CITIZENS' GUIDE TO THE WORLD COMMISSION ON DAMS

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ROADMAP TO THE *CITIZENS' GUIDE TO THE WCD*

This Citizens' Guide to the World Commission on Dams is intended as a tool for people in their struggles for social justice and environmental protection. Here's a quick "roadmap," or guide, to how this book is structured.

- For a **very short overview** of the WCD, see page 2. A *Fact Sheet on the WCD* describes the WCD's mandate, work programme, findings and recommendations, and includes suggestions on how you can use the report. We hope you can use and translate this Fact Sheet for outreach in your own region.
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- For a **detailed summary of the WCD's recommendations,** see Chapter 7 (page 43). This includes the WCD's seven strategic priorities; a proposed process for decision-making for the water and energy sectors; suggestions relevant for dams planned or under construction; and WCD follow-up strategies for specific sectors.
- For a list of contacts, publications and other **resources** to help your campaigns, see Chapter 8 (page 53).

Fact Sheet
World Commission on Dams

What was the World Commission on Dams?

The World Commission on Dams (WCD) was established by the World Bank and IUCN — The World Conservation Union in May 1998 in response to the growing opposition to large dams. Its mandate was to:

- review the development effectiveness of large dams and assess alternatives for water resources and energy development; and
- develop internationally acceptable criteria, guidelines and standards for the planning, design, appraisal, construction, operation, monitoring and decommissioning of dams.

The 12 Commission members came from a variety of backgrounds, representing a broad spectrum of interests in large dams — including governments and nongovernmental organisations (NGOs), dam operators and grassroots people's movements, corporations and academics, industry associations and consultants.

What did the WCD do?

The WCD relied on extensive public consultation and commissioned a large volume of research. An associated Forum with 68 members from 36 countries representing a cross-section of interests, views and institutions was consulted during the Commission's work. The $10 million necessary to fund the Commission came from more than 50 governments, international agencies, private corporations (including many of the main dam industry multinationals), private charitable foundations and NGOs.

To conduct the most comprehensive and independent review of the world's dams to date, and base its conclusions on a solid foundation, the WCD commissioned and assessed:

- in-depth case studies of eight large dams on five continents, and papers assessing the overall dam-building records of China, India and Russia;
- 17 thematic reviews on social, environmental, economic and financial issues; alternatives to dams; different planning approaches and environmental impact assessments;
- brief reviews of 125 large dams in 56 countries;
- four public hearings in different regions; and
- 950 submissions by interested individuals, groups and institutions.

The Commission's final report, *Dams and Development: A New Framework for Decision-Making,* was released in November 2000.

What were the WCD's main findings?

The WCD found that while "dams have made an important and significant contribution to human development, and benefits derived from them have been considerable … in too many cases an unacceptable and often unnecessary price has been paid to secure those benefits, especially in social and environmental terms, by people displaced, by communities downstream, by taxpayers and by the natural environment." Applying a "balance-sheet" approach to assess the costs and benefits of large dams that trades off one group's loss with another's gain is seen as unacceptable, particularly given existing commitments to human rights and sustainable development.

The WCD's final report provides ample evidence that large dams have failed to produce as much electricity, provide as much water, or control as much flood damage as their supporters originally predicted. In addition, these projects regularly suffer major cost overruns and time delays. Furthermore, the report found that:

- Large dams have forced 40-80 million people from their homes and lands, with impacts including extreme economic hardship, community disintegration, and an increase in mental and physical health problems. Indigenous, tribal, and peasant communities have suffered disproportionately. People living downstream of dams have also suffered from water-borne diseases and the loss of natural resources upon which their livelihoods depended.
- Large dams cause great environmental damage, including the extinction of many fish and other aquatic species, huge losses of forest, wetlands and farmland.
- The benefits of large dams have largely gone to the rich while the poor have borne the costs.

What were the WCD's recommendations?

The Commission provides a new framework for decision-making on water and energy projects based on recognising the rights of, and assessing the risks to, all stakeholders. Those who would be adversely affected should participate in the planning and decision-making process and have a share in project benefits. The Commission's main recommendations include the following:

- No dam should be built without the "demonstrable acceptance" of the affected people, and without the free, prior and informed consent of affected indigenous and tribal peoples.
- Comprehensive and participatory assessments of people's water and energy needs, and different options for meeting these needs, should be developed before proceeding with any project.
- Priority should be given to maximising the efficiency of existing water and energy systems before building any new projects.
- Periodic participatory reviews should be done for existing dams to assess such issues as dam safety, and possible decommissioning.
- Mechanisms should be developed to provide reparations, or retroactive compensation, for those who are suffering from existing dams, and to restore damaged ecosystems.

Why is the WCD important?

The WCD prepared the first global, independent review of large dams. The process was transparent and participatory, and extensive research was conducted. The WCD found that the economic, social and environmental costs of large dams are high and often outweigh their benefits, and that alternatives for water and energy are available, viable, and often untested. The WCD put forward a series of recommendations that have relevance not just for energy and water planning, but for development planning generally.

As an internationally respected commission, the WCD's findings and recommendations can carry great weight in dam debates worldwide. What the WCD says is matched in importance by who is saying it. The WCD was co-sponsored by the World Bank. The commissioners included the Chief Executive Officer of engineering multinational company ABB and an ex-President of the International Commission on Large Dams (ICOLD), the lead professional association of the global big dam industry. The report was unanimously endorsed by all the Commissioners.

How can you use the report?

NGOs and people's movements can use the WCD report to stop or modify destructive development projects, to promote alternatives, to encourage greater accountability and performance of development processes, and to push for new models of decision-making around development planning. Some ideas for how you can use the report include:

- Educate affected communities, NGOs and the general public about the WCD's findings and recommendations. Translate materials into local languages. Organise local, regional and national workshops for NGOs, affected communities, academics, students and government representatives to discuss the report.
- Prepare analyses on whether proposed projects comply with WCD recommendations and distribute them to government agencies and funders.
- Advocate for WCD recommendations to be incorporated into national laws and policies and pressure government institutions to formally endorse the recommendations.
- Push the World Bank, regional development banks, export credit agencies and bilateral aid agencies to adopt WCD recommendations into their policies and follow them in practice.
- Use the WCD recommendations to advocate for reparations for communities affected by existing dams.
- Organise community-based processes to identify and promote non-dam alternatives for water supply, energy and flood control.

For more information, go to the WCD's website at www.dams.org and International Rivers Network's website at www.irn.org.

Introduction

There is good news for people worldwide who are committed to caring for their rivers, who believe in finding the best ways to produce and distribute electricity, who understand that access to water is a basic human right, and who know that respect for human rights must be a core principle guiding development. That news comes in a big package – the 400-page report of the World Commission on Dams (WCD for short). The report is formally titled *Dams and Development: A New Framework for Decision Making*, but is commonly referred to as "the WCD Report."

The report boils down to this: worldwide, large dams haven't provided the benefits that their promoters had predicted. At the same time, the negative impacts of large dams have been far greater than imagined. The report finds that the status quo is unacceptable; that outstanding social and environmental problems associated with existing dams need to be addressed; and that the rights of all people, particularly indigenous peoples, must be respected.

Continuing to plan and build dams as they have always been planned and built, the WCD says, is unacceptable. Instead, the WCD recommends a new approach to decision-making based on the principles of equity, efficiency, participatory decision-making, sustainability and accountability. The WCD's guidelines and recommendations are extraordinarily useful to academics, activists, professionals and government officials who are interested in promoting a new model for making decisions about development.

