

CONSTRUCTIVE DIALOGUE ON

Dams and Development

IN NEPAL

EDITORS

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PREFACE

In January 2003, a consultative process was initiated to discuss issues regarding dams and development in Nepal. It was held in the context of the recommendations of the report of the World Commission on Dams (WCD), Dams and Development. Participating in this constructive engagement were government representatives, and their parastatals, private hydropower developers, non-governmental research organisations, and local people affected by dams.

As a part of the process, a scoping study was carried out, which sought to compare Nepal's legal provisions with the recommendations of Dams and Development. A task force and a steering committee were formed to oversee the study, which interacted with grassroots non-government organisations as well as those in the more formal sector. The findings of the study were presented at a national-level stakeholders' meeting. Separate discussion programmes were held with government officials as well as at many taskforce and steering committee meetings. The consultative process came to an end in April 2004, when the draft report of scoping study was completed.

This book summarises the scoping study and the consultative activities. It suggests that Nepal's legal provisions do address many of the recommendations made in Dams and Development, indeed even more progressively than the WCD's report. It also notes that these new policies on water and energy development and their management have been introduced in Nepal's pluralised policy terrain in the last decade and a half. Nepal must translate them into more effective implementation to benefit the people and the country while building local institutions and capacity.

The way forward is for Nepal to continue the process of preparing its own guidelines on dams and development. The consultative process that this book describes has shown that a participatory approach can yield encouraging outcomes in developing Nepal's water resources with sensitivity to both society and nature.

DISCLAIMER

This report summarises the findings of the scoping exercise. It is only meant to serve as a platform for continuing the dialogue on issues of water resources development and dams in Nepal. Its draft was discussed over a period of two months and has been published only after incorporating comments from all who participated in the consultative process. Some of the comments are included in annexes 6a and 6b. This report can assist in the evolution of the policy process, but it is not the policy document of any of the organisations involved in the consultative process or IUCN.

ACKNOWLEDGEMENTS

On behalf of the team conducting the scoping exercise we thank all who have contributed directly or indirectly to this process. Special thanks go to all the members of the Nepal's Dams and Development Steering Committee who were generous with their valuable time to discuss the issues as well as all those who participated in the consultative process. We would also like to thank IUCN Nepal for facilitating this exercise.

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ACRONYMS

ADB	Asian Development Bank
AG	Advisory Guidelines
CBO	Community Based Organisation
CG	Criteria Group
CHIA	Cultural Heritage Impact Assessment
CMISP	Community-Managed Irrigation Sector Project
DAD	Dams and Development
DDC	District Development Committee
DDF	Dams and Development Forum
DDP	Dams and Development Project
DI	Defining Issue
DoED	Department of Electricity Development
DoI	Department of Irrigation
DWIDP	Department of Water Induced Disaster Prevention
EA	Electricity Act
EIA	Environmental Impact Assessment
EPA	Environment Protection Act
EPR	Environment Protection Regulation
ER	Electricity Regulation
ETAFIC	Electricity Tariff Fixation Committee
GHG	Green House Gases
HDP	Hydropower Development Policy
HIA	Health Impact Assessment
HMG/N	His Majesty's Government of Nepal
ICOLD	International Commission on Large Dams
IEE	Initial Environment Examination
IHA	International Hydropower Association
IIDS	Institute of Integrated Development Studies
IPP	Independent Power Producers
IRR	Impoverishment, Risk and Resettlement
IUCN	The World Conservation Union
IWRM	Integrated Water Resources Management
JVS	Jalasrot Vikas Sanstha
MDG	Millennium Development Goals
MoPE	Ministry of Population and Environment
MoWR	Ministry of Water Resources
MRDAP	Mitigation, Resettlement and Development Action Plan
MSHP	Medium Scale Hydropower Project
NEA	Nepal Electricity Authority
NGO	Non-Governmental Organisation
NWCF	Nepal Water Conservation Foundation
PAP	Project Affected People
PDF	Power Development Fund

PoE	Panel of Experts
PPP	Public Private Partnership
RoR	Run-of-River
SAGUN	Strengthened Action for Governance in Utilisation of Natural Resources
SIA	Social Impact Assessment
SNV	Netherlands Development Organisation
SP	Strategic Priority
SUP	Social Upliftment Programmes
UNEP	United Nations Environment Programme
USAID	United States Aid
VDC	Village Development Committee
WAFED	Water and Energy Users' Federation
WB	The World Bank
WCD	World Commission on Dams
WECS	Water and Energy Commission Secretariat
WRA	Water Resources Act
WRR	Water Resources Regulation
WRS	Water Resources Strategy of Nepal

WATER FLOW RHYTHM AND DISCORD

Water is life. Its flow through ecosystems and the rhythms of seasonal precipitation shape the livelihoods of the majority of the world's population. Fulfilling basic water, food and energy needs of a growing population is a major challenge, not only for Nepal, but also for other countries, in South Asia and around the world. The difficulty in meeting the demand for water underscores the fact that water is crucial for national and local economies, for the biological functions of human beings, plants and animals, and for overall ecological processes. Government and private agencies as well as social and environmental groups, agree on the fundamental importance of water and on it being a prerequisite to maintain a standard of living. Their views about how the need for water should be met, however, often differ. The result can be a negotiated compromise or, in the worst cases, impasses-ridden contestation.

The need for and utility of dams, particularly large ones, is a major topic of dispute among various stakeholders in water resources planning, development and use.¹ In the 1980s and the 1990s, this debate became highly visible in the international arena. Advances in information technology promoted alliances among groups spread across the globe; together they ran campaigns raising questions about local projects. These debates slowed the pace of construction of large dam projects and raised public awareness about their social and environmental costs. Two opposing views emerged. In one view, large dams are necessary for the water resource development required to fulfil water and energy needs of the present as well as growing population in the future. The other view is that the social and environmental costs associated with large dam construction are too high and that their performances are poorer than promised.

THE WORLD COMMISSION ON DAMS PROCESS

In 1998, the World Commission on Dams (WCD) was formed in response to these debates. The Commission created a base of knowledge about worldwide experiences in building and operating large dams. The Commission proposed that its report *Dams and Development: A New Framework for Decision-making*, form the foundation for a negotiated approach. The report recognises that the concept of rights and the assessment of risks are a means to identify legitimate stakeholders, negotiate development outcomes, share benefits and provide for the social and economic rehabilitation of

involuntarily displaced people. Implementing dispute management strategies, which lead to outcomes that meet some, but not all, of the interests of stakeholders, the WCD's report Dams and Development (DAD) suggests, can reverse wrongs.

Assessing risks adds an important dimension to our understanding of how and to what extent a project may affect people's rights and of the risks of both voluntary takers and involuntary bearers. Clarifying the context of rights for a proposed project is seen as an essential step in identifying the legitimate claims and entitlements that may arise upon implementing that project or its alternatives. In the past, many groups were denied the opportunity to participate in decisions that posed risks to their lives and livelihoods. Their voice in the decision-making process was not commensurate with their exposure to risk.

VALUES, PRINCIPLES AND GUIDELINES

DAD proposes a 'rights and risks'-based approach embracing five principles:

- Equity,
- Efficiency,
- Sustainability,
- Participatory decision making, and
- Accountability

Within its framework, DAD also proposes seven strategic priorities (SPs) that aim to provide a principled way forward towards negotiated decision-making about dam selection and its alternatives, construction and management. The seven strategic priorities are

- Gaining public acceptance,
- Conducting a comprehensive options assessment,
- Addressing existing dams,
- Sustaining rivers and livelihoods,
- Recognising entitlements and sharing benefits,
- Ensuring compliance, and
- Sharing rivers for peace, development and security.

These strategic priorities constitute the core of the recommendations of DAD and are complemented by 26 advisory guidelines (AGs) (see Table 1) and 152 defining issues (DIs) that elaborate the guidelines.

TABLE 1:
Advisory Guidelines (AG) of DAD

1. Stakeholder Analysis	14. Baseline Ecosystem Surveys
2. Negotiated Decision-Making Processes	15. Environmental Flow Assessment
3. Free, Prior and Informed Consent	16. Maintaining Productive Fisheries
4. Strategic Impact Assessment for Environmental, Social, Health and Cultural Heritage Issues	17. Baseline Social Conditions
5. Project-Level Impact Assessment for Environmental, Social, Health and Cultural Heritage Issues	18. Impoverishment Risk Analysis
6. Multi-Criteria Analysis	19. Implementation of the Mitigation, Resettlement and Development Action Plan
7. Life Cycle Assessment	20. Project Benefit-Sharing Mechanisms
8. Greenhouse Gas Emissions	21. Compliance Plans
9. Distributional Analysis of Projects	22. Independent Review Panels for Social and Environmental Matters
10. Valuation of Social and Environmental Impacts	23. Performance Bonds
11. Improving Economic Risk Assessment	24. Trust Funds
12. Ensuring Operating Rules Reflect Social and Environmental Concerns	25. Integrity Pacts
13. Improving Reservoir Operations	26. Procedures for Shared Rivers

RESPONSE TO DAMS AND DEVELOPMENT

Globally, reactions to DAD ranged from strong support to outright rejection. Some even rejected the report altogether. Even within a single organisation, a variety of responses could be seen. Advocates lauded the opportunities DAD provides for finding ways beyond the polarised debates of the past, while opponents condemned what they saw as its inadequate coverage of the benefits derived from dam projects built in the past. Others saw the guidelines as unrealistic and impractical and claimed that they will unnecessarily delay the implementation of many projects.

Nepal's response to DAD was similarly diverse. His Majesty Government of Nepal (HMG/N) expressed reservations about the WCD framework and was critical of its report (Annex 1).² A number of consultative meetings were held after the report was published. On 23 August 2001, Jalasrot Vikas Sanstha (JVS) organised an interactive meeting which saw participants representing government and non-governmental organisations. They worked in the water sector, for public utilities and in engineering colleges.³ The papers presented at the meeting discussed the role of dams in Nepal *vis-a-vis* DAD and commented on the proposed guidelines. The comments were mixed. Some participants opined that the guidelines would prolong the period of implementation of projects and thus add to the cost, while others claimed that the suggestions were useful in making dams in Nepal respond to national and community needs.⁴

DIALOGUE ON DAMS AND DEVELOPMENT IN NEPAL

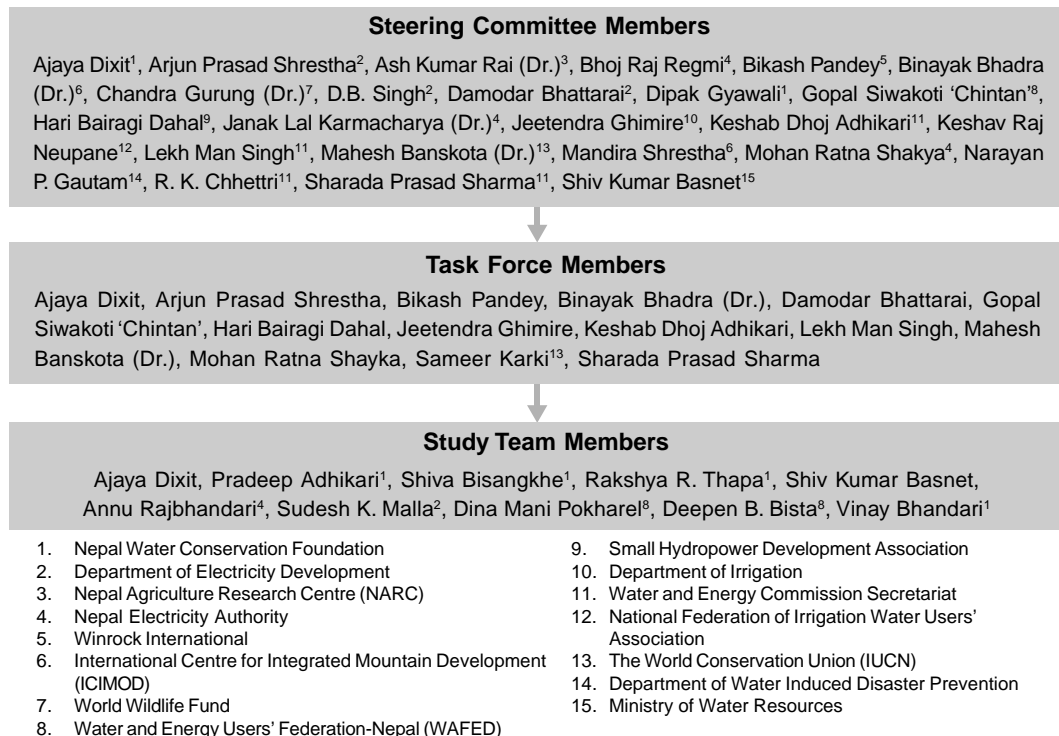
A national-level dialogue on DAD began in Nepal in January 2003. Its overall mission was phrased as follows:

To carry out national consultations on dams and development to consider the relevance of the recommendations of the WCD and other bodies in the Nepalese context with the ultimate aim of recommending development and adoption of a national guideline for improved decision making, planning and management of dams and alternatives for Nepal.

IUCN Nepal facilitated the dialogue and a steering committee was formed. The committee consisted of representatives from various institutions (Chart 1). A subgroup of this steering committee was the Task Force, with responsibility for detailed planning of the work and on implementation of the activities. The Task Force met

CHART 1:

Name of steering committee, task force and study team members



eight times between January and August 2003. Its main responsibilities were to commission a status report on dams and development issues in Nepal. It received support from the United Nations Environmental Programme (UNEP) Dams and Development Project (DDP) in holding the discussions needed to prepare the status report and in preparing the report itself.

A ten-member team representing both the governmental and non-governmental sector as well as voluntary groups carried out the study. They included experts in a variety of disciplines among them engineering, law, environmental studies, social science and development. Nepal Water Conservation Foundation (NWCF) coordinated the study.

The study reviewed the guidelines in DAD in the light of Nepal's constitutional provisions, court directives, acts, policies, and regulations on water resource development and management plans. It analysed legal provisions related to rivers, water and dams and the degree to which they relate to the WCD's guidelines. It also reviewed environmental assessment provisions and the Local Self-Governance Act including policy measures and mechanisms for their implementation that had been put in place in Nepal to address social and environmental questions. The process of the scoping study is shown in Chart 2.

OBJECTIVES OF THE STUDY

The objectives of the study were as follows:

1. Analyse the existing plans, policies, regulations and laws in Nepal which have a bearing on dams,
2. Compare guidelines of World Bank (WB), Asian Development Bank (ADB) and related institutions,
3. Investigate three hydropower projects Kali Gandaki 'A', Khimti and Indrawati in light of the guidelines of DAD,
4. Prepare a database of existing hydropower dams in Nepal for use in defining what a large dam means in the context of Nepal.

CHART 2:
Different phases of the study



METHODOLOGY

The study comprised the following activities:

- 1. Division of work among members of the study team:** The team met six times during the study period. In the first meeting, a decision was made about the working framework for carrying out the study. A matrix of the seven strategic priorities (SPs), twenty-six advisory guidelines (AGs) and 152 defining issues (DIs) of DAD was used in order to compare them with Nepal's legal provisions. This approach was deliberately chosen to explore the interface at that level of details.
- 2. Integration of inputs from members:** Each member of the team then worked individually, analysing the proposal of DAD. Once the analysis of each member was completed, their written summaries were compiled, synthesised and edited.
- 3. Collection of secondary documents:** The following documents were collected from Ministry of Water Resources, Nepal Electricity Authority (NEA) and private libraries:
 - a. Past consultations, government presentations and comments by international financing agencies on dam-related matters.
 - b. The constitution of 1990 and acts, laws, plans, policies, gazettes, regulations, and strategies currently operative in Nepal. The team reviewed almost all-legal provisions related to water, environment, displacement and benefit sharing. The team also looked at the Irrigation Policy, Nepal Biodiversity Strategy 2002, Wetland Policy 2003, the Aquatic Act and the Soil and Water Conservation Act, which cover livelihoods and the quality of aquatic ecosystems but are not specifically related to rivers or dams. Though these documents are indirectly relevant, their implications are not included in this report.
 - c. Manuals and guidelines related to hydropower development, irrigation and drinking water supply.
 - d. Documents related to the Kali Gandaki 'A', Khimti and Indrawati hydropower projects.
 - e. The policy documents of the WB and the ADB and the sustainability guidelines of the International Hydropower Association (IHA).
- 4. Comparison and analysis:** The documents collected were compared to the guidelines of DAD. The focus was on:

- a. Hydropower development, and
- b. Irrigation

References are also made to policies on

- c. Drinking water supply
- d. Forestry/natural resource management, and
- e. Aquatic systems

- 5. Case studies:** As stated in its objectives, the scoping exercise conducted a comparative study of Kali Gandaki 'A', Khimti and Indrawati hydroelectric power projects in order to compare DAD's recommendations with the actual implementation. But details of the case studies are not incorporated in the report due to the lack of field verification. Only relevant lessons are drawn.
- 6. Preparation of dam inventory:** The study team prepared a list of dams constructed in Nepal, mainly for hydropower generation (Annex 2). Technical information, including the area of land inundated and the number of the families displaced, was also collected. The list however is not exhaustive as the required information of some dams was not available. One of the objectives of preparing the dam inventory was to create a foundation for a dialogue to define large and small dams in Nepal in the future.
- 7. Consultations:** Three rounds of consultative meeting were held. The first was with organisations involved in flood disaster mitigation, irrigation management, water supply and sanitation, and conflict management. The second round chiefly comprised the national-level stakeholders in a meeting held in Kathmandu on September 12, 2003, at which the draft report was presented. A third set of meetings was later held with key government officials. The name of the participants and their respective agencies are listed in Annexes 3a, 3b and 3c.
- 8. Review by members of the Task Force and Steering Committee:** At two different meetings the members of the Task Force were presented with an outline and the preliminary findings of the study. They also reviewed the draft report and provided comments on it. On 30 June, 2003, following a presentation by the study team members, the Steering Committee endorsed the objectives and processes of the study.

The actual scoping exercise was conducted over a period of three months in 2003. Even though the consultative process was extensive, as the writing proceeded it became apparent that more time was needed for consultations and discussions but was not available due to the busy schedule of the stakeholder representatives. Some documents relevant to the dam inventory and case studies were simply impossible to trace. The findings of the case studies were not validated at the site itself with field visits. This would have required a larger study with substantial funding.⁵

ORGANISATION OF THIS REPORT

The following section deals with the results of the scoping exercise. It includes a comparison of Nepal's legal provisions with the proposals made by DAD.* The next section provides a summary of the public discussions in Nepal. It also presents a summary of the views expressed in the consultative meetings. The report then discusses WB, ADB and IHA's guidelines, which is followed by comments on the strategic priorities. The next section presents a discussion on the public policy processes. Recommendations for further analysis are provided, as is a discussion on the scoping process as constructive engagement.

POLICY AND LEGAL STATUS *vis-à-vis* STRATEGIC PRIORITIES (SPs)

In the following section we compare the DAD's seven SPs, 26 AGs and 152 defining issues (DI) as they relate to Nepali legal provisions. For the sake of simplicity the term 'legal provisions' has been used to include acts, laws, policies, regulations and manuals. The status of DIs is summarised in annex 4. Table 2 to 7 show the comparison of Nepal's legal provisions with the DIs of each strategic priority. In the first column provisions that match the DIs are summarised. In the next column those that do not are listed as 'issues to address'. The detailed comparison is available as a separate document. The related legal provisions are listed in box 1 to 7.

* The team members agreed about where Nepal's legal provisions conformed and diverged, but there were differences regarding the interpretations of some AGs and DIs. Where a consensus was reached, there is a synthesised statement. In cases where individual perceptions differed and no reconciliation was possible the team decided to record differences as they were.⁶ The contents of the provisions are also explained.

1. Gaining public acceptance

Three guidelines and twelve defining issues are related to this strategic priority. Laws and other documents which are related to the defining issues of this strategic priority are listed in box 1.

The main document concerning right of people is the constitution of the Kingdom of Nepal 1990. Part III of the Constitution guarantees all citizens of Nepal fundamental rights including the enjoyment of rights, privileges and immunities with regard to life, liberty and property. Article 16 of the Constitution guarantees the right to information, which states that every citizen shall have the right to demand and receive information on any matter of public importance. This right is limited, though, in that the state cannot be forced to provide all information, particularly if it is considered a state secret. On the issue of the right to information, the Supreme Court has made an explicit ruling and prescribed eight guidelines on the procedures to follow in providing information.⁷

1. The plaintiffs should ask for a list of documents related to different subjects from the defendants,
2. If the defendants provide that list within seven days, the plaintiffs should demand an arrangement for the inspection of the concerned documents,
3. Once a demand is made according to paragraph 2, the defendants should provide a notice to the plaintiffs specifying the time, date and place (for inspection) within three days,
4. Notes should be made after the inspection and if copies of the documents are to be made, a request should be made to the specified officer,
5. If rules are lacking for providing copies, certified copies should be provided after charging the real cost for making such copies,
6. If the defendants cannot permit the plaintiffs to inspect the documents, take notes from them and make copies of them, they should state the reasons and notify the plaintiffs within three days,

Box: 1

The Constitution of the Kingdom of Nepal, 1990 (Article 16 & 17),
Muluki Ain (National Code), 1963
 (Chapter- Land Cultivation, Section 1)
 Electricity Regulation, 1993 (Rule 16)
 Water Resources Act, 1992 (Section 4), and
 Water Resources Regulation, 1993 (Rule 19)
 Land Acquisition Act, 1977 (Section 3 and 4)
 Hydropower Development Policy, 2001 (Policy 5.8)
 Environment Protection Regulation, 1997 (Rule 4, 7, 10 and 11.2)
 National EIA guidelines, 1993 (Guideline 14, 15 and 27)
 Manual for Public Involvement in the EIA process of
 Hydropower Projects Part 2
 Manual for Preparing Scoping Document for Environmental
 Impact Assessments of Hydropower Projects.

7. If the plaintiffs are denied access, they can file a petition in the Supreme Court if they are not satisfied with the reasons specified or for denial of access, and
8. The Procedure for action on (the) petition shall be according to the Rules of the Supreme Court.

Section 5.4 of the Hydropower Development Policy (HDP) of 2000 provides for appropriate incentives to be given to a developer and for a transparent procedure for attracting national and foreign investments in the development of hydropower. The key word in the HDP is ‘transparency’.

The Constitution also addresses the rights of citizens, one of the defining issues related to gaining public acceptance. It recognises the right to private property as a fundamental right. In particular, Article 17 states that all citizens shall, subject to the existing laws, have the right to acquire, own, sell and otherwise dispose of property. The State, shall not, except in the public interest, requisition, acquire or create any encumbrance on the property of any person without fair compensation, for which a procedure is laid out.

The Land Acquisition Act of 1977 provides HMG with the power to acquire any land in any place for any public purpose as long as compensation is provided for. The government may decide to acquire land for an institution upon its request to construct residential quarters for its staff, to operate a project or to construct a godown for the storage of any commodity. According to the act, public purposes include functions undertaken in the interest of or, for the benefit or use of, the general public as well as functions to be undertaken by HMG.

The Water Resources Act of 1992 also touches upon land acquisition and compensation. It states that HMG may acquire land and develop water resources for the purpose of extensive public use. Similarly, the Electricity Act of 1992 mentions that the licensee may submit an application to HMG to purchase the land or house of any person if it is needed for the generation, transmission or distribution of electricity. Upon the receipt of such an application, HMG may make the land or house so requisitioned available to any corporate body under the prevailing laws.

Another provision relating to water rights is mentioned in the *Muluki Ain* of 2020 B.S. (the National Code of 1963), which lays out rights to irrigation water. According to the Code, any action that submerges private land with a dam or reduces supply to it with the redirection of water, implicitly requires the acceptance of such an action by the affected persons. The Code states that ‘water shall not be made

available to others until the requirements of the person who constructed an irrigation channel at his own expense with his own physical labour are first met.⁷⁸ Another provision of the *Muluki Ain* acknowledges existing rights to water as follows: 'A new irrigation channel may be constructed at a point higher than the existing one only if the amount of water available to the field irrigated by the old channel is not reduced'.

The Environment Protection Act of 1997 and the Environment Protection Regulations of 1997 specify the following steps for conducting Environment Impact Assessment of a project (EIA). First, the project proponent must publish a notice in any national-level newspaper requesting the VDC or municipality where the project is to be implemented as well as schools, hospitals, health posts and concerned individuals or institutions of that area to provide in writing their comments concerning any possible impacts of the proposed project on the environment within 15 days of the publication of the notice. Anyone who has an opinion or suggestion about the project is called upon to give official voice to it.

In addition, the project proponent must solicit further comments by affixing notices at the offices of concerned VDCs or municipalities, DDC offices, schools, hospitals and health posts. Again, all concerned are requested to submit written statements about the possible environmental impact of implementing the project within 15 days of posting. A *muchulka* (a witnessed public endorsement) of the posting also has to be prepared. The third way the project proponent has to collect opinion and suggestions is to organise a public hearing about the proposal in the VDC or municipality where the proposal is to be implemented. All opinion and suggestions received are to be included in the EIA report.

The Environmental Protection Act and Regulations provide a legal basis for undertaking an EIA. The guidelines state that the main purpose of conducting a scoping exercise in the early stages of project planning is to clearly define all the communities and agencies which should be involved in making decisions relating to the proposal. The scoping exercise is designed to determine which persons are to be involved in discussions and when and how communication with them is to be undertaken. For this, consent must be obtained from the concerned authorities and government agencies. While formulating a plan for public involvement, the proponent, concerned experts, persons likely to be affected by the project, and special interest groups should be included in the list of persons to be contacted. The guidelines also stipulate that the data and information collected should be

compiled and organised and then forwarded by the project proponent to relevant persons and organisations for their comments. Larger projects, after publishing public notices, must organise meetings at the project site as well as at the central level, in order to solicit suggestions and comments. People likely to be affected by the proposed project must be notified directly.

