throughout the project's lifecycle.

Baseline information has provided valuable information, which was used to compile the Resettlement Action Plan and Policy Frameworks (Annexes E1, E2 and E3 of Volume 3 of the Supplementary Environmental and Social Assessment of the AILWMP (Mahab Ghodss Consulting Engineers, 2004)). In addition, the data provide a base against which future activities and outcomes can be measured.

Below is a summary of the data gathered:

- Upper/Pasha Kola watershed.
  - The watershed comprises five sub-catchments with a total area of 350 km^2.
  - Approximately 933 herdsmen families reside in the area.
  - They are pastoral communities that move between winter encampments, inside the forest areas, and high altitude summer pastures.
  - The families' own cattle and sheep, and their livelihoods depend on livestock production.
  - Also in this area, are around 267 families living in scattered settlements inside the forest.
  - Their livelihoods comprise the cultivation of small patches of forest land, the grazing of domestic cattle within the forest, and other activities such as apiculture, silk cocoon production and the collection of minor non-timber forest products.
  - The overall total population in the upper watershed is 3,400 people (approx. 15 persons/km^2).
  - The forest dwellers' houses are largely constructed from timber, with only a few having brick structures.
  - The majority of households do not have access to electricity and other basic services (for example, running water, waste collection, telecommunications, etc).
  - Household incomes in this watershed are low, with economic transactions based largely on the exchange of goods and products.
  - Access to the watershed is by roads built for forest management.
  - Education is limited to primary school level.
  - The average age of the population in this area is increasing as a result of the youth migrating to urban centres in search of better education and employment opportunities (Mahab Ghodss Consulting Engineers, 2004).

- The middle lands.
  - This area covers 18 rural settlements and 15 administrative villages, of which 14 are affected and some of the households will be resettled under the Government's resettlement programme, as they are located within the dam and reservoir area.
  - The total number of households in the vicinity of the dam, which would also be resettled, is 401.
  - The total population of the middle lands was 3,283, of which 57% (1,881 people) would need to move.
  - Livelihoods in this area are primarily dependent on agriculture, with the most important crop being rice.
  - Use is also made of forest products.
  - Approximately 60% of people are farmers, 34% are livestock breeders and the remaining 6% comprise beekeepers and/or produce silk worms.
  - The cash economy in this area is more developed with people selling their products in nearby markets.
  - 13% of the population are wage earners.
  - The average land holding is between 0.1 ha and 0.4 ha. Only 7% of households have land holding between 1 ha and 1.5 ha (compared to land holdings of 2.7 ha in Mazandaran and 0.7 ha in the lower lands).
  - Approximately 10% of the population live below the absolute poverty line (calculated at between US $47 and US $59 for rural Mazandaran in 2001), compared to only 6.3% of the lower lands' population.
  - The area has an aging population (50.5% of people are 59 years or older) as a result of young people migrating to nearby towns for better education and employment opportunities.

- Access to villages is good and often paved.
- Education facilities include a high school, with the University in Babol City being only 30 km away.
- Almost half of the villagers have access to piped water, power and telecommunications, but there are no waste collection or sewage systems.
- A health clinic is easily accessible to 62% of the population (Mahab Ghodss Consulting Engineers, 2004).

- The lower lands.
  - This area is densely populated, and both rural and urban in nature, with six main cities being located within it (Babol, Babolsar, Amirkola, Azizak, Joybar and Behnamir).
  - The area is predominantly used for agriculture, although there are a variety of different jobs associated with an urban environment, with the services and unskilled labour sectors being important sources of income.
  - In the rural areas there are 344 villages with a total of 46,520 households and an estimated population of 213,990 people.
  - The wider population (inclusive of the inhabitants of the six cities in the area) is closer to 1 million.
  - Living standards in this area are comparatively high (by Iranian standards), but there are also poor areas (for example, Babolkenar village at Babol and the villages around Joybar).
  - In the rural areas, rice cultivation makes up 94.3 percent of the crops grown and provides the majority of the agricultural income.
  - Wheat, Konola oil seeds, citrus orchards, hotels and tourism are the secondary income streams.
  - Unemployment is at 11% (of the total work force, 39% of the population).
  - In the rural areas, 57% of people are engaged in farming, 1.5% in livestock breeding, 6% are civil servants, and approximately 13% are wage earners. Agriculture alone is, however, insufficient as the only source of income, and 49% of rural residents supplement their incomes either full time or part-time through wage labour, driving cabs, etc.
  - The average land holding in the rural areas is 0.7 ha.
  - 9.3% of the rural population live in absolute poverty (as per the 2001 rural poverty line for Mazandaran of between US $ 47 and US $ 59). However, 57.3% belong to the middle-income group with monthly earning of between US $ 120 and US $ 290.
  - 57% of the population in the lower lands project area have a primary or secondary education, 4% have college degrees and 36% have no education at all (compared to the urban areas where the literacy level is above 70%).
  - Thirty percent of people are under 36 years of age and 30% are between 37 and 47, indicating the tendency of young people to remain in their villages, as a result of their proximity to towns, as well as the improved socio-economic situation of the villages.
  - Road infrastructure is well developed and includes three seashore highways.
  - The Trans-Iranian Railway passes through Ghaemshahr in the eastern part of the project area.
  - Houses are constructed from bricks and concrete, but as they are scattered, only 70% have piped water. However, all have electricity and most have telephones.
  - Sewage treatment systems commenced recently (as at 2003) in Babol and a similar system was under construction in Babolsar.
  - Waste is collected and disposed of at land fills (Mahab Ghodss Consulting Engineers, 2004).

1.10.2 Prediction and evaluation of response to impacts

In terms of prediction and the evaluation of responses to impacts, this example serves to illustrate the subject in terms of involuntary resettlement.

It is the understanding of the Consultant that the primary negative/adverse impact associated with the construction of the Alborz Dam and its associated irrigation and drainage network is that of involuntary resettlement, including relocation or loss of shelter as well as a loss of income sources or means of livelihood, through the acquisition of land and displacement of people.

Six, out of fifteen, villages will be inundated and the inhabitants of nine other villages would be resettled from the area. The total number of people to be resettled is 4,000.

Resettlement of households from the dam area was carried out in accordance with Iranian legal and policy provisions. However, on revision of the resettlement strategy in terms of World Bank safeguards, the Resettlement Action Plan was revised and a supplementary plan developed as part of the Environmental and Social Assessment (in addition to the two Resettlement Policy Frameworks compiled for each of the upper and lower watershed areas). This supplementary plan allowed for retrospective provision of compensation, where the original provision was not deemed sufficient in terms of the World Bank's safeguards.

Through the implementation of the AILWMP, the need to further change land uses is reduced as the project aims to improve resource utilisation in order to achieve long-term sustainability.

Key positive socio-economic impacts as a result of the project were expected to be:

- An increase in income for people in the lower watershed (lower lands) area as a result of the improved reliability and sufficiency of the irrigation water supply and the associated increased agricultural production.
- Improved livelihoods for people in the upper watershed as a result of participatory planning and management, the promotion of sustainable forest management and additional community development initiatives (Mahab Ghodss Consulting Engineers, 2004).

1.10.3 Mitigation

This example illustrates the avoidance/minimisation of negative impacts and the optimisation of benefits.

The impacts of the project were both of a biophysical and social nature and were dealt with comprehensively in the assessment and formulation of viable mitigation measures, as detailed in the Environmental and Social Management Plan that has been compiled, and is structured in such a way that each of the World Bank safeguard policies is adequately addressed.

In addition, a Resettlement Action Plan has been compiled for the middle land area of the project, where the dam basin sits, and separate Resettlement Policy Frameworks have been compiled for each of the upper and lower watershed areas, to address involuntary resettlement.

The Resettlement Action Plan makes provisions for the following:

- Organisational responsibilities.
- Community participation and integration with host populations.
- A socio-economic survey.
- A legal framework.
- Alternative sites and selection.
- Valuation and compensation for lost assets.
- Land tenure, acquisition, and transfer.
- Access to training, employment and credit.
- Shelter, infrastructure and social services (Mahab Ghodss Consulting Engineers, 2004).

The Resettlement Policy Frameworks cover:

- Description of the project and its components and justification for not compiling a Resettlement Action Plan.
- Principles and objectives governing resettlement preparation and implementation.
- A description of the process for preparing and approving resettlement plans.
- An estimate of population displacement and likely categories of displaced persons.
- Eligibility criteria for defining various categories of displaced people.
- A legal framework, reviewing the fit between the borrower laws and regulations and World Bank policy requirements and measures proposed to bridge any gaps.
- Methods of evaluating affected assets.
- Organisational and institutional set up.
- A description of the implementation process, linking resettlement implementation to civil works.
- A description of grievance redress mechanisms.
- A description of the arrangements for funding resettlement.
- A description of mechanisms for consultations with, and participation of, displaced persons in planning, implementation and monitoring.
- Arrangements for monitoring by the implementing agent and, if required, by independent monitors (Mahab Ghodss Consulting Engineers, 2004).

The lack of capacity and understanding of environmental and social issues are adequately addressed through the provision of support staff and training of government staff, through seminars, study tours and workshops. The lack of resources is addressed through the procurement of equipment to upgrade laboratories and environmental monitoring facilities.

1.11 Outcomes and Results

In terms of the construction of the Alborz Dam, the development of the irrigation and drainage network, and the subsequent involvement of the World Bank in terms of developing sustainable land and water resource use programmes, it is the understanding of the Consultant that a key outcome was that it enabled the Government of Iran to advance its practise in terms of Environmental and Social Assessment as well as make provision to put in place strategies for the long-term sustainability of its resources. This is as a result of the capacity building and exchange of information throughout the project, not only for government officials, but also for interested and affected people (the public at large). It has also brought about a new way of thinking with regard to resettlement in Iran, and the fact that Iranian laws and regulations as they stand are inadequate in terms of relevant practise.

1.12 Assessment of Outcomes/Results by Involved Stakeholders

It was not possible to obtain an independent source of information to deal with this topic objectively. Similarly, attempts at reviewing project results as perceived by the affected or involved stakeholders have proven unsuccessful.

1.13 Consultant's Conclusions

It is important to note that this project aims to improve water resource use to ensure long-term sustainability. The primary impacts were the loss of land and the displacement of people.

Basically, the construction of the dam was done in accordance with Iranian law, and while social aspects are covered, the involvement of the World Bank (through its loan financing) brought about a new way of thinking in Iran in terms of impacts and how they need to be mitigated and managed, particularly with regard to involuntary resettlement. There is insufficient information to assess whether these lessons have been taken forward to other projects, or if they have been incorporated into revisions of law, but they will most certainly have benefited the people in the Mazandaran Province. Furthermore, the capacity building aspect must be noted as government members now have the skills to apply to future development projects.

1.14 Source Material

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2. Brilliant Expansion Project

Kootenay River, Canada (Figure 2).

2.1 Aspects of Social Impact Assessment Addressed

- Public Involvement.
  - Develop and implement an effective public involvement plan.
- Profile of Baseline Conditions.
  - Document the relevant human environment, and existing social conditions and trends.
- Scoping and Projection of Estimated Effects.
  - Identification and prioritisation of social impacts.
  - Cultural aspects.
- Estimate of Indirect and Cumulative Impacts.
  - Flow-on effects.
  - Incremental impacts.
- Mitigation.
  - Avoidance/minimisation of negative impacts.
  - Optimisation of benefits.
- Monitoring.
  - Programme and independent social monitor.

2.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects form part of normative frameworks covering Environmental Assessment:

- Canadian Environmental Assessment Act (1992).
- British Columbia Environmental Assessment Act (1995)[17].

2.3 Project Identification

- Name — Brilliant Expansion Project, Brilliant Dam.
- Country — Canada.
- Dates — Original dam constructed in the 1940s. Construction of current project commenced 2003.
- Developer — Brilliant Expansion Power Corporation.

2.4 Stage in the Project Lifecycle

Revamp (Redevelopment).

[17] This Act was replaced in 2002 by the new British Columbia Environmental Assessment Act, Bill 38. However, it is understood that the 1995 Act guided the requirements of this project.

Figure 2 Indicative location of the Brilliant Dam in Canada

www.geography.about.com/library/maps

Table 7 Selected technical details of the Brilliant Dam in Canada

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Brilliant	Canada	The total drainage area of the Kootenay River at Brilliant is 49,200 km²	Kootenay	Total storage volume of 48.5 million m³ and a surface area of 445 ha	Hydropower	Brilliant Expansion Power Corporation

2.5 General Description of the Country Institutional Set-up

In 1964, the Columbia River Treaty was signed between Canada and the United States of America to guide joint developments on the Columbia River. The Columbia Basin Trust was established in 1995 to invest, disburse and otherwise manage regional allocations arising out of downstream power benefits, as a result of the Columbia River Treaty, for the ongoing economic, environmental and social benefit of the Columbia River Basin and its residents (Brilliant Expansion Power Corporation, 2000).

The Brilliant Expansion Power Corporation responsible for implementing the Brilliant Expansion Project is a joint venture corporation between the Columbia Power Corporation and the Columbia Basin Trust Brilliant Expansion Power Corporation, an indirect subsidiary of the Columbia Basin Trust.

2.6 Detailed Description of the Specific Policy/Normative Framework

The Columbia Power Corporation has an environmental policy aimed at showing commitment to developing and operating commercially viable and environmentally sound electric power projects in the Columbia River Basin region. To meet this commitment in terms of the social environment, policy objectives adhered to by the Corporation or their agents are:

- Comply with all applicable environmental legislation, licences, permits and legal obligations and other non-regulatory requirements to which Columbia Power Corporation subscribes.
- Balance economic return with a commitment to environmental management and protection as set out in the Columbia Basin Management Plan.
- Make environmental considerations an integral part of planning, project design, operating decisions and ongoing due diligence, and, where appropriate, set measurable environmental objectives and targets.
- Ensure own employees or employees of agents have the knowledge and skills necessary to conduct their work in a manner that complies with environmental laws and regulations and this Environmental Policy (http://www.columbiapower.com/content/environment.html).

The specific legislation governing the impact assessment, and the assessment framework, was the Canadian Environmental Assessment Act (1992) and the British Columbia Environmental Assessment Act (1995). Although other policies or directives may have had an influence in guiding the project, it is the Consultant's understanding that these two Acts provided the dominant framework for the assessment.

Two key areas where the policy/normative framework influenced the assessment was through the requirement of the Canadian Environmental Assessment Act (1992) for a Cumulative Effects Assessment for projects of this nature, and the requirements of the British Columbia Environmental Assessment Act (1995) in terms of First Nations consultations and participation.

The basis and requirements of the Cumulative Effects Assessment is to consider cumulative environmental impacts that are likely to result from the project in combination with past, existing and imminent projects and activities. These impacts may occur over a certain period of time or distance.

The requirement for First Nation consultation includes particular obligations on the developer to consult and provide information to First Nation groups. The Act specifically requires that Aboriginal Governments be included at the project committee level to ensure a meaningful level and role for First Nations in the development of the project.

The *Guidelines for Preparation of an Application for a Project Approval Certificate*, produced by the British Columbia Environmental Assessment Office, were used to guide the preparation of the Environmental Impact Assessment Report. Format modifications were made to the contents of the Environmental Assessment Report and, in particular, two additional sections were added, a chapter on Cumulative Effects Assessment and a chapter on Accidents and Malfunctions, in order to simultaneously comply with the Canadian Environmental Assessment Act (1992).

2.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

The Brilliant Expansion Power Corporation is responsible for implementing the Brilliant Expansion Project.

The environmental authorities that needed to authorise the project are both the British Columbia Environmental Assessment Office (Provincial) and the Canadian Environmental Assessment Agency (Federal), acting on behalf of the Minister of Environment.

Authorisation is granted in terms of the British Columbia Environmental Assessment Act (1995) and the Canadian Environmental Assessment Act (1992), respectively. Authorisation is by means of a Project Approval Certificate, the provisions of which are enforceable and which are monitored.

2.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

Environmental Assessments have been undertaken previously under both the British Columbia Environmental Assessment Act (1995) and Canadian Environmental Assessment Act (1992).

In particular, two projects illustrate previous relevant practise, firstly, the Brilliant Generating Station Upgrade Project was assessed in 1998 and completed in 2000 after the necessary authorisations were obtained. A Cumulative Effects Assessment was also undertaken for this project. Secondly, the Keenleyside Powerplant Project was developed and implemented by the Columbia Power Corporation and the Columbia Basin Trust. Four years of environmental review concluded in approvals being obtained from the Provincial and Federal Authorities. A Cumulative Effects Assessment was also completed for this project (Brilliant Expansion Power Corporation, 2000). Indeed, the Cumulative Effects Assessments for both of these projects fed into the Cumulative Effects Assessment for the current project.

2.9 Project Description

The Brilliant Expansion Project entailed a second powerhouse to be built and operated at the existing Brilliant Dam. The first powerhouse was built as an integral part of the Brilliant Dam when it was constructed in the 1940s. The goal of the project was to add approximately 100 MW of hydroelectric generating capacity to the scheme.

The Brilliant Dam is situated on the Lower Kootenay River at the southern end of the Canadian portion of the Columbia River Basin. In order to harness more of the remaining spill opportunity, the aim of the project was to construct a bypass channel to a new powerhouse on the left bank. Output from the generator is transformed to a transmission voltage of 230 kV at the powerhouse before being connected by a new transmission line to an existing transmission network (Brilliant Expansion Power Corporation, 2000).

2.10 Implementation of Key Issues

2.10.1 Public Involvement

Public communication commenced during the planning stage of the project, with the primary goal of ensuring broad awareness of the proposed project and the related public consultation process. Early involvement of review agencies and community stakeholders provided valuable feedback, which the proponent took into consideration in optimising the proposed project concept (Brilliant Expansion Power Corporation, 2000).

The approach adopted for the communication activities was to provide timely and technically accurate project information that was easily accessible to a variety of audiences (Brilliant Expansion Power Corporation, 2000). Key communication materials used were the following:

- A project background information document providing a project description, pictures, drawings and other graphics to assist audiences in better understanding the project.
- Two media releases featuring the project and anticipated benefits.
- Two detailed newsletters, one dealing with project background material and the other dealing with principle issues raised and discussed as part of public consultation.
- Display panels were prepared for community meetings.
- Establishment of an information office in a nearby town, Castlegar.
- Various meetings and workshops were held, summarised as follows:
  - Meetings with all of the four resident communities.
  - A workshop for organisations with specific biophysical concerns.
  - Public Open Houses with respect to the environmental application.
  - Various media updates on project progress and the availability of additional project information.

Importantly, the British Columbia Environmental Assessment Act (1995) places certain obligations on development proponents in terms of First Nations consultations and information dissemination. This Act specifically requires that Aboriginal Governments be included in the project committee. In consultation with the British Columbia Environmental Assessment Office, it was determined which groups or organisations needed to be represented and a public involvement plan was developed. The Ktunaxa/Kinbasket Tribal Council, the Okanagan Nation Alliance and the Shuswap Nation Tribal Council were selected as the appropriate organisations. Contact was made with each organisation and, thereafter, a range of information dissemination activities and meetings followed. The proponent undertook consultation effectively, with First Nation representatives raising issues that concerned potential implications on fisheries, local community capacity development and training, and local economic benefits (Brilliant Expansion Power Corporation, 2000).

A significant outcome of this consultation was to determine and adopt the terms of reference for the Columbia Power Corporation-Columbia Basin First Nations Working Group (Brilliant Expansion Power Corporation, 2000). This Group was tasked with issues relating to First Nations economic benefits and capacity building, in particular during the ongoing operation of the project.

Some specific further activities arranged to involve and build capacity within the First Nations stakeholders included guided tours of the project site, meetings detailing in depth the environmental application process, the timely provision of new information, and a range of meetings, information sessions and workshops.

2.10.2 Profile of Baseline Conditions

The Consultant's interpretation is that the investigations undertaken appear to have been thorough and comprehensive, as detailed information is provided in project reports on the social, historical and cultural environments. The source of the data appeared to be primarily from national or regional statistical reports and work undertaken on other recent projects in the region. In the presentation of the results, in particular the economic estimates, a large number of tables and charts were used. In the opinion of the Consultant, this did not necessarily add to the ease of the reader in assimilating the data.

The topics investigated and discussed were:

- Environmental setting (dealing with all aspects of the natural environment).
- Land and water management framework.
  - Land tenure and use.
  - Land use plans.
  - Water use.
- First Nations Setting.
  - Aboriginal interests.
  - Traditional resource use.
  - Archaeological resources.
- Non-aboriginal cultural and heritage setting.
  - Settlement history.
  - Historical sites and landscape features.
- Social setting.
  - Demography.
  - Housing.
  - Transportation and traffic.
  - Health.
  - Social support services.
  - Community stability.
- Economic setting.

Economic and land-use data were described in detail. The description of the baseline conditions, in particular around employment and the local economy, generated the baseline data, which underlay the bulk of the social issues and assessment dealt with later in the process. In the opinion of the Consultant, this underscores the value of investigating and understanding baseline conditions as a basis from which social impact assessment can be undertaken. For this case study, particular attention is drawn to aspects related to Aboriginal interests and cultural heritage/archaeological resources (which are important potential social impacts).

As it was a requirement of the British Columbia Environmental Assessment Act (1995) to ensure the active involvement of First Nation groups, the history and status of the First Nation groups in the area was dealt with substantially. This provided a sound basis and background in the assessment for the ongoing involvement and role of the First Nation representatives.

2.10.3 Scoping and Projection of Estimated Effects

The Scoping Assessment identified a wide range of potential social elements, which could be impacted and then, through a process of screening, identified the following main issues:

- Opportunities for equity hire and training.
- Housing.
- Physical effects.
- Community services.
- Community stability.

The screening matrices were developed to identify project issues as a result of the relationship between specific construction and operational activities and environmental and socio-community elements. The matrices were essentially large tables detailing elements of the receiving social environment in each column whilst listing a range of impacting factors in the rows. Each interrelating aspect was rated either no impact, impacts that could be managed through design or management, or potential impacts needing environmental assessment.

The report projected estimated impacts in detail and, in particular, analysed a large amount of projected employment opportunities, economic benefits and economic stimulation.

A total of 503.5 person years of direct employment were estimated to be required over a 30-month construction period (Brilliant Expansion Power Corporation, 2000). In order to clarify the regional distribution of potential employment opportunities, local labour supply (within 100 km of the site) and the number of workers known through various trade registrations were investigated (Brilliant Expansion Power Corporation, 2000).

In addition, a range of benefits were analysed and categorised into components such as management and engineering employment, direct local pre-tax and after tax incomes for each year of construction, and indirect and induced employment benefits for each year of construction (Brilliant Expansion Power Corporation, 2000).

Estimated revenues to government from the sale of electricity were also detailed in the overall motivation for the project (Brilliant Expansion Power Corporation, 2000).

2.10.4 Estimate of Indirect and Cumulative Impacts

A detailed Cumulative Effects Assessment, as required by Federal legislation, was undertaken for this project.

The Cumulative Effects Assessment followed the process set out in the Reference Guide produced by the Federal Environmental Assessment Review Office. Key elements of this review are as follows:

- To determine the geographic and temporal scope of the impacts.
- Scope the direct cumulative environmental effects that will result from the proposed project.
- Scope the cumulative environmental effects that will result from other projects in the pertinent area.
- Undertake an analysis of the potential cumulative effects.

Importantly, in undertaking this work, the assessment team was able to draw on previous Cumulative Effects Assessments undertaken for projects in the area, such as the Keenleyside Powerplant Project.

The section of the report dealing with the Cumulative Effects Assessment followed closely the sections of the Reference Guide. In the Consultant's opinion, a strength of this work was that a large amount of baseline data and socio-economic information had been collated in the preparation of this report and, using the data obtained from other projects, the flow-on effects of this proposal, which occurred in proximity to other large project activities could be examined in detail.

2.10.5 Mitigation

The impacts of the project were predominately of a biophysical nature although there were social impacts and these were dealt with comprehensively in the assessment and formulation of viable mitigation measures. In this regard, it is the understanding of the Consultant that mitigation measures were primarily raised as recommendations to improve the social benefits of the project, in terms of employment and community stability, rather than to mitigate adverse social impacts. The estimated jobs and employees that would benefit were described as well as the potential positive impacts on the social fabric of the community.

2.10.6 Monitoring

In order to monitor and report on the social and economic benefits associated with the expansion of the generating capacity at the Brilliant Dam and identify deviations from outcomes anticipated, the Columbia Power Corporation hired an independent, third-party contractor to serve as the Socio-Economic Monitor for the project (Brilliant Expansion Power Corporation, 2000).

The Socio-Economic Monitor objectively monitored and reported on both the benefits and impacts that occurred as a result of the expansion project (http://www.columbiapower.org/content/brx_socioeconomic_monitor.html). Through investigating a range of social and socio-economic variables, the Socio-Economic Monitor could gauge the impact of the expansion project on the local communities and the region (i.e. within a 100 km radius of the project site).

The Socio-Economic Monitor used various indicators to measure the benefits and impacts of the project. Aspects investigated in terms of employment and expenditure were:

- Number of local hires, trades, female workers, First Nation workers by Nation and by Band, and disabled workers.
- Number of apprenticeships.
- Ratio of project employment to regional labour force.
- Direct and induced expenditures by communities.
- Number of local firms benefiting.

2.11 Outcomes and Results

The potential cumulative impacts were identified in detail, with the main social impact relating to the benefits of this project providing ongoing employment to local residents at a time when the nearby Keenleyside Powerplant Project would be nearing completion. It is the understanding of the Consultant that the social outcomes of this project were reasonably successful as construction commenced at the appropriate time required to maximise possible social benefits.

This aspect was identified and discussed in the Cumulative Effects Assessment, which appeared to have achieved its purpose, particularly as related to social issues as the inter-related impacts and activities of other projects in the area were considered in detail.

Policy requirements, such as ensuring equity employment (particularly as it related to employment of women or First Nation citizens) were monitored and, if considered unsatisfactory, additional measures were introduced to reach original targeted benefits. For example, in order to encourage the hire of qualified women, an effective and authoritative facilitator was appointed and various activities, such as a one-day orientation to the project for women potentially interested in employment, were held (http://www.columbiapower.org/content/brx_socioeconomic_monitor.html).

A key successful outcome in terms of ensuring the involvement of First Nation organisations was the establishment of the Columbia Power Corporation-Columbia Basin First Nations Working Group (Brilliant Expansion Power Corporation, 2000). During operation, this Group dealt with and reviewed aspects relating to First Nations' economic benefits and capacity building.

From the available literature, it is the understanding of the Consultant that the results obtained were as the project proponent intended. In this regard, the outcomes met all the requirements for the regulations and this was carefully tabulated, showing the key requirement of legislation and the manner in which it had been dealt with in the investigations and the section of the report where compliance was documented.

2.12 Assessment of Outcomes/Results by Involved Stakeholders

It was not possible to obtain an independent source of information to deal with this topic objectively. However, a suite of quarterly socio-economic reports, available on the website, reviewed the outcomes of the projected mitigation measures and economic projections (http://www.columbiapower.org/content/brx_socioeconomic_monitor.html). Most appear to have been adequately achieved with few stakeholder concerns being raised in the monitoring reports.

2.13 Consultant's Conclusions

There are three key elements arising from this example that can strengthen the practice of Social Impact Assessment. In this case study, the assessment team included a significant component of work dealing with aspects required by the legislative framework, viz.:

- The need to specifically include and stimulate the involvement of local indigenous people.
  Legislation in Canada specifically requires the involvement of First Nations' representatives, which focused the attention of the assessment team on ensuring that this occurred, and that the inputs of indigenous peoples were "heard" and not lost within the greater volume of public involvement inputs of the general public. In other cases, the involvement of local, often affected groups, can be incorporated into the general public involvement programme with the views and concerns raised by indigenous people being less predominant within the overall project.

  A strength of this aspect of the Canadian policy is that for all projects, developers and specialists, would, from the outset, plan and programme into the project design the active involvement of all people, but particularly of indigenous people. This planning was undertaken in conjunction with the authorising authorities. The early involvement of these groups strengthened the public involvement process of the project and the resultant outcomes of the Social Impact Assessment.

  This is an important aspect, particularly in developed countries, but could be transferred into developing countries with great effectiveness. For example, in developing countries there are often a range of cultural and economic groups affected by a proposed project and, thus, specific legislative or relevant practice requirements to ensure all are included and equally "heard" will be of great valuable in a Social Impact Assessment.

- The need to undertake an assessment of cumulative impacts.
  The assessment of cumulative impacts, although required by other policy or legislative frameworks, can, at times, only be addressed if stakeholders or specialists raise significant cumulative impacts.

  Yet, the requirement to undertake a specific cumulative effects assessment on specific projects, immediately strengthens the assessment work in terms of reviewing project macro- and micro-specific alternatives, and broadens the focus of the assessment, in terms of both physical boundaries and timeframes.

  This focus strengthens Social Impact Assessment activities, moving forward from assessing social impacts in isolation for one project, to assessing social impacts in a broader context taking into account the dynamic and fluid nature of the social environment (which is influenced by many externalities on an on-going basis).

- The monitoring of predicted estimates and predictions.
  Another strength of this project was that the predicted social benefits of the project, particularly in terms of employment and local economic stimulation, were monitored throughout the implementation of the project.

  Ensuring that there is always a programme to undertake the active monitoring of predicted social impacts and benefits during implementation will have the result of strengthening and refining the estimates made during the impact assessment phase. This, in turn, will lead to a strengthening of the practise of Social Impact Assessment and project promotion, which often rely heavily on the predicted social or socio-economic benefits of the project.

2.14 Source Material

Brilliant Expansion Power Corporation (2000). *Application for the Brilliant Power Plant Expansion Project. Volume 1 – Main Report.*

British Columbia Environmental Assessment Act (1995).

Canadian Environmental Assessment Act (1992).

http://www.columbiapower.com/content/environment.html
http://www.columbiapower.org/content/brx_socioeconomic_monitor.html.
http://www.eao.gov.bc.ca/epic/output/html/deploy/epic_document_132_12879.html
http://laws.justice.gc.ca

3. Bumbuna Hydroelectric Project

Seli River, Sierra Leone (Figure 3).

3.1 Aspects of Social Impact Assessment Addressed

- Public Involvement.
  - Develop and implement an effective public involvement plan.
- Alternatives.
  - Reasonable alternatives.
- Profile of Baseline Conditions.
  - Document the relevant human environment, and existing social conditions and trends.
- Scoping and Projection of Estimated Effects.
  - Identification and prioritisation of social impacts.
- Mitigation.
  - Compensation for adverse impacts.

3.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects form part of normative frameworks covering Environmental Assessment:

- National Environmental Policy (1990).
- Environmental Protection Act (2000).
- World Bank Safeguard Policies.
  - OP and BP 4.01: Environmental Assessment.
  - OP 4.12: Involuntary Resettlement.

3.3 Project Identification

- Name Bumbuna Hydroelectric Project.
- Country Sierra Leone.
- Dates First Proposed in 1970s, initial construction works between 1982 and 1997, original Environmental Impact assessment in 1996, with an updated Environmental Impact Assessment completed in January 2005.
- Developer Government of the Republic of Sierra Leone, Ministry of Energy and Power.

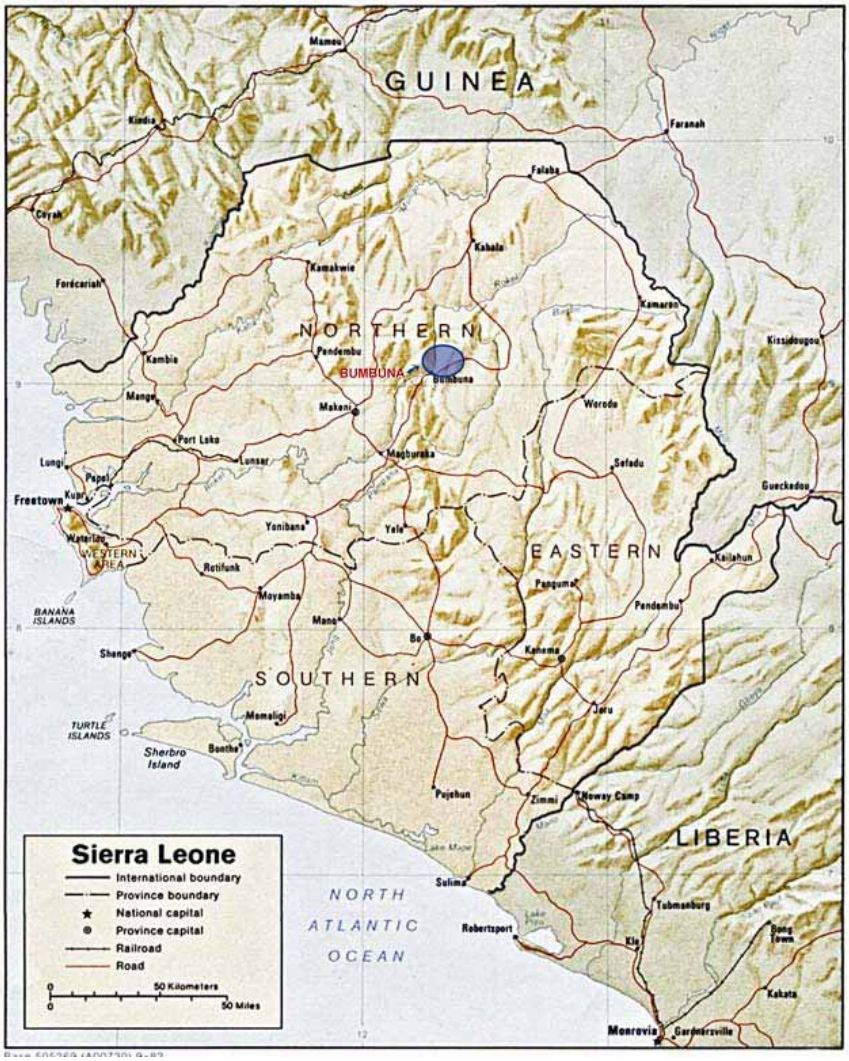
3.4 Stage in the Project Lifecycle

Construction.

3.5 General Description of the Country Institutional Set-up

The institutional set up in Sierra Leone was in a state of flux over the lifespan of this project. Initial planning commenced in the 1970s but construction was interrupted by a civil war.

Figure 3 Indicative location of the Bumbuna Hydroelectric Project in Sierra Leone



www.geography.about.com/library/maps

Table 8 Selected technical details of the Bumbuna Dam in Sierra Leone

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Bumbuna	Sierra Leone	Drainage area of 10,620 km²	Seli	Surface area of 21 km² and a maximum operating capacity of 350 million m³	Hydropower	Government of the republic of Sierra Leone, Ministry of Energy and Power

At the time of the assessment, the Bumbuna Project Implementation Unit within Sierra Leone's Ministry of Energy and Power was responsible for the completion of the project (Nippon Koei UK, 2005). The Project Implementation Unit also had some responsibility for environmental management oversight and had an environmental specialist as part of the organisation.

In addition, an Environmental and Social Advisory Panel comprising various experts was established to provide additional oversight for the project (Nippon Koei UK, 2005).

3.6 Detailed Description of the Specific Policy/Normative Framework

The National Environmental Policy (1990) was adopted and implemented, which resulted in the introduction of the Environmental Protection Act, 2000. The original 1996 Environmental Impact Assessment was undertaken prior to the Environmental Protection Act coming into effect. However, it retrospectively met the requirements in terms of undertaking a full Environmental Impact Assessment for a Class A project. The national Environmental Impact Assessment requirements do not conflict with those of the World Bank Group and are similar in many respects, including project categorisation and the required content of the Environmental Impact Assessment study and report (Nippon Koei UK, 2005).

World Bank Operational Policies (OP) and Bank Procedures (BP) applicable to the Bumbuna Hydroelectric Project are as follows:

- OP and BP 4.01: Environmental Assessment.
- OPN[18] 11.03 dealing with Cultural Property (although under preparation at the time).
- OP 4.04: Natural Habitat.
- OP 4.36: Forests.
- OP 4.37: Dam Safety.
- OP 4.12: Involuntary Resettlement.
- OP 7.50: Projects on International Waterways.
- OP 4.20: Indigenous Peoples.

In addition to the World Bank Safeguard Policies, a number of other guides to environmental and social management of major projects were considered and incorporated into the Bumbuna Hydroelectric Project, viz.:

- Addressing past/existing projects.
- Compensation.
- Public consultation.
- Benefit sharing.
- Analysis of alternatives.
- Downstream river flows.
- Contingency planning for emergencies.
- Strategic Environmental Assessment.
- Capacity building.

Importantly, in terms of Social Impact Assessment, the requirements of the World Bank OP 4.01 on Environmental Assessment are the most relevant for this project. Key relevant policy principles include the following:

[18] Operational Policy Note.

- Assessment is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project.
- Assessment takes into account the human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property) of a project.
- During the assessment process, the proponent must consult with project-affected groups and local non governmental organizations about the project's impacts and take their views into account. These consultations should be initiated as early as possible.
- For certain projects, a panel of independent, internationally recognized environmental specialists must be appointed to advise on all aspects of the project relevant to the assessment.

The requirements of the World Bank OP 4.12 on Involuntary Resettlement are that resettlement be avoided where feasible or minimized, exploring all viable alternative project designs.

The requirements of the World Bank OP 4.20 on Indigenous Peoples required that the project ensure that indigenous people benefit from the development project and to avoid or mitigate potentially adverse effects on indigenous people.

3.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

The information provided below is sourced primarily from the Environmental Assessment Report prepared by Nippon Koei UK (2005). The National Environmental Protection Board is the principle administrative body responsible for providing advice, co-ordination and co-operation with other government departments. The Department of Environment (under the Ministry of Lands, Country Planning and Environment) acts as the executive arm of the National Environmental Protection Board to administer Environmental Impact Assessment procedures, including requesting, reviewing and approving Environmental Impact Assessment reports.

The national Environmental Impact Assessment requirements are similar in many respects to World Bank Policies in terms of content and project categorisation. However, as the World Bank Policies require more public consultation during scoping and the national Environmental Impact Assessment requirements stipulate more during the Environmental Impact Assessment review stage, both were incorporated into the approach for the impact assessment for the Bumbuna Hydroelectric Project.

It was recommended that a Community Liaison Committee be established in order to assist with the enforcement and monitoring of project implementation. The motivation was that experience had shown the role that such a forum could provide in which the local communities, the project operator and the national and local government agencies could discuss issues and problems.

In terms of ongoing capacity, the report detailed the fact that many of the mitigation measures would require local catchment management to maintain and then improve the environment around the reservoir and within the catchment. Thus, a key action was the formation of the Bumbuna Watershed Management Authority, comprising a range of government, parastatal and civil society representatives, which was to be established to serve as a facilitator for the delivery of the Water and Land Management Strategy and Action Plan (Nippon Koei UK (2005).

The Water and Land Management Strategy and Action Plan was envisaged to be a key document to address water, land use and agricultural issues and to implement mitigation measures identified in the Environmental Impact Assessment.

It was planned to revive the Seli River Development Authority in order to support the Bumbuna Watershed Management Authority by coordinating training, capacity building and institutional strengthening. The Seli River Development Authority would comprise a small full-time executive of experts in finance and administration, economics, water and land management, planning and legislation. The anticipated funding mechanism for the Seli River Development Authority was from central government via all government ministries that had an interest in the development of the Seli Basin.

It is also pertinent to note that the report identified that the capacity of the Department of Environment's personnel was limited in terms of experience in monitoring the impacts of such a large project. Thus, it was recommended that the government enter into discussions with the World Bank to design a focussed capacity-building programme for the Department (this would need to be aligned with current Bank-supported initiatives, for example, the "Institutional Reform and Capacity Project" aimed at government decentralisation) (Nippon Koei UK, 2005).

The programme proposed to create a Project Supervision Unit in the Department designed according to current "best practice" for such capacity building initiatives, with a clear exist strategy for the withdrawal of external support, whilst ensuring that the Unit continues to function effectively and sustainably (Nippon Koei UK, 2005).

It is also useful to note that the report stated that the intention was to use this project as the "main vehicle" for capacity-building within the Department, since capacity-building is more effective if it is based on the principle of "learning by doing". Staff would continue to discharge their responsibilities as they learned (Nippon Koei UK, 2005).

3.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

Although no factual data were found, it is the Consultant's assumption that the implementation history in Sierra Leone was limited at the time of the investigations, especially as many of the normative policies, including Sierra Leone's Environmental Protection Act (2000), was not in force when the project initially commenced.

It was further noted in the report that the capacity of the Department of the Environment to monitor and enforce implementation was weak, particularly during construction and implementation (indeed, the staff at headquarters consisted of five graduates) (Nippon Koei UK, 2005).

The limited experience of the staff was raised in the assessment report and it was proposed that the capacity of the Department needed to be built up in readiness for the implementation of the project. A detailed capacity-building programme was motivated which included sources of funding, staff requirements and training activities.

Examples of the implementation of the provisions of World Bank safeguards are available for numerous projects world-wide (dam and other large-scale infrastructure projects). It is also pertinent to note that World Bank safeguards are updated periodically, suggesting the incorporation of experience and learning into newer safeguards.

With regard to World Bank safeguards, there appears to be some controversy regarding their implementation. Some writers perceive the norm and its implementation positively, for example, Bekhechi (1999) states that *since 1984, major environmental policies have been issued and implemented by the World Bank and constitute the most comprehensive environmental policy that frames investment and other development activities of any development agency*. Others, predominantly from non governmental organisations and civil society have reservations regarding the norm. For example, the International Rivers Network (2005) states that *in spite of their many shortcomings, the World Bank's social and environmental safeguard policies are an important achievement of the past twenty years.* However, the International Rivers Network (2005) continues by stating *… the Bank has not mainstreamed social and environmental concerns throughout its business model. As a consequence, the Bank has repeatedly developed unsustainable projects within which the objectives of the safeguard policies cannot be achieved. The Bank may go through the motions of implementing safeguard policies, but it often fails to comply with their objectives. For example, the Bank rarely explores alternative options in any balanced way as part of the environmental assessments of projects. And people who are displaced by Bank projects almost invariably end off poorer as a result, rather than becoming project beneficiaries*.

The implementation of World Bank safeguards, therefore, appears not to have been free of disappointment. However, as stated above, the World Bank seems to be constantly striving towards the improvement of its policies and guidelines in an attempt to address shortcomings.

3.9 Project Description

The information provided below is sourced primarily from the Environmental Assessment Report prepared by Nippon Koei UK (2005). The Bumbuna Hydroelectric Project site is located 2.4 km upstream of the Bumbuna Falls on the upper reaches of the Seli/Rokel River, in the foothills of the Sula Mountains. The Seli River is the third largest river in Sierra Leone and drains into the sea at Freetown.

The entire proposed project comprises five possible stages, with Phase 1 being the construction of the 88 m high rockfill dam with a 50 MW powerhouse at the foot of the dam. A 161 kV transmission line will be connected to Freetown. The reservoir will have a surface area of 21 km² and will be approximately 30 km long. This case study considers Phase 1 only.

The project was first proposed in the 1970s and site preparation and some construction works were undertaken between 1982 and 1997. In 1997, the 85% complete project was abandoned due to civil war.

The Environmental Impact Assessment Report recognises that the report is unusual as both investigations (an original Environmental Impact Assessment report was done in 1996) and the current report (2005) have been prepared whilst construction of the project has been largely completed.

However, during the 1996 to 2002 civil war, there was considerable disturbance and displacement of communities in the vicinity of the project. For this reason, and increasing international expectations in terms of the scope of the Environmental Impact Assessment, the Project Implementation Unit decided that the Environmental Impact Assessment report should be updated to take account of recent Environmental Impact Assessment requirements and the changed environmental, social and institutional environments (in which the project was now located).

At the time of the Impact Assessment Report, the dam wall had been constructed but impoundment had not commenced. The river continued to flow freely through one of the spillway tunnels.

3.10 Implementation of Key Issues

3.10.1 Public Involvement

A Public Consultation and Disclosure Plan was prepared in accordance with OP 4.01. The purpose of this plan was to act as a guide to management of the public involvement plan. In the Consultant's opinion, this illustrates compliance with both the regulatory framework adopted for the project and relevant Social Impact Assessment practise in terms of developing and implementing an effective public involvement programme.

The Bumbuna Public Consultation and Disclosure Plan was prepared taking into account the requirements of the Environmental Impact Assessment legislation in Sierra Leone as well as that of OP 4.01. The Public Consultation and Disclosure Plan was prepared early, which helped to ensure that adequate and effective consultation occurred within tight time frames. Importantly, in compliance with relevant practise, particular reference was made to the 1999 International Finance Corporation[19] Environmental and Social Review Procedure Guidance Note F entitled *Guidance for Preparation of a Public Consultation and Disclosure Plan* and the IFC Good Practice Manual entitled *Doing better business through effective public consultation and disclosure*. A technically and culturally appropriate approach to consultation and disclosure was adopted (Nippon Koei UK, 2005).

At the start of scoping, primary (local) stakeholder and secondary (national) groups were identified and various meetings were arranged.

The primary stakeholder target group consisted of:

- The Women's Farming Association in Bumbuna and women in other local villages.
- Paramount Chiefs, Chiefs and elders in each of the affected settlements.
- Provincial Secretary of the Northern Province.
- Youth in Bumbuna.
- Co-operative associations and/or special interest groups.
- Religious leaders.
- Local police.
- Principal and teacher of the Bumbuna Secondary School.
- Site Manager for the contractor of the current phase of the project.

The secondary stakeholder target group consisted of:

- Central Government Ministries.
  - Ministry of Energy and Power.
  - Ministry of Finance.
  - Ministry of Lands, Country Planning and Environment.
  - Ministry of Agriculture, Forestry and Food Security.
  - Ministry of Local Government.

[19] The IFC is a member of the World Bank Group.

- Parastatals.
  - National Commission for Social Action.
  - National Power Authority.
- Political Bodies.
  - Council of Paramount Chiefs.
- NGO Community.
  - Sierra Leone Chamber of Commerce.
  - Conservation Society of Sierra Leone.
  - Sierra Leone Institution of Engineers.
- Academic/Research Institutes and Other.
  - University of Sierra Leone.
  - Media Groups.
  - Groups responsible for the Resettlement Action Plan.

The stakeholder concerns were summarised and assessed, and the terms of reference for the environmental studies refined to ensure that the legitimate concerns of the stakeholders were taken into account.

The consultation process during the Impact Assessment Phase included meetings and discussions on the findings of the impact assessment. In addition, the teams actively consulted local people to increase the team's knowledge and understanding of the local environment, key changes since 1996 and current trends. Such discussions provided a context in which stakeholders could voice any new concerns, as well as reinforcing issues and concerns already raised in the earlier consultations (Nippon Koei UK, 2005).