You may think that such a report is unremarkable. This would be true if the report had been produced by International Rivers Network or one of hundreds of organisations worldwide opposing big dams. What is remarkable about the WCD report is who put it together: namely, a Commission of 11 members from diverse backgrounds, including representatives from the dam-building industry, as well as from governments, NGOs and people's organisations .

The problem with all this good news is that the package that it comes in is difficult to unwrap, and so we'd like to help. Hence we offer this *Citizens' Guide to the WCD*. So that you can appreciate the legitimacy and usefulness of the report's findings, we provide its history, from the WCD's conception through to publication of the report. So that you can supplement your own knowledge of the actual performance of dams worldwide, we highlight the report's key findings. To help you understand the WCD's alternative decision-making approaches, we highlight the report's guidelines and recommendations. To help you in your campaigns, we offer suggestions on how you can use the report to stop destructive development projects and promote alternatives.

This particular guide is the first of two that we plan to produce, targeted at different audiences. We hope that this one will be particularly helpful to those individuals and organisations that work to inform and influence policy-makers locally, regionally and internationally. While this includes many people directly affected by large dams, another guide will be written specifically for – and with much greater participation of – project-affected people.

We've tried to put together a guide that's both useful and easy to read. We haven't always succeeded. The world of development policy is filled with overly complex language to describe relatively simple ideas. We will learn a lot of lessons about how to communicate more clearly as we translate this guide into many languages. For readers of the English edition, we urge you to read behind the jargon, and if you have any suggestions for how we can better deal with it ourselves, please share them with us.

The goal of this guide is to ensure that the WCD recommendations and guidelines are more likely to be followed than not. If they are not respected, but instead are dismissed, ignored and left to collect dust, progress toward stopping destructive projects will not just be stunted, but perhaps reversed, and the WCD experiment, only half done, will be deemed a failure.

If the findings are respected, however, and the guidelines and recommendations put to use, the work of the Commission and the hundreds of people who contributed to it will help put an end to the days of destructive development projects.

Juliette Majot
International Rivers Network

The Creation of the World Commission on Dams

1.1 ACTIVISTS CALL FOR INDEPENDENT REVIEW

The origins of the WCD lie in the many struggles waged by dam-affected communities and NGOs around the world, in particular those targeting World Bank-funded projects. In June 1994, to coincide with the 50th anniversary of the World Bank, more than 2,000 organisations signed the Manibeli Declaration, calling for the World Bank to establish an "independent comprehensive review of all Bank-funded large dam projects." Anti-dam activists believed that an independent review of the projected and actual performance and impacts of dams would confirm many of their arguments if carried out in an honest and rigorous manner, and would help to promote more appropriate investments.

At the end of 1994, the World Bank's Operations Evaluation Department (OED) announced that it would undertake a review of large dams the Bank had funded. The review was completed in 1996, but never publicly released.[1] Although it contains some criticisms of the World Bank's record, on the whole it sided with the Bank and the dam industry, concluding that "overall, most large dams were justified." NGOs prepared a critique of a leaked copy of the review, arguing that the OED had exaggerated the benefits of the dams under review, underplayed their impacts and displayed a deep ignorance of the social and ecological effects of dams.[2]

Critics then stepped up pressure on the Bank to commission a truly independent dam review. In March 1997, participants at the first international conference of dam-affected people, held in Curitiba, Brazil, called for an immediate moratorium on all dam-building until a number of conditions were met. One of these conditions was that an international, independent commission be established "to conduct a comprehensive review of all large dams financed or otherwise supported by international aid and credit agencies, and its policy conclusions implemented."

1.2 THE WCD IS BORN

Shortly after the Curitiba conference, the World Bank and IUCN invited around 40 representatives from the dam industry, governments, academia, NGOs and dam-affected people's movements to a workshop in Gland, Switzerland, to discuss a second phase of the OED's 50-dam review. At the workshop, participants agreed on the need for an independent commission to review large dams in general, and not just those funded by the World Bank. The commission would look both backward at the "development effectiveness" of existing dams, and forward to how water and energy projects should be planned and built in the future.

Some representatives of the dam industry agreed because they thought it would confirm their strongly held beliefs about the great benefits of dams. Others realised that their industry was in crisis and believed that they needed to learn from past mistakes if they wanted to win public acceptance and funds for future dams.

The Gland workshop mandated the World Bank and IUCN to oversee the establishment of the World Commission on Dams, in close consultation with those present in Gland. The process was highly contentious and several times both NGOs, the World Bank, and industry representatives came close to withdrawing from the negotiations. The main disagreement was in the selection of commissioners, in particular because of the reluctance of the World Bank and IUCN to appoint representatives of dam-affected people's movements.

Agreement was reached on the mandate and composition of the WCD in February 1998. The mandate is outlined on page 2 of this guide. Professor Kader Asmal, formerly South Africa's Minister for Water Affairs and an expert on international human rights law, was selected to chair the commission. Lakshmi Chand Jain, a diplomat and economist from India, was to serve as the vice-chair. The other members represented a broad spectrum of those with an interest in large dams, rivers and energy – governments and dam operators, corporations and industry associations, river basin authorities and academics, NGOs and grassroots movements (see Box 1). All members served in their individual capacity and not as representatives of their institutions or constituencies.

The group that had overseen the Commission's establishment was enlarged to serve as a consultative body and named the WCD Forum. The 68-member Forum met three times between 1998 and 2001 to provide input into the work of the Commission. Twenty affected people's groups and NGOs were represented in the Forum.

Box 1 – WCD COMMISSIONERS

Professor Kader Asmal (Chair), *Minister of Education and former Minister of Water Affairs and Forestry, South Africa*

Lakshmi Chand Jain (Vice-Chair), *Industrial Development Services, India*

Donald J. Blackmore, *Chief Executive of the Murray-Darling Basin Commission, Australia*

Joji Carino, *Tebtebba Foundation, Philippines/UK*

José Goldemberg, *Professor at University of São Paulo, Brazil and former Secretary of Science and Technology, Brazil*

Judy Henderson, *former Chair of Oxfam International, Australia*

Göran Lindahl, *former President and CEO of ABB Ltd., Switzerland*

Deborah Moore, *former Senior Scientist with Environmental Defense Fund, US*

Medha Patkar, *founder of the Narmada Bachao Andolan (Struggle to Save the Narmada River), India*

Thayer Scudder, *Professor of Anthropology at the California Institute of Technology, US*

Jan Veltrop, *past President of the International Commission on Large Dams and engineer retired from Harza Engineering Company, US*

1.3 THE WCD'S WORK

During mid-1998 a secretariat was established for the WCD in Cape Town, South Africa. The secretariat developed a 30-month work plan which included a range of studies to be carried out by consultants in consultation with stakeholders. Public input was solicited through submissions and regional public consultations. The final report was then based on the information in this "knowledge base" (see Figure 1 and Box 2).