Two recent publications prepared by the Department of Electricity Development (DoED) provide even more encompassing instructions with regard to executing in this strategic priority. These publications are the *Manual on Public Involvement in the EIA Process of Hydropower Projects* and the *Manual on Preparing Scoping Documents for the Environmental Impact Assessment of Hydropower Projects*. They provide guidelines on dealing with public consultations when hydropower projects are developed and touch upon many of the issues WCD report raises. Table 2 summarises provisions on gaining public acceptance.

2. Conducting comprehensive options assessment

There are eight guidelines and forty-nine defining issues under this strategic priority. Among these guidelines, five are addressed directly or indirectly by our existing legal documents and manuals including the constitution, which are listed in box 2. Rest of the guidelines: the assessment of greenhouse gases (GHG), the distributional analysis of a project and risk assessment improvement are not included in any plan or policy.

The Water Resources Act of 1992 aims to make timely legal arrangements for determining the beneficial uses of water resources, preventing environmental and other hazardous effects and keeping water resources free of pollution. The Act mentions that

no person is entitled to utilise water resources without a license except in the case of drinking and other domestic uses and irrigation. A person or a corporate body that desires to conduct a survey of, or to utilise, water resources has to submit an application, along with an environmental study report and other prescribed particulars to the prescribed officer or authority. On receipt of the application, the designated officer shall conduct or have conducted all necessary

Box: 2

The Constitution of the Kingdom of Nepal 1990 (Article 17, 26(4)), *Muluki Ain* (National Code) 1963 (Chapter- Land Cultivation, Section 1) Electricity Regulation 1993 (Rule 12 & 16), Water Resources Act 1992 (Section 4, 7, 8 & 18), Water Resources Regulation 1993 (Rule 17,18 & 19), Land Acquisition Act 1977 (Section 3), Hydropower Development Policy 2001 (Policy 5.8, 6.1 & 6.2) , Environment Protection Act 1997 (Section 3, 6, 7, 11, 13 & 15-20) , Environment Protection Regulation 1997 (Rule 3, 4, 5, 7, 10, 11 & 50) and National EIA guidelines 1993 (Guideline 3, 6, 7, 12, 13, 14, 15, 17, 27, 28, 30, 32, 34, 38 & 45 to 49) and Manual for Public Involvement in the EIA process of Hydropower Projects Part 2 & Part 3.

TABLE 2:
Gaining public acceptance

2.1 Stakeholders analysis	
Defining Issues: <i>Recognise existing rights; identify vulnerable and those at risks; identify constraints for stakeholder involvement</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ The Constitution guarantees the right to property and to information. ■ Right to appropriate water from common water sources accorded to persons who construct irrigation canals early with their own cost and efforts. ■ Constructing canals upstream of existing ones is prohibited if supply to them is affected. 	<ul style="list-style-type: none"> ■ DoED manual on public involvement partly spells stakeholders participation but the provision is not mandatory. ■ Local people are unaware about their rights. ■ Vulnerable and those at risk are not mentioned. ■ Constraints to public involvement are not identified.
2.2 Negotiated decision-making	
Defining issues: <i>Ensure stakeholder representation; ensure integrity of community processes; provide adequate time for consultation; address power imbalances; ensure transparency; assist in negotiation</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ Stakeholders' representation recognised. ■ Provisions have been made for public notice and public hearing. ■ National EIA guideline has provision to facilitate early agreement between PAPs and the proponent on contentious issues. ■ VDC can facilitate in addressing the issue. ■ Public consultation/public hearing/public notice are done during EIA. ■ Constitution recognises the issue of representation. 	<ul style="list-style-type: none"> ■ DoED manuals recommend stakeholders' analysis but is not mandatory. ■ The concept of stakeholder forum is not envisaged. ■ Illiteracy, inaccessible sites and backwardness deter full fledged representation and participation of stakeholders. ■ Organisation and practices of public hearing need improvement. Local leaders and politicians influence the process of consultation. ■ The provision regarding the consultation does not consider the implications of agricultural and other local activities. ■ Many regions are remote and time allocated for consultation is inadequate. ■ Language (English to Nepali) acts as barrier for effective consultation and for dissemination of information. ■ Local stakeholders are not cognizant of the scale of impacts. ■ VDC is a political entity and tends to be influenced by narrow partisan interests and politics. ■ Implementation of legal provisions is weak. ■ Extent/degree of transparency is not clearly defined. ■ The process of public consultation needs to be made more participatory and transparent.
2.3 Get free, prior and informed consent	
Defining issues: <i>Ensure broad representation/inclusiveness; establish an independent dispute resolution mechanism</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ People can furnish their reaction about proposed project. ■ Provisions exist for an Inquiry Committee related to utilisation of water resources. 	<ul style="list-style-type: none"> ■ Information flow is one way (Domination of one notion of development paradigm or technical choice). ■ Actual beneficiaries at community level and PAPs are not included in the process. Public notice, public hearing have procedural limitations. ■ Illiterate persons cannot participate and lose out. ■ The Inquiry Committee is not independent. Its working procedure is not defined or clearly mandated.

investigations and issue a license to the applicant after prescribing certain terms. The Water Resources Act also prioritises the utilisation of water resources as per the following hierarchy:

- a. Drinking water and domestic uses;
- b. Irrigation;
- c. Agricultural uses such as animal husbandry and fishery;
- d. Hydroelectricity;
- e. Cottage industry, industrial enterprise and mining uses;
- f. Navigation;
- g. Recreational uses; and
- h. Other uses

The Water Resources Act mentions that the government may, by a notification published in the *Nepal Gazette*, set a quality standard for the water resources used for various purposes. Similarly, the government may also prescribe a pollution toleration limit for water resources with the objective of ensuring water quality. No one is allowed to pollute water resources by the disposal of any litter, industrial wastes, poisons, chemicals or toxic substances that exceeds the pollution tolerance limit prescribed by the Act. Water resources shall be utilised in a manner such that there is no substantial adverse effect on the environment by way of soil erosion, flooding, landslides or other similar phenomenon. If any person causes an adverse effect, or demolishes, destroys or causes harm with malicious intent to any source of drinking water, dam, canal or any other structure related to the utilisation of water resources, she/he can be punished with a fine or imprisonment or both.

The Electricity Act of 1992 has a similar provision about licensing needed to conduct a survey related to the generation, transmission or distribution of electricity. Section 5.15 of the Hydropower Development Policy describes the proper arrangements be instituted in order to circumvent risks likely to arise from hydropower projects.

The National EIA Guidelines of 1993 also contain provisions applicable to the defining issues related to comprehensive options assessment. Guidelines 7, 12, 13 and 27 (2) deal with the processes of project screening and making an inventory of options. Guideline 14 (d) makes provisions related to the implementation of mitigation measures, while Guideline 28 makes arrangements for publicising impact assessment reports for review and comment. The issues are listed in Table 3.

TABLE 3:
Comprehensive options assessment

3.1 Conduct SIA for environmental, social, health and cultural heritage issues	
Defining issues: <i>Incorporate environmental and social criteria; screen projects; reduce up-front planning and preparation cost; provide options of improving the performance of existing dams and other assets</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ Existing legal provisions address the issues to some extent. ■ Alternatives are selected at the project level. ■ NEA incorporated some environmental issues while identifying 10-200 MW projects in screening rating and ranking study under MSHP. ■ Provisions are insufficient, however they incorporate stakeholders' view early in project planning. ■ EIA has been a positive tool of pro-society and pro-environment development vision. ■ The issues of minimising cost is realised. 	<ul style="list-style-type: none"> ■ Stakeholders cannot participate during option assessment stage. ■ Existing provisions are not implemented at plans, policy and central level decisions. ■ Projects face financial, technical and institutional constraints for conducting SIA. ■ Accountability and transparency issues are not emphasised. ■ EIA is taken as an impediment rather than a tool to mitigate negative impacts.
3.2 Conduct project level impact assessment for environmental, social, health and cultural heritage issues	
Defining issues: <i>Conduct two-staged impact assessment, i.e., scoping and assessment phases; integrate technical, environmental and social studies in the design; conduct IAs independent from project financing and developers; comply international standards for EIA, SIA, HIA and CHIA; Appoint independent panel of experts; open local liaison office; make agreement to implement the mitigation measures; arrange for auditing and monitoring; put a redress mechanism for grievance; publicise IAs.</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ Existing provisions incorporate these issues to some extent. ■ National EIA Guidelines, 1993 cover most of the issues. ■ The practice in place has helped establish dialogue among stakeholders. ■ Major environmental and social issues are identified to help minimise cost of mitigation. ■ Multi-disciplinary team undertakes EIA studies. ■ Selection of environmentally sustainable options is possible. ■ EIA meets requirements of the financing agencies e.g. ADB, WB, etc. ■ With regard to standard, National EIA Guidelines have certain provisions. ■ MoPE does require the views of a Panel of Experts (POE) on EIA reports before approval. ■ The POE is multifaceted and some of the consultants are independent. ■ Local liaison offices have been established in some projects (Kali Gandaki A). ■ The mitigation measures are integral part of the EIA approved by MoPE. ■ EIA report incorporates environmental management plan. ■ The Acts do not require preparing resettlement plan but it is carried out during EIA process as part of public hearing/consultation ■ MoPE makes project document public and interested persons can use them. 	<ul style="list-style-type: none"> ■ IEE and EIA processes are weak. ■ Quality of EIA reports need improvements. ■ Field visits during assessment phase are of short duration to identify issues. ■ Methods of impact assessment is in embryonic stage. ■ Technical design keeps on changing during optimisation and issues identified earlier become irrelevant. ■ The provisions are insufficient to make integrated technical, environmental and social analysis in the design stage. ■ Designed standard are generally not complied with international standards. ■ No clear procedures exist to select an independent PoE. ■ Report of PoE is not made public. ■ PoE includes conditions rather than providing overall assistance to the government or developer. ■ Liaison offices have inadequate information. EIA reports are not published in local language. So local people do not understand them. ■ The opening of the liaison office is not mandatory. ■ Provisions about the support for auditing and monitoring are not explicitly stated in legal documents. ■ Mitigation budget is <i>ad-hoc</i>. Also it is not properly assessed. ■ Institutional arrangement for compliance is not clear. ■ Transparency is poor and monitoring is weak. ■ Acts and institution do not mention auditing and monitoring. ■ Post project monitoring is ineffective. ■ The provision of mechanism for redress is not clear.

3.3 Conduct multi-criteria analysis

Defining issues: *Prepare ToR; conduct stakeholder analysis; establish information centre; form stakeholder forum; form multidisciplinary planning team; prepare options inventory, screen options; present options to stakeholder forum; conduct public hearing; select the suitable option.*

Conformity

- ToR guides project level EIA.
- DoED Manual guides the EIA process for stakeholders' analysis and for information dissemination. It recognises the concept of stakeholder forum.
- Without establishing information clearing house it is disseminated through public notice and public hearing.
- Many projects form multidisciplinary planning team, though not specifically stated.
- Some guidance for assessing options are in place.
- EPA, EPR and EIA guidelines require identification and selection of alternatives.
- Public hearing is conducted at project level.
- Outputs of EIA study can be taken as input for selecting suitable option during feasibility study.

Issues to address

- Many times, ToR do not cover all the issues at the site.
- No instrument for assessing important policy and plan level impacts.
- DoED manual are not legally binding.
- Acts and regulations do not mention about stakeholder analysis and stakeholder forum.
- There is no mention of information centre in any Act or Regulation.
- No provision exists to present selected options to any forum.
- Multi-and interdisciplinary team is formed to inquire into policies and plans.
- Options selection is not legally binding.
- EIA studies do not cover all issues identified in EIA guidelines, and quality and effectiveness of mitigation measures need improvement.
- No systematic practice of selecting alternatives.
- Selection procedure of a particular option needs to be made transparent.
- No simple mechanism for PAPs to express concerns.
- The existing provision of public hearing need improvements.

3.4 Conduct life-cycle assessment

Defining issues: *Categorise different stages for each options; identify material flows and resource impacts at each stage; compare each option with a set of indicators (efficiency, emissions etc.); identify the range and magnitude of subsidies/external factors/incentives*

- The provisions do not mention about conducting life-cycle assessment of a project.

4.5 Assess greenhouse gas emissions

Defining issues: *Assess CO₂, CH₄, and Nitrous Oxide (N₂O); assess the characteristics (size, temperature, bathymetry, primary productivity etc) of reservoir(s); inundated area(s); estimate the cumulative emissions.*

- Existing provisions do not mention need to assessing greenhouse gas emissions.

3.6 Conduct distributional analysis of projects

Defining issues: *Assess equity/poverty; conduct macroeconomic/regional analysis; conduct economic distributional analysis*

Conformity

- The Local Self Governance Act by ensuring to flow of some percentage of revenue to the district responds to the issue of equity.

Issues to address

- No legal instrument to conduct distributional analysis

3.7 Conduct valuation of social and environmental impacts

Defining issues: *Identify/select impacts to be valued; conduct valuation studies; conduct public hearings.*

Conformity

- Qualitative analysis is done to identify/select impacts.
- Public hearing is conducted.

Issues to address

- Intangible issues like emotional aspects are difficult to be valued.
- No procedure exists for making quantitative valuation.
- Lot of assumptions are made during quantitative valuation.
- Theoretical exercises might lead to wrong conclusions.
- No provision mentions the need to conduct valuation study.
- PAP can rarely voice their concerns in public consultation meetings.
- The provisions of public hearing need to be improved.

3.8 Improve economic risk assessment

Defining issues: *General approach*-Include risks assessment in planning cycle; identify/select risk as a part of larger stakeholder/multi-criteria processes; include ranges for the risk and sensitivity analysis on the basis of past performance of large dams; complement sensitivity analysis with full probabilistic risk analysis

Conformity

- Risk, sensitivity and probabilistic analysis is carried out by promoters.

At all stages- Improve prediction of project costs

- Prediction of the project costs is done by promoters.

At options assessment stage- Conduct simple sensitivity analysis; compare the options qualitatively with uncertainty associated with the cost and benefit

- Carried out by promoters/developers.

At the feasibility stage- Conduct full probabilistic risk analysis of economic profitability; prepare modelling of changes in hydrological estimates (climate change etc.); investigate the likely benefits of risk reduction measures.

Issues to address

- The identification of risk is not legally binding.
- Lack of clarity and comprehensiveness to identify risk.
- Legal provisions do not require risk assessment in steps of planning cycle.
- Risks faced by others tends to be underplayed.
- Project cost tend to be site specific and difficult to predict due to unforeseen problems during construction.
- Legally not a recognised issue.
- Different projects have different context, and varying reasons for escalation of cost.
- Not specified in laws and policies.
- Not specified in legal provisions.
- Poor coordination with DHM and other departments.
- Lack of legal and policy clarity.
- The policy documents do not acknowledge that water science, soil, climate and ecology contain elements of uncertainty.

3. Addressing existing dams

This priority includes two guidelines and twenty-nine defining issues. The documents related to this strategic priority are listed in box 3.

Section 7 of the Water Resources Act of 1992 prioritises the utilisation of water resources, while Article 17 of the Constitution, Section 3 of the Land Acquisition Act and Guideline 27(2b) of the National EIA Guidelines deal with compensation for people whose property is acquired. Policy 6.1.1 of the Hydropower Development Policy calls for preserving environmental flow in a river or rivulet.

According to Guideline 32(c) of the National EIA Guidelines, people should be informed about potential environmental damage in a timely manner and Guideline 35 provides for the regular monitoring of the environmental impact of a project in order to obtain the data and information needed to draw accurate conclusions. Environmental impact monitoring generates the information required to ensure that project

Box: 3

The Constitution of the Kingdom of Nepal 1990 (Article 17.3); Land Acquisition Act 1977 (Section 3); Environment Protection Act 1997 (Section 13 & 17); Water Resources Act 1992 (Section 7); Hydropower Development Policy 2001 (Policy 6.1) and National EIA guidelines 1993 (Guideline 27, 32, 35 & 38).

implementation has the least possible adverse environmental impact on the people and the environment in the area it serves.

Out of the twelve defining issues under the guideline related to the improvement of reservoir operations, the Water Resources Act addresses only one. The issues are listed in Table 4.

TABLE 4:
Address existing dams

4.1 Ensure operating rules to reflect social/environmental concern	
<p><i>Defining issues :</i> Ensure emergency warning/evacuation plans; maintain downstream drinking water/environmental requirements; ensure good quality of water to downstream during reservoir filling; adopt compensation plan; release environmental flow; release minimum technical flow; release maximum ramp rates for downstream; ensure water allocations during normal operation; manage operation during normal/exceptional floods; warn people for potential dangers; formulate rules for evacuation of people and animals; set out rule for opening spillway gates; conduct periodic safety inspection; formulate drawdown procedure if dam safety is in doubt; monitor relevant operation data; disseminate data to stakeholders; review operating rule periodically</p>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ Generally EIA report includes provision for emergency warning system. ■ The Hydropower Development Policy recognises the issue of environmental flow and suggests that 10 per cent flow be released for downstream reaches. ■ Water Resources Act (WRA) sets priority to ensure allocation according to the set priority. ■ WRA has set drinking water as the first priority. ■ Only Land Acquisition Act, 1977 deals the issue of compensation. ■ In case of the IPP, direct negotiation between the affected people and the proponent is encouraged. ■ IPPs may develop basin-level decision support systems to optimise interactive reservoir operation and optimising operation. ■ Provision is in place for monitoring. ■ The sedimentation rate of Kulekhani reservoir was monitored. ■ In Kulekhani catchment management programme has been implemented. ■ In Kulekhani a sloping intake has been built to minimise impact of sedimentation. ■ Sediment flushing is done in very limited RoR projects. 	<ul style="list-style-type: none"> ■ Although EIA report includes the provisions for emergency warning, it is not legally binding. ■ Provisions of providing information to people do not exist. ■ There are no legal provisions to formulate plan for evacuation of people and animals. ■ Emergency warning mechanism is limited to assess performance. ■ No mechanism to ensure downstream drinking water/environmental requirement. Usually the downstream is completely dry during lean season. ■ No mechanism of implementing water allocation as per acts. ■ There are cases where the affected people complained that they did not get adequate and timely compensation. ■ Hydropower Development Policy is not legally binding provision about environmental flow. ■ None of the legal provisions mention technical flow and release of maximum ramp rates for downstream reaches. ■ No provision categorically states the issue of normal and exceptional floods. ■ Although National EIA guidelines 1993 mention about institutional capacity building, nothing is mentioned about training for extreme events. ■ The functioning of monitoring system is not effective due to lack of resources. ■ The assumptions of design sedimentation rate is not revisited. ■ The effectiveness of catchment management programme has not been assessed in terms of sediment yield.

4.2 Improve reservoir operations

Defining issues : Collect views on current reservoir operation with stakeholder; record /confirm changes in the priority of water uses; record /confirm changes in the priority of water uses; optimize reservoir operation; asses the ability to operate the reservoir optimally; provide clear procedure for emergency warning; provide operator training for extreme events; ensure monitoring systems are in condition; monitor sediment in the reservoir quantitatively/qualitatively; minimize sediment deposition; remove accumulated deposits; launch catchment management program;

Conformity	Issues to address
<ul style="list-style-type: none"> ■ The provision for the priority of water uses is legally binding. ■ Provision is in place for monitoring. 	<ul style="list-style-type: none"> ■ Prioritisation of water use is relatively rigid, which may have to be altered as situation changes. ■ Several constraints impede effective functioning of the monitoring systems.

4. Sustaining rivers and livelihoods

There are three guidelines and fifteen defining issues under the strategic priority of sustaining rivers and livelihoods. The documents listed in box 4 address some of these issues.

Rule 7 of the EPR requires that a report on the IEE and the EIA be carried out before implementation is prepared. This report includes an assessment of the impact on social and economic, cultural and physical, chemical and biological factors. A project's likely impact in terms of human health, any degradation of cultivable land or destruction of forests, and any changes in social, cultural and religious norms and values, populations, flora and fauna, and natural habitats and communities has to be included.

Guideline 14(b) of the National EIA Guidelines stipulates that data and information relevant to the nature of the project and a preliminary list of potential environmental impacts and practical alternatives have to be collected. This information is to be supplemented with information about the proposed project, maps, drawings and other relevant materials. Guideline 23(a) recommends a study of the socio-economic impacts of project activities that would bring about changes in the existing economic and social conditions of the communities within the project area or in its vicinity.

A project's socio-economic impacts may be beneficial or adverse; both types need to be identified. Guideline 23(b) requires that the effects on biophysical resources like vegetation, wildlife, crops, and aquatic life be listed. Guideline 25 provides details about impact prediction; it requires that special attention be paid to the magnitude, extent and duration of impact. Guideline 13(1) makes provisions for completing project screening, whose aim is to uncover alternatives to the proposed activities. Guideline 27(2) advocates including a comparative study of the adverse and beneficial impacts of a project, taking into consideration the alternative of total abandonment of the project, too. Guideline 27.2(c)

Box: 4

Environment Protection Regulation 1997 (Rule 5 & 7); National EIA Guidelines 1993 (Guideline 3, 13, 14 & 23-27) and Hydropower Development Policy 6.1.2

suggests adopting corrective measures like fish ladders in dams and weirs. The issues related to sustaining rivers and livelihoods are listed in Table 5.

TABLE: 5
Sustain rivers/livelihood

5.1 Conduct baseline ecosystem surveys	
Defining issues: <i>Study life cycle of fish species (especially migratory species); identify the distribution of habitat of endangered species; locate important areas for biodiversity; identify key natural resources for riverine communities</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ EIA guidelines provide suggestions for collecting information on aquatic life. ■ EIA guidelines mention fish pass. 	<ul style="list-style-type: none"> ■ The list of endangered species is not regularly updated. ■ Monitoring of performance needs to be strengthened. ■ Acts and Regulations do not mention these issues.
5.2 Assess environmental flow	
Defining issues : <i>Assess the affected river upstream/downstream; Identify ecosystem components; develop predictive capacity on biophysical responses; predict social impacts of biophysical responses; create scenarios (with varying social, biophysical and economic parameters); select/Implement one scenario</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ EIA guidelines cover the issue. ■ Legally established. ■ EIA guidelines make provision on choosing alternatives. 	<ul style="list-style-type: none"> ■ Monitoring of performance needs improvement. ■ Resources gap and technological constraints hamper effective functioning. ■ Release of environmental flow is not legally binding. Effectiveness has not been assessed.
5.3 Maintain productive fisheries	
Defining issues : <i>Propose sound fish pass design; prevent the loss of endangered fish biodiversity; maintain fish stock; ensure long-term sustainability; produce fish for local consumption/export</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ EIA guidelines have incorporated these issues to some extent. 	<ul style="list-style-type: none"> ■ Fish passage arrangement in Nepal are very limited and there is no criteria for judging soundness of a design. ■ Methods of maintaining wild fish stock for export and local consumption are not mentioned.

5. Recognising entitlements and sharing benefits

Four guidelines and seventeen defining issues are elaborated under this strategic priority. The four guidelines are the identification of baseline social conditions, the analysis of impoverishment risks, the implementation of mitigation, resettlement and development action plan (MRDAP) and the development of a benefit-sharing mechanism. The provisions listed in box 5 contain issues related to this strategic priority.

As the Water Resources Act and the Land Acquisition Act provide HMG with the power to acquire any land in any place for any public purpose, subject to the

compensatory principles provided under these laws, they touch upon some of the defining issue related to benefit sharing.

Rule 7 of the EPR of 1997 calls for collecting baseline social, economic and cultural information. Article 17 of the EPA deals with compensation for affected people.

Sections 5.8, 5.14, 6.1.3 and 6.4.4 of the Hydropower Development Policy of 2001 suggest ways to minimise adverse environmental effects as well as to make proper arrangements for rehabilitating displaced families, providing appropriate benefits at the local level while operating hydropower projects, rehabilitating and resettling affected people as per the standards set by HMG/N and providing one per cent of the royalties received by HMG/N directly to the affected VDC. This royalty is to be used for meeting rural electrification objectives.

The Local Self-Governance Regulation declares that 10 per cent of the royalties received by HMG/N from utilising water resource is to be provided to the affected district. The DoED has been providing this amount to sixteen districts since 2000/2001; a total of Rs 57,980,199 has been disbursed.

Rules 19 (1), (2) and (3) of the Water Resources Regulation, Rules 16 (1), (2) and (3) of the Electricity Regulation and Rule 4 of EPR call for publishing notices in connection with assessing the impacts of proposed projects. Guideline 14 (c) of the National EIA Guidelines goes even further; it requires that the data and information collected during the scoping study be made public to concerned people and organisations for their comments.

Guideline 25 of the EIA identifies three different approaches to predict impacts: magnitude, extent and duration. Guideline 27(2b) stipulates that compensation be paid to mitigate unavoidable or adverse impacts. Compensatory measures include restoring damaged natural resources, rehabilitating displaced settlements, and compensating affected persons. Guideline 27(e) provides for incorporating mitigation measures into a project design as a part of the construction and operational phases of that project. Table 6 shows conformity to and divergence from this priority.