3.10.2 Alternatives

The information provided below is sourced primarily from the Environmental Assessment Report prepared by Nippon Koei UK (2005). The Environmental Impact Assessment recognised that the original selection of the Bumbuna site was undertaken strictly on economic and financial criteria, with little involvement of stakeholders. Environmental and social criteria were either not applied or made explicit in site selection or to optimise the project design, layout or operating strategy.

However, the environmental and social investigations, which commenced in mid-2004, provided a new opportunity to evaluate alternatives for the non-infrastructure components of the project.

A Retrospective Options Assessment was undertaken and this, as well as the Impact Assessment Report, considered how the previous decision-making and information available conformed or did not conform to current relevant practice.

Little attention was given to the option of not proceeding with the completion of the project. In this scenario, adverse impacts, which had been identified, would be prevented but the environmental benefits would also be foregone. Furthermore, the significant adverse negative environmental and social impacts, which had already been experienced through partial construction, would have then occurred without realising any positive impacts (Nippon Koei UK, 2005).

One of the alternatives considered during this phase of the project was the filling of the reservoir. The number of days it would take to fill the reservoir differed according to the season, but was initially based on the complete stoppage of river flows. It was identified that this alternative would have significant biophysical and social impacts on downstream aquatic ecology, fisheries and river users as well as increasing mosquito breeding grounds. Thus, an acceptable environmental flow was determined and the outlets were designed to achieve these flows at all times, including the start of filling.

It was the Environmental and Social Advisory Panel, which highlighted in their first report that downstream water flows needed to be released. In the opinion of the Consultant, this aspect illustrates the value and successful result of this requirement of the World Bank OP 4.01

3.10.3 Profile of Baseline Conditions

Various previous and new investigations were used to gather data on baseline conditions. New investigations relating to the social environment that were commissioned were:

- Surveys on archaeology, public health and socio-economics.
- A Community Development Initiatives report.

Methods used to gather data included questionnaire surveys with heads of households, separate focus group discussions with the youth, women, men and chiefs and elders, and consultative meetings with the community.

The baseline information gathered was comprehensive with text, data and/or illustrations being provided on the following:

- General socio-economic conditions.
- Demographics, settlements and infrastructure.
- Ethnic groups.
- Household structure.
- Village size.
- Water supply.
- Solid waste disposal.
- Public health.
- Attitude to relocation.
- Culture, history and archaeology.
- Social organisation and traditions.
- Religion and sacred sites.
- Secret societies.
- Tourism and recreation.

Household surveys were conducted in the 54 villages in the reservoir area and data were collected from a total of 872 households.

It is the understanding of the Consultant that the adoption of a wide policy framework seemed to lead to a wider collection and collation of data being undertaken to inform the study. Through this process, the existing social environment and trends were established across lifestyle, culture, infrastructure, economic and health aspects. Also included were archaeological resources that comprise an important component of potential social effects of large development projects.

This detailed description of the baseline conditions illustrates relevant practise in terms of preparing the profile against which scoping can then be undertaken.

3.10.4 Scoping and Projection of Estimated Effects

Impacts identified were assessed and mitigation measures were proposed and discussed. However, in terms of the social impacts, it is the opinion of the Consultant that this did not appear to be the strongest component of the work as the possible success or effectiveness of various mitigations measures, predominately those to restore livelihoods and access, were debatable.

All issues identified were placed in a table reviewing their significance and potential mitigation measures, either during the construction or operational phases. Key issues were further discussed and analysed.

However, in defence, as the dam was almost complete, the major social issues related to the displacement and resettlement of people from the reservoir basin. As such, much of the mitigation required was assigned to the preparation of the Resettlement Action Plan where further discussion with the affected parties would occur.

Thus, it would appear to the Consultant that the scoping of impacts and estimating effects were not aimed primarily at supporting decision-making with regard to the feasibility of the project, but in preparing the baseline from which to proceed with the preparation of the Resettlement Action Plan.

3.10.5 Mitigation

As stated, for each impact, various mitigation measures were proposed, with the majority of the social mitigation measures relying on the implementation of the Resettlement Action Plan.

Another key document that was motivated and for which a framework was provided was the Water and Land Management Strategy and Action Plan, to be implemented by the Bumbuna Watershed Management Authority (Section 8).

The aim of this document was to ensure that a coordinated and long-term approach was applied to managing the increasing pressure on the land immediately around the catchment, propose the development aspiration of the local communities, and manage other related processes directly affecting water quality and quantity within the catchment as well as facilitating the ongoing involvement of the local communities and monitoring social and biophysical impacts.

It is also important to note the Community Development Initiatives Report that was initiated to optimise benefits that may arise from the proposed development, directed not only at affected persons but the wider population who could benefit from the proposed project. In the opinion of the Consultant, this is considered relevant practice in terms of the formulation of Social Development Plans that should have a positive influence on the wider population within a project-affected area.

3.11 Outcomes and Results

Importantly, throughout the report, the various aspects of the policy framework or relevant practise were cross-referenced. For example, the most feasible options available in terms of benefit sharing mechanisms were reviewed primarily as this related to current relevant practise, which had been included in the framework.

Notwithstanding that the dam was almost complete prior to even the original impact assessment being undertaken in 1996, it is the opinion of the Consultant that the 2005 impact assessment is believed to have met the expectations for relevant practise and the legislative requirements.

In particular, a suitable public involvement plan was developed and implemented in accordance with World Bank Policy and the social baseline conditions of the area were updated via a large scale survey.

It is the understanding of the Consultant that the formation of a Panel of Experts in accordance with World Bank Policy requirements strengthened the Social Impact Assessment and ensured the consideration of downstream river flows, which formed a component of the policy framework adopted.

3.12 Assessment of Outcomes/Results by Involved Stakeholders

It was not possible to obtain an independent source of information to deal with this topic objectively. Similarly, attempts at reviewing project results as perceived by the affected or involved stakeholders have proven unsuccessful.

3.13 Consultant's Conclusions

The Consultant has identified the following challenges and opportunities in this example.

- Adopting a comprehensive policy framework.
  A strength of this assessment was the collection of baseline data. The approach adopted resulted as a response to the requirements of the various policy frameworks. Each policy framework or relevant practise guideline was reviewed and the approach to the assignment adapted as far as possible to address each requirement.

  The approach appears to have both expanded and improved the scope of the work and the actions required.

  In assessment work, accurately understanding all components of the baseline conditions provides the basis against which to accurately identify impacts. Thus, a key strength of this approach was to adopt a wide framework that would stimulate and guide the Social Impact Assessment, as well as other studies, within the overall assessment.

- Approach to relevant practise compliance.
  Another opportunity arising from this example is to view the manner in which the proponent approached the investigation in order to meet relevant practise standards where ever possible.

The proponent clearly outlined the current relevant practice policy frameworks and, in each case, reviewed in some detail previous work undertaken since the commencement of the project. The assessment work that was proposed aimed to ensure that each item was addressed where possible.

No factors appeared to be downplayed or overlooked. Aspects such as the dam construction being 85% complete when the study commenced, were frankly discussed and the past actions and current options, if available, in order to comply where possible with relevant practise standards, were identified and incorporated into the approach.

The fact that the area had been subject to a civil war and it is anticipated that the project area was difficult to access, did not result in social data collection being downplayed or marginal/limited data being extrapolated. A total of 872 households were surveyed, in addition to the review of previous information and information obtained from various public participation meetings. This detailed approach to meeting the requirements of relevant practise is noteworthy.

Another example was that the different requirements for public participation in various national and international policies were noted. The public involvement plan was developed and implemented in order that the approach would ensure compliance with both policies.

- Capacity and peer review.
  As a result of World Bank Safeguard Policies, an international Environmental and Social Advisory Panel was established. This is an important factor to consider, particularly in less developed countries where government institutions may not have the capacity, knowledge or political authority to ensure all environmental aspects are suitably addressed.

  In this example, it is reported that the Advisory Panel ensured that environmental water releases were allowed during the filling and operational period of the dam. The involvement of an effective Advisory Panel, from as early as possible in project planning, should receive priority consideration in any areas where capacity or experience may be lacking.

  This will strengthen the practise of Social Impact Assessment (amongst others) as the timing and approach in order to meet relevant practise and the project objectives will be guided and supported by the Advisory Panel.

3.14 Source Material

Bekhechi, M.A. (1999). *Some Observations Regarding Environmental Covenants and Conditionalities in World Bank Lending Activities*. Max Planck UNYB, 3, 1999. (www.mpil.de/shared/data/pdf/pdfmpunyb/bekhechi_3.pdf).

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World Bank Safeguard Policies.

www-wds.worldbank.org/projects/

4. Burnett River Dam

Burnett River, Queensland, Australia (Figure 4).

4.1 Aspects of Social Impact Assessment Addressed

- Public Involvement.
  - Develop and implement an effective public involvement plan.
- Alternatives.
  - Consideration of the no action alternative.
- Profile of Baseline Conditions.
  - Document the relevant human environment, and existing social conditions and trends.
- Scoping and Projection of Estimated Effects.
  - Identification and prioritisation of social impacts.
  - Amenity/quality of life.
- Estimate of Indirect and Cumulative Impacts.
  - Flow on effects of the proposal.

4.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects form part of normative frameworks covering Environmental Assessment:

- Commonwealth/Federal Government Legislation.
  - Environment Protection and Biodiversity Conservation Act, 1999.
  - Environmental Protection Act, 1994.
- Queensland State Legislation.
  - State Development and Public Works Organisation Act, 1971.
  - Water Infrastructure Development (Burnett Basin) Act, 2001.

4.3 Project Identification

- Name Burnett River Dam[20].
- Country Australia.
- Dates Social and Economic Information for Draft Water Allocation Scenarios (2000), Burnett Basin Water Allocation Management Plan Social Assessment Report (2000), Public Participation (August 2001), Environmental Impact Statement (2001), Environmental Impact Statement Evaluation and Approval (January 2002) and Practical Completion (November 2005).
- Developer Burnett Water (Pty) Ltd[21].

[20] Subsequently renamed Paradise Dam in 2005.

[21] Burnett Water (Pty) Ltd became a subsidiary of SunWater in 2005 when SunWater purchased the shares of the Queensland State Government. All Burnett River Dam operations were taken over by SunWater.

Figure 4 Indicative location of the Burnett River Dam in Australia

www.geography.about.com/library/maps

Table 9 Selected technical details of the Burnett River Dam in Australia

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Burnett	Australia	30 601 km²	Burnett	Capacity 300,000 million litres	Irrigation	Burnett Water (Pty) Ltd

4.4 Stage in the Project Lifecycle

Construction.

4.5 General Description of the Country Institutional Set-up

The institutional set up, according to the report by Burnett Water (Pty) Ltd (2001), is described below. Within Queensland, Australia, the Department of State and Development manages and coordinates inputs from local and state government agencies for developments such as dams. This Department is also responsible for ensuring project compliance with the environmental laws of Queensland State and those of the Commonwealth/Federal Government.

Proposals for water infrastructure development within Queensland are referred to the Co-ordinator General at the Department of State and Development. The Coordinator-General will, following consideration of the Environmental Impact Statement, grant the requisite approvals and licences prior to the commencement of a project.

In 2000, Bundaberg Project 2000 Pty Ltd, a wholly owned subsidiary of Multiplex Constructions Pty Ltd, proposed an industrial development in the Bundaberg Region, known as the Bundaberg 2000+ Industrial Development Project. In January 2001, the Queensland Government announced the proposed development of various water resource infrastructure, including the Burnett River Dam. The Government reached an agreement with the Bundaberg Project 2000 Pty Ltd for the Government to assume control of the development of the dam and weirs and the *Water Infrastructure Development (Burnett Basin) Act 2001* was promulgated to allow rapid further assessment of the feasibility of water infrastructure in the Burnett Basin. This Act put in place measures to facilitate the creation of a company to progress the development of major water storage infrastructure in the Burnett River Catchment. Burnett Water (Pty) Ltd was, thus, established as a wholly state owned company to investigate the feasibility of the development of the water infrastructure projects and to apply for approvals for those developments.

Burnett Water (Pty) Ltd was, therefore, the proponent and responsible for appointing the various environmental and social teams tasked with investigating and assessing potential impacts.

4.6 Detailed Description of the Specific Policy/Normative Framework

According to the report by Burnett Water (Pty) Ltd (2001), the policy/normative framework for the Burnett River Dam project comprised both State (Queensland) and Commonwealth (Australian) laws. At the State sphere, the Environmental Impact Statement for this project was governed by the Water Infrastructure (Burnett Basin) Act 2001. Section 6 of this Act classifies the Burnett River Dam as a significant project under section 29B of the State Development and Public Works Organisational Act, 1971, which requires that a full Environmental Impact Statement be undertaken.

Under the Commonwealth Environment Protection and Biodiversity Conservation Act, 1999, actions that have, or are likely to have, significant impacts on a matter of national environmental significance (viz. those that are deemed to be “controlled actions”), require approval from the Commonwealth Environment Minister.

The construction of the Burnett River Dam and the associated water abstraction was declared a controlled action under Section 75 of the Commonwealth Environment Protection and Biodiversity Conservation Act, 1999, originally on 2 April 2001 and by a revised referral on 31 August 2001. The controlling provisions of the Act were as follows:

- Sections 18 and 18A (listed threatened species and communities).
- Sections 20 and 20A (listed migratory species).

Another part of the policy framework within which the Burnett River Dam Environmental Impact Statement was undertaken was the Queensland Environmental Protection Act, 1994. This Act requires all Environmentally Relevant Activities to be authorised by an Administering Authority. Schedule 1 of the Environmental Protection (Interim) Regulation 1998 lists all Environmentally Relevant Activities.

When deciding whether to grant or refuse an application in terms of the Queensland Environmental Protection Act, 1994, the Administering Authority must consider the report against the Standard Criteria as set out in the Act. The Standard Criteria that relate to the Social Impact Assessment are as follows:

- Any applicable Commonwealth, State or Local Government plans, standards or requirements.
- The character, resilience and values of the receiving environment.
- All submissions made by the applicant and interested parties.
- The financial implications of the requirements of the authority, programme, order or permit, as they would relate to the relevant type of activity or industry.
- The public interest.

The manner in which the report addressed each of these standard criteria was illustrated in an Appendix.

For the Burnett River Dam Project to proceed, a range of approvals and licences were required following consideration of the Environmental Impact Statement by the Co-ordinator General. Major State legislative instruments under which approvals were required were the following:

- Water Act, 2000.
- Integrated Planning Act, 1997.
- Environmental Protection Act, 1994.
- Nature Conservation Act, 1992.
- Fisheries Act, 1994.
- Queensland Heritage Act, 1992.
- Forestry Act, 1959.
- Vegetation Management Act, 2000.

These permits were integrated into a single Integrated Development Assessment System as established by the Integrated Planning Act, 1997. The Burnett River Dam Environmental Impact Statement was reviewed by a group of Referral Agencies consisting of Local, State and Commonwealth Government representatives before being approved by the Commonwealth Government in January 2002 under the provisions of the Commonwealth Environment Protection and Biodiversity Conservation Act, 1999.

4.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

Burnett Water (Pty) Ltd was the proponent of the project.

The Department of State and Development was responsible for coordinating input from local and state government agencies. The Queensland Coordinator-General was responsible for considering and reviewing the Environmental Impact Statement Report (Burnett Water (Pty) Ltd., 2001).

The Coordinator-General stipulated various conditions of approval. One of these was that, prior to commencement, the proponent had to establish a Technical Advisory Group to provide advice and protocols for updating, monitoring and reviewing the activities required by the Environmental Management Plan. This Technical Advisory Group needed to include representatives from the Environmental Protection Agency, the Department of Primary Industries and the Department of Natural Resources and Mines (Queensland Department of State and Development, 2001).

The Commonwealth Environmental Minister was responsible for providing input and approving actions that may have a significant impact on elements of the natural environment that are of national significance.

4.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

Environmental Impact Statements have been undertaken previously under both the Commonwealth/Federal Government Legislation and the Queensland State Legislation. Particularly relevant experience would have been gained from other water infrastructure projects being constructed or proposed within the Burnett River Catchment in parallel to this project.

Importantly, it is the understanding of the Consultant that the roles and coordination between the various government departments responsible for providing input into the Environment Impact Statement Report appeared well defined and developed through these previous processes.

4.9 Project Description

This project is one of five water infrastructure projects in the Burnett River Catchment under construction or being proposed. The other four components were considerably smaller new weirs or upgrades of existing weirs (Burnett Water (Pty) Ltd., 2001).

The objective of this water resource development was to provide a reliable source of water for agricultural, industrial and urban use in the Lower Burnett Area and to supplement existing supplies. A key motivation behind the project was also to support and stimulate local industrial growth and to provide economic stability to a region where the economy was stagnating (Burnett Water (Pty) Ltd., 2001).

The Burnett River Dam, approximately 131.2 km upstream from the mouth of the Burnett River, affected predominately grazing land and limited orchards. The dam would inundate a total area of 2,253 ha at Full Supply Level and have a wall height of 37 m. There were also a number of residences on rural holdings, as well as other farm infrastructure, which would be inundated.

Construction of the dam was estimated to extend over 30 months.

4.10 Implementation of Key Issues

4.10.1 Public Involvement

During the impact assessment, the following activities were undertaken as part of the public involvement process:

- Letters were sent to individuals potentially directly affected by the project, including residents whose properties would be partially or wholly inundated.
- Letters were sent to key stakeholders with an interest in the project.
- Advertisements were placed in local papers.
- Media releases were placed.
- Establishment of a communication management system (database) to log all correspondence with stakeholders during the Environmental Assessment process.
- Establishment of a "free call" project information line.
- Telephone calls to individuals potentially directly affected by the project.
- Meetings with property owners potentially directly affected by the project and key stakeholders on request (Burnett Water (Pty) Ltd., 2001).

Stakeholder groups that were identified consisted of those directly affected by the development, including residents whose property would be partially or wholly inundated. Local councillors and mayors as well as members of state and federal agencies were also identified as stakeholders.

As the improved water infrastructure for the Burnett region was not new to the local community, and there had been a long history of community input (including extensive consultation during the Water Allocation Management Plan[22] process) the Stakeholder Consultation Plan was designed to penetrate the local community quickly and informatively, without causing "consultation fatigue" (Burnett Water (Pty) Ltd., 2001).

To put the level of social impacts into perspective, one house and one orchard were to be inundated at full supply level. The 1:100 flood level would inundate another seven houses and two orchards.

In the Consultant's opinion, the Social Assessment Report (Preliminary Draft) (2000) for the Burnett Water Allocation Management Plan highlighted the importance of including indigenous people in the water allocation and monitoring process. Indigenous people and their values were included in consultations regarding the development of the Draft Water Allocation and Management Plan. These consultations, in turn, influenced the Water Resource Plan process, which governed the allocation process for additional water as a result of Burnett River Dam.

A total of 145 submissions were received from private individuals, 72 from other stakeholders (including private companies) and 16 from State and Federal Government agencies in response to the Draft Environmental Impact Statement. The significant majority of the

[22] A Water Allocation Management Plan is not a requirement of an Environmental Impact Statement. Rather, a Water Allocation Management Plan is part of on-going strategic planning by Government to balance availability and demand.

submissions received were strongly supportive of the project. These submissions largely came from existing irrigators, agricultural organisations and local government bodies (Burnett Water (Pty) Ltd., 2001). The inclusion of these submissions met the Standard Criteria, as set out in the Environmental Protection Act, 1994, for the inclusion of all submissions made by the applicant and interested parties.

The main concerns of property owners potentially directly affected by the project were threat to the viability of their businesses, property severance, access and the long delay in decision-making, and, thus, uncertainty with regard to the project.

4.10.2 Alternatives

Five possible dam sites were identified, including the "No Project" alternative, for which social aspects were considered. The "No Project" alternative was considered unacceptable for a community that is greatly dependent on agriculture for its continued survival and prosperity. Agriculture is, in turn, reliant on the secure supply of adequate volumes of water for irrigation and industrial use to remain a viable industry. Thus, the proposed dam would be a major source of reliable water and an important foundation for the future prosperity of the region.

4.10.3 Profile of Baseline Conditions

In response to community demands for additional water in the Burnett Basin, the Queensland State Government had commissioned several studies previously to investigate further water storage sites (Burnett Water (Pty) Ltd., 2001). In addition, socio-economic impacts had been investigated during the preparation of the Burnett Water Allocation Management Plan.

Thus, the baseline data of the area was collated relying heavily on data from recent studies (Burnett Water (Pty) Ltd., 2001), which included the following:

- Social and Economic Information for Draft Water Allocation Scenarios.
- Wide Bay Summit Conference Report.
- Burnett Basin Water Allocation Management Plan Social Assessment Report.
- Environmental Impact Statement report compiled for the Bundaberg Industrial Development.
- Catchment Strategy for the Burnett and Associated River Systems Report.
- Initial Environmental Evaluation Report, Lower Burnett River Dam Site.

These data were supported with existing census data and by interviews with directly affected stakeholders and meetings with other interested and affected stakeholders (Burnett Water (Pty) Ltd., 2001).

The baseline data was presented in written and tabular form in the report. The profile of baseline conditions detailed in the report dealt with the following items:

- Local government areas.
- Historical context.
- Settlement and economic profile.

- Demography.
  - Population.
  - Age and gender structure.
  - Ethnic origin.
  - Household structure.
  - Education levels.
- Labour force.
- Industry structure in the region.
- Regional social and economic values.
- Local economic activities, including land uses.
- Community services and infrastructure.
  - Accommodation and housing.
  - Accommodation type.
  - Education and child care facilities.
  - Health and social services.
- Leisure and recreation.
- Inundation area culture, traditions, values and lifestyle (including land uses).

These baseline data were established in accordance with the Standard Criteria, as set out in the Environmental Protection Act, 1994, the existing and applicable Commonwealth, State or Local Government plans and development requirements and the character, resilience and values of the receiving environment.

In terms of relevant Social Impact Assessment, it is the Consultant's opinion that this profile of the baseline conditions enabled the scoping stage to adequately identify issues with regard to cultural customs and values, community services and networks and the quality of life and sense of security held by the people of the region.

4.10.4 Scoping and Projection of Estimated Effects

It is the understanding of the Consultant that one of the key strengths of this assessment was that the estimated regional social and economic benefits of the project were considered in depth.

Residents within the inundation area had been aware of the proposal to build a possible dam (under a number of names) for over 20 years. Some of the key aspects considered and calculated were the possible cumulative economic impacts in terms of all the development proposals and, in particular, the substantial and enduring benefits that would arise from the project from increased agricultural production.

The investigations predicted that the agricultural production enabled by the construction of the water storage infrastructure would support the creation of an estimated 7,500 jobs, three quarters of which could be expected to be created in the Wide Bay-Burnett region. In addition, the operation of a proposed pulp mill plant could be expected to generate an additional 1,000 jobs, nearly half of which could be expected to be created in the Wide Bay-Burnett region. It is possible that a further 200 direct jobs and 300-600 indirect jobs could be provided if plans for a chicory plant proceeded.

The additional water in the area, and the increased development potential, were predicted to include increased community confidence and also to provide impetus for filling service gaps, as professionals and businesses decided to remain in or relocate to the area. Increased water for irrigation was expected to provide opportunities for the development of support and processing industries (with additional employment opportunities).

It is the understanding of the Consultant that increasing the development potential and confidence in the area was a key socio-economic consideration and illustrates the practice of assessing the quality of life and sense of security as key social issues.

It is the understanding of the Consultant that the provision of additional water resources was anticipated to help underwrite the continued development of the region and lead to sustainable economic development over the long-term. This projection of estimated effects met the Standard Criteria, as set out in the Environmental Protection Act, 1994, for the consideration of the financial implications of the proposed project as it related to the relevant type of activity or industry and for the consideration of public interest.

These latter predicted effects were amongst the primary driving motivations for the construction of the dam.

The primary negative social impacts identified related predominately to standard construction impacts and the compensation of directly affected landowners and their uncertainty with regard to the future.

Construction related issues were increased pressure on social services and infrastructure by the incoming workforce and noise impacts arising from traffic flow along the access and haul roads (Burnett Water (Pty) Ltd., 2001).

The analysis of the hazards indicated that the major hazards associated with the dam related to dam failure and river quality. These risks to the public and to the environment were considered moderate, with some risk levels being at the top end of the moderate range. In terms of this preliminary risk assessment, it was determined that the risk levels were tolerable and could be managed through technical design.

No sites of cultural importance, which would be impacted by the proposed construction of the Burnett River Dam were identified on the Register of the National Estate, the Queensland Heritage Register and local Government Registers (Burnett Water (Pty) Ltd., 2001). However, there were significant indigenous and non-indigenous heritage issues identified with regard to the proposed dam. A Cultural Heritage Management Plan was prepared for the project and was widely circulated as part of an extensive consultation process. The Cultural Heritage Management Plan sets out procedures for mitigating any negative impact from the construction of the dam and associated activities on areas of cultural significance to traditional owners.

In the opinion of the Consultant, this illustrates relevant practise both in terms of identifying cultural issues but also in terms of ensuring that all interested and affected stakeholders, and their issues, were included in the process.

4.10.5 Estimate of Indirect and Cumulative Impacts

Residents of the inundation area had been aware of the proposed dam for over 20 years. This had become a source of concern, conflict and confusion for landowners and the local community. This was identified as an indirect effect of the proposed project and provided added motivation for a rapid decision.

As mentioned previously, a key element considered in detail was the possible cumulative economic impacts in terms of all the development proposals and, in particular, the substantial and enduring benefits that would arise from the project from increased agricultural production.

The flow-on effects in terms of economic stability and increased confidence in the area as well as the accompanying social and socio-economic benefits were calculated, analysed and assessed.

The exacerbation of current population changes in the study area was identified as a cumulative impact. This had some positive but also negative impacts. An example of a negative impact predicted was the increased pressure on social infrastructure and the availability of accommodation, particularly during times such as fruit picking. The mitigation measure proposed was that the proponent would provide additional site vans at a local caravan park, if competition for accommodation was identified (Burnett Water (Pty) Ltd., 2001).

4.11 Outcomes and Results

The Environmental Impact Statement for this project was approved and construction was authorised (Queensland Department of State and Development, 2001). Thus, the expected outcomes were achieved as well as those required by the regulations.

The expected outcomes in terms of profiling the baseline conditions and meeting the legislative requirement to consider the character and values of the environment were achieved.

The outcomes in terms of economic predictions and flow-on economic stimulation could not be ascertained at this point but can be expected to accrue over time.

4.12 Assessment of Outcomes/Results by Involved Stakeholders

The Coordinator-General reviewed the public involvement process and the comments received, both prior to and after the submission of the Environmental Impact Statement Report, and concluded that all consultation matters associated with the proposed dam had been adequately addressed in terms of the legislative requirements (Queensland Department of State and Development, 2001).

It is the understanding of the Consultant that affected stakeholders, from landowners to representatives from local industries and the agricultural sector, appear to have achieved the results they requested, which were predominantly to have a decision made with regard to the dam and to create further economic stimuli in an area that was stagnating economically.

The outcomes of land acquisition and associated compensation matters could not be ascertained.

The Coordinator-General had received a number of submissions questioning the results of the economic analysis and predictions on which many of the socio-economic benefits were based. However, the Coordinator-General did not uphold these submissions as the principles of the utilised methodology were similar to those used for other recent (at the time) economic impact assessments (Queensland Department of State and Development, 2001).

4.13 Consultant's Conclusions

The Burnett River Dam Project Environmental Impact Statement met legislative requirements and was authorized for implementation. Overall, it is the opinion of the Consultant that the negative social issues were relatively minor and addressing them involved standard construction procedures to minimize impacts and compensating landowners according to recognized procedures.

The detailed review of the baseline data, collated from various other projects and initiatives in the area enabled the correct identification and motivation of the predicted social benefits of the project.

The social impact scoping process considered in some detail the regional social benefits during construction and the socio-economic benefits once additional water resources were made available. This comprehensive projection of estimates provided a suitable baseline from which to actually monitor the true economic and social benefits realized from an individual project and in terms of the flow-on effects of the proposal. In the opinion of the Consultant, over time, this form of monitoring will strengthen the quality of Social Impact Assessment and prediction.

It could not be ascertained whether the Technical Advisory Group, which included representatives from the Environmental Protection Agency, the Department of Primary Industries and the Department of Natural Resources and Mines, would monitor the wider economic effects against the predicted effects. If in the affirmative, this will further strengthen the quality of Social Impact Assessment and prediction. In this regard, in the Consultant's opinion, a key aspect that could have followed from the Burnett Environmental Impact Statement work was the preparation of a detailed monitoring programme including timeframes and indicators to identify deviations from the predicted social and economic benefits.

4.14 Source Material

Burnett Water (Pty) Ltd. (2001). *Burnett River Dam Appendix C Standard Criteria.*

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Queensland State Legislation.

Water Infrastructure Development (Burnett Basin) Act (2001).

http://www.sunwater.com.au/burnettwater_docs.htm

5. Campos Novos Hydroelectric Power Project

Canoas River, Southern Brazil (Figure 5).

5.1 Aspects of Social Impact Assessment Addressed

- Mitigation.
  - Avoidance/minimisation of negative impacts.
  - Optimisation of benefits.
- Monitoring.
  - Programme and independent social monitor.

5.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects form part of normative frameworks covering Environmental Assessment:

- Brazilian National Environment Policy Act (Law 6938/81).
- Inter-American Development Bank Environmental Policy: Operational Policy – 703.
- Inter-American Development Bank Involuntary Resettlement: Operational Policy 7-10.
- Inter-American Development Bank Environment and Safeguards Compliance Policy.

5.3 Project Description

- Name — Campos Novos Hydroelectric Power Project.
- Country — Brazil.
- Dates — Environmental Impact Assessment and Environmental Impact Statement completed in 1990. Construction commenced in 2002 with completion scheduled for 2006.
- Developer — Electrosul and Enercan.

5.4 Stage in the Project Lifecycle

Construction.

5.5 General Description of the Country Institutional Set-up

Given the size of Brazil and particular regional or local features, the Brazilian National Environmental Policy (Section 7.1.1) is executed at three different spheres of public administration - federal, state and municipal. Coordinating and formulating environmental policy is the responsibility of the Ministry for the Environment. Linked to it is the Conselho Nacional do Meio Ambiente (CONAMA) (National Environmental Council), the deliberative and consultant board for environmental policy.

Figure 5 Indicative location of the Campos Novos Hydroelectric Power Project in Brazil

www.geography.about.com/library/maps

Table 10 Selected technical details of the Campos Novos Hydroelectric Power Project in Brazil

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Campos Novos	Brazil	Unknown	Canoas	Inundation surface area of 35 km²	Hydropower	Electrosul and Enercan

The National Environmental Council is responsible for the establishment of rules, standards, and criteria guidelines so that environmental licensing can be granted and controlled by the state and local municipal environmental agencies. These are part of the Sistema Nacional do Meio Ambiente (National Environmental System) and the Instituto Brasileiro de Meio Ambiente e dos Recursos Naturais Renovaveis (Brazilian Institute for the Environment and Renewable Resources) as its substitute. The Brazilian Institute for the Environment and Renewable Resources, under the jurisdiction of the Ministry for the Environment, is the agency responsible for executing the Brazilian Environmental Policy at federal level as well as for issuing environmental permits where defined by law (Inter-American Development Bank, 2004).

5.6 Detailed Description of the Specific Policy/Normative Framework

The Campos Novos Hydroelectric Power Project is in the State of Santa Catarina in Southern Brazil, and partly funded by the Inter-American Development Bank. Therefore, both the Brazilian and Inter-American Development Bank normative frameworks are applicable to the project.

5.6.1 Brazil Environmental Legislation

5.6.1.1 NATIONAL ENVIRONMENT POLICY ACT (LAW 6938/81)

The most relevant Brazilian environmental legislation is the National Environmental Policy Act (Federal Law 6938 of August 1981), which established the National Environmental Policy. The National Environmental Policy Act establishes the objectives of Brazil's environmental policy, viz. the preservation, improvement, and recuperation of the environmental quality, adequate for life, assuring the country of conditions for socio-economic development, for the interests of national security, and for the protection of the dignity of human life.

A number of CONAMA resolutions are of relevance to the project:

- CONAMA Resolution No. 1 (January 1986), which outlines basic criteria and general guidelines for the compilation of a Relatório de Impacto Ambiental (RIMA) (Environmental Impact Statement).
- CONAMA Resolution No. 2 (April 1996), which provides for compensation for environmental damages caused by projects of relevant environmental impact.
- CONAMA Resolution No. 237 (December 1997), which provides for the procedures and guidelines used in environmental licensing.

The National Environmental Policy created an environmental permitting system, which requires that three permits or licenses be obtained for all proposed projects that have potential environmental effects, i.e. *Licença Prévia* (Preliminary License), *Licença de Instalação* (Installation License), and *Licença de Operação* (Operating License). This process applies to projects listed in CONAMA 001/1986:

- The environmental permitting process begins with the compilation and submission of an Environmental Impact Assessment and review by the authorities. Upon review and approval of the Environmental Impact Assessment and Environmental Impact Statement, the Preliminary License is issued. A public hearing may be required prior to the issuance of the Preliminary License. Importantly, as part of the permitting process, CONAMA Resolution No. 001/1986 establishes that a study must be conducted in an area to be impacted by a project to assess the presence of archaeological, historical, and cultural sites as well natural places of unique beauty.

- The Installation License is granted based upon agency review and approval of the project-specific *Projeto Básico Ambiental* (Environmental Management Plan) and provides the legal authorization for the developer to start construction of the proposed project. The Installation License also establishes specific requirements regarding the mitigation and monitoring of environmental and social impacts.

- An Operating License must be obtained prior to beginning project operation. The Operating License is granted only after all the plans and programmes defined in the Environmental Management Plan are implemented. Once issued, the Operating License is valid between four and 10 years as outlined in CONAMA Resolution 237/1997. The operating permit is issued for the entire facility. If expansions, changes in major equipment, or changes in process are planned for the facility, then new applications for Installation and Operating Licenses are required by law.

5.6.2 Relevant Inter-America Development Bank Guidelines and Policies

5.6.2.1 ENVIRONMENTAL POLICY: OPERATIONAL POLICY - 703

The Inter-American Development Bank was the first Multilateral Development Bank to adopt an Environment Policy in 1979 (OP-703), broadly mandating the institution to ensure the environmental quality of its operations, and support environmental projects in the region. In 2003, a decision was taken to prepare a new Environment Policy to replace the by then outdated OP-703.

In March 2004, the Inter-American Development Bank Executive Directors approved and disclosed an advanced profile of the Environment and Safeguards Compliance Policy for comment. After a number of rounds of comment, the Bank's Board of Directors approved the final document in March 2005.

At the time of its implementation, the Campos Novos Dam project fell within the framework of OP-703. However, as this has since been replaced by the Environment and Safeguards Compliance Policy, the policy is no longer available in the public domain and could not be sourced as part of this case study.

The goal of the Environment and Safeguards Compliance Policy is to contribute to advancing the Bank's mission for promoting sustainable development and reducing poverty across the Latin American and Caribbean region. The specific objectives of the Environment and Safeguards Compliance Policy are:

- To maximize development benefits and environmental sustainability outcomes in Bank operations and activities.
- To manage risks to ensure that all Bank operations and activities are environmentally viable.
- To improve and promote corporate environmental responsibility within the Bank.

These specific objectives are to be achieved through Bank measures to mainstream the environment into overall economic and social development, and to safeguard the environment in all Bank activities.

5.6.2.2 INVOLUNTARY RESETTLEMENT: OPERATIONAL POLICY 7-10

OBJECTIVES AND PRINCIPLES

The objectives of Operational Policy 7-10, together with the Inter-American Development Bank Involuntary Resettlement Principles and Guidelines, are to minimize the disruption of the livelihoods of people living in the area of influence of a project, by avoiding or minimizing the need for physical displacement, ensuring that when people must be displaced they are treated equitably and, where feasible, can share in the benefits of the project that requires their resettlement.

In order to reach these objectives, the following policy considerations need to be taken into account:

- Resettlement should be avoided wherever possible. Other options should be examined before key decisions are taken.
- Community participation is essential for successful resettlement.
- As a minimum, resettlement should provide full compensation for the loss of assets and income. In order to achieve sustainable development, resettlement measures should include economic development, infrastructure, and services, and should not be simply limited to mitigatory measures.
- Legal definitions are needed to determine rights to replacement land, housing, cash compensation, economic rehabilitation and other benefits.
- Displaced people must not be made to subsidize the main project through unfair compensation, and should receive full replacement value for their assets.
- The absence of legal titles to land and other resources should not be a bar to compensation, even though in many countries the existing legal provisions for expropriation and indemnification only apply to those people who have full property rights to land and housing.
- The main cause of hardship, even in urban resettlement, is loss of economic opportunities. Sustainable economic development programmes should be appropriate for the different groups and communities that are affected, reflecting their skills, aspirations, and the availability of labour.
- The resettlement plan should provide an opportunity to improve the quality of housing and service provision.
- It is essential to have accurate information on the standards of hygiene, insulation, drainage, and vector control.
- Security issues should be addressed, since badly planned resettlement leads to poverty and insecurity, and can provide a breeding ground for organized crime, drug trafficking, and terrorism.
- The host communities that receive displaced people should also be involved in the planning and execution of resettlement, and should be offered assistance to overcome any adverse consequences that may be expected or realised.
- The planning and execution of resettlement is an integral part of the project that causes the resettlement.
- The choice of an institutional framework should be considered early in the project lifecycle.
- Compensation procedures should be independently monitored so that compensation is paid to those, and only those, whose property is affected.

The Inter-American Development Bank resettlement policy and guidelines deal with Environmental Impact Assessment and Social Impact Assessment as part of the project lifecycle. It states that all impacts that may have a significant negative affect on human population should be considered in an Environmental Impact Assessment. Resettlement studies can be carried out as part of, or parallel to, the environmental impact studies, but the findings have to be included in an Environmental and Social Impact Report that will be presented to the Committee for Environmental and Social Impacts for consideration. The preparation of the Environmental and Social Impact Report requires expertise in the social sciences, and the specialists should be given sufficient time and finance to enable them to consider the potential social impacts in detail. Preparation of an Environmental and Social Impact Report normally entails working meetings with the borrowing agency, the anticipated executing agency, and the environmental institutions that oversee Environmental Impact Assessments. The agency with primary responsibility for resettlement should be included in the inter-institutional working meetings. The purpose of these meetings is to exchange points of view, share information, and, if necessary, to establish a working group to coordinate the preparation of terms of reference for the studies, and the subsequent review and follow up of the recommendations of the Environmental and Social Impact Report. The affected groups should be consulted to ensure the adequacy of the impact assessment, as the project may affect their health, safety, and well-being, or generate major changes in their employment and livelihoods. The procedures and timing of the community consultations should be agreed with the appropriate agencies, and should be based on a realistic assessment of the opportunities and risks involved. Active participation should be facilitated, but should avoid generating unrealistic expectations or stimulating speculation. The Inter-American Development Bank procedures require that the direct beneficiaries and the general public must participate in a formal and verifiable way in the preparation of the terms of reference for the Environmental Impact Assessment.

5.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

Electrosul and Enercan are responsible for implementing the Campos Novos Hydroelectric Power Project.

As indicated in Section 7.1.1, the Brazilian Institute for the Environment and Renewable Resources, under the jurisdiction of the Ministry for the Environment, is the agency responsible for executing the Brazilian Environmental Policy at federal level as well as for the issuing of environmental permits.

Environmental authorisation is granted in terms of the National Environment Policy Act (Law 6938/81) as well as a number of CONAMA Resolutions, particularly Resolutions 1, 2 and 237.

5.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

As indicated in Section 7.2.2.1, the Inter-American Development Bank was the first Multilateral Development Bank to adopt an Environment Policy in 1979. OP-703 was applied and enforced throughout the 1980s and 1990s. Since the 1990s, the Bank has been in a process of revising its environmental policies into a set of safeguard policies, which culminated in the Environment and Safeguards Compliance Policy, which was finally approved and accepted in January 2006.

5.9 Project Description

The Campos Novos Hydroelectric Power Project entails the construction and operation of an 880 megawatt hydroelectric power plant and an 11 km, 230 kV transmission line. The project is situated on the Canoas River, in the State of Santa Catarina one of the most economically developed States in Southern Brazil.

Four municipalities are affected by the project, i.e. Campos Novos, Abdon Batista, Celso Ramos and Anita Garibaldi. The Municipality of Campos Novos is the oldest, largest and most developed of the four affected municipalities. The 2000 census indicated population figures of 28,707 in Campos Novos, 10,232 in Anita Garibaldi, 2,843 in Celso Ramos and 2,776 in Abdon Batista. Over half the population of the area live in the town of Campos Novos, with the remainder in small towns and many in rural areas. Agricultural activities (crops and livestock) are the primary economic drivers in the region. Farmers range from small property owners who live on the land, to a few large landowners (with properties in extent of 100 ha) who practise more modern farming methods than the smaller landowners.

The first hydrological studies for the Campos Novos Hydroelectric Power Project were conducted by Electrosul, the federal state-owned energy company, during the 1970s and 1980s. More than 20 alternatives were analysed, which varied in scope, the site axis location, height of the dam, the total area to be inundated and the total nominal capacity. A total of 12 different locations were studied along five kilometres of the Canoas River. Of these, three locations were selected for more detailed analysis. This analysis resulted in the identification of the two best location alternatives, from which the current layout and design were selected. The selection was based on several factors including energy efficiency, technology, and environmental and social impacts, and economic benefits.

The Environmental Impact Assessment and Environmental Impact Statement were completed in 1990, but were not submitted to the authorities until 1995, as Electrosul had other priority projects at the time. In December 1995, Electrosul organised a public hearing in the town of Campos Novos. This was the first of a number of public hearings and meetings between 1995 and 2001, which were attended by representatives from the various spheres of government, local communities, and affected parties.

The project is currently being developed by Enercan, a special-purpose company that has been granted a 35-year concession[23] to develop the Campos Novos Hydroelectric Power Project, and to produce and sell up to 3,310,404 MWh of energy per year. Construction of the project started in August 2001, and filling of the reservoir planned to start during September 2005. When filled, the reservoir will cover an area of 35 km² and will inundate areas in four municipalities.

In October 2001, a meeting was held at which community representatives of each affected municipality and Enercan were present. During this meeting, community representatives were chosen directly by the affected people in each municipality, and constituted a Negotiating Council. The Negotiating Council comprises six members and six alternative members from each of the four Municipal Commissions of affected people. The Municipal Commissions were elected by the directly affected population in each municipality, and are mainly composed of landowners, with the only non-landowners being the sons of landowners.

[23] The concession was assigned by the National Electrical Energy Agency to Enercan on September 30, 1999.

The Municipal Commissions were responsible for reviewing the case studies carried out and to determine whether individuals have a right to resettlement benefits. The Negotiating Council has taken an active role in the surveys of land prices in the project area. The Council is independent of the municipal administrations and represents a range of political positions. It is representative of 95% of the affected families, as members were directly elected by these families.

The total project cost is an estimated US$ 523.9 million. The two largest institutions involved in financing the project are Banco Nacional de Desenvolvimento Economico e Social (National Bank for Economic and Social Development) and the Inter-American Development Bank (Inter-American Development Bank, 2004).

5.10 Implementation of Key Issues

5.10.1 Mitigation

5.10.1.1 RESETTLEMENT ACTION PLAN

The Final Resettlement Action Plan was formally agreed with the Negotiating Council in January 2002. It includes the principal measures and details associated with the mitigation of the impacts on the population directly affected by the Campos Novos Hydroelectric Project, as follows:

- Eligibility criteria for compensation and resettlement.
- Cut-off dates and a methodology to determine the eligibility of people missed by the earlier baseline census.
- An estimate of the numbers of people and properties affected by the project.
- A description of compensation and resettlement options.
- Financial figures for resettlement and infrastructure budgets.
- Legal and institutional aspects (Inter-American Development Bank, 2004).

The resettlement programme comprises three options:

- A letter of credit, valued at R$ 87,800 (approximately US $ 29,260 dollars at April 2004 prices) for a family of up to three adults.
- Collective resettlement.
- Resettlement in remaining areas (Inter-American Development Bank, 2004).

It also contemplates modified options for independent unmarried children over 18, and for people classified as “special cases”, viz. vulnerable groups such as the elderly, handicapped, chronically ill, or widows with young children (Inter-American Development Bank, 2004).

Compensation, resettlement and social infrastructure programmes were implemented by an external agency under Enercan’s management. The contract covered:

- Negotiations with the affected population.
- The study of land values used to determine the reference price for land.
- The surveying, valuation, and negotiation of the affected properties.
- Provision of advice to owners and non-owners in regard to resettlement options.
- Implementation of the resettlement programme (Inter-American Development Bank, 2004).

COMPENSATION FOR LANDOWNERS AND POSSEIROS

Compensation for landowners, including posseiros (people with occupancy rights, but who lack full legal title) was based on a detailed assessment of the value of their affected property and assets. The assessment was undertaken according to a standard valuation methodology consistent with accepted Brazilian national standards. The Negotiating Council agreed to, and accepted the methodology, but was of the opinion that the reference prices for land were undervalued, as prices had increased dramatically in the affected municipalities due to demand generated by the Campos Novos Hydroelectric Project and the Barra Grande Project. Enercan reviewed land prices on four occasions (March 2002, October 2002, May 2003 and November 2003) and declared the last study to be final and that no further increases would be contemplated (Inter-American Development Bank, 2004).

For all owners and posseiros, Enercan was willing to acquire the whole of partially affected properties that no longer remained economically viable, per specific guidelines, provided the owner did not have other, viable holdings outside the area. Owners had the option of receiving the amount of compensation assessed for their property, or benefit from the resettlement programme, but only if their plot was smaller than 40 ha and the property was no longer economically viable (Inter-American Development Bank, 2004).

COMPENSATION FOR SMALL LANDOWNERS AND NON-OWNERS

The following people were entitled to benefits provided in the Resettlement Action Plan:

- Landowners identified with less than 40 ha of land whose properties were no longer viable.
- Non-owners, such as tenants, sharecroppers, farm hands, and other people who were living and working on an affected property.
- Married children of landowners who were living and working on an affected property.
- Economically independent unmarried children of landowners over 18 years of age and children of landowners who were temporarily absent (Inter-American Development Bank, 2004).

TECHNICAL ASSISTANCE

Families of smallholders and non-owners were the least able to cope with resettlement and required consistent social and technical assistance. These people were classified as “special cases” and were provided social and technical assistance directly by Enercan. For all other affected families, Enercan requested assistance from local public agencies (Inter-American Development Bank, 2004).