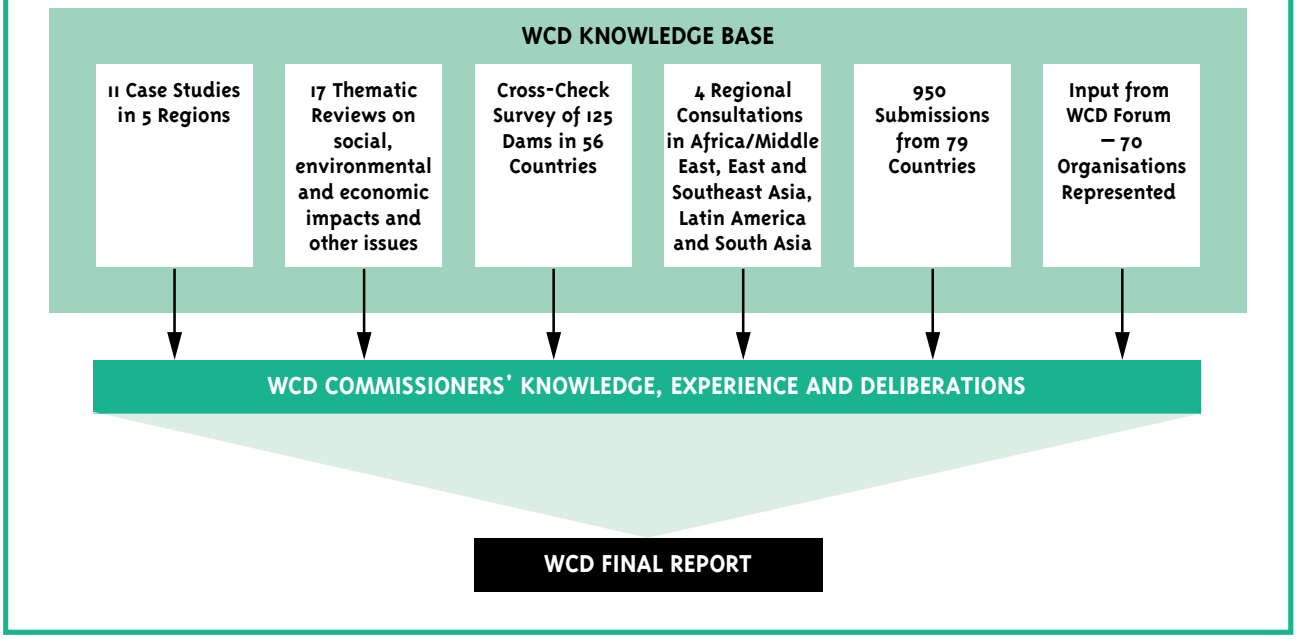
The controversies surrounding large dams played out throughout the WCD process. Both pro- and anti-dam groups were critical of various aspects of the WCD's work. The fiercest criticism came from India's dam-building establishment, which in 1998 forced the Commission to cancel its planned South Asia public consultation in Bhopal.

Among dam opponents' criticisms were the secretariat's selection of consultants who had close ties with the dam industry. The lack of a strong consultation strategy meant that groups and individuals who did not speak English or were not familiar with the jargon of the dam industry found it very difficult to bring their experiences into the process. Background documents were not translated into local languages.

NGOs and people's movements from around the world followed the WCD's work closely. They sent in submissions, gave presentations at regional consultations, participated in meetings on the detailed case studies and commented on drafts of the thematic reviews. IRN coordinated an informal network of around 20 NGOs and people's movements under the name of the International Committee on Dams, Rivers and People which provided input into the WCD and encouraged other NGOs and movements to get involved.

Finally, the hard work, the commitment of the WCD Commissioners and staff – together with the evidence accumulated through the shared knowledge base, the consultations and the field trips – allowed Commissioners to overcome their different backgrounds and perspectives and to agree on a report at the end of the process. The report, *Dams and Development: A New Framework for Decision-Making*, was launched by Nelson Mandela at a ceremony in London on 16 November 2000. The report was signed unanimously, with an additional comment from Medha Patkar.

Figure 1 – WCD WORK PROGRAMME



Box 2 — WCD CASE STUDIES AND THEMATIC REVIEWS

The following studies are available online at www.dams.org or by contacting the Dams and Development Project (see Chapter 8).

WCD CASE STUDIES

The WCD examined eight dams in detail and also commissioned studies to examine the overall experience with dam-building in China, India and Russia.

Aslantas Dam, Ceyhan River Basin, Turkey
Kariba Dam, Zambezi River, Zambia/Zimbabwe
Gariep/Vanderkloof Dams, Orange River Basin, South Africa (pilot study)
Grand Coulee Dam, Columbia River, US/Canada
Glomma-Laagen Basin, Norway
Pak Mun Dam, Mun-Mekong River Basin, Thailand
Tucuruí Dam, Tocantins River, Brazil
Tarbela Dam, Indus River Basin, Pakistan

WCD THEMATIC REVIEWS

The WCD commissioned 17 thematic reviews to inform the final report. These papers were classified under five broad categories: social and distributional issues, environmental issues, economic and financial issues, options assessment and governance and institutional processes. The reviews were supported by over 100 commissioned contributing papers.

Social and Distributional Issues
- Social impacts of large dams: equity and distributional issues
- Dams, indigenous people and vulnerable ethnic minorities
- Displacement, resettlement, rehabilitation, reparation and development

Environmental Issues
- Dams, ecosystem functions and environmental restoration
- Dams and global change

Economic and Financial Issues
- Economic, financial and distributional analysis
- International trends in project financing

Options Assessment
- Electricity supply and demand management options
- Irrigation options
- Water supply options
- Flood control and management options
- Operation, monitoring and decommissioning of dams

Governance and Institutional Processes
- Planning approaches
- Environmental and social assessment for large dams
- River basins — institutional frameworks and management options
- Regulation, compliance and implementation
- Participation, negotiation and conflict management

FOOTNOTES

1 World Bank Operations Evaluation Department, *The World Bank's Experience with Large Dams: A Preliminary Review of Impacts*, Washington DC, August 1996. A sanitised 4-page "Précis" is the only publicly available version of the 67-page review.

2 P. McCully, "A Critique of *The World Bank's Experience with Large Dams: A Preliminary Review of Impacts*," International Rivers Network, Berkeley, CA, April 1997. www.irn.org/programs/finance/critique.shtml

2

A Brief Summary of the WCD Report

The WCD found that 40-80 million people have been resettled for dams. Applied to today's population, this means that approximately one out of every hundred people now living on earth would have been displaced by a large dam.

The WCD report is the product of numerous political negotiations and compromises. While there are plenty of inclusions, omissions and compromises in the report for NGOs and affected people to criticise, *Dams and Development* is on the whole a strongly worded and coherent report. In the report's Executive Summary, the WCD states:

"We believe there can no longer be any justifiable doubt about the following:

- Dams have made an important and significant contribution to human development, and the benefits derived from them have been considerable.
- In too many cases an unacceptable and often unnecessary price has been paid to secure those benefits, especially in social and environmental terms, by people displaced, by communities downstream, by taxpayers and by the natural environment.
- Lack of equity in the distribution of benefits has called into question the value of many dams in meeting water and energy development needs when compared with the alternatives.
- By bringing to the table all those whose rights are involved and who bear the risks associated with different options for water and energy resources development, the conditions for a positive resolution of competing interests and conflicts are created.
- Negotiating outcomes will greatly improve the development effectiveness of water and energy projects by eliminating unfavourable projects at an early stage, and by offering as a choice only those options that key stakeholders agree represent the best ones to meet the needs in question."

This section contains a brief summary of the WCD report. A more complete summary of WCD findings and recommendations is contained in Chapters 6 and 7 of this guide.

2.1 FINDINGS

Social costs of dams are devastating and largely ignored

The WCD found that 40-80 million people have been resettled for dams. Applied to today's population, this means that approximately one out of every hundred people now living on earth would have been displaced by a large dam. Indigenous people and women have suffered disproportionately from the impacts of dams while often being excluded from the benefits. Resettlement has caused extreme economic hardship, community disintegration and an increase in mental and physical health problems. Millions of people living downstream of dams have also suffered devastating impacts as a result of disease, altered river flow and loss of natural resources such as fisheries and floodplain agriculture.