Box: 5

Land Acquisition Act 1977 (Section 3);
Environment Protection Act 1997 (Section 17);
Environment Protection Regulation 1997 (Rule
5, 7); Hydropower Development Policy 2001
(Policy 5.8, 5.14, 6.1, 6.4); Local Self-
Governance Act 1999 (Section 220), Local
Self-Governance Regulation 1999 (Rule 211)
and National EIA guidelines 1993 (Guidelines
14, 23, 25, 27)

TABLE 6:
Recognising Entitlements and Sharing Benefits

6.1 Construct baseline social conditions	
Defining issues : <i>Assess baseline social conditions for all impact areas/communities; ensure the base line social information.</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ EIA incorporates the baseline social information. 	<ul style="list-style-type: none"> ■ Reports are based on secondary data. Institutional requirements for sustained data collection is insufficient. ■ For larger project baseline data is not comprehensive. ■ Monitoring capacity needs improvement.
6.2 Impoverish risk analysis	
Defining issues : <i>Prevent/overcome the pattern of impoverishment; identify risk in advance explicitly; make transparent the risk in advance; implement impoverishment risk model</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ EIA identifies risks 	<ul style="list-style-type: none"> ■ Not mentioned in existing laws.
6.3 Implement Mitigation, Resettlement/ Development Action Plan (MRDAP)	
Defining issues : <i>At government and developer level: Ensure MRDAP as a part of the master contract; ensure the signing of performance bond; provide other services (land acquisition, road building and health care)</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ EIA is binding to the hydropower developer. The resettlement plan as outlined in the EIA report is binding to the developer. ■ Approved EIA compels the developer to implement the proposed mitigation measures as mentioned in the report. ■ Environmental Management Plan (EMP) and resettlement plan is formulated in the EIA report. 	<ul style="list-style-type: none"> ■ Not comprehensive for larger project ■ Some provisions for implementing mitigation plans are in EIA report but is not legally mandatory. ■ Resettlement action plan is not mentioned.
<i>At community and affected persons level :</i>	
<i>Ensure compensation, resettlement and development entitlements; make schedule of entitlement delivery; Finalise institutional arrangement for delivering commitments; enlist obligation/responsibilities of the concerned parties (as stipulated in contract); prepare recourse procedures</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ Legal provisions are in place. 	<ul style="list-style-type: none"> ■ Resettlement issue is inadequately addressed and specific timetable to fulfill obligations not mentioned. ■ Institutional dysfunction. Successful implementation of Resettlement Action Plan has risks.
6.4 Develop project benefit-sharing mechanism	
Defining issues : <i>List out/Identify the types of project benefit; assess the benefits; ensure delivery of project benefit</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ 12 per cent of the royalty from electricity sales to be used for the development of the affected district and 38 to the region. ■ Provision of 1 per cent of the royalty to affected VDC for rural electrification. ■ Benefits is shared if the project encompasses two or more districts. 	<ul style="list-style-type: none"> ■ Benefit assessment procedure in project designs needs to be clarified and made more transparent. ■ Due to proximity to transmission grid, etc. there is a chance of concentration of development in a few districts that will benefit more than others. This issue needs to be addressed by formulating benefit sharing mechanism.

6. Ensuring Compliance

There are five guidelines and twenty-one defining issues in this strategic priority. Of the five guidelines, three are addressed by the Nepali legal documents listed in box 6. The remaining two guidelines that are not explicitly addressed through any legal documents include the establishment of a trust fund and the application of an integrity pact.

Section 13 of the EPA of 1997 provides for monitoring and evaluating the environmental impacts of external intervention. Section 6 suggests soliciting the opinions and comments on the project's EIA report from a team of experts. Rule 50 of the EPR of 1997 authorises the Ministry of Population and Environment (MoPE) to maintain an updated list of persons possessing special knowledge and experience in matters concerning the environment. Rule 12 states that the proponent has to comply with the matters mentioned in the EIA report as well as with the conditions prescribed by the concerned body or the MoPE while implementing its proposal.

Article 17 of the Constitution of 1990 ensures the right to information. Rules 19 (1), (2) and (3) of the Water Resources Regulation, Rules 16 (1), (2) and (3) of the Electricity Regulations, Rule 4 of the EPR and Guideline 28 of the National EIA guidelines call for publishing notices in connection with assessing the impact of a proposed project. Guideline 14 (c) of the National EIA Guidelines goes further and calls for making the data and information collected by the scoping study public to concerned people and organisations for their comments.

Guidelines 32 and 34 (c) of the National EIA Guidelines advocate evaluation and monitoring to ensure that the impact does not exceed legal standards and compliance monitoring to ensure that the project complies with the law. Guideline 38 deals with the institutional aspects of effective monitoring. Guideline 27(e) makes provisions for incorporating the implementation of mitigation measures in a project's design so that these measures automatically form a part of the construction and operational phases of that project. The issues are listed in Table 7.

Box: 6

The Constitution of the Kingdom of Nepal 1990 (Article 16); Environment Protection Act 1997 (Section 6, 12, 13 & 50); Environment Protection Regulation 1997 (Rule 7, 8,9, 11, 13) and National EIA guidelines 1993 (Guideline 27, 28, 32, 34 & 38)

TABLE 7:
Ensuring Compliance

7.1 Finalise compliance plan	
Defining issues : <i>Ensure compliance plan to follow the applicable laws; conduct independent review of internal processes/ commitments; ensure sufficient in-country institutional capacity; ensure funds to secure performance; built compliance cost into the plan/project budget/evaluation process; establish performance indicators/ benchmarks</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ Legal provisions are in place. ■ EIA guidelines recognise need to build institutional capacity. ■ Approved EIA requires the developer to implement proposed mitigation measures. ■ Some EIA reports incorporate details of mitigation plan. 	<ul style="list-style-type: none"> ■ Not explicitly mentioned in legislation. ■ Compliance is not independently reviewed. ■ Implementation and monitoring capacity need improvement. ■ Incomplete indicators for monitoring implementation of compliance plan.
7.2 Establish independent review panel (IRP) for social/environmental matters	
Defining issues : <i>Establish project level IRPs; fund IRPs; ensure reporting of IRPs to the national government/regulator; ensure systematic information distribution to IRPs (by the developer); make all report public; ensure developers responses to the issues raised (by IRPs); make frequency of IRPs visits flexible</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ A EIA review Committee comprising of independent consultants, concerned institutions etc. are formed to review scoping, ToR and EIA findings. ■ MOPE is empowered to form a committee for reviewing the EIA reports. ■ EIA report is made public prior to approval by MoPE. ■ MoPE generally includes suggestions recommended by 'Review Committee'. 	<ul style="list-style-type: none"> ■ Panel members provide <i>pro bono</i> input which impinges on the quality of analysis. ■ EIA review panel does not have a say on the environmental performance of a project during construction or operation. ■ Sometimes a panel is hired by the proponent to review report and in return is compensated. Moral hazard issue emerges. ■ Proponents and the government do not disclose the comments made by reviewer.
7.3 Ensure submission of performance bond	
Defining issues : <i>Apply the bond in related activities; make regular review of the level of security</i>	
<ul style="list-style-type: none"> ■ No provision of bond or insurance. 	
7.4 Establish trust fund	
Defining issues : <i>Formulate laws for the trust fund; prepare transparent trust deed; appoint independent trustee; define the role of the affected people</i>	
<ul style="list-style-type: none"> ■ No provision for establishing trust fund 	
7.5 Apply integrity pact	
Defining issues : <i>Ensure the compliance of pact with accepted international practices; make provision for institutional capacity building (training, technical assistance etc.)</i>	
Conformity	Issues to address
<ul style="list-style-type: none"> ■ EIA has some provisions regarding the issues. 	<ul style="list-style-type: none"> ■ No institutional mechanism to monitor compliance.

7. Sharing rivers for peace, development and security

DAD has endorsed the general principles and mechanisms enshrined in the United Nations Convention on the Law of Non-Navigational Uses of International Watercourses of 1994. In doing so, it supported the concept of the river basin as the primary basis for management, the principle of negotiations in good faith and the need for harmonising of the policies of bilateral agencies, multilateral development banks and export credit agencies with respect to financing projects on shared watercourses. This strategic priority has one guideline and nine defining issues. No Nepali plans, policies, acts, or regulations address any of the issues. Provisions concerning shared watercourse is spelled out in specific treaties. Only two international laws given in box 7 deal with the issues raised under this strategic priority.

Articles 5 to 26 of the Non-Navigational Uses of International Watercourses addresses equitable and reasonable utilisation and the participation of watercourse states. Article 9 deals with the regular exchange of data and information and Articles 11 to 19 deal with prior notification about measures planned for the use of international watercourses and their waters for purposes other than navigation. Articles 20 to 26 call for the protection, preservation and management of international watercourses, while Article 33 deals with the settlement of disputes. Articles IV to VIII of the Helsinki Rules elaborate the principles of the equitable utilisation of the waters in an international drainage basin, while Articles XXVI to XXXVII address the procedures for the prevention and settlement of disputes.

Neither of these internationally accepted provisions for managing trans-boundary water has been visibly applied to any Indo-Nepal water sharing agreements or practices. This has become particularly clear in last few years: Nepal is bearing the cost of India's unilateral decisions to construct new embankments and renovate old ones along the border. They include, inter alia the embankments in Laxmanpur, Rasiawal Khurdalotan and Bairganiya in Bihar downstream of Gaur Bazaar in Rautahat District as well as the issue of Mahalisagar Dam. These structures have caused drainage congestion and led to inundation of land in Nepal. India's recent proposal to link rivers raises new concern about its implications for developing Himalayan waters. Nepal and India entered into cooperative path of water development in 1954 with the signing of the Kosi Agreement. In 1996 the treaty on Mahakali River was signed and ratified by a two-thirds majority of the Nepali parliament is currently mired in an impasse. Suspicion and mistrust regarding water resource development has

Box: 7

Non-navigational Uses of International Watercourses 1994 (Article 5-26, 33) and Helsinki Rules on the Uses of the Waters of International Rivers 1966 (Article IV-VII, XXVI-XXXVII)

remained an impediment to friendly relations between the two countries. Both sides have remained attached to conventional ways of project development and neither has made an effort to explore alternative ways of co-operating.

PUBLIC DISCUSSIONS ON DAMS AND WATER ISSUES

DAD's guidelines are not alien in the context of Nepal. HMG has put in place certain provisions that recognise and aim to minimise the negative social and environmental impacts of dam's construction. And, thanks to the discourse over the last twelve years, stakeholders felt the need to begin a dialogue. This scoping study must be viewed in this context.

Water Resources Strategy

Nepal's Water Resource Strategy (WRS) of 2002 is a recent attempt that aims to meet the national goal of significantly improving the living conditions of Nepali people in a sustainable manner. The WRS has identified water sector activities that accord importance to its sustainable use, mitigate the impact of natural hazards, protect the environment, foster economic growth and help evolve constructive methods to resolve conflicts among communities or countries. The strategy proposes approaches to fostering economic development using mechanisms that emerge from broad-based consensus and co-operation. The document identifies ten broad water-sector issues, which together touch upon many of the issues identified in DAD, including social, water supply and sanitation, irrigation, hydropower, legal, database, international, environmental and institutional topics . Sixty-two sub-issues further elaborate them.⁹

To meet the national goal the strategy has identified short (5 years) medium-term (15) and long-term (25 years) targets. This time-bound strategy defines the following ten strategic outputs:

1. Effective measures to mitigate water-induced disasters are functional.
2. Sustainable management of watersheds and aquatic ecosystems is achieved.
3. Adequate supply of and access to potable water and sanitation and hygiene awareness is provided.
4. Appropriate and efficient irrigation to support the optimal, sustainable use of irrigated land is available.
5. Cost-effective hydropower is developed in a sustainable manner.

6. The economic use of water by industries and of water bodies by tourism, fisheries and navigation is optimised.
7. Enhanced water-related information systems are functional.
8. Appropriate legal frameworks are functional.
9. Regional cooperation for substantial mutual benefit is achieved.
10. Appropriate institutional mechanisms for water sector management are functional.

The activities involved in achieving each output encompass the issues of

- risk,
- vulnerability,
- floodplain management,
- watershed and aquatic ecosystem protection,
- rehabilitation and management,
- compliance and environmental regulations,
- disaster mitigation,
- integration of improved social and environmental mechanisms into hydro projects,
- local capacity building,
- and equitable mechanisms for cost sharing.

The formulation of the National Water Plan is one of the preconditions for the implementation of the WRS. It is now in the final stage of preparation.

At this stage it is useful to recount the views expressed by the participants in the consultative processes conducted during the scoping study. The following sections summarise the views articulated during consultations with NGOs, in the national consultative meeting and in the meeting with key government officials.

Views from grassroots

By bringing together the issues of dams and development, DAD report aims to tackle the dichotomy of scale, macro vs. micro. In other words it seeks to reconcile the building of a water project (dam, powerhouse, canals, electric equipment) using technological artefacts with development, which is embedded in a social context. In Nepal this context is endemic poverty, low literacy, low development and nascent local capacity, and still evolving political institutions. Consultations with grassroots NGOs (Annex 3b) during the scoping study aimed to continue exploring the links between development and dam building. The

contribution of dam construction to poverty alleviation and some of the barriers that have to be overcome in the process were identified. Putting in place an appropriate institutional framework that addressed these issues were seen as continuing to remain a challenge. Another limitation in Nepal has been that the development discourse has only recently begun to be contested by alternative perspectives and paradigms. The views expressed during the interactions were as follows:

- **WCD process:** Many grassroots groups in Nepal are not aware of the WCD and its suggestions. The WCD's five core values are welcome but are too general. Efforts should be made to define their implications at the local level.
- **Flow and access to information:** The flow of information about new projects to the local level generally and to project affected people particularly is top down. Most of the time, local people do not understand the implications (costs and benefits) of a project and when they do, it is too late for them to take corrective measures. Creating stakeholder forum early on at the local and national levels can help remedy this shortcoming.
- **Compliance:** There is poor compliance with existing guidelines, laws and policies during project construction and management. There is no follow ups. There should be mechanisms to ensure that regulations are followed. To make compliance effective, stringent criteria such as provision for taking project proponents to court should be included. Building the capacity for undertaking social auditing at the local level is critical.
- **Participation:** Although people's participation is endorsed by government policies, project affected people play minimal role in the decision-making process. Communities on the physical and social margins do not get the opportunity to participate in any consultations. Sufficient time must be provided for discussing the benefits and risks of a project before it is implemented. Project-affected people should be brought to the centre stage when social and economic support is planned within the existing legal framework.
- **Articulation of benefits and costs:** Benefits and costs operate at the community, watershed and national levels. They must be repeatedly discussed at various levels.

The Larger Community: The National Consultative Meeting

This national-level consultation brought together Nepal's larger community involved in dams and development. The day-long meeting was conducted in three stages with a wider range of stakeholder participation (Participants' name and their affiliation is given in Annex 3a). The first session began with a keynote address by the former Minister for Water Resources, Dipak Gyawali. Honourable member of the National Planning Commission Dr. Yub Raj Khatiwada also gave his views as chief guest. Dr Swyambhu Man Amatya, executive secretary of the Water and Energy Commission Secretariat (WECS) chaired the session.

Following this tone setting, Bikas Pandey, country representative of Winrock International and Gopal Siwakoti 'Chintan,' Coordinator of WAFED, discussed the broader context of WCD and the processes following the publication of DAD. This presentation was followed by a brief question and answer period. In the second session, Ajaya Dixit, Director of Nepal Water Conservation Foundation, presented a summary of the scoping study. Three experts commented on his presentation; Dr. Janak Lal Karmacharya, Managing Director of NEA; Purna Prasad Adhikary, President of Independent Power Producers (IPPs) and Hari Roka, a political commentator. Following the presentation, the floor was opened to discussion. After this open session, Arun D. Adhikary, a governance specialist at the Netherlands Development Organisation (SNV) Nepal, provided an overview of the day's proceedings including his views on the WCD. Dr. Dwarika N. Dhungel, Director of Institute of Integrated Development Studies (IIDS) facilitated the discussions.

The following sections summarise the views expressed by the speakers in the first and the last sessions of the meeting. The views of others in the floor discussions are presented in a collective format in the sections below.¹⁰

Session I

Dipak Gyawali

- Dams are and will be part and parcel of regional and bilateral water development agreements. Hence, it is necessary to define what constitutes 'pervasive, serious and long-term impact' as per Article 126 of Nepal's Constitution of 1990 that requires a two-thirds majority sanction from the parliament for natural resources sharing treaty. A status paper prepared by

MoWR has proposed nine criteria to give clarity to this constitutional provision and thus help in the dams and development debate. The proposed nine criteria help define what constitutes a resource sharing treaty of a 'pervasive, serious and long-term' nature that would each trigger the process of parliamentary approval by a two-thirds instead of a simple majority. The proposed criteria are:

1. If any hydroelectric project is of capacity greater than 1000 MW,
 2. If a proposed water project will require a trans-basin transfer of water;
 3. If the population to be displaced by project is more than 10,000;
 4. If a project will affect or submerge more than 25 square kilometres of agriculture, grazing or forest land.
 5. If the foreign to Nepali investment share in a project is more than 80:20 in favor of foreigners.
 6. If investors in a project ask for sovereign guarantee for their investments
 7. If there are possibilities of intersectional or cross-sectoral trade-offs between water and other benefits from a project
 8. If more than 50 per cent of the electricity output of a project is to be exported
 9. If, at the point of a river leaving Nepal's border, an upstream project's reservoir will increase the dry season flow by 10 per cent or reduce the flood peak by 10 per cent.
- Irrigation Policy 2003 and the Community Electricity Distribution Bylaws of 2003 bring communities and users to the centre stage of the policy processes and implementation.
 - Internal reorganising of the structure of NEA through unbundling of the distribution centers and bulk purchase through communitised rural distribution has created incentives to promote efficiency
 - Restructuring electricity tariffs will promote efficiency and encourage investors to invest in dams that produce higher quality energy (i.e. storage).
 - Constructive engagement among government, private developers and social auditors is crucial to prevent the policy process from falling victim to an impasse.

Dr Yub Raj Khatiwada

- The recommendations of DAD are important for building dams in Nepal.
- We need a balanced approach to make an appropriate trade-off between development and environment.
- Both markets and civil society have global reach. Global civil society can express concern about a national project; this is an important aspect to consider in our effort to develop dams. At the same time, markets can also influence government policies.

Dr Swayambhu Man Amatya

- Dams help regulate water so that irrigation, electricity and other benefits are obtained.
- Dam building should maintain a balance with bio-diversity and forests and not impair social harmony.
- Nepal should develop its own definition of a large dam.

Hari Bairagi Dahal

- Our challenge is to localise water resource development in Nepal.

Session II

This session included presentations on, comments about and discussion of the earlier draft of the scoping study report. The issues raised by the commentators and participants are summarised as follows:

Scoping study report: The report analyses the status of Nepal's legal provisions and activities with respect to DAD's recommendations. The report did not look into the questions of river tourism or livelihoods. The case studies of the three-hydropower projects lacked coherence and appeared biased against government-supported hydropower projects. A comparative analysis of the policies of funding agencies such as the WB and the ADB must be provided.

DAD guidelines: The recommendations of DAD are generic and need to be contextualised to meet our specific needs, in other words, 'Nepalised'. Some

of the proposed guidelines are complicated and implementing them would take unnecessary time. The question of looking at alternatives is commendable but we need to do more homework. DAD suggests a new approach to developing dams in an inclusive and democratic way. The seventh strategic priority, ***sharing river for peace, development and security***, is against the interests of an upper riparian nation. Prior to approval of Power Development Fund (PDF), the WB had notified Nepal's riparian nations. The Bank did not however, inform Nepal when it approved an irrigation sector reform loan to the Uttar Pradesh government of India. This behaviour was akin to 'double standard' on the part of the WB.

Past efforts: Many past projects have not met their designed objectives. The much-expected benefits did not trickle down to beneficiaries. A new approach, in which all stakeholders are involved in decision-making, is needed. But this process must be designed in such a way to avoid risks of unnecessary extension of time of project completion. Past river treaties have not benefited Nepal and the time is ripe for their review.

Livelihood: The planning and development of new dam projects need to consider the livelihoods of the Majhi, Bote and Raji communities who depend on rivers. If a project is likely to impact them negatively they must be appropriately compensated, rehabilitated, and their livelihoods sustained. River tourism is an important source of income; it also earns foreign exchange for the country. These aspects must be reflected in planning for water development. DoED needs to improve its licensing procedure so that it considers water development in a holistic manner.

Resettlement and compensation: In the past, efforts to resettle and compensate project affected families were inadequate. Such support should respond to the livelihood needs of the affected families. The level of awareness about the hardship project affected families face has increased but more serious work is necessary.

Basin Approach: While designing two projects under the Community-Managed Irrigation Sector Project (CMISP), the Department of Irrigation (DOI) has used a

basin-wide approach. It is expected that this approach will be followed in future projects as well.

Coordination: Institutional and procedural reform is key. Ministries, government departments and utilities should improve coordination among themselves. Much more creative effort is needed.

Role of Civil Society: Civil society members do not favour rules that may stifle dam building. Their concern is to improve a project's performance on technical, social and environmental grounds. Professional societies must play a more active role in these debates and the voices of civil society should be given logical space in decision-making processes.

Tariff: Nepali consumers pay one of the highest tariffs in the world. The Electricity Tariff Fixation Committee (ETAFIC) has been in existence for a few years but its contribution to policy process is not visible. The process of tariff restructuring must be transparent and its analytical basis must be made accessible to the public. This committee must be more visible to consumers.

Continuing dialogue: Nepal's national dialogue on DAD must continue. WECS would be an appropriate mechanism to facilitate this process.

Definition of a large dam: Nepal needs to formulate its own definition because the ICOLD definition is too small for the mountains and too big for the plains.

Session III

This session included a comment on the day's proceeding by Arun Dhoj Adhikari and summary by Dr Dwarika Nath Dhungel who facilitated the session.

Arun D Adhikary

- Most dams in the world were conceived in an era when development was perceived as top down and infrastructure guided. This approach accorded little emphasis to the human dimension and has not been successful in

delivering benefits. The efforts of the last 50 years did not link development to the actual needs of common people, whose condition did not change nor were people informed about what was planned for them.

- Development is not only about building a project or pursuing economic benefits; it also entails promoting social and environmental harmony. It is not enough for example, to construct a tap in a village: creating the social environment needed for a *dalit* to be able to collect water from that tap is equally important. This approach requires focussing on empowering communities and building human assets.
- We need new paradigm. DAD needs to be also seen from this perspective. It suggests an avenue for conceiving water projects within a new paradigm.
- DAD's five core values, seven strategic priorities and 26 guidelines appear to be a straightjacket, but one intended to put the state, which is the major dam builder, in a position of moral responsibility. Members of civil society can use the guidelines to challenge the government and, in the process, help build institutions, which minimise negative impacts.

Dr Dwarika N. Dhungel

- Dam builders must learn from past mistakes in order to help minimise social and environmental impacts while fostering equitable access to benefits from dam building.
- Public consultations about the role of dams must be held in all parts of the country not just the capital.

Views from Above: Key Government Officials

The scoping study organised a half-day consultation session with key government officials to solicit their perspectives (Annex 3c). Their views are summarised as follows

- **Role of dams:** A dam balances the seasonal variations of river flow and thus helps obtain benefits from water resources development.
- **Information sharing:** The sharing and communication of information among government departments must be improved. The Department of Watershed Management's work in Kulekhani catchment aims to minimise

sedimentation in the Kulekhani reservoir. The Department needs to share information with NEA but has been successful to a limited extent only.

- **Past learning:** Public discussions of issues related to water, energy development and natural resource management in the last decade have contributed to increased understanding but the scoping study did not look at the forestry sector.
- **Aquatic species:** Experience shows that fish passages and ladders do not serve their intended purpose. The dams built so far have negatively affected aquatic species. Effective measures to mitigate the effect of dams on aquatic life need to be investigated and implemented. Poaching has also decreased fish populations in many stretches of rivers. The question of the declining quality of fishing needs to be considered from a broader perspective.
- **Resettlement and rehabilitation:** Past efforts at mitigating the social and economic impacts of dams are inadequately covered in the scoping study report. The Kulekhani Project, for example, did compensate affected people. Kali Gandaki 'A' provided affected families with compensation and skill training. According to the NEA, a project cannot be expected to fulfil the inflated expectations of the affected community.
- **Provision of EIA:** The implementation of the Environment Protection Act (EPA) and the Environment Protection Regulation, (EPR) must be significantly improved. A project some times is conditionally approved even without conducting an EIA, a practice, which nullifies the spirit of the EIA, the EPA and the EPR. Due to a lack of clarity in legal provisions, the proposal of potential hydropower projects located within or adjacent to a national park have not moved forward. This issue needs serious consideration through interdepartmental coordination because many good dam sites are located within parks. By making innovative arrangements, a dam could be designed to benefit not only the people living there but also the national park which would in such cases be the recipient of the 10 per cent royalty from sale of electricity or regulated waters as valued. The challenge is to balance conservation goals with development.

- **Capacity for Conducting EIAs:** The MoPE lacks qualified manpower to conduct EIAs. This is one reason for the delays in sanctioning EIAs. This capacity needs to be strengthened.
- **Synergy with the National Water Strategy:** The issues identified by Nepal's WRS are similar to those raised by DAD. One approach envisioned in the WRS is the formulation of national water plan and basin-level water resource management. How this concept will influence the sharing of benefits at the local level needs in-depth analysis.
- **Follow up:** This dialogue has been useful and should continue in order to help formulate Nepal's own guidelines for developing good dams.

The views expressed in the consultative processes indicate the intellectual and practical challenges to developing and managing water in Nepal in a manner that will benefit the country and people. The issues identified clearly indicates that many disciplines and sectors are involved. The questions that they raise are conceptual and do not have clearcut answers. One analytical approach is based on the common-property, community-based school of thought, while others rest on organisational theories underlying the development of governmental and private sector organisations. Multilateral agencies such as the WB and the ADB emphasise economic instruments, private sector-based approaches and the reform of governmental agencies.¹¹ The intellectual context is, as a result, marked by ferment. As a consequence, the balance between theoretical perspectives on the one hand and the conditions on the ground as well as development and management needs on the other is often poor. How will an appropriate institutional approach evolve to address the emerging complex problems of water and energy development and management? This question does not have a clear-cut answer nor is simply creating more powerful bureaucratic authorities the way out. It is a matter involving continuous engagement among government departments, private sector organisations and civil society groups. Because Nepal is dependent on external resources for funding its development and dam building, such engagement also needs to take cognizance of guidelines of funding and other agencies. Each funding agency has its own set of guidelines, a comparison of which for Nepal's specific context, would be useful.

Guidelines of ADB and the WB

Both WB and ADB have endorsed the five core values and the seven strategic priorities suggested by DAD. The ADB states, 'for new hydropower projects, the approach recommended by the World Commission on Dams will be pursued.' The WB considers the WCD's report to be a major contribution to define the issues associated with introducing large infrastructure to developing countries and with engaging a wide variety of stakeholders in the debate over their construction. The WB intends to continue to work with its borrowers in the effective implementation of its current operational policies, which the WCD describes as '...the most sophisticated set of policies, operational procedures and guidelines amongst the international donor community.' The provisions of ADB and WB are compared in Annex 5.