INFRASTRUCTURE

Nine specific programmes were established to mitigate and compensate impacts due to the loss or deterioration of infrastructure. The infrastructure programme involved the reconstruction of 33 km of access roads, the construction of a new bridge over the Canoas River, the replacement of electricity supply lines, phone lines, and water pipes, and negotiating the relocation or rebuilding of community infrastructure for settlements that no longer remained viable (Inter-American Development Bank, 2004).

INFLUX OF NON-LOCAL WORKERS

In October 2001, Enercan established a reception centre for migrants (*Centro de Atendimento ao Migrante*) that arrived in Campos Novos in search of work. The programme was financed by Enercan, and was carried out in collaboration with the Municipality of Campos Novos, and a local parish priest. It was intended to reduce the influx of unemployed migrants and avert the growth of squatter settlements on the outskirts of the town. The programme had an office at the Campos Novos bus station, which provided new arrivals with information on where they should apply for work and, which could direct them to a dormitory managed by the parish priest. If they failed to find work, the centre provided them with bus fare to return to their place of origin (Inter-American Development Bank, 2004).

SUPPORT TO HEALTH, EDUCATION AND RECREATIONAL PROGRAMMES

In August 2002, Enercan signed a formal agreement to support the Municipalities of Abdon Batista, Campos Novos, and Celso Ramos to compensate for the indirect impacts of the project, particularly the social impacts generated by the influx of workers. The agreement defined the obligations of Enercan and the municipalities (Inter-American Development Bank, 2004).

5.10.1.2 MITIGATION OF INDIRECT IMPACTS AND OPTIMIZATION OF PROJECT BENEFITS

These were achieved via the following:

- Agricultural Development Fund.
  An Agricultural Development Fund was established to support small farmers living in indirectly affected areas. In 2003, Enercan set up a non-reimbursable fund of R$ 600,000 to support indirectly affected small farmers living in the areas around the reservoir (Inter-American Development Bank, 2004).

- Fund for Directly Affected Small Landowners.
  The Agricultural Development Fund was exclusively for the use of indirectly affected families, and it was decided to provide non-reimbursable funding of R$ 2,000 for small landowners (with land smaller than 100 ha) who received compensation and for people who chose exchange or resettlement in remaining areas, R$ 1,500 for people who chose letters of credit, and R$ 1,000 for people who chose collective resettlement (Inter-American Development Bank, 2004).

- Economic Study.
  In December 2000, Enercan undertook a study of the economy and opportunities for investment in the four municipalities. The study was completed in February 2002, and included a detailed census of the businesses in each municipality, with recommendations for potential areas of growth (Inter-American Development Bank, 2004).

- Fund for the Development of Communities of the Future Campos Novos Reservoir.
  In September 2003, Enercan signed an agreement with a Santa Catarina State agency (in collaboration with the municipalities) to set up a fund for the development of micro-enterprise and small agribusinesses in the municipalities affected by the Project. Enercan contributed financially, while the agency provided in-kind support for agricultural development projects, technical support, and the promotion of small enterprises, administrative training, market studies, marketing and product certification (Inter-American Development Bank, 2004).

5.10.2 Monitoring

Enercan has set up a monitoring system to track the situation of each of the three sub-programmes in the resettlement plan. This will allow the company to assess progress, plan disbursements, identify problems as they arise, and generate the quantitative information required for reporting to the Inter-American Development Bank. As a starting point, Enercan has established a database that combined the information from the 1998 socio-economic survey with the inventory of affected properties and the surveys and valuations carried out as part of resettlement planning. This defined the extent of the affected families and properties, and can be updated to include any additional families or properties eligible for compensation or resettlement, for instance, families affected by loss of access or isolation (Inter-American Development Bank, 2004).

Enercan has also commissioned a study to monitor the population resettled. The proposed study is based on periodic evaluations rather than on-going monitoring. The study assists Enercan to assess the impacts of compensation and resettlement programmes. This provides a baseline against which the results of the mid-term and final surveys can be compared. The objective of the evaluation is to ensure that the affected families have been able to improve, or at least recover their standard of living within a reasonable period of time. In this regard, it tracks the use of compensation, distinguishing between different categories of affected landowners (viz. those that received compensation for the whole of their properties, those that chose a resettlement option and those that were only compensated for the directly affected areas of their properties) while taking into account the different resettlement options chosen by families (Inter-American Development Bank, 2004).

5.11 Outcomes and Results

It is the understanding of the Consultant that resettlement was the single greatest social and socio-economic affect of the Campos Novos Hydroelectric Project and, due to settlement patterns in the project area, could not be avoided. More than 20 alternatives were assessed over a period of almost 20 years and, eventually, the site and design selected were based on energy efficiency, technology, as well as environmental, social and economic considerations.

Although the level of community participation during the original Environmental Impact Assessment and Environmental Impact Statement are unclear, the Consultant understands that extensive participation took place during the formulation and implementation of the Resettlement Action Plan, especially through the Negotiating Council.

Resettlers (both small landowners and posseiros) were compensated for land, improvements to land, standing timber and crops, buildings and other structures, and had a choice of three resettlement options. Further to compensation, an Agricultural Development Fund and a Fund for Directly Affected Small Landowners were established to assist directly and indirectly affected farmers in mitigating potential lost economic opportunities. In addition, the Fund for the Development of Communities of the Future Campos Novos Reservoir was also established to provide economic and other development opportunities within the greater Campos Novos area.

Both monitoring and evaluation systems were established to monitor the on-going progress of the resettlement process as well as the re-establishment of resettler livelihoods, which, as understood by the Consultant, can be measured against a pre-resettlement baseline database.

5.12 Assessment of Outcomes/Results by Involved Stakeholders

It was not possible to obtain an independent source of information to deal with this topic objectively. Similarly, attempts at reviewing project results as perceived by the affected or involved stakeholders have proven unsuccessful.

5.13 Consultant's Conclusions

The Campos Novos Hydroelectric Power Project provides a number of key lessons, which may be applied to other projects of this nature.

- Mitigating resettlement through development programmes.
  Resettlement programmes should, as a minimum, compensate affected parties for loss of land, improvements to land, infrastructure, crops and fruit trees. However, the mere replacement of lost assets is not necessarily sufficient for resettlers to re-establish their livelihoods. Implementation of resettlement mitigation through the initiation of development projects, which can include a compensation component or stand apart from it, ensures a greater likelihood of resettlers re-establishing themselves in a sustainable manner.

- Monitoring and evaluation of the resettlement programme and the re-establishment of resettler livelihoods.
  Monitoring and evaluation of resettlement programmes should ideally include a dual approach. Firstly, ongoing monitoring should take place through the monitoring of pre-determined key indicators. This provides an indication of whether the programme is on track and is delivering what it set out to deliver within a pre-determined timeframe, in order to take corrective action within and during the process. On-going monitoring comes to an end once implementation of the resettlement programme has been completed.

  Secondly, evaluation should take place at longer, pre-determined intervals. These evaluations should be conducted against an initial baseline of resettler conditions as well as a set of pre-determined indicators. The objective of these evaluations is to determine the manner in which resettlers are managing to re-establish their livelihoods through the resettlement programme. These evaluations should be initiated while the resettlement programme is being implemented, during which time it can inform the on-going monitoring programme, but must ideally continue for a period of at least five years after completion of implementation.

5.14 Source Material

Brazilian National Environment Policy Act (Law 6938/81).

Inter-American Development Bank Environmental Policy: Operational Policy – 703.

Inter-American Development Bank (1998). *Operational Policy OP 7-10: Involuntary Resettlement*.

Inter-American Development Bank (1999). *Involuntary Resettlement in IDB Projects: Guidelines and Principles.*

Inter-American Development Bank (2004). *Campos Novos Hydroelectric Power Project. Environmental and Social Management Report*.

Inter-American Development Bank (2005). *Safeguard Implementing Guidelines of the Draft Environment and Safeguards Compliance Policy*.

Inter-American Development Bank (2006). *Environment and Safeguards Compliance Policy*.

6. Driekoppies Dam

Mlumati River, South Africa[24] [25] (Figure 6).

6.1 Aspects of Social Impact Assessment Addressed

- Public Involvement.
  - Develop and implement an effective public involvement plan.
- Scoping and Projection of Estimated Effects.
  - Identification and prioritisation of social impacts.
  - Lifestyle – behaviour and relationships.
  - Community – infrastructure services and networks.
- Mitigation.
  - Avoidance/minimisation of negative impacts.
  - Compensation for adverse impacts.

6.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects were incorporated within the following normative framework:

- Republic of South Africa (RSA)/KaNgwane[26] Permanent Water Commission Policy

6.3 Project Identification

- Name — Driekoppies Dam.
- Country — Republic of South Africa[27].
- Dates — Social Impact Assessment undertaken in 1992. Construction commenced in 1993 and impoundment commenced in 1998.
- Developer — Komati Basin Water Authority (KOBWA).

6.4 Stage in the Project Lifecycle

Implementation.

[24] The support of the South African Department of Water Affairs and Forestry is gratefully acknowledged.
[25] This example deals only with the South African component of the project.
[26] In the former political dispensation in South Africa, KaNgwane was a nominally declared self-governing territory within the borders of South Africa.
[27] The dam wall on the Mlumati River is in South Africa. Most of the impoundment area is in South Africa. However, the impoundment does extend into the Kingdom of Swaziland.

Figure 6 Indicative location of the Driekoppies Dam in South Africa

www.geography.about.com/library/maps

Table 11 Selected technical details of the Driekoppies Dam in South Africa

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Driekoppies	South Africa	900 km^2	Mlumati	Storage volume of 251 million m^3	Irrigation	Komati Basin Water Authority

6.5 General Description of the Country Institutional Set-up

The information below is based on the Consultant's own knowledge of the project. Up until 1994, the Republic of South Africa was governed under a policy of apartheid, which influenced and skewed all aspects of life, including institutional structures, planning and project development. Pre 1994, KaNgwane, the area where Driekoppies Dam is located, was a self-governing territorial homeland. Therefore, in order to plan and develop the proposed Driekoppies Dam, the South African Department of Water Affairs and Forestry, responsible for all aspects of water resources management in the country, formed a joint commission with the KaNgwane Government, viz. the South African/KaNgwane Permanent Water Commission. For the most part, however, the then laws of the Republic of South Africa were applied in KaNgwane, in particular, as pertained aspects of national and international importance (as was the case with Driekoppies Dam where parts of Swaziland were inundated). Nevertheless, pre 1994, the South African/KaNgwane Permanent Water Commission was responsible for planning and implementing the Relocation Action Plan for the project.

Post 1994, this task was entrusted to the Driekoppies Resettlement Management Committee, which reported to the Joint Water Commission between South Africa and Swaziland. Post 1994, the democratically elected Government of South Africa implemented new laws that became retrospectively applied to the Driekoppies Dam project, predominantly during construction and post-construction implementation of social mitigation plans (for example, resettlement).

6.6 Detailed Description of the Specific Policy/Normative Framework

In 1987, South Africa adopted the principles of Integrated Environmental Management, viz.:

- Informed decision-making.
- Accountability for decisions taken.
- A broad understanding of the term environment to include physical, biological, social, economic, cultural, historical and political components.
- An open participatory approach in the planning of proposals.
- Consultation with Interested and Affected Parties.
- Due consideration of alternates.
- An attempt to mitigate negative impacts and to enhance benefits.
- The opportunity for public and specialist input in the decision-making process.
- Democratic regard for individual rights and obligations.

Although voluntary (i.e. these principles were not legislated), these were guiding principles for environmental and social impact assessments. However, in terms of normative frameworks, it is the Consultant's understanding that no formal policy for Social Impact Assessment or Environmental Impact Assessment existed at the time, and practise varied from project to project, particularly the level of social information that influenced policy formulation and the early planning stages of a project. Thus, the commencement of a detailed Social Impact Assessment was not undertaken until late in project planning after a decision on the location and size of the dam had already been taken. This narrowed the value of the Social Impact Assessment and the contribution that it could make to decision-making.

In 1991, a set of guidelines for the resettlement of people from Driekoppies Dam was drafted and these were subsequently approved by the Permanent Water Commission as a policy document for preparing a Resettlement Action Plan. In parallel with the preparation of the Resettlement Action Plan Guideline Policy, a Social Impact Screening Assessment was undertaken (albeit with no consultation with potentially affected community members or representatives) (Human Sciences Research Council, 1993).

Thereafter, a detailed Social Impact Assessment was undertaken which aimed to:

- Identify the nature, magnitude and significance of the socio-economic impacts of the proposed dam on the people directly affected by construction and impoundment.
- Formulate a Resettlement Action Plan.
- Establish communication structures to facilitate collaboration between the client, the affected communities, implementing agents and relevant government departments (Human Sciences Research Council, 1993).

The Social Impact Assessment was undertaken in terms of the Guideline Policy and the Resettlement Policy adopted by the Permanent Water Commission (Human Sciences Research Council, 1993), which identified the following key items, which the Social Impact Assessment needed to address:

- Profiling.
  - To identify all stakeholders (agents, beneficiaries and affected parties) who were at risk or may have had an interest in the proposed facility construction.
  - To elicit from all stakeholder groups their views/opinions on the proposed project, as well as their respective claims, concerns and issues in this regard.
  - To identify existing interest configurations and to formulate areas for further research necessary to adequately address possible conflict of interests.
- Data collection.
  - To determine the number of individuals/households, as well as the range of social categories, groups, institutions and organisations that would be affected by the proposed facility construction.
  - To identify the nature and extent of the socio-economic and environmental impacts associated with the proposed development.
  - To generate reliable data aimed at testing the plausibility/relevance of stakeholders' claims, concerns and issues.
- Projection.
  - To determine the magnitude and significance of the socio-economic and environmental impacts associated with the proposed facility construction (prediction of impacts).
  - To identify and investigate potential positive impacts/development opportunities associated with the proposed development.
- Assessment.
  - To identify viable mitigation options or alternative development policies, and to compare the anticipated impacts of the alternatives.
  - To assess which alternatives were best in terms of the significance of the social and environmental impacts, the economic costs and benefits, as well as the financial costs of implementation.
  - To formulate comprehensive and diversified mitigation options and compensation packages for approval by the Permanent Water Commission (Human Sciences Research Council, 1991).

6.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

During the ongoing negotiation of social/socio-economic mitigation measures during the preparation and implementation of the Driekoppies Dam project, including the Resettlement Action Plan, the institutional framework comprised two interdependent sections, viz. the Joint Water Commission and the Komati Basin Water Authority, responsible for overall implementation, and the KaNgwane Government responsible for the planning, implementation and management of specific sub-projects.

To this end, the KaNgwane Government established the Driekoppies Dam Co-ordinating Committee, an interdepartmental committee responsible for the coordination of regional development initiatives. In addition, the Driekoppies Dam Co-ordinating Committee was tasked with responsibility for the effective implementation of resettlement, in terms of funding efficiency, coordinating the input and efforts between various government departments, and promoting developmental initiatives. The Driekoppies Dam Co-ordinating Committee had different departmental working groups, which were responsible for aspects such as infrastructure and service provision, housing and agricultural enterprise development (Human Sciences Research Council, 1993). In 1994, the Driekoppies Dam Co-ordinating Committee was replaced by the Driekoppies Relocation Management Committee.

The Matsamo Community Action Committee was established to represent the directly affected communities, and played a central role in all aspects of resettlement planning, implementation and post-resettlement monitoring and evaluation (Human Sciences Research Council, 1993).

It is the understanding of the Consultant that in 2004, the Driekoppies Relocation Management Committee was disbanded and the Komati Basin Water Authority was made responsible for the ongoing implementation, enforcement and monitoring of mitigation measures associated with Driekoppies Dam.

It is the Consultant's understanding that neither the Permanent Water Commission nor the Driekoppies Dam Co-ordinating Committee was responsible for the assessment or mitigation of impacts for the Swaziland portion of the dam. Responsibility for addressing biophysical and social impacts in Swaziland was initially housed within the Ministry of Agriculture, thereafter, the Swaziland Komati Project Enterprise, which completed an Environmental and Social Impact Assessment and Comprehensive Mitigation Plan. However, once this plan and funding for mitigation had been approved, responsibility for implementation was handed over to the Komati Basin Water Authority (which, at that stage, was involved with similar resettlement planning and implementation associated with the construction of the Maguga Dam on the Nkomati River in Swaziland).

6.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

It should be noted that the normative framework for the assessment of social impacts on dams and success/lessons learnt from previous projects was influenced significantly by experiences from the first phase of the Lesotho Highlands Water Project (that, in itself may not have been viewed as a successful project but from which valuable insights and experience were gained).

A significant improvement in policy and planning was required at the time, but this was only developed later. As this was one of the early but recent examples of large dam planning and construction, there were few successes from which to gain experience. Enforcement and compliance were originally weak but did become strengthened by legislation after construction of the dam.

It is the understanding of the Consultant that two key factors in the outcome of this project were that:

- Swaziland and South Africa had different approaches to land entitlement and resettlement, yet the dam extended across a single traditional group which lived on either side of an international border. Therefore, enforcement and compliance responsibilities varied.
- The responsibility for planning, assessment of impacts and implementing mitigation measures fell across a number of different and changing institutions throughout the lifecycle of the project. This factor, in addition to there being no recognised or previously tested policy, resulted in new proposals and approaches being applied as new institutions assumed responsibility. This lead to discontinuity for the duration of the project during planning and implementation.

6.9 Project Description

The description below reflects the Consultant's understanding of the project. Driekoppies Dam is situated on the Mlumati River, a tributary of the Nkomati River, and is approximately 50 km south-west of Komatipoort (at the Mozambique/South African border) in the Mpumalanga Province of South Africa. A small portion of the tail end of the dam inundates Swazi Nation Land in the north-western part of the Kingdom of Swaziland.

The dam wall is approximately 50 m above the riverbed and 2.4 km in length. Gross storage capacity is 251 million m³ and the full supply surface level inundates 1,870 ha. The buy-out line for the dam was approximately 2,500 ha of which approximately 380 ha are in Swaziland. Approximately 40 ha outside the inundation area were used for the temporary occupation of operating staff and construction camps.

The dam resulted in the loss of 763 ha of cultivated agricultural land, 1,289 ha of grazing land and the resettlement of approximately 220 homesteads.

Driekoppies Dam constituted the first phase (Maguga Dam being the second phase) of the development of the water resources of the Komati River Basin, shared by South Africa and Swaziland (and Mozambique further downstream). The purpose of Driekoppies Dam was to stabilise river flows and to improve the assurance of water supplies to existing and new irrigation, and urban development in the South African (primary) and Swaziland (secondary) portions of the Komati River Basin.

As stated, one of the key aims of increased assurance of water supply was to support the Nkomazi Irrigation Expansion Programme. This downstream project focused on the development of 6,000 ha of new irrigation lands, to be farmed by small-scale growers cultivating sugar cane. The Nkomazi Irrigation Expansion Programme was a major developmental intervention by the KaNgwane Government that produced wide benefits (that continue to the present day) to a previously impoverished region. Importantly, social impacts and benefits associated with the downstream developments were dealt with separately from the dam project.

6.10 Implementation of Key Issues

6.10.1 Public Involvement

Public involvement was on-going throughout the social assessment investigations for the Driekoppies Dam. Key activities included:

- Two meetings were held with the local traditional authority to obtain approval to undertake fieldwork in the area and to recruit local assistants.
- A total of 49 stakeholder groups were identified and their representatives were interviewed. These stakeholder groups included local community organisations, government departments, parastatals and private organisations.
- Five community briefing sessions were held in directly and indirectly affected areas. Attendance at these meetings ranged from approximately 40 to 850 community members.
- A household survey was administered, using a structured questionnaire, on a total of 227 homesteads that were below the full supply level and would require resettlement. Twenty affected households had no representatives available and could not be surveyed. The survey collected demographic and socio-economic data, and respondents' views on a number of key issues.
- An agricultural survey was undertaken for 237 of the affected farmers/households. The survey was designed to obtain an impression of land-use activities over the previous two seasons.
- Four group meetings were held to discuss specific aspects relating to livestock grazing (Human Sciences Research Council, 1993).

Considering the above, it is important to note that the actual communication with affected stakeholders does not necessarily commence when the official public involvement programme commences. With regard to the Driekoppies Dam project, information was "communicated" through rumour and feedback from various meetings or activities on the ground from as early as 1984 (Human Sciences Research Council, 1993).

Two examples of this were:

- In 1988, members of the community were requested by the traditional authorities (who, in turn, had been requested by the project planners) not to build or settle within the inundation area due to the possible dam. The result of this, in 1993/4, when an assets inventory was compiled, was that those who felt they had acceded to the request received less compensation than those who had ignored it.

- Due to the late commencement of the Social Impact Assessment, construction of the dam commenced prior to all negotiations with affected parties being completed and the finalisation of the Resettlement Action Plan. Thus, from the outset, affected communities were aware that their comments or perspectives on the suitability of the project would have no influence as the Government had already made its decision. This resulted in a spirit of entitlement with the aim to acquire as many benefits as possible out of the development (Human Sciences Research Council, 1991).

Thus, the actual commencement of communication to the affected parties occurred in advance of a formal public involvement programme being developed as well as clarification of the policy and message to be communicated. It is the understanding of the Consultant that this resulted in the actual public involvement process being less effective as people had already formed opinions on the project.

6.10.2 Scoping and Projection of Estimated Effects

Using the data obtained from meetings and questionnaire surveys, the following six areas of key impacts and sub-components were identified, described and discussed in the Social Impact Assessment Report:

- Loss of productive resources and economic activities.
  - Land and other natural resources.
  - Water supply.
  - Employment opportunities.
- Settlement and housing.
  - Resettlement of households to be inundated.
  - Socio-economic features of affected households.
  - Number and type of dwelling structures that would be lost.
  - Cumulative impacts (associated with previously inadequate communication about the project (specifically related to resettlement) from *circa* 1984 onwards).
- Community services and facilities (in particular, as related to improved services).
  - Health.
  - Education.
  - Social welfare.
  - Road networks and transport.
  - Trade and retail facilities.
  - Electricity and communication services.
- Community and institutional organisation.
- Historical and archaeological sites.
- Population pressure and social dislocation.
  - Disruption of movement patterns.
  - Household instability and impoverishment.
  - Community discord and organised action.

It is important to note that these data applied to the preferred development alternative only, as, it is the understanding of the Consultant, this had been determined on technical and economic grounds prior to the consideration of social impacts.

The scoping of the productive resources and economic activities investigated, in some detail, lifestyle in terms of economic behaviour and the economic quality of life and security. The arable and grazing land affected by the dam at different locations were documented with a description of the number of farmers, plot size and type of cropping. Livestock numbers and grazing movements and patterns were documented for each main settlement.

The community's concerns around their sense of security and lifestyle were gathered from questionnaires and meetings with regard to areas in which to settle, concerns with regard to services, economic resources and community values such as proximity to relatives.

The section on population pressure and social discord examined recent social conditions and trends in the area, such as factors that would undermine household stability or promote conflict over resources. How the proposed project would affect or contribute to these trends was considered.

The social and transport networks of the three community centres affected by the dam were considered and both the formal and informal transport services were investigated. The future of the roads, the road surfaces and how changes in movement patterns may be affected were considered.

It is the Consultant's opinion that this section of the report met adequately the requirement of the policy at the time to collect data on the households and socio-economic conditions of the individuals/households to be affected by the proposed project.

In terms of significance, the assessment of potential impacts was undertaken against a checklist of 124 items related to the key impact and subcomponents listed above. Each impact was classified as positive or negative and rated in terms of magnitude, significance, probability and duration. The significant impacts were identified as follows: loss of productive resources (negative), social dislocation (negative), improved domestic water supply (positive) and sub-regional development potential (positive).

6.10.3 Mitigation

As the preferred dam option had already been selected prior to the Social Impact Assessment commencing it was accepted that the assessment of impacts was unlikely to aid decision-making around a preferred option. Rather, the aim of the assessment was designed to understand the impacts and then establish how they could be mitigated/managed (Human Sciences Research Council, 1993).

Various potential mitigation measures were formulated, some which had been identified by the authorities and the development proponent (such as alternative available land options) and had been commented on by community members during interviews. However, some of these mitigation and development options had been formulated and discussed at government and traditional authority level prior to the community briefing sessions, and, as reported, one proposed mitigation measure came as a surprise to the community at these sessions (Human Sciences Research Council, 1993). Community perspectives from the surveys were used to discuss the potential viability of the mitigation options.

The further investigation and negotiation of these options with the affected parties was recommended as a key action required in the preliminary stages of preparing the Resettlement Action Plan for the proposed dam (Human Sciences Research Council, 1993). However, as there was no formal policy in place, it is the understanding of the Consultant that this later resulted in mitigation projects being proposed, negotiated and implemented in conjunction with construction and post-construction with little formal link back to the impact assessment recommendations and policy requirements.

In the opinion of the Consultant, this illustrates clearly a key element for the success of Social Impact Assessments, viz. sufficient time must be allowed for the assessment and development of mitigation measures. In this case, the suitability of the mitigation measures was affected by the late commencement of the Social Impact Assessment, which, in turn, was as a result of the lack of a formal policy requirement for a Social Impact Assessment.

The potential mitigation measures suggested and discussed briefly were:

- Compensatory land.
  - Purchase of a local coffee project.
  - Eco-tourism on surrounding land.
  - Afforestation.
  - Irrigable home gardens/communal food plots.
  - Irrigation development.
- Improved domestic water supply.
- Fish production.
- Improved livestock opportunities through paddocks and fodder production.
- Construction employment opportunities (Human Sciences Research Council, 1993).

In the opinion of the Consultant, the weakness in this approach was that these mitigation measures had not been sufficiently investigated and discussed with affected stakeholders. Most had been discussed at a concept level with government and traditional authorities and although they could provide economic benefits, the extent to which they would actually restore the economic livelihoods of people affected by the dam was not investigated.

In this regard, in the opinion of the Consultant, the Social Impact Assessment did not meet the policy requirement that required alternatives to be considered in terms of the significance of the social and environmental impacts, the economic costs and benefits, as well as the financial costs of implementation.

This highlights another key element in Social Impact Assessment, viz. that mitigation to avoid, then minimise and lastly compensate for aspects related to livelihoods (land, resources etc.) cannot be effectively achieved by the promotion of completely new livelihood strategies and technologies. In addition, policy documents should be strengthened to reflect that the final objective must be to develop recommendations that will restore and improve the livelihoods of affected parties. The acceptability and feasibility of these recommendations should then influence final project decisions (before it is too late to do so).

Importantly, in the opinion of the Consultant, another weakness of this Social Impact Assessment was that there were a number of issues for which the formulation of mitigation measures was left to a later date or future activity, such as the preparation of a Resettlement Action Plan. Two of these issues, which are important were:

- Loss of graves.
- Access of non-directly affected farmers after construction of the dam.

It is likely that this was primarily due to time constraints placed on the Social Impact Assessment. Importantly, these issues were captured in the Resettlement Action Plan that was subsequently implemented.

6.11 Outcomes and Results

It is the opinion of the Consultant that the Social Impact Assessment for the Driekoppies Dam met the majority of expectations in terms of the policy requirements at the time. Adequate data were collected, collated, discussed and assessed. Possibly, the Social Impact Assessment did not proceed as far as anticipated in terms of negotiating and discussing mitigation/resettlement options with affected households and land-users (as a consequence of time constraints placed on the Social Impact Assessment assignment).

One area where outcomes were not as expected was the conclusion, reached by the social assessment practitioner, that the briefing documents and briefing sessions, although simplified, were too technical for many of the local residents (in terms of information, maps, etc) (Human Sciences Research Council, 1993). Indeed, it can be argued that had the affected parties better understood the project in terms of timing, technical details, compensation and mitigation, it is likely that this would have resulted in less implementation difficulties (that were subsequently experienced). From this it is important to note that effective communication and the discussion of impacts are vital during the Social Impact Assessment in order to prepare a solid foundation for the formulation and implementation of mitigation/management plans (such as a Resettlement Action Plan).

In the understanding of the Consultant, one key aspect that both the policy (at the time) and the Social Impact Assessment did not address was potential social impacts on host communities. The focus was on homesteads or landowners below the high-water line as marked on the ground by beacons and, essentially, ignored any impacts on residents or landowners narrowly above this line, or adjacent or within host areas. This, too, had negative implications for resettlement, particularly considering that available land for resettlement and alternative land-use activities are generally problematic. Thus, the integration of resettlers with hosts is a crucial aspect of any social management and/or development plan (for whatever purpose the plan is formulated).

6.12 Assessment of Outcomes/Results by Involved Stakeholders

In terms of the assessment of outcomes by involved stakeholders, in particular, government officials, the Social Impact Assessment was considered a success. However, overall, the implementation of the social components of the project have, in fact, taken far longer and at significant additional cost, than originally planned (indeed, up to 10 years after construction commenced).

The undertaking of the Social Impact Assessment and the implementation of the Resettlement Action Plan have been long drawn out processes with numerous difficulties.

Therefore, in retrospect, it is the opinion of the Consultant that stakeholders, including government, civil society and affected parties, would most likely accept that the identification of suitable mitigation options, particularly in terms of land compensation should have been investigated for longer and with more public involvement preceding and supporting the Social Impact Assessment.

6.13 Consultant's Conclusions

Three challenges and opportunities were identified from this example.

- Streamlining institutional arrangements and continuity.
  Large projects, such as dams, are often implemented over a long period of time with a range of institutions and parties involved at different times during the project lifecycle. In addition, these projects can affect different cultural and institutional groups.

  One of the key difficulties for Driekoppies Dam was that Swaziland and South Africa had different approaches to land entitlement and resettlement, yet the dam extended across a single traditional group which lived on either side of an international border.

Furthermore, South Africa underwent a change in government during the project lifecycle and former self-governing territories were re-incorporated into existing and new government structures.

Thus, the roles and responsibilities for the planning, assessment of impacts and implementing mitigation measures fell across a number of different and changing institutions. It is the understanding of the Consultant that added to the unavoidable change in key individual role-players over a long project lifecycle, this meant that the continuity for implementing strategies, plans and projects, kept changing and being altered. This resulted in progress being delayed, reduced the effectiveness of results, and resulted in a situation where the affected community kept being able to exploit the situation for further benefits.

In the opinion of the Consultant, a key lesson to take forward is to simplify and streamline institutional responsibilities where possible, especially across different groups and, ideally, to make one single committee responsible throughout the entire project lifecycle. This committee should have a robust policy in place at the start and be responsible for seeing matters through to completion.

- Commencing with communication and/or assessment as early as possible.
  A key question is when to engage with potentially affected parties. Initially, this engagement may be delayed, as there may be a reluctance to create expectations when a wide range of project alternatives or sites are still being investigated. However, it is also important to recognise that any project teams undertaking preliminary investigations in an area will already raise awareness and communicate the onset or continuation of project planning.

  Driekoppies Dam illustrates this point as information was disseminated either through rumour, feedback from various meetings or activities on the ground from as early as 1984. In the opinion of the Consultant, a consequence of these early expectations was subsequent complications and discontent during the assessment and mitigation phases.

  A streamlined institutional framework and a formal policy from the commencement of planning would enable the exact timing of the initial project communication, and the content of the message, to occur in a coordinated manner at the correct time in the project lifecycle.

  This timing will in turn support the improvement of all the follow-on activities, especially the prediction of estimated effects and the development of a mitigation plan that reflects relevant practise.

- Research and develop with those affected the most appropriate communication strategy.
  The social assessment practitioner, in reviewing activities, reflected that the briefing document (six pages plus maps) had been too detailed for relatively illiterate members of the community to obtain any valuable information.

  This gives rise to the need to develop a researched communications strategy, agreed to by the affected stakeholders, on how to effectively communicate project general and/or technical information. This should improve the overall strength of Social Impact Assessments, particularly when dealing with illiterate persons.

6.14 Source Material

Human Sciences Research Council (1991). *Guidelines for a Relocation Action Plan.* RSA/KaNgwane Permanent Water Commission.

Human Sciences Research Council (1993). *Social Impact Assessment of the proposed Driekoppies Dam.* RSA Department of Water Affairs and Forestry.

Human Sciences Research Council (1993). *Relocation Action Plan for the Driekoppies Dam.* RSA/KaNgwane Permanent Water Commission.

Republic of South Africa (RSA)/KaNgwane Permanent Water Commission Policy

7. Kandadji Dam Project

Niger River, Republic of Niger (Figure 7).

7.1 Aspects of Social Impact Assessment Addressed

- Profile of Baseline Conditions.
  - Document the relevant human environment, and existing social conditions and trends.
- Projection of Estimated Effects.
  - Analysis and prediction of probable impacts.

7.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects form part of normative frameworks covering Environmental Assessment:

- Niger "Code de l'Environnement".
- World Bank Operational Policy 4.01 Environmental Assessment[28].

7.3 Project Identification

- Name: Kandadji Dam Project.
- Country: Niger.
- Dates: Three different feasibility studies have been conducted since 1976 but, to date, no structure for flow regulation has been constructed. The most recent feasibility study, on which this case study is based, was conducted during 1999.
- Developer: Government of Niger, through the Haut Commissariat au Barrage de Kandadji (High Commission of the Kandadji Dam).

7.4 Stage in the Project Lifecycle

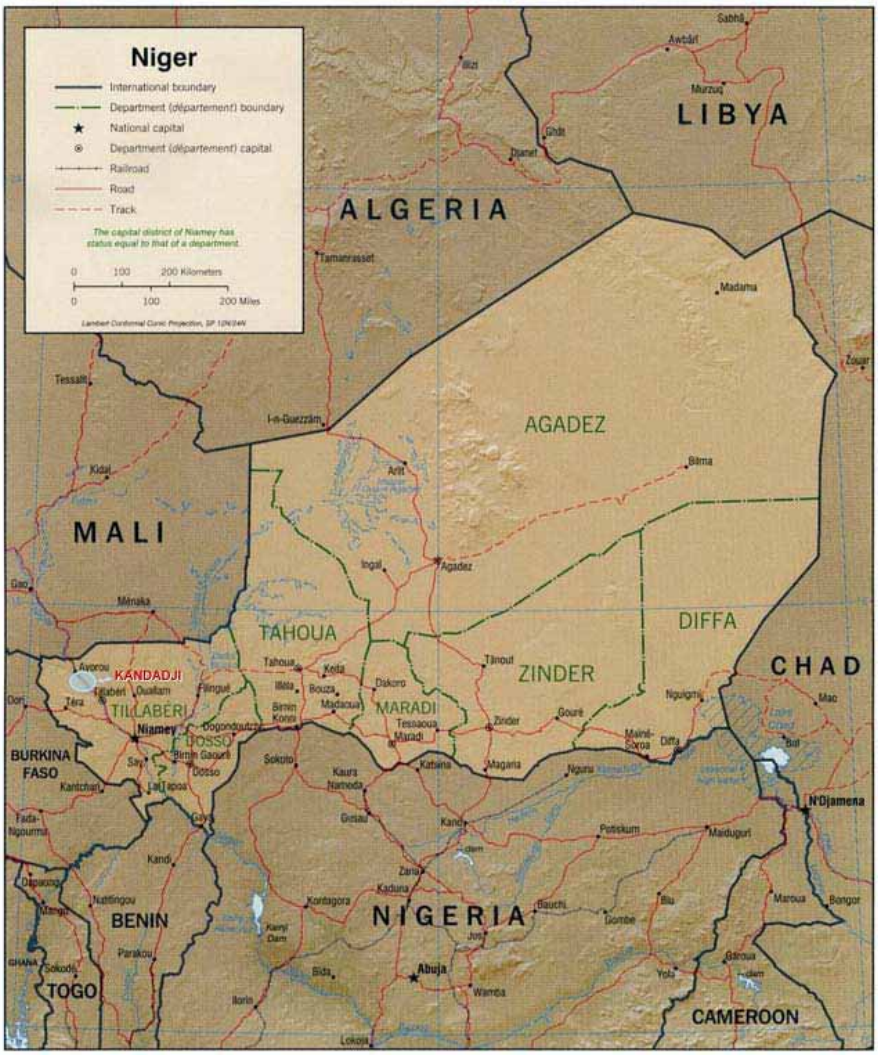
Planning.

7.5 General Description of the Country Institutional Set-up

The Government of Niger, through the Haut Commissariat au Barrage de Kandadji (High Commission of the Kandadji Dam) is the executing agency responsible for the supervision and the follow-up of all planning activities for the Kandadji Dam project. It is directly assigned to the Prime Minister, and is directed by a Haut Commissaire (High Commissioner) (Section 10).

[28] Other World Bank safeguards will become applicable in subsequent planning phases for this project, specifically, World Bank Safeguards governing involuntary resettlement.

Figure 7 Indicative location of the Kandadji Dam Project in Niger



www.geography.about.com/library/maps

Table 12 Selected technical details of the Kandadji Dam Project in Niger

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Kandadji	Niger	Unknown	Niger	Storage capacity of 1597.10^9 m^3	Irrigation	Government of Niger, through the Haut Commissariat au Barrage de Kandadji

Applications for environmental authorization are evaluated by the 'Ministre chargé de l'Environnement' (the Minister charged with the environment) (Section 7.1.1).

Irrigation of agricultural land falls under the Direction du Genie Rural (Management of Rural Engineering) and the Office des Amenagements Hydro-Agricoles (Bureau for the Development of Hydro-Agriculture), which forms part of the Ministere de l'Agriculture (Ministry of Agriculture). The Ministere de la Sante (Ministry of Health) is responsible for the prevention and management of water borne diseases. Due to the fact that the project will be generating power, the Ministere des Mines et de l'Energie (Ministry of Mines and Energy) is also involved.

7.6 Detailed Description of the Specific Policy/Normative Framework

The Government of Niger received credit from the African Development Bank to update the Kandadji Dam Feasibility Study. The project is classified as Category A according to the World Bank Operational Policy 4.01, and is also subject to an Environmental Assessment under Niger's umbrella legislation on environmental management.

7.6.1 Niger Environmental Legislation

7.6.1.1 CODE DE L'ENVIRONNEMENT

Environmental legislation in Niger is based primarily on French colonial laws and, where these are lacking, on traditional and Islamic law. Laws exist for the protection and use of water, soils, forests and trees, arable land, flora and fauna. Of direct relevance to this study is the Niger Code de l'Environnement (literally translated as the Code of the Environment) (Government of Niger, 1998).

The Code of the Environment (Code) states that the authorization of activities, projects, and development programmes, which may impact on natural and human habitats, falls under the auspices of the 'Ministre chargé de l'Environnement' (the Minister charged with the environment). The Minister has the capacity to authorize the compilation of Environmental Impact Assessments in order to determine the impacts of an activity, project, or programme. As a minimum requirement, an Environmental Impact Assessment must include an analysis of baseline conditions of the site and its surrounding environment, a description of the project, any impacts that it may have on the environment, as well as recommendations on measures to reduce the impacts and/or compensate consequential damages to the environment (Government of Niger, 1998).

The Code deals with the protection of the following:

- The atmosphere.
- Water resources.
- Soil and sub-soil.
- Natural resources.
- Human habitat, which focuses predominantly on urban areas. It states that:
  - Cultural and architectural places of interest should be protected as part of the environment.
  - The establishment of public amenities, economic activity zones, and residential areas should take cognizance of these places.
  - Urban developments need to provide recreational areas and green spaces according to national forestry legislation.

Except for these aspects that deal with human habitats, the Code makes little direct mention of the social environment (Government of Niger, 1998).

The Code also addresses the management of the following:

- Waste.
- Hazardous substances.
- Noise pollution.
- Prevention and attenuation of desertification (Government of Niger, 1998).

7.6.2 Relevant World Bank Policies

At the time of the study, the only World Bank policy, which was applied to the project, was Operational Policy 4.01 – Environmental Assessment.

7.6.2.1 WORLD BANK OPERATIONAL POLICY 4.01 ENVIRONMENTAL ASSESSMENT

The World Bank requires the Environmental Assessment of projects proposed for World Bank financing, to assist in ensuring that they are environmentally sound and sustainable, thereby improving decision-making. According to the World Bank, Environmental Assessment is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project. In this regard, an Environmental Assessment:

- Evaluates the potential environmental risks and impacts of a project in its area of influence.
- Examines project alternatives.
- Identifies ways of improving project selection, siting, planning, design, and implementation, by preventing, minimizing, mitigating, or compensating for adverse environmental impacts, and enhancing benefits.
- Includes the process of mitigating and managing adverse environmental impacts throughout project implementation. The World Bank favours preventive measures over mitigatory or compensatory measures, whenever feasible.

Environmental Assessment takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property); and trans-boundary and global environmental aspects. Environmental Assessment considers natural and social aspects in an integrated way. It also takes into account:

- Variations in project and country conditions.
- The findings of country environmental studies.
- National environmental action plans.
- The overall policy framework, national legislation, and institutional capabilities of a country as related to the environment and social aspects.
- Obligations of the country, pertaining to project activities, under relevant international environmental treaties and agreements. The World Bank does not finance project activities that would contravene such country obligations, as identified during the Environmental Assessment. Environmental Assessment is initiated as early as possible in project processing, and is integrated closely with the economic, financial, institutional, social, and technical analyses of a proposed project.

The World Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of Environmental Assessment. The World Bank classifies the proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project, and the nature and magnitude of its potential environmental impacts. The Kandadji Dam was classified as a Category A project, as it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. An Environmental Assessment for a Category A project examines the potential negative and positive environmental impacts of a proposed project, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.

7.6.3 African Development Bank

Currently, the African Development Bank has a set of Environmental and Social Procedures, adopted in 2001, which serve to guide environmental and social assessments on projects funded by the African Development Bank. At the time of the Kandadji Dam Feasibility Study, the African Development Bank applied a set of Environmental Assessment Guidelines, which were adopted in 1992. However, these were not applied for the Kandadji Dam Feasibility Study; rather the World Bank Operational Policy 4.01 – Environmental Assessment was applied.

7.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

As mentioned in Section 6, the Government of Niger, through the High Commission of the Kandadji Dam, is directly responsible for the planning implementation of the Kandadji Dam project.

Applications for environmental authorization are evaluated by the 'Ministre chargé de l'Environnement' (the Minister charged with the environment) (Sections 6 and 7.1.1).

As indicated in Section 6, the Direction du Genie Rural, the Office des Amenagements Hydro-Agricoles, Ministere de l'Agriculture, the Ministere de la Sante and the Ministere des Mines et de l'Energie also have involvement in a project of this nature.

From what was sourced in the literature, it would appear that the project studies were driven through the High Commission of the Kandadji Dam.

7.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

It was not possible to find English versions of Niger environmental legislation (that which is provided here was translated from French) and, similarly, it was not possible to source any English documentation on the implementation of Niger policies.

However, examples of the implementation of the provisions of World Bank safeguards are available for numerous projects world-wide (dam and other large-scale infrastructure projects). It is also pertinent to note that World Bank safeguards are updated periodically, suggesting the incorporation of experience and learning into newer safeguards. However, there is little or no readily available literature on the implementation history of Niger national normative frameworks.

With regard to World Bank safeguards, there appears to be some controversy regarding their implementation. Some writers perceive the norm and its implementation positively, for example, Bekhechi (1999) states that *since 1984, major environmental policies have been issued and implemented by the World Bank and constitute the most comprehensive environmental policy that frames investment and other development activities of any development agency*. Others, predominantly from non governmental organisations and civil society have reservations regarding the norm. For example, the International Rivers Network (2005) states that *in spite of their many shortcomings, the World Bank's social and environmental safeguard policies are an important achievement of the past twenty years.* However, the International Rivers Network (2005) continues by stating *… the Bank has not mainstreamed social and environmental concerns throughout its business model. As a consequence, the Bank has repeatedly developed unsustainable projects within which the objectives of the safeguard policies cannot be achieved. The Bank may go through the motions of implementing safeguard policies, but it often fails to comply with their objectives. For example, the Bank rarely explores alternative options in any balanced way as part of the environmental assessments of projects. And people who are displaced by Bank projects almost invariably end off poorer as a result, rather than becoming project beneficiaries*.

The implementation of World Bank safeguards, therefore, appears not to have been free of disappointment. However, as stated above, the World Bank seems to be constantly striving towards the improvement of its policies and guidelines in an attempt to address shortcomings.

7.9 Project Description

Niger, a Sahelian country, has suffered recurrent droughts in the past four decades. Arable land is continuously decreasing and soil fertility has been on the decline due to water shortages, wind erosion, disappearance of vegetation and population growth. Parallel to the deterioration of soils, the surface water resources of the Niger River have been seriously affected by drought (Haut Commissariat au Barrage de Kandadji, 1999).

The proposed Kandadji Dam on the Niger River is located in close proximity to a village with the same name, 187 km upstream from Niamey and 61 km from the border with Mali. The closest city is Tillabéri, located 65 km to the south. At the administrative sphere, the study area includes the Departments of Tillabéri and Dosso, as well as the urban community of Niamey (Haut Commissariat au Barrage de Kandadji, 1999).

In the context of the strategic goals and objectives identified in Niger's National Environmental Plan for Sustainable Development, which aims at improving food security and health conditions, solving the domestic energy crisis, and developing the country economically, the Government of Niger has identified the development of the Kandadji Dam project as a possible intervention under the Niger's National Environmental Plan for Sustainable Development (Kimba, 2003).

The aim of the Niger's National Environmental Plan for Sustainable Development is not only to ensure the energy security of the country and the integrated management of national energy resources. It is also designed to ensure environmental protection in the exploitation and consumption of energy resources, the promotion of new and renewable energy sources, and access to energy by all citizens (Kimba, 2003).

As indicated in Section 6, the Kandadji Dam project is conducted under the auspices of the Government of the Republic of Niger, through the High Commission of the Kandadji Dam. To assist in the continuation and follow up of planning activities, two additional institutions were founded, the Comité Directeur du Suivi de l'Exécution des Etudes de Faisabilité du Barrage de Kandadji (Directing Committee for the Follow-up of the Execution of the Feasibility Study for Kandadji Dam) and the Comité Technique de Coordination des Etudes de Faisabilité du Barrage de Kandadji (Technical Committee for the Co-ordination of the Feasibility Study for Kandadji Dam) (Haut Commissariat au Barrage de Kandadji, 1999).

The basic aims of the Kandadji Dam project are to regulate the flow of the Niger River within the country, to produce energy to contribute to food self-sufficiency as well as meeting the energy needs of the population, and to contribute to the regeneration of the ecosystem and the development of the Middle Niger River Basin.