The benefits of dams have largely gone to the rich while the poor bear the costs. Further, the WCD found that these costs were frequently neither addressed nor accounted for.

> The WCD says that no dam should be built without the "demonstrable acceptance" of affected people, and without the free, prior and informed consent of indigenous and tribal peoples.

Environmental costs of dams are huge, unanticipated and hard to mitigate

The WCD found that large dams have had profound and irreversible environmental impacts including extinction of species, loss of forest, wetlands and farmland. An estimated 60 percent of the world's large rivers are fragmented by dams and diversions. The WCD states that large dams have led to "the loss of aquatic biodiversity, upstream and downstream fisheries and the services of downstream floodplains, wetlands and riverine estuarine and adjacent marine ecosystems." Negative environmental impacts were not predicted and efforts to mitigate these impacts have failed.

The WCD found that 20 percent of the earth's land which is irrigated by large dams is lost to salinisation and waterlogging, and that 5 percent of the world's freshwater evaporates from reservoirs.

Dams emit greenhouse gases

Greenhouse gases are responsible for changing the earth's climate. Reservoirs emit greenhouse gases due to the rotting of flooded vegetation and soils and of organic matter flowing into the reservoir from its catchment. The WCD estimates that perhaps between 1 to 28 percent of global greenhouse gas emissions comes from reservoirs. In some cases emissions from a reservoir can be equal to or greater than those from a coal or gas-fired power station. Emissions are highest in shallow, tropical reservoirs.

Dams often fail to provide projected benefits

While it is agreed that dams can be beneficial, actual benefits are often lower than the projected benefits on which decisions to build a dam are based. Specifically, the WCD found the following disadvantages:

- Power – more than half the hydropower dams reviewed generated less power than projected.
- Water supply – 70 percent did not reach targets.
- Irrigation – almost half have under-performed.
- Flood control – dams have increased human vulnerability to floods.
- Multi-purpose dams particularly fell short of targets.

Dams have had poor economic performance

The WCD found that on average, large dams have been at best only marginally economically viable. The average cost overrun of dams is 56 percent. This means that when a dam is predicted to cost $1 billion, it ends up costing $1.56 billion. Half of the dams surveyed had a construction delay of one year or more. If these factors had been taken into account at the time of decision-making, many alternatives would have been more economically viable.

Alternatives are available but not treated as equal contenders

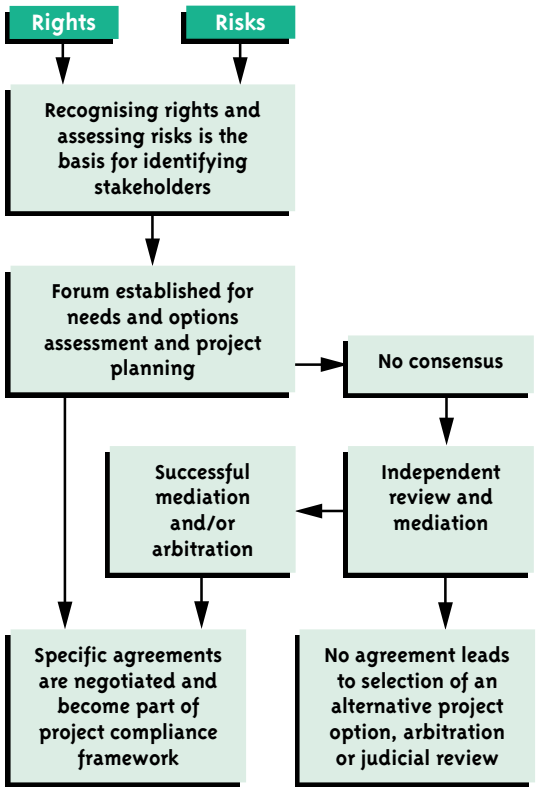
The WCD found that many different options for meeting energy, water and food needs currently exist. One set of options includes reducing demand for water and energy (demand-side management) and

improving efficiency in use and in production. There are also many alternative supply options. Alternatives to dams do exist, and are often more sustainable and cheaper. The WCD recommended that alternatives to large dams be treated with equal emphasis in the planning process.

Bias towards large dams

The WCD found that large dams have been a long-time favourite of politicians, government officials, dam-building companies and development banks. They have provided opportunities for corruption and favouritism and have skewed decision-making away from cheaper and more effective options.

Figure 2 – RIGHTS & RISKS APPROACH



2.2 RECOMMENDATIONS

In addition to reviewing the past record of dams and assessing alternatives, the WCD makes recommendations for the future. These recommendations establish a framework for decision-making not just on dams but on energy and water planning in general. Beyond energy and water, the recommendations have implications for the ways that all types of development projects are planned and implemented.

A NEW WAY FORWARD – BASED ON "RIGHTS AND RISKS" APPROACH

The WCD proposes a new approach to decision-making based on recognising the rights of, and assessing the risks to, all stakeholders. This means that all stakeholders whose rights might be affected, and all stakeholders who have risks imposed upon them involuntarily, should be included in decision-making on development. The WCD believes that this approach "offers an effective way to determine who has a legitimate place at the negotiation table and what issues need to be included on the agenda." The WCD developed seven strategic priorities for this new approach to development.

1. Gaining public acceptance

The WCD says that no dam should be built without the "demonstrable acceptance" of the affected people, and without the free, prior and informed consent of affected indigenous and tribal peoples. This should be achieved through negotiated agreements that are legally binding.

2. Comprehensive options assessment

Before deciding whether to build a dam, there should be a transparent and participatory assessment of needs for water, food and energy. All options for meeting these needs should be considered. First priority should be given to making existing water, irrigation and energy systems more effective and sustainable. Social and environmental concerns should be given the same weight as technical and economic concerns during the options assessment process and throughout the project planning, construction and operation phases.

3. Addressing existing dams

Opportunities should be taken to rehabilitate and upgrade existing dams to maximise benefits. Reparations, or retroactive compensation, should be made to communities impacted by existing dams. Dam operations should be modified to mitigate environmental impacts. All dams should have time-bound licence periods. Relicensing processes should provide opportunities for participatory reviews of project performance and impacts which may lead to changes in project operation, or dam decommissioning.

4. Sustaining rivers and livelihoods

Options assessment and decision-making around river development should try to avoid impacts, followed by the minimisation and mitigation of harm to the river system. Before making a decision to build a dam, good baseline information and scientific knowledge of ecosystems, social and health issues should be gathered and analysed, taking into account the cumulative impacts of dams and other development projects on ecosystems. Dams should release "environmental flows" to help maintain ecosystems and livelihoods.

5. Recognising entitlements and sharing benefits

Adversely affected people should be the first to benefit from a project. This includes those displaced, those living upstream and downstream of the dam, those living around the reservoir, and those whose lands are impacted by resettlement sites. They should participate in the identification, selection, distribution and delivery of benefits. Negotiations with affected people should result in mutually agreed and legally enforceable mitigation and development provisions.

6. Ensuring compliance

Financial institutions and project promoters must adopt a clear set of criteria and guidelines for developing water and energy resources. Before a project begins, a plan for complying with all project-related obligations must be developed including both incentives and sanctions. Steps should be taken to end corrupt practices.

7. Sharing rivers for peace, development and security

Measures should be developed for countries to resolve disputes and cooperate over issues concerning transboundary rivers. States should have the ability to stop projects on shared rivers using independent panels and other forms of dispute resolution. WCD principles should be incorporated into national water policies to help resolve disputes and promote cooperation over shared river basins.