Every funding agency pursues its own policies in the projects it funds. How Nepal will reconcile itself to these guidelines could be the subject of a more in-depth study that is beyond the scope of this one.

Guidelines of IHA

At this stage it is relevant to review the Sustainability Guidelines of the International Hydropower Association (IHA), which were produced in 2003 in order to promote greater consideration of environmental, social and economic sustainability in the assessment of new hydro projects and the management and operation of existing hydropower schemes. IHA is a member of Dams and Development Forum (DDF) and is involved in advocating that countries adopt IHA'S guidelines. In March 2004, when representatives of IHA met then Nepali Prime Minister Surya Bahadur Thapa, they mentioned its guidelines. The, IHA guideline they suggested, incorporated 'greater consideration of environmental, social and economic sustainability in the assessment of new hydro projects and the management and operation of existing power schemes.'

IHA's principles of sustainability consist of following five elements.

- Policy framework;
- Evaluation of alternatives and decision making processes;
- Hydropower and environmental management;
- Social sustainability; and
- Economic sustainability

Policy framework: It proposes the concept of eco-efficiency, which includes three broad objectives for sustainable development: (a) reducing the

consumption of resources, (b) reducing the impact on nature and (c) increasing product or service value. Secondly, it also advocates implementing National Energy Policies, including the Strategic Assessment (SA) process. The IHA also supports a framework of shared water management policies.

Evaluation of alternatives and decision-making processes: IHA proposes using ten key criteria to analyse options and eleven criteria to prioritise those options. The guidelines see EIA as a tool for assessing a broad political, social and economic context, particularly that surrounding a large hydroelectric power scheme.

Hydropower and environmental management: IHA identifies ten issues to use in optimising environmental outcomes for hydropower schemes. These issues are supplemented by twenty-eight mitigation options/strategies, which advocate the involvement of local communities, proper rehabilitation of affected communities and clear and transparent procedure to meet environmental objectives and sustainability criteria.

Social sustainability: IHA believes that hydropower schemes have the ability to reduce poverty significantly and to enhance the quality of life of the affected people. To be socially sustainable, hydro schemes need to recognise entitlements and share benefits with the directly affected people. The guidelines recognise that consulting the affected people and the fair and equitable distribution of project benefits particularly to the affected and vulnerable communities are two modalities which help achieve social sustainability. IHA suggests eleven steps in the process of achieving community acceptance.

Economic sustainability: Economic sustainability is a central plank in the decision-making processes associated with hydropower projects suggested by IHA. Decisions about economic sustainability are to be based on a comprehensive evaluation of the resources affected and the project's costs and benefits, some of which are difficult to quantify precisely. The guidelines suggest that stakeholders be identified early in the planning and development approval process and that their legitimate interests be acknowledged and taken into account in the financial and economic evaluation process.

IHA's guidelines focus on dams for hydropower development while those of DAD go to the extent of suggesting procedures from rights and risk perspectives.¹² The premises set by both guidelines agree on the need for people's participation in decision-making, assessing the alternatives, sharing benefits, ensuring environmental, social and technical sustainability and upholding the rights of involuntarily displaced people. Like the guidelines of DAD, IHA's suggestions are one more platform for countries to develop country specific guidelines.

In the next sections we provide observations on each of the seven strategic priorities proposed by DAD as they apply to Nepal.

COMMENTS ON STRATEGIC PRIORITIES

Gaining public acceptance

While legal provisions do incorporate measures enabling communities to participate in consultations, the challenge is to ensure that the process provides the space for genuine voices to be heard. How the acceptance expressed will translate into action is a key question in this regard. The notion of 'acceptance' is a relative one and difficult to measure. A term acceptable to one stakeholder might not be acceptable to another. Can the decisions of the majority meet the criteria for acceptance? Reconciling local and national-level acceptance is also necessary. Questions such as who is to define stakeholders and their representation have not yet been answered.

One of the main concerns in the large dam debate is that the rights of local inhabitants are often not recognised. They are involuntarily displaced and their livelihoods suffer when rivers are diverted. In the past, many involuntarily displaced Nepali families were not socially or economically rehabilitated though their number is lower than elsewhere in the world. The Kulekhani and Marsyangdi hydropower projects completed in the 1980s used land or cash and cash only method of compensation, but in subsequent project there has been a move towards social and economic rehabilitation. The Kali Gandaki A hydroelectric projects, for example used the Impoverishment Risks and Reconstruction (IRR) approach comprising eight components: landlessness, joblessness, homelessness, marginalisation, food insecurity, increased morbidity, loss of access to common property assets and social disarticulation.¹³

The limitations of the IRR measures were manifested to different degrees in the case of the Kali Gandaki Project. In the absence of policies that govern compensation to landowners

without legal titles some involuntarily displaced families were negatively affected in the formulation and implementation of resettlement and rehabilitation plans. Appropriate policies and practices can prevent impoverishment risks from becoming a reality while their absence exacerbates the risks among families involuntarily displaced by dam construction.

Though project documents claim that rehabilitation activities were successful, concerns have been raised publicly. This is also true of hydropower projects built by the private sector, about which stakeholders have expressed similar concerns. These issues need more in depth analysis than has been possible in this exercise. Nepal has moved up on the social learning curve compared to ten years ago, but much more needs to be done so that legal and statutory provisions can successfully deal with the social and economic aspects of rehabilitating families involuntarily displaced by development projects.

The rights and risks framework aims to institutionalise processes to ensure that the interests and rights of marginalised groups will not be ignored. Once this premise is accepted it is up to the state to put in place methods suitable to the context which facilitate consensus building and solicitation of consent in a transparent and inclusive way. Consensus cannot be reached instantaneously without sustained effort. Once the process is begun negotiations can take place. The risks borne by communities become evident and they can then be compensated in both social and economic terms. Such an approach can create incentives for dam construction and a new dam project can become beneficial at both national and local levels.

Conducting a comprehensive options assessment

Nepal's poor development indicator reflects the challenges the government faces in ensuring that the energy and water needs of Nepali are met reliably, cheaply and fast. Access to water related service is still unsatisfactory. At this stage, it will be useful to recount the conditions of three sectors; drinking water, irrigation and energy.

Best estimates indicate that only 71 per cent of the Nepali have access to safe drinking water. The coverage in the case of basic health, hygiene and sanitation is much lower.¹⁴ Except perhaps for the dam in the Bagmati River at Sundarijal, which meets part of Kathmandu's drinking water needs, most drinking water systems in Nepal use localised sources like springs and streams. Communities in the Tarai and the *bhabar* regions use groundwater to meet their domestic water needs.

Although, this study did not make a database for irrigation projects, it is clear that the structures built by the Department of Irrigation (DoI) do not fall into the category of large dams. Most structures are weirs and barrages, except perhaps for the

dam in Begnas Tal, Pokhara. In fact, almost 70 per cent of Nepal's irrigated area is served by farmer-built and managed systems, which use temporary brushwood diversions that do not permanently obstruct or divert flow. Instead, they permit the seepage of flow and thereby allow downstream users to tap into it for irrigation and other uses.

Dependence on external resources has brought about a concomitant decrease in the initiative of local communities, who show less interest in managing traditional irrigation systems than they did earlier. Another challenge is developing mechanisms for resolving disputes among users. The DoI needs to re-craft its role to meet the emerging constraints facing irrigation management in Nepal, where modern irrigation was introduced in 1928.¹⁵

Only about 18 per cent of Nepali have access to electricity services from the national grid. The WRS (2000) envisages that in 2025, 60 per cent of Nepali people will have access to electricity.¹⁶

The issue of assessing options needs to be analysed within this larger context. While EIA provides a platform to address issues such as water quality, this priority's focus is on the planning process through which projects are selected for implementation. The task ahead is to select a do-able path that makes basic services accessible and helps analyse the choices available at strategic and practical levels. What mechanism should be used to make those services available to the people? For water supply and irrigation sectors, the questions of options are related with institutional issues, not to the banality that there is no alternative to water. At both the strategic and the practical levels the questions are related to institutions, prices, and choices of technology.

In the energy sector, the issues also include the source of energy, institutions, and technology that need to be addressed at both levels. The possible sources of energy are conventional, which include biomass, agriculture residue, animal waste and biogas and commercial such as fossil fuels, hydro-electricity, solar, and wind. Demand management should also be considered where applicable.

The primary source of energy in Nepal is biomass. The use of biogas is popular and solar panels are being promoted to supply electricity in rural villages. And both have benefitted from government support in their promotion. In Kathmandu, the use of solar panels to heat water is widespread. HMG's Alternative Energy Promotion Centre provides support for implementing different renewable energy sources, including micro-hydro. The choice and promotion of a particular type of energy source to meet peoples needs is an issue that needs to be addressed at a national scale as it is within such conceptualisations that hydropower must be planned. Hydropower can help Nepal

reduce the country's dependence on imported fossil fuels, which are used extensively for transport and domestic cooking in urban areas. Given this high dependence, it is imperative that hydropower development be planned accordingly. Continuing reliance on petroleum-based fuel is unsustainable from the perspectives of expenditure of convertible currency and of pollution. These issues depend on the process of institutional changes including the need to consider price signals, incentives for enhancing efficiency, and organisational innovations.

The next step at the practical level involves selecting optimum projects on the basis of strategic impact assessments and baseline studies and screening out inappropriate projects. A multi-criteria decision-making framework has been used in a few cases to rank and select hydropower and irrigation projects for implementation. NEA's Medium Hydro Project employed such a procedure to select hydropower projects for a feasibility study. Similarly, the NEA prepared the criteria for a Coarse Screening and Ranking Study to identify and conduct a feasibility study of storage projects. The criteria are as follows:

- Road length,
- Transmission line length,
- Storage per cent of annual flow,
- Hydrological risk,
- Geological and geo-technical risk,
- Environmental/socio-economical risk,
- Sedimentation risk, and
- Financial risk.

On the basis of the above criteria, 102 storage projects were ranked, and eight projects were recommended for fine screening. However, the evaluation of the projects was based only on techno-economic criteria (NEA, 2000). In addition, the DoED has prepared a standard for making reconnaissance or preliminary, pre-feasibility and feasibility- level studies of hydropower projects based on their capacity and scheme type. On the basis of installed capacity, projects are classified into three types: between 1 and 10 MW; between 10 and 100 MW; and higher than 100 MW. On the basis of scheme type, projects are classified as run-of-river (RoR) or storage. For making comparisons, the standards include the following parameters:

- Topography,
- Hydrology and sedimentation,
- Geological/geo-technical factors,

- Construction and seismicity,
- Project configuration,
- Optimisation studies,
- Project design,
- Energy computation and benefit assessment,
- Cost estimate, construction planning and schedule,
- Environmental study,
- Project evaluation, and
- Presentation of drawings, maps and charts.

With regard to environmental and social aspects, the standard refers to the EPA of 1997, the EPR of 1997 and the amendment of 1998, IEE and EIA. For storage projects, additional parameters include additional geological studies, reservoir water quality, a study of resource loss by submergence and a resettlement study (DoED, 2001). In the mid 1990s a multi-criteria methodology was also used to select irrigation projects in the Mid West region of Nepal. Nine criteria groups (CGs) were decided upon and weightage given to each according to their perceived relative importance in achieving sustainable irrigation development. The criteria groups and their weightage were as shown in Table 8.¹⁷

These methods used in selection, though they are at a preliminary stage, show that the questions of distribution of sharing of benefits can be answered to in an equitable and rational manner, and that the methods are useful. But their use requires resources. Though a challenge for Nepal, the approach is worth pursuing.

The question of institutions is important, too. Nepal has already initiated some institutional reforms, one of which is the 'internal unbundling' of NEA within the existing NEA Act. This unbundling has allowed for the establishment of 18 'semi-autonomous' distribution centres covering all the major urban areas of the kingdom. This measure introduces separate accounting for bulk electricity sold by the grid and retail sales by distribution centre thereby helping prevent unauthorised consumption. This approach is useful for reducing loss and to make maximum use of existing facilities. The autonomy provided to the managers of centres creates incentives for better internal efficiency and makes addressing local grievances easier than through centrally controlled systems.

TABLE 8:
Screening criteria and their weightage

Criteria Groups	Weightage (%)
Water resources	18
Land and agriculture resources	16
Engineering	11
Environment	10
Local infrastructure	7
Support services	6
Participation	16
Human condition	11
Economics	5

The passing of the Community Electricity Distribution Bylaws of 2003 also allows any organised and registered rural group to buy electricity in bulk from the NEA and retail it amongst themselves. Groups that invest in their system, get returns from the tariff to the extent of their investment. The measure is intended to ensure better accountability, to reduce 'un-metered' consumption, and to allow remittances flowing into Nepal's rural hinterland from migrant workers abroad to be invested into productive enterprises. This creates a move towards the 'communitisation' of the sector at the distribution level. The NEA has decided to entrust 25 community-based organisations with managing and distributing electricity in rural areas. They were selected among 95 applicants from across the country. Out of selected organisations 21 are from areas with an existing network of electricity; the other four are from new areas that need to be electrified.¹⁸

An issue in the assessment of options is the question of restructuring electricity tariffs, which is required as a conservation measure designed to discourage consumption during peak and dry seasons while encouraging use of spill energy during off-peak and wet seasons. Such a measure is also necessary to balance Nepal's power system. Tariff restructuring can also introduce and test the proposition that revenue from a utility can go up by increasing sales rather than merely by increasing tariff. In April 2003, the NEA board passed a proposal for restructuring of electricity tariff, which was sent to the ETAFIC for approval and was to be in force from July 2003. The restructuring has not, however, happened as the ETAFIC is still debating the proposal.

In the last eight years, nine hydropower projects were implemented: Puwa Khola, Khimti, Modi Khola, Bhote Kosi, Kali Gandaki 'A', Chilime, Puluwa Khola, Indrawati and Syange. The implementation of these projects demonstrates the various institutional possibilities for developing hydropower projects. These were facilitated by the 1992 hydropower policy and by the announcement of buying rates in 1997. Nepal's hydropower policy terrain is plural and dynamic though substantial improvements are needed to address the existing constraints and the many second-generation problems that have emerged.

Addressing existing dams

How many dams are there in Nepal and how many of them are large? Using WCD's definition, four of Nepal's hydropower dams fall in to the category of large dams (Table 12 as well as Annex 2). However, since all the dams except Kulekhani are run-of-river types, this classification cannot apply without qualifications. The issue of coming out with country's own definition is discussed further below.

Of the existing hydropower dams, only two have been rehabilitated: the Trisuli Devighat projects and the Kulekhani plant after the floods in 1993. The rehabilitation of existing systems is common practice. Often, the recognition of existing problems goes a long way in responding to past wrongs and proposing appropriate solutions. When, in complying with their commitment, implementing agencies improve their performance and respond to issues previously unaddressed, people's confidence in them increases. This process may begin with making public statements, rehabilitating families, or providing appropriate development assistance. Confidence building makes it easier to establish the dialogue needed to gain consent for the future. Taking a positive step, the NEA has recently published a document called 'NEA Generation', which includes technical details about plants currently under its management as well as those it has proposed. This is a useful beginning in disseminating information. By adding the social and environmental dimensions of those plants the document would become more comprehensive and thus serve as a useful stimulus for beginning informed public dialogues.

In terms of Nepal's irrigation dams the main issues are operation and maintenance as well as management to maximise productivity from the water allocated. The new Irrigation Policy of 2003 has a provision for bringing farmer organisations to the centre stage of irrigation development and management. The policy suggests measuring progress in irrigation by the actual amount of water delivered to a specific irrigated area for a particular crop/season rather than by construction and financial allocation. It also allows farmer groups to seek compensation from the government if, due to its negligence or error, they suffer. Bridges between the government and farmers and their representatives need to be built in order to bring about changes and address the constraints that the management of irrigation faces.

Sustaining rivers and livelihoods

The result of significant scientific advances in understanding the relationship between hydrology and ecosystem integrity is the emphasis placed on environmental flow releases, which are essential for meeting the needs of downstream users and ecosystems. In many cases the ecosystem in question sustains fish populations, which form the livelihood base of certain communities. In the Himalayan rivers, river tourism is an established and popular economic activity. White water rafting is also a source of employment and foreign exchange. In Bhote Kosi River, for example, white water rafting generates about US \$ 1.7 million revenue annually and employs about one thousand six hundred people.¹⁹

In Nepal the following two broad types of river water diversions are practiced:

- a. Upstream diversion of water and its release downstream in the same river corridor (e.g. Trisuli, Marsyangdi, Kali Gandaki, Bhote Kosi, Sun Kosi, etc.).
- b. Water diverted into another river corridor in an adjoining basin (e.g., Kulekhani to East Rapti, Jhimruk to Mari, and Khimti to Tama Kosi).

The idea of releasing flow for environmental requirements and downstream users is not a new concept in Nepal. In the 1996 Integrated Treaty on the Mahakali River there is a provision for releasing '10 m³/s flow as ecosystem needs' (Article, 1 (2)). Article 7 of the treaty says, that hydropower use 'shall not preclude the use of water of the Mahakali River by local communities living along both sides of the Mahakali River not exceeding five per cent of the average flow at Pancheswar'. The design of the Kali Gandaki Project provided for the release of 4 m³/s. The 2001 Hydropower Development Policy also has a provision for flow release. Article 6.1.1 states 'an arrangement shall be made for 10 per cent of the minimum monthly average flow or the amount of water mentioned in EIA study, whichever is greater to be maintained in the river/rivulet.'

A major difficulty in applying this principle is the lack of understanding of specific aspects of the interdependence of upstream diversion and downstream ecosystems and users. The WCD did not have sufficient information with which to make strategic recommendations. Information is lacking in Nepal, too, though it is known that flow release is important for downstream users, particularly to operate farmer-built and-managed irrigation systems. If this need is not acknowledged, it may result in disputes or livelihoods may be lost. More research into the nature of interdependence will be needed. We need to investigate existing conditions and prepare baseline assessments. Once the context is known, the local needs can be made explicit and approaches to meeting those needs sought in a locally appropriate manner.

Recognising entitlements and sharing benefits

HMG has begun disbursing 10 per cent of the royalties it earns from electricity sales to affected DDCs as per the Local Self-Governance Act and Regulation. In 2000/2001 sixteen districts had received NRs, 579,000 under this provision.²⁰ There is also a provision to provide one per cent of the royalties obtained from electricity sales to affected VDCs to use for rural electrification. However, this amount has not yet been delivered. An ordinance was passed in January 2004 amended some existing provisions of the Local Self-Governance Regulation relating to revenue allocation. According to the new amendment the concerned District Development Committee that houses the powerhouse shall be

entitled to the 12 per cent amount to be obtained by HMG for royalty of electricity production. And 38 per cent of the royalty shall be provided to the concerned Development Region in which the electricity is produced. The later amount will be allocated and distributed among the DDCs of the Region as per decisions made by joint meeting of the Chairpersons or authorised representatives.²¹ By making this provision, HMG has recognised the notion of local rights: allocations are a means of operationalising those rights. This provision can create a basis for helping involuntarily displaced families if they are made beneficiaries to the shared benefits. Much more work must be done in order to obtain a conceptual handle on allocating the revenue. To this end, local bodies, with support from government agencies, local civil society and development practitioners need to take the initiative in identifying modalities.

At the same time, DDCs, which receive the royalties, need to be supported so that the amount is invested in a manner which enhances forward and backward linkages. While turning over some percentage of royalties is a welcome beginning, it also brings to the fore the question of regional equity a question which has also to be addressed. For example, how will Tarai districts, which have no geographical scope for building a hydropower project, benefit or district with no development because there is no grid? Building the capacity of DDCs to manage revenue is another critical issue. Continuous engagement among stakeholders is needed in order to come up with acceptable measures. Whatever provisions are implemented must be monitored and evaluated regularly in order to bring about improvements. Recognising the entitlements of local regions signifies a shift from urban bias to an understanding that project development should contribute to the social and economic upliftment of the region in which a project is located.

The initiative by CARE Nepal, which is implementing a Strengthened Actions for Governance in Utilisation of Natural Resources (SAGUN) programme, deserves mention here. The main objective of the programme, which is financed by USAID, government and non-government partners, is to strengthen the capacity of local stakeholders (e.g. DDCs, VDCs and CBOs) to deal with the effects of hydropower development. The programme aims at internalising good governance practices so that equity in access to and benefits from natural resources (hydropower) is established, specifically among women, the poor and other disadvantaged groups. The programme works at the interface between the affected community and the power developer so that themes such as participation, accountability, transparency and predictability are internalised in the development of hydro projects for mutual benefit. The programme is being implemented in three hydropower projects at different stages

of development. Upper Modi, Kaski District; Middle Marsyangdi, Lamjung District; and Khimti I, Ramechhap and Dolkha districts are the targeted projects; they are at the pre-construction, construction and post construction (i.e. operational) stages respectively. The goal of targeting three projects at different stages of development is mainly to learn and then cross-fertilize that learning. Winrock International is also investigating how those who live in upper watersheds could be compensated for the environmental values they generate. The lessons from both exercises can provide useful practical tools.

Ensuring compliance

Ensuring compliance with existing guidelines and commitments was identified as a major limitation during the consultative meetings. Participants in the consultative process spoke of the need to improve compliance. Policies and guidelines identify mechanisms for promoting compliance, including the use of incentives. Building on these procedures and introducing greater transparency will further increase the effectiveness of the process. Ensuring compliance poses a major challenge: much more needs to be done to translate commitments into actions.

Sharing rivers for peace, development and security

This strategic priority is limited on two counts. First, the WCD did not review the ongoing discourses on trans-boundary water debates among the countries of South Asia, so its analysis is not well informed about the nature of problems here. In fact, there is only a single reference to trans-boundary water issues in South Asia. In Nepal, however the inundation of land along the border region due to embankments built in Uttar Pradesh and Bihar is a major concern. Incidentally, these are not large dams by ICOLD's definition, but generally low-height embankments, which have interfered with natural drainage causing inundation in Nepal.

The second, limitation is that one of the defining issues of the seventh priority suggested by DAD is biased against upper riparian nation. This defining issue suggests that riparian nations make prior notification of their plans for trans-boundary rivers.²² This defining issue, which seems in favour of lower riparian countries has serious implications for the trans-boundary issues in South Asia, particularly for nations in the upstream like Nepal.

The implication of this issue was seen before the WB approved the loan for PDF, for which it followed its operational guideline 7.5. This guideline states, 'the beneficiary

state should formally notify the other riparian of the proposed project. If the borrower indicated to the bank that it doesn't wish to do so, normally the Bank itself does so. If the beneficiary state objects to the Bank doing it, the Bank discontinues processing of the project.' The WB had sought to and notified Nepal's riparian nations as per its operational guideline. The Bank did not however, inform Nepal when it approved an irrigation sector reform loan to the Uttar Pradesh government. Both government and civil society representatives have seriously questioned this role of WB. The other defining issue included in the seventh strategic priority suggests sharing of information, which is laudable. But one must recognise the 'real politics' involved in trans-boundary water sharing and though efforts for sharing information between and among riparian nations continues, it has remained an unachievable goal, whose resolution needs more creative engagement between and among the different social solidarities of the riparian nations.

The formulation of the ideal of peace and development is welcome. However, it falls short of offering modalities for addressing the contentious issue of trans-boundary water and neither takes cognisance of the context of South Asia.

Sharing trans-boundary rivers is a complex question, which is governed by bilateral relations, geo-politics and socio-economic realities among and between the concerned co-riparian countries. This issue requires more in depth analysis than the suggestions DAD provides. The analysis needs to explore new institutional arrangements for sharing resources among and between the countries of South Asia so that people's needs are met, their lives are made more secure than they are at present, and perceptions of national security addressed.

IDEAS, DEBATES, CHANGES AND POLICY PROCESSES

The WCD arguably reflects the culmination of the development debates of recent times. The decade of the 1950s was marked by jubilation over independence in developing countries, while the 1960s was a period of 'trickle down' development. The 1970s launched participatory discourse and the tumultuous decade of the 1980s ushered in a major shift in the global geopolitical landscape. The decade of 1990s was remarkable for two contradictory, trends: the globalisation of the world economy and the information revolution on the one hand, and the increasing impasse and disputes generally over development and particularly over water resources development.

Globally governmental, NGO and multilateral actors involved in these debates staked their philosophical territories and domains of interest. The debates and the philosophical positions they related to were not, however, just about the technical, social and environmental impacts of large dams. Instead, although ostensibly conducted on the basis of 'objective' technical or economic considerations, they reflected fundamental divisions regarding the perception and nature of development and its relationship to the structure of society. The differences over dams are, in many ways, also a proxy debate between two sides. On the one hand are proponents of government and multi-national market-led approaches to social organisation and development. On the other are those whose worldviews are rooted in notions of egalitarian, community-based forms of organisation.²³ These debates are inherently political and, it is no surprise that WCD process was political when it began and continues to be enmeshed in the politics of development. The debates will continue, but the task before those with well-meaning intent is to see how common positions can be found.

Debates and discourses, however, do influence, thoughts, ideas, and 'policy process' in a nonlinear and indirect sort of way. The preceding discussions on equity, efficiency, consultative decision-making etc. show this non-linearity. On such principles broad unanimity exists among various stakeholders. The suggestions of DAD or guidelines by IHA, WB or ADB, for example, suggest that in future, planning and decision-making can be improved by drawing lessons from past experience. Such notion of consultation and participation builds on the Dublin Principles and Agenda 21. Also the 'rights and risks based approach suggested by DAD transcends the conventional cost-benefit analysis. It focuses on sustainability, and urges that options and alternatives be investigated. These find reflection in Nepal's acts, rules, regulation, and policies (Table 9).