The Feasibility Study is a culmination of a number of studies conducted over the past three decades. The objective of the Feasibility Study was to update the technical and scientific data on the dam, collected through the previous studies, and, in particular, to conduct a complete Environmental Impact Assessment.

The Feasibility Study comprised two distinct phases:

- Phase 1: Social, Economic and Environmental Diagnosis and Definition of the Reservoir Characteristics.
- Phase 2: Feasibility Study.

Each of the phases comprised a number of reports. Of specific relevance to this case study are the following:

- Phase 1 – Volume 4: Social and Environmental Diagnosis.
- Phase 1 – Volume 7: Diagnosis of Socio-economic Data.
- Phase 2 – Volume 4: Environmental Impact Study.

Following the completion of the 1999 Feasibility Study, the organization of the High Commission of the Kandadji Dam proved successful and its structure was retained for the tender stage. This was done to secure consistency in the personnel involvement of the High Commission's experts, who were already familiar with the project, thereby avoiding possible delays. However, for the construction and operational phases of the project, the structure of the High Commission of the Kandadji Dam would have to be modified. Detailed recommendations in this regard were made in an Etude de l'Aspect Institutionnel (Institutional Study) prepared for the Kandadji Dam project. According to the conclusions of this study, the future scheme of Kandadji should be placed under the control of a Société Nationale du Barrage de Kandadji (translated as the National Kandadji Dam Company) that would be in charge of the operations and maintenance of the overall scheme, including the hydroelectric plant (Haut Commissariat au Barrage de Kandadji, 1999).

The National Kandadji Dam Company would be managed by a Board of Directors headed by a Managing Director. Operations and maintenance responsibilities would be divided across the following structures:

- Département de la Gestion du Barrage (Department of Dam Operation).
  This department would be responsible for the operation, control, maintenance, and monitoring of the dam, its appurtenant structures, and the intake for irrigation water.
- Département de la Production de l'Energie (Department of Energy Generation).
  This department would responsible for the operation, control, and maintenance of the hydropower plant (mechanical, electrical, and general equipment).
- Département des Etudes Générales (Department of General Studies).
  This department would be in charge of the provision of all necessary information to other services required to define the operating rules to ensure optimum plant operation (studies, planning, recording, social and environmental follow-up).
- Département des Services Logistiques, Administratifs et Financiers (Department of Logistics, Administration and Finance).
  This department would be responsible for the logistics of the overall plant (financial services and accounts, personnel services, computer services and communication, foreign affairs, security, transport, medical services, secretarial services, archive, water and electricity supply for dam site, living quarters and offices, fire protection, upkeep of living quarters and offices).

After completion of the Feasibility Study, a call for tenders for a further two phases of the Kandadji Dam project were issued towards the end of 2003:

- Phase 1 - The construction of the dam itself.
- Phase 2 - The establishment of a hydro-electrical generating station and associated transmissions lines.

The call for tenders also included two additional studies to be conducted for these two phases, viz. a detailed Environmental and Social Impact Assessment and a Technical Assessment Study.

The aim of the detailed Environmental and Social Impact Assessment is to expand on the extensive work undertaken during the Feasibility Study, as well as the previous studies undertaken within the framework of the Kandadji Dam project. According to the call for tenders, these studies should provide more precise and detailed assessment of the impacts of the Kandadji Dam project and propose measures to mitigate the negative impacts with emphasis on the preparation of a complete plan to resettle the displaced population in line with the World Bank's safeguards on involuntary resettlement. It also requires extensive consultations with the population affected by the Kandadji Dam project (Haut Commissariat au Barrage de Kandadji, 1999).

7.10 Implementation of Key Issues

7.10.1 Profile of Baseline Conditions

Volumes 4 and 7 from Phase 1 were based on data presented in the Recensement Général de la Population (General Census of the Population) of 1988, as well as an extensive socio-economic survey, which was undertaken within the scope of this study during July 1999. This survey was conducted among a sample of 996 households from the influence zone of the proposed dam. The sections outlined below indicate the baseline components, which were deemed necessary by the Haut Commissariat au Barrage de Kandadji in understanding the

affected socio-economic environment (and are illustrative of the kind of baseline information that should be assimilated as part of a Social Impact Assessment) (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.1.1 POPULATION AND DEMOGRAPHIC CHARACTERISTICS

Baseline data covered population size, population density, average household size and population growth rate. Based on the prevailing growth rate, it was expected that the population of most districts would double within 20 years, with the population in the zone of direct influence of the proposed dam exceeding 4.2 million in 2020 (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.1.2 SOCIAL STRUCTURE

Social structure is outlined in detail through the following:

- Socio-ethnic groups.
- Social cohesion.
- Cooperatives and associations.
- Migration (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.1.3 INFRASTRUCTURE AND SERVICES

Limited infrastructure inventories existed for the area at the time of the study, and it was only when the Feasibility Study was undertaken that details on levels of infrastructure emerged. However, it was acknowledged that this analysis needed to be complemented by an evaluation of the functionality of the infrastructures, to better appreciate the affect of the infrastructure on the well-being of the population (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.1.4 LAND OWNERSHIP AND CONFLICTS OVER NATURAL RESOURCES

Access to land is essentially through heritage, but new forms are developing, such as loans and transactions. The concept of real estate being a family and a community value that is inherited from one generation to another is no longer respected. Individuals are selling land to access cash (Haut Commissariat au Barrage de Kandadji, 1999).

The survey found that the majority of cultivated plots are smaller than one hectare in size. However, it is common for a single farmer to cultivate more than one plot at the same time within the same season (Haut Commissariat au Barrage de Kandadji, 1999).

Conflicts related to the utilisation of natural resources frequently threaten the social balance of several communities within the study area. The survey showed that conflicts are frequent between crop farmers and livestock owners. Grazing and water resources are the main cause of conflict between these two groups (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.1.5 PUBLIC HEALTH

Public health was investigated through a review of health statistics (1993-1998) as well as several site visits to the study area, and dealt with medical infrastructure, malaria as the major public health problem, rates of immunisation through vaccines, access to drinking water and the prevalence of Schistosomiasis (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.1.6 ACTIVITIES IN THE PROJECT AREA

The traditional activity of the rural populations in the project area is mainly agriculture, whereas animal breeding, fishing, and trading represent relatively important secondary activities. There are no important industries in the project influence zone, other than construction and craft-based activities (Haut Commissariat au Barrage de Kandadji, 1999).

In summary, it is the understanding of the Consultant that the profile of baseline conditions for the proposed Kandadji Dam project appeared to offer the level of detail required for a Social Impact Assessment for a project of this nature and magnitude. Indeed, it is believed that baseline conditions are sufficiently well known and described to enable the accurate projection and estimation of effects arising from the Kandadji Dam project.

7.10.2 Projection of Estimated Effects

The Kandadji Dam project illustrates the nature and extent of effects that may arise from a project of this kind. The projection and estimation of social effects appears to have been widely encompassing, including both negative impacts and benefits.

7.10.2.1 RESETTLEMENT OF PEOPLE

The most significant impact of the project is the need to resettle people from the future reservoir area. Approximately 35,000 people, residing in 15 villages would have to resettle. In terms of resettlement, the Kandadji Dam Project examined the following elements (which, in itself, is illustrative and not an exhaustive list of what is required for or what constitutes the requirements of a Resettlement Action Plan) (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.2.2 LOSS OF INFRASTRUCTURE

The construction of the proposed dam would lead to the loss of the following infrastructure:

- A 43 km section of national road.
- Boreholes (7).
- Community clinics (3).
- Schools (12).
- Mosques (30).
- Slaughterhouses (2).
- Traditional markets (2).
- Mills (2) (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.2.3 LOSS OF AGRICULTURAL LAND

Approximately 7,000 ha of agricultural land would be flooded by the proposed dam (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.2.4 GUARANTEED WATER SUPPLY

A guaranteed water supply would provide the following:

- Potable water to urban areas and villages.
- Irrigation water for agricultural areas.
- Water to the livestock and industrial sectors.
- Rehabilitation of fish farms and the potential for the establishment of new ones (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.2.5 REDUCTION IN DEPENDENCE ON ENERGY IMPORTS

With a constantly growing domestic demand for electricity, the proposed dam would ease the dependency of the country on imported energy (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.2.6 FOOD SECURITY AND SUSTAINABLE DEVELOPMENT

Through maintenance of water levels, the provision of secure water, and the availability of energy, the fishing, livestock and agricultural sectors would benefit through increased food production, provision of employment and the establishment of small industries (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.2.7 PUBLIC HEALTH

The proposed dam may have a dual impact (positive and negative) on public health:

- A reduction in water borne diseases due to the availability of potable water, as well as the maintenance of higher water levels downstream during dry seasons.
- The creation of a health risk due to the creation of biotypes favourable to the development of water related diseases (Haut Commissariat au Barrage de Kandadji, 1999).

7.10.2.8 OTHER INDIRECT IMPACTS

A number of indirect impacts were also identified:

- A contribution to a reduction of rural migration.
- The development of upstream and downstream industrial activities.
- Employment opportunities during construction.
- The improvement of fluvial traffic by maintaining a minimum water level in the Niger River.
- Easier access to groundwater.
- A contribution towards the attenuation of desertification (Haut Commissariat au Barrage de Kandadji, 1999).

7.11 Outcomes and Results

One of the minimum requirements of the Code de l'Environnement is that an Environmental Impact Assessment must include an analysis of baseline conditions of the site and its surrounding environment. For the Kandadji Dam Feasibility Study, it is the understanding of the Consultant that a detailed socio-economic survey of the zone potentially affected by the dam was undertaken.

However, it was recognized that further quantification of the affected villages would need to be conducted as part of the Environmental and Social Impact Assessment. In the opinion of the Consultant, this is not uncommon in incremental data gathering and decision-making.

Similar to other large dam projects, it is the opinion of the Consultant hat the greatest negative effect of the project is the need to resettle people from the future reservoir area. Also, a significant amount of agricultural land and infrastructure would be lost due to inundation. However, the Feasibility Study concluded that, in a Sahelian country such as Niger, where climatic opposites of lengthy droughts interspersed by radical flooding are commonplace, it would appear as if the socio-economic benefits of the Kandadji would outstrip the negative effects (Haut Commissariat au Barrage de Kandadji, 1999; Kimba, 2003). However, it is the understanding of the Consultant that a significant risk remains in that the livelihoods of approximately 35,000 people in a drought stricken country can be severely disrupted if resettlement is not implemented with due care and consideration for the people affected by resettlement.

Therefore, it is the Consultant’s understanding that the Environmental and Social Impact Assessment is designed to include a precise and detailed assessment of the impacts of the project and to provide mitigation measures for negative impacts. Its emphasis is on the preparation of a detailed Resettlement Action Plan, consistent with the World Bank's safeguards on involuntary resettlement. In the compilation of these plans, extensive consultations with the population affected by the project will remain important.

7.12 Assessment of Outcomes/Results by Involved Stakeholders

It was not possible to obtain an independent source of information to deal with this topic objectively. Similarly, attempts at reviewing project results as perceived by the affected or involved stakeholders have proven unsuccessful.

However, it is important to state that, the need for additional social studies post the Feasibility Study, should not negate the value of the work undertaken to date. Indeed, it is the experience of the Consultant that incremental information gathering, coupled with incremental decision-making, are common approaches to large projects of this kind. Furthermore, it should be understood that social environments are dynamic, necessitating the on-going updating of social information throughout the lifecycle of a project (especially considering the long time frames involved from project initiation through to operations).

7.13 Consultant's Conclusions

The Kandadji Dam project provides a number of key lessons, which may be applied to other projects of this nature.

- Establishment of a socio-economic baseline.
  The detailed documentation of the area of influence of the project is one of the first, and one of the most important steps in the assessment process, for a number of reasons:
  - It serves to assist the understanding of the relevant socio-economic environment and as well as the potential affects that the proposed project may have on this environment.
  - It provides a control baseline of people potentially affected by resettlement and thereby assists in the prevention of opportunistic resettlers into the area after project announcement. However, it is important for the parties implementing the programme be open to include affected people who were either absent, or incorrectly recorded during the initial baseline.
  - It serves as yardstick against which effects of a project and mitigation actions can be measured.

- A sound understanding of potential effects.
  As indicated in Section 12, in most cases, the most significant negative effect of a large dam project is the need to resettle people. It is necessary to understand these effects as early as possible in the project lifecycle (as early as project conceptualisation). Thereafter, incrementally through the project lifecycle, there is a need for the detailed quantification of these effects, ultimately culminating in the preparation of mitigation plans, for example, a Resettlement Action Plan. In the case of the Kandadji Dam project, the baseline studies conducted were based on a sample of the potentially affected population. It provided a good indication of the extent of the potential effects of the project, at a feasibility study level of understanding. However, as is the case with the Environmental and Social Impact Assessment (to be conducted for the Kandadji Dam project), this initial understanding of the socio-economic effects of a dam project should be built upon and extended during subsequent assessment phases.

7.14 Source Material

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8. Odra Dam

Odra River, Poland (Figure 8).

8.1 Aspects of Social Impact Assessment Addressed

- Public Involvement.
  - Develop and implement an effective public involvement plan.
- Alternatives.
  - Reasonable alternatives.
- Profile of Baseline Conditions.
  - Document the relevant human environment, and existing social conditions and trends.
- Scoping and Projection of Estimated Effects.
  - Identification and prioritisation of social impacts.
  - Cultural aspects.
- Mitigation.
  - Avoidance/minimisation of negative impacts.
  - Optimisation of benefits.

8.2 Normative Frameworks

- Polish Environmental Protection Law (2001).
- Polish Historical Conservation and Protection Act (2003).
- World Commission on Dams – Strategic Priorities.
- Various World Bank Policies.
  - Operational Policy 4.01 – Environmental Assessment.
  - Operational Policy Note 11.03 – Cultural Property.
  - Operational Policy 4.12 – Involuntary Resettlement.
  - Bank Policy 17.50 – Public Disclosure.
- Various EU Directives and International Treaties.
  - EU Council Directive 85/337/EEC on Environmental Impact Assessment.
  - EU Council Directive 2001/42 (Strategic Environmental Assessment Directive).
  - World Cultural and Natural Heritage (1972).
  - Convention of Environmental Impact Assessment in trans-boundary context (1991).
  - Aarchus Convention[29] (1998).

8.3 Project Identification

- Name Odra River Basin Flood Protection Project.
- Country Poland.
- Dates Impact Assessment 2004/2005, detailed Resettlement Action Plan 2004 onwards, and construction set to commence post 2006.
- Developer Polish Regional Water Board.

[29] Dealing with the free access to information and public participation in environmental issues.

Figure 8 Indicative location of the Odra Dam in Poland

www.geography.about.com/library/maps

Table 13 Selected technical details of the Odra Dam in Poland

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Odra	Poland	The Odra River is 854 km in length	Odra	Total reservoir area is approximately 26.3 km²	Flood Protection	Polish Regional Water Board

8.4 Stage in the Project Lifecycle

Planning/River Basin.

8.5 General Description of the Country Institutional Set-up

The material below is sourced primarily from the environmental assessment report prepared by Regional Water Board Gliwice (2005). The main legislative and socio-economic issue over the last decade for Poland has been the integration of Poland into the European Union. This process was successfully concluded in May 2004 when Poland entered the European Union as a full member. Thus, over this period, in order to meet the requirements of the Community Acquis, a complex process of harmonizing existing Polish legislation with that of the European Union was implemented.

Time was required to transform the existing environmental and sectoral departments[30] into effective units. At the time of the impact assessment for the proposed Odra Dam, the spatial planning and environment protection measures were designed at regional level, whereas their implementation and enforcement would be the responsibility of local level government. This was a completely new task for local government.

Decentralisation and reform of public administration during the 1990s, including adopted modifications in the legal system, significantly changed internal structures, decision-making processes and the management of public funds. The assignment of responsibilities between the various spheres of administration in Poland was still a matter of evolution during the assessment.

In summary, the local administration covered all public matters of local importance that are not statutory responsibilities of other entities, such as landscape and land use management, environmental protection, sewerage, waste disposal and treatment, etc.

8.6 Detailed Description of the Specific Policy/Normative Framework

An amendment to the Polish Environmental Protection Law (2001) simplified the administrative procedure for an Environmental Impact Assessment to a single-stage procedure instead of a two-stage procedure. The amended Law introduced a mandatory administrative procedure for all investors to obtain a *Decision on Environmental Conditions*. Such a decision is to be issued prior to the procedure for the approval of final designs to obtain a construction permit for an investment project. The documentation prepared for authorisation must be in line with the provisions of local land use plans and site permits. Thus, the procedure is strongly integrated into the entire approval procedure for new investments implemented by local and regional administrations (Regional Water Board Gliwice, 2005).

However, actual procedures were different due to the decentralised nature of Polish administration. In this regard, local impact assessments needed to be prepared to obtain site and construction permits from local authorities. Also, an impact assessment on a national or regional level was required as this was a major project, which affected more than one region and, thus, the Ministry of Environment required an Environmental Impact Assessment in compliance with Polish environmental legislation (Regional Water Board Gliwice, 2005).

[30] In reviewing the policies, procedures and responsible institutions, occasional references were made in Polish terms to approaches or Polish institutions. In these instances, the context of the section was used to interpret the overall meaning, but the exact reference or procedure may have been misinterpreted.

In accordance with World Bank safeguards, an Environmental Assessment was required for the Odra Dam project. Previous feasibility studies had included an environmental impact review. However, in order to meet World Bank requirements, in particular to develop mitigation measures and to prepare an Environmental Management Plan, it was decided to upgrade this work to a full Environmental Assessment, including the Social Impact Assessment component. In addition, an independent review group was established to review the findings (Regional Water Board Gliwice, 2005).

It is the understanding of the Consultant that the requirements for Environmental Assessments prepared under Polish legislation are similar to those of the World Bank and that of the European Union Council Directive 85/337/EEC (1985) on the assessment of the effects of certain projects on the environment.

Importantly, in terms of Social Impact Assessment, the requirements of World Bank OP 4.01 on Environmental Assessment are the most relevant for this project. Key relevant policy principles include the following:

- Assessment is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed project.
- Assessment takes into account the human health and safety; social aspects (involuntary resettlement, indigenous peoples and cultural property) of a project.
- During the assessment process, the proponent must consult with project-affected groups and local non governmental organizations about the project's impacts and take their views into account. These consultations should be initiated as early as possible.
- For certain projects, a panel of independent, internationally recognized environmental specialists must be appointed to advise on all aspects of the project relevant to the assessment.

The requirements of the World Bank OP 4.12 on Involuntary Resettlement are that resettlement be avoided where feasible or minimized, exploring all viable alternative project designs.

8.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

The material below is sourced primarily from the environmental assessment report prepared by Regional Water Board Gliwice (2005). The Regional Water Board Gliwice was charged with the planning, implementation and operation of the project, and it was recognised that the capabilities and expertise of the existing staff needed to be increased, especially as it related to river and floodplain ecology, environmental legislation, water quality management and environmental management.

The project was implemented with support from the international community, including support from the World Bank and the European Investment Bank.

Both the local authorities and the Polish Ministry of Environment were responsible for authorising components and ensuring and monitoring compliance.

The report intimated that a Monitoring and Evaluation consultant would be appointed to support the Environmental and Social Specialist in implementing the Environmental Management Plan and will provide technical assistance and training to the various parties involved in the implementation of the project. Two of the key functions proposed for the Monitoring and Evaluation consultant were to build capacity within the implementing organisations in environmental management and managing resettlement issues, and to provide training in environmental management to staff involved in the construction and operation of the project.

8.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

Examples of the implementation of the provisions of World Bank safeguards are available for numerous projects world-wide (dam and other large-scale infrastructure projects). It is also pertinent to note that World Bank safeguards are updated periodically, suggesting the incorporation of experience and learning into newer safeguards. However, there is little or no readily available literature on the implementation history of Polish national normative frameworks.

With regard to World Bank safeguards, there appears to be some controversy regarding their implementation. Some writers perceive the norm and its implementation positively, for example, Bekhechi (1999) states that *since 1984, major environmental policies have been issued and implemented by the World Bank and constitute the most comprehensive environmental policy that frames investment and other development activities of any development agency*. Others, predominantly from non governmental organisations and civil society have reservations regarding the norm. For example, the International Rivers Network (2005) states that *in spite of their many shortcomings, the World Bank's social and environmental safeguard policies are an important achievement of the past twenty years.* However, the International Rivers Network (2005) continues by stating *… the Bank has not mainstreamed social and environmental concerns throughout its business model. As a consequence, the Bank has repeatedly developed unsustainable projects within which the objectives of the safeguard policies cannot be achieved. The Bank may go through the motions of implementing safeguard policies, but it often fails to comply with their objectives. For example, the Bank rarely explores alternative options in any balanced way as part of the environmental assessments of projects. And people who are displaced by Bank projects almost invariably end off poorer as a result, rather than becoming project beneficiaries*.

The implementation of World Bank safeguards, therefore, appears not to have been free of disappointment. However, as stated above, the World Bank seems to be constantly striving towards the improvement of its policies and guidelines in an attempt to address shortcomings.

8.9 Project Description

The material below is sourced primarily from the environmental assessment report prepared by Regional Water Board Gliwice (2005). The Odra River flows from the Oderskie Mountains and is one of two main rivers of Poland. The catchment is characterised by steep, impermeable geology that, combined with a high annual rainfall, results in rapid runoff. This has been aggravated by urbanisation, agriculture and deforestation in the catchment.

The Odra River Basin Flood Protection Project was designed in the wake of the devastating floods and large-scale inundations of the floodplains in 1997. The floods inundated an area of 65,000 ha resulting in significant adverse impacts. The most realistic strategy to cope with peak floods was determined as a combination of:

- Constructing retention reservoirs in the upper floodplain of the Odra River.
- Improving and modernizing the existing flood protection system and dykes.
- Increasing the carrying capacity of the river channel and the Widawa flood relief by-pass.

Major flood protection works in the programme included the construction of a retention reservoir at Raciborz. This reservoir would remain dry and would be operational only during high floods. The total storage capacity of this reservoir would be approximately 185 million m³. The works comprised a 4 km embankment across the Odra River valley with a height of 10.5 m above river bed level. The total reservoir area is approximately 26.3 km².

The project was estimated to result in the protection against flooding of more than 2.5 million people, major urban infrastructure and industrial and commercial establishments.

The social impacts at Raciborz included the acquisition of approximately 2,600 ha of land and the involuntary resettlement of two villages involving 240 families.

The modernisation of the river embankments required limited resettlement, involving the possible relocation of 77 ha of homestead gardens and some infrastructure. The details would depend on the final design, and agreement was reached with the investors that these impacts would only be briefly addressed in the impact assessment because an agreement on the principles of mitigation and compensation had been reached.

The Environmental Impact Report briefly highlights some of the cost:benefit economic estimates, which preceded the undertaking of the assessment. The analysis considered the construction, social and administration/engineering costs for three of the regional catchment options (including downstream activities) and the total cost for the scheme. It is the understanding of the Consultant that this was reviewed against results from simulation modelling showing the effectiveness of these interventions in reducing flood levels and the estimated cost of damage inflicted by these floods. Estimated flood damage costs were considered for both annual damages as well as less frequent flood occurrences.

8.10 Implementation of Key Issues

8.10.1 Public Involvement

The material below is sourced primarily from the environmental assessment report prepared by Regional Water Board Gliwice (2005).

The Environmental Impact Assessment report showed that the work undertaken followed the precepts of the World Commission of Dams and provided for continuing collaboration between Regional Water Board Gliwice and the affected families in terms of participatory planning.

This process complied with the World Bank OP 4.01 on Environmental Assessment in terms of consulting early and in-depth with all stakeholders concerned.

During the preparation of the Environmental Impact Assessment study, there were two stages of consultation, viz. during scoping and during the presentation of findings. During scoping, the assessment team held individual meetings with various stakeholders that had previously been involved in studies of the Odra River. Indeed, pre-scoping consultation had been initiated since 2002 as part of preparations for the feasibility studies.

Consultation was also undertaken after the preparation of the draft Environmental Impact Assessment report that was distributed to local authorities and published on websites.

Additional background is important to understand the predominant social issues and the public participation process:

- After the great flood of 1997, activities commenced aimed at construction of the flood protection reservoir. At the same time, work commenced on the pre-feasibility study, including large-scale information dissemination, public consultation and meetings.

- Stakeholder interaction and a survey of affected landowners were undertaken between 1998 and 2004. The most recent survey in 2002 was boycotted by residents, encouraged by the Defence Committee[31].

- The Social Research Centre in Katowice administered a questionnaire survey on all residents of the reservoir basin. At the same time, an inventory of land and fixed assets was compiled. The results of these activities contributed to an economic analysis of the proposed flood control measures and provided information on the socio-economic and demographic characteristics of the population to be affected, its land and property holdings, and the attitudes of the households to resettlement.

- However, the household survey carried out in 1998 encountered hostility from residents. The elected head of Nieboczowy village refused to answer the questionnaire on the grounds that it included questions not discussed at a village meeting held earlier in the year. In all, ten households (6%) in Nieboczowy refused to respond to the questionnaire. However, as much as 91.9% of surveyed inhabitants formally accepted the involuntary displacement.

- Between 1998 and 2005, three teams of sociologists held formal and informal discussions and consultations with those people and their representatives, including well-attended public presentations of the project. There was, however, a strong and organised resistance to resettlement in Nieboczowy, the larger of the two affected villages. One of its manifestations, orchestrated by the Defence Committee, was an unwillingness to collaborate with the developer and study team in formulating a Resettlement Action Plan. It has also resulted in a refusal by many local families to provide any information about themselves or their attitudes.

- In May 2002, a meeting between representatives from the community, the team of sociologists and the Regional Water Board Gliwice was held. The affected community members demanded that serious consideration be given to the alternative alignment for the embankment, proposed by the Defence Committee, which would exclude Nieboczowy from the reservoir basin.

- This proposal had been submitted earlier to the local authorities and had received a detailed reply from the Regional Water Board Gliwice, explaining why it was not feasible. The community representatives nevertheless felt that their case had not been seriously considered and that they were not being adequately informed and consulted on the project. It was, therefore, proposed that further analysis should be undertaken and a public presentation on the outcomes be arranged.

[31] A committee established in 2000, by some residents of Nieboczowy and Ligota Tworkowska opposed to resettlement.

- In the opinion of the Consultant, the frequency of meetings with participation of the Defence Committee in 2004 indicated a tenacious and consistent search for new solutions. The Defence Committee showed no acceptance of alternatives where the site in any way mirrored that previously selected (even though the authorities issued the relevant location permit on July 5, 2004, which, incidentally, received 159 appeals). The Minister of Infrastructure upheld the decision taken with regard to the location. A further complaint was lodged in this regard and a decision from the authorities was still pending during the preparation of the Resettlement Action Plan. [The appeals did not stop the realization of the project that is to be implemented according to the initial decision, which was upheld].

- The client's representatives held meetings with the Defence Committee in late 2004. The first one was reduced to repeated presentation of positions and thus failed to address anything new. The second meeting was arranged by the Defence Committee to discuss another solution proposed by them. This solution concerned the so-called "Kotlarnia", i.e. location of the reservoir within gravel pits. The Regional Water Board Gliwice informed the Committee that this option was not feasible as the pits could be filled with ground water and the capacity of 2 million m^3 was too small for a significant reduction of the flood wave.

- The last 2004 meeting with the Defence Committee was organized at the request of World Bank staff. Five leaders of the Defence Committee, five consultants and World Bank staff participated. The arguments were similar to those given previously. Firstly, members of the leading group repeated their argument that they represented all (or at least 90%) of the residents. They refused to take cognisance of the fact that those they claim to defend included quite a few people who thought differently.

It is the understanding of the Consultant that this last meeting illustrates relevant practise and compliance with the policy framework as independent, internationally recognized specialists participated in advising on this difficult portion of the project.

From what was reported, it is the understanding of the Consultant that the outcome of this process, at the time of the reports, appeared to be that it was accepted that little further consultation would change the position of these stakeholders and the project proponents should simply continue with the selective and gradual purchase and resettlement of local residents as they chose to be resettled. This drawn out compensation approach is not often possible in projects of this nature where construction and operational deadlines play a large role in determining environment programme requirements.

However, again it reflects relevant practise in terms of attempting to minimise the impact of resettlement on the stakeholders' quality of life and mental well being.

8.10.2 Alternatives

Damage as a result of floods in the Odra River was high, with ten large floods recorded over the last half of the 20th century. In this context, the "do-nothing approach" was considered and deemed to be unacceptable.

A project-specific alternative investigated was the length and alignment of the reservoir wall. The one alternative had a considerably greater population to resettle, 704 versus 172, but the latter was eventually discarded due to both surface water concerns, increased risk to the local inhabitants[32] and a lower economic rate of return. It was this decision that was appealed and eventually upheld by the authorities.

Alternative project designs were considered with the selected alternative being based primarily on effectively reducing social risks without resulting in significant impacts and associated costs.

The protection of some portions of agricultural land that was subject to flooding was considered. However, it was decided that it was more efficient to enforce the present rule that no arable agriculture was allowed on land subject to regular flooding, rather than to protect these areas through construction of additional infrastructure.

It is the understanding of the Consultant that the project team appears to have been willing to consider all viable alternatives, especially those raised by affected stakeholders. This reflects current relevant practise. The preferred alternative does not select the alternative that minimizes resettlement, in accordance with the requirements of the World Bank OP 4.12 on Involuntary Resettlement. However, this alternative carried certain human health and safety concerns that were considered critical and, thus, this latter consideration did comply with the World Bank OP 4.01 on Environmental Assessment.

8.10.3 Profile of Baseline Conditions

The socio-demographic data on inhabitants affected in the two villages were based on opinion polls from 1998 and 2004, population and land ownership registers, and the results of a fragmented survey of households already purchased by the Regional Water Board Gliwice (Regional Water Board Gliwice, 2005).

Results were also reported to have been gathered from secondary sources such as the data concerning 43 households that did not appeal against the location permit.

Each of the two villages gave the overall impression of relative prosperity, stability and high standards of maintenance. Some of this is due to renovation work undertaken since the floods of 1997, but much is due to more enduring social influences. Many of the inhabitants had, or did have, jobs in one of the neighbouring towns, or in coal mines, and also had small farms. The income from these sources had been invested substantially in improvements to land and buildings, as well as in new buildings. The previous survey results showed high levels of residential stability, sometimes over several generations. These factors contributed to the reluctance of residents to leave and resettle (Regional Water Board Gliwice, 2005).

The collation of baseline conditions illustrated relevant practise in terms of identifying the social trends, cultural customs and lifestyle in terms of sense of security and community networks. The material was presented in reports, with supporting tables, graphs and figures. The understanding of baseline data provided a good background understanding of the reluctance of certain affected parties to resettle.

[32] This risk related to the proximity of the local village and the flood warning time required to ensure residents' safety.

8.10.4 Scoping and Projection of Estimated Effects

Benefits projected were categorised as primary, secondary and intangible. These benefits related to project estimates involving the reduction in flood damage risk and the exploitation of gravel from within the reservoir.

Land use in the Raciborz reservoir area is approximately 71% arable land and pastures, 17% natural forests and waste land and approximately 12% being residential areas, infrastructure, open water and ongoing gravel excavation. More than 60% of this land is State owned.

Potential social and environmental impacts of the project were screened by taking into account the effects caused by the project's location, design, construction and project operation.

Impacts identified that related to the social environment were:

- Positive future benefits on the safety of people and property.
- Safety risks associated with possible reservoir failure.
- Changes in land use and resettlement.
- Relocation of public utilities.
- Risk of damage to cultural properties.
- Removal of homesteads and gardens covering approximately 77 ha.

The reservoir would remain dry except at peak flood periods, when it would be inundated for periods of a few days to a few weeks. Under these conditions, it was decided that farming could continue, with the risk that crops could be lost during temporary inundation.

Compliance with the policy framework and relevant practise is illustrated in that scoping identified and investigated aspects of health and safety, and sense of security of the affected parties.

8.10.5 Mitigation

Concerns with regard to the safety of infrastructure and risk to people were addressed by incorporating various recognised design, construction and operation procedures, which included appointing an independent Panel of Experts.

The appointment of an independent Panel of Experts illustrates compliance with the requirement of the World Bank OP 4.01

One of the mitigation measures adopted to minimise social impacts was to defer the purchase of land within the inundation area until the end of construction and then lease it back to the owners for productive agricultural use. This leasing back of the land was undertaken at preferential rates, which recognised the increased probability and impact of flooding.

In the opinion of the Consultant this provides a good example of relevant practise in terms of avoiding and minimising impacts rather than only utilising complete compensation and resettlement.

The impacts of the work to be done on the river channels (loss of approximately 77 ha of homestead gardens) were not discussed in much detail as part of the main Environmental Impact Assessment report. Rather, land re-allocation and resettlement were planned under a separate Resettlement Action Plan (that is not considered further in this example, save for the additional social information that has informed this case study).

Some of the conclusions of the socio economic studies were:

- The method of gradual, voluntary buy-outs, as applied by the Regional Water Board Gliwice during the last two years (2003-2004) had been successful especially in view of the limited funds available and the difficult social conditions.
- The acquisition approach taken by the Regional Water Board Gliwice should be maintained in the future. With the support of international funding, the buy-out programme could be accelerated.
- In order to maintain the present or an accelerated rate of buy-outs, it would be necessary to establish more effective communication procedures.
- It was important to commence the process of the purchase of land, which belongs to people living outside the reservoir area that is required for construction of the embankments (Regional Water Board Gliwice, 2005).

8.11 Outcomes and Results

Compliance of the project with both Polish legislation and World Bank guidelines and policies were reviewed, and, where necessary, additional actions were taken to achieve compliance. In terms of meeting World Bank Operational Policy on Environmental Assessment (OP. 4.01), the following activities or actions were completed:

- Environmental assessment and public consultation.
- Local environmental impact assessments prepared for selected sub-projects.
- Follow up mitigation measures through implementation of an Environmental Management Plan.
- Implementation of training and capacity building in environmental management.

In particular, the Consultant understands that a public involvement plan was developed and implemented in accordance with World Bank safeguards and significant effort was made to reach consensus on all issues.

The formation of a Panel of Experts in accordance with World Bank safeguard requirements strengthened the Social Impact Assessment and provided input into the various key public involvement and mitigation options.

The formulation of alternative mitigation strategies to ensure that the social impacts in terms of sense of place and emotional links were minimised where possible, reflects a good example of relevant practise.

8.12 Assessment of Outcomes/Results by Involved Stakeholders

It was not possible to obtain an independent source of information to deal with this topic objectively. Similarly, attempts at reviewing project results as perceived by the affected or involved stakeholders have proven unsuccessful.

However, it is clear from the reports that the project, in general, was regarded as important by many stakeholders in Poland, whilst the project specific impacts were reluctantly accepted by some and opposed by others. It appears that the directly affected stakeholders opposing the project did not accept that alternatives had been investigated to a sufficient level of detail.

8.13 Consultant's Conclusions

The following challenges and opportunities were identified from this case study.

- Meeting international standards.
  In terms of meeting World Bank safeguards with regard to Environmental Assessment, it was recorded that a preliminary environmental analysis was carried out as part of project feasibility studies. A team of independent environmental consultants reviewed this preliminary analysis and carried out additional studies, including a detailed assessment of potential impacts. This culminated in a comprehensive Environmental Impact Assessment and report.

  This Environmental Impact Assessment recognised the socio-economic impacts associated with the alternative that required the resettlement of up to 700 people. The Environmental Impact Assessment reported that socio-economic studies had been undertaken and a detailed Resettlement Action Plan was required.

  An important feature of large projects such as this that span long time frames and iterative planning processes, is to ensure as early on as possible that the process is being undertaken according to all the relevant legislative requirements. In this project, the team reviewed the legislative requirements of the various international and national institutions involved in the project. This was regarded as a strength of the project, particularly in the light of the changing legal and political environment as the country aligned itself with the European Union. However, this said, it is important that compliance with international standards not be undertaken retrospectively once a preferred option has been selected as this seldom results in an objective and detailed analysis of alternatives.

- Public participation.
  In examining the literature it was apparent that numerous affected parties had not provided any information and that numerous appeals to the project had been made due to resistance to resettlement. However, it appears from the reports that the project team undertook a long and time consuming consultation process to try and reach an understanding or common ground with stakeholders opposed to resettlement.

  A number of alternatives were considered, both in terms of realignments and mitigation measures that would lessen the impacts of resettlement (for example, purchasing agricultural land and leasing it back). However, other directly affected parties, with long ties to the village and area, were reluctant to consider resettlement in any form.

  The various project reports clearly illustrated that the benefits that would accrue from the project in terms of overall flood risk to the catchment, were significantly greater that the direct impacts associated with resettlement (only 12 % of the affected area was private residential infrastructure). Thus, the end decision was that the project needed to proceed.

This extended public involvement process, although not in the end reaching a consensus with all stakeholders, appears to have strengthened the focus of the team on mitigation strategies that will best accommodate the affected landowners. This was seen in the concessions with regard to the continued cropping of arable land and the slow purchase of residential areas. A key outcome is that the level of public involvement detail and the aim to reach consensus, wherever possible, strengthened other components of relevant Social Impact Assessment practice, especially the consideration of alternatives and the development of mitigation measures.

8.14 Source Material

Aarchus Convention (1998).

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Polish Environmental Protection Law (2001).

Polish Historical Conservation and Protection Act (2003).

Regional Water Board Gliwice (2005). *ODRA River Basin Flood Protection Project Environmental Assessment.* Government of Poland.

Various World Bank Policies.

Various EU Directives and International Treaties.

World Commission on Dams – Strategic Priorities.

www-wds.worldbank.org/projects/

9. Olifants River Water Resources Development Project (Phase 2)

Olifants River System, Republic of South Africa[33] (Figure 9).

9.1 Aspects of Social Impact Assessment Addressed

- Public Involvement.
  - Develop and implement an effective public involvement plan.
- Alternatives.
  - Reasonable alternatives.
- Scoping and Projection of Estimated Effects.
  - Identification and prioritisation of social impacts.
  - Prediction of Probable Impacts.
- Prediction and Evaluation of Responses to Impacts.
  - Determination of significance of social impacts.
  - Resettlement or loss of shelter.
  - Loss of income sources or means of livelihood.
- Estimate of Indirect and Cumulative Impacts.
  - Flow-on effects.
  - Incremental impacts.
- Mitigation.
  - Avoidance/minimisation or compensation of negative impacts.
  - Optimisation of benefits.

9.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects form part of international normative frameworks, including those covering Environmental Assessment:

- Rio Earth Summit 1992 – Concept of Sustainability.
- World Commission on Dams – Strategic Priorities.
- South Africa's international agreements and obligations.
  - Revised SADC Protocol on Shared Watercourses.
- South Africa's national legislation and associated regulations.
  - Constitution of the Republic of South Africa Act (Act 108 of 1996) as amended by the Constitution of Republic of South Africa Amendment Act (Act 35 of 1997).
  - National Environmental Management Act (Act 107 of 1998).
  - Environment Conservation Act (Act 73 of 1989).
  - National Water Act (Act 36 of 1998).
  - National Heritage Resources Act (Act 25 of 1999).

[33] The support of the South African Department of Water Affairs and Forestry is gratefully acknowledged.

Figure 9 Indicative location of the Olifants River Water Resources Development Project in South Africa

www.geography.about.com/library/maps

Table 14 Selected technical details of the Olifants River Water Resources Development Project (De Hoop Dam) in South Africa

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
De Hoop	South Africa	The Steelpoort River (and its tributaries) drain a tertiary catchment area of 7,136 km^2	Steelpoort	Surface area of about 1,600 ha with a storage of approximately 300 million m^3	Mining and Domestic Water Supply	South African Department of Water Affairs and Forestry

9.3 Project Identification

- Name Olifants River Water Resources Development Project (Phase 2).
- Country Republic of South Africa.
- Dates Screening Investigation 2004, Environmental Impact Assessment 2004 and 2005, and construction of the selected option to commence 2006.
- Developer RSA Department of Water Affairs and Forestry.

9.4 Stage in the Project Lifecycle

Policy/Strategy/River Basin.

9.5 General Description of the Country Institutional Set-up

In South Africa, the Department of Water Affairs and Forestry is the custodian of water resources, including responsibility for this example, water resource planning and management (although it should be noted that Water Services Authorities (municipalities) are responsible for the water services aspects of water). It is the understanding of the Consultant that the Department of Environmental Affairs and Tourism is responsible for environmental matters in the country, including the authorisation of "listed" activities that potentially have a deleterious affect on the environment. Dams are listed activities and, therefore, any proposed dam is subjected to the environmental authorisation process of the country, viz. an Environmental Impact Assessment.

9.6 Detailed Description of the Specific Policy/Normative Framework

The material provided below is derived from the Consultant's knowledge of and experience with the project. The policy/normative framework for the Olifants River Water Resources Development Project (Phase 2) (ORWRDP) was provided by South Africa's legislation, of which the following were of primary importance:

- Constitution of the Republic of South Africa Act (Act 108 of 1996) as amended by the Constitution of Republic of South Africa Amendment Act (Act 35 of 1997).
- National Environmental Management Act (Act 107 of 1998).
- Environment Conservation Act (Act 73 of 1989).
- National Water Act (Act 36 of 1998).
- National Heritage Resources Act (Act 25 of 1999).

The Bill of Rights is fundamental to the Constitution of the Republic of South Africa. Section 24 states that "Everyone has the right (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".

The National Environmental Management Act (Act 107 of 1998) provides South Africa's overarching environmental legislation. This Act contains a set of principles that govern environmental management, and against which all environmental management is measured. This Act requires for sustainable development the consideration of all relevant factors including the following:

- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
- That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied.
- That a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.
- Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its lifecycle.
- The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.
- Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.
- Community well-being and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.
- Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.
- The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.

The Act also requires adherence to South Africa's international agreements and obligations, in this case as relevant to shared watercourses.

In terms of environmental authorisation, the Environment Conservation Act (Act 73 of 1989), and associated Regulations, as amended, requires that an Environmental Impact Assessment be undertaken for "listed" activities, aimed to provide for the effective protection and controlled utilisation of the environment.

Although broad social principles are contained in the above legislation, it is important to note that neither the National Environmental Management Act (Act 107 of 1998) nor the Environment Conservation Act (Act 73 of 1989) actually stipulates a framework for Social Impact Assessment. However, embedded within the principles of the National Environmental Management Act (Act 107 of 1998) are many of the key principles of Social Impact Assessment, including:

- Placing people and their needs at the forefront of its concern.
- Ensuring the participation of all interested and affected parties especially those from vulnerable and disadvantaged groups.
- Decisions must take into account the interests, needs and values of all interested and affected parties.
- Community well-being and empowerment must be promoted

Assessments undertaken in accordance with the requirements of the Environment Conservation Act (Act 73 of 1989) must include the recognised impact assessment requirements such as estimated effects on the social (and biophysical) environment, potential cumulative impacts and proposed mitigation measures and monitoring programmes.

The above three pieces of legislation formed the main basis for the framework within which environmental investigations for the ORWRDP were undertaken. Added to this was consideration to key elements of the National Water Act (Act 36 of 1998) that governs all aspects of water (taking note that water services are governed by the Water Services Act (not under consideration in this case study)), including water resources planning and management, including, importantly, South Africa's international agreements and obligations as pertains to water, and the National Heritage Resources Act (Act 25 of 1999) that prescribes the manner in which cultural heritage resources should be investigated and protected.

Importantly, a key area where the proponent and Project Co-ordination and Management Team deviated from the policy norm, was to commission an environmental and social impact screening assessment on a range of options to inform the configuration of a final option that would be investigated in further detail. This screening assessment was not required by legislation (but was anticipated as, at the time, regulations governing Environmental Impact Assessments for "listed" activities were in the process of revision, with one revision being the introduction of screening).

In addition to the legislative framework within which the ORWRDP (Phase 2) was investigated, the environmental team undertaking the environmental screening assessment added into the assessment framework non-regulatory principles and procedures, viz. the Rio Earth Summit 1992 concept of sustainability and the seven strategic priorities arising from the World Commission on Dams.

A positive aspect from this example is that, whilst there were still a number of water resource development options and alternatives being considered (four possible dams, water trading, water conservation and demand management and groundwater exploitation), a robust and wide normative framework enabled and stimulated a wider focus on potential options and strategies required to avoid impacts.

9.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

The material provided below is derived from the Consultant's knowledge of and experience with the project. The organisational set-up adopted for this project was to establish a Project Co-ordination and Management Team comprising members of the Department of Water Affairs and Forestry and members from private consulting firms. The Project Co-ordination and Management Team was tasked with the responsibility for planning, programming, appointing investigative teams, assessing information, formulating options and, finally, making recommendations to senior members of the Department and the South African Cabinet. The Project Co-ordination and Management Team, in turn, appointed the lead Environmental Practitioner who was responsible for ensuring that the Social Impact Assessment was adequately and timeously undertaken in order to feed into the wider investigations and analyses of options.

The members of the Project Co-ordination and Management Team from the private sector essentially functioned as additional support staff and advisors to the Department of Water Affairs and Forestry members who were part of the Team. The Departmental members would

take the Team's recommendations to more senior Departmental staff for authorisation where required. Different members of the Project Co-ordination and Management Team were tasked with the responsibility of liaising and supervising the activities of the various sub-consultants, such as the environmental practitioner, the public participation team and the various technical teams.

The environmental practitioner was made up of four members from two environmental firms, which drew on a range of appointed specialists throughout the study.

An Authorities Forum, representing all relevant authorising authorities as per South Africa's legislative requirements was established to enable the streamlining of input and to facilitate the ease at which the authorities could enforce and monitor the requirements that required compliance. Meetings were held biannually at key milestones to update the authorities and obtain input and guidance.

Regular forum meetings strengthened the enforcement and monitoring of the legislated requirements and ensured that activities were dealt with at the correct time within the project.

Importantly, this Authorities Forum was not a public stakeholder forum and only authorities needing to approve or provide input on the project were involved. Through the public participation programme and other technical forums, a range of stakeholders from mining, business and civil society were provided the opportunity to interact with the Project Co-ordination and Management Team and discuss the project.

9.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

The material provided below is derived from the Consultant's knowledge of and experience with the project (and relatively recent similar projects in South Africa). Draft regulations for compulsory Environmental Impact Assessments were first published for comment in March 1994, and an amended draft was published in November 1997. Through a participatory process followed to finalise the regulations, a recommendation was made that a Guideline Document be published to provide all role players with a uniform basis for implementing the regulations. The Draft Guideline Document was published by the Department of Environmental Affairs and Tourism in September 1997 and coincided with the publication of a List of Activities and Regulations for Environmental Impact Assessments in the Government Gazette of 5 September 1997, in terms of Sections 21, 22 and 26 of the Environment Conservation Act. Over the past nine years, the regulations have been applied widely to a vast variety of projects, including large dams. There is general acceptance in South Africa that the application of the regulations has been successful. However, this does not mean that all parties involved on a single project necessarily reach consensus on any or all aspects related to a project.