3

Responses and Follow-up Activities to the WCD Report

The WCD's findings have generated a broad array of reactions and official responses, some encouraging, some disappointing. Many NGOs and some international organisations welcomed the report and called for its adoption and implementation by dam proponents. Other organisations, governments and companies have rejected the report.

When the report was released, it was warmly welcomed by the coalition of activists and affected people monitoring the WCD. "The report vindicates much of what dam critics have long argued. If the builders and funders of dams follow the recommendations of the WCD, the era of destructive dams should come to an end," the groups said in a statement. A "Call to Public Financial Institutions" endorsed by 109 NGOs from 39 countries was released at the report launch (see Box 3).

Other institutions also welcomed the report at the London launch. IUCN described the report as a "landmark in the history of the development and operation of large dams." The United Nations Environment Programme (UNEP) supported the report, and the World Health Organisation expressed its "strong endorsement." Skanska, a Swedish dam building company, immediately endorsed the WCD's recommendations.

Since this time, the report has generated a range of responses from different actors (see Table 1). The WCD has certainly made an impact, and its circle of influence is ever widening. But it is clear that more work needs to be done to encourage industry, funders and governments to adopt its recommendations. See Chapter 4 for more information on how you can use the report to do this.

CAMPAIGN TIP!

Use the "Fact Sheet on the WCD" on p. 2 of this Citizens' Guide as a handout to distribute at workshops, seminars, protests and other events. Translate it into local languages and distribute to communities, affected people and other interested people.

Table 1 — SOME OFFICIAL REACTIONS TO THE WCD REPORT

INSTITUTION	POSITION	COMMENTS
Governments		
China	Rejects	China initially supported the WCD but later refused permission for the WCD to study any of its dams. A senior official from China's Ministry of Water Resources was selected as a Commission member but withdrew, supposedly for health reasons. She was not replaced by the Chinese government.
Germany	Supports	Has committed to promoting dialogues between government agencies, NGOs and the private sector on how best to respond to the report. Will promote the implementation of WCD recommendations by German aid agencies and at the World Bank.
India	Mixed	The Federal government denied the WCD permission to choose an Indian dam as one of its case studies and refused to allow the WCD to hold its South Asia consultation in India. The Federal Ministry of Water Resources has rejected the report, although it is a member of the WCD Forum. Other central government bodies and individuals have shown more openness to the WCD. A series of regional multi-stakeholder workshops has shown that there is some support among state government officials.
Norway	Mixed	The Ministry of Foreign Affairs coordinated a review of the WCD report among various government agencies. The review said the report was "extremely interesting and useful" but made no commitments to change government policies. The section on development cooperation states that Norway agrees with "the main principles set out in the Commission's report on public participation in and transparency relating to planning processes." However it criticises the WCD for proposing to weaken the rights of national governments to take decisions on natural resources.
South Africa	Supports	A joint symposium was hosted by the South African government, industry and NGOs in July 2001 where there was overall support for the WCD. An ongoing multi-stakeholder process was launched to investigate how the WCD findings can be contextualised in South Africa.
Sweden	Supports	The Swedish International Development Agency (SIDA) has promised to support Southern governments' efforts to implement the WCD's findings, and to help disseminate the report. SIDA has stated it will use the report in future decision-making around dam projects. However, it says it will not make policy changes, as it believes its current policies are close to those recommended by the WCD.
Turkey	Rejects	The Turkish General Directorate of State Hydraulic Works alleges that the WCD was a conspiracy by the nuclear and thermal power industries. Turkey refused to allow the WCD to study the huge Atatürk Dam in southeastern Anatolia.
United Kingdom	Supports	Established a cross-departmental group to review the WCD report and assess its implications for UK support of dams overseas. The Department for International Development (DFID) has offered support to developing countries wanting to implement the Commission's report. DFID is supporting a dialogue on the report involving UK government agencies, NGOs, unions and companies.

Table 1 – SOME OFFICIAL REACTIONS TO THE WCD REPORT

INSTITUTION	POSITION	COMMENTS
United States	Mixed	The federal agencies that have built most of the big dams in the US have not officially responded to the WCD. The US export credit agencies, Ex-Im and OPIC, have welcomed the report and committed to incorporating parts of the WCD's recommendations into their policies.
Industry		
International Commission on Large Dams (ICOLD)	Rejects	ICOLD, ICID and IHA have all been lobbying governments, the World Bank and others to reject the WCD's report. But there are vigorous disagreements within each of these organisations and there are chapters and individuals within them that support the WCD report.
International Commission on Irrigation and Drainage (ICID)	Rejects	See above.
International Hydropower Association (IHA)	Critical of report	See above. At time of writing had not yet decided whether to remain engaged with WCD follow-up processes.
Hydro Equipment Association (HEA)	Uncertain	Established in 2001 by Alstom Power, Voith Siemens and VA Tech with goal of representing hydropower interests in post-WCD processes.
International Financial Institutions		
African Development Bank	Supports	Welcomed the report as "a major milestone in the assessment of large dams." The Bank says it plans "to incorporate the criteria and guidelines during the development of Bank's technical guidelines to support our recently completed policy on Integrated Water Resources Management."
Asian Development Bank	Supports	In a draft response issued in August 2001, the ADB says that it "supports the Commission's guidelines and intends to consider them in all future projects." However, it also states that key WCD recommendations such as those requiring negotiated agreements with affected people are the responsibility of governments and that the ADB will not adopt them. The ADB hosted a multi-stakeholder meeting on the WCD in the Philippines in May 2001 and has said it will facilitate other national workshops on the WCD in 2002, in Vietnam, India, Bhutan and Nepal.
World Bank	Mixed	See Section 3.1
Export Credit Agencies	Mixed	G8 environment ministers in March 2001 called for export credit agencies to "adopt common measures to increase the transparency of their decision-making process including... consideration of relevant elements of the recommendations of the World Commission on Dams." But overall progress among the ECAs in adopting common standards has been extremely slow.

For more information on responses to the WCD report, go to www.unep-dams.org.

Box 3 — AN NGO CALL TO PUBLIC FINANCIAL INSTITUTIONS

London, 16 November 2000

Given the role of financial institutions in funding large dams and in the WCD process, and based on the WCD report's recommendations, we call on all public financial institutions, including the World Bank, the regional development banks, the export credit agencies and bilateral aid agencies, to take the following actions:

- All public financial institutions should immediately and comprehensively adopt the recommendations of the World Commission on Dams, and should integrate them into their relevant policies, in particular those on water and energy development, environmental impact assessment, resettlement and public participation.
- All public financial institutions should immediately establish independent, transparent and participatory reviews of all their planned and ongoing dam projects. While such reviews are taking place, project preparation and construction should be halted. Such reviews should establish whether the respective dams comply, as a minimum, with the recommendations of the WCD. If they do not, projects should be modified accordingly or stopped altogether.
- All institutions which share in the responsibility for the unresolved negative impacts of dams should immediately initiate a process to establish and fund mechanisms to provide reparations to affected communities that have suffered social, cultural and economic harm as a result of dam projects.
- All public financial institutions should place a moratorium on funding the planning or construction of new dams until they can demonstrate that they have complied with the above measures.

Endorsed by 109 NGOs from 39 countries

3.1 SLOW GOING AT THE WORLD BANK

The World Bank's response to the report has been disappointing. The Bank says that it will use the report "as a valuable reference to inform its decision-making process," yet has so far refused to adopt any of the WCD recommendations into its binding policies.