If there is consensus on the governing principles and values where is the problem? The disagreement is about DAD's 26 guidelines. This was also revealed during our scoping exercise. The following observation by the WB reflects this perspective. The WB reckons that, if followed literally, the guidelines would make it all but impossible to build large dams. Other global changes in the aftermath of publishing DAD also reflect the views of the WB on WCD. This multilateral agency, which was one of the primary stakeholders in the WCD process, has isolated itself from the guidelines of DAD, according to *The Economist*. The magazine has reported that under pressure from its Indian and Chinese executive directors, the WB's new water resources strategy released in February 2003, backs away from DAD.²⁴ The Water Resources Sector Strategy: Strategic Directions for WB Engagement (2003) states:

TABLE 9:
Comparison of the Principles of DAD with the Policies of Nepal

Acts, Rules and Regulations	Policies	10 th Plan (Strategic Policies)
<p>The constitution of the Kingdom of Nepal, 1990</p> <p>Clause 11: <i>Right to equality</i> Local Self Governance Act, 1999 (Part 3) Principle and policies of Local self governance</p> <ul style="list-style-type: none"> ▪ Devolution of powers, responsibilities, and means and resources as are required to make local self governance. ▪ Building and development of institutional mechanism and functional structure in Local Bodies capable of considering for local people and <i>bearing responsibilities</i>. ▪ Devolution of powers to collect and mobilise such means and resources as are required to discharge the functions, duties, <i>responsibility and accountability</i> conferred to the Local Bodies. ▪ Having the Local Bodies oriented towards establishing the civil society based on <i>democratic process, transparent practice, public accountability, and people's participation</i>, in carrying out the functions devolved on them. ▪ For the purpose of developing local leadership, arrangement of effective mechanism to make the Local Body <i>accountable</i> to the people in its own areas. ▪ Encouraging the private sector to participate in local self-governance in the task of providing basic services for <i>sustainable development</i>. 	<p>Hydropower Development Policy, 2001</p> <p>Policy 4.1 : Extension of hydropower services to the rural economy from the perspective of <i>socio-equity</i>.</p> <p>Policy 4.2 : Pursuance of investment friendly, clear, simple and <i>transparent procedures</i> to promote private sector participation in the development hydropower.</p> <p>Water Resources Strategy, 2002 Policy principles are guided by integrated Water Resources Management concept, sustainability to ensure conservation, decentralised autonomous and accountable water services agencies, economic <i>efficiency and social equity, participation of stakeholders and transparent</i> water sector management.</p> <p>Kathmandu Valley Strategy on Water Supply and Sanitation, 2057 Make provisions for <i>efficient, effective and equitable</i> service delivery</p> <p>National Water Supply and Sanitation Sector Policy, 1998 Policy 4.7: <i>Transparency and consultation</i></p>	<p>Hydropower Development</p> <p>Policy 7: To ensure <i>social justice</i> hydro power services will be provided upto the rural economics Policy 9: For ensuring domestic consumption and export, and to increase the involvement of the private sector, in the development of hydropower. simple and <i>transparent</i> processes will be adopted.</p> <p>Water Induced Disaster Management Policy 1: To manage water induced disasters, policies and work plan will be formulated so that the <i>institutional capacity</i> of increased, Policy 2: To minimise the impact of the water induced disasters and create awareness among the people, <i>peoples participation/ mobilisation</i> will be ensured/increased with consumers</p> <p>Drinking water and Sanitation Policy 2: Drinking water needs of rural population will be met through their <i>active involvement and participation</i> by making maximum utilisation of local resources.</p>

The World Bank has conducted a detailed comparison of the 26 WCD guidelines vis-à-vis the Bank's safeguard policies. Although there was much in common, several important differences existed. First, while there is agreement on the importance of the rights of affected and indigenous people, in the judgment of the World Bank, the adoption of the WCD principle of 'prior informed consent' amounts to a veto right that would undermine the fundamental right of the State to make decisions which the State regards as being in the best interest of the community as a whole. Second, while there is agreement on stimulating good-faith negotiations on international rivers, World Bank experience (and its policies) are based on proactive engagement rather than disengagement from countries who are not already engaged in good faith negotiation with their neighbours on

international waters (as advocated by the WCD). And, third, while there is agreement on the importance of consultation and public acceptance, experience suggests that the multi-stage, negotiated approach to project preparation recommended by the WCD is not practical and would virtually preclude the construction of any dam.

In the Rio Plus Ten Summit held in Johannesburg, hydropower did not figure as a renewable resource. The Camdessus report, prepared to cover the issue of financing the Johannesburg Millennium Development Goals (MDG) barely mentions DAD or its guidelines. While they reflect the nature of the larger debate, it is worth mentioning that the WB has endorsed WCD's five core values and seven strategic priorities.

A number of other international events on water also suggest the need for a more creative way forward. In March 2003, the Third World Water Forum was held in Japan. The Water Voice Project Report presented at this forum captures the issues surrounding water from multidisciplinary, cross-sectoral and multi-faceted perspectives, including poverty, peace, governance, Integrated Water Resource Management (IWRM), food and environment, climate, cities, water supply, sanitation, hygiene and pollution, nature and the environment, agriculture, education and capacity building, floods, energy, cultural diversity, information, finance, science and technology, management, dams and sustainable development and public private partnership (PPP).²⁵

Two issues that are important to the dialogue on dams and water are the interface of water and poverty. The interface is conceived as follows:

1. Poor people do not have access to sufficient clean water.
2. Poor people have no choice but to live on nonproductive land unsuitable for irrigated agriculture.
3. Water policies are dominated by rich people and hardly benefit the poor (poor people obtain water at prices higher than those for tap water).
4. Among the poor, women shoulder the burden of most of the unpaid labour (fetching water, cooking, etc.) and are especially disadvantaged.

In the case of water and energy, the forum had two key observations:

1. An energy source is needed to serve as the driving force in any society that wants to continue developing. Hydropower can play an important role as a clean and sustainable source of energy that takes the environment into consideration.

2. Dam construction is required for hydroelectric power. Dams have a big impact on the ecosystems of rivers and river basins and also have a social impact, especially in terms of causing the migration of large numbers of people.

The measures suggested to address the above-mentioned challenges were as follows:

- Advance sustainable forms of power generation and the debate related to its practicality
- Advance the debate related to the consolidation of hydroelectric power generation for the purpose of efficient dam management

The Kyoto statement of the dams theme is also supportive of DAD. Although the Kyoto statement did not explicitly mention DAD, it endorsed an improved decision-making process based on the DAD's five core values and paraphrased most of its strategic priorities.

It is been more than six years since the WCD process began, and almost four years since WCD published its report in 2000. Today in the new Gregorian century, new challenges have emerged since 9/11. Other events with a bearing on water resource development include are the Millennium Development Summit in 2003, the consolidation of World Trade Organisation, aid fatigue and corporate scandals. These events will have far reaching consequences on how water is developed and managed and how dams are built. India's recent proposal to link rivers is yet another process with serious implications for water development and management in the Himalayan region. The ongoing political uncertainty and violence in Nepal are country-specific influences that demand specifically-tailored attention on the issue of dams and development.

STRATEGIC PRIORITIES: THE BASIS FOR A WAY FORWARD

What do these foregoing conclusions mean for the efforts of developing water resources, dam building and related policy processes in Nepal? The country is facing enormous challenges, as one of the least developed countries in the world as measured by modern economic indicators. The majority of the people do not enjoy access to basic services like health, drinking water, education, housing, sanitation, employment or a reliable supply of energy. The country has to harness its water resources so that its people benefit. In doing so, Nepal must avoid the mistakes that other countries have made; it needs to develop good and not bad dams. In this endeavour, the government should

play a key role in creating a suitable framework for action. The question is, what makes a dam good? No simple, straightforward answer exists but answers must be found. And one simple answer could be posited thus: water resource development and dam building in Nepal must maximise benefits for the people and the country while minimising adverse impacts. WCD, and other platforms can help us begin the process of answering the above questions not with a prior judgement but in a socially more engaged fashion.

Since the disagreement is on the 26 guidelines it would be helpful to compare Nepal's legal provision with them and their 152 defining issues which further expand the guidelines. Table 10, which is an indicative comparison of Nepal's legal provisions with sixth SPs, shows a semblance of commonality. The seventh priority as mentioned above is biased in favour of lower riparian, and since it requires deeper analysis, Nepal need not follow this strategic priority.

TABLE 10:
Indicative Comparison of SPs and Legal Provisions

Strategic Priority	Key issue	Status of Nepali Policies	Remarks
Gaining Public Acceptance	Recognise rights, address risks and safeguard the entitlements of all affected people who are in social and economic margins. A transparent and inclusive consultation process for participation.	Public participation is a accepted strategy. The procedure is more institutionalised in water supply and irrigation sectors.	Improvement needed as a continuous process
Conducting Comprehensive Options Assessment	Investigate range of policy, institutional and technical options providing equal weightage to social and environmental as well as economic and financial aspects.	EPA, EPR and National EIA guidelines, help identify social and environmental issues at project level.	Option assessment needs to be tackled at national level.
Addressing Existing Dams	Respond to changing circumstances over the project's life to address outstanding and emerging technical, environmental and social issues.	Past experience is limited. Institutional capabilities need to be enhanced to suite changing circumstances.	NEA's recent publication contains technical details of plants. Addition of social and environmental issues suggested.
Providing Sustaining Rivers and Livelihoods	Protect and restor ecosystems to foster equitable human development and the welfare because livelihoods of local communities depend on them.	Some provisions analyse livelihood issue (EPA, EPR).	Assessment of local needs has to be made at the planning stage of a project.
Recognising Entitlements/Sharing Benefits	Provide for entitlements at national and international levels so that local people (including directly affected) receive benefits from projects to improve livelihoods and quality of life.	Provision of royalty to DDC's and VDC's.	Need to strengthen the mechanisms of sharing benefits with local and affected people.
Ensuring Compliance	Meet commitments and effective actions.	Needs to be considerably improved.	CBOs and Use's Groups can help monitoring.
Sharing Rivers for Peace/ Development/Security	Promote mutual self-interest for co-operation through peaceful collaboration.	The collaboration is guided by bi-lateral treaties.	Biased against the upper riparian.

A more specific picture is obtained when a summary of the provisions are compared with DAD's defining issues, to provide a basis to judge relevance of the 26 guidelines (Table 11). To do that, the 143 defining issues* are grouped into the following four types: a) addressed by legal provisions, b) practiced in Nepal but not mentioned in legal provisions, c) adaptable in short-term (5-10 years) and d) adaptable in long-term (10-20 years), as listed in Table 10.²⁶ The table also provides a summary of the status. In Annex 4, the grouping's relevance is indicated by asterisks. A note on group (b) would be useful here. This group includes activities that are performed as related to the defining issues but they are not mentioned in the country's legal provisions. One example is the monitoring of reservoir sedimentation. Nepali legal provisions do not mention that sedimentation rate be monitored but was measured in Kulekhani Reservoir, till 1998.

Table 11 shows that twenty eight per cent of the 143 defining issues conform with Nepal's legal provisions. Forty-eight per cent can be reconciled in the next 5-10 years. Eight per cent of the issues are being carried out even if they are not mentioned in legal provisions. The remaining 16 per cent issues are of long-term implications and presently hold only academic importance and can be deferred.

TABLE 11:
Summary of Defining Issues and Framework for Adaptation

Strategic Priorities	No. of guidelines	No. of defining issues	Addressed	Practiced but not mentioned in provisions	Framework for adaptation	
					Short-term (5-10 yrs)	Long-term (10-20 yrs)
Gaining public acceptance	3	12	6		6	
Conducting comprehensive option assessments	8	49	13	6	14	16
Addressing existing dams	2	29	3	5	16	5
Sustaining rivers and livelihoods	3	15	5		10	
Recognising entitlements and sharing benefits	4	17	7		9	1
Ensuring compliance	5	21	6	1	13	1
Sharing rivers for peace and development**	1	9*				
Total	26	152-9=143	40	12	68	23
Percent			28	8	48	16

* These nine defining issues not included. Out of 152 defining issues, this study indicates relevance of only 143. The remaining nine issues related to the strategic priority; Sharing Rivers for Peace, Development and Security, as mentioned earlier, needs more indepth analysis.

** The seventh SP and its 9 defining issues are not included in the comparison

Nepal's legal provisions do reflect synergy with the values SPs and DIs suggested in DAD. In addition, many policy initiatives, which offer new opportunities in water and energy management and development, have been introduced in Nepal in a pluralised policy terrain. A foundation to proceed with in preparing the country's own guidelines exists. Developing such a guideline is recommended as away forward.

This process can begin by working on the six strategic priorities (SPs), which can provide a starting point from which discussions about local processes of negotiation can move forward. Indeed, DAD does emphasise the responsibility of governments for making the policies and legal frameworks essential for more inclusive decision-making. Openness on all sides, renunciation of an adversarial approach and promoting dialogue among all stakeholders form the foundation of the rights and risks-based approach. The nature of the most appropriate mechanism varies from country to country.²⁷ This scoping exercise has underscored the necessity of developing Nepal's own guidelines to suit local conditions.

This conclusion matches the following comments made by Kader Asmal, the Chair of the World Commission on Dams, about the DAD guidelines. He has suggested that:

... guidelines offer guidance, not a regulatory framework ... they are guidelines with a small 'g' that illustrate best practice and show all nations how they can move forward. But guide us they should, as they will reduce the risks of all parties involved.

RECOMMENDATIONS FOR FURTHER ANALYSIS

On the basis of the above discussions, we highlight the following points as issues for further analysis. These issues are important and will contribute toward making good dams in Nepal if any.

- **Access to information:** Information establishes the text about which perspectives are formed and solutions negotiated. So access to information is key. It must be remembered, though, that information is not always neutral. How it is generated and to what end, who controls it and how it is disseminated, determine the level of analysis and the formation of perspectives. Information can help a community become aware of the benefits, costs and risks of a project in terms of their lives, livelihoods and surroundings. It promotes the informed

dialogue and also helps set the priorities. Most of the community discontent is a result of too little, partial or plain incorrect flow of information. Though it needs to be accessible to all, it is of limited value unless it can be interpreted and analysed in time. The challenge is to institutionalise a process that allows for the flow of information from the top to the bottom and vice versa. Information flow to communities must be in a language that they understand. The existing means of communication must be used, but also improved upon.

- **Participatory decision-making and consultation processes:** In Nepal, participatory approaches to implementation are practised in the irrigation and drinking water sectors. The EPA, the EPR and the National EIA Guidelines recognise the need for involving people in identifying social, economical and environmental impacts of new projects. Majority of the participants in the consultative processes of this scoping exercise suggested that local consultation processes be more open and inclusive.

Public consultation and hearings are becoming a major part of all projects. Especially while conducting an EIA, it has been the step, which tries to reflect the people's concern about new developmental activities. The process has been limited, however, on several counts. The level of people's education and awareness, the time and season (harvesting and festival) in particular of the consultation or hearing and the facilitation skills of the people involved have limited the participation of the community in the process. Yet, the process must made more inclusive and effective.

Local communities need to be involved not only during the planning and development phase of a project but also throughout its life cycle. By involving community members they become not only informed but also accountable. Informed citizens can help in the timely completion of projects. Conducting stakeholder forums with representatives from various interest groups (local youth clubs, women's groups, mothers' clubs, community-based organisations, non-governmental organisations, users committees, federations including VDCs, and DDCs and national-level government utilities) is one way of enhancing consultation by broadening its base.

- **Maintaining livelihoods:** In many cases, when upstream dams divert water, communities which live in downstream areas, are affected, some may even lose their livelihoods. Communities of Bote, Raji and Majhi whose livelihood depends upon flowing rivers can be seriously affected. Many stretches of Nepal's rivers are used for white water rafting, which contributes to the country's economy and provides significant employment. Any approach to developing and managing water must adopt a broad perspective, which takes cognisance of these benefits.
- **Acquisition, compensation and rehabilitation:** The Constitution of the Kingdom of Nepal 1990 guarantees some fundamental rights, including property rights, to citizens. On the other hand, it also empowers the state to acquire citizen's land for public welfare without specifying what type of works are included within the purview of public welfare. The laws used as the main legal bases for dealing with land acquisition are outdated and are not very sensitive to the problems of affected families. Transparency and stakeholder participation in various decisions that have long-term implications for the welfare of project-affected families is lacking and rehabilitation is often delayed.²⁸

Clear policy statements must be made in order to address the issues of compensation and rehabilitation. Policy should focus on adequate compensation of physical and social assets; resettlement, compensation and rehabilitation as an integral part of project development; integration of a resettled community into its host community; special attention to women, indigenous and vulnerable groups; and the establishment of a system of monitoring resettlement activities before, during and after the payment of compensation. The objective of compensation must be to ensure that no one is left homeless and without a means of livelihood after involuntary displacement.

- **Monitoring, compliance and social auditing capacity:** Improving the monitoring of and compliance with existing provisions remains a challenge. Several factors lead to poor monitoring and compliance. Poor information flow, resource constraints and dependence on an expatriate panel of experts for monitoring have interfered with the institutionalisation of local capacities. By involving the affected community in monitoring activities, a new mode of arrangement for compliance must be explored. Efforts to build local capacity on a long-term basis are needed.

- **Benefits sharing and equity:** The objectives of many water resources projects include contribution to meeting regional development goals, both within the watershed and outside of it. The notion of regional development brings out the importance of equity and benefit sharing.²⁹ These objectives were accorded importance in the past projects. How they can be achieved and how project can contribute to regional development goals are two new challenges. New arrangements are in place to share part of the revenue. HMG/N's recent initiative to provide 50 per cent of royalties from the sale of electricity to affected districts is a welcome step. The provision of one per cent royalty to VDCs for meeting rural electrification objectives is a similar positive initiative. Two issues emerge important with respect to benefits: first, that the benefits actually contribute to the well-being of the districts and VDCs, and second, how they without a hydropower base or generating capacity or being left out in the hydropower planning process can benefit. Districts and VDCs that receive benefits will also need support in investing the income properly for productivity.

- **Revisiting legal provisions:** Nepal's EIA guidelines address some critical issues associated with water and dam projects. Although they provide a foundation for addressing environmental and social issues, they have no legally binding status. While the EIA guidelines are encompassing as they cover many social and environmental issues, the EPA and the EPR are not. They need to be modified to suit the spirit of EIA. Other acts and rules need to be made coherent in view of emerging technical, environmental and social concerns.

- **Social upliftment programmes (SUP):** The EIA process suggests measures for mitigating the social and environmental impacts of new projects. There are different modalities of SUP depending upon the donors and the consultants involved. The challenge is to reconcile the issues of scale and complexity, particularly in relation to a hydropower dam project. Once approved, a hydropower project has to be implemented within its own norms, priorities and quality control. The scale is larger and more complex than the micro context of households. The flip side of the coin is social impact mitigation and the implementation of a social upliftment programme within whose micro-scale those impacted at the individual, household, and local community level are provided with support.

Such support includes activities related to poverty alleviation, micro enterprise, education, health and hygiene, drinking water supply, micro irrigation and gender disparity. How should such support be managed? Should the project that causes the impact itself implement them directly or should we follow an alternative way by involving grassroots support organisations? Many such organisations have already built the analytical tools and the institutional base needed to help enhance the human capacity to adapt to changes in implementing these tasks. This question is important. A review of the methods of support used in past projects can provide the contours of new institutional possibilities.

- **Existing water use pattern:** Similar lessons can be obtained by studying the conditions of water users in river stretches where dams have already been built. Such study should look at social issues, future needs, water quality, attitudes of the community towards ecology, and how local needs can be met in an equitable manner. The studies need to look into issues such as performance of existing systems, periodic review of licensing arrangements, basin-wide understanding of the functioning of the ecosystem and its link with livelihoods, and a policy for white water rafting.
- **Social learning in the water resources sector after 1990:** Since the restoration of multiparty democracy in 1990 there has been a remarkable sensitisation among the people about their rights. Similarly, there have been several reforms in government's policies in view of the newly liberalised political environment. The constitution of 1990 guarantees the people the right to information, the right to organise and form groups and the right to contest the policy terrain. The democratic space in a pluralised policy terrain in the aftermath of the liberalised political environment has created incentives that did not exist prior to 1990. The WRS has, at the very least, captured some elements of the discussion. The experience after 1990 needs more analysis for the lessons it holds for discerning institutional innovation in water and energy resources development and management.
- **Implications of international legal instruments:** Nepal is a state party to more than four-dozen international human rights and environmental treaties and agreements of the United Nations and is a signatory to various related

declarations and programmes of action. These instruments place many obligations upon the government of Nepal, which include access to information, public participation in decision-making, environmental management, social and economic benefit sharing, ecological conservation and preservation of livelihoods. Article 9 of the Nepal Treaty Act of 1991 has made further provisions declaring that respect for and implementation of these international treaties take precedence over domestic laws. The issue of compliance with relevant strategies and guidelines can be considered synonymous with the implementation of the country's already established international as well as domestic commitments and obligations. These issues need to be looked into as a follow-up activity in the process of consultation and engagement.

- **Multiple criteria screening:** Nepal has already used a multiple criteria screening methodology in selecting hydropower and irrigation projects. These methods need to be reviewed and updated. Such investigations are best carried out by academic institutions as part of their research agenda for M. Sc. level theses. By rooting analyses in academic rigour the dialogue can be taken to the next level, where discussions move on to second-generation issues instead of taking pro-or anti-dam positions. The issue described below is highlighted to show the significance of one such lesson, particularly related to the management and technology of dam building in Nepal.
- **Technological questions :** The development of dams in Nepal also raises the questions of management and technology. The following conclusions from an M. Sc. thesis are worth mentioning.³⁰
 - The development of hydropower projects needs to focus on management because of their extended life cycle, cost overruns and delays during construction. The traditional method of project development based on the lowest price must be improved upon.
 - Geological conditions introduce complexity and are commonly used to justify the unsatisfactory subsequent cost escalation of projects. A new dimension to address unforeseen geological conditions in the future is required.
 - The existing approach to initiating hydropower projects in Nepal comprises a number of phases and shows wide variations. There is a need to develop a common framework and a systematic approach. The lessons learned from

the execution of hydropower projects are still beyond the reach of active stakeholders and the learning experienced in one project does not find salience in the next.

- Many hydropower project developers bring and use their own technology and approaches. Experts in construction management need to educate and help policy makers distinguish the best value for the price including innovative approaches to managing construction of dams.
- **Definition of Large Dams in Nepal:** During the consultation, several participants voiced their concern about ICOLD's definition of a large dam, as it does not cater to country-specific conditions. A preliminary database of electricity generating dams in Nepal has been prepared. It is also necessary to include irrigation barrages and dams built by DoI in the database, but could not be completed in this study due to the limitation of time. Much more work needs to be done to update this list. The database also needs to include structures that are located along the border and causes inundation in Nepal.

Table 12 shows dams in Nepal classified as per ICOLD's definition. Except for the Kulekhani I hydropower project, the application of the same definition to other

TABLE 12:
Classification of dams in Nepal

S.No.	Name of Project	Height (m) (million m ³)	Reservoir Capacity M ³ × 10 ⁶	Classification	Remarks
1	Middle Marsyangdi	62	N/A	High*	RoR
2	Chilime	3	N/A	Low	RoR
3	Kali Gandaki 'A'	44	7.7	High*	RoR
4	Modi Khola	7.5	N/A		RoR
5	Puwa Khola		N/A		Side Intake
6	Upper Bhote Kosi	15	N/A	High*	RoR
7	Khimti 1	2.5	N/A	Low	RoR
8	Kulekhani I	114	73.2-83.2	High	Storage
9	Kulekhani II		N/A		Uses tailwater from Kulekhani I
10	Marsyangdi	3 gates -13.8 m. 2 gates -14.8m.	6.25		RoR
11	Indrawati III	5	N/A		RoR
12	Andhikhola	6	N/A		RoR
13	Jhimruk	2	N/A	Low	RoR

* These would be high dams if the 15m height criteria is used. But this blanket definition in Nepal's case is inappropriate and needs changing.

dams in Nepal is untenable. A dam of 5 metres height in the Tarai can be the source of major adverse social and environmental impacts while a dam of the same height in the hills may not extend beyond a rivers' high flood level. This issue of definition needs a sustained investigation, dialogue, consultation and follow-up activities. Visits to each dam must be made to validate the parameters. Existing documents, in many cases, did not differentiate between the total height and the height above the bed level, for example. This exercise also needs to revisit the basis on which ICOLD has categorised dam types. Nepal's engineering colleges and professional societies can and must play a significant part in the process of proposing a definition. The government needs to be in a facilitating mode.

CONSTRUCTIVE ENGAGEMENT

Since the WCD process emerged from a situation laced with political undercurrents, it is not surprising that some governments have seriously questioned the premise of DAD, while others have endorsed it. HMG's Ministry of Water Resources did express concerns about the guidelines of DAD, but did not totally reject them. It is useful to recount the observation of one of the participants at the WCD consultative meeting held at the ADB based in Manila. According to Iyer (2003), 'Nepal, Sri Lanka, etc were more restrained in their language and were prepared to find some merit in the Report'. In addition, HMG/N has put in place certain legal provisions to address issues related to the environment and to social spheres before implementing any water development project. These are encouraging provisions though the effectiveness of their implementation can and must be improved. Improving implementation continues to remain a major challenge.

This exercise aimed to engage various stakeholders involved in the processes of water development in Nepal in suggesting a more inclusive arrangement for the conceptualisation, design, implementation and operation of water development projects including dams. While doing so, this report has sought to explore ways of providing the Nepali people with maximum benefits rather than blindly reject or follow the recommendations of DAD. The proposals of DAD therefore needs to be viewed in the context of the parallel global discourse on water, which aims to institutionalise an inclusive process for its development and management as a whole. With energy generation using dams as one of its objectives. For example, the Global Water Partnership

has proposed that addressing water management challenges need 'a process that promotes the coordinated development and management of water, land and related resources, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.' The key words here are 'economic and social welfare', 'equity', 'sustainability and ecosystem'. These concepts broadly conform to the values and principles of DAD.