The regulations pursuant to the Environment Conservation Act are scheduled for repeal, when on 1 July 2006, new regulations pursuant to the National Environmental Management Act are promulgated. The new regulations are designed to build on and strengthen the positive aspects of the current regulations and, also, to amend existing specifications that could not be applied or which failed to deliver the anticipated outcomes.

As determined by Schedule 4 of the Constitution of South Africa, 1996, the environment is a concurrent function of the relevant national and provincial departments. For the national and provincial environmental departments, a major role is, *inter alia*, to set specific regulatory norms and standards for impact management and to ensure that individuals and organisations meet these. Therefore, overall enforcement is undertaken by the Department of Environmental Affairs and Tourism in association with nine provincial environmental authorities.

In terms of this case study example, it is the Consultant's understanding that this was the first time that for a dam project, and the Social Impact Assessment within the Environmental Impact Assessment, that a wide assessment framework that included various non-regulatory requirements, was adopted. The social elements that underlie the strategic priorities of the World Commission on Dams Report and the Concept of Sustainability, significantly influenced the focus and approach of Social Impact Assessment activities.

9.9 Project Description

The material provided below is derived from the Consultant's knowledge of and experience with the project. Water requirements in the Limpopo and Mpumalanga Provinces of South Africa are expected to increase significantly due to the expansion of current activities as well as new and proposed developments in the region, particularly in the mining sector but also to secure bulk water for improved domestic supply purposes. Due to this increase in water demand, the Department of Water Affairs and Forestry commenced a review of a range of possible alternative developments in order to identify the most feasible configuration to meet the anticipated demand.

The first option considered was the improved utilisation of existing dams in the Olifants River System. To this end, Phase 1 of the ORWRDP entailed the raising of an existing dam on the Olifants River. However, this action alone was insufficient to meet the projected demand and, therefore, Phase 2 of the ORWRDP was initiated.

At the outset, environmental screening, the stage being reviewed for this case study, was undertaken for a range of possible options:

- Four possible dam sites on the farm Rooipoort (Olifants River), the farm De Hoop (Steelpoort River), on the farm Groenvley (Sterk River) and on the Phalala River.
- The purchase or lease of water rights from three irrigation areas.
- Water conservation and demand management measures.
- Developing local groundwater resources.

The screening exercise considered the environment in its broadest context and focussed on identifying biophysical and social impacts that could be considered environmental red flags or fatal flaws associated with the various options and configurations between and within options[34].

[34] A fatal flaw is defined as a significant long-term negative consequence on the affected social environment that is extremely difficult to mitigate or undesirable to promote, and a red flag is defined as a potentially serious impact that could have medium to long-term negative consequences on the affected social or biophysical environment that can only be mitigated at significant will, effort and cost (total cost, i.e. not only financial and economic considerations). In this regard, an alternative with a fatal flaw should not be considered further.

The final preferred option that was recommended for further investigation was the proposed De Hoop Dam on the Steelpoort River. The dam wall will be approximately 80 m high, the impounded lake will cover an area of about 1 600 ha with a storage of approximately 300 million m^3 of water and a yield of approximately 72 million m^3 of water per year. Alongside this it was also recommended that additional water conservation and demand management initiatives be implemented concomitantly with infrastructure planning and development.

The approach and methodology applied during screening was guided by the following key factors:

- Both the direct, immediate social impacts, as well as the long-term impacts and costs of each development option, needed to be considered and understood.
- All external costs of development, for example, pollution and degradation of resources for future generations, must be internalised when assessing the potential benefits of economic opportunities.
- The options were viewed individually and in configurations, as cumulative impacts needed to be clearly understood.

9.10 Implementation of Key Issues

The following activities were undertaken during screening (only those relating to the social environment are described hereunder) and are all based on the Consultant's own experience with the project.

9.10.1 Public Involvement

Consistent with the legislative framework of the country, a comprehensive public involvement programme was undertaken. Stakeholder inputs were obtained during meetings, individual interviews or through written correspondence. Also, all inputs, which had been received during previous investigations of individual options, were incorporated into the screening assessment. Furthermore, consistent with the policy/assessment framework, the environmental team ensured that input was obtained from key stakeholders who represented different economic sectors and who were likely to hold different perspectives on the various options.

Stakeholder inputs focused on conservation, the ecological integrity of the Olifants River System (in particular, the aquatic environment and associated riparian vegetation) mining, directly affected communities and commercial farmers at the dam sites, the status of water services, health and environment, effluent reuse, water saving, groundwater use, institutional arrangements and water trading from existing irrigation farms.

Public involvement also involved providing stakeholders with feedback on how their inputs had been considered by the environmental team, and how the preferred development option had been identified and configured. This occurred via meetings and correspondence and through the inclusion of their comments and the environmental team's response in tabular form in the Environmental Impact Assessment reports. Through this Issues and Response Report each stakeholder who provided input was able to see his/her comment and, if applicable, a reference to where the issue had been dealt with in the suite of environmental reports.

9.10.2 Alternatives

Environmental legislation in South Africa requires the consideration of alternatives. In this regard, the environmental team considered options wider than that required by the terms of reference and the prevailing legislative framework, that included a brief summary of the no-development option and macro-international and national options, prior to addressing regional options (as required by the terms of reference). All options were considered closely in the context of the strategic priorities arising from the World Commission on Dams, particularly the requirement to undertake a comprehensive assessment of alternatives.

The potential social effects of all of these alternatives were briefly considered with the more viable alternatives taken further for additional scoping. The full range of alternatives considered and their potential social consequences were as follows:

- No development option.
  - Negative socio-economic impacts in terms of stifling economic growth and socio-economic advancement precluded this alternative.
- Transfer of water from another catchment supported by the Lesotho Highlands Water Project.
  - Although technical considerations were not appealing, there were potential flow-on incremental social and socio-economic impacts over the long-term that could have held merit.
- Water trading from two irrigation areas to supply industrial requirements.
  - The potentially negative social impacts on the lifestyle and loss of income sources for livelihoods were considered, as well as the potential positive impacts of additional finance supporting further development of irrigation infrastructure and economic development.
- Water conservation and demand management.
  - The current social acceptability and socio-economic impacts of this alternative on industry, agriculture and domestic users were detailed.
- Groundwater exploitation.
  - The current social acceptability, health factors and quality of life factors influenced the attractiveness of this alternative.
- The development of new dams.
  - Two potential sites were preferred from a technical perspective. The assessment of these social impacts is detailed below.

This investigation met the requirements of the legislative framework of the Environment Conservation Act (Act 73 of 1989) in terms of identifying and assessing alternatives to the same level of detail for each alternative.

9.10.3 Scoping and Projection of Estimated Effects

Each of the regional options was assessed individually, with scoping considering the social impacts associated with each development option in terms of direct impacts and predicted future impacts.

For two of the dam options, viz. Rooipoort and De Hoop, different technical alternatives were reviewed and costed in parallel with the technical team. In an iterative manner, information was exchanged between the environmental and technical teams, with a view to avoiding and/or minimizing impacts on the social environment. In this way, project specific alternatives were refined (noting that all environmental aspects contributed to this refinement, with only social aspects being dealt with in this case study).

Where applicable, estimated costs for mitigation were formulated. These cost estimates were prepared in relatively fine detail, for example, the Rooipoort Dam cost estimate, for three different dam wall heights, mitigation costs were projected for the following:

- Loss of cultural resources.
- Loss of graves.
- Loss of infrastructure.
  - Houses.
  - Roads.
  - Electricity services.
  - Fencing.
  - Businesses.
  - Offices.
  - Crèches.
  - Schools.
  - Boreholes and standpipes.
  - Places of worship.
  - Public telephones.
  - Taxi ranks.
- Land for resettlement.
- Loss of land for crop production.
  - Dryland crops.
  - Irrigated crops.
  - Grazing within the inundation area.
  - Grazing within the mountainous areas.
  - Grazing lost to the road reserve.
- Loss of fruit trees.

In addition, the personnel cost to implement resettlement and re-establish livelihoods were estimated over a ten year period. Importantly, this was undertaken at the screening level of assessment (using data collected previously) and this detailed information so early in the project planning process, significantly aided decision-making.

It should be noted that non-dam options were investigated to the same level of detail as dam options. Particular attention was paid to water conservation and demand management, and water trading. In each case, potential social impacts were identified and quantified. These were factored into the assessment of project specific alternatives (Section 11.2) as well as the assessment of configurations (Section 11.5) to be taken forward for more detailed investigations, post screening.

9.10.4 Prediction and Evaluation of Responses to Impacts

Arising from scoping, each individual project alternative was assessed. The assessment aimed to identify potential issues of significance that could render the project unviable in terms of social and socio-economic impacts (as well as other environmental aspects). The assessment included evaluating predicted impacts and responses (based on experience gained on similar projects) to ensure that impacts were fully understood clearly by the proponent.

The manner in which the assessment was undertaken was, first, to review each project component individually, i.e. each dam site, groundwater options, water trading etc. Impacts on various components of the environment, such as vegetation, water quality, social impacts, were rated as either a negative or positive impact, the significance of which was to be determined during the Environmental Impact Assessment. A key aspect was to identify environmental fatal flaws and red flags.

Thereafter, various combinations of the main project components, such as groundwater, water trading and the construction of a dam, or groundwater, water trading and demand management with the dam being delayed, were rated in the same manner.

This allowed the decision-makers to consider suitable project components and combinations that carried reduced social and environmental risks.

9.10.5 Estimate of Indirect and Cumulative Impacts

Following the completion of the individual assessment of alternatives, three possible joint configurations using different strategic options were assessed for their anticipated:

- Regional socio-economic impacts.
- Downstream socio-economic impacts.
- Water pollution impacts.
- Long-term sustainability.

These configurations included various groupings of project specific alternatives that had been considered viable after assessment, as well as one of the national alternatives raised by the environmental team.

9.10.6 Mitigation

Although specific mitigation measures did not need to be developed and described in detail at this social impact screening level of investigation, potential mitigation measures and their associated costs were identified and developed. In this way, due to the early quantification of impacts, the alternatives taken forward into the various configurations were those that, firstly, avoided, secondly, minimised, and, thirdly, compensated for social impacts. For example:

- The Rooipoort Dam was avoided primarily due to high social impacts and potential resettlement impacts.
- Social impacts upon landowners at the De Hoop Dam were minimised by the relocation of the regional road and the choice of spillway (which was based on social and environmental inputs to minimise impacts). In particular, the relocation of the road supported and streamlined the land acquisition planning and mitigation processes that would be required.

Furthermore, social impacts and benefits accruing to other alternatives were identified and translated into mitigation and/or management actions. However, these are not elaborated here because, ultimately, the preferred option was the construction of the De Hoop Dam on the Steelpoort River.

9.11 Outcomes and Results

The material provided below is based on the Consultant's own experience with the project, as well as information arising from the associated public participation programme.

From a social perspective, the outcomes of the social impact screening assessment were partly those expected in that options with high social impacts that would be difficult, timely and costly to mitigate, were discarded.

In terms of the key role players involved, the outcomes and results were considered to be of a high standard, although the final preferred project configuration favoured the implementation of a single technical alternative, namely, De Hoop Dam. However, ancillary to this was additional investigations into non-infrastructure options such as water conservation and demand management to realise long-term sustainability benefits for the whole Olifants River System.

The social screening assessment was undertaken in exceedance of the legislative requirements of the country at a level of detail appropriate to screening with a primary objective of identifying social red flags and/or fatal flaws, to aid integrated planning and informed decision-making at an early stage of project planning. Subsequently, an Environmental Impact Assessment has been completed for the ORWRDP Phase 2 Infrastructure Development, with the outcomes and results of social screening forming the basis within which the Environmental Impact Assessment (and the Social Impact Assessment within it) was undertaken. Importantly, screening outcomes and results were reinforced by the outcomes of the Environmental Impact Assessment.

9.12 Assessment of Outcomes/Results by Involved Stakeholders

The material provided below is based on the Consultant's own experience with the project, as well as information arising from the associated public participation programme.

The outcomes of the Social Impact Assessment undertaken during the Screening Phase for the project were well received by most stakeholders[35].

In terms of legislative requirements at the time, the work exceeded the regulated requirements as laid out in the Environment Conservation Act (Act 73 of 1989). This provided the authorities with additional information and confidence in the findings and approach to the investigation.

The results achieved met the Department of Water Affairs and Forestry's requirements as it provided the background, detail, and predicted effects of the various alternatives from a social perspective. The quantification and costing of preliminary social impacts provided the basis from which to make informed decisions on preferred alternatives at an early policy/strategy stage in the project lifecycle.

[35] It should be noted that stakeholders in the area of inundation of the proposed Rooipoort Dam were unsupportive of the outcomes. This was because, for many years there had been discussions about a possible dam in this area, which had created an expectation amongst communities. This expectation was founded on the development possibilities afforded by resettlement.

Members of civil society accepted the results but were generally more concerned that not all of the recommendations may be carried forward to the regulated process.

9.13 Consultant's Conclusions

This case study provides two key lessons that can be applied to projects of this nature and the practise of Social Impact Assessment.

- Wide policy and assessment framework.
  Adopting a wide policy and assessment framework enables the inclusion and assessment of a wide variety of alternatives. Although there are limits to the number of alternatives that can be considered in a project-specific investigation, widening the scope early on in the investigative process does hold merit in capturing alternatives that might otherwise have been left out. In this case, water trading might have been left out (although, as screening showed, there are a number of negative consequences and, hence, it was not favoured at this time). Whatever the scope of alternatives under consideration, it is important that each is investigated to the same level of detail enabling informed decision-making.

- Appropriate detail to inform decision-making.
  The more accurately, and earlier in the project planning process, social impacts can be predicted and described, backed up by similar experiences on other projects, and anticipated mitigation measures formulated and costed, the more likely impacts can be appropriately factored into decision-making and, importantly, iteratively, impacts avoided or mitigated through interactive planning.

  A detailed and robust policy and legislative framework is required to ensure that the level of detail provided in the Social Impact Assessment in the early stages of project planning, i.e. preliminary cost estimates, sufficiently aids the decision-making rather than only providing a general description of the social background (as is often the case).

9.14 Source Material

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10. Salto Caxias Hydroelectric Power Plant

Iguaçu River, Brazil (Figure 10).

10.1 Aspects of Social Impact Assessment Addressed

- Public Involvement.
  - Development and implementation of effective public involvement plans.
- Mitigation.
  - Mitigation through resettlement compensation.
  - Mitigating resettlement impacts through development initiatives.

10.2 Normative Frameworks

- Brazilian National Environment Policy Act (Law 6938/81).
- CONAMA Resolution No. 1 (January 1986).
- CONAMA Resolution No. 2 (April 1996).
- CONAMA Resolution No. 237 (December 1997).

10.3 Project Identification

- Name: Salto Caxias Hydroelectric Power Plant.
- Country: Brazil.
- Dates: Environmental Impact Assessment and Environmental Impact Statement were completed in 1993. Construction commenced in 1995 and was completed in 1998.
- Developer: Companhia Paranaese de Energia.

10.4 Stage in the Project Lifecycle

Operation.

10.5 General Description of the Country Institutional Set-up

Given the size of Brazil and its particular regional or local features, the Brazilian National Environmental Policy is executed at three different spheres of public administration - federal, state, and municipal. Coordinating and formulating environmental policy is the responsibility of the Ministry for the Environment. Linked to it is the Conselho Nacional do Meio Ambiente (CONAMA) (National Environmental Council), the deliberative and consultative board for environmental policy. The National Environmental Council is responsible for the establishment of rules, standards, and criteria guidelines so that environmental licensing can be granted and controlled by the state and local municipal environmental agencies. These are part of the Sistema Nacional do Meio Ambiente (National Environmental System), and the Instituto Brasileiro de Meio Ambiente e dos Recursos Naturais Renovaveis (Brazilian Institute for the Environment and Renewable Resources) as its substitute. The Brazilian Institute for the Environment and Renewable Resources, under the jurisdiction of the Ministry for the Environment, is the agency responsible for executing the Brazilian Environmental Policy at federal level.

Figure 10 Indicative location of the Salto Caxias Hydroelectric Power Plant in Brazil

www.geography.about.com/library/maps

Table 15 Selected technical details of the Salto Caxias Hydroelectric Plant in Brazil

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Salto Caxias	Brazil	Unknown	Iguaçu	Surface area of 140 km²	Hydropower	Companhia Paranaese de Energia

10.6 Detailed Description of the Specific Policy/Normative Framework

The Salto Caxias Hydroelectric Power Plant is located in the Paraná State in Southern Brazil. Therefore, both the Brazilian and Inter-American Development Bank normative frameworks are applicable to the project.

10.6.1 Brazil Environmental Legislation

10.6.1.1 NATIONAL ENVIRONMENT POLICY ACT (LAW 6938/81)

The most relevant Brazilian environmental legislation is the National Environmental Policy Act (Federal Law 6938 of August 1981), which established the National Environmental Policy. The National Environmental Policy Act establishes the objectives of Brazil's environmental policy, viz. the preservation, improvement, and recuperation of the environmental quality, adequate for life, assuring the country of conditions for socio-economic development, for the interests of national security, and for the protection of the dignity of human life.

A number of CONAMA resolutions are of relevance to the project:

- CONAMA Resolution No. 1 (January 1986), which outlines basic criteria and general guidelines for the compilation of a Relatório de Impacto Ambiental (Environmental Impact Statement) and establishes the public participation requirements.
- CONAMA Resolution No. 2 (April 1996), which provides for compensation for environmental damages caused by projects of relevant environmental impact.
- CONAMA Resolution No. 237 (December 1997), which provides for the procedures and guidelines used in environmental licensing.

The National Environmental Policy created an environmental permitting system, which requires that three permits or licenses be obtained for all proposed projects that have potential environmental effects, i.e. *Licença Prévia* (Preliminary License), *Licença de Instalação* (Installation License), and *Licença de Operação* (Operating License). This process applies to projects listed in CONAMA 001/1986:

- The environmental permitting process begins with the compilation and submission of an Environmental Impact Assessment and review by the authorities. Upon review and approval of the Environmental Impact Assessment and Environmental Impact Statement, the Preliminary License is issued. A public hearing may be required prior to the issuance of the Preliminary License. Importantly, as part of the permitting process, CONAMA Resolution No. 001/1986 establishes that a study must be conducted in an area to be impacted by a project to assess the presence of archaeological, historical and cultural sites as well natural places of unique beauty.

- The Installation License is granted based upon agency review and approval of the project-specific *Projeto Básico Ambiental* (Environmental Management Plan) and provides the legal authorization for the developer to start construction of the proposed project. The Installation License also establishes specific requirements regarding the mitigation and monitoring of environmental and social impacts.

- An Operating License must be obtained prior to beginning project operation. The Operating License is granted only after all the plans and programmes defined in the Environmental Management Plan are implemented. Once issued, the Operating License is valid between four and 10 years as outlined in CONAMA Resolution 237/1997. The operating permit is issued for the entire facility. If expansions, changes in major equipment, or changes in process are planned for the facility, then new applications for Installation and Operating Licenses are required by law.

10.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

The State-owned electric utility Companhia Paranaese de Energia (COPEL) is the electric utility for the Brazilian State of Paraná, and supplies power throughout the south of Brazil. COPEL took responsibility for the construction and operation of the project, and also played a significant role in the associated public involvement and resettlement programmes.

The Brazilian Institute for the Environment and Renewable Resources, under the jurisdiction of the Ministry for the Environment, is the agency responsible for executing Brazilian Environmental Policy at Federal level, and by the Paraná State Environmental Authority at State level.

Environmental authorisation is granted in terms of the National Environment Policy Act (Law 6938/81), as well as a number of CONAMA Resolutions, particularly Resolutions 1, 2 and 237.

10.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

The Brazilian environmental legislation has been actively enforced since 1986 after the publication of the resolutions issued by CONAMA, and regulated after the promulgation of the new Brazilian Constitution in 1988. At the time, it was the only constitution in the world that had an entire chapter dedicated to environmental issues. The Salto Caxias Hydroelectric Power Plant was the first large dam project to be constructed after the promulgation of the new constitution and the publication of the resolutions (Dos Santos, 2004).

10.9 Project Description

The Salto Caxias Hydroelectric Power Plant is located on the Iguaçu River, approximately 180 km upstream from the Iguaçu Falls, in the Paraná State of Southern Brazil. The dam wall is constructed from Rolled Compacted Concrete, is 63 meters high, and has a length of approximately 1,000 meters. Construction began in 1995, and the filling of the reservoir was completed by September of 1998. The reservoir inundated an area of approximately 140 km² and flooded 1,120 rural properties in nine counties in the south-western part of the State. The power plant has a capacity of 1,240 MW, with four 310 MW generators delivering electricity since the end of 2000. The total coast of construction of the project was US$ 1 billion, with almost a quarter part of this amount, approximately US$ 250 million, spent on the implementation of 24 environmental programmes (http://www.beckwithelectric.com/powerlines/powerlines-29.html#3).

At the beginning of the environmental studies, the project was faced with strong resistance from local people in the project-affected area. Some of these people used to live in the region where at least four big dams had been built in the past, under old Brazilian legislation. This happened

at a time when strategic projects were considered vital to progress and the development of the country. The military government of the time declared areas where dams were to be built as so-called “national security areas”, a decision, which could not be questioned. People affected by the construction of big dams had almost no rights, unless ownership could clearly be proven. Landless workers, living on the land to be flooded, were removed from the land and had no choice but to migrate to shanty towns close to suburban areas of big cities, in what are commonly known in Brazil as the “rural exodus”. Although Brazilian legislation had changed by the time that the Salto Caxias project was announced, it was strongly opposed against this background. The population of the region of Salto Caxias organized themselves with the help of non governmental organisations, such as the Landless Workers Movement and the National Movement for the People Affected by the Construction of Dams. A new movement, the Regional Movement for the People Affected by the Construction of Dams in the Iguaçu River (CRABI) was formed. CRABI was strongly opposed to the construction of the dam, to the point that they instructed people not to answer the census that was being conducted in the region by COPEL, in order to obtain sufficient data for the conclusion of the Social and Environmental Impact Assessments (Dos Santos, 2004).

When COPEL started initial surveys in the area, the CRABI movement occupied the land of the future construction site, demanding discussions with authorities, including the Public District Attorney, State representatives, and the Environmental Authority (Dos Santos, 2004).

As this was the first dam proposed after the establishment of the National Environmental Policy Act (Federal Law 6938 of August 1981) and subsequent Decrees, CRABI was adamant that the dam could only be constructed after open discussions, where affected people’s rights were guaranteed. During the occupation of the future construction site, COPEL took the initiative and the responsibility for the creation of a mechanism to conduct discussions between project proponents, the authorities, and the potentially affected population.

In 2003, the Salto Caxias Hydroelectric Project (together with the Palmiet Pumped Storage Scheme in South Africa) was awarded the International Hydropower Association’s Blue Planet Prize. The International Hydropower Association initiated the Blue Planet Prize, with evaluation support by UNESCO's International Hydrological Programme in 2001, to inform and encourage developers and owners of hydropower plants, in the pursuit of excellence. The aim of the Blue Planet Prize is to increase awareness of hydropower's contribution to sustainable development and to promote good practice in the use of the world's hydropower resources. The Blue Planet Prize evaluates existing schemes according to four criteria, viz. technical, economic, social and environmental aspects. These criteria were recently acknowledged by the Organization for Economic Co-operation and Development. Successful candidates need to demonstrate a good standard in all of these aspects and excellence in at least one. An international panel of judges visits each of the candidate projects for the award and an international jury made up of representatives from UNESCO and the International Hydropower Association select the winners. In order to be eligible to win, a scheme must have been in operation for a minimum of three years and show excellence in one or more of the four criteria. The rules permit up to three schemes to be awarded every two years (http://www.greenjobs.com/Public/newsitems/news_00012.aspx).

10.10 Implementation of Key Issues

10.10.1 Public involvement

As indicated, COPEL took the initiative to establish new mechanisms for participation between various stakeholder groups. This mechanism was called the Multidisciplinary Study Group (GEM-CX) and was supported by the national environmental authorities, State representatives,

the Public District Attorney, and CRABI (which represented potentially affected communities). Decisions made by the GEM-CX were made by majority vote after intensive discussion and debate on issues. The importance of this body is that COPEL managed to establish open discussion on environmental issues related to the project, and, in the process, sharing of responsibilities for decisions in the environment was established. With the formation of the GEM-CX and the participation of governmental agencies, CRABI was guaranteed that if the decisions of the group were not implemented, the environmental authorities would not issue the necessary permits for the construction of the reservoir (Dos Santos, 2004).

For the first time in Brazil, issues were being discussed openly and democratically before the beginning of the construction of a large dam. One of the key products of the process was the inclusion and definition of certain key issues in the Environmental Impact Assessment, which, by law, the proponent was bound to implement (Dos Santos, 2004).

These issues included:

- Schedules for expropriation.
- Schedules for relocation.
- Participation of the affected people in defining the price of land.
- The right of the affected to choose where they were resettled.
- Defining the size of land for each family.
- Defining the infrastructure to be built in each project.
- The participation of the families in the management of the construction of the infrastructure of the projects.
- The participation of the community in the management of the resettlement project (in partnership with COPEL during the first three years) (Dos Santos, 2004).

10.10.2 Mitigation

10.10.2.1 MITIGATION THROUGH RESETTLEMENT COMPENSATION

Against the historical background of its implementation on previous dam projects in Brazil, and because of the extent of the effect, resettlement was a contentious issue and the single greatest effect of the project. In this regard, there is little doubt that the aforementioned public involvement process informed the compilation of a detailed resettlement programme.

A detailed survey of the affected communities was conducted by a commission comprising COPEL technicians and representatives of the affected people. The process was mediated by the Paraná State Environmental Authority and the Ministry of the Environment (Dos Santos, 2004).

The Resettlement Programme was implemented by means of payment to landowners for the acquisition of land, based on market value and the detailed survey. The Resettlement Programme was aimed at small farmers, owners of properties smaller than 30 acres, and rural workers with no formal tenure. Families had a choice between individual resettlement, and a Collective Resettlement Project. Almost 73% of affected families opted for the Collective Resettlement Project. For implementation of the Collective Resettlement Project, COPEL acquired 40,000 acres of land in the surrounding region, with strong public involvement in the selection of these areas. In the process, 19 communities, with an average of 50 families in each, were established. In these communities, COPEL funded agricultural and social assistance for three years after resettlement. Each family received an area with a minimum size of 40 acres, a brick house with three or four bedrooms, and a barn (Dos Santos, 2004).

Infrastructure and support for these new communities were provided in the form of storage facilities, water supply, roads, soil preparation, electricity supply, telephone connections, health services, and schools.

Particular attention was paid to the following considerations in the Resettlement Programme:

- Conservation of remnant forest areas, including the planting of new trees.
- Preparation of farmland in ways that minimized erosion and protected waterways from sedimentation.
- Support and extension for the development of organic agricultural practices, to replace the use of pesticides, highly soluble fertilizers, hormones, and antibiotics.
- Improvements to local healthcare through the development of two health centres, and a family doctor programme with the emphasis on preventative medicine.
- Cultural growth and preservation of cultural and social heritage (Dos Santos, 2004).

10.10.2.2 MITIGATION THOUGH THE IMPLEMENTATION OF LOCAL AND REGIONAL DEVELOPMENT PROGRAMMES

Resettlement of the 1,120 families implied the removal of almost a quarter of the population of the region. Since the original towns were relatively small, with a small economic base, this could have had significant economic effects on these towns. This issue became one of the key themes for discussion by the GEM-CX. The result was the compilation of an economic development plan named Procaxias, which was aimed at creating jobs and assisting economic recovery in the region (Dos Santos, 2004).

An example of this was the potentially significant socio-economic effects of the inundation of Foz do Chopim, a small hydroelectric power plant owned by COPEL. The plant had been operational since the 1960s, and was, at that time, the only formal employer in the small town of Foz do Chopim. Its closure could have spelled the complete economic collapse of the town, as approximately 40 people would lose their jobs. Plant employees would lose their jobs and move away in search of other opportunities, which, in turn, would lead to the closure of businesses in the town (Dos Santos, 2004).

The situation left COPEL with two options:

- Compensate the whole community to abandon the village and re-establish themselves elsewhere.
- Find a solution for the issue, by identifying market and business opportunities that would replace the jobs that would be lost with the closure of the power plant (Dos Santos, 2004).

In pursuit of the second option, COPEL appointed SEBRAE, a Government organization that assists and supports the creation and development of small business. SEBRAE conducted a survey of the economic situation of the town and its resources, and came up with three innovative solutions:

- Organising and training small farmers in the town into a cooperative to grow fruit and vegetables, and supplying these to Dois Vizinhos, a city of approximately 45,000 inhabitants. This initiative has grown to a point where produce is now sold to all cities in the region.

- Starting a small clothing factory, by identifying a number of seamstresses in the town, and providing them with training, sewing machines, and a small warehouse. The original women trained more women, and formed a cooperative, which caught the interest of a well-known clothing brand in Sao Paulo. Due to the quality and competitive pricing of the garments, this Sao Paulo company is currently sourcing the majority of its stock from Foz do Chopim.
- A cooperative was formed and members were trained to perform the clearing of vegetation and other debris from the dam basin (approximately 140 km^2) before inundation. Due to training and extensive experience in performing this task, the cooperative is currently performing several similar activities for municipalities in the region (Dos Santos, 2004).

After a period of six months, 100 jobs were created through these efforts, 250% more than was lost through the closure of the power plant.

Due to the success of this project, COPEL decided to extend its contract with SEBRAE to include the compilation of a regional development plan for the nine counties affected by the establishment of the reservoir. This was aimed as a compensation measure for the resettlement of its population, as well as any other negative socio-economic effects experienced by these communities. SEBRAE compiled and implemented a plan, which not only created small business and tourism opportunities, but also involved the municipal authorities as a means to ensure long-term sustainability. To date, numerous small businesses and cooperatives have been formed, which are involved in a range of activities, from road maintenance to the manufacture of furniture, household items, and children's toys (Dos Santos, 2004).

The above descriptions are examples of relevant practice as pertains to the mitigation of negative social impacts within a development paradigm (and, indeed, are also indicative of the manner in which Social Development Plans should be formulated in order to optimise benefits that may accrue from a large-scale project of this nature).

10.11 Outcomes and Results

The Salto Caxias project was initially faced with a level of resistance by the affected population, unprecedented in Brazil at the time. If this situation had been handled in a different manner, the project could easily have led to extensive social conflict and unrest in the area, as well as other parts of Brazil where people were mobilised against existing dams. However, through an extensive public involvement programme, COPEL managed to gain the support of the affected population, as well as the different spheres of government.

Resettlement occurred between 1996 and 1998. As can be expected in any resettlement programme, everything did not go smoothly but, in general, it is the opinion of the Consultant that the resettlement process appears to have been successful. The public involvement process played a crucial role in the compilation and implementation of the Resettlement Programme. Affected parties were involved in the process from the valuation of property to the final relocation, and by 2001 the farming communities were producing substantial crops.

Mitigation of the effects of resettlement was not limited to the compensation of the immediately affected population. Socio-economic development initiatives were also implemented in the project's wider area of influence, thereby creating benefits from the project for the greater region.

10.12 Assessment of Outcomes/Results by Involved Stakeholders

It was not possible to obtain an independent source of information to deal with this topic objectively. Similarly, attempts at reviewing project results as perceived by the affected or involved stakeholders have proven unsuccessful.

10.13 Consultant's Conclusions

The Salto Caxias Hydroelectric Power Project provides a number of key lessons, which may be applied to other projects of this nature.

- Public involvement as an inescapable part of a project.
  The initiation of public involvement from the very first stages of a project is of immeasurable importance for the overall long-term success of a project. As shown in the Salto Caxias example, a lack of initial consultation can lead to conflict and costly delays in the process. Where affected communities feel a sense of "ownership" of the process, there is much greater acceptance of responsibility for its outcomes.

  The process also assists the development proponent to better understand the potential effects of the project, and places the proponent in a better position to recommend appropriate mitigation measures. Public involvement in the implementation of mitigation plans and programmes envisaged in Environmental and Social Impact Assessments can also contribute to the successful outcome of these plans and programmes.

- Mitigation of potential effects through development programmes.
  Resettlement programmes should, as a minimum, compensate affected parties for loss of land, improvements to land, infrastructure, crops, fruit trees and economic displacement. However, the mere replacement of lost assets is not necessarily sufficient for resettlers to re-establish their livelihoods. Implementation of resettlement mitigation through the initiation of development projects, which can include a compensation component, or stand apart from it, ensures a greater likelihood of resettlers re-establishing themselves and their livelihoods in a sustainable manner.

  As shown in the Salto Caxias example, it is even more beneficial if the development initiatives are extended to a wider target group than the directly affected population, thereby extending benefits and improving livelihoods in the greater region.

10.14 Source Material

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11. Son La Hydroelectric Power Project

Da River, Vietnam (Figure 11).

11.1 Aspects of Social Impact Assessment Addressed

- Alternatives.
  - Identification of reasonable alternatives.
- Prediction of responses to impacts.
  - Involuntary resettlement.

11.2 Normative Frameworks

- Law on Environmental Protection, 1993.
- Law on Environmental Protection, 2005.
- Decree on Providing Guidance for the Implementation of the Law on Environmental Protection, 1994 (Government Decree No. 175-CP, 1994).
- Decree on Providing Guidance for the Implementation of the Law on Environmental Protection, 2005 (Government Decree No. 80/2006/ND-CP, 2006)
- Guidelines for Resettlement and Rehabilitation in Vietnam.
- Environment Policy of the Asian Development Bank, 2002.
- Asian Development Bank: Involuntary Resettlement, 1995.

11.3 Project Identification

- Name — Son La Hydroelectric Power Project (Son La Dam).
- Country — Vietnam.
- Dates — Feasibility studies were completed in 1998. Final project approval was granted at the end of 2002. Construction started in 2004 and is planned for completion in 2009. Resettlement is to be completed also in 2009.
- Developer — Electricity of Vietnam.

11.4 Stage in the Project Lifecycle

Planning and Construction.

11.5 General Description of the Country Institutional Set-up

The Ministry of Natural Resources and Environment is responsible for exercising the function of State management of environmental protection and State management on water resources. All other ministries, ministry-level agencies, and other government bodies are obliged to cooperate with the Ministry of Natural Resources and Environment in carrying out environmental protection within their sectors and in establishments under their direct supervision. The People's Committees of provinces and cities exercise the State management function for environmental protection, as well as the implementation of resettlement programmes at local level.

Figure 11 Indicative location of the Son La Hydroelectric Power Project in Vietnam

www.geography.about.com/library/maps

Table 16 Selected technical details of the Son La Hydroelectric Power Project in Vietnam

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Son La	Vietnam	Unknown	Da	Unknown	Hydropower	Electricity of Vietnam

11.6 Detailed Description of the Specific Policy/Normative Framework

The proposed Son La Hydroelectric Power Project is located in Vietnam, and funded by Electricity of Vietnam. Although the Asian Development Bank was not involved in the initial funding of the project, it became involved in 2005, through a technical assistance programme called "Strengthening Institutional Capacity of Local Stakeholders for Implementation of Son La Livelihood and Resettlement Plan". Therefore, both the Vietnamese and Asian Development Bank normative frameworks are applicable to the project.

11.6.1 Vietnam Environmental Legislation

11.6.1.1 LAW ON ENVIRONMENTAL PROTECTION (1993) AND LAW ON ENVIRONMENTAL PROTECTION (2005)

The Law on Environmental Protection states that organisations, and/or individuals, *albeit,* foreign investors, joint ventures or socio-economic developers, must submit Environmental Impact Assessment reports to the State management agency for environmental protection for appraisal, when constructing or renovating:

- Production areas.
- Population centres.
- Economic, scientific, technical, health, cultural, social, security and defence facilities.

The result of the appraisal is an Environmental Impact Assessment report, which should propose appropriate solutions to protect the environment. This shall constitute part of the basis on which the competent authorities approve the projects, and authorize their implementation.

11.6.1.2 DECREE ON PROVIDING GUIDANCE FOR THE IMPLEMENTATION OF THE LAW ON ENVIRONMENTAL PROTECTION, 1994 (GOVERNMENT DECREE NO. 175-CP, 1994)

Decree 175-CP was issued in 1994 and was enacted to guide the implementation of the Law on Environmental Protection. It also provides guidelines for the implementation of an Environmental Impact Assessment. It states that environmental effects should be evaluated as follows:

- Evaluating the present state of the environment in the area of operation of the project or the establishment.
- Evaluating the effect exerted on the environment by the operation of the project or the establishment.
- Proposing measures for environmental protection.

The Son La Hydroelectric Power Project is classified as an Extraordinary Category Project according to a subsequent circular issued by the Ministry of Natural Resources and Environment under the Law on Environmental Protection and Decree 175-CP (Circular no. 490/TT-BKHCNMT dated April 1998). The reason for the classification is that the dam is a water reservoir with a capacity of more than 100,000 million m^3. For this category, a project needs to be divided into two phases, viz. Phase 1, which consists of an application for an investment permit, and Phase 2, which comprises detailed project design. In order for Phase 1 to be approved, i.e. for an investment permit to be issued, which grants permission for the investment, a Feasibility Study with a chapter on potential environmental impacts should be completed. This is similar to an Initial Environmental Examination. Only in Phase 2 should the project proponent compile and submit a detailed Environmental Impact Assessment report.

11.6.1.3 GUIDELINES FOR RESETTLEMENT AND REHABILITATION IN VIETNAM

There is no formal Vietnam specific norm or guideline, which deals with resettlement. The Government of Vietnam is currently in the process of preparing a National Resettlement Policy under a grant from the World Bank. The aim is to apply this policy to all types of development projects in Vietnam. It will provide standards for compensation and resettlement of affected people. The guidelines follow the format and general content of the guidelines prepared by the World Bank. However, these country specific guidelines were not completed at the time of the planning and implementation of resettlement for the Son La Hydroelectric Power Project. Therefore, expatriate and Vietnamese consultants prepared an interim document titled "Guidelines for Resettlement and Rehabilitation in Vietnam", which is based on the World Bank's guidelines on involuntary resettlement, for use on the project. The central objective of the Guidelines for Resettlement and Rehabilitation in Vietnam is to ensure that the living standards and income earning capacity of affected persons are improved, or at least restored after the resettlement. The displaced persons ought to be compensated for their losses at full replacement cost prior to the actual move and they ought to be assisted with the move and supported during the transition period in the resettlement site.

11.6.2 Asian Development Bank

11.6.2.1 ENVIRONMENT POLICY OF THE ASIAN DEVELOPMENT BANK

According to the Asian Development Bank, large dams are categorised as Category A projects, which implies that an Environmental Impact Assessment is required as part of the project authorisation and funding applications. Key considerations in preparing an Environmental Impact Assessment are:

- Assessment of induced, indirect and cumulative impacts.
- Examining alternatives.
- Achieving environmental standards.
- Designing least-cost mitigation measures.
- Developing appropriate environmental management plans and monitoring requirements.
- Formulating institutional arrangements.
- Ensuring meaningful public consultation.

11.6.2.2 ASIAN DEVELOPMENT BANK: INVOLUNTARY RESETTLEMENT (1995)

The objectives and principles of the Asian Development Bank policy on involuntary resettlement are as follows:

- Involuntary resettlement should be avoided where feasible.
- Where population displacement is unavoidable, it should be minimised by exploring all viable project options.
- People unavoidably displaced should be compensated and assisted.
- People affected should be informed fully and consulted on resettlement and compensation options.
- Existing social and cultural institutions of resettlers and their hosts should be supported and used to the greatest extent possible.
- The absence of a formal legal title to land by some affected groups should not be a bar to compensation.
- As far as possible, involuntary resettlement should be conceived and executed as a part of the project.

- The full costs of resettlement and compensation should be included in the presentation of project costs and benefits.
- Costs of resettlement and compensation must be considered for inclusion in Asian Development Bank loan financing for the project.

11.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

The project is being undertaken by Electricity of Vietnam, which falls under the Ministry of Industry.

The Ministry of Natural Resources and Environment is responsible for the environmental authorisation of the project. Environmental authorisation is granted in terms of the Law on Environmental Protection as well as a number of Decrees, particularly Decree 175-CP.

11.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

Environmental issues have gained increased attention in Vietnam since 1984, when the Vietnamese Government formulated the National Conservation Strategy. At the time, the first preparations for Environmental Impact Assessment procedures were implemented. Following this, Environmental Impact Assessment experts were trained and there were a number of elaborations on regulatory documents and adaptations to methodologies, which culminated in the enactment of the Law on Environmental Protection and Decree 175-CP.

Reportedly, most large dams are in Asia (31,340). The Asian Development Bank, as the regional finance institution in the region, has played a significant role in the dam-building industry. Since 1970, the Asian Development Bank has approved a total of 86 water-sector loans with dam components that include 29 large dams (worth US$ 4,386 million in investments) (Asian Development Bank, 1999).

The Asian Development Bank conducted a “Special Evaluation Study on the Social and Environmental Impacts of Selected Hydropower Projects” based on four case studies of dam projects funded by them. Some of the key findings from the evaluation are as follows:

- Projects have not resulted in disastrous environmental and social impacts. However, several shortcomings have occurred, most of which could have been avoided or compensated with more diligence on the part of project proponents, Development Member Country agencies and the Asian Development Bank (Asian Development Bank, 1999).

- Compliance with environmental clauses in construction contracts has not been satisfactory because many have modest clauses and, in some, accountability placed on the contractors is slight. The evaluation recommended that the Asian Development Bank and Development Member Country agencies be more rigorous in screening the capacity of construction firms to abide by environmental and social requirements (Asian Development Bank, 1999).

- According to the evaluation, monitoring of impacts has been better during construction than in the operational phase due to the use of review missions, progress reports and panels of experts. The evaluation recommended a clearinghouse for all monitoring efforts and a formal follow-up by the Asian Development Bank on whether impact monitoring is translated into changed action (Asian Development Bank, 1999).

- Some environmental and social impacts that occur go unreported because of weak scrutiny by the Development Member Country oversight agencies and the Asian Development Bank. The evaluation recommended the deployment of multi-skilled supervision teams at the midterm review and increasing the number of relevant staff recommended if the Asian Development Bank is to consider the systematic review of environmental and social mitigation measures (Asian Development Bank, 1999).

- Institutional capabilities of Development Member Country agencies responsible for enforcing environmental and social concerns vary substantially across countries. The evaluation recommended that identification of institutional development needs would be useful (Asian Development Bank, 1999).

The Asian Development Bank, therefore, implements rigorous self-evaluation that includes sound recommendations, which aim to improve the quality of project outputs funded by the Asian Development Bank (Asian Development Bank, 1999).

However, in contrast, it would appear that there is a substantial civil society movement, which is highly critical of Asian Development Bank funding activities related to large dams. One such organisation is the "NGO Forum on ADB". In 2005, this forum produced a guidebook entitled "The Asian Development Bank and Dams". In the guidebook it states the following: *"Though infrastructure per se is necessary for development, most ADB projects have been perceived and, for the most part, proven to have had adverse social and environmental impacts. Further, the Bank has a bad record of not consulting meaningfully affected local communities, vulnerable groups and other civil societies about its so-called development projects. Access to information with regard to Bank activities, as well as government decisions on IFI financing has been unsatisfactory, if not highly unacceptable"* (Nuera, 2005; Masayda and Nuera, 2006).

Therefore, in the opinion of the Consultant, the implementation of Asian Development Bank policies appears not to have been free of disappointment. However, as stated, the Asian Development Bank seems to be striving towards the improvement of its policies and guidelines in an attempt to address shortcomings.

11.9 Project Description

The potential of the Son La Hydroelectric Power Project has been the focus of studies for more than 30 years. Electricity of Vietnam completed the pre-feasibility study in 1996 and final feasibility studies were completed in 1998. Environmental studies were undertaken at the same time and a Social Impact Assessment was completed in 1999. Final environmental project approval was granted at the end of 2002. When completed, the project will be the largest power plant in Vietnam (Bladh, Nilsson, 2005).

The project will comprise eight turbine units with a total generating capacity of 2,400 MW. This implies annual electricity generation in the order of 14 billion kWh. Construction started in 2004 and is envisaged to be completed in 2009. Other objectives beside electricity generation are flood control, water supply and irrigation (Bladh *et al*., 2005).

The Son La Hydroelectric Power Project will affect people in three provinces, viz. Son La, Lai Chau and Dien Bien, making it not only the largest power plant in Vietnam but also the largest resettlement programme to date (Section 11.2). The majority of the villagers that may be affected by the construction of the project are poor and belong to ethnic minorities (Bladh *et al*., 2005).

The project is financed by the Government of Vietnam through Electricity of Vietnam. The overall value of the project is estimated at US $ 2.3 billion. The cost of the resettlement programme is high and estimated to be approximately US $ 0.7 billion. The cost per resettled person is an estimated US $ 8 100 (Bladh *et al*., 2005).

11.10 Implementation of Key Issues

11.10.1 Prediction of responses to impacts

11.10.1.1 IDENTIFICATION OF ALTERNATIVES

Three different size alternatives, focussing on the length and height of the dam wall, were investigated. Four criteria were used on which to base a decision, viz. economic and technical feasibility, and social and environmental aspects.

Based on these criteria, the so-called “Low Son La Project Option”, the mid-size alternative, was chosen. This alternative would sufficiently minimise the risk of downstream flooding, is economically and technically feasible and would have less socio-economic effects than the larger alternative. The larger alternative, the so-called “High Son La Project Option”, would have involved the resettlement of more than 100,000 people. The “Small Son La Project Option” would involve a smaller number of resettled people than the “Low Son La Project Option” but it was found to be not economically feasible. Thus, although the final alternative that was chosen does not have the least overall socio-economic effect, it has the least effect while remaining economically and technically feasible (Bladh *et al*., 2005).

Importantly, social (and environmental) considerations were taken into account when assessing the merits of different alternatives (Bladh *et al*., 2005).

11.10.1.2 RESETTLEMENT

The first Resettlement Plan for the Son La Hydroelectric Power Project was compiled in 1996 and was revised three times before 2005, when compilation of the Resettlement Master Plan was completed. Based on the Resettlement Master Plan, eight District Resettlement Plans are in preparation for a total of 270 resettlement sites. As indicated in Section 4, resettlement is scheduled to be completed by 2009. The plans were compiled by the National Institute of Agriculture Planning and Protection in conjunction with other government institutes, such as the Institute of Ethnology who conducted the socio-economic baseline surveys. These baseline surveys included all the households affected by the project. Information collected through the surveys included the number of people per household, age profile, household infrastructure and assets, and the household’s source(s) of livelihood (Bladh *et al*., 2005).