The Bank was one of the two sponsors of the WCD. During the establishment phase and the Commission's deliberations it frequently highlighted its role in the process to show that it was willing to listen to its critics and to be an honest broker between the interests of government, the private sector and NGOs. At the launch ceremony, Bank President James Wolfensohn said the report showed that "there is common ground that can be found among people of good faith coming from very diverse starting points."

It was therefore anticipated that the Bank would incorporate the WCD's recommendations into its policies and practices and encourage others to do so. What has followed instead has been a battle between some staff members who are opposed to incorporating WCD recommendations into Bank policy, and other staff members, Executive Directors and members of civil society who believe that the Bank has an obligation to implement the recommendations.

In January 2002, the World Bank released its official position on the WCD report. In it, the Bank says that it "shares the WCD core values and concurs with the need to promote the seven strategic priorities." However, the Bank will not adopt the WCD's recommendations into its official policies, instead making a commitment to "work with the government and developer on applying the relevant guidelines in a practical, efficient and timely manner" in the context of specific projects.

The official position also states that the Bank has initiated a "Dams Planning and Management Action Plan." The plan contains vague commitments to undertake activities which fall under six headings including "working with borrowers to move 'upstream' in decision-making" (in other words to focus more on assessing different alternatives to achieve development objectives rather than assuming that a dam is the best option); "effectively implement the World Bank's existing safeguard policies" and "continue to support borrowers in improving the performance of existing dams." These activities are in themselves commendable and are actions which critics have long been urging the Bank to undertake.

There is still no sign, however, as to how this action plan will be turned into reality. In a departure from

usual Bank procedure, Bank staff state that this action plan is a "demand-driven operation" and that the Bank "will not impose on countries." Given that the Bank rarely hesitates in advising on national policies and even transforming entire sectors to better suit the private sector, this seems to be nothing more than an excuse for its non-implementation.

In addition, the Bank is in the process of developing a Water Resources Sector Strategy that is expected to be the main vehicle for implementing WCD recommendations. It remains to be seen whether this strategy will be meaningful and enforceable, and result in changes to operational policies. At this writing, a first draft was expected to be released for public comment around March 2002.

One promising sign has come from donor countries who, in negotiations for replenishing funds for the International Development Association (IDA), recently "asked that IDA take into account the core values and strategic priorities suggested by the WCD for preparing and evaluating dam projects." IDA is the arm of the World Bank that supports the poorest nations.

For more information, see the World Bank's Water Resource Management website at www.worldbank.org/water.

3.2 WCD ACTIVITIES SINCE THE LAUNCH

The Commission itself was disbanded with the report's publication, but a small secretariat remained until September 2001 to promote and disseminate the report. So far, the secretariat has distributed around 4,600 hard copies of the report and more than 15,000 copies of a CD-ROM that includes the report and thousands of pages of background materials. The entire report has been translated into Spanish and can be downloaded at www.dams.org. Negotiations are

Box 4 — THE DAMS AND DEVELOPMENT PROJECT

In February 2001, the 80 participants in the final meeting of the WCD Forum agreed that a new organisation was needed to disseminate the WCD report and promote dialogue on how its recommendations could be put into practice. As a result, the Dams and Development Project (DDP) was created under the auspices of UNEP, the United Nations Environment Programme.

The four main aims of the DDP are to:

- support the widespread dissemination of the WCD report and related information, including the translation of WCD materials into different languages;
- support country-level, regional and global dialogues on the report and the issues it addresses;
- strengthen interaction and networking among participants in the dams debate with the aim of engaging all stakeholders in the dialogue; and
- facilitate the flow of information and advice concerning initiatives relevant to the WCD report.

The mandate of the DDP excludes it from taking positions or making judgments on individual projects or associated practices.

The Dams and Development Project is based in Cape Town, South Africa, and has a two-year mandate starting from November 2001. It is being financed mainly by the governments of Sweden, Switzerland, Germany, UK and the Netherlands.

A diverse 14-member international steering committee will guide the DDP's work. The committee includes representatives from the Philippines-based Indigenous Peoples' International Centre for Policy Research and Education (Tebtebba Foundation), the Save the Narmada Movement and International Rivers Network, as well as the World Bank, IUCN, governments and the private sector.

DDP staff and consultants will attend relevant meetings and conferences around the world to give presentations on the WCD and disseminate materials. The DDP will also facilitate multistakeholder dialogues on the WCD at the national or international level through providing funds, resource people, information materials and experience from similar processes elsewhere. Information on WCD follow-up initiatives and reactions to the Commission's report will be posted on the DDP's web site at www.unep-dams.org.

underway to publish it in Chinese and French. An overview of the report is available in eight languages and can also be downloaded at www.dams.org.

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Since the launch of the WCD report, the former Commissioners and secretariat staff have presented the report at meetings in some 25 countries. NGOs in many parts of the world have organised workshops to bring the findings to a local, regional or national level. Individual groups working on specific dams have begun to use the WCD recommendations to bolster their campaigns against destructive projects (see Chapter 4).

4

Using the WCD Report

"We have told our story. What happens next is up to you."
WCD Report.

The WCD was an internationally respected commission, composed of representatives from all sides of the dams debate, and as such its findings and recommendations can carry great weight in dam campaigns worldwide.

The WCD report creates a model of participatory decision-making which is relevant far beyond the energy and water sectors. It can be used to support NGOs, people's movements and sympathetic professionals in the quest for transparency and democracy in decision-making processes, for community control over local resources, for social justice, environmental protection and the equitable and sustainable management of scarce resources.

But there's a catch. The WCD's guidelines do not constitute international law, and its recommendations are not binding on any institution. It is up to NGOs and people's movements to pressure governments, companies and funding institutions to comply with the WCD recommendations.

We need to educate ourselves, our communities and our governments about the report and the tools that it offers as we strive for equitable and ecologically sustainable development. We need to pressure governments and funding institutions to adopt and implement WCD recommendations. We need to show how individual projects fail to comply with WCD recommendations, and whether they can be brought into compliance. We need to promote alternatives to dams. We need to use the WCD's recommendations to push for reparations, or retroactive compensation, for communities affected by existing dams.

This section offers some ideas for how you can use the WCD report to stop destructive development projects and promote aternatives. Also included are some examples of follow-up activities that have been organised by other NGOs and people's organisations.

4.1 HOW YOU CAN USE THE WCD REPORT

The WCD presents a valuable tool for NGOs and affected communities. Some ideas for how to use the report include:

Educate communities and NGOs

- Translate this Citizens' Guide into local languages and circulate to project-affected communities and NGOs.
- Translate parts of the WCD report into local languages and circulate widely throughout the country. Approach the Dams and Development Project for funding for these translations.
- Organise local, regional and national workshops for affected communities and NGOs to educate them about the WCD. Use this as an opportunity to establish a local, regional or national network on dams. Invite a former WCD Commissioner or secretariat staff member to present the WCD report at the workshop (see p. 24 for examples from India and the Philippines).
- Organise a briefing or workshop for the media to discuss the WCD's findings and its implications for your region. Invite local experts, if possible, to discuss specific projects' impacts.

Challenge proposed projects

- Prepare your own analysis of how a proposed project complies with WCD recommendations and distribute this to government agencies and funders (see Box 5 for an example). The WCD report has a special section on dams in the pipeline which gives specific recommendations for dams at various stages of planning and development (see p. 45).
- Set up an independent team to review a proposed project's compliance with WCD recommendations, or pressure the government or funding agency to appoint such a team. Call upon local and international experts from academic, industry and research institutions as needed. The views of independent experts can often have more credibility with governments or funding agencies than analyses done by NGOs. The use of independent review panels is recommended by the WCD (see Guideline 22 of the WCD's Guidelines for Good Practice).