Incidentally, these key words are echoed in the principles and statements of various policies, acts, regulation and plan of HMG/N, thereby implying that the notion of inclusion is recognised. Whether the language of inclusion had been co-opted to be politically correct or reflects the State's genuine concern for its citizens is an issue for exploration in making constructive linking of water engineering and social issues. Global discourses do influence national policy processes, and it would be incorrect to suggest that the keywords are included only for bureaucratic exigencies. The question of social, economic and political inclusion has been a major issue in post-1990 Nepal. Nepali scholars and others who study Nepali society and the country's political evolution suggest that inclusion in Nepal must be based on the concept of citizens' rights and on acceptance of the principle of equality in diversity that was promised in the constitution of 1990 but has not yet been satisfactorily delivered.³¹

The public discussions do have some impact. And the response show that this structural limitation is recognised. The government, headed by Surya Bahadur Thapa, put forth a social and economic reform agenda before the third round of peace talks with the Maoists in Nepalgunj on 17 August 2003. The agenda was defined as follows: 'build a political system that can accommodate and ensure participation of all Nepali people, create equal opportunities for self-development of all Nepali people and to create an egalitarian society bringing an end to all kinds of inequalities, discrimination and exploitation'. The peace process, however, has been aborted and the country is going through yet another cycle of violence. Yet, the above statement points to the need to overcome the impasse in the country and begin changing its political economy. A systematic analysis and public discussion of the trade-offs inherent in a system of representative governance that delivers basic needs such as water, energy, health services, education and livelihoods would go a long way towards building the middle ground for a new future. Unless questions of representation are addressed and basic livelihood needs are met, lasting peace is likely to be a mirage: Even though one insurgency may be quelled, another could as easily arise on the same fertile base of grievances.

Although it is not within the scope of this study to analyse political discourses and how they may or may not have influenced policy instruments related to water development, it cannot, in its conceptualisation, remain isolated from the country's ongoing political context. Limited in its scope though it is, this scoping exercise veers towards the political context while exploring the rights and risks framework proposed by DAD. Consequently, the exercise falls between two ends of a continuum: the political, where the language is that of representation, social and political inclusion and the instrumental, which focuses on methods for implementing development activities, including dams. But no project can exist in a vacuum bereft of social and political contexts. In fact, these very contexts define the contours within which instruments such as laws and projects must fit in order to achieve the larger goal of national well-being. Since one informs the other, projects need to be conceptualised within the larger context, and political dialogues need to take cognisance of the technical, social and economic realities of developing projects, including dams.

Such a path can balance the questions of representation and delivery while developing the country's water resources. Though its landscape is still fuzzy, a middle development path, where development and conservation are not in contradiction but are seen as two sides of the same coin, does exist and we believe it is worth pursuing. By bringing together different stakeholders in a consultative and engaging process, this scoping exercise has sought to identify such a path. Collectively, we explored both the limitations and opportunities of legal and policy measures *vis-à-vis* the guidelines proposed by DAD.

As often happens in a consultative exercise, differences, some of which were irreconcilable, emerged. Because of their roles and orientations, it was natural that those involved in the dialogue had different views. The divergent viewpoints, in a typical textbook fashion, fractured along information, interest, and value, common to environmental resource management debates.³² Some differences in the various interpretations of information were, by and large, reconciled. Wherever the team did not agree, it decided to leave the issue and come back to it later, perhaps even under different circumstances. Those involved in the dialogue broadly agreed on interest: water development in Nepal must improve the quality of life of the Nepali people and raise the country's economy in an equitable and sustainable manner. On some issues participants espoused different values; they expressed strong views about how the goals set should be met or how the world ought to be. We overcame these differences by isolating extreme positions, coming together on common interests and continuing the engagement.

IN THE END

This scoping process, which started in January 2003, came to an end more than a year later, in July 2004, when its summaries in English and Nepali were published. This was the first ever-sustained multi-stakeholder dialogue on DAD in Nepal. It involved nine taskforce meetings, one steering committee meeting, one national workshop, one consultative meeting with key senior government officials and three consultative meetings with grassroot non-governmental organisations. The processes had good links with global process and received support from the Dams and Development Project (DDP). It was a significant exercise for the government, NGOs and the private sector, all of whom were continuously engaged in the dialogue. Probably for the first time, an environment was created for 'constructive engagement' on issues in and approaches to developing the country's water resources. The process has helped improve awareness of DAD in Nepal while raising international interest.

The dialogue process was seen by all stakeholders as valuable in promoting understanding of each other's perspectives. There were clear agreements on the principles suggested by DAD but views were not uniform on its guidelines. The process has also shown that there are no extreme positions (pro- or anti at all costs) on dams in Nepal. There was a general consensus that harnessing the country's water resources must contribute to the all-around development of Nepal and the Nepali people and that means planning and implementing good dams. Guidelines to that end need to be developed on the basis of the six strategic priorities of DAD, which can be the appropriate platform to elaborate more detailed recommendations that might strengthen and complete the existing laws and procedures. This might also be the focus of the next phase.

As with many other developing countries, the approach to water resource development can never be 'no dams' but rather 'no bad dams'. What would constitute a good dam that government, private developers and critics can all agree on is what this particular exercise sought to explore.

This exercise has shown that those involved in water processes are willing to engage and the engagement has important lessons for Nepal's larger socio-political realm.

NOTES

- 1 WCD uses the definition by International Commission on Large Dams (ICOLD), which is 'a dam with a height of 15 metres or more from the foundation. If dams are between 5-15 metres high and have a reservoir volume of more than 3 million m³, they are also classified as large dams.' In Nepal, the applicability of this definition is questionable, as discussed later in this report.
- 2 The comments by HMG/N, in Annex 1, covered following issues: The WCD Report in General, Greenhouse Gas Emission, National Background, Participatory Decision-Making Process, Stakeholders, Options Assessment and Riparian Issues.
- 3 See, JVS (2001) – unpublished (summary of the meeting).
- 4 Dixit (2001) suggests that WCD was an collective compromise to respond to emerging water management challenges.
- 5 This might be an useful set of activities for future graduate students.
- 6 The text does not necessarily incorporate issues detailed in the matrix of comparison. The tables showing conformity and issues to address in the main text sometimes may appear inconsistent with those mentioned in Annex 4. This is natural as they reflect views of different team members.
- 7 Bhattarai (2001) provides details of the directive by the Supreme Court on information disclosure.
- 8 The details are found in Pradhan *et al.* (2000)
- 9 See, WRS (2002)
- 10 The details are available in the Nepali publication '*Bandh Ra Bikas Bare Rachanatmak Sambad*' Nepal Water Conservation Foundation, Kathmandu, July 2004.
- 11 Groups such as the International Association for the Study of Common Property and the Workshop on Political Theory, have distilled some basic principles from case studies of community-based and other forms of management but these are often difficult to apply to regional management needs or contexts characterised by social and economic change. See Moench *et al.*, (2003) for discussions.
- 12 Some of the more environmental organisations such as the International Rivers Network (IRN) have criticised the IHA guidelines. McCully (2004) states that the IHA's acceptance of the WCD's core values and the 'objectives of the WCD's strategic priorities' is to be welcomed. However, the sustainability guidelines do not endorse the WCD's criteria and guidelines for applying the strategic priorities. By developing their own criteria for applying the values and priorities—criteria which are designed with the interests of dam builders in mind much more than rivers, dam-affected people or the wider public—the IHA could render meaningless the WCD priorities.
- 13 See, Sapkota (2000).
- 14 This is based on calculations by WaterAid, which has attempted to normalise the data from many different sources. See Newah (2004)
- 15 For details see Moench *et al.* (1999)
- 16 The 18 per cent figure is often used by NEA. The MWR presentation at the preconsultation meeting of the Nepal Development forum (April 2004) mentions the figure as 40 per cent. The 18 per cent figure is based on the fact that of the 8,30,000 electric meters of the NEA, 8,00,000 are in the domestic category. Assuming all of these are with single independent families and multiplying by 5.5 as the average family size in Nepal yield a figure of 18 per cent. It is estimated that the approximately 6 MW of offgrid supply probably meets electricity needs of another 5 per cent of the population.
- 17 The study also included background information for comparison of the fifteen districts of the Mid Western Development Region, and covered the following features: level of past and current support for irrigation development, presence of national parks, population and demographic trends, food deficit/surplus situation, broad irrigation and land use pattern and the number of schemes that was present in the inventory. See, Euro Consult and East Consult (1994)
- 18 See, *The Himalayan Times* November 10, 2003,
- 19 The figure is based on the presentation made by Megh Ale of Nepal River Conservation Trust in the national stakeholders' workshop on *Dams and Development* held on 12 September 2003 in Kathmandu.
- 20 See, Upadhyaya (2003)
- 21 See, Finance Ministry's letter to the Ministry of Local Development dated 2060/10/6 regarding revenue allocation to be obtained by His Majesty's Government from electricity production.
- 22 Speakers in a public discussion programme, in Nepal who included former water resources secretaries of HMG, have expressed serious concerns about this provision. For details see, *Pani Satsang* (2002)
- 23 This section is based on Moench *et al.* (2003).
- 24 See, *The Economist* July 19-26, 2003
- 25 Water Voice' Project Report, March 2003, The Secretariat of the 3rd World Water Forum
- 26 The suggested time frames are normative based on WRS (2000). The WRS used a sequence of 5 (short), 15 (medium) and 25 (long) years but does not specify the basis on which this sequence was selected.
- 27 For details see, Byrd (2002).
- 28 Some people affected by Kulekhani Project still recount the story of injustice. For a recent discussion see Poudel (2004)

- ²⁹ This issue has again achieved salience since one of the identified causes feeding Maoist violence in the underdeveloped far west region of Nepal is the grievances that uneven development of the past has failed.
- ³⁰ See, Pokharel (2002)
- ³¹ The social and political dimension of 'inclusive democracy' was the subject of a conference organised by Social Science Baha in Kathmandu, 24-26 April 2003. Most of the papers presented at the Conference, which was entitled, 'The Agenda of Transformation: Inclusion in Nepali Democracy' focus on the notion of inclusion. Also see Dixit and Shastry (2003) for a discussion on state of Nepal's politics. The issue of choice of technology is found in Gyawali (2003) and Subba (2003) discusses the challenges of water resource development.
- ³² These three factors lead to dispute in environment resource sharing and development. The fourth is ideological difference. For detailed discussions see Prescoli (1994)

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ANNEXES

■ ANNEX 1

HIS MAJESTY'S GOVERNMENT OF NEPAL MINISTRY OF WATER RESOURCES

COMMENTS ON THE WCD REPORT SUBMITTED TO THE WORLD BANK ON 23RD JANUARY 2001

1. Preface

On 16th November 2000 the Final report of the World Commission on Dams (WCD) was released in London. As promised by the President of the World Bank Mr. Wolfensohn in the event, the report has now come to the hands of its member countries for their comments. The WCD consists of 11 commissioners, has established a Secretariat and a Forum consisting of 50 members. The ICOLD, IHA and ICID are the members of the forum. At the onset, it will here be worthwhile to note the concern raised by these institutions on 13th November 2000 stating that only the commissioners and the secretariat of WCD had been involved in preparing the report, and the forum members had not been given the opportunity to see or review any of the drafts. In this circumstance, it would have been more logical to get a common ground for a consensus of the forum members on the report before it comes to the hands of the member countries of the World Bank for their review. Nepal has difficulties and hesitation on expressing her view on a report that has not passed even through the scrutiny of its limited 50 forum members. It is, therefore, requested that this comment be read in the same line of aspiration.

It would be pertinent to note the comments of ICOLD on the report dated 30th November 2000, which has raised a number of valid issues based on practical experiences that the report is deficient with. Nepal, being one of the member countries of ICOLD, agrees with the concerns raised by the institution.

2. The WCD Report in General

The WCD report has identified the five core values, equity, efficiency, participatory decision-making, sustainability and accountability, which provide the essential tests that must be applied to decisions relating to water and energy development. We appreciate the emphasis given by WCD on the need of a holistic approach in developing a dam project with sustainable development concepts and principles, including demand side management, improvement of system management and watershed management. It is

very timely that the lessons learnt from dam building history of the mankind be reviewed at the advent of the 21st Century to redefine our course of action so as not to repeat the past mistakes and to minimise the likely adverse effects of the dams to be built in the years to come. Above all, we appreciate the concern of WCD on the fate of affected people and the needed protection of their rights. There cannot be any dispute over the fact that the affected people must be the “first among the beneficiaries” and they should be provided with a satisfactory means to maintain and increase their livelihood.

However, the WCD Report seems to be biased towards highlighting the negative impacts of large dams. The first impression while going through the first few pages anywhere in the report is that dams are essentially bad projects, and, therefore, the last resort to opt for, if it all. A more balanced way of putting things together would have been possible if the report had also given equal weightage to the benefits of dam.

It is feared that, the negative tone towards dams compounded with the contradictory statements of the facts in the report would create an unprecedented level of uncertainty and debate on the development process of the dams. In such a situation, groups with vested interests would be the only ones benefited instead of those people suffering from hunger, thirst, lack of water, sanitation and electricity. Incidentally, these people happen to live in those areas of the world where their hopes are still tied up with water resources development. Apparently, there is every likelihood that the recommendations of the report would, by and large, be taken as the conditions being imposed by the haves upon the have-nots.

The so-called knowledge base of WCD is founded on the review of a few hundred out of the 45,000 or dams so built around the World. This report reviews in depth only of 8 dams most of which are more than 30 years old and built at a time when the laws concerning social and environmental impacts were not as rigorous as they are today. Is there any shift in the approaches in developing the dams in the recent decades? This is a question, which the report has failed to review. Is the knowledge base of WCD sufficient enough to enable one to draw a global conclusion on the pros and cons of a dam? We have reservations on the conclusion of WCD made with such limited information.

3. Greenhouse Gas Emission

We have noted that the green house emission section of the report takes no account of the CO₂ absorbed by man-made aquatic systems. The advantage of hydropower development against CO₂ emission from fossil fuel fired generation plants has been ignored by the report. The report did not mention the Kyoto protocol, which favoured hydropower development on the basis of many valid scientific reasons.

It is very astonishing to note the dubious emphasis that has been given in the guidelines to the possible greenhouse gas emission from the reservoir projects on the ground that some unconfirmed research has indicated so. Is this phenomenon so important to get a separate section in the guidelines? Why is not the portion incorporate in the environmental impact study and mitigation program? The underlying intention gives us enough room to express our doubt on the sanctity of the report.

4. National Background

Although Nepal has a potential storage and regulating capacity of about 70 billion m³ of water out of the total annual yield potential of 230 billion m³, it has only one reservoir having a total storage capacity of 83 million m³ (Kulekhani Reservoir). Nepal has not yet started constructing dams and the experience in the construction, operation and maintenance of dams is at its infancy. Over the last three decades or so, Nepal has conducted studies on large dams, which includes 6,400 MW Pancheswar and 10,000 MW Karnali multipurpose projects; and there are numerous other storage projects identified as technically and economically feasible. At present, the population coverage of electricity supply is about 15 percent and a large part of the rural population is out of reach of the boon of the modern technology. Nepal has merely developed a few hundred megawatts of hydropower out of the total potential of 83,000 MW. The development of water resources in Nepal has following aspects:

1. Nepal does not have any other means of sizable energy supply, which can be taken as an alternative to the hydro-electricity. All fossil fuels are imported commodities.
2. About 90 percent of the energy needs are met with sources of organic origin, which largely includes fuel wood and biomass. With increased energy needs as the population grows, the depleting forest resources are being stressed to the detriment of the environment. The only way to reverse this situation is to develop hydropower.
3. The nature of the monsoon rain in the area is highly seasonal characterised by more than 80 percent of the annual rain occurring during the four months of June, July, August and September, and the remaining months falling short of the demand to meet the crop water requirement. All the hydropower projects built in Nepal except the Kulekhani Project are run-off-river type projects. The generation capacity is high during the monsoon season with spill energy but is insufficient to meet the demand during the lean flow season. This situation essentially calls for storage projects to regulate water and meet the peaking

energy demand. The need for such regulation will escalate to meet the demands of the growing population for more food and electrical energy.

4. With more than 40 percent of the population below the poverty line, Nepal's economy is highly dependent on agriculture, the primary occupation of some 85% its population. Increased agricultural production backed up by reliable year round irrigation facility is, therefore, essential to poverty alleviation and employment generation. In the context of the highly seasonal nature of rainfall and the variability of available water in time and space, this is only possible with dams.
5. Having been deprived of natural resources of significant economic growth potential other than water, Nepal has viewed the development of its hydropower potential as the only means of attaining economic prosperity through overall development and the export of surplus hydro energy to neighbouring countries.
6. When we look the water resources development in sub-regional context, the development of dams in Nepal is seen as the only means to provide water for consumptive uses, clean energy and flood control.

Therefore, it is but natural that Nepal look into any issues related to water resources development with interest. In the mean time, Nepal has also been keen enough to pave ways to encourage hydropower development. The enactments of the Water Resources Act 1992, Hydropower Development Policy 1992, Electricity Act 1992, and Environment Protection Act, 1997 are the milestones in this direction. They have encouraged foreign investment in hydropower development in recent years. These legal provisions are consistent with the internationally accepted standards and guidelines.

The Environment Protection Act of Nepal and its regulation require a thorough study of most of the aspects indicated by the WCD report for a storage project. Nepal has already begun the processes of public hearings, systematic environmental studies, ranking and screening of projects based on economic, social and environmental factors and developing the ones, which pass through the rigorous screening.

5. Participatory Decision Making Process

There cannot be any question on the principles set out by United Nations Charter (1945), the Universal Declaration of Human Right (1947) and the UN Declaration on the Right to Development (1986). It is true that the definition of the public interest is shifting from the one placed on the overriding interests of economic growth to the one that places more weight on the rights and interests of people and communities affected by a development project. Over the last decade, Nepal has also experienced a similar

shift in the development process that emphasises beneficiary or affected people's participation in a development project right from the planning stage to the operation and maintenance stage. A review of the processes followed in Nepal beginning with the construction of the Kulekhani Project in 1981 through the Marsyandi Project in 1989 to the ongoing Kali Gandaki A project expected to be commissioned at the end of this year clearly shows that Nepal is following most of the guidelines concerning social and environmental impacts proposed by the WCD Report.

The Environment Protection Act, 1997 and Environment Protection Rules, 1997 of Nepal require a full-scale environmental impact assessment (EIA) for any development project including dams. The rules have laid down the procedures starting from the determination of scope to the finalisation of the study. In each of the steps, consultation with the affected people is mandatory. Open and pre-informed public hearings are held during the course of the study. The study must include the in depth analyses of social and economic, cultural and physical, chemical and biological impacts of the project. The rules require a proponent to prove with sufficient evidence that other alternatives have been duly considered before project finalization. The measures to minimise the negative impacts are required to be elaborated. A complete plan for compensation, relocation and resettlement of affected people is a must. The provision for an independent body to monitor the compliance of the rules along with the right to file complaints and the necessary legal processes have been in place in the Act and the Rules. We are proud to note that we have been able to adopt these standards of international norms in our development process. Similarly, the Constitution of the Kingdom of Nepal gives exclusive right to the individuals to own and utilise the land and the Land Acquisition Act provides detailed procedures for acquiring the private property giving due respect to the individual's right.

The WCD Report is very elaborate in setting out the procedures to ensure that the affected people and the stakeholders are taken into confidence at all the stages of project formulation. In Nepal's case, most of the procedures put forward by WCD are already in place in the form of several acts and rules. Adopting a new set of guidelines as mentioned in the WCD Report with its contradictory statements and yet to be polished prescriptions, would create confusion and chaos.

Our concern is also attracted towards the WCD Report's suggestion to review the terms of license every 5 years or so along with public consultation; the terms, among others, include sharing of the benefits. This suggestion, if adopted, will increase the risk viewed from the part of the investor and it is likely that no investor will come forward to finance any project under such terms. This would be counterproductive to

the notion of the privatisation drive that is taking place in the hydropower sector in Nepal and other developing countries and, hence, unacceptable.

6. Stakeholders

The WCD Report recognises the following facts:

“ a process that is too complex can needlessly delay decisions and deprive potential beneficiaries of the fruits of any of the development alternatives under consideration. The goal must be a process that gives all key stakeholders a voice and a full opportunity to participate in the decision-making, seeks the broader reasonable consensus, and is transparent in the criteria used for reaching a decision. Such a process is likely to ensure the demonstrable public acceptance that projects require if they are to achieve development. However, no process will work unless all the parties enter the negotiation in the good faith. Without this there is a danger that any attempt to make the process more inclusive will end up being a recipe for stalemate, putting the achievement of needed benefits at risk.”

The WCD Report is not clear in defining the stakeholders. It has left the matter open-ended implying that any one interested could be a stakeholder. The report further remains silent on who has the authority to decide the list of stakeholders. We believe that this gives ample playground for the so-called anti-project activists with vested interests to attempt to abort a genuinely benign project in the name of safeguarding stakeholder interest. The WCD report is ambivalent on who should represent the stakeholders to enter into negotiation and sign an agreement.

Nepal is of the view that the cumbersome nature of the negotiation process suggested by WCD will stall any new development projects. Developing country like Nepal cannot simply afford the cost of such a rigorous process. As a result, we fear that the recommendations of the WCD report, apparently intending to make the process more inclusive will end up being a recipe for stalemate, putting the achievement of needed benefits at risk.

Nepal has a democratically elected legislative body, which represents and speaks the voice of the people. There are also locally elected bodies empowered sufficiently by the Local Self Governance Act with decision making powers to speak up on behalf of the project affected people, like the Village Development Committees and District Development Committees. In fact the Environment Protection Act and Rules require the written consent of these local bodies regarding the project before the environmental study is finalised and approved. Our concern on the WCD report lies on the over played emphasis given to the stakeholders.

Nepal is of the opinion that the matter of stakeholder consultation is country and location specific and should not be globalised in the manner suggested by the WCD guidelines; rather, it should be taken care of by the rules and acts of the individual nations as per their local condition. On the other hand, Nepal believes in the fact that the consultation with the stakeholders, particularly the project-affected people, is key to the smooth completion and operation of a project.

7. Options Assessment

The WCD report has suggested that for each dam project, assessment of all policy, institutional, management and technical options should be reviewed. In our context, this process is not justified. On the contrary the dam project should be an outcome of the national policy and programmes. Nepal has already initiated the formulation of the National Water Resources Strategy with a vision of overall water resources development over a period of 25 years. The strategy formulation is being done with assistance from the World Bank. A lot of public consultation at various levels, national, regional, donor agencies and line ministries are being sought at different stages of the process. The National Water Resources Strategy (NWRS) will guide the nation with the necessary options for consumptive use as well as for generation of power using Nepal's abundant water resources.

The WCD report has put forward the concept of demand side management and supply side management as alternatives to possible dams. We believe these alternatives together with those of available renewable energy alternatives cannot replace dams for meeting growing demand of water and energy, especially in the case of a country like Nepal and the sub-region.

8. Riparian Issues

The relationship between the principle of equitable utilisation and no significant harm is not clear in the WCD Report. This is admitted by the report itself. The relationship between these two principles was a matter of great debate when the draft convention on the law of non-navigational uses of international watercourses was discussed in the working group. The requirement of the consent of riparian states may be practicable provided that the level of development is similar in the riparian countries. When there are disparities, the requirement of consent will preclude the development of dams in the less developed riparian country. Further, the consent required even in the case of non-consumptive uses makes little sense.

The principle that dams on shared rivers should not be built and the external financial agencies should not be involved in projects where riparian states raise objections is unjustifiable for reasons that this again applies unequally in the case of a relatively less developed and asymmetrically placed riparian state. The riparian that has already developed shared water courses for its need will easily object to such a new development. So far as the question of an independent panel is concerned, this would result in an agonizingly protracted process of consultation, investigation and finalisation for the panel prior to the preparation of its final report. This would further disadvantage the state that is already behind the race for development.

The WCD Report, in its guideline, recommends that if a project has significant impacts on other riparian states, prior notification should be made at various stages of project development. This concept may be agreeable only if it is applied on a reciprocal basis and the concerned riparian states are at an equal level of development as mentioned earlier. In Nepal's context, it has already suffered because of non-notification by its southern neighbour on the use of water from some trans-boundary rivers. Such a notification requirement proposed by the WCD report would hamper Nepal's power and irrigation development.

9. Conclusion

The WCD report states, "the report is not intended as a blueprint. We recommend that it be used as the starting point for discussions, debates,...". In the same line we believe that the report has started a wide debate on dams, which would consolidate our philosophy on development based on dams in the future. Such a report and its recommendations cannot be adopted as guidelines in the present form till the debate takes some definitive shape.

There was a workshop held on 10th January 2001 organised jointly by the Nepal Chapter of ICID, Nepal Chapter of ICOLD, Jalsrot Vikas Sanstha and Nepal Hydropower Association, which was participated by more than 60 eminent persons. There was a general consensus on the workshop that WCD guidelines in the present form cannot be implemented, especially in the context of a LDC like Nepal.

Nepal has strong reservations on the globalisation/ generalisation of the key issues that are location specific and are to be viewed in the perspective of the rules and regulations of the individual nation against the one suggested by WCD.

Similarly, the riparian issue as simply and straightforwardly put by WCD, is a complex one needing more in depth thought in the light of the geo-political and socio-economic realities prevailing in the concerned riparian countries of the region.