IMPLEMENTATION

Provincial People's Committees, which function at the sphere of local government in the different affected provinces, are responsible for the implementation of the physical resettlement of people. Under them, District Resettlement and Compensation Management Committees are formed. These Committees and their representatives are able to speak the various local languages of the different ethnic groups (Bladh *et al*., 2005).

APPLICATION OF RESETTLEMENT PRINCIPLES

According to the National Institute of Agriculture Planning and Protection, the following overarching compensation principles outlined in the "Guidelines for Resettlement and Rehabilitation in Vietnam" were followed as the basis for the preparation of the Resettlement Plans:

- Affected people who have permanent land use rights would be compensated at full replacement cost for their losses.
- Affected people who do not have permanent land use rights would be compensated at a lower rate, but would be entitled to rehabilitation measures to ensure living standards and income earning capacity. Production levels are to be improved or at least restored.
- Affected people who have affected crops and trees would be compensated at market value for their lost crops, regardless of their land tenure status.
- Affected people who have affected shops or businesses, or suffer loss of income due to the project, would be assisted to restore their income earning capacity and production levels, regardless of their land tenure status.
- Compensation for all assets would be equivalent to the replacement cost of the asset without any subtraction made for depreciation or salvageable materials (Asian Development Bank, 2005).

COMPENSATION

Based on these principles, the Resettlement Master Plan states that people affected and displaced by the Son La Hydroelectric Power Project would be compensated in the following manner:

- Cash compensation, at higher cash values than previously paid on other projects.
- Replacement land in the order of 2 000 m^2 prepared for cultivation.
- Replacement housing. Resettlers would be provided with material and would have to build their new houses themselves. There are two replacement housing options, viz. a "new type" house, which means that it is built with construction material such as brick and mortar, or traditional houses, similar to the present ones, constructed of bamboo and wood. If "new type" houses are chosen, the Government will assist in the construction work. Each household will receive a 400 m^2 plot of land for the construction of new housing.
- Replacement crops. Seed stock and plant material were provided to replace crops such as maize, tea, vegetables, rice and fruit trees.
- A supply of rice for a six to twelve month period would also be provided to bridge the period until own, new crops can be harvested.
- Replacement and improved infrastructure. Infrastructure such as electricity and water supply, health care centres, schools, roads are to be provided as part of the resettlement process (Bladh *et al*., 2005).

The aim of the resettlement plans is to resettle whole villages together even if only a part of the village will be directly affected by the project. This should reduce the dispersion of communities and will also maintain existing group patterns, which may ease the restoration of villages and their livelihoods after resettlement. According to a survey done by the Institute of Ethnology, the affected people would like to be resettled together so that they can help each other to adjust to the new areas. However, many people, predominantly those belonging to the Thai ethnic group, whose main agricultural activity is wet-rice cultivation in the river valleys, are going to have to move to higher ground. This will disrupt their cultivation practices and may affect their food security situation during the resettlement process as well as thereafter. There is also not sufficient land in the Son La Province to accommodate all the affected people. Approximately 30% of the resettled people will, therefore, need to be resettled in the Lai Chau Province in the Central Highland area. In order to mitigate the effect of people being resettled in different agricultural conditions, the Government has made a commitment to assist villagers in alternative agricultural methods (Bladh *et al*., 2005).

PILOT PROGRAMMES

In 1998, the Government issued a decree (Decree 22-CP of 1998) to regulate compensation and other allowances for land structures of national and public interest. Following this decree, the resettlement plan for the Son La Hydroelectric Power Project was piloted in the affected provinces. The pilot projects were initiated in 2001 and approximately 3,375 people were resettled in three provinces. An implementation review of the pilot projects identified a number of weaknesses in the implementation of the resettlement plans:

- Inaccurate assessment for compensation.
- Inadequate disclosure and planning of income restoration and livelihood programmes.
- Tension between resettled people and host communities.
- Ineffective grievance mechanism.

Based on the lessons learned from the pilot, the Government issued a special decision (No 459/QD-TT) in May 2004, which aimed to address gaps in the earlier decree and to provide measures to maintain the standard of living of the affected people (Asian Development Bank, 2005).

ASIAN DEVELOPMENT BANK TECHNICAL ASSISTANCE

The Asian Development Bank is currently adjudicating the approval of funding for the Northern Power Transmission Expansion Sector Project in Vietnam. Under this project, transmission lines will be constructed from the power stations in the north of the country, of which the Son La Hydroelectric Power Project is to be the largest, to load centres in Hanoi, Haiphong, and Quang Ninh. Under the Northern Power Transmission Expansion Sector Project, the Asian Development Bank has included a technical assistance component, which is aimed at strengthening the institutional and technical capacity of national, provincial, and district authorities, as well as commune leaders, for the effective planning and implementation of resettlement and livelihood programmes for the communities affected by the construction of the Son La Hydroelectric Power Project (Asian Development Bank, 2005).

In the process of preparing the funding approvals, a Technical Assistance Fact-Finding Mission investigated the resettlement activities, which had already taken place on the Son La Hydroelectric Power Project. This Mission identified specific problems, especially with the district resettlement plans and livelihood activities for the affected people:

- Inadequate implementation of the Government's special decision of 2004 in the district resettlement plans and livelihood programmes.
- Lack of proper land use planning in selecting resettlement sites.
- Weak feasibility studies on the availability of adequate or suitable cultivable land for an appropriate upland farming system, suitable crops, extension and marketing, etc., for the livelihood development of the resettlers.
- Inadequate attention to retaining the cultural and traditional way of life and subsistence system of the resettlers.
- More emphasis is needed on building infrastructure in the resettlement sites than on preparing livelihood programmes for the relocatees.
- Inadequate consultation with the affected people (resettlers and host communities) regarding resettlement, land acquisition, compensation, and the retention of traditional way of living in the resettlement sites.
- No specific grievance process was established to address resettlement issues at the commune and district level for the affected people.
- In most cases, the District Resettlement and Compensation Management Committees do not include representatives from the District Agriculture and Rural Development Division and Natural Resource Management Division. Rather, most members of the committees are from the infrastructure division. In two districts, resettlement plans are linked to the urban development plans of the districts, which could complicate further the resettlement and livelihood programmes of the Son La Hydroelectric Power Project (Asian Development Bank, 2005).

According to the Technical Assistance Fact-Finding Mission, the District Resettlement and Compensation Management Committees do not include representation from the Committee for Ethnic Minorities in Mountainous Areas. Overall, the Provincial Resettlement Steering Committees and the District Resettlement and Compensation Management Committees lack the institutional and technical expertise to plan and implement resettlement and livelihood programmes effectively (Asian Development Bank, 2005).

The ethnic minority communities in the affected areas depend mainly on wetland agriculture. Since the proposed resettlement sites are in the uplands, a change in farming systems from wetland agriculture to upland agriculture will be needed. Selection of resettlement sites for upland farming and development of a livelihood programme will require:

- Significant technical skills of national and local authorities in land use planning.
- Selection of farmland for upland agriculture.
- Selection of suitable crops.
- Management and sustainable use of natural resources.
- Assessment of capital requirements for production, agriculture extension services, marketing facilities, etc. (Asian Development Bank, 2005).

For the affected people downstream, an income restoration programme will require technical expertise in community-based aquaculture development. The Technical Assistance Fact-Finding Mission recommended that a comprehensive review is needed of the Resettlement Master Plan, as well as the district resettlement plans and livelihood programmes. The aim of the revision is to:

- Assess the selection of resettlement sites for appropriate livelihood development programmes for the affected people.
- Identify the institutional and technical capacity required at the national, provincial, district, and commune level for developing an effective resettlement plan and livelihood programme.

- Identify the gaps between Special Decision No 459/QDT and the district resettlement plans (Asian Development Bank, 2005).

In summary, the first Resettlement Action Plan was compiled in 1996. After numerous revisions, a final Resettlement Action Plan was compiled in 2005, three years after project approval (in 2002) and four years after the initiation of pilot resettlement programmes (in 2001). In this regard, resettlement planning should ideally be completed prior to the commencement of construction.

11.11 Outcomes and Results

A number of site alternatives were investigated in great detail over a period of around 30 years. Ultimately, it is the understanding of the Consultant that it was not possible to select the lowest-cost alternative, or the alternative with the least negative socio-economic effects. In order to find a suitable alternative, a compromise had to be reached between the extent of the potential socio-economic effects and economic feasibility (using outcomes from the Social Impact Assessment, undertaken in 1999 as part of the Environmental Impact Assessment).

Extensive resettlement plans were compiled and the majority of the required aspects were covered in the various components of the plans. The resettlement associated with the Son La Hydroelectric Power Project is the biggest ever resettlement programme in the country, taking place in three of the poorest provinces of Vietnam. Pilot resettlement has been undertaken. While piloting is a positive aspect, some of the outcomes of the piloting process showed up some shortcomings. Based on the findings and statements of the Asian Development Bank (Asian Development Bank, 2005), it would appear to the Consultant as if the Government, when faced with the challenges of implementing such a large and complex resettlement programme, lacks institutional and technical capacity for implementation. However, it would also seem that the Government has recognised this and is open to receiving external assistance (in this case, from the Asian Development Bank) with a view to ensuring that resettled people are given every opportunity to re-establish their livelihoods in the least disruptive manner. In the opinion of the Consultant, an added benefit of the Asian Development Bank intervention is that it gives government officials at various spheres of government an opportunity to increase their own capacity.

11.12 Assessment of Outcomes/Results by Involved Stakeholders

It is the understanding of the Consultant that resettlement is the largest socio-economic effect of the Son La Hydroelectric Power Project and is mitigated through the drafting and implementation of appropriate resettlement plans. As indicated, based on pilot resettlement activities and its own investigations, the Asian Development Bank has pointed out a number of serious shortcomings in the compilation and implementation of resettlement for the Son La Hydroelectric Power Project.

Attempts at reviewing project results as perceived by other affected or involved stakeholders have proven unsuccessful.

11.13 Consultant's Conclusions

The Son La Hydroelectric Power Project provides a number of key lessons, which may be applied to other projects of this nature.

- Challenges in the selection of alternatives.
  All international normative frameworks emphasise the investigation of alternatives (with the "no-project" alternative as one possibility), as an initial step in identifying the potential effects of a proposed development. On projects of strategic importance, the "no-project" alternative is often not realistic or popular. Ideally then, the alternative with the least socio-economic effects needs to be identified and assessed.

  However, there are factors other than socio-economic, which influence decisions on alternatives, with technical and economic feasibility often being the deciding factors. The challenge, therefore, is to identify the alternative with the least possible socio-economic effects (not necessarily the least effects of all alternatives), while remaining economically feasible (bearing in mind that the full costs for social mitigation must be included as part of the overall cost of a project).

- Importance of sufficient capacity of the body compiling and implementing resettlement plans.
  More often than not on large projects of strategic importance, it is the government of the country, which takes responsibility of the resettlement process. However, it is often the case that government does not have the capacity to execute these tasks effectively. Usually, the responsibility for the physical implementation of the resettlement programmes falls on local government bodies. It is understandable that it becomes difficult for these government bodies to implement the programmes as it includes activities, which fall outside of their normal administrative duties. Local government officials do not necessarily have the correct background, skills and knowledge for the effective execution of the tasks required for the successful implementation of the programmes.

  It is, therefore, advisable that task teams are established for the implementation of resettlement programmes. These teams should comprise representatives of government, representatives of the resettled community, the project proponent and specialists. When viewed against an overall resettlement project cost of US $ 0.7 billion (US $ 8,100 per resettled person), as in the case of the Son La Hydroelectric Power Project, the cost of a task team of this nature fades to insignificance.

  Ultimately, government still remains the responsible party, but with the necessary specialist input to ensure that the process runs smoothly and that the affected communities manage to re-establish themselves as seamlessly as possible.

- Pilot projects.
  For resettlement programmes of the size of those associated with the Son La Hydroelectric Power Project, pilot resettlement projects are valuable tools from which to identify shortcomings and learning experiences. These lessons need to feed into future resettlement activities in a progressive manner, thereby incrementally achieving desired outcomes in an ever-improving manner.

11.14 Source Material

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12. Thukela Water Project

Thukela and Bushman's Rivers, South Africa[36] (Figure 12).

12.1 Aspects of Social Impact Assessment Addressed

- Projection of Estimated Effects.
  - Identification and prioritisation of social impacts.
- Mitigation.
  - Recommendations relating to the development and implementation of mitigation plans.

12.2 Normative Frameworks

- Integrated Environmental Management Principles.
- Constitution of the Republic of South Africa Act (Act 108 of 1996) as amended by the Constitution of Republic of South Africa Amendment Act (Act 35 of 1997).
- Environment Conservation Act (Act 73 of 1989).

12.3 Project Identification

- Name Thukela Water Project.
- Country South Africa.
- Dates Recognisance Phase – 1994.
  Pre-feasibility Phase – 1995 to 1996.
  Feasibility Phase – 1997 to 1999.
  Decision Support Phase – 2000 to 2002.
- Developer Department of Water Affairs and Forestry.

12.4 Stage in the Project Lifecycle

Feasibility.

12.5 General Description of the Country Institutional Set-up

In South Africa, the Department of Water Affairs and Forestry is responsible for all aspects of water, including for this example, water resource planning and management. The Department of Environmental Affairs and Tourism is responsible for environmental matters in the country, including the authorisation of "listed" activities that potentially have a deleterious affect on the environment. It is the Consultants experience that dams are listed activities and, therefore, any proposed dam is subjected to the environmental authorisation process of the country, viz. an Environmental Impact Assessment.

[36] The support of the South African Department of Water Affairs and Forestry is gratefully acknowledged.

Figure 12 Indicative location of the Thukela Water Project in South Africa

www.geography.about.com/library/maps

Table 17 Selected technical details of the Thukela Water Project in South Africa

Project	Country	Natural Mean Annual Run-Off	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Jana	South Africa	1,446 x 10^6 m^3/a	Thukela	160 – 190 m wall height	Inter-Basin Transfer	South African Department of Water Affairs and Forestry
Mielietuin	South Africa	288 x 10^6 m^3/a	Bushman's	75 – 95 m wall height		

12.6 Detailed Description of the Specific Policy/Normative Framework

It is the Consultant's understanding that the overall approach to the social and environmental assessments conducted for the Thukela Water Project was strongly vested in the principles of Integrated Environmental Management, viz.:

- Informed decision-making.
- Accountability for decisions taken.
- A broad understanding of the term environment to include physical, biological, social, economic, cultural, historical and political components.
- An open participatory approach in the planning of proposals.
- Consultation with Interested and Affected Parties.
- Due consideration of alternates.
- An attempt to mitigate negative impacts and to enhance benefits.
- The opportunity for public and specialist input in the decision-making process.
- Democratic regard for individual rights and obligations.

12.6.1 Constitution of the Republic of South Africa Act (Act 108 of 1996) as amended by the Constitution of Republic of South Africa Amendment Act (Act 35 of 1997)

The Bill of Rights is fundamental to the Constitution of the Republic of South Africa. Section 24 states that "Everyone has the right (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".

12.6.2 Environment Conservation Act (Act 73 of 1989)

In terms of environmental authorisation, the Environment Conservation Act (Act 73 of 1989) and associated Regulations, as amended, requires that an Environmental Impact Assessment be undertaken for "listed" activities, aimed to provide for the effective protection and controlled utilisation of the environment.

Of particular relevance to Environmental Impact Assessments are Sections 21, 22 and 26 of the Environment Conservation Act. These sections have the following objectives:

- To ensure that the environmental effects of activities are taken into consideration before decisions in this regard are taken.
- To promote sustainable development, thereby achieving and maintaining an environment, which is not harmful to people's health or well-being.
- To ensure that identified activities which are undertaken do not have a substantial detrimental effect on the environment, and to prohibit those activities that will.
- To ensure public involvement in the undertaking of identified activities.
- To regulate the process and reports required to enable the Minister or his designated competent authority to make informed decisions on activities.

12.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

It is the Consultant's knowledge that the organisational set-up adopted for this project was to establish a Project Management Team comprising members of the Department of Water Affairs and Forestry and members from private consulting firms. The Project Management Team was tasked with the responsibility for planning, programming, appointing investigative teams, assessing information, formulating options and, finally, making recommendations to senior members of the Department. The Project Management Team, in turn, appointed the Social Impact Assessment Practitioner who was responsible for ensuring that the Social Impact Assessment was adequately and timeously undertaken in order to feed into the wider investigations that comprised the Feasibility Study.

It is the understanding of the Consultant that the Feasibility Study was undertaken as a precursor to an application for authorisation within the provisions of the Environment Conservation Act. However, given that the intention was to eventually apply for environmental authorisation, the Feasibility Social and Environmental Impact Assessments were undertaken in accordance with the Environment Conservation Act to provide a seamless interface between the Feasibility Study and the subsequent application for environmental authorisation[37].

12.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

It is the Consultant's understanding that draft regulations for compulsory Environmental Impact Assessments were first published for comment in March 1994, and an amended draft was published in November 1997. Through a participatory process followed to finalise the regulations, a recommendation was made that a Guideline Document be published to provide all role players with a uniform basis for implementing the regulations. The Draft Guideline Document was published by the DEAT in September 1997 and coincided with the publication of a List of Activities and Regulations for Environmental Impact Assessments in the Government Gazette of 5 September 1997, in terms of Sections 21, 22 and 26 of the Environment Conservation Act. Over the past nine years, the regulations have been applied widely to a vast variety of projects, including large dams. There is general acceptance in South Africa that the application of the regulations has been successful. However, this does not mean that all parties involved on a single project necessarily reach consensus on any or all aspects related to a project.

It is the Consultant's knowledge that the regulations pursuant to the Environment Conservation Act are scheduled for repeal, when on 1 July 2006, new regulations pursuant to the National Environmental Management Act are promulgated. The new regulations are designed to build on and strengthen the positive aspects of the current regulations and, also, to amend existing specifications that could not be applied or which failed to deliver the anticipated outcomes.

[37] This would have required new and updated Social and Environmental Impact Assessments. However, these were never commissioned as the Thukela Water Project was shelved after the Decision Support Phase due to changed water requirement projections over the lifespan of project planning that had occurred to that point. However, the decision was to proceed with the Thukela Water Project at the appropriate time when water demands required additional supplies to the Vaal River System.

As determined by Schedule 4 of the Constitution of South Africa, 1996, the environment is a concurrent function of the relevant national and provincial departments. For the national and provincial environmental departments, a major role is, *inter alia*, to set specific regulatory norms and standards for impact management and to ensure that individuals and organisations meet these. Therefore, overall enforcement is undertaken by the Department of Environmental Affairs and Tourism in association with nine provincial environmental authorities.

12.9 Project Description

It is the Consultant's knowledge that the objective of the Thukela Water Project is inter-basin transfer from one catchment to another, in this case to augment water supply to the Vaal River System, which serves the economic powerhouse of South Africa (Gauteng Province) and the electricity-generating region of the country (Mpumalanga Province). Four parallel studies were undertaken to the same level of investigative detail (reconnaissance and pre-feasibility), viz. the Thukela Water Project, further phases of the Lesotho Highlands Water Project, transfer from the lower reaches of the Orange River in South Africa and transfer from the Umzimvubu River[38]. This case study considers only the Thukela Water Project, which proceeded beyond the reconnaissance and pre-feasibility studies to a Feasibility Study.

It is the Consultant's experience that for the Thukela Water Project, initially, 73 alternative dam sites were identified for the augmentation scheme. After reconnaissance, these were narrowed down to 20 alternatives, based on technical, environmental, social and economic criteria (with environmental and social criteria carrying considerable weight). These 20 dam sites were then configured as potential transfer schemes (links between dams, aqueducts, etc. conveying water to a predetermined transfer point, viz. the existing Drakensberg Pumped Storage Scheme). The Pre-feasibility Study focused on six configurations. One potential scheme was selected from the Pre-feasibility Study and was taken forward into the Feasibility Study, which took place between 1997 and 1999. It is on the Social Impact Assessment for the Feasibility Study that this case study is based. Extensive fieldwork was undertaken as part of the Social Impact Assessment to gain an in-depth understanding of the social and socio-economic environments potentially affected by the project. A subsequent phase, the Decision Support Phase, took place between 2000 and 2002, but the focus at that time was on biophysical aspects.

Initial planning indicated that construction of the scheme could take up to eight years to complete, commencing between the years 2004 and 2010, or later depending on Vaal River water user demands (Department of Water Affairs & Forestry, 1999). The assumption was that the first water would flow from the Thukela Water Project to the Vaal River System during 2011. However, the project was put on hold after the Decision Support Phase, due to changes in the water demand projections for the Vaal River System. It is the Consultant's understanding that there were two key reasons for the change in water use projections:

- Eskom (the main power utility in South Africa) "moth-balled' a number of its coal fired power stations and required substantially smaller volumes of water.
- The potential effect of HIV/AIDS on population and economic activity projections was taken into account.

In the final analysis, it is the understanding of the Consultant that the Thukela Water Project was shelved for the time being, with the intention of resurrecting it as a viable option to supply additional water to the Vaal River System but only when water demand in the Vaal River System requires additional supplies.

[38] This option was investigated to a lower level of detail because of its remoteness to the Vaal River System and due to the fact that it could not exist on its own as it needed to link into either one of the afore-mentioned three options.

The proposed Thukela Water Project plans to deliver 15 m^3/s to the Kilburn Dam for transfer to the Vaal River System and comprises the following development components:

- Two large storage dams configured to supply a total of 15 m^3/s.
- Jana Dam in the Thukela River approximately 7 km downstream of the confluence of the Thukela and Klip Rivers.
- Mielietuin Dam in the Bushman's River immediately upstream of the western boundary of the Weenen Nature Reserve.
- Aqueducts linking the proposed dams and the existing Kilburn Dam from which water will be transferred to the Vaal River System via the existing Drakensberg Pumped Storage Scheme. Three options for aqueducts (with different servitude requirements and different construction periods) were under investigation:
  - Open canals (with limited tunnels, pipelines and inverted siphons) (196 km).
  - A pipeline ranging in size from 1.6 to 3 m diameter (121 km).
  - A combination of open canals and a pipeline (between 121 and 196 km).
  - Appurtenant infrastructure including pump stations, access roads and bulk electricity supply (Department of Water Affairs & Forestry, 1999).

A range of dam heights from 160 m to approximately 190 m was considered for Jana Dam. A similar situation existed at the Mielietuin site, where the height could be affected by the need to compensate for a reduced yield from Jana. At this site, attention was given to a Full Supply Level (FSL) range of 1,020 to 1,040 m above mean sea level, representing a range of dam heights from approximately 75 to 95 m (Department of Water Affairs & Forestry, 1999).

12.10 Implementation of Key Issues

12.10.1 Projection of Estimated Effects (and Mitigation)

The Social Impact Assessment identified and discussed potential social issues and effects at two different levels. Firstly, it examined a number of contextual issues, relevant to the project, which had come to the fore during the course of the investigation. Of these, the most critical were the following:

- The potential impact of HIV/AIDS.
- Population trends in potential erodible areas and the potential impact of sedimentation.
- Land reform and restitution issues.
- Impacts on the downstream environment.
- Impacts on the receiving environment (Department of Water Affairs & Forestry, 1999).

Thereafter, the study focused on the potential effects of each of the major project components, individually, viz.:

- Jana Dam (the Left and Right Banks were dealt with separately).
- Mielietuin Dam.
- The conveyance routes (canals and steel pipe lines) (Department of Water Affairs & Forestry, 1999).

The following effects associated with the various components were identified. In some instances, mitigation measures were suggested in the discussions of the effects.

12.10.1.1 JANA DAM - LEFT BANK

The Left Bank of the Jana Dam comprised reasonably inaccessible communal/tribal land on which different remote villages were located. The main land uses were settlement, dry land agricultural production and livestock grazing. The inhabitants were generally poor and their main livelihood activities were land-based.

- The impact of the proposed dam on existing agricultural land use.
  - The total area of cultivated land would be reduced by 20% from 244 ha to 196 ha. This effect was not, however, uniform throughout the area. Some parts of the area would lose all its cultivated land and most of its winter grazing so that, although it remained intact as a residential area, it was no longer a viable agricultural unit.
  - The winter grazing was largely lost throughout the area.
  - The summer grazing was mainly unaffected except that, with most of the winter grazing becoming inaccessible, the livestock would have to remain in the summer grazing areas during winter, leading to severe over-stocking with serious consequences for both the livestock and the natural resources (Department of Water Affairs & Forestry, 1999).

  The mitigation measures that were proposed were as follows:
  - Cash compensation for individual assets affected by the dam.
  - As many local employment opportunities as possible.
  - Improved services, especially in terms of an upgraded access road and improved domestic water supplies.
  - A limited area of irrigation from a local gravity-fed water source for at least a large community garden and, possibly, some commercial plots.
  - A nearby area of replacement land where those members of the community who lost their houses could be resettled (Department of Water Affairs & Forestry, 1999).

- Impacts on resource utilisation. The following resources would be inundated or made inaccessible by the proposed dam:
  - Poles for construction were sourced from trees growing in the area.
  - Firewood was gathered from the bush and thicket area.
  - Sand/gravel was taken from the alluvial areas.
  - Thatch was cut from grasses left to grow between fields.
  - Wild fruit trees.
  - Wild vegetables.
  - Fish (caught in the river).
  - Reeds used to make mats to be sold (for income generation).
  - Water from local springs/streams and from the Thukela River (Department of Water Affairs & Forestry, 1999).

  The mitigation measures that were proposed were as follows:
  - Careful location of construction village and infrastructure to minimise impacts on the resources.
  - Salvage and relocation of resources to areas outside of flooded boundaries.

- Provision of alternative energy resources through electrification of the Mziyonke area.
- Establishment of alternative economically viable income generation opportunities.
- Promotion of commercial propagation of high value indigenous plants to reduce pressure on remaining populations and assist in meeting regional and national demand (mainly for medicinal purposes).
- Populations of standing water species of fish would increase and the riverine fish would be found mainly near the inflows. Opportunities for aquaculture could be explored (Department of Water Affairs & Forestry, 1999).

- Health hazards.
  - Potential spread of water related diseases, for example, bacterial, malaria and Schistosomiasis (Department of Water Affairs & Forestry, 1999).

  The mitigation measure that was proposed was as follows:
  - Programmes designed to educate people about the spread of water borne diseases and equipping the clinic to deal with potential disease outbreaks (Department of Water Affairs & Forestry, 1999).

- Impacts on infrastructure.
  - Fifty-seven homesteads would have to be compensated.
  - The majority of homesteads had at least one grave associated with it.
  - A store, a dipping tank, a small reservoir and one church would be lost (Department of Water Affairs & Forestry, 1999).

  The mitigation measure that was proposed was as follows:
  - The formulation of a comprehensive Resettlement Action Plan (which did not form part of the Feasibility Study Social Impact Assessment as it was considered premature and there was concern that affected peoples' expectations and/or concerns would be unnecessarily raised (Department of Water Affairs & Forestry, 1999).

12.10.1.2 JANA DAM – RIGHT BANK

Impacts associated with the Right Bank, in the freehold farming area, were, in the main, less problematic than those associated with the Left Bank. In all, five farms were directly affected. All five farms were used for game farming or cattle ranching, with a limited amount of maize production. Specific impacts included:

- Loss of a number of farmhouses on some of the farms.
- Loss of an access road through the valley.
- Loss of resource areas to cattle and game farms.
- Loss of cultivated land.
- Disruption of commercial river rafting activities.
- Loss of other grazing land (Department of Water Affairs & Forestry, 1999).

12.10.1.3 MIELIETUIN DAM

In all, nine landowners were to be affected by both the 1,040 FSL and the 1,020 FSL dam options. Depending on the FSL decided upon in the later design stages, a number of these farms would become unviable agricultural land units and would have to be bought out by the development proponent. At the 1,040 FSL, seven farms would become unviable, and in the case of the 1,020 FSL, only two would become unviable. However, there was little resistance from the nine landowners as most viewed the development of the dam as potentially positive. This was probably predicated upon the following:

- Property prices had declined (partially as a result of the uncertainly around the dam but probably more directly as a result of the then pressures on diary farming).
- The shift from diary to game farming meant that many farms might have actually aesthetically benefited from the presence of the artificial lake. This was expected to occur if the dam remained full for much of the time (as might be the case). Under these circumstances property prices might have increased with developers and speculators entering the market (Department of Water Affairs & Forestry, 1999).

12.10.1.4 CONVEYANCE ROUTE

The following potential effects associated with the conveyance route were identified:

- Hazards to people and livestock (falling into a canal can be fatal and if animals cannot get out they either drown or starve to death).
- Disruption of farming operations and a barrier to access. This could lead to increased costs in terms of managing and operating farms and to a decrease in the value of the land.
- Canals would require expropriation that may remove irrigated or arable land from productive use. This included land under centre pivots, the removal of which would make some farms non-viable.
- Conveyances may have detracted from the aesthetic quality of certain areas.
- Construction work associated with canals introduced hazards and could make farms accessible to criminal elements.
- Access roads for maintenance of the canals and roads to pump stations could also create entrance and escape routes for criminal elements.
- Two farm dams and six farmhouse structures or farm buildings were either directly located on the route or so close to the route as to necessitate relocation (Department of Water Affairs & Forestry, 1999).

The following suggestions were made to mitigate potential effects of the conveyance routes:

- The location of the aqueduct based construction crews (including pump station crews) within the town limits of Colenso, Bergville and Winterton. This would minimise social tensions around the potential security threats that construction crews could pose to farmers.
- If the canal was fenced, there should be adequate access points across the canal that are positioned in negotiation with the landowner. The fencing was to be regularly and effectively maintained by the scheme operator.
- A canal designed in a manner that allowed for the safe escape of people, livestock and game.

- Full replacement of all housing and infrastructure that was destroyed or that was difficult/impossible to manage as a result of the construction of the aqueduct route.
- Full expropriation of all farms not deemed to be economically viable as a result of the construction of the aqueduct. Where batches of farms were bought up they may be re-planned and re-sold. Although demand in terms of land redistribution may be given a degree of precedence, the needs of displaced farmers should not be ignored.
- Proper re-internment of any graves disturbed.
- A negotiated arrangement for securing the properties during construction, with strict controls imposed upon contractors.
- Negotiated arrangements for securing access roads that were constructed for the purposes of servicing the aqueduct route (Department of Water Affairs & Forestry, 1999).

With regard to conveyances, it should be noted that there were substantially more negative social effects associated with canals than with pipelines. As a result, the decision was taken to proceed with the pipeline conveyance as the preferred option (Department of Water Affairs & Forestry, 1999).

12.10.2 Compensation and mitigation

Land acquisition, the acquisition of assets and resettlement were the largest social and socio-economic effects of the Thukela Water Project. Aside from mitigation recommendations made throughout the discussion on potential effects, the Social Impact Assessment devoted a separate section to compensation and mitigation of these effects. The type of compensation and mitigation would depend largely on the type of land tenure held by affected people (Department of Water Affairs & Forestry, 1999).

Two types of land tenure existed in the project area, viz. freehold, where land was held by title deed and could be traded freely within the market system, or, land held under tribal tenure. The study provided an in-depth outline of these two types of tenure, and implications for mitigating social effects (within the changing land laws of the country at the time) (Department of Water Affairs & Forestry, 1999).

Where land held in freehold was affected by the project, the following three methods were suggested and discussed in detail in the Social Impact Assessment:

- Acquisition by ownership.
- Acquisition through servitude.
- Compensation for loss of income as a result of construction activities (Department of Water Affairs & Forestry, 1999).

Within communal/tribal areas, compensation matters were more complex by uncertainty as to how compensation for land acquisition should take place within a context where market forces, based upon the “willing buyer willing seller” premise, played no role in determining value. The Social Impact Assessment made detailed recommendations regarding compensation and land acquisition in this context, which covered the following aspects:

- Replacement housing.
- Absentee owners.
- Non-owning occupants (for example, renter, borrower or squatter).
- Toilets.
- Water supplies.
- Commercial properties.

- Graves.
- Crops in the field.
- General principles around land acquired.
- Temporary and exclusive occupation.
- Temporary and non-exclusive occupation.
- Special issues regarding acquisition of arable land.
- Acquisition of grazing land.
- Host communities.
- Infrastructure and amenities.
- Optimisation of development inputs (Department of Water Affairs & Forestry, 1999).

The above formed the framework and basis from which a comprehensive Resettlement Action Plan could be formulated. However, as stated previously, this activity did not form part of the Feasibility Study Social Impact Assessment as it was considered premature and there was concern that affected peoples' expectations and/or concerns would be unnecessarily raised.

12.11 Outcomes and Results

It is the understanding of the Consultant that extensive fieldwork was undertaken as part of the Social Impact Assessment to gain an in-depth understanding of the social and socio-economic environments potentially affected by the project. A critical aspect of the receiving social and socio-economic environments was the land tenure systems in the area, and the potential effects these may have on the project. At that time, land was a sensitive subject in South Africa and, therefore, the Social Impact Assessment delved extensively into the matter, with sound recommendations being made on how best to approach it.

The Consultant understands that the potential social and socio-economic effects of the Thukela Water Project were identified at a number of levels. At national level, the scheme would assist in assuring a water supply for the Gauteng and Mpumalanga Provinces, with important economic benefits for the country. At regional level, the Thukela Water Project would have the potential to provide a much-needed economic boost (through the injection of significant capital, job creation and the like). At a local level, direct impacts were negative, with affected people losing assets, access to assets, and in most cases, having to move.

In understanding the negative effects of the project, the Social Impact Assessment recommended the compilation of a comprehensive Resettlement Action Plan, based on World Bank safeguards, suggested that this should form an integral part of an overarching Environmental Management Plan (to be formulated for the proposed project) (Department of Water Affairs & Forestry, 1999).

[It is the knowledge of the Consultant that although not dealt with in the Social Impact Assessment, positive aspects of the project (for example, regional development opportunities) were also explored in detail. Plans were formulated to ensure that potential benefits could be realised. These serve as a good example of relevant practice to optimise benefits that may flow from a large investment project of this nature].

12.12 Assessment of Outcomes/Results by Involved Stakeholders

It is the knowledge of the Consultant that the Social Impact Assessment for the Thukela Water Project was underpinned by a comprehensive public involvement programme that, originally, was initiated during the reconnaissance study. The study area was large and extensive public

involvement activities were undertaken over a five-year period (covering a multitude of public and private sector representatives). For the most part, it is the opinion of the Consultant that the various components that comprised the Feasibility Study (including the Social Impact Assessment) were well executed, with the outcomes being accepted by the proponent and most stakeholders (as evidenced from public participation records spanning five years) (there was not consensus on all items and, indeed, at the end of the Feasibility Study, some concerns remained over biophysical aspects related to the proposed Jana Dam).

12.13 Consultant's Conclusions

The Thukela Water Project provides a number of key lessons, which may be applied to other projects of this nature.

- Incremental planning.
  A major feature of the Thukela Water Project was the incremental planning approach that was adopted, from reconnaissance, through pre-feasibility, to the Feasibility Study, with the outcomes of earlier stages informing future stages of study. At each stage, the level of detail of investigation for all disciplines was sufficient and appropriate to inform decision-making around alternatives and options (with social (and environmental) criteria carrying equal weight as technical and economic criteria). The outcome was that there was a seamless transition to the Feasibility Study during which detailed investigations were undertaken (facilitated to a large degree by the on-going public involvement process that had commenced at the outset of reconnaissance)[39].

- Understanding the context of a project and assessing impacts and benefits for different project elements.
  A strength of the Thukela Water Project Feasibility Study was that the context of the project was framed for the identification and assessment of impacts and benefits for different project elements. This facilitated investigations and enabled the orderly documentation and quantification of potential effects. Although not a requirement of the Feasibility Study, it is believed that this approach would have enabled the outcomes of the Social Impact Assessment to be easily translated and transformed into mitigation and social development plans.

- Understanding land tenure systems in a project area and the potential effects these may have on a project.
  In project areas where different types of land tenure exist, it is important to understand these systems early on in the investigation. Most tenure systems are rooted in history, often with a colonial past. Therefore, it is necessary to understand the tenure system as well as the underpinning history. Different tenure systems must be managed and mitigated differently, and if not done correctly, there may be detrimental outcomes for the affected populations and the project.

[39] Although the Thukela Water Project was not implemented at the time, it is conceivable that it may be implemented within the next decade. If this does occur, it is probable that the level of knowledge of the project amongst regional and local stakeholders remains high, and that a resumption of project planning and implementation activities would be facilitated by the work undertaken and relationships formed during previous study stages.

12.14 Source Material

Constitution of the Republic of South Africa Act (Act 108 of 1996) as amended by the Constitution of Republic of South Africa Amendment Act (Act 35 of 1997).

Department of Environmental Affairs and Tourism (1998). *Guideline Document: EIA Regulations. Implementation of Sections 21, 22 and 26 of the Environmental Conservation Act.*

Department of Water Affairs and Forestry (1999). *Thukela Water Project. Feasibility Study: Social Impact Assessment.* Prepared by G. Huggins.

Environment Conservation Act (Act 73 of 1989).

Integrated Environmental Management Principles.

13. Tuyen Quang Dam and Flood Prevention Project

Gam River, Vietnam (Figure 13).

13.1 Aspects of Social Impact Assessment Addressed

- Prediction of responses to impacts.
  - Involuntary resettlement.
- Estimate of indirect impacts.
  - Identification of subsequent flow-on effects of the proposal.

13.2 Normative Frameworks

- Law on Environmental Protection, 1993.
- New Law on Environmental Protection, 2005
- Decree on Providing Guidance for the Implementation of the Law on Environmental Protection, 1994 (Government Decree No. 175-CP, 1994).
- New: Decree on Providing Guidance for the Implementation of the Law on Environmental Protection, 2006 (Government Decree No. 80/2006/ND-CP, 2006)
- Guidelines for Resettlement and Rehabilitation in Vietnam.
- World Bank Operational Policy 4.01 Environmental Assessment.
- World Bank Operational Directive 4.30 Involuntary Resettlement.

13.3 Project Identification

- Name — Tuyen Quang Dam and Flood Prevention Project (Tuyen Quang Dam).
- Country — Vietnam.
- Dates — Preliminary Environmental Impact Assessment was completed in May 2000. Due to national and international concern regarding the project's potential effect on the biophysical environment, a Supplementary Environmental Impact Assessment was completed towards the end of 2002.
- Developer — Electricity of Vietnam.

13.4 Stage in the Project Lifecycle

Planning (Feasibility) (now under construction for completion in 2007).

13.5 General Description of the Country Institutional Set-up

The Ministry of Natural Resources and Environment is responsible for exercising the function of State management of environmental protection and water resources. All other ministries, ministry-level agencies, and other government bodies are obliged to cooperate with the Ministry of Natural Resources and Environment in carrying out environmental protection within their sectors and in establishments under their direct supervision. The People's Committees of provinces and cities exercise the State management function for environmental protection and water use at local level.

Figure 13 Indicative location of the Tuyen Quang Dam and Flood Prevention Project in Vietnam

www.geography.about.com/library/maps

Table 18 Selected technical details of the Tuyen Quang Dam in Vietnam

Project	Country	Catchment area		Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Tuyen Quang	Vietnam	Unknown	Gam	An inundation area of approximately 7.69 km^2	Hydropower	Electricity of Vietnam

13.6 Detailed Description of the Specific Policy/Normative Framework

The proposed Tuyen Quang Dam is located in Vietnam, and partly funded by Electricity of Vietnam. The United Nations Development Programme funded the Preliminary, as well as the Supplementary Environmental Impact Assessment studies. Both Vietnam and World Bank normative frameworks are applicable to the project.

13.6.1 Vietnam Environmental Legislation

13.6.1.1 LAW ON ENVIRONMENTAL PROTECTION (1993) AND LAW ON ENVIRONMENTAL PROTECTION (2005)

The Law on Environmental Protection states that organisations, and/or individuals, *albeit* foreign investors, joint ventures or socio-economic developers, must submit Environmental Impact Assessment reports to the State management agency for environmental protection for appraisal, when constructing or renovating:

- Production areas.
- Population centres.
- Economic, scientific, technical, health, cultural, social, security and defence facilities.

The result of the appraisal is an Environmental Impact Assessment report, which should propose appropriate solutions to protect the environment. This shall constitute part of the basis on which the competent authorities approve the projects, and authorize their implementation.

13.6.1.2 DECREE ON PROVIDING GUIDANCE FOR THE IMPLEMENTATION OF THE LAW ON ENVIRONMENTAL PROTECTION, 1994 (GOVERNMENT DECREE NO. 175-CP, 1994)

Decree 175-CP was issued in 1994 and was enacted to guide the implementation of the Law on Environmental Protection. It also provides guidelines for the implementation of an Environmental Impact Assessment. It states that environmental effects should be evaluated as follows:

- Evaluating the present state of the environment in the area of operation of the project or the establishment.
- Evaluating the effect exerted on the environment by the operation of the project or the establishment.
- Proposing measures for environmental protection.

The Tuyen Quang Dam is classified as a Category A project according to a subsequent circular issued by the Ministry of Natural Resources and Environment under the Law on Environmental Protection and Decree 175-CP (Circular no. 490/TT-BKHCNMT dated April 1998). The reason for the classification is that the dam is a water reservoir with a capacity of more than 100,000 million m^3. For this category, a project needs to be divided into two phases, viz. Phase 1, which consists of an application for an investment permit, and Phase 2, which comprises detailed project design. In order for Phase 1 to be approved, i.e. for an investment permit to be issued, which grants permission for the investment, a Feasibility Study with a chapter on potential environmental impacts should be completed. This is similar to an Initial Environmental Examination. Only in Phase 2 should the project proponent compile and submit a detailed Environmental Impact Assessment report.

13.6.1.3 GUIDELINES FOR RESETTLEMENT AND REHABILITATION IN VIETNAM

There is no formal Vietnam specific norm or guideline, which deals with resettlement. The Government of Vietnam is currently in the process of preparing a National Resettlement Policy under a grant from the World Bank. The aim is to apply this policy to all types of development projects in Vietnam. It will provide standards for compensation and resettlement of affected people. The guidelines follow the format and general content of the guidelines prepared by the World Bank. However, these country specific guidelines were not completed at the time of the planning and implementation of resettlement for the Tuyen Quang Dam. Therefore, expatriate and Vietnamese consultants prepared an interim document titled "Guidelines for Resettlement and Rehabilitation in Vietnam", which is based on the World Bank's guidelines on involuntary resettlement, for use on the project. The central objective of the Guidelines for Resettlement and Rehabilitation in Vietnam is to ensure that the living standards and income earning capacity of affected persons are improved, or at least restored after the resettlement. The displaced persons ought to be compensated for their losses at full replacement cost prior to the actual move and they ought to be assisted with the move and supported during the transition period in the resettlement site.

13.6.2 World Bank Safeguards

13.6.2.1 WORLD BANK OPERATIONAL POLICY 4.01 - ENVIRONMENTAL ASSESSMENT

The World Bank requires an environmental assessment of projects proposed for World Bank financing, to help ensure that they are environmentally sound and sustainable, thereby improving decision-making. According the World Bank, an environmental assessment is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impacts of a proposed project. In this regard, an environmental assessment:

- Evaluates a project's potential environmental risks and impacts in its area of influence.
- Examines project alternatives.
- Identifies ways of improving project selection, siting, planning, design, and implementation, by preventing, minimizing, mitigating, or compensating for adverse environmental impacts, and enhancing benefits.
- Includes the process of mitigating and managing adverse environmental impacts throughout project implementation. In this regard, the World Bank favors preventive measures over mitigatory or compensatory measures, wherever feasible.

An environmental assessment takes into account the natural environment (air, water and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples and cultural property); and trans-boundary and global environmental aspects. An environmental assessment also considers natural and social aspects in an integrated way. It also takes into account:

- Variations in project and country conditions.
- The findings of country environmental studies.
- National environmental action plans.
- The country's overall policy framework, national legislation, and institutional capabilities, related to the environment and social aspects.

- Obligations of the country pertaining to project activities, under relevant international environmental treaties and agreements. The World Bank does not finance project activities that would contravene such country obligations, as identified during an environmental assessment. Therefore, an environmental assessment is initiated as early as possible in project processing, and is integrated closely with the economic, financial, institutional, social, and technical analyses undertaken for a proposed project.

The World Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of environmental assessment required. The World Bank classifies a proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project, and the nature and magnitude of its potential environmental impacts. The Tuyen Quang Dam project was classified as a "Category A" project, which implies the following:

- A proposed project is classified as Category A (if it is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. An environmental assessment for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. For a Category A project, the borrower is responsible for preparing an environmental assessment report.

13.6.2.2. WORLD BANK OPERATIONAL DIRECTIVE 4.30 – INVOLUNTARY RESETTLEMENT

The current World Bank Safeguards relating to involuntary resettlement are Operational Policy 4.12 (OP 4.12) and Bank Procedure 4.12 (BP 4.12), which replaced OD 4.30 on 1 January 2002. All projects for which Project Concept Reviews were conducted prior to this date were, therefore, still financed under the provisions of OD 4.30.

The objective of OD 4.30 is to ensure that the population displaced by a project receives benefits from it. Involuntary resettlement is an integral part of project design, and should be dealt with from the earliest stages of project preparation, taking into account the following policy considerations:

- Involuntary resettlement should be avoided or minimized where feasible, exploring all viable alternative project designs.
- Where displacement is unavoidable, resettlement plans should be developed. All involuntary resettlement should be conceived and executed as development programmes, with resettlers provided sufficient investment resources and opportunities to share in project benefits.
- Community participation in planning and implementing resettlement should be encouraged. Appropriate patterns of social organisation should be established, and existing social and cultural institutions of resettlers and their hosts should be supported and used to the greatest extent possible.
- Resettlers should be integrated socially and economically into host communities so that adverse impacts on host communities are minimised.
- Land, housing, infrastructure, and other compensation should be provided to the adversely affected population, indigenous groups, ethnic minorities, and pastoralists who may have usufruct or customary rights to the land or resources acquired for the project.

Where the resettlement of large groups of people is unavoidable, a detailed Resettlement Action Plan, timetable, and budget are required. The Resettlement Action Plan should make detailed provisions for the following:

- Organisational responsibilities.
- Community participation and integration with host populations.
- A socio-economic survey.
- A legal framework.
- Alternative sites and selection.
- Valuation and compensation for lost assets.
- Land tenure, acquisition, and transfer.
- Access to training, employment and credit.
- Shelter, infrastructure and social services.