Influence government policies

- Advocate for WCD recommendations to be incorporated into national laws and policies and pressure government institutions to formally endorse the recommendations. Such institutions include energy and water ministries; licensing authorities for energy, flood regulation, irrigation or water supply projects; operators such as state electricity boards or river basin authorities; and public infrastructure and development finance institutions.
- Start a local campaign to pressure your country's export credit agency and bilateral aid agency to adopt WCD recommendations. Educate and lobby your elected representatives to push for accountability of these agencies.
- Set up national multi-stakeholder forums to discuss and implement the WCD recommendations. Approach the Dams and Development Project for funding to support these activities. See Box 6 for tips on how to organise a multi-stakeholder process.
- Participate in national workshops organised by the Dams and Development Project, multilateral institutions such as the Asian Development Bank and other official forums.
- Push for a National Commission on Dams to be established using a process and methodology similar to the World Commission on Dams.

Push international financial institutions to adopt WCD recommendations

- Start or participate in national, regional and international campaigns to pressure the World Bank, regional development banks, export credit agencies and bilateral aid agencies to adopt WCD recommendations.
- Pressure your finance ministries to encourage the World Bank and other institutions to adopt and implement WCD recommendations. Try to get your Congress or Parliament to enact legislation requiring your government to push for reforms at the World Bank and other international financial institutions. This is especially effective for donor countries, which can make contributions to the World Bank and other institutions conditional upon specific reforms.

Call for reparations

- Use the WCD recommendations to advocate for reparations for communities affected by existing dams.
- Push your government to establish an independent, multi-stakeholder committee to address the unresolved legacy of past dams (recommended by WCD, Chapter 10.2).

Promote alternatives

- The WCD identifies a range of alternatives to dams for meeting energy, water and flood control needs. Use the WCD recommendations to encourage governments to undertake participatory needs and options assessments.
- Organise your own community-based processes to identify development needs and goals.
- Enlist the help of experts from academia, industry and research institutions to assess a range of options and recommend the best option on social, environmental and economic grounds. Promote this option with government and funders. Develop your own project and use this as a model.

CAMPAIGN TIP!

The Dams and Development Project can be a resource for NGOs. NGOs interested in organising or attending workshops on the WCD report, translating WCD materials or inviting a resource person to explain the WCD process at a meeting or conference can contact the DDP at info@unep-dams.org.

4.2 HOW IS THE WCD RELEVANT FOR OTHER SECTORS?

The WCD's recommendations propose a new approach to development based on generally accepted core values and international conventions. Therefore, many of its strategic priorities and guidelines should be applied to infrastructure and development planning generally. The WCD calls for free, prior and informed consent of indigenous peoples affected by a project, comprehensive assessment of options before deciding to build a project and decision-making based on social and environmental as well as economic factors.

The following are examples of how WCD recommendations can be applied to other sectors:

- The principles of demonstrable public acceptance and prior informed consent should be incorporated in national energy and water policies, national land acquisition acts, and policies governing the transport, mining and land development sectors. They should also be incorporated into the policies of international financial institutions.
- The principles of participatory needs and options assessments should be extended to other sectors, such as the transport, extractive industries, industrial and telecommunications sectors, and integrated into respective laws and policies.
- The principle of providing reparations for the unresolved problems of past projects should also be applied to mining, forestry, urban renewal, transport or other projects which have a legacy of unresolved social and environmental impacts.

4.3 WCD SUPPORTS REPARATIONS FOR DAM-AFFECTED COMMUNITIES

NGOs can use the WCD report to support claims for reparations, or retroactive compensation, for communities affected by dams. The WCD recommends that "Outstanding social problems associated with existing large dams are identified and assessed; processes and mechanisms are developed with affected communities to redress them." The WCD states that reparations should be made to affected communities before funding new dam projects in that particular location or river basin.

Reparations process

The report sets out a process for assessing claims and making reparations. The WCD states that responsibility for initiating the process of reparations rests with the government, but that multiple actors may be involved, including financial institutions, international organisations and private corporations.

The WCD recommends that governments appoint an independent committee which includes legal experts, the dam owner, affected people and other stakeholders to do the following:

- develop criteria for assessing claims;
- identify individuals, families and communities which are eligible to make claims; and
- facilitate negotiations with affected people for developing mutually agreed and legally enforceable reparations provisions.

Affected people should receive legal, professional and financial support to participate in the assessment, negotiation and implementation of reparations.

Assessing damages

Damage should be assessed on a watershed or catchment basis, to include not only those resettled by the project, but also those affected upstream and downstream. Assessments should include non-monetary losses, and reparations should be developed based on the communities' priorities and needs. Through changes in dam operations or decommissioning, reparations can take the form of allocations of resources such as land, water, fish and access to sacred sites.

An independent committee should be established to collect, manage and award reparations. Such committees should include legal representatives selected by government and affected communities. Accountability of the parties responsible for reparations should be ensured through contracts and legal recourse.

CAMPAIGN TIP!

Organise an action on March 14th, the International Day of Action Against Dams and for Rivers, Water and Life, demanding that your government implement WCD recommendations. In 2001, people from 25 countries participated in the International Day of Action. Contact IRN for more details.

Funding reparations

The Commission states that reparations can be financed with funds from national, provincial, and/or local government budgets; a percentage of loans and grants to dam development projects; or a percentage of current income from energy and water projects.

The WCD also recommends that bilateral aid agencies and multilateral development banks "review the portfolio of past projects to identify those that may have under-performed or present unresolved issues and share in addressing the financial burden of such projects for borrower countries. This may include, for example, cancelling the outstanding debt related to them, converting debt repayment into development assistance targeting affected areas, or providing new support to help borrower countries address unresolved economic, social and environmental problems."

Such funds could be allocated to a trust fund to benefit affected communities over the long term. Other possibilities include a percentage of donations from organisations and industries who profited in planning and facilitating dam projects and resettlement of communities. Funds could also come from a reparations tax levied on all future dam-related contracts (including for maintenance, upgrading and refurbishment of existing dams).

For more information, see "Reparations and the Right to Remedy" by Barbara Johnston, a Briefing Paper prepared for the WCD, available at www.dams.org or on the WCD CD-ROM.

Box 5 — EVALUATING A PROJECT AGAINST WCD RECOMMENDATIONS

The following is IRN's analysis of the proposed Nam Theun 2 Dam in Laos, reviewed in light of the WCD's recommendations. This analysis was prepared and released at the time of the WCD report launch in London in November 2000. A more detailed analysis of Nam Theun 2's compliance with WCD guidelines is available at www.irn.org/programs/mekong. Other IRN analyses of proposed projects are available at www.irn.org/wcd. You can use these resources to get ideas on how to conduct your own evaluations.

Background

The 50-meter-high Nam Theun 2 Dam, planned for the fourth largest tributary of the Mekong, is the largest and most controversial hydropower project planned for Laos. The $1.2 billion "build-own-transfer" scheme is being developed by Electricité de France and two Thai companies in association with the Lao government. Almost all of the dam's 1,060 MW of generating capacity would be exported to Thailand. The project is currently stalled awaiting a power purchase agreement with the Thai electricity utility, a concession agreement with the Lao government, and a decision from the World Bank on whether to grant guarantees and other financial assistance to the project.