S. No.	Details	1	2	3	4	5	6	7	8
1	Name	Middle Marsyangdi Hydroelectric Project	Chilime Hydropower Project	Kali Gandaki 'A' Hydroelectric Project	Modi Khola Hydroelectric Project	Ilam(Puwa Khola) Hydropower Project	Upper BhoteKosi Hydroelectric Project	Khimti 1 HydroPower Project	Second Kulekhani Hydroelectric Project
2	Location								
	a) River	Marsyangdi	Chilime Khola	Kali Gandaki	Modi Khola	Puwa Khola	Bhote Kosi	Khimti	Kulekhani, Mandu
	b) Basin	Gandak	BhoteKosi, Trisuli	Gandak	Kali Gandaki	Mai Basin	Sun Kosi	Tama Kosi	Rapti
	c) District	Lamjung	Rasua	Syangja	Parbat	Ilam (Puwa Khola) Hydropower Project	Sindhupalchowk	Dotakha, Ramechhap	
	d) VDC	Faliyasanghu, Udipur, Siudibar, Bhoteodar			Deupur				
3	Function(s)								
	a) Primary	Hydropower	Hydropower	Hydropower	Hydropower	Hydropower	Hydropower	Hydropower	Hydropower
	b) Secondary	None	None	None	None	None	None	None	None
4	Technical details								
	a) Type	RoR	RoR	RoR	RoR	RoR	RoR	RoR	Storage
	b) Height of Dam/Weir (m)	62	3	44	7.5	Side Intake	15	2.5	
	c) Length of Dam/Weir (m)	95	13	105	33	Side Intake	60		
	d) Rated head (m)	98	352	115	67	304	134	660	284.1
	e) Rated Discharge (m ³ /s)	80	7.5	133.8	25	2.5	36.8	2.15	13.3
	f) Catchment area (Km ²)	2729	274	7618	510	125.1	2132	358	
	g) Mean annual flow (m ³ /s)	24.8		288			66.4	31.5	
	h) Minimum annual flow								
	i) Maximum annual flow								
	j) Backwater fetch								
	k) Total storage (Mm ³)			7.7	0	0			
	l) Dead storage				0	0			
	m) Diverted flow for DWS/Irrigation	None	None	None	None	None			
	n) Environmental flow	None	None	m ³ /s	None	None			
	o) Provision for migratory fishes								
	Command area								
	p) Gross	None	None	None	None	None			
	q) Net	None	None	None	None	None			
	Power generation								
	r) Installed capacity (MW)	70	20	144	14.8	6.2	45	60	32
	s) Firm capacity								
	t) Load factor								
	u) Annual Energy Generation (GWh)	398	137	842	92.5	48	246	350	104.6
5	Construction								
	a) Started on	2001			1996	1995		1993	1982
	b) Completed/ commissioned on	Ongoing			2000	1999	2001	2001	1986
6	EIA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	Inundation								
	a) Surface area of reservoir (Ha)	14.47		65	0	0			
	b) Total Land Area				0	0			
8	No. of people displaced	Family	65 families	18 families	3 families	2 families			
9	Total Project Cost								
	Crores Rs.	1365	232.32		30	15.7		140	124
	Million US\$		30.98						
10	Promoters / developers	NEA	Chilime Hydropower Co. Ltd.	NEA	NEA	NEA	Bhote Kosi Power Co.	Himal Powers Limited	NEA
11	Ownership/Operation/ Management	NEA	Chilime Hydropower Co. Ltd.	NEA	NEA	NEA	Bhote Kosi Power Co.	Himal Powers Limited	NEA
12	Financing agency (ies)	KFW, NEA	Karmachari Sanchay Kosh, NEA, Chilime Hydropower Co. Ltd.,	ADB, OECF, NEA	HMG, NEA, Import/Export Bank (EDFC), Korea	NEA	Panda Energy, Harze, HIPC, and IFC-MGN	ADB, IFC, NORAD, EKSPORTFINANS	HMG, IDA, KF, OPEC, UNDP, EEC
13	Consultants	Fichtner Joint Venture, EIA: TAEC-NESS J/V		Morrison Knudsen International (MKI), USA; Norconsult International, Norway; IVO International, Finland	Saman Engineering Consultants CO. LTD., Republic of Korea; In collaboration with Water Resources Consults (P) Ltd., Nepal	IHPP/NEA		Stattkraft Anlegg AS, BPC Hydroconsult	Nippon Co-e, Japan
14	Contractors	<i>Civil works:</i> Dywidag-Drageados-CWE JV (DDC JV); <i>Mechanical Equipment:</i> Voith Siemens Hydropower Generation GmbH & Co; <i>GIS Switchgear equipment Substation switchyard:</i> ALSTOM Energietechnik GmbH <i>Electrical Equipment:</i> ALSTOM power generation AG; Hydroelectric Steel <i>Structure Equipment:</i> VA TACH Hydro GmbH Co. of Austria	<i>Hydro-mechanical works:</i> China Gezhouba Construction Group Corporation For Water Resources and Hydropower.	<i>Civil works:</i> Impregilo spA, Italy; <i>Hydraulic Steel Works:</i> Noell Stahl, Germany; <i>Electrical Works:</i> Mitsui/ Toshiba/ Alstom J/V; <i>Mechanical Works:</i> Mitsui/ Toshiba J/V ; <i>Transmission lines and Sub Stations:</i> TATA/ Marubeni J/V.	<i>Office and Staff Quarters:</i> Muktinath Nirman Sewa (Pvt.) Ltd., and Neesa Nirman Sewa Joint Venture; <i>Headworks:</i> China International Water and Electric Corporation, China ; Jayee Construction (P) Ltd., Nepal; and B.T. Nirman Sewa (P) Ltd., Nepal Joint Venture; <i>Tunnel and Surge Tank:</i> Himal Hydro & General Construction Ltd., Nepal; and Stattkraft Anlegg AS, Norway Joint Venture (HH & SA JV) <i>Power House, Tailrace, Switch yard and penstock:</i> China National Water Resources& Hydropower Engineering Corporation, China; and Shrestha Construction Co. Ltd., Nepal Joint Venture (CWHEC/SCC JV); <i>Electro-Mechanical Works and 132 kV Transmission Line including Substation Works:</i> Hyundai Engineering Co. Ltd., in Collaboration with Hyundai Corporation, Republic of Korea.	<i>Civil Works:</i> CWHEC-Laxmi J/V; <i>Hydro-Mechanical works:</i> Nepal Hydro & Electro Co. (NHE) , Butwal; <i>Electro-mechanical works:</i> Dongfang Electric Co. (DEC), PR China.	<i>Civil works:</i> Himal Hydro & general construction, Stattkraft Anlegg AS; <i>Electrical Equipments:</i> ABB, Norway; <i>Mechanical Equipments:</i> Kvaner, Norway.	<i>Civil works:</i> Hazama Gumi limited, Japan; <i>Gate valve & Penstock:</i> China International Water and Electric Corporation, PR of China; <i>Generating Equipment & Sub Station:</i> Fuji electric company, Japan.; 132 kV <i>Transmission line:</i> Richardson & Kudas Ltd., India.	

The inventory is not exhaustive. It can be used as a template for preparing a more elaborate inventory in the future.

	9	10	11	12	13	14	15	16	17	18
r	Kulekhani Hydroelectric Power Project	Marsyangdi Hydropower Project	Mailun Khola Hydropower Project	Upper Modi Hydroelectricity Project	Indrawati Third Hydroelectric Project	Aaandhikhola Project	Jhimruk Hydroelectric and Electrification Project	Trisuli Hydropower Project	Gandak HydroElectric Project	Sunkosi Hydropower Project
		Marsyangdi river	Mailun Khola	Modi	Indrawati	Aaandhi Khola	Jhimruk Khola	Trisuli	Narayani	Sunkosi
		Gandaki Basin	Trisuli	Kali-Gandaki	Sun Kosi	Gandak	Rapti		Gandaki	Kosi
		Tanahun	Rasuwa	Kaski	Sindhupalchowk	Syangja	Pyuthan	Nuwakot	Nawalparasi, Nepal & Bihar,India	Sindhupalchowk
		Aanboo Khaireni	Haku, Dandagaon	Lumle, Dansing, Aslyan, Ghandruk	Jyamire	Galyang		Trisuli Bazar		
			Hydropower							
	Hydropower None	Hydropower None		Hydropower	Hydropower None	Hydropower None	Hydropower None	Hydropower None	Irrigation Hydropower	Hydropower None
	Storage	RoR	RoR	RoR	RoR	RoR	RoR	RoR		RoR
	114	3 gates-13.8 m. ; 2 gates 14.8 m.	2.5	10	5	6	2			
		102	20	30	62	60	205	150		
		95	370	94	63	238	210	54	6.09	30.5
		96	1.6	17	17.3	2.7	7	45.3		39.9
		3850	83	385	437	444	645			
		210	5.1			1.4	3.2			
			0.66							
		6.25		0.038				0.283		0.067
		None					Under Study			
		None	0.1	0.5			Under Study			
		2 gated openings of width 16 m each and height 15.8m					Under Study			
		None			None	None	5 ha under study			
		None			None	None	None			
	60	69	5	14	7.5	5.1	12	24	15	10.05
	211	462.5	38.38	91.2	51	35	72	117.646	0.046	70
	1977	1985/86	2002		1999	1982	1989			1968
	1982	1989			Ongoing, Final Stage Yes	1991	1994	1966		1972
	Yes	No	IEE Done							
		62		9513						
	500 households, 3,000 people	222 households, 1,776 people	6 Families	24 Families						
		221.57	584.5	27.9		55.3	55.3	20	17	10.94
	117.843									
	NEA	NEA	Molnia Power Pvt, Ltd.	GITEC Nepal (P) Ltd.	National Hydropower Company Ltd.		Butwal Power Company			NEA
	NEA	NEA	Molnia Power Pvt, Ltd.	GITEC Nepal (P) Ltd.	Natonal Hydropower Company Ltd.		NORAD, UMN	NEA		NEA
	HMG, IDA, KF, OPEC, UNDP, EEC	NEA,IDA, KFW, SFD, KAFED and ADB	-	-	-	-	-	GoI,HMG	Government of Bihar, India/ Nepal	PR of China, HMG
n.	Nippon Co-e.Japan Simco international	Lahmeyer International gmbH, Frankfurt (Main) Federal Republic of Germany in Association with Snowy Mountains Engineering Corporation (SMEC), Coorma, N.S.W., Australia				BPC Hydroconsults	Butwal Power Company Hydroconsult		River Valley Projects, Dept. GoB, India and Irrigation Dept. GoB	
	Dam,Tunnel, U/ G powerhouse & other construction: Sambu construction, Korea.	Headworks: KDC-HD, Korea Development Corporation-Hyundai Engineering & constr. Co. Ltd. Korea (ROK); Waterways and power house: TAISEI-CWE, Japan, China International Water & Electrical Corporation, China (PRC) ; Hydraulic Steel Structures: COSMAR-Krupp-Noell- Thyssen, Federal Republic of Germany; Mechanical Equipment: J.M.VOITH, Federal Republic of Germany; Electrical Equipment: Siemens AG,Federal Republic of Germany; Transmission Lines: SAE, India; Switchyards and Substations: AEG, Federal Republic of Germany				Civil works: Himal Hydro and General Construction. Electromechanical Equipments: Nepal Hydro and electro company, Butwal.	Civil works: Himal Hydro and General Construction; Electro-Mechanical Equipments: Nepal Hydro and Electro Company, Butwal			

ANNEX 3 (A)

NATIONAL STAKEHOLDERS' WORKSHOP ON DAMS AND DEVELOPMENT

12 SEPTEMBER 2003, KATHMANDU

Name of Participant	Organisation
Government offices	
Ms. Annu Rajbhandari	Nepal Electricity Authority
Mr. Anup K. Upadhyaya	Department of Electricity Development
Dr. B.L. Manandhar	Department of Hydrology Meteorology
Mr. Bhoj Raj Regmi	Nepal Electricity Authority
Mr. Bikash Chand Shrestha	Directorate of Fishery Development
Mr. D.B. Singh	Department of Electricity Development
Mr. Damodar Bhattarai	Department of Water Induced Disaster Prevention
Dr. Janak Lal Karmacharya	Nepal Electricity Authority
Dr. Kul Ratna Bhurtel	Water and Energy Commission Secretariat
Mr. Mohan Ratna Shayka	Nepal Electricity Authority
Mr. Shital Babu Regmee	Department of Water Induced Disaster Prevention
Mr. Shiv K. Sharma	Ministry of Water Resources
Mr. Shiv Kumar Basnet	Ministry of Water Resources
Mr. Shiva Chandra Jha	Nepal Electricity Authority
Mr. Surya Pandey	Dept. of National Parks and Wildlife Conservation
Mr. Sushil Prasad Pradhan	Pancheswor Multipurpose Project
Dr. Swoyambhu Man Amatya	Water and Energy Commission Secretariat
Dr. Yubraj Khatiwada	National Planning Commission
Community based organisations	
Mr. Bed Prakash	Kali Gandaki A
Mr. Chhatra Bdr. Karki	Khimti Hydropower Users Group
Mr. Dhan Bahadur Majhi	Nepal Majhi Utthan Sangh
Mr. Hari Rana	Khimti Hydropower Users Group
Ms. Kalpana Kumal	Nepal Federation of Nationalities
Mr. Madhu Dumre	AKWUA
Mr. Padam	AKWUA
Mr. Padam Prasad Aryal	NFIWUAN

Name of Participant	Organisation
Ms. Shakuntala Nagarkoti	FECOFUN
Mr. Shanti Prasad Paudel	Khimti Hydropower Users Group
Mr. Tika Ram Dahal	NFIWUAN
<i>Non-Governmental organisations</i>	
Mr. Ajaya Dixit	Nepal Water Conservation Foundation
Mr. Ananda Prasad Shrestha	NEFAS
Mr. Anil Pokharel	NEWAH
Mr. C.N. Pandey	Nepal Engineering Association
Dr. Dipak Gyawali	Nepal Water Conservation Foundation
Mr. Dwarika Nath Dhungel	IIDS
Mr. Gajendra B.J. Chettri	Nepal Centre for Riverine Life
Mr. Gopal Siwakoti 'Chintan'	Water and Energy Users' Federation-Nepal
Mr. Hari Bairagee Dahal	Small Hydropower Development Association
Mr. Ishwar Onta	Jalsrot Vikas Sanstha (JVS)
Ms. Meena Joshi	King Mahendra Trust for Nature Conservation
Mr. Megh Ale	Nepal River Conservation Trust
Mr. Narayan Pd. Chaulagain	Water and Energy Users' Federation-Nepal
Mr. P P Adhikari	NHA
Mr. P.L. Joshi	FRD
Mr. Pradeep Adhikari	Nepal Water Conservation Foundation
Ms. Rakshya Thapa	Nepal Water Conservation Foundation
Mr. Rudra Sapkota	Association of DDC Nepal
Mr. Shiva Bisangkhe	Nepal Water Conservation Foundation
<i>International non-governmental organisations</i>	
Mr. Bikash Pandey	Winrock International
Mr. Dhruva Pant	International Water Management Institute
Ms. Lisa Singh	UNDP
Mr. Shyam Upadhyaya	Winrock International
Ms. Neera Pradhan	IUCN
Ms. Rakita Singh	IRG
Mr. Ratna Sansar Shrestha	Winrock International
Prof.	S.R. Chalise ICIMOD
Mr. Sameer Karki	IUCN
Dr. Stefan Gorzula	IRG

Name of Participant	Organisation
<i>Bi-lateral agencies</i>	
Mr. Arun Dhoj Adhikari Mr. Jaypal Shrestha Mr. Narendra K. Gurung	SNV Nepal U.S. Embassy JICA
<i>Multi-lateral agencies</i>	
Mr. Nogendra Sapkota Ms Neeta Pokharel	Asian Development Bank Asian Development Bank
<i>Media</i>	
Mr. Abdullah Miya Mr. Anil Giri Mr. Bikash Thapa Mr. Bishnu Budhathoki Mr. Dina Mani Pokhrel Mr. Kedarshree Joshi Mr. Kiran Pokhrel Mr. Santosh Neupane Mr. Sharad Chirag Mr. Shree Ram Subedi Mr. Suman Malla Mr. Tula N. Shah	Rajdhani Dainik The Annapurna Post Kantipur Daily The Rising Nepal Radio Sagarmatha Janaprabhat weekly Radio Sagarmatha Image Metro T.V. Nepal Samacharpatra The Himalayan Times The Kathmandu Post Space-Time Dainik
<i>Educational Institutes</i>	
Mr. Dipak Bhattarai Dr. Kailash Pyakurel Dr. Narendra Man Shakya Mr. Som Nath Poudel	Nepal Engineering College T.U. Institute of Engineering CTEVT
<i>Private/others</i>	
Dr. A. Karki Mr. Bhola Shrestha Mr. Chandra Mani Adhikari Mr. Chandra Mani Satyal	CMS Development Consultants Energy System Bansbari Allied Law Services Indrawati III Hydro Electric

■ ANNEX 3 (B)

CONSULTATION MEETING WITH NGOS

JULY 18, 2003
NWCF, PATANDHOKA

Name of Participant	Organisation
Ms. Kalpana Rajthala	NFIWUAN, Bhaktapur
Mr. Padam Prasad Aryal	NFIWUAN
Mr. Dhaka Ram Kunwar	NFIWUAN
Mr. Ramhari Sharma	NFIWUAN, Kathmandu
Mr. Shriram Acharaya	NFIWUAN, Kathmandu
Mr. Krishna Bahadur Gurung	Jal Sarokar Samuha, Nawalparasi
Mr. Krishna Adhikari	Jal Sarokar Samuha, Rautahat
Mr. Krishna Paudel	Jal Sarokar Samuha, Rupandehi
Mr. Guna Raj Panta	Jal Sarokar Samuha, Kanchanpur
Ms. Laxmi Paudel	Nepal Water for Health
Mr. Deepak Dewan	TEWA
Ms. Rita Thapa	Nagarik Aawaz
Ms. Sabina Khadka	WATCH
Mr. Raju Khadka	Nepal Water for Health
Mr. Ram Risal	Rural Self-reliant Development Centre
Dr. Durga Paudel	Rural Self-reliant Development Centre
Ms. Kabita Rai	Independent Researcher

■ ANNEX 3 (C)

CONSULTATION WITH GOVERNMENT OFFICIALS

14 NOVEMBER 2003

IUCN, BAKHUNDOL

Name of Participant	Organisation
Mr. Binod Prasad Devkota	Department of Forest
Dr. Umesh Parajuli	Department of Irrigation
Dr. Khin Ni Ni Thein	UNEP–DDP
Mr. Uma Kant Jha	Water and Energy Commission Secretariat
Mr. Keshab Dhoj Adhikari	Water and Energy Commission Secretariat
Mr. Shyam Bajimaya	Dept. of National Parks and Wildlife Conservation
Mr. Bikash Chandra Shrestha	Directorate of Fishery Development
Mr. Khruschev Shrestha	DSCWM/BIWMP
Mr. Shiv Kumar Basnet	Ministry of Water Resources
Mr. Mohan Shakya	Nepal Electricity Authority
Mr. Damodar Bhattarai	Department of Water Induced Disaster Prevention
Mr. Shiva Chandra Jha	Nepal Electricity Authority
Ms. Meera Joshi	Ministry of Population and Environment
Mr. D. B. Singh	Department of Electricity Development
Mr. Sohan Sundar Shrestha	DoLIDAR

■ ANNEX 4

STATUS OF DEFINING ISSUES

In the following section we list out the SPs, guidelines and defining issues. How relevant is each defining issue to Nepal is indicated by an asterix against each and also suggests a framework for adaptation, which is explained in the following table. As mentioned in main text the team members disagreed on the many defining issues. We record specific differences in the note below each guideline section.

Indicator	Relevance	Suggestion for adaptation
*	High	Addressed already addressed by Nepali legal provisions (The Constitution, Muluki Ain, Acts and Regulations)
**	Significant	to be looked in the short (5-10 years) term (Those issues also addressed by Policies, National EIA guideline and DoED manuals are placed in this group)
***	Marginal	to be looked in the long (10-20 years) term
****	High	Though not mentioned in the legal provisions the activities is practiced

Strategic priority 1

Gain public acceptance

Advisory Guideline

1.1 Analyse stakeholder

Defining issues

1.1.1 *Recognise existing rights**

1.1.2 *Identify those vulnerable/at risks***

1.1.3 *Identify constraints for stakeholder involvement***

Advisory Guideline

1.2 Negotiate on decision-making processes

Defining issues

1.2.1 *Ensure stakeholder representation**

1.2.2 *Ensure integrity of community processes***

1.2.3 *Provide adequate time for assessment/consultation participation**

*1.2.4 Make special provisions for prior informed consent**

*1.2.5 Address power imbalances***

*1.2.6 Ensure transparency**

*1.2.7 Assist in negotiation***

Note: There were differences about defining issue 1.2.3. Some members argued that the 15 days time, provided by existing legal provisions, for submitting concerned people's opinion with regard to possible impacts of implementation of the project is inadequate. Others, however, felt that it was adequate.

Advisory Guideline

1.3 Get free, prior and informed consent

Defining issues

*1.3.1 Ensure broad representation/inclusiveness***

*1.3.2 Establish an independent dispute resolution mechanism**

Note: Referring to defining issue 1.3.2, some members suggested that independent dispute resolution mechanism would be relevant only for hydro projects with capacity higher than 50 MW while others opined that it should be established in all projects irrespective of size.

Strategic priority 2

Conduct comprehensive options assessment

Advisory Guideline

2.1 Conduct SIA for environmental/ social/ health and cultural heritage issues

Defining issues

*2.1.1 Recognise rights/assess risks of stakeholder**

*2.1.2 Incorporate environmental and social criteria**

*2.1.3 Screen projects***

*2.1.4 Reduce up-front planning & preparation cost***

*2.1.5 Provide options of improving the performance of existing dams and other assets****

Note: Some members felt that (defining issue 2.1.4) would be applicable only to Independent Power Producers (IPPs) while others suggested that it should be applicable to both the state and IPPs. Views also differed on defining issue 2.1.5.

Advisory Guideline

- 2.2 Conduct project level impact assessment for environmental, social, health and cultural heritage issues

Defining issues

- 2.2.1 *Subject project to two-staged Impact Assessment (IA), i.e., scoping and assessment phases**
- 2.2.2 *Allow for total integration of technical, environmental and social studies in the design stage.**
- 2.2.3 *Honour the independence of project financing and developing institution****
- 2.2.4 *Comply international professional standards for EIA, SIA, HIA and CHIA**
- 2.2.5 *Appoint independent panel of experts to assist the government and developer.**
- 2.2.6 *Open local liaison office*****
- 2.2.7 *Make agreement to implement the mitigation measures.**
- 2.2.8 *Arrange for institutional and financial support for auditing and monitoring.**
- 2.2.9 *Put a redress procedure for addressing the resettlement plan***
- 2.2.10 *Publicise IAs**

Note: Since international financing institutions on the basis of bilateral and multilateral agreements finance most hydro projects, some members felt that defining issue 2.2.3 will be relevant in Nepal. But others disagreed. Similarly, members had opposite views about defining issues 2.2.4 and 2.2.5. DI 2.2.6 is practiced in Kali Gandaki 'A' hydropower project.

Advisory Guideline

- 2.3 Conduct multi-criteria analysis

Defining issues

- 2.3.1 *Prepare ToR***
- 2.3.2 *Conduct stakeholder analysis***
- 2.3.3 *Establish information centre**
- 2.3.4 *Form stakeholder forum ***
- 2.3.5 *Form multidisciplinary planning team***
- 2.3.6 *Prepare options inventory*****
- 2.3.7 *Screen options*****

*2.3.8 Present options to stakeholder forum***

*2.3.9 Conduct public hearing**

*2.3.10 Select the suitable option*****

Note: There was no consensus on defining issues 2.3.4 and 2.3.8. Some opined that stakeholder forum would be necessary to give voice to the affected people while others mentioned that such a forum would unnecessarily prolong the period of implementation. DIs 2.3.6, 2.3.7 and 2.3.10 were particed during Ranking and Screening Study bu NEA. DoED has formulatd a screenign procedure and one such approach was also used to select irrigation porjects in the mid west.

Advisory Guideline

2.4 Conduct Life-Cycle assessment

Defining issues

*2.4.1 Categorise different stages for each options****

*2.4.2 Identify material flows and resource impacts at each stage****

*2.4.3 Compare each option with a set of indicators (efficiency, emissions etc.). ****

*2.4.4 Identify the range and magnitude of subsidies/external factors/incentives****

Note: Some members suggested the defining issues would be appropriate only to storage projects having more than 500 MW capacity but others felt that they would be relevant in all projects.

Advisory Guideline

2.5 Assess greenhouse gas emissions

Defining issues

*2.5.1 Assess CO₂, CH₄ and nitrogen cycles (N₂O)****

*2.5.2 Estimate future carbon input****

*2.5.3 Assess the characteristics (size, temperature, bathymetry, primary productivity etc) of reservoir (s), inundated area(s)****

*2.5.4 Estimate the cumulative emissions.****

Advisory Guideline

2.6 Conduct distributional analysis of projects

Defining issues

*2.6.1 Assess equity/poverty.***

*2.6.2 Conduct macroeconomic/regional analysis****

*2.6.3 Conduct economic distributional analysis****

Note: Some members felt that since defining issues 2.6.1 to 2.6.3 are dealt at the plan/policy levels, they are irrelevant at project level. Other argued that the issues should be considered also at a project level.

Advisory Guideline

2.7 Conduct valuation of social and environmental impacts

Defining issues

- 2.7.1 *Identify/select impacts to be valued**
- 2.7.2 *Conduct valuation studies**
- 2.7.3 *Conduct public hearings**

Advisory Guideline

2.8 Improve economic risks assessment

Defining issues

General approach

- 2.8.1 *Include risks assessment in all steps of the planning cycle***
- 2.8.2 *Identify/Select risk as a part of larger stakeholder/multi-criteria processes***
- 2.8.3 *Include ranges for the risk and sensitivity analysis on the basis of past performance of large dams.****
- 2.8.4 *Complement sensitivity analysis with full probabilistic risk analysis****

At all stages

- 2.8.5 *Improve prediction of project costs***

At options assessment stage

- 2.8.6 *Conduct simple sensitivity analysis****
- 2.8.7 *Compare the options qualitatively with uncertainty associated with the cost and benefit***

At the feasibility stage

- 2.8.8 *Conduct full probabilistic risk analysis of economic profitability***
- 2.8.9 *Prepare modelling of changes in hydrological estimates (climate change etc.)****
- 2.8.10 *Investigate the likely benefits of risk reduction measures***

Note: Some members suggested that defining issues 2.8.2 to 2.8.5 will be necessary only for large storage projects or those that export electricity. There were also differences on relevance of defining issues 2.8.6, 2.8.7 and 2.8.9. Other members felt otherwise.