13.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

The project is being undertaken by Electricity of Vietnam, which falls under the Ministry of Industry. Two government agencies, Power Engineering Consulting Company 1 and Power Engineering Consulting Company 2 are responsible for project planning, investigation, and design of the hydropower project.

The Ministry of Natural Resources and Environment is responsible for the environmental authorisation of the project.

Environmental authorisation is granted in terms of the Law on Environmental Protection (1993) as well as a number of Decrees, particularly Decree 175-CP.

However, the Protected Areas Resource Conservation Project has been active in the greater project area since 1999, and has a vested interest in the effective completion of Environmental Impact Assessment and the successful implementation of mitigation recommendations. Through this, the Protected Areas Resource Conservation Project has played an important role in the undertaking of environmental studies and it is anticipated that it will play an equally active role in monitoring project implementation, as well as monitoring post-completion.

13.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

Environmental issues have gained increased attention in Vietnam since 1984, when the Vietnamese Government formulated the National Conservation Strategy. At the time, the first preparations for Environmental Impact Assessment procedures were implemented. Following this, Environmental Impact Assessment experts were trained and there were a number of elaborations on regulatory documents and adaptations to methodologies, which culminated in the enactment of the Law on Environmental Protection and Decree 175-CP.

Examples of the implementation of the provisions of World Bank safeguards are available for numerous projects world-wide (dam and other large-scale infrastructure projects). It is also pertinent to note that World Bank safeguards are updated periodically, suggesting the incorporation of experience and learning into newer safeguards.

With regard to World Bank safeguards, there appears to be some controversy regarding their implementation. Some writers perceive the norm and its implementation positively, for example, Bekhechi (1999) states that *since 1984, major environmental policies have been issued and implemented by the World Bank and constitute the most comprehensive environmental policy that frames investment and other development activities of any development agency*. Others, predominantly from non-governmental organisations and civil society have reservations regarding the norm. For example, the International Rivers Network (2005) states that *in spite of their many shortcomings, the World Bank's social and environmental safeguard policies are an important achievement of the past twenty years.* However, the International Rivers Network (2005) continues by stating *… the Bank has not mainstreamed social and environmental concerns throughout its business model. As a consequence, the Bank has repeatedly developed unsustainable projects within which the objectives of the safeguard policies cannot be achieved. The Bank may go through the motions of implementing safeguard policies, but it often fails to comply with their objectives. For example, the Bank rarely explores alternative options in any balanced way as part of the environmental assessments of projects. And people who are displaced by Bank projects almost invariably end off poorer as a result, rather than becoming project beneficiaries*.

The implementation of World Bank safeguards, therefore, appears not to have been free of disappointment. However, as stated above, the World Bank seems to be constantly striving towards the improvement of its policies and guidelines in an attempt to address shortcomings.

13.9 Project Description

The proposed Tuyen Quang Dam is located in the Gam River, just below the confluence with the Nang River, in the Tuyen Quang Province of Vietnam. It will comprise a concrete structure across the river at a narrow section below the Pac Ta Mountain. The dam's hydroelectric generation capacity will be 300 MW (United Nations Development Programme, 2000).

The principle objectives of the project are:

- To meet a growing national demand for electricity, and to ensure reliable supply.
- To regulate river flows downstream, contributing to flood control, irrigation and other uses.

The surface area, when fully inundated should be in the order of 57 km^2. This will inundate areas upstream along both the Gam and the Nang Rivers (and into the Ha Giang and Bac Can Provinces) and will include an area of the Na Hang Nature Reserve and a portion of the Ba Be National Park. Both these parks are important protected areas containing nationally and globally significant biodiversity values, including highly endangered species such as the Tonkin Snub-nosed Monkey (United Nations Development Programme, 2000).

The project is classified as a Category A project, which requires a two-phased Environmental Impact Assessment. At the time of the Government of Vietnam granting permission for the investment (end of Phase 1), little assessment of the potential effects of the project had taken place, as this, according to legislation, should only be conducted during the detailed design phase (United Nations Development Programme, 2000).

The Protected Areas Resource Conservation Project, a joint project between the Government of Vietnam, the Ministry of Agriculture and Rural Development, and the United Nations Development Programme has been working in the greater area, which includes the two parks, since 1999. The Protected Areas Resource Conservation Project became concerned about the

effects the proposed dam may have on the two parks, as well as the delays in the commissioning of the detailed Environmental Impact Assessment (the concern being that detailed design may have progressed too far to be influenced by the findings of the Environmental Impact Assessment, with the latter merely ending up as an attempt to mitigate something that is already a forgone conclusion). Thus, a decision was made that the Protected Areas Resource Conservation Project should assist in the carrying out of a Preliminary Environmental Impact Assessment for the proposed dam (United Nations Development Programme, 2000). This took place in 2000, with a subsequent Supplementary Environmental Impact Assessment completed in 2002. The Supplementary Environmental Impact Assessment was conducted with the assistance of the World Conservation Union, and a team comprising of an international Environmental Impact Assessment specialist as team leader, and three national experts in ecology, socio-economics, and resettlement matters (United Nations Development Programme, 2000).

It is important to note that the Preliminary and Supplementary Environmental Impact Assessments do not fall within the normative framework of Vietnam. They, therefore, carry no official status within the environmental process of the country. However, both the Government of Vietnam and the United Nations Development programme have endorsed the studies and support their findings. Thus, the findings of the studies will serve an important role in informing and advising the detailed Phase 2 project Environmental Impact Assessment, when commissioned.

13.10 Implementation of Key Issues

13.10.1 Prediction of responses to impacts

13.10.1.1 RESETTLEMENT

The study has shown that the project will have a number of impacts such as effects on the economy of the area, the provision of regulated water supply to the basin area, increased volumes of water during the dry-season, as well as flood control benefits. However, as is the case with most large dams, the single greatest socio-economic effect of the proposed Tuyen Quang Dam is involuntary resettlement.

The construction of the dam will affect 15 communes and three districts of the Tuyen Quang, Ha Giang, and Bac Can Provinces. These communes and districts will be totally or partially flooded. As a result, 3,194 households with 17,384 inhabitants will be displaced:

- Tuyen Quang Province: 12 communes, 68 villages, 2,934 households and 15,793 people.
- Ha Giang Province: two communes, eight villages, 211 households and 1,300 people.
- Bac Can Province: one commune, one village, 49 households and 291 people (United Nations Development Programme, 2000; United Nations Development Programme, 2002).

People living in the areas to be flooded consist of six different ethnic groups. Three of these groups are minorities, together making up only 8% of the population. In a few areas, the six groups live together, but each has its own tradition and culture, an important feature, which appears to have been kept in mind through the process of resettlement planning (United Nations Development Programme, 2002).

Arising from the social and socio-economic studies, the feasibility of the project is largely contingent on the implementation of resettlement for the affected people.

The resettlement design paid particular attention to host communities, and the following factors were taken into account:

- The number of people to be accommodated in each host commune.
- Moving resettled villages together, where possible.
- Trying to reduce the number of people to be moved to remote and isolated communes.
- The infrastructure investment required.

Resettlement criteria excluded communes as potential hosts with less that 450 m^2 agricultural land per capita, less than 225 m^2 rice paddies per capita, less than 226 kg of food per capita per year, and less than 15 households in the commune (United Nations Development Programme, 2002).

All people affected by resettlement are to be compensated for the following:

- Houses and other fixed structures. Each resettled household will receive a 35 m^2 to 90 m^2 brick or on-stilt house, depending on the size of the household.
- Permanently and temporary affected land (agricultural, gardens and residential).
- Crops and trees.
- Land on a "land for land" basis. On average, each person will be allocated 400 m^2 to 500 m^2 of replacement land (United Nations Development Programme, 2002).

Besides compensation, resettlers and hosts will also be provided with the following:

- Assistance in moving – each household will receive VND 3 million (US $ 188).
- Livelihood assistance – each resettled household will be subsidised with the monitory equivalent of 30 kg of rice per capita per month, over a period of 36 months.
- Production assistance – each household will be assisted in resuming agricultural production activities.
- Assistance for special needs households – each household will receive VND 1 million (US $ 63.00) as part of a government subsidy policy.
- Once off award – each household is to receive a once off award of VND 5 million (US $ 313).
- Assistance to people not resettled – people affected by the project, but not resettled, will receive an amount of VND 30 million (US $ 1,875) per household.
- Assistance of hosts – host communities affected by land acquisition for resettlement will be assisted with approximately VND 10 million (US $ 625).
- Other assistance – such as, education, healthcare, electricity supply and occupational training (United Nations Development Programme, 2002).

13.10.2 Estimate of indirect impacts

The completion of the dam and the flooding of the reservoir will change patterns of land and water use in the Na Hang district significantly. It is estimated that the dam should fill up within a year. Thereafter, the reservoir will stabilise over the next few years as conditions change and submerged vegetation degrades. Within five to ten years it may be expected that conditions will be suitable for the development of both water-related tourism activities and fisheries. No plans have been produced for these developments yet, but the study provides a general outline of typical development opportunities, which may arise (United Nations Development Programme, 2002).

- Tourism.
  Dams and reservoirs are impressive forms of infrastructure development that attract visitors in their own right. Although it is difficult to provide exact potential tourism figures for the period after the dam has been completed, the study based estimates on figures from the Hoa Binh Dam, which has been operational for a number of years. Based on visitors to Hoa Binh Dam, as well as the rapid growth rate in the number of local and international tourists, it is projected that in the order of 50 000 visitors per year may visit the dam within five years of its completion (United Nations Development Programme, 2002).

- Fisheries.
  No work has been carried out for the development of fisheries in the reservoir. However, there are enormous opportunities for both capture- and cage-fisheries. It is anticipated that during the initial years after inundation, the so-called “disturbed phase”, the focus will be predominantly on capture fishing, as there ought to be an increase in the fish population. Water conditions will not be conducive to cage fisheries during this stage. After approximately 10 years, the dam should reach its “stable phase” during which cage fisheries could be established successfully (United Nations Development Programme, 2002).

Both tourism development and the development of fisheries may be long-term positive socio-economic effects arising from the dam.

No potential negative affects of an indirect nature were identified in the source material reviewed for this case study.

13.11 Outcomes and Results

This case study did not focus on the official Environmental and Social Impact Assessment studies for the proposed Tuyen Quang Dam, as these have not yet been completed. Rather, Preliminary and Supplementary Environmental Impact Assessments (within which the Social Impact Assessment was embedded) have been undertaken as an intervention by international organisations, out of concern for the progress that had been made on the official studies. However, these studies were conducted with the knowledge and permission of the Vietnamese Government and the relevant environmental authorities, and will serve to strengthen future studies.

In the opinion of the Consultant, resettlement, as the single greatest social and socio-economic affect of the Tuyen Quang Dam, has been dealt with in detail as a potential effect, with strong focus on the potential host areas and the possible effects resettlement may have on them. Ethnic differences within the resettler and host groups were also given prominence in the description of the effect.

Also, while there are longer term opportunities that may arise from the dam project, it will take time for these follow-on effects and resultant benefits to be realised.

13.12 Assessment of Outcomes/Results by Involved Stakeholders

It was not possible to obtain an independent source of information to deal with this topic objectively. Similarly, attempts at reviewing project results as perceived by the affected or involved stakeholders have proven unsuccessful.

13.13 Consultant's Conclusions

The Tuyen Quang Hydroelectric Power Project provides a number of key lessons, which may be applied to other projects of this nature.

- The importance of both the resettled the host community, as well as their ethnic make-up, in resettlement.
  In a context like the Tuyen Quang Dam, where six different ethnic groups make up the potential resettlers as well as the hosts, it is important for the integration of resettlers with hosts, and for the long term success and sustainability of the resettlement programme, that cognisance is taken of this make up in the planning and implementation of the programme. Indeed, ignoring community make-up may lead to social conflict and instability in host areas post-resettlement.

- The prediction of indirect effects.
  The prediction of indirect effects during the Environmental Impact Assessment is important in order to proactively mitigate negative effects and, also, to take a longer term view on potential positive effects/benefits. Thus, the longer term effects, that will not immediately accrue as a result of dam construction and operation, need to spelled out in order for local and regional planning to take cognisance of these benefits, and to include them in developmental planning, thereby creating an enabling environment within which benefits can be realised and potential negative effects can be minimised.

- Co-operation between national governments and international agencies.
  No single set of environmental regulations can be equipped to deal with all potential types of projects or the effects of projects. Thus, shortcomings may appear in national legislative frameworks in its dealing with a specific project or the potential effects of the project. Where these effects may impact on, for example, the habitat of an extremely endangered species or the livelihoods of people, international agencies may intervene in an advisory capacity. However, this should take place with the approval of national government, and with close co-operation with national environmental authorities. This co-operation can ensure avoidance or mitigation of the effect, and can strengthen the national environmental framework in the process.

13.14 Source Material

Bekhechi, M.A. (1999). *Some Observations Regarding Environmental Covenants and Conditionalities in World Bank Lending Activities*. Max Planck UNYB, 3, 1999. (www.mpil.de/shared/data/pdf/pdfmpunyb/bekhechi_3.pdf).

Decree on Providing Guidance for the Implementation of the Law on Environmental Protection (1994) (Government Decree No. 175-CP, (1994)).

Guidelines for Resettlement and Rehabilitation in Vietnam.

International Rivers Network (2005). *NGO Comments on the use of Country Systems in Bank Operations*. 10 January 2005. (http://www.irn.org/programs/finance/pdf/050405ngocomments.pdf).

Law on Environmental Protection (1993).

United Nations Development Programme (2000). *Gam River Dam Preliminary Environmental Impact Assessment.* (http://www.undp.org.vn/projects/parc/docs/bn6-eia.pdf)

United Nations Development Programme (2002). *Supplementary Environmental Impact Assessment for the Tuyen Quang Dam, Vietnam.* (http://www.undp.org.vn/projects/parc/docs/misc2.pdf and http://www.undp.org.vn/projects/parc/docs/misc2-appendices.pdf)

World Bank Operational Policy 4.01 Environmental Assessment.

World Bank Operational Directive 4.30 Involuntary Resettlement.

14. Upper Seti Storage Hydroelectric Project

Seti River, Nepal (Figure 14).

14.1 Aspects of Social Impact Assessment Addressed

- Public Involvement.
  - Develop and implement an effective public involvement plan.
- Profile of Baseline Conditions.
  - Document the relevant human environment, and existing social conditions and trends.
- Mitigation.
  - Avoidance/minimisation of negative impacts.
  - Optimisation of benefits.

14.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects form part of normative frameworks covering Environmental Assessment:

- Nepal National Environmental Impact Assessment Guidelines (1993).
- Environmental Protection Act (1996).
- Nepal Environmental Rule (1997 as amended in 1999).
- Acquisition, Compensation and Rehabilitation Plan (1999)[40].

14.3 Project Identification

- Name — Upper Seti Storage Hydroelectric Project.
- Country — Nepal.
- Dates — The Preliminary Feasibility Environmental Impact Assessment Report was submitted to the Ministry of Water Resources and the Ministry of Population and Environment in October 2004. (Terms of Reference for the Upgrading Feasibility Study to be undertaken by the Japan International Cooperation Agency (JICA) were signed by the Nepal Electricity Authority (NEA) and JICA in November 2004).
- Developer — Nepal Electricity Authority.

14.4 Stage in the Project Lifecycle

Planning.

[40] Due to political instability in Nepal at the time of compilation of this case study, the Acquisition, Compensation and Rehabilitation Plan could not be sourced.

Figure 14 Indicative location of the Upper Seti Storage Hydroelectric Project in Nepal

www.geography.about.com/library/maps

Table 19 Selected technical details of the Upper Seti Storage Hydroelectric Project in Nepal

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	developer, agency or company
Upper Seti	Nepal	Unknown	Seti	Unknown	Hydropower	Nepal Electricity Authority

14.5 General Description of the Country Institutional Set-up

The Nepal Electricity Authority was created in 1985 under the Nepal Electricity Authority Act (1984) through the merger of the Department of Electricity of Ministry of Water Resources, Nepal Electricity Corporation and related Development Boards. The Authority is managed by a board, chaired by the Minister of Water Resources.

Two government ministries are responsible for the environmental authorisation of water resource related projects, viz. the Ministry of Population and Environment and the Ministry of Water Resource Development.

14.6 Detailed Description of the Specific Policy/Normative Framework

14.6.1 Policy Frameworks within Planning Processes

Since the 1960s, Nepal's national planning has been driven through a series of sequential Five Year Plans. The need for the integration of Environmental Impact Assessments into major development projects was first recognised in the "Sixth Plan" (1980-1985). In 1982, an Environmental Impact Study Project was compiled by the Department of Soil Conservation to develop necessary instruments for the integration of Environmental Impact Assessments into infrastructure development projects. The Government of Nepal enunciated its environmental conservation related policies in the "Seventh Plan" (1985-1990). In order to enforce these policies, a series of guidelines were developed to be implemented at the project formulation stage of development plans and projects, in order to avoid or minimize adverse effects on the environment. In addition, it also emphasized the importance of Environmental Impact Assessments for industry, tourism, water resources, transportation, urbanization, agriculture, forest and other developmental projects (Nepal Electricity Authority, 2004).

The "Eighth Plan" (1992-1997), which was formulated after Nepal's participation in the Rio Earth Summit in 1992, recognised the need for integration of Environmental Impact Assessment into economic development projects. This plan emphasized the adoption of an integrated approach and the sustainability concept in the formulation of environmental legislation. The "Eighth Plan" recommended the establishment of an environmental section or unit in the concerned ministries, the development of indicators, the creation of standards, and the implementation of working procedures in order to minimize likely environmental impacts of the development activities. The "Eighth Plan" also recommended the compilation of Environmental Impact Assessment Guidelines for large development projects such as roads, hydro-electric plants, irrigation schemes, industry, housing, potable water schemes, sewerage plants, etc. (Nepal Electricity Authority, 2004).

The afore-mentioned planning period made significant contributions to the institutionalisation of Environmental Impact Assessment into Nepal's development planning and administrative framework. As products of this period, the Government of Nepal adopted and implemented the National Environmental Impact Assessment Guidelines (1993), two separate Environmental Impact Assessment Guidelines for the Forestry and Industry Sectors (1995), the Environment Protection Act (1996) and the Environment Protection Rules (1997). In addition, and of significant importance to the social environment was the development and adoption of the Acquisition, Compensation and Rehabilitation Plan.

The "Ninth Plan" (1997-2002) adopted a policy of participation in Environmental Impact Assessment, and emphasised the necessary procedures for the involvement of local bodies, communities, the private sector, non governmental organisations and government agencies (Nepal Electricity Authority, 2004).

14.6.2 Environment Protection Laws/Regulations Flowing from the Five Year Plans

14.6.2.1 NATIONAL ENVIRONMENTAL IMPACT ASSESSMENT GUIDELINES (1993)

The National Environmental Impact Assessment Guidelines set out the process for the environmental review and management of infrastructure projects in all sectors, and the respective roles of agencies and project proponents.

It views the environment as all-encompassing and includes the bio-physical, socio-economic and cultural, as well as the built environment as the key components comprising the environment.

The main aims of an Environmental Impact Assessment according to the Guidelines are to:

- Identify potential environmental impacts.
- Examine the significance of environmental impacts.
- Recommend preventative and corrective mitigating measures.
- Inform decision makers and concerned parties about environmental implications.
- Advise whether a development should go ahead.

The Guidelines outline the sequence of activities, which should be followed within the Environmental Impact Assessment process as follows:

- Project screening.
- Scoping.
- Project description and consideration of alternatives.
- Prediction of impacts.
- Evaluation of impacts.
- Mitigation measures.
- Stakeholder involvement.
- Monitoring and auditing measures.
- Environmental Impact Report.
- Review.
- Decision making.

The collection of baseline data is emphasised in the Guidelines for two main purposes:

- To provide a description of the status and trends of environmental factors against which predicted changes can be compared and evaluated in terms of importance.
- To provide a means of detecting the actual change by monitoring once a project has been initiated.

14.6.2.2 ENVIRONMENTAL PROTECTION ACT (1996)

In the process of internalising the Environmental Assessment System in development proposals, the Government of Nepal enacted the Environment Protection Act (1996). This Act obliges a proponent to prepare an Environmental Impact Assessment Report for approval by the relevant sectoral ministry and the Ministry of Population and Environment. The Act also outlines the processes for the submission and approval of Environmental Impact Assessment reports.

14.6.2.3 ENVIRONMENT PROTECTION RULE (1997 AMENDED IN 1999)

The Environment Protection Rule (1997) was established under the provisions of the Environment Protection Act, and endorsed by the Government of Nepal in June 1997. The Environment Protection Rule adopts the environmental assessment criteria outlined in the National Environmental Impact Assessment Guidelines. The Environment Protection Rule also outlines the format/layout of the Environmental Impact Assessment documents, and establishes an administrative framework for assessing Environmental Impact Assessments.

14.6.2.4 ACQUISITION, COMPENSATION AND REHABILITATION PLAN

This document could not be sourced.

14.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

The Nepal Electricity Authority is responsible for implementing the Upper-Seti Dam project. The authorities that need to provide environmental authorisation for the project are both the Ministry of Population and Environment and the Ministry of Water Resource Development in terms of the Environment Protection Act (1996) and the Environment Protection Rule (1997 as amended 1999).

14.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

Section 7.1 provides a detailed outline of the development of Environmental Impact Assessment related legislation and policy, from the first recognition of the need for the integration of Environmental Impact Assessments into major development projects in the “Sixth Plan” (1980-1985), to establishment of the Environmental Impact Assessment Guidelines (1995), the Environment Protection Act (1996) and the Environment Protection Rule (1997).

14.9 Project Description

The objective of the Upper Seti Storage Hydroelectric Project is to construct a storage hydroelectric dam consisting of a 136 m high reservoir wall, an inundation area of approximately 7.69 km^2, and a hydroelectric generator house at the toe of the dam (Nepal Electricity Authority, 2004).

An Environmental Impact Assessment was conducted by the Nepal Electricity Authority as part of a Preliminary Feasibility Study. The Environmental Impact Assessment included specialist input from an aquatic biologist, a forester, a botanist, a sociologist, an economist, an environmental engineer, and a hydroelectric engineer (Nepal Electricity Authority, 2004).

The project is located in the Tanahu District of the Western Development Region of Nepal. The District covers an area of 1,546 km^2, with a population of 304,496, and a population density of 197 persons per km^2. The main project facilities and the reservoir will extend into eight Village Development Committee areas of the Tanahu District, viz. the Bhimad, Kahu Shivpur, Kot Burbar, Majhkot, Rani Pokhari, Jamune, Damauli, and Pokharibhanjyan areas (Nepal Electricity Authority, 2004).

The Hindu caste group is the dominant group in the project area, and is composed of different ethnic groups. Magars are numerically the largest caste, followed by Bhramin and Newars. Other ethnic/caste groups in the project area are Gurung, Chhetri, Kami, Damai, and Kumal. Agriculture and the rearing of livestock are the main economic activities of the majority of the people in the project area. The major subsistence crops cultivated are paddy rice, wheat, maize and millet. Cash crops constitute mustard, potato, legumes, fruit and vegetables. The project area has relatively strong social infrastructure and government services. The overall literacy rate of the sampled population is estimated at 78%, which is higher than the national average of 39.6% (Nepal Electricity Authority, 2004).

The Preliminary Feasibility Study was conducted at planning level. Following this study, an Upgrading Feasibility Study is to be conducted by the Nepal Electricity Authority in conjunction with the Japan International Cooperation Agency. This study will include an Environmental and Social Considerations Study. Based on its findings, the Preliminary Feasibility Study included terms of reference for the Updated Feasibility Study and the Environmental and Social Considerations Study. Three aspects of social and socio-economic importance are included in the terms of reference:

- An examination of environmental impacts associated with layout design and the operation of the proposed dam.
- Further development of resettlement plans.
- Additional analysis of social and cultural aspects (Nepal Electricity Authority, 2004).

14.10 Implementation of Key Issues

14.10.1 Public Involvement

Public consultation was conducted according to the requirements of the Environmental Protection Act and the Environmental Protection Rule, and took place in two stages:

- The First Public Consultation.
  The first public consultation took place during scoping through a public notice published in a National Daily Newspaper “Gorkhapatra” by the environmental team. In response to the public notice, suggestions, comments and information were received from affected parties, organizations, NGOs, Village Development Committees and municipality offices. These were analysed and included as part of scoping (Nepal Electricity Authority, 2004).

- The Second Public Consultation.
  The Second Public Consultation took place in the form of a public hearing at the end of the Environmental Impact Assessment stage, held at the Vyas Municipality offices. Advanced notice of the hearing was given through the “Gorkhapatra”. Prior to the

hearing, the key Environmental Impact Assessment findings were made available in the form of booklets (provided in Nepalese). The booklets included information with regard to the planning process, key environmental issues and impacts, mitigation measures, monitoring processes and environmental enhancement measures. Preliminary layouts of the proposed dam and photos were displayed at the hearing. Key environmental and social concerns raised during the hearing were documented. In general, local people expressed a positive attitude towards the implementation of the project, provided that the affected people and the local communities benefited from it (Nepal Electricity Authority, 2004).

14.10.2 Profile of Baseline Conditions

Primary social and socio-economic data were collected through a questionnaire survey, checklists, focus group discussions and on-site observations. Key findings of importance to the overall Environmental Impact Assessment were as follows:

- There are eight Village Development Committees.
- The Hindu caste group dominates in the project area and is composed of different ethnic groups.
- Agriculture and livestock rearing are the mainstay of a large majority of the people.
- Social infrastructure, as well as government services, are relatively good (health posts, police posts, schools, etc.) as well as two markets (bazaars), which provide a variety of goods.
- The project area is not an active tourist spot, but there are some places of religious and cultural significance (Nepal Electricity Authority, 2004).

14.10.3 Projection of Estimated Effects

The study conducted a first order identification of impacts of the project on the social and socio-economic environment, and analysed the benefits of the project. The study noted that since the project is still in the planning stage, the nature of the impacts and/or the magnitude of the impacts may change, depending on the final size and layout of the dam as determined during Detailed Design (Nepal Electricity Authority, 2004).

According to the Nepal Electricity Authority (2004), four key issues and associated impacts were identified:

- Resettlement related impacts.
  - Forty five households in seven of the Village Development Committees may need to be resettled.
  - A further 324 households will be affected by the development, but should be able to remain at their place of residence.
  - Arable land to the extent of 162 ha will be affected, leading to a potential crop loss of 768.6 tonnes per annum.

- There are a number of ancient archaeological sites, such as the “Vyas Cave”, which may be affected by the proposed project.

- An influx of people into a rural area with associated secondary impacts, for example, on infrastructure, social services and the rural way of life of the local population.

- Economic benefits.
  - Employment opportunities.
  - Availability of electricity.
  - Market facilities for local products.
  - Industrial development.
  - Increase in real income.
  - Increase in regional gross domestic product.
  - Capital formation.
  - Moneterization of a rural economy.
  - Flow of goods and services.

14.10.4 Mitigation

According to the Nepal Electricity Authority (2004), a number of mitigation measures were recommended to deal with negative social and socio-economic impacts:

- Resettlement and acquisition principles.
  - Two methods of compensation were proposed, based on discussions with the local people and on-site observation, viz. “land-for land compensation” and “cash compensation”. Since it is difficult to find replacement agricultural land in the vicinity of the project area, cash compensation was preferred.
  - The valuations of individual households and their effects would be undertaken before determining compensation packages.
  - An Acquisition, Compensation and Rehabilitation Plan would be developed for the families who will lose their lands and houses.
  - A Compensation Committee would be established and would be responsible for determining compensation for loss of land, property, etc. The Feasibility Study does not say how this committee will be constituted.
  - Compensation would be provided, in full or partially, before land is acquired, in accordance with the Nepal Land Acquisition Guidelines.
  - Resettlement options would be based on people’s preferences, provided they are feasible. Resettlement planning must ensure that affected households at least maintain their current standards after project implementation.

- A strong code of conduct would be formulated and enforced, especially for outside construction workers, to minimize impacts on the cultural practices of local communities.

- The assistance of local bodies and leaders would be required to decide on the necessary protection measures for ancient archaeological sites.

- The influx of 500-1,000 workers into the project area would put significant pressure on existing public facilities. It would be necessary for local government to invest in additional social infrastructure and services (several mitigation measures were recommended).

Several enhancement measures, which aim to enhance positive impacts of the proposed project or to compensate for negative impacts, were also suggested:

- Improvement in Agricultural Practices.
- Training for Small Scale Skills Development.
- Loan Assistance Programmes for small businesses, such as cage fish culture, livestock and poultry rearing and retail shops.
- Environmental Awareness for Conservation.

- Other Community Development Initiatives (such as rural electrification, education, health, sanitation and water supply) (Nepal Electricity Authority, 2004).

14.11 Outcomes and Results

It is the understanding of the Consultant that a preliminary feasibility study is not necessarily expected to deal with all the requirements of national legislation and policy at a composite level of detail. Considering the pre-feasibility level of detail, it is the Consultant's opinion that Social Impact Assessment aspects that were dealt with successfully were as follows:

- Public Involvement. It is a requirement of the National Environmental Impact Assessment Guidelines (1993) for stakeholders to be involved in the assessment process. Two rounds of public involvement were conducted, with the level of stakeholders broadened and the level of detail of information shared increasing between the first and the second level. A variety of media was used, importantly, material was provided in the local language, Nepalese.

- Baseline Data Collection and profiling of Baseline Conditions. The National Environmental Impact Assessment Guidelines (1993) highlight the importance of the collection of baseline data. Primary social and socio-economic data were collected on the area of project influence through a questionnaire survey, checklists, focus group discussions and on-site observations.

- Identification and Projection of Effects. Consistent with the National Environmental Impact Assessment Guidelines (1993), the Preliminary Feasibility Study included a first order identification and projection of project impacts. Similar to most large dam projects, resettlement is the single greatest social and socio-economic effect of the Upper Seti Dam project. However, the extent of the population directly affected by resettlement appears to be significantly less (45 households) when compared to other large dam projects. No resettlement plan was compiled at this level of study, but one of the aims of the subsequent Upgrading Feasibility Study to be conducted by the Nepal Electricity Authority in conjunction with the JICA, is the compilation of resettlement plans.

The Preliminary Feasibility Study also made a number of mitigation recommendations, which attempt to provide initial ideas of means through which potential negative effects can be avoided or reduced and whereby positive effects can be enhanced. These recommendations are also to be further developed in subsequent environmental study phases as the potential social and socio-economic effects of the project are analysed further.

14.12 Assessment of Outcomes/Results by Involved Stakeholders

It was not possible to obtain an independent source of information to deal with this topic objectively. Similarly, attempts at reviewing project results as perceived by the affected or involved stakeholders have proven unsuccessful.

14.13 Consultant's Conclusions

The Upper Seti Dam project provides a number of key lessons, which may be applied to other projects of this nature.

- Public involvement with directly and indirectly affected.
  Involving directly and indirectly affected people from the early planning stages of the project enables a good understanding of the nature and extent of the potential social and socio-economic effects. Further, it enables informed planning and implementation of mitigation measures (such as resettlement).

- Establishment of a socio-economic baseline.
  The detailed documentation of the area of influence of the project as one of the first steps in the assessment process is important for a number of reasons:
  - It serves to assist the understanding of the relevant socio-economic environment and as well as the potential effects that the proposed project may have on this environment.
  - It provides a control baseline of people potentially affected by resettlement and thereby assists in the prevention of opportunistic resettlers into the area after project announcement. However, it is important for the parties implementing the programme to be open to include affected people who were either absent or incorrectly recorded during the initial baseline.
  - It serves as yardstick against which effects of a project and mitigation actions can be measured.

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15. Xiaolangdi Dam Project

Yellow River, China (Figure 15).

15.1 Aspects of Social Impact Assessment Addressed

- Public Involvement.
  - Develop and implement an effective public involvement plan.
- Identification of Alternatives.
  - Reasonable alternatives.
- Prediction and Evaluation of Responses to Impacts.
  - Involuntary resettlement.

15.2 Normative Frameworks

There were no normative frameworks specifically covering Social Impact Assessment. However, social aspects form part of normative frameworks covering Environmental Assessment:

- Environmental Protection Law of the People's Republic of China (1989).
- World Bank Operational Policy 4.01 Environmental Assessment.
- World Bank Operational Directive 4.30 – Involuntary Resettlement.

15.3 Project Identification

- Name: Xiaolangdi Dam Project.
- Country: China.
- Dates: Environmental Impact Assessment completed in 1992. Civil works initiated in 1994. Resettlement took place in three phases between 1993 and 2003.
- Developer: Yellow River Water and Hydroelectric Power Development Corporation and CIPM Yellow River Joint Venture.

15.4 Stage in the Project Lifecycle

Operation.

15.5 General Description of the Country Institutional Set-up

China’s National Environmental Protection Agency is responsible for the environmental authorisation of developments. Should a development involve resettlement, the China Ministry of Water Resources take responsibility for the approval of resettlement plans.

Figure 15 Indicative location of the Xiaolangdi Dam Project in China

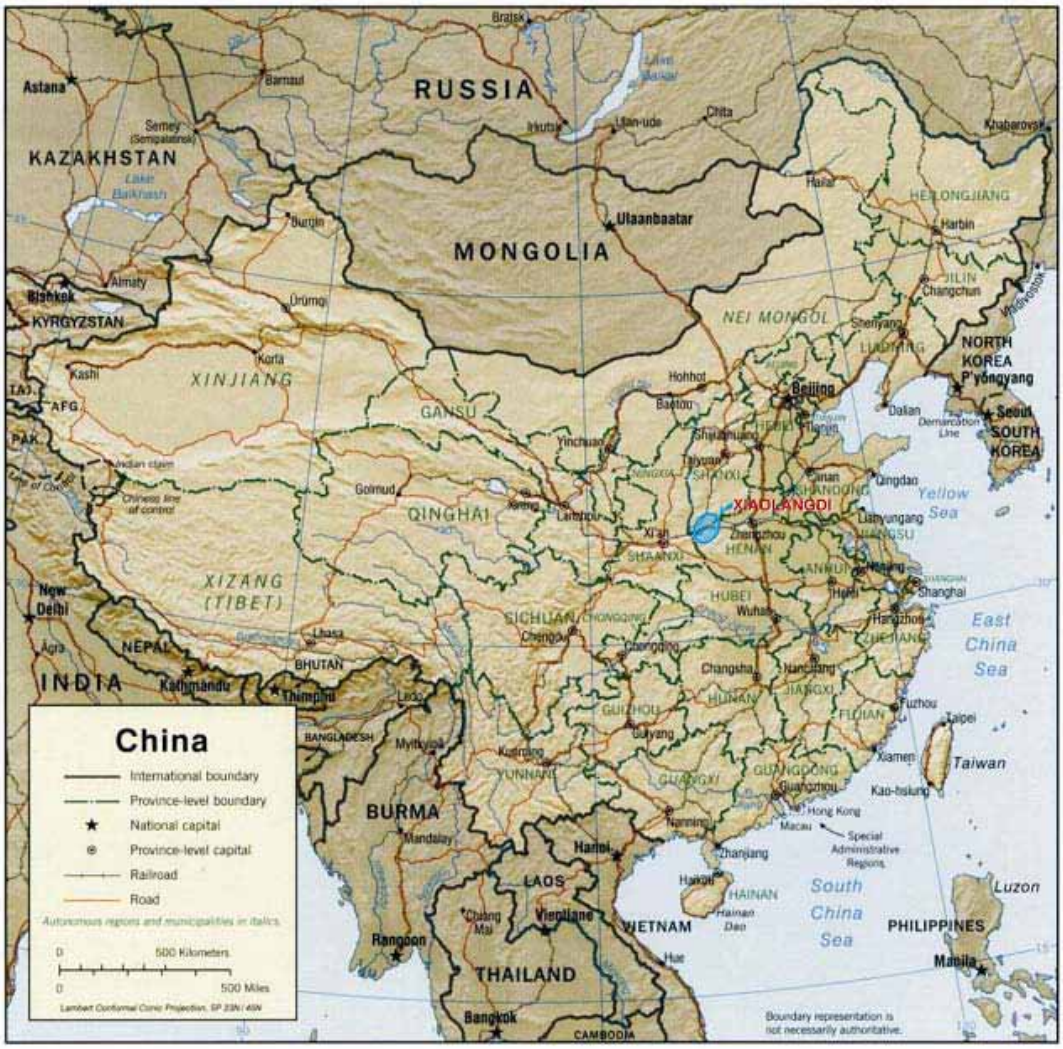

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Table 20 Selected technical details of the Xiaolangdi Dam Project in China

Project	Country	Catchment area	River	Project size	Purposes, highlighting the main one	Responsible developer, agency or company
Xiaolangdi	China	Dam catchment area is 694,155 km²	Yellow	Surface area is 272 km²	Hydropower	Yellow River Water and Hydroelectric Power Development Corporation and CIPM Yellow River Joint Venture.

The Yellow River Water and Hydroelectric Power Development Corporation took responsibility for the implementation of the project, which was conducted by the CIPM Yellow River Joint Venture.

15.6 Detailed Description of the Specific Policy/Normative Framework

The Xiaolangdi Dam Project was the first major project involving resettlement in China to obtain loan finance from the World Bank. The project is classified as a Category A project according to the World Bank Operational Policy 4.01 (OP 4.01), and, due to resettlement impacts, the project was also subject to the provisions of World Bank Operational Directive 4.30 (OD 4.30). In addition to World Bank guidelines and policies, OP 4.01 clearly states that the World Bank takes into account a country's overall policy framework and national legislation, and that the World Bank will not finance projects which contravene these.

Relevant Chinese environmental legislation is also an important part of the normative framework applicable to the Xiaolangdi Dam Project.

15.6.1 Chinese Environmental Legislation

15.6.1.1 ENVIRONMENTAL PROTECTION LAW OF THE PEOPLE'S REPUBLIC OF CHINA (1989)

The Environmental Protection Law was formulated for the purpose of protecting and improving people's environments and the ecological environment, preventing and controlling pollution and other public hazards, safeguarding human health, and facilitating the development of socialist modernization.

The Environment Protection Law views the environment as the total body of all natural elements and artificially transformed natural elements affecting human existence and development, which includes the atmosphere, water, seas, land, minerals, forests, grasslands, wildlife, natural and human remains, nature reserves, historic sites and scenic spots, and urban and rural areas.

As far as could be ascertained, the Environment Protection Law does not make specific provision for the undertaking of a Social Impact Assessment for a proposed development.

15.6.2 Relevant World Bank Guidelines and Policies

At the time of the study, World Bank guidelines and policies that were of direct relevance to the Xiaolangdi Dam Project were OP 4.01 – Environmental Assessment and OD 4.30 – Involuntary Resettlement. The updated and revised World Bank Safeguard Policies became effective only during 2002, well after completion of the study for this project (and, therefore, were not applicable).

15.6.2.1 WORLD BANK OPERATIONAL POLICY 4.01 - ENVIRONMENTAL ASSESSMENT

The World Bank requires an Environmental Assessment of projects proposed for World Bank financing, to help ensure that they are environmentally sound and sustainable, thereby improving decision-making. According to the World Bank, an environmental assessment is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impacts of a proposed project. In this regard, an Environmental Assessment:

- Evaluates a project's potential environmental risks and impacts in its area of influence.
- Examines project alternatives.
- Identifies ways of improving project selection, siting, planning, design, and implementation, by preventing, minimizing, mitigating, or compensating for adverse environmental impacts, and enhancing benefits.
- Includes the process of mitigating and managing adverse environmental impacts throughout project implementation. In this regard, the World Bank favors preventive measures over mitigatory or compensatory measures, wherever feasible.

An Environmental Assessment takes into account the natural environment (air, water and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples and cultural property); and trans-boundary and global environmental aspects. An Environmental Assessment also considers natural and social aspects in an integrated way. It also takes into account:

- Variations in project and country conditions.
- The findings of country environmental studies.
- National environmental action plans.
- The country's overall policy framework, national legislation, and institutional capabilities, related to the environment and social aspects.
- Obligations of the country pertaining to project activities, under relevant international environmental treaties and agreements. The World Bank does not finance project activities that would contravene such country obligations, as identified during an Environmental Assessment. Therefore, an Environmental Assessment is initiated as early as possible in project processing, and is integrated closely with the economic, financial, institutional, social, and technical analyses undertaken for a proposed project.

The World Bank undertakes environmental screening of each proposed project to determine the appropriate extent and type of Environmental Assessment required. The World Bank classifies a proposed project into one of four categories, depending on the type, location, sensitivity, and scale of the project, and the nature and magnitude of its potential environmental impacts. The Xiaolangdi Dam Project was classified as a Category A project, which implies the following:

- A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. An Environmental Assessment for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. For a Category A project, the borrower is responsible for preparing an Environmental Assessment Report.

15.6.2.2 WORLD BANK OPERATIONAL DIRECTIVE 4.30 – INVOLUNTARY RESETTLEMENT

The current World Bank Safeguards relating to involuntary resettlement are Operational Policy 4.12 (OP 4.12) and Bank Procedure 4.12 (BP 4.12), which replaced OD 4.30 on 1 January 2002. All projects for which Project Concept Reviews were conducted prior to this date were, therefore, still financed under the provisions of OD 4.30 (as was the case for the Xiaolangdi Dam Project).

The objective of OD 4.30 is to ensure that the population displaced by a project receives benefits from it. Involuntary resettlement is an integral part of project design, and should be dealt with from the earliest stages of project preparation, taking into account the following policy considerations:

- Involuntary resettlement should be avoided or minimized where feasible, exploring all viable alternative project designs.
- Where displacement is unavoidable, resettlement plans should be developed. All involuntary resettlement should be conceived and executed as development programmes, with resettlers provided sufficient investment resources and opportunities to share in project benefits.
- Community participation in planning and implementing resettlement should be encouraged. Appropriate patterns of social organisation should be established, and existing social and cultural institutions of resettlers and their hosts should be supported and used to the greatest extent possible.
- Resettlers should be integrated socially and economically into host communities so that adverse impacts on host communities are minimised.
- Land, housing, infrastructure and other compensation should be provided to the adversely affected population, indigenous groups, ethnic minorities, and pastoralists who may have usufruct or customary rights to the land or resources acquired for the project.

Where the resettlement of large groups of people is unavoidable, a detailed Resettlement Action Plan, timetable, and budget are required. The Resettlement Action Plan should make detailed provisions for the following:

- Organisational responsibilities.
- Community participation and integration with host populations.
- A socio-economic survey.
- A legal framework.
- Alternative sites and selection.
- Valuation and compensation for lost assets.
- Land tenure, acquisition, and transfer.
- Access to training, employment and credit.
- Shelter, infrastructure and social services.

15.7 Brief Description of the Organisational Set-up Adopted/Available for Implementation, Enforcement and Monitoring

The CIPM Yellow River Joint Venture was selected by the Chinese Government and the World Bank to assist the Yellow River Conservancy Commission in the preparation of a feasibility study. The effort was further assisted by an international panel of experts established by the Yellow River Water and Hydroelectric Power Development Corporation, and by guidance provided by various World Bank missions.

As indicated in Section 6, the environmental authority, which authorised the project is China’s National Environmental Protection Agency. The China Ministry of Water Resources took responsibility for the approval of resettlement plans.

This authorisation is granted in terms of the Environmental Protection Law of the People's Republic of China (1989).

15.8 Brief Description of the Implementation History of the Norm, including Enforcement and Compliance

It was not possible to source English versions of the implementation of Chinese policies.

However, examples of the implementation of the provisions of World Bank safeguards are available for numerous projects world-wide (dam and other large-scale infrastructure projects). It is also pertinent to note that World Bank safeguards are updated periodically, suggesting the incorporation of experience and learning into newer safeguards. However, there is little or no readily available literature on the implementation history of Chinese national normative frameworks.

With regard to World Bank safeguards, there appears to be some controversy regarding their implementation. Some writers perceive the norm and its implementation positively, for example, Bekhechi (1999) states that *since 1984, major environmental policies have been issued and implemented by the World Bank and constitute the most comprehensive environmental policy that frames investment and other development activities of any development agency*. Others, predominantly from non governmental organisations and civil society have reservations regarding the norm. For example, the International Rivers Network (2005) states that *in spite of their many shortcomings, the World Bank's social and environmental safeguard policies are an important achievement of the past twenty years.* However, the International Rivers Network (2005) continues by stating *… the Bank has not mainstreamed social and environmental concerns throughout its business model. As a consequence, the Bank has repeatedly developed unsustainable projects within which the objectives of the safeguard policies cannot be achieved. The Bank may go through the motions of implementing safeguard policies, but it often fails to comply with their objectives. For example, the Bank rarely explores alternative options in any balanced way as part of the environmental assessments of projects. And people who are displaced by Bank projects almost invariably end off poorer as a result, rather than becoming project beneficiaries*.

The implementation of World Bank safeguards, therefore, appears not to have been free of disappointment. However, as stated above, the World Bank seems to be constantly striving towards the improvement of its policies and guidelines in an attempt to address shortcomings.

15.9 Project Description

The Xiaolangdi Dam Project, a multipurpose reservoir project, is located on the Yellow River, approximately 40 km upstream from the City of Luiyang, in the Henan Province of China. The project consists of a dam, flood release and silt discharge structures, and water diversion and electricity generating structures. The primary objectives of the Xiaolangdi Dam Project are:

- Flood control in the Yellow River.
- Sediment control.
- Power generation.
- Water supply for irrigation, and urban and industrial development.

Secondary objectives include eco-restoration in the reservoir area, and the promotion of aquaculture (Yellow River Conservancy Commission, 1993).

The first Environmental Assessment Report compiled on the Xiaolangdi Dam Project was prepared in 1986 and approved by China's National Environmental Protection Agency. The work was carried out by the Yellow River Conservancy Commission, supported by 88 Chinese experts from various institutes and universities. In 1989, China requested project financing with the objective of appraising the project, and the World Bank provided an outline of requirements for specific environmental work necessary prior to project appraisal and loan approval. This work was undertaken during 1990, with the advice and assistance of the CIPM Yellow River Joint Venture (Section 6). The CIPM Yellow River Joint Venture was selected by the Chinese Government and the World Bank to assist the Yellow River Conservancy Commission in the preparation of a feasibility study. The effort was further assisted by an international panel of experts established by the Yellow River Water and Hydroelectric Power Development Corporation, and by guidance provided by World Bank missions in 1990 and 1991. A number of successive draft Environmental Assessment documents were prepared, culminating in the document on which this case study is based, which was produced in November 1992, and accepted by the World Bank in the same year (Yellow River Conservancy Commission, 1993).