If built, the project would forcibly displace 4,500 indigenous people from their ancestral lands, deprive tens of thousands more people of their fishing and farming livelihoods, and flood 450 square kilometres of the Nakai Plateau, an area of rich biological diversity. Proposed to generate electricity for export to Thailand, the economic viability of the project is in doubt due to Thailand's oversupply of power and its changing power market.

While publicly stating that it is not committed either way on the project, the World Bank has been heavily promoting Nam Theun 2 since it financed its feasibility study in 1989. Due to the perceived risks of investing in Laos, the developers are unable to attract financing unless the World Bank offers guarantees and other concessionary financial assistance.

COMPREHENSIVE OPTIONS ASSESSMENT

WCD Recommendation: "A multi-criteria assessment was used to screen and select preferred options from the full range of identified alternatives. The screening of options covered all policy, program and project alternatives."

Reality: The World Bank has promoted the dam as an income generator for Laos, yet no comprehensive assessment of alternatives for generating foreign exchange has ever been completed. There has never been any analysis of how the resources of the area could be managed to balance watershed protection and enhance livelihoods while avoiding the serious negative impacts expected from Nam Theun 2 .

GAINING PUBLIC ACCEPTANCE

WCD Recommendation: "Stakeholders participate in the project design and the negotiation of outcomes that affect them. Indigenous and tribal peoples gave their free, prior, and informed consent. Effective participation in a stakeholder forum must be facilitated through timely access to information and legal and other necessary support."

Reality: Project proponents point to a 1997 public participation program in Laos as proof that Nam Theun 2 has gained public acceptance. However, in a submission to the WCD, Shalmali Guttal from FOCUS on the Global South states that the decision to construct the dam had been taken well before this process. "Substantive input of affected communities and the public at large was solicited primarily within the parameters of developing resettlement options and mitigation measures, which came in the later part of the project development process." Information was not accessible to directly affected communities or even government officials because of a tremendous knowledge gap between the foreign experts on the one hand, and the local people on the other. "There were almost no authentic opportunities in the consultations for the Lao public to challenge the information presented or question the overall viability of the project."

RISK

WCD Recommendation: Risk must be fairly analysed and publicly discussed. "[Risks] must be identified, articulated and addressed explicitly. Most important, involuntary risk bearers must be provided with the legal right to engage with risk takers in a transparent process to ensure that risks and benefits are negotiated on a more equitable basis." It goes on, "Determining what is an acceptable level of risk should be undertaken through a collective political process."

Reality: The risks for the thousands of people who are expected to lose their fisheries and other livelihoods has never been assessed as part of the project's risk assessment. These "involuntary risk takers" have been provided no opportunity to participate in decisions affecting their lives.

ADDRESSING EXISTING DAMS

WCD Recommendation: The report states, "Outstanding social and environmental issues associated with existing large dams are identified and assessed; processes and mechanisms are developed with affected communities to remedy them." It also states that "cumulative impacts of projects should be analysed," and "environmental impacts from past projects should be evaluated and incorporated into the needs assessment."

Reality: Theun-Hinboun Dam, 50 km downstream of the proposed site of the Nam Theun 2, was funded by the Asian Development Bank and completed in 1998. Theun-Hinboun has had a severe impact on the livelihoods of more than 25,000 people living downstream and upstream of the dam, including reduced fish catches, the destruction of vegetable gardens and dry-season drinking water sources, loss of fish nets and increased difficulties with transportation. Despite sustained lobbying by NGOs and numerous promises from the ADB, adequate compensation has still not been provided to affected communities.

4.4 CASE STUDIES - HOW OTHER GROUPS HAVE USED THE WCD REPORT

CASE STUDY 1 — Workshops Used to Engage Regional Governments in India

The South Asia Network on Dams, Rivers and People (SANDRP) organised a series of WCD workshops in India during 2001. The main objectives were to disseminate the WCD report to people and organisations concerned about dams and to discuss possibilities for implementation in India. All stakeholders that agreed to these objectives were invited to attend the meetings. Thus, government officials, political representatives, academics, independent experts, journalists, non-government organisations, movements and affected people participated in various meetings.

SANDRP, in collaboration with local organisations, organised meetings in several cities, including Hyderabad, Shillong, Ranchi, Indore, Bangalore and Khedi-Balwadi (a village affected by the Man Dam in the Narmada Valley). In addition to the SANDRP workshops, a two-day national consultation and a one-day meeting organised by the WCD and India International Centre were held in Delhi in May 2001. A meeting in Pune was organised by the WCD and Gomukh Trust.

Prior to the meetings, SANDRP published a Hindi translation of the WCD India country study. The WCD overview report was also translated into Hindi and provided a useful resource. The full WCD report and WCD CD-ROMs in English were also circulated.

In addition to discussing the WCD report, the meetings provided an excellent networking and learning opportunity for all stakeholders. Information exchange and advocacy on issues of concern were a secondary goal for the meetings. Media coverage of the meetings helped to publicise the WCD report, its process and message to a wider audience.

Government responses

The meetings provided an opportunity to hear the different responses of government agencies to the WCD report. At the Delhi meeting organised by the WCD, a member of the Planning Commission spoke highly of the WCD report, while some officials of the Ministry of Water Resources tried to highlight the problems with the report.

Several state officials spoke highly of the WCD and stressed the need for India to implement its recommendations. As a result of the meeting in Mumbai, the Chief Secretary of Maharashtra invited the WCD to present the report and its findings to concerned officials and ministers in the Maharashtra Government. A similar possibility opened in Andhra Pradesh following the Hyderabad meeting.

At the Bangalore meeting, a working group was established to implement the recommendations. Barh Mukti Abhiyaan, the local organiser of the Ranchi meeting, offered to organise meetings in all the districts of Bihar and Jharkhand. The Shillong meeting decided to organise a Northeast-wide follow-up meeting on dams.

Meeting with affected people

Among all the meetings, the one at Khedi Balwadi was unique as it was held in a tribal village in the Narmada Valley that was slated for submergence at the time of the meeting. Affected people and activists from at least five dams of the Narmada Valley participated in the meeting, shared their experiences and compared them with the recommendations of the World Commission on Dams. That comparison – presented by affected people themselves – showed, more than anything else, how far India is from incorporating WCD guidelines into its planning for water and energy projects, and how challenging our struggle is to bring people and reason into the decision-making processes around large dams.

Himanshu Thakkar
South Asia Network on Dams, Rivers and People

CASE STUDY 2 – Philippines Workshop leads to Creation of National Network on Dams

The Cordillera Peoples' Alliance convened a National Workshop on Dams in March 2001 in Baguio City. The Workshop provided a venue for dam-affected people, advocates and concerned NGOs to discuss dam projects in the Philippines, the WCD report, legal issues related to dams and alternative development options.

The three-day workshop was attended by 48 representatives of NGOs and dam-affected communities from around the country. The gathering resulted in the formation of a national network with a general framework for common action among dam-affected communities and NGO advocates.

Through the exchange of information and sharing of community struggles, participants built a deeper awareness of the impacts of different dam projects throughout the country. The reports of the dam-affected community representatives highlighted common issues: violation of the rights of affected people, circumvention of national laws, questionable economic benefits, empty promises by project proponents, the added financial burden brought about by huge foreign loans for the projects and the question of the appropriateness of the government's energy development program.

Workshop participants developed an action plan for the network, which includes the translation of the WCD report into various local languages; research on dams and reviews of environmental impact assessments; and launching of common actions on Earth Day, World Environment Day, Indigenous Peoples Week, and the International Day of Action Against Dams. A steering committee for the network was formed, composed of representatives