Strategic priority 3

Address existing dams

Advisory Guideline

3.1 Ensure operating rules to reflect social / environmental concern

Defining issues

- 3.1.1 *Ensure emergency warning /evacuation plans*****
- 3.1.2 *Maintain downstream drinking water/environmental requirements***
- 3.1.3 *Ensure good quality of water to downstream during reservoir filling***
- 3.1.4 *Adopt compensation plan**
- 3.1.5 *Release environmental flow**
- 3.1.6 *Release minimum technical flow***
- 3.1.7 *Release maximum ramp rates for downstream****
- 3.1.8 *Ensure water allocations during normal operation***
- 3.1.9 *Manage operation during normal/exceptional floods****
- 3.1.10 *Warn people for potential dangers*****
- 3.1.11 *Formulate rules for evacuation of people and animals***
- 3.1.12 *Set out rule for opening spillway gates***
- 3.1.13 *Conduct periodic safety inspection***
- 3.1.14 *Formulate drawdown procedure if dam safety is in doubt***
- 3.1.15 *Monitor relevant operation data***
- 3.1.16 *Disseminate data to stakeholders***
- 3.1.17 *Review operating rule periodically****

Note: Some of the team members expressed reservation on the defining issue 3.1.16. They felt that this provision could create unnecessary problems. But others argued that the information flow would help address stakeholders' concerns. DIs 3.1.1 and 3.1.10 are practiced in Kali Gandaki 'A' hydropower project.

Advisory Guideline

3.2 Improve reservoir operations

Defining issues

- 3.2.1 *Collect views on current reservoir operation with stakeholder. ***
- 3.2.2 *Record /Confirm changes in the priority of water uses***
- 3.2.3 *Optimize reservoir operation*****

- 3.2.4 *Asses the ability to operate the reservoir optimally***
- 3.2.5 *Develop basin-level decision support systems to optimize interactive reservoir operation****
- 3.2.6 *Provide clear procedure for emergency warning.***
- 3.2.7 *Provide operator training for extreme events.***
- 3.2.8 *Ensure monitoring systems are in condition**
- 3.2.9 *Monitor sediment in the reservoir quantitatively/qualitatively***
- 3.2.10 *Minimize sediment deposition*****
- 3.2.11 *Remove accumulated deposits****
- 3.2.12 *Launch catchments management program*****

Note: Differences emerged on defining issues 3.2.1 and 3.2.2 NEA operates the Kulekhani Reservoir by optimising the system's load. Catchment management activities are implemented in Kulekhani (3.2.10 and 3.2.12)

Strategic priority 4

Provide sustaining rivers/livelihood program

Advisory Guideline

- 4.1 Conduct baseline ecosystem surveys

Defining issues

- 4.1.1 *Study life cycle of fish species (especially migratory species)***
- 4.1.2 *Identify the distribution of habitat for endangered species**
- 4.1.3 *Locate important areas for biodiversity**
- 4.1.4 *Identify the key natural resources for riverine communities**

Advosory Guideline

- 4.2 Assess environmental flow

Defining issues

- 4.2.1 *Assess the affected river upstream/downstream ***
- 4.2.2 *Identify ecosystem components**
- 4.2.3 *Develop predictive capacity on biophysical responses ***
- 4.2.4 *Predict social impacts of biophysical responses**
- 4.2.5 *Create scenarios (with varying social, biophysical and economic parameters)***
- 4.2.6 *Select/Implement one scenario***

Advisory Guideline

4.3 Maintain productive fisheries

Defining issues

- 4.3.1 *Propose sound fish pass design***
- 4.3.2 *Prevent the loss of endangered fish biodiversity***
- 4.3.3 *Maintain fish stock***
- 4.3.4 *Ensure long term sustainability***
- 4.3.5 *Produce fish for local consumption/export***

Strategic priority 5

Recognise Entitlements/Sharing Benefits

Advisory Guideline

5.1 Construct baseline social conditions

Defining issues

- 5.1.1 *Assess baseline social conditions for all impact areas/communities**
- 5.1.2 *Ensure the base line social information.**

Advisory Guideline

5.2 Impoverish risk analysis

Defining issues

- 5.2.1 *Prevent/Overcome the pattern of impoverishment****
- 5.2.2 *Identify risk in advance explicitly***
- 5.2.3 *Make transparent the risk in advance***
- 5.2.4 *Implement impoverishment risk model***

Note: There was difference of opinion on defining issue 5.2.4.

Advisory Guideline

5.3 Implement Mitigation, Resettlement/ Development Action Plan (MRDAP)

Defining issues

At government and developer level

- 5.3.1 *Ensure MRDAP as a part of the master contract***
- 5.3.2 *Ensure the signing of performance bond***
- 5.3.3 *Provide other services (land acquisition, road building and health care)***

At community and affected persons level

- 5.3.4 *Ensure compensation, resettlement and development entitlements**
- 5.3.5 *Make schedule of entitlement delivery**
- 5.3.6 *Finalize institutional arrangement for delivering commitments***
- 5.3.7 *Enlist obligation/responsibilities of the concerned parties (as stipulated in contract)***
- 5.3.8 *Prepare recourse procedures***

Note: Some members argued that defining issue 5.3.1 is not relevant. They also thought that 5.3.3 would create incentive among the affected to inflate demands. Others strongly disagreed.

Advisory Guideline

5.4 Develop project benefit-sharing mechanism

Defining issues

- 5.4.1 *List out/Identify the types of project benefit**
- 5.4.2 *Assess the benefits**
- 5.4.3 *Ensure delivery of project benefit**

Strategic priority 6

Ensure Compliance

Advisory Guideline

6.1 Finalize compliance plan

Defining issues

- 6.1.1 *Ensure compliance plan to follow the applicable laws**
- 6.1.2 *Conduct independent review of internal processes/ commitments***
- 6.1.3 *Ensure sufficient in-country institutional capacity***
- 6.1.4 *Ensure funds to secure performance**
- 6.1.5 *Built compliance cost into the plan/project budget/evaluation process***
- 6.1.6 *Establish performance indicators/ benchmarks**

Note: Differences emerged on defining issues 6.1.4 and 6.1.5.

Advisory Guideline

6.2 Establish independent review panel (IRP) for social/environmental matters

Defining issues

- 6.2.1 *Establish project level IRPs**
- 6.2.2 *Fund IRPs***
- 6.2.3 *Ensure reporting of IRPs to the national government/regulator**
- 6.2.4 *Ensure systematic information distribution to IRPs (by the developer)*****
- 6.2.5 *Make all report public**
- 6.2.6 *Ensure developers responses to the issues raised (by IRPs)***
- 6.2.7 *Make frequency of IRPs visits flexible***

Note: Some members opined that defining issue 6.2.1 is relevant but others disagreed. Defining issue 6.2.7 would be relevant only if the Independent Review Panel is entrusted with monitoring performance. But views differed. Some members of the scoping team argued that MoPE provides information to IRP

Guideline

6.3 Ensure submission of performance bond

Defining issues

- 6.3.1 *Apply the bond in related activities***
- 6.3.2 *Make regular review of the level of security***

Note: Some members were convinced that the defining issues 6.3.1 and 6.3.2 were not relevant.

Advisory Guideline

6.4 Establish trust fund

Defining issues

- 6.4.1 *Formulate laws for the trust fund***
- 6.4.2 *Prepare transparent trust deed***
- 6.4.3 *Appoint independent trustee ***
- 6.4.4 *Define the role of the affected people***

Note: There were differing views on defining issue 6.4.4.

Advisory Guideline

6.5 Apply integrity pact

Defining issues

- 6.5.1 *Ensure the compliance of pact with accepted international practices****
- 6.5.2 *Make provision for institutional capacity building (training, technical assistance etc.)***

Note: Different views were expressed about defining issues 6.5.1 and 6.5.2.

Strategic priority 7**Share river for peace / development /security****Advisory Guideline**

- 7.1 Develop procedure for shared rivers

Defining issues**Prior notification**

- 7.1.1 *Ensure prior notification*
- 7.1.2 *Identify the relevant riparian issues*
- 7.1.3 *Agree on modalities to share technical data/information*
- 7.1.4 *Ensure accurate impact evaluation of potentially affected riparian states*

Basin-wide impact assessment

- 7.1.5 *Include a participatory basin-wide scoping phase*
- 7.1.6 *Consider/honour the submissions of riparian states/affected communities*
- 7.1.7 *Allow for acceptable independent panel review*

Dispute resolution

- 7.1.8 *Resolve dispute within six months through good faith negotiation*
- 7.1.9 *Refer the dispute to a fact-finding commission (as detailed in UN Convention)*

Note: The guidelines and defining issues covered by SP seven were not evaluated. The study team members felt that the SP is biased against upper riparian as explain in the main text.

ANNEX-5

COMPARISON OF ASIAN DEVELOPMENT BANK (ADB) AND THE WORLD BANK (WB) POLICIES ON WATER RELATED ISSUES

Asian Development Bank (ADB)	World Bank (WB)
<p>Environment Policy:</p> <ul style="list-style-type: none"> ■ The IEE and EIA processes need to involve key stakeholders. ■ Strong and effective institutions are necessary for good governance, but they must also operate within the principles of accountability, transparency, participation and predictability. ■ Integrate environmental consideration into all operations from the earliest stage, moving toward a more strategic and comprehensive approach. ■ Strengthen implementation of environmental mitigation measures in projects by clear specification and support from local stakeholders. ■ Environmental provisions are reflected in contract, procurement, and tender documents. ■ The summary IEE/EIA reports are required to be circulated worldwide. ■ ADB help/assist (including resources need) to mitigate unanticipated environmental impacts during project implementation or after project completion. 	<p>Operational Plan 4.02: Environmental Action Plans (EAP)</p> <ul style="list-style-type: none"> ■ Encourages and supports to prepare and implement an appropriate EAP and to revise it periodically. ■ Encourages the government to make EAP drafts available to groups that will be affected by its implementation and to other interested groups including NGOs. Procedure 4.01 and Operational Plan 4.01: Environmental Assessment (EA) ■ Requires to record earlier on the key environmental issues (including any resettlement, indigenous peoples, and cultural property concerns). ■ Evaluates a project's potential environmental risks, impacts and examines project alternatives. ■ Considers natural, economic, financial, institutional, technical and social aspects in an integrated way. ■ Favours the project to include components to strengthen EA-related capacity. ■ Ensures that the borrower consults project-affects groups and local NGOs and takes their views into account. ■ Ensures the availability of relevant material in a timely manner prior to consultation in a local language.

Asian Development Bank (ADB)	World Bank (WB)
<p>Energy Policy: Among the four operational priorities, two are specific to the environmental and regional cooperation</p> <ol style="list-style-type: none"> 1. Supports measures to address acid rain problems, use of clean energy and Kyoto Protocol mechanisms for GHG abatement, and by financing renewable energy projects; and 2. Promotes regional cooperation: by helping developing member country identify and implement export-oriented hydropower and natural gas-based generation and transmission project. <p>For new hydropower projects, the approach recommended by the World Commission on Dam will be pursued.</p> <p>Water Policy: ADB's water policy has the seven principle elements. They are: (1) Promote a national focus on water sector reform, (2) Foster the integrated management of water resources, (3) Improve and expand the delivery of water services, (4) Foster the conservation of water and increase system efficiencies, (5) Promote regional cooperation and increase the mutually beneficial use of shared water resources within and between countries, (6) Facilitate the exchange of water sector</p>	<p>Trust funds may be available to potential borrowers that request Bank assistance in financing.</p> <p>Operational Directives 4.20: Indigenous Peoples (IP)</p> <p>The Bank's broad objective towards IP is to ensure that the development process fosters full respect for their dignity, human rights, and cultural uniqueness. Additionally, the bank;</p> <ul style="list-style-type: none"> ■ Ensures that IP receive culturally compatible social and economic benefits. ■ Requires to deal the issues pertaining to IP must be based on the informed participation. ■ Ensures the rights of IP to have access to natural resources vital to their subsistence. ■ Ensures participation by IP in decision-making throughout project cycle. <p>OP 4.07: Water Resources Management</p> <ul style="list-style-type: none"> ■ Entails support for providing potable water, sanitation facilities, flood control and water for productive activities in a matter that is economically viable, environmentally sustainable and socially equitable. ■ Assists in the following priority area: (a) developing a comprehensive framework for designing water resource investments, policies, and institutions through river basin perspectives, (b) adopting pricing and incentive policies that achieve cost recovery, water conservation, and better allocation of water resources, (c) involving users and stakeholders in planning and

Asian Development Bank (ADB)	World Bank (WB)
<p>information and experience, and (7) Improve governance.</p> <p>ADB adopts a cautious approach to large water resource projects- particularly those involving dams and storage-given the record of environmental and social hazards associated with such projects. All such projects will need to be justified in the public interest and all government and non-government stakeholders in the country must agree on the justification.</p> <p>Policy on Indigenous People: The policy ensures the ADB interventions affecting indigenous people are to be (1) consistent with the needs and aspirations of affected indigenous people, (2) compatible in substance and structure with affected indigenous peoples' culture and social and economic institutions, (3) conceived, planned, and implemented with the informed participation of affected communities, (4) equitable in terms of development efforts and impact; and (5) not imposing the negative effects of development on indigenous peoples without appropriate and acceptable compensation.</p>	<p>managing water projects and in policy formulation. (d) Restoring and preserving aquatic ecosystem and guarding against overexploitation of groundwater resources, and (e) establishing strong legal and regulatory frameworks to ensure that social concerns are met, environmental resources are protected.</p> <p>Procedure 4.04: Natural Habitats The Bank identifies relevant natural habitat issues for regional and sectoral EA reports which indicate the present location of natural habitats in the region or sectoral involved, analyse the ecological functions and relative importance of such natural habitats, and describe the associated management issues.</p> <p>Operational Procedure 4.11: Cultural Property</p> <ul style="list-style-type: none"> ■ Assists in preservation of cultural property. ■ Declines to finance projects that will significantly damage non-replicable cultural property. ■ Assists in the protection and enhancement of cultural properties. <p>Procedure 7.50 and Operational Procedure 7.50: Projects on International Waterways</p> <ul style="list-style-type: none"> ■ Potential international water rights issue is assessed early on. ■ recognizes of riparian cooperation for the efficient use and protection of the waterway.

Asian Development Bank (ADB)	World Bank (WB)
<p>Inspection Policy: The inspection policy of the ADB establishes a formal channel through which local communities, organizations and other groups- and, in special circumstances, members of the Bank's Board of Directors-can request independent review or "inspection" of the Bank's role in certain Bank-financed projects.</p>	<ul style="list-style-type: none"> ■ in cases where differences remain unresolved between the states proposing the project (beneficiary state) and the other riparian, the Bank normally urges the beneficiary state to reach appropriate agreements with the other riparian. ■ the beneficiary state should formally notify the other riparian of the proposed project. If the borrower indicated to the bank that it doesn't wish to do so, normally the Bank itself does so. If the beneficiary state objects to the Bank doing it, the Bank discontinues processing of the project. ■ if the other riparian raise objections to the proposed project, the Bank may appoint one or more independent experts to examine the issues. <p>OP 4.37 Safety of Dams</p> <p>For small dams, generic dam safety measures designed by qualified engineers are usually adequate. For large dams, the Bank requires: (a) reviews by an independent panel of experts of the investigation, design, and construction of the dam, (b) a plan for construction supervision and quality assurance, an operation and maintenance plan, and an emergency preparedness plan, and (c) periodic safety inspections of the dam after completion.</p>

■ ANNEX 6 (A)

NEA COMMENTS ON SCOPING STUDY REPORT

(DRAFT – APRIL 2004)

GENERAL COMMENTS

WCD report prepared in 2000 marks a major chapter in the history of water resources development. The guidelines prepared with the objective of sustainable development through a negotiated approach is certain to make long term impact on nations particularly the ones where the resource is yet to be harnessed.

Given unique nature of Nepal's resource base with Hydropower having a share of more than 80% of the energy potential, there is a strong need to effectively utilize this renewable energy resource. Based on the resource endowment and hydrological characteristics of Nepal, the need for dams for socio economic development should be acknowledged by all. Dams are hence not a luxury but a necessity for meeting the needs of Nepalese people and achieving overall growth. The major concern is to thus to make the dam based project sustainable through social equity and benefit sharing mechanism.

The existing Acts and regulations in the field of water resources & environment address much of the issues that have been raised by the WCD report. The core values of WCD are universally accepted and hence serve as a planning tool. However, much of the 26 guidelines prepared by WCD are too impractical and can not be implemented as such. Hence WCD report shall not be a binding document for planning & policy implementation. The fundamental issue for preparing a good guideline is to create a conducive environment for the implementation of dam based projects that would benefit the people at large.

In the past decade, there has been major development in the field of hydropower and environmental concerns. In case of Kali Gandaki A, EIA study was carried out parallel to the project studies which recommended appropriate mitigation plan as well. Mitigation measures were carried out and environmental monitoring was conducted during project construction. Recently, the environmental post audit was also completed which has been well accepted by the project donors. All the stakeholders should review the difficulties faced by project developers regarding implementation of environmental mitigation programs as well.

Option assessment should be country specific based on the resource endowment of the country (like hydropower based generation expansion plan in the Nepalese context). Moreover, option assessment should be concluded at certain stage in order to implement the program.

It is to be emphasized that Nepal has already adopted several guidelines that suits its requirement and in this regard the some provisions of WCD guideline that fulfill the national interest need to be used as well.

In this context, some of the issues to be addressed as presented in the draft report have misleading statements like – myth of overall development, lack of professionalism in preparing EIA document, mitigation budget is ad hoc, affected people's cannot voice their concerns in public consultations etc.

As mentioned above, Kali Gandaki A may be considered as a reference case for comparing the pre and post project development scenario where the national guidelines have been met and well accepted by the donors.

OTHER COMMENTS

Gaining Public Acceptance

WCD guideline states that indigenous people have the right to decide whether to build the project or not. As water is a national resource, such a pre-condition of having consensus of all indigenous groups is not achievable and hence such provisions of WCD simply prevents the development.

The draft report mentions “actual beneficiaries at community level and project affected families do not get included in the process” (page 13). This is a grossly incorrect statement and undermines the endeavor of the project developers. Likewise text like “value laden one way information flow (myth of development)” is a prejudice observed in the draft report. Compensation and rehabilitation, employment in the project construction, rural electrification, access road that is vital for rural growth, 10% of royalty to the district etc. are some of the major benefits brought about by the project development. Recently the local governance act (January 2004) has increased the royalty amount to 50%. It should also be noted that project beneficiaries are not only local people but the nation itself. The broader public acceptance like project contribution in meeting the growing power demand through renewable energy supply and its forward linkages with the macro economy should also be accounted while making a statement

on public acceptance. Hence the text should be modified to give a perspective of socio economic transformation that the project has brought about in totality.

Obviously, human needs are unlimited and there are segment of society, which think that all their needs should be fulfilled by project. Such utopian thinking will only hamper future project development.

Conduct comprehensive option assessment

Text like “provisions of EIA are taken as burden (page 15)” and “methods of impact assessment and prediction embryonic (page 15)” are subjective interpretations made in the draft report. The statement “technical design keeps on changing during optimization and earlier issues do not remain relevant” is not correct as the impact assessment is focused on the whole scheme and can accommodate design changes during construction without any major impact. Likewise, “alternative selection is not practiced systematically in Nepal” (page 16) does not show the correct picture. Project identification is based on the outcome of inventory study and within each project, alternative layout is prepared in-order to recommend the most promising one from technical, economic and environmental point of view as there is no need to compare all the time with other alternatives like thermal or nuclear in the context of Nepal. “Affected people’s cannot voice their concerns in public consultative meeting (page 16)”. This statement is vindicated by the active participation of people in the public hearing and during the EIA surveys.

In the same page the subtitle “Green house gas emission” should also include the credit to be given for hydropower project – particularly for storage project for avoiding the pollutants by displacing thermal generation.

The text “the use of biogas is gaining popularity and solar panel are being promoted to supply electricity “(page 41) should add the suffix “in isolated communities through subsidy from line agencies” to make it meaningful.

The text mentioned in this section should also highlight the need for meeting daily, seasonal load in an efficient manner in the integrated power system. There is large seasonal variation in river discharge and the peak load demand is in dry season. Comparison of project development alternative should be made on its ability to deliver dependable (or firm) power and not merely on the cost per unit of electricity.

Option assessment needs to be carried out during planning, feasibility study stage but after the feasibility study stage the project parameters are basically fixed. Hence option study cannot be carried out indefinitely or else the project implementation will

be jeopardized. There is hence a need to highlight the shortcoming of WCD guideline with respect to the option assessment.

Addressing existing dams

The definition of high dam as adopted by the WCD report (> 15 m high from foundation or 3 million cumecs storage volume) is not applicable for Nepal where the river gradient is high and even modest run of river schemes have a foundation depth in that range. Although dams of 15 m height can have large impact if it is located in plains, in case of hilly topography it has minimum impact. Hence the Nepal Dams and Development report should categorically emphasize the need for suitable modification to the terminology of high dam to suit Nepal's requirement.

The draft mentions in page 18 "There are cases where the affected people complained that they did not get adequate compensation". It would be appropriate also to add that the affected people in the recent projects have been well compensated for their land, houses etc. and projects both public and private have been facing never ending demands of the local population.

Text "so far sediment has not been flushed in Kulekhani" (page 18) shows confusion on the pertinent issue. Sediment flushing is not feasible and hence not planned in the KL-1 project having rockfill dam and hence such statements should be deleted.

Statements like "IHA guidelines are theoretical and focus on dams for development while WCD guideline are elaborate and go to the extent of suggesting procedure" (page 38) shows prejudice against other guidelines that have been prepared by the people working in this field. IHA guideline has been adopted by the 82 member countries as an important policy document for the 21st century and is more pertinent in the context of Nepal.

Sustaining rivers and livelihood (page 19)

River ecosystem is an intricate phenomenon involving complex issues far beyond the scope of dam development as well. Hence it can be studied to certain extent only for large sized projects in the major river basins. The guideline needs to be realistic regarding the extent to which a hydropower project developer can invest in the project studies.

Recognizing entitlements and sharing benefits (page 20)

Statement "lacks comprehensiveness for large project" and "resettlement action plans does not exist" are incorrect. Baseline studies are carried out as part of EIA process. Rehabilitation plans have been implemented even prior to project construction in

the recent project Middle Marshyangdi where the number of displaced families is more than 25.

Ensuring compliance (Page 23)

Ensuring compliance with adopted EIA & mitigation plan should not lead to “mothballing” of hydropower schemes or having moratorium on new construction as conceived in the WCD guideline. As hydropower is the only renewable source of energy that is endowed with the country, such a measure would be fatal and hence the draft report shall include Nepal’s objection to it.

■ ANNEX 6 (B)

COMMENTS BY WATER AND ENERGY USERS' FEDERATION, NEPAL ON THE SCOPING STUDY REPORT OF *DAMS AND DEVELOPMENT IN NEPAL*

We would like to express our sincere thanks to Sameer Karki for his hard work in coordinating the dialogue on Dams and Development. IUCN also deserves our appreciation for initiating and continuing this process.

Water and Energy Users' Federation, Nepal (WAFED) takes this opportunity to record a few comments on matters that should have been covered by the scoping study report but failed to find inclusion in it.

1. We consider this dialogue process among dam proponents, operators, NGOs and affected people a positive and constructive initiative. The process has also been praised internationally. We firmly believe that such a dialogue can help overcome differences and make decision-making more inclusive.
2. We had agreed to include the case studies of Kali Gandaki A, Khimti and Indrawati Hydroelectric Projects and include the insights (positive and negative impacts created by these projects at local level) in the report. But the findings have been grossly diluted. These insights would have given space to the voice of the affected people, towards which concerned authorities are less sensitive. These local concerns addressed honestly are the key to designing 'good dams' in Nepal and implementing them successfully.
3. The right and authority to evaluate the success or failure of projects rests with the affected people. In Nepal, donors' and their consultants' reports are used as the criteria. This is unacceptable, as such reports would have inherent biases of project promoters.
4. Complaints against Kali Gandaki 'A' have been filed in Asian Development Bank. The situations in Khimti and Indrawati are serious too. Some problems have emerged because of shortcomings of existing policies, laws and institutional dysfunction. Others have emerged due to careless implementation. However, government officials insist that there are no mistakes committed in the past. They express reservations about the recommendations of WCD report. That "failed development" promoted by government and donors in Nepal has brought the country to such an impasse seems to be lost on them.

5. NGOs and affected people have contributed to making the dialogue among various stakeholders about dam building constructive. Government agencies consider their genuine and valid concern as impediments to progress, an attitude which does not help build consensus or confidence in the official apparatus.
6. Dialogue should help us appreciate each other's perspectives. The government should help foster such a platform for dialogue.

Finally, we suggest that the government create an enabling environment for constructive dialogue on dams and development following the WCD's guidelines (as has begun with this current process) so that 'good dams' can be built and bad dams and mistakes of the past avoided.

IUCN– The World Conservation Union

IUCN - The World Conservation Union was founded in 1948. It brings together States, government agencies and a diverse range of non-governmental organizations in a unique world partnership: over 1,035 members in all, spread across some 141 countries. The World Conservation Union builds on strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

IUCN - The World Conservation Union officially launched the Nepal Country Office on 23 February 1995 with the Ministry of Finance, His Majesty's Government as the government partner. IUCN Nepal has been developing partnerships with various government line agencies as well as non-governmental organizations to carry forward its activities to conserve Nepal's natural resources and ecological processes.

Nepal Water Conservation Foundation (NWCF)

NWCF is a non-governmental, non-profit and non-political organisation that conducts interdisciplinary research on interrelated issues that affect the use and management of water and energy. NWCF aims to promote the sustainable development, management and conservation of natural resources through generating and disseminating scientific knowledge to be used in informed decision making. It promulgates research findings through education and advocacy. Its specific focus is on capacity building, both of the upcoming generation as well as of disadvantaged groups, so that resources can be used without compromising the rights of either the future generation or non-human life. By building the capability of younger generations of professionals to analyse issues related to sustainable development, NWCF maintains a pool of interdisciplinary analytical expertise. NWCF publishes the interdisciplinary journal *Water Nepal*.