The main civil works started during 1994, by which time the resettlement of affected people from the construction zone had been completed. Resettlement from the reservoir area was carried out in three phases, with Phases I and II running from 1994 to 1996 and 1997 to 2000, respectively. Phase III was originally planned to be completed in 2010, but planning was revised and this phase was completed in 2003.

15.10 Implementation of Key Issues

15.10.1 Public Involvement

A public involvement programme was carried out by the resettlement team with the aim of enabling potentially affected resettler families and host communities the opportunity to voice opinions and express concerns. This was done through direct consultation with potentially affected villagers. Public involvement actively included potentially affected people in order to better understand the issues relating to, and the extent of, resettlement (Yellow River Conservancy Commission, 1993).

The number of households consulted amounted to approximately 5% (almost 10,000 households) of the total 181,000 people potentially affected by inundation (which is illustrative of shortcomings associated with the consultation and/or participation of large numbers of people potentially or actually affected by a proposed development) (Yellow River Conservancy Commission, 1993).

In order to ensure inputs from all spheres of government, the public involvement programme included discussions with officials at village level, as well as with government officials at the higher township, county, prefecture, provincial and national levels.

To ensure that the levels of improvement and compensation established in the Resettlement Action Plan were attained, the plan included a provision for the formulation and execution of written agreements with the local officials concerned, down to village level (Yellow River Conservancy Commission, 1993).

The resettled population also had a high level of involvement in a number of aspects related to the resettlement process including: the planning of new villages, location selection, asset valuation and compensation, and replacement housing selection and construction (Yellow River Conservancy Commission, 1993).

15.10.2 Identification of Alternatives

A number of alternatives to the Xiaolangdi Dam Project were considered during the course of the Environmental Assessment (Yellow River Conservancy Commission, 1993). Each of the alternatives had different impacts in terms of flood control, sediment management, resettlement of people and cost. The following alternatives were considered as part of the Environmental Assessment:

- The raising of dykes to control a 1,000 year flood event.
  This would reduce sediment deposition in the lower reaches of the Yellow River. However, this would have been costly and there was doubt as to the structural soundness of the dykes.
- The construction of reservoirs for flood control and sediment management at other suitable sites upstream from Xiaolangdi.
  This would regulate downstream flooding and sediment deposition, and reduce long-term river channel build up of sediment. However, it would not provide flood protection or lower reach sediment regulation and stabilisation.
- The implementation of large-scale conservation and rehabilitation measures on the barren Loess Plateau.
  These measures would reduce sediment generation at source. However, this was considered a long-term solution and would not solve the problem in the immediate future. The costs of such measures were estimated at twice that of the Xiaolangdi Dam Project and, also, would not offer flood protection.
- The construction of an emergency flood channel parallel to the existing river course.
  This alternative would require the resettlement of 700,000 to 930,000 people, disrupt irrigation, communication, and transportation facilities, and would be technically complicated.
- The modification of the existing river channel configuration, creating a new channel, and abandoning part or the entire existing channel.
  This would have had the same effects as the emergency flood channel, would have required the resettlement of up to 500,000 people, and provided no sediment control in the lower reaches of the river.
- The undertaking of large scale warping (i.e. the diversion and settling of sediment outside the river channel) at various locations.
  Sediment transport and deposition would be reduced, but the alternative would provide no flood control. It would also not be effective without the construction of large reservoirs upstream, and would require the resettlement of approximately 900,000 people (Yellow River Conservancy Commission, 1993).

The Environmental Assessment concluded that the Xiaolangdi Dam Project would be the only project alternative, which would furnish excellent flood protection and sediment control with the minimum possible resettlement of people (i.e. the social effects were focussed on limiting resettlement whilst, technically and economically, the objectives of the intervention needed to be met) (Yellow River Conservancy Commission, 1993).

15.10.3 Prediction and Evaluation of Responses to Impacts – Involuntary Resettlement

Resettlement planning and management represented an effort in planning and management that outweighed the rest of the environmental studies by an order of magnitude. Eight surveys of the population potentially inundated by the Xiaolangdi Dam Project were conducted between 1959 and 1991. A total of 181,050 people were estimated to require resettlement from the reservoir area, of which 87% were located in rural villages and 13% in towns (Yellow River Conservancy Commission, 1993).

A detailed and comprehensive Resettlement Action Plan was compiled in 1991 and submitted for approval by the Ministry of Water Resources. The Resettlement Action Plan took cognisance of the people directly affected by the project (i.e. those people displaced by inundation) as well as the indirectly affected population in areas receiving resettlers (hosts). The Resettlement Action Plan was based on 17 resettlement criteria, which were compiled by a Yellow River Conservancy Commission Resettlement Team (comprising representatives of the commission and local government), and were based on international principles and guidelines, as well as knowledge gained from other resettlement experiences (Yellow River Conservancy Commission, 1993).

The two main objectives of the Resettlement Action Plan were that both resettlers and host communities:

- Would not be disadvantaged by the Xiaolangdi Dam Project.
- Would share in the project benefits (Yellow River Conservancy Commission, 1993).

The Environmental Assessment included an environmental review of the Resettlement Action Plan to ensure that the plan was environmentally sound, and that the objectives could be achieved. It included a review of economic effects on both the resettlers and the host communities, preferential policies, housing, amenities, and public services, as well as social and cultural aspects. The review concluded the following:

- Economic effects on both resettlers and host communities.
  It was determined that adequate compensation provision for resettlers had been made. This included cash compensation, a continuation of an agricultural lifestyle, and additional non-farm jobs to increase income. Although hosts were due to lose agricultural land, there were to be improved irrigation developments and non-farm job opportunities, which were designed to improve the economic situation of hosts.
- Preferential policies.
  Preferential policies were to be introduced for rural resettlers and hosts, which would include special status for scarce farm inputs, direct free market sales of farm products, training, exemption from or reduction of grain quotas, priority for jobs in rural enterprises, subsidies and tax exemptions.
- Housing, amenities and public services.
  For resettlers, the availability of these services would be better than prior to resettlement (60% of the floor space of resettler housing comprised caves). Existing infrastructure in host areas would be supplemented to accommodate the additional load, without loss of level of service, thereby improving living standards for both resettlers and hosts.
- Social and cultural aspects
  Ethnic problems between resettlers and hosts were considered unlikely, since almost all resettlers and hosts are Han Chinese. Nevertheless, in order to minimise the social dislocation impact, villages were to be moved as whole groups (Yellow River Conservancy Commission, 1993).

Other aspects covered in the Resettlement Action Plan included:

- Grievance and complaints procedure.
  A mechanism that is based on existing Village Committees, which represents villagers independently of regular government structures, was provided. If matters could not be resolved at Village Committee level, procedures were provided for referring them to local, and subsequently higher, government levels.
- Safety nets.
  A special Reservoir Area Support Fund was established to assist resettlers or hosts, should they be unsuccessful in achieving satisfactory income levels. The Reservoir Area Support Fund guaranteed a minimum income if farm or non-farm livelihoods failed to meet their minimum need. The Reservoir Area Support Fund is to remain in place until Government deems that resettlers and/or hosts have established themselves adequately, and are no longer at any particular risk.
- Transport capacity for relocation.
  Since this had been a major problem on previous resettlement programmes, the Resettlement Action Plan provided that there would be adequate transport capacity for moving resettler families to their new sites.
- Monitoring and reporting.
  The Resettlement Action Plan made provision for monitoring and reporting during the resettlement process. Special monitoring and reporting forms were to be completed by resettlement personnel at township and village level, for submission to provincial and municipal resettlement bureaus.
- Annual evaluations.
  The Resettlement Action Plan also made provision for qualified social scientists to be engaged to conduct annual individual evaluations of resettlers' socio-economic progress. This aimed at evaluating and reporting on the living conditions and level of social services of the affected population, both before and after resettlement (Yellow River Conservancy Commission, 1993).

15.11 Outcomes and Results

It is the understanding of the Consultant that the Xiaolangdi Dam Project was the first major project involving resettlement in China to obtain loan finance from the World Bank. The World Bank OP 4.1 states that an Environmental Assessment should evaluate a project's potential environmental risks and impacts in its area of influence. In the opinion of the Consultant, the single greatest potential socio-economic affect of the Xiaolangdi Dam Project was the resettlement of up to 900,000 people, which led to World Bank OD 4.30 becoming relevant to the project. OD 4.30 places strong emphasis on the avoidance of resettlement as first mitigation option. However, since this could not be avoided on the Xiaolangdi Dam Project, and since both OP 4.1 and OD 4.30 require an investigation into alternatives, six different alternatives were assessed. The alternative that was selected and taken forward into the detailed Environmental Assessment minimised the number of affected people (to 181,050), while still remaining technically and economically feasible.

In an attempt to mitigate and manage the effects of resettlement, a Resettlement Action Plan was compiled, based on the requirements of OD 4.30. The compilation and implementation process of the Resettlement Action Plan included a high level of community participation in obtaining an understanding of the extent of the effects, in structuring resettlement planning, and in the implementation thereof. This involvement included structures, institutions, and spheres of government, which stretched from community level, through village level, all the way to the relevant national government departments. Throughout these processes, both the resettler community and the host community were involved, with strong emphasis being placed on the social and economic integration of the two groups during and after completion of the implementation of resettlement.

The Resettlement Action Plan included the provision of replacement land, housing, and infrastructure, as well as the establishment of other opportunities such as employment creation to improve the socio-economic conditions of both resettlers and hosts, and to ensure their sustained livelihoods.

In this regard, in the opinion of the Consultant, the Xiaolangdi Dam Project addressed components of Social Impact Assessment that are considered relevant practice, viz. the extensive public involvement which was undertaken as part of the project, did not only take place with the aim of introducing the project to stakeholders and obtaining feedback and comment from them, but more specifically, to involve parties directly and indirectly affected by the Xiaolangdi Dam project in a process through which effects of resettlement could be better understood and quantified. Through this process and the resulting understanding of the issues, effects could be managed and mitigated through the compilation and implementation of a comprehensive Resettlement Action Plan.

15.12 Assessment of Outcomes/Results by Involved Stakeholders

This was not discussed in the Environmental Assessment Report. However, according to Baoqin (2002), Vice President of the World Bank, the Xiaolangdi resettlement project is a model of cooperation between the World Bank and a borrower, and creates a new way for other countries to construct large-sized hydropower projects and deal with resettlement issues through the use of a loan from the World Bank.

Other than the above, no other unbiased and/or English comments could be sourced.

15.13 Consultant's Conclusions

There are two key elements arising from this example that can strengthen the practice of Social Impact Assessment.

In this case study, the assessment team included a significant component of work dealing with aspects required by the legislative framework, viz.:

- Extensive public involvement with directly and indirectly affected people.
  Involving directly and indirectly affected people from the early planning stages of the project enabled a good understanding of the nature and extent of the potential effects. Through this, sufficient detail was gathered to enable informed decision-making and the compilation of the largest single mitigation and management action on the project, viz. an extensive and detailed Resettlement Action Plan.

- Extensive and detailed Resettlement Action Plan.
  This included mitigating resettlement related impacts, not only through the replacement of land and infrastructure, but by implementing additional development orientated actions, for example, through establishing opportunities for resettlers and hosts, such as service sector and agricultural employment. These actions were designed to ensure longer-term and sustained benefits from the project, and provide affected communities with opportunities to improve their livelihoods.

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SUMMARY OF KEY FINDINGS AND RECOMMENDATIONS

The material presented in this report has highlighted a number of aspects related to the practice of Social Impact Assessment. Arising from the case studies are ten key findings:

- At the commencement of a project, it is advisable to adopt the widest possible set of normative and planning frameworks, so as to enable the widest possible examination of the proposed project and its alternatives, within the widest possible consideration of the receiving environment. This should also enable planning to take account of the proposed project and its alternatives at different applicable planning levels, for example, international, national, regional and local. Similarly, it should enable planning to consider strategic and project/alternative-specific aspects. Over time, as project planning unfolds, the frameworks can be narrowed down.
- Considering the long lead time required for the planning of projects, such as large dams, there is merit in adopting an incremental approach to project planning (including Social Impact Assessment), with the level of detail of information increasing as planning progresses. This enables the early identification of projects and alternatives that may be fatally flawed or which may have potentially serious consequences (with, also, them being discarded from further consideration). It enables the wise application of resources and can lead to sound decision-making.
- Again, considering the long lead time in planning and implementing projects, such as large dams, there is a need and it is desirable to streamline institutional arrangements for the lifespan of project planning and implementation. In this regard, these institutions do not necessarily need to be the same. However, there does need to be a seamless interface between planning and implementation. A primary benefit is continuity over a longish period of time.
- There is merit and benefit in sharing information, expertise and experience between nations (be it from developed economies to developing economies, or *vice versa)*. This can take the form of direct assistance or as peer review. However, what is critical is that lessons learned on one project are applied to projects.
- In many texts, much is written about the consideration of alternatives. However, it would appear that alternatives are not always examined to the same level of detail as the proposed project or a preferred configuration for a particular project. In this regard, there is a real need for all alternatives to be investigated and assessed to comparable levels of detail, to enable informed decision-making between alternatives.
- Social Impact Assessment is about people. Therefore, it is critical that people are involved in the planning of their own futures, sooner rather than later in project planning. This can take various forms, for example, public participation, community research and the like. Of importance is recognition that people are aware of their environments, they understand opportunities and constraints, and they can make meaningful contributions that should be considered seriously by development proponents.
- For all projects, particular attention should be paid to the needs of vulnerable groups that, while different for each project, could include the youth, elderly, women, the infirm and the disabled.
- Allied to the above, there is merit in communication (open, transparent and on-going) commencing as early as possible within project planning. However, while recognising the importance and value of communication, it is also important to understand that communication can lead to expectations that need to be managed (particularly considering that planning is dynamic and information does change).

- There can be little argument that the single largest social and socio-economic impact of large projects, such as dams, is involuntary resettlement (physical and/or economic displacement). The implementation of Resettlement Action Plans takes time and requires considerable resources. Three aspects of resettlement deserve highlighting:
  - Resettlement should be undertaken within a development paradigm that goes beyond leaving project affected people in a similar position as they were prior to the intervention. Indeed, the aim should be to improve peoples' livelihoods and to advance them beyond pre-project conditions.
  - Host communities are often neglected in resettlement planning and implementation. In this regard, host communities need to receive commensurate attention as affected communities, and need to be included within the development programmes so that their livelihoods are also advanced (alongside those of the resettlers).
  - The use of resettlement pilot projects appears to have merit and is worthy of wider application, with lessons learned from pilot projects being applied to the main resettlement programme.
- The value of independent monitoring cannot be overstated. Monitoring enables corrective action to be applied on a particular project as soon as the need for corrective action is indicated. Furthermore, monitoring informs future projects thereby applying lessons learned and continuously increasing the knowledge base, and the application of relevant practice.

Arising from the characterisation of the state of the art of Social Impact Assessment, it is evident that there are very few normative frameworks covering the subject. Indeed, it would appear that, for the most part, Social Impact Assessment is embedded within normative frameworks governing other elements of law, from overarching constitutional law, to specific laws governing Environmental Impact Assessments. This could be a consequence of Social Impact Assessment essentially evolving from Environmental Impact Assessment. However, of importance, is that there appears to be a gap in normative frameworks, with those of a social orientation focussing on the management of social impacts without due consideration and specification for the identification and assessment of impacts. Therefore, it can be argued that without a normative framework that specifically addresses Social Impact Assessment and its requirements, the practise of Social Impact Assessment will fall short of that considered adequate and necessary by society (interested in or affected by a development proposal). Nevertheless, even in the relative absence of normative frameworks, Social Impact Assessment is practised widely. Similarly, there appears to be a sound understanding and agreement on the elements that constitute relevant practice in Social Impact Assessment. However, what is also apparent is that there are differing approaches and opinions as to the level of detail of information that is required. This influences the accuracy of assessments and the eventual outcomes of mitigation measures. In this regard, it is probably true to comment that there is a tendency to do less rather than more. This is often in response to the enormity of the task of gathering data and soliciting inputs from large numbers of people. Therefore, for different stages in the project lifecycle, it is necessary to enumerate a representative sample of the affected population in order to properly understand and quantify effects to inform decision-making. This enumeration should be supported by the public involvement process whereby affected populations are informed that samples are being enumerated and that, in the event that any particular alternate is chosen, a complete enumeration of all affected people will be undertaken at a later stage for purposes of planning for mitigation. In the case of the latter, inefficient enumeration at this stage has often led to the alienation of those not enumerated, resulting in the problematic implementation of mitigation measures.

Pen ultimately, although not a focus of this study, it is readily apparent from the material presented in this report that involuntary resettlement is the most significant social impact arising from most projects that requires significant planning and implementation of mitigation measures. (Many other social impacts can be avoided and/or managed through changes in technical layout, design, etc). Involuntary resettlement covers many aspects (loss of land, loss of shelter, loss of access to resources, economic displacement and the like). The history of implementing mitigation measures by way of, for example, a Resettlement Action Plan is not good (time delays, over-expenditures, unfavourable outcomes, aspects not addressed, and the like). In many cases, this poor history is despite of a Social Impact Assessment having been undertaken, and leads to questions concerning the interface between a Social Impact Assessment and subsequent mitigation plans/programmes. Considering that the latter are covered by a number of different normative frameworks, and considering the suggestion above that there may be a need for a normative framework covering Social Impact Assessment, there is definitely a need to better link the assessment task with the task of implementing mitigation plans and managing social change.

Finally, therefore, arising from the afore-mentioned are four specific recommendations:

- Formulate a normative framework covering Social Impact Assessment, and provide linkages to existing normative frameworks covering the implementation of the management of social change, for example, those covering involuntary resettlement.
- Formally define the process of Social Impact Assessment that must be adopted to achieve compliance with the proposed normative framework.
- Develop evaluation criteria to assist in assessing whether or not a particular Social Impact Assessment meets the requirements of the proposed normative framework and the proposed assessment process.
- Review the normative framework and assessment process after five years and make refinements as necessary.

Also arising from this assignment is the observation that, while there is a plethora of information about dams, there is no single source of project documentation. While many international organisations do host project documentation on web sites, primarily for purposes of public disclosure, this is for a finite period of time, where after sourcing project documents is difficult. This gives rise to the need for a single, dedicated database of project documents, categorised by country and by project.

DATABASE OF SOURCE MATERIAL

Element/Mechanism	Location	Normative Framework		Implementation	
	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
❑ Profile of Baseline Conditions. ▪ Document the relevant human environment, and existing social conditions and trends. ❑ Prediction and evaluation of responses to impacts. ▪ Involuntary resettlement. ❑ Mitigation. ▪ Avoidance/minimisation of negative impacts. ▪ Optimisation of benefits.	Islamic Republic of Iran	Article 50 of the Constitution of the Islamic Republic of Iran. Land Acquisition Law (1980). Law on Economical, Cultural, Societal Development (1989). Law for Environmental Protection and Development (1991). World Bank Operational Policy 4.01 Environmental Assessment. World Bank Operational 4.12 Involuntary Resettlement.	www.parstimes.com/law/iran World Bank (2001). The World Bank Operational Manual. Operational Policies: Involuntary Resettlement (OP 4.12 and BP 4.12). World Bank (2001). The World Bank Operational Manual. Operational Policies: Annex A – Involuntary Resettlement Instruments. World Bank (1999). The World Bank Operational Manual. Operational Policies: Environmental Assessment (OP 4.01).	Alborz Dam	Bekhechi, M.A. (1999). *Some Observations Regarding Environmental Covenants and Conditionalities in World Bank Lending Activities*. Max Planck UNYB, 3, 1999. (www.mpil.de/shared/data/pdf/pdfmpunyb/bekhechi_3.pdf). International Rivers Network (2005). *NGO Comments on the use of Country Systems in Bank Operations*. 10 January 2005. (http://www.irn.org/programs/finance/pdf/050405ngocomments.pdf). Mahab Ghodss Consulting Engineers (2004). Alborz Integrated Land and Water Management Project (AILWMP): Supplementary Environmental and Social Assessment – Executive Summary (September 2004). Mahab Ghodss Consulting Engineers (2004). Supplementary Environmental and Social Assessment of Alborz Integrated Land and Water Management Project: – Annexes (DRAFT) (16 September 2004). United Nation Department of the Environment Development Programme and the Iran Department of the Environment. Environmental Impact Assessment: Capacity building and institutional strengthening in Iran. Project reference IRA/97/017/A/OL/99. Annex to the Minutes of the Meeting of 23 December 1997. World Bank (2001). The World Bank Operational Manual. Operational Policies: Involuntary Resettlement (OP 4.12 and BP 4.12).

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	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
					World Bank (2001). The World Bank Operational Manual. Operational Policies: Annex A – Involuntary Resettlement Instruments. World Bank (1999). The World Bank Operational Manual. Operational Policies: Environmental Assessment (OP 4.01) **Internet Sources** www.worldbank.org www.parstimes.com/law/iran www.irandoe.org www.eiairan.org/eia
❑ Public Involvement. ▪ Develop and implement an effective public involvement plan. ❑ Profile of Baseline Conditions. ▪ Document the relevant human environment, and existing social conditions and trends. ❑ Scoping and Projection of Estimated Effects. ▪ Identification and prioritisation of social impacts. ▪ Cultural aspects. ❑ Estimate of Indirect and Cumulative Impacts. ▪ Flow-on effects. ▪ Incremental impacts. ▪ Optimisation of benefits. ❑ Mitigation. ▪ Avoidance/minimisation of negative impacts. ▪ Optimisation of benefits. ❑ Monitoring. ▪ Programme and independent social monitor.	Canada	Canadian Environmental Assessment Act (1992). British Columbia Environmental Assessment Act (1995).	http://laws.justice.gc.ca	Brilliant Expansion Project	Brilliant Expansion Power Corporation (2000). *Application for the Brilliant Power Plant Expansion Project. Volume 1 – Main Report.* **Internet Sources** http://www.columbiapower.com/content/environment.html http://www.columbiapower.org/content/brx_socioeconomic_monitor.html. http://www.eao.gov.bc.ca/epic/output/html/deploy/epic_document_132_12879.html http://laws.justice.gc.ca

Element/Mechanism	Location	Normative Framework		Implementation	
	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
❑ Public Involvement. ▪ Develop and implement an effective public involvement plan. ❑ Alternatives. ▪ Reasonable alternatives. ❑ Profile of Baseline Conditions. ▪ Document the relevant human environment, and existing social conditions and trends. ❑ Scoping and Projection of Estimated Effects. ▪ Identification and prioritisation of social impacts. ❑ Mitigation. ▪ Compensation for adverse impacts.	Sierra Leone	National Environmental Policy (1990). Environmental Protection Act (2000). World Bank Safeguard Policies. ❑ OP and BP 4.01: Environmental Assessment. ❑ OP 4.12: Involuntary Resettlement.		Bumbuna Hydroelectric Project	Bekhechi, M.A. (1999). *Some Observations Regarding Environmental Covenants and Conditionalities in World Bank Lending Activities*. Max Planck UNYB, 3, 1999. (www.mpil.de/shared/data/pdf/pdfmpunyb/bekhechi_3.pdf). International Rivers Network (2005). *NGO Comments on the use of Country Systems in Bank Operations*. 10 January 2005. (http://www.irn.org/programs/finance/pdf/050405ngocomments.pdf). Nippon Koei UK (2005). *Bumbuna Hydroelectric Project Environmental Impact Assessment. Draft Final Report.* Government of the Republic of Sierra Leone. **Internet Sources** Www-wds.worldbank.org/projects/
❑ Public Involvement. ▪ Develop and implement an effective public involvement plan. ❑ Alternatives. ▪ Consideration of the no action alternative. ❑ Profile of Baseline Conditions. ▪ Document the relevant human environment, and existing social conditions and trends. ❑ Scoping and Projection of Estimated Effects. ▪ Identification and prioritisation of social impacts. ▪ Amenity/quality of life. ❑ Estimate of Indirect and Cumulative Impacts.	Australia	Commonwealth/ Federal Government Legislation. ❑ Environment Protection and Biodiversity Conservation Act (1999). ❑ Environmental Protection Act (1994). Queensland State Legislation. ❑ State Development and Public Works Organisation Act, 1971. ❑ Water Infrastructure Development		Burnett River Dam	Burnett Water (Pty) Ltd. (2001). *Burnett River Dam Environmental Impact Statement.* Burnett Water (Pty) Ltd. (2001). *Burnett River Dam Appendix C Standard Criteria.* Burnett Water (Pty) Ltd. (2001). *Burnett River Dam Supplementary Report.* Queensland Department of State and Development (2001). *Coordinator-General's Report on the Environmental Impact Statement for the proposed Burnett River Dam.* **Internet Sources** http://www.sunwater.com.au/burnettwater_docs.htm

Element/Mechanism	Location	Normative Framework		Implementation	
	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
▪ Flow on effects of the proposal.		(Burnett Basin) Act (2001).			
❑ Mitigation. ▪ Avoidance/minimisation of negative impacts. ▪ Optimisation of benefits. ❑ Monitoring. ▪ Programme and independent social monitor.	Southern Brazil	Brazilian National Environment Policy Act (Law 6938/81). Inter-American Development Bank Environmental Policy: Operational Policy – 703. Inter-American Development Bank Involuntary Resettlement: Operational Policy 7-10. Inter-American Development Bank Environment and Safeguards Compliance Policy. CONAMA Resolution No. 1 (January 1986). CONAMA Resolution No. 2 (April 1996). CONAMA Resolution No. 237 (December 1997).	Inter-American Development Bank (1998). *Operational Policy OP 7-10: Involuntary Resettlement*. Inter-American Development Bank (1999). *Involuntary Resettlement in IDB Projects: Guidelines and Principles.* Inter-American Development Bank (2005). *Safeguard Implementing Guidelines of the Draft Environment and Safeguards Compliance Policy*. Inter-American Development Bank (2006). *Environment and Safeguards Compliance Policy.*	Campos Novos Hydroelectric Power Project	Inter-American Development Bank (1998). *Operational Policy OP 7-10: Involuntary Resettlement*. Inter-American Development Bank (1999). *Involuntary Resettlement in IDB Projects: Guidelines and Principles*. Inter-American Development Bank (2004). *Campos Novos Hydroelectric Power Project. Environmental and Social Management Report*. Inter-American Development Bank (2005). *Safeguard Implementing Guidelines of the Draft Environment and Safeguards Compliance Policy*. Inter-American Development Bank (2006). *Environment and Safeguards Compliance Policy*.
❑ Public Involvement. ▪ Develop and implement an effective public involvement plan. ❑ Scoping and Projection of Estimated Effects.	Republic of South Africa	Republic of South Africa (RSA)/KaNgwane Permanent Water Commission Policy	Human Sciences Research Council (1991). *Guidelines for a Relocation Action Plan.* RSA/KaNgwane Permanent Water Commission.	Driekoppies Dam	Human Sciences Research Council (1991). *Guidelines for a Relocation Action Plan.* RSA/KaNgwane Permanent Water Commission. Human Sciences Research Council (1993). *Social Impact Assessment of the proposed Driekoppies Dam.* RSA Department of Water Affairs and Forestry.

Element/Mechanism	Location	Normative Framework		Implementation	
	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
▪ Identification and prioritisation of social impacts. ▪ Lifestyle – behaviour and relationships. ▪ Community – infrastructure services and networks. ❑ Mitigation ▪ Avoidance/minimisation of negative impacts. ▪ Compensation for adverse impacts.					Human Sciences Research Council (1993). *Relocation Action Plan for the Driekoppies Dam.* RSA/KaNgwane Permanent Water Commission.
❑ Profile of Baseline Conditions. ▪ Document the relevant human environment, and existing social conditions and trends. ❑ Projection of Estimated Effects. ▪ Analysis and prediction of probable impacts.	Republic of Niger	Niger "Code de l'Environnement" (1998). World Bank Operational Policy 4.01 Environmental Assessment.	Government of Niger. *Code de l'Environnement.* (1998). World Bank (1999). *The World Bank Operational Manual – Operational Policies. Operational Policy 4.01 – Environmental Assessment*. World Bank Group.	Kandadji Dam Project	Bekhechi, M.A. (1999). *Some Observations Regarding Environmental Covenants and Conditionalities in World Bank Lending Activities*. Max Planck UNYB, 3, 1999. (www.mpil.de/shared/data/pdf/pdfmpunyb/bekhechi_3.pdf). International Rivers Network (2005). *NGO Comments on the use of Country Systems in Bank Operations*. 10 January 2005. (http://www.irn.org/programs/finance/pdf/050405ngocomments.pdf). Government of Niger. *Code de l'Environnement.* (1998). Haut Commissariat au Barrage de Kandadji (1999). *Kandadji Dam – Feasibility Study. Summary Report*. Kimba, H. (2003). *Assessment of the environmental impacts of the Kandadji dam project: an energy choice identified under the National Energy and Sustainable Development Program*. AJEAM-RAGEE. Volume 5, pp. 46-54. World Bank (1999). *The World Bank Operational Manual – Operational Policies. Operational Policy 4.01 – Environmental Assessment.* World Bank Group.

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	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
					Internet Sources http://www.afdb.org/pls/portal/url/ITEM/F5A3B14AB686CD3AE030A8C0668C5CDC http://www.strategis.ic.gc.ca/epic/internet/inimr-ri.nsf/en/gr120739e.html http://www.nigerembassyusa.org http://www.nigerembassyusa.org/pdf/part2.pdf http://www.nigerembassyusa.org/pdf/part3.pdf http://www.nigerembassyusa.org/pdf/part4.pdf
❑ Public Involvement. ▪ Develop and implement an effective public involvement plan. ❑ Alternatives. ▪ Reasonable alternatives. ❑ Profile of Baseline Conditions. ▪ Document the relevant human environment, and existing social conditions and trends. ❑ Scoping and Projection of Estimated Effects. ▪ Identification and prioritisation of social impacts. ▪ Cultural aspects. ❑ Mitigation. ▪ Avoidance/minimisation of negative impacts. ▪ Optimisation of benefits.	Poland	Polish Environmental Protection Law (2001). Polish Historical Conservation and Protection Act (2003). World Commission on Dams – Strategic Priorities. Various World Bank Policies. ❑ Operational Policy 4.01 – Environmental Assessment. ❑ Operational Policy Note 11.03 – Cultural Property. ❑ Operational Policy 4.12 – Involuntary Resettlement. ❑ Bank Policy 17.50 – Public Disclosure. Various EU Directives and International Treaties.		Odra Dam	Bekhechi, M.A. 1999. *Some Observations Regarding Environmental Covenants and Conditionalities in World Bank Lending Activities*. Max Planck UNYB, 3, 1999. (www.mpil.de/shared/data/pdf/pdfmpunyb/bekhechi_3.pdf). International Rivers Network (2005). *NGO Comments on the use of Country Systems in Bank Operations*. 10 January 2005. (http://www.irn.org/programs/finance/pdf/050405ngocomments.pdf). Regional Water Board Gliwice (2005). *ODRA River Basin Flood Protection Project Environmental Assessment.* Government of Poland. II Jacobs (2005). *Raciborz Flood Reservoir Resettlement Action Plan*. Government of Poland. **Internet Sources** www-wds.worldbank.org/projects/

Element/Mechanism	Location	Normative Framework		Implementation	
	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
		❑ EU Council Directive 85/337/EEC on Environmental Impact Assessment. ❑ EU Council Directive 2001/42 (Strategic Environmental Assessment Directive). ❑ World Cultural and Natural Heritage (1972). ❑ Convention of Environmental Impact Assessment in trans-boundary context (1991). ❑ Aarchus Convention (1998).			
❑ Public Involvement. ▪ Develop and implement an effective public involvement plan. ❑ Alternatives. ▪ Reasonable alternatives. ❑ Scoping and Projection of Estimated Effects. ▪ Identification and prioritisation of social impacts. ▪ Prediction of Probable Impacts. ❑ Prediction and Evaluation of Responses to Impacts. ▪ Determination of significance of social impacts.	Republic of South Africa	Rio Earth Summit OF 1992 – Concept of Sustainability. World Commission on Dams – Strategic Priorities. South Africa's international agreements and obligations. ❑ Revised SADC Protocol on Shared Watercourses. South Africa's national legislation and associated regulations.	Department of Water Affairs and Forestry (2002). *National Water Resources Strategy.* Department of Water Affairs and Forestry, South Africa. World Commission on Dams (2000). *Dams and Development. A New Framework for Decision-Making.* Earthscan Publications Ltd.	Olifants River Water Resources Development Project (Phase 2)	Department of Water Affairs and Forestry (2002). *National Water Resources Strategy.* Department of Water Affairs and Forestry, South Africa. Department of Water Affairs and Forestry (2003). *Olifants Water Management Area: Overview of Water Resources Availability and Utilization.* Report No. P WMA 04/000/00/0203. Department of Water Affairs and Forestry (2004). *Olifants River Water Resources Development Project Environmental Authorisation Screening Investigation.* Report No. P WMA 04/B50/00/1904. Department of Water Affairs and Forestry (2004). *Olifants River Water Resources Development Project: Regional Economic Impact Assessment Draft 1.* Report No. P WMA 04/B50/00/3504.

Element/Mechanism	Location	Normative Framework		Implementation	
	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
▪ Resettlement or loss of shelter. ▪ Loss of income sources or means of livelihood. ❑ Estimate of Indirect and Cumulative Impacts. ▪ Flow-on effects. ▪ Incremental impacts. ❑ Mitigation. ▪ Avoidance/minimisation or compensation of negative impacts. ▪ Optimisation of benefits.		❑ Constitution of the Republic of South Africa Act (Act 108 of 1996) as amended by the Constitution of Republic of South Africa Amendment Act (Act 35 of 1997). ❑ National Environmental Management Act (Act 107 of 1998). ❑ Environment Conservation Act (Act 73 of 1989). ❑ National Water Act (Act 36 of 1998). ❑ National Heritage Resources Act (Act 25 of 1999).			Department of Water Affairs and Forestry (2004). *Olifants River Water Resources Development Project: Water Requirements*. Report No. P WMA 04/B50/00/1104. Johnson, E.H., A. Stephens and S. Fakir (2002). *Development of a methodology to determine the effectiveness of water conservation and water demand management measures.* Water Research Commission, South Africa. WRC Report No. 1273/1/02. World Commission on Dams (2000). *Dams and Development. A New Framework for Decision-Making.* Earthscan Publications Ltd.
❑ Public Involvement. ▪ Development and implementation of effective public involvement plans. ❑ Mitigation. ▪ Mitigation through resettlement compensation. ▪ Mitigating resettlement impacts through development initiatives.	Brazil	Brazilian National Environment Policy Act (Law 6938/81). CONAMA Resolution No. 1 (January 1986). CONAMA Resolution No. 2 (April 1996). CONAMA Resolution No. 237 (December 1997).		Salto Caxias Hydroelectric Power Plant	Dos Santos, A. *Salto Caxias Hydroelectric Power Plant Consultation Process and Public Participation: A Real Tool for Sustainable Development.* Dos Santos, A. (2004). *Salto Caxias Hydroelectric Power Plant Consultation.* Paper delivered at the United Nations Symposium on Hydropower and Sustainable Development. Beijing, October 2004. **Internet sources** http://www.af-info.or.jp/eng/honor/bpp-e.html http://www.beckwithelectric.com/powerlines/powerlines-29.html#3 http://www.greenjobs.com/Public/index.aspx http://www.power-technology.com/projects/#Renewables/SaltoCaxias http://www.regionalpower.com/OperatingSites/General/tabid/622/Default.aspx (http://www.greenjobs.com/Public/newsitems/news_00012.aspx)

Element/Mechanism	Location	Normative Framework		Implementation	
	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
❑ Alternatives. ▪ Identification of reasonable alternatives. ❑ Prediction of responses to impacts. ▪ Involuntary resettlement.	Vietnam	Law on Environmental Protection (1993). Decree on Providing Guidance for the Implementation of the Law on Environmental Protection (1994) (Government Decree No. 175-CP (1994)). Guidelines for Resettlement and Rehabilitation in Vietnam. Environment Policy of the Asian Development Bank (2002). Asian Development Bank: Involuntary Resettlement (1995).	Ministry of Planning and Investment (1998). *Guidelines for resettlement and rehabilitation in Vietnam.*	Son La Hydroelectric Power Project	Asian Development Bank (1999). *Special Evaluation Study on the Social and Environmental Impacts of Selected Hydropower Projects.* Asian Development Bank (2005). *Technical Assistance – Socialist Republic of Vietnam: Strengthening Institutional Capacity of Local Stakeholders for Implementation of Son La Livelihood and Resettlement Plan.* Bladh, U. and Nilsson, E-L. (2005). *How to Plan for Involuntary Resettlement? The Case of the Son La Hydroelectric Power Project in Vietnam*. Masayda, R. and Nuera, A. (2006). *ADB in Central Asia - Asian Development Bank's Involvement in Central Asia*. NGO Forum on ADB, April 2006. (http://www.forum-adb.org/pub/guidebooks/guide.html) Nuera, A. (2005). *Asian Development Bank and Dams*. NGO Forum on ADB, November 2005. (http://www.forum-adb.org/pub/guidebooks/guide.html) Ministry of Planning and Investment (1998). Guidelines for Resettlement and Rehabilitation in Vietnam.
❑ Projection of Estimated Effects. ▪ Identification and prioritisation of social impacts. ❑ Mitigation. ▪ Recommendations relating to the development and implementation of mitigation plans.	Republic of South Africa	Integrated Environmental Management Principles. Constitution of the Republic of South Africa Act (Act 108 of 1996) as amended by the Constitution of Republic of South Africa Amendment Act (Act 35 of 1997). Environment Conservation Act (Act 73 of 1989).	Department of Environmental Affairs and Tourism (1998). *Guideline Document: EIA Regulations. Implementation of Sections 21, 22 and 26 of the Environmental Conservation Act.*	Thukela Water Project	Department of Environmental Affairs and Tourism (1998). *Guideline Document: EIA Regulations. Implementation of Sections 21, 22 and 26 of the Environmental Conservation Act.* Department of Water Affairs and Forestry (1999). *Thukela Water Project. Feasibility Study: Social Impact Assessment.* Prepared by G. Huggins.

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❑ Prediction of responses to impacts. ▪ Involuntary resettlement. ❑ Estimate of indirect impacts. ▪ Identification of subsequent flow-on effects of the proposal.	Vietnam	Law on Environmental Protection (1993). Decree on Providing Guidance for the Implementation of the Law on Environmental Protection (1994) (Government Decree No. 175-CP, (1994)). Guidelines for Resettlement and Rehabilitation in Vietnam. World Bank Operational Policy 4.01 Environmental Assessment. World Bank Operational Directive 4.30 Involuntary Resettlement.		Tuyen Quang Dam and Flood Prevention Project	Bekhechi, M.A. (1999). *Some Observations Regarding Environmental Covenants and Conditionalities in World Bank Lending Activities*. Max Planck UNYB, 3, 1999. (www.mpil.de/shared/data/pdf/pdfmpunyb/bekhechi_3.pdf). International Rivers Network (2005). *NGO Comments on the use of Country Systems in Bank Operations*. 10 January 2005. (http://www.irn.org/programs/finance/pdf/050405ngocomments.pdf). United Nations Development Programme (2000). *Gam River Dam Preliminary Environmental Impact Assessment.* (http://www.undp.org.vn/projects/parc/docs/bn6-eia.pdf) United Nations Development Programme (2002). *Supplementary Environmental Impact Assessment for the Tuyen Quang Dam, Vietnam.* (http://www.undp.org.vn/projects/parc/docs/misc2.pdf and http://www.undp.org.vn/projects/parc/docs/misc2-appendices.pdf) Cited in: Bladh, U and Nilsson, E-L. (2005). How to Plan for Involuntary Resettlement? The Case of the Son La Hydroelectric Power Project in Vietnam. Cited in: United Nations Development Programme. (2000). Gam River Dam Preliminary Environmental Impact Assessment. (http://www.undp.org.vn/projects/parc/docs/bn6-eia.pdf)
❑ Public Involvement. ▪ Develop and implement an effective public involvement plan. ❑ Profile of Baseline Conditions. ▪ Document the relevant human environment, and existing social conditions and trends.	Nepal	Nepal National Environmental Impact Assessment Guidelines (1993). Environmental Protection Act (1996). Nepal Environmental Rule (1997 as amended in 1999).	Ministry of Population and Environment (1996). *Protection of Environment Act (Act 2053, 1996).* Ministry of Population and Environment (1997). *Environmental Protection Rules.* Ministry of Population and Environment (2002). *Environmental Assessment Guidelines.* Ministry of Water Resources (1992). *Water Resources Act (Act 2049, 1992).*	Upper Seti Storage Hydroelectric Project	Nepal Electricity Authority (2004). *Upgrading Feasibility Study on Upper Seti (Damauli) Storage Hydroelectric Project.* Ministry of Population and Environment (1996). *Protection of Environment Act (Act 2053, 1996).* Ministry of Population and Environment (1997). *Environmental Protection Rules.* Ministry of Population and Environment (2002).

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❑ Mitigation. ▪ Avoidance/minimisation of negative impacts. ▪ Optimisation of benefits.		Acquisition, Compensation and Rehabilitation Plan (ACRP) (1999).			*Environmental Assessment Guidelines.* Ministry of Water Resources (1992). *Water Resources Act (Act 2049, 1992)*. **Internet sources** http://www.unescap.org/DRPAD/VC/orientation/annex.htm http://www.jica.go.jp/english/about/policy/envi/profile/pdf/nep01_01.pdf http://www.jica.go.jp/english/about/policy/envi/profile/pdf/nep02_02.pdf
❑ Public Involvement. ▪ Develop and implement an effective public involvement plan. ❑ Identification of Alternatives. ▪ Reasonable alternatives. ❑ Prediction and Evaluation of Responses to Impacts. ▪ Involuntary resettlement.	China	World Bank Operational Policy 4.01 Environmental Assessment. World Bank Operational Directive 4.30 – Involuntary Resettlement. Environmental Protection Law of the Peoples' Republic of China (1989).	World Bank (1999). *The World Bank Operational Manual – Operational Policies. Operational Policy 4.01 – Environmental Assessment*. World Bank Group. World Bank (1990). *The World Bank Operational Manual. Operational Directive 4.30 – Involuntary Resettlement*. World Bank Group.	Xiaolangdi Dam Project	Baoqin, Z. (2002). *Environmental Protection and Management of Xiaolangdi Resettlement Project*. Bekhechi, M.A. (1999). *Some Observations Regarding Environmental Covenants and Conditionalities in World Bank Lending Activities*. Max Planck UNYB, 3, 1999. (www.mpil.de/shared/data/pdf/pdfmpunyb/bekhechi_3.pdf). International Rivers Network (2005). *NGO Comments on the use of Country Systems in Bank Operations*. 10 January 2005. (http://www.irn.org/programs/finance/pdf/050405ngocomments.pdf). World Bank (1990). *The World Bank Operational Manual. Operational Directive 4.30 – Involuntary Resettlement*. World Bank Group. World Bank (1999). *The World Bank Operational Manual – Operational Policies. Operational Policy 4.01 – Environmental Assessment*. World Bank Group. Yellow River Conservancy Commission (1993). *Xiaolangdi Multipurpose Dam Project. Environmental Impact Assessment: Executive Summary*.

Element/Mechanism	Location	Normative Framework		Implementation	
	Country	Legislation/Policy/ Guidelines	References For Framework	Relevant Dam Plan/Projects	References For Dam Plans/Projects
					Internet Sources http://www.chinacp.com/eng/index.html http://www.zhb.gov.cn/eic/648518346341351424/index.shtml http://wbln0018.worldbank.org/Institutional/Manuals/OpManual.nsf/023c7107f95b76b88525705c002281b1/19036f316cafa52685256b190080b90a?OpenDocument http://www-wds.worldbank.org/

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ANNEXURE 1
CASE STUDY ANALYSES

UN DDP
Compendium on Relevant Practises (Second Stage)
Social Impact Assessment
Case Studies - Final List

#	Dam	River	Country	Continent	Purpose	Stage in Project Cycle
1	Alborz	Babol	Iran	Asia	Irrigation	Construction/Development
2	Brilliant	Kootenay	Canada	North America	Hydropower	Revamp (Redevelopment)
3	Bumbuna	Seli	Sierra Leone	Africa	Hydropower	Construction
4	Burnett	Burnett	Australia	Australia	Irrigation	Operation
5	Campos Novos	Canoas	Brazil	South America	Hydropower	Construction
6	Driekoppies	Nkomati	South Africa and Swaziland	Africa	Irrigation	Operation
7	Kandadji	Niger	Niger	Africa	Irrigation, Domestic Water Supply, Livestock Watering and Hydropower	Planning
8	Odra	Odra	Poland	Europe	Flood Protection	Planning/River Basin
9	ORWRDP	Steelpoort	South Africa	Africa	Mining and Domestic Water Supply	Policy/Strategic
10	Salto Caxias	Igacu	Brazil	South America	Hydropower	Operation
11	Son La	Da	Vietnam	Asia	Hydropower, Flood Control, Irrigation and Water Supply	Planning/Construction
12	Thukela Water Project	Thukela and Bushman's	South Africa	Africa	Inter-Basin Transfer	Planning/Feasibility
13	Tuyen Quang	Gam	Vietnam	Asia	Hydropower, Flood Control and Irrigation	Planning
14	Upper Seti	Seti	Nepal	Asia	Hydropower	Planning
15	Xiaolangdi	Yellow	China	Asia	Hydropower	Operation

Geographic Distribution	
Africa	5
Europe	1
North America	1
South America	2
Asia	5
Australia	1
Total	15

Project Cycle	
Policy/Strategy	1
River Basin	1
Project Level/Planning	4
Construction	4
Operation	4
Revamp	1
Total	15

UN DDP
Analysis of SIA Characterisation

Dam	Public Involvement	Alternatives	Profile of Baseline	Scoping	Projection of Effects	Prediction and Evaluation of Response to Impacts	Indirect and Cumulative Impacts	Mitigation	Monitoring
Alborz			■			■		■	
Brilliant	■		■	■	■		■	■	■
Bumbuna	■	■	■	■	■			■	
Burnett	■	■	■	■	■		■		
Campos Novos								■	■
Driekoppies	■			■	■			■	
Kandadji			■		■				
Odra	■	■	■	■	■			■	
ORWRDP	■	■		■	■	■	■	■	
Salto Caxias	■							■	
Son La		■				■			
Thukela Water Project						■		■	
Tuyen Quang						■	■		
Upper Seti	■		■					■	
Xiaolangdi	■	■				■			
Total	9	6	7	6	7	6	4	10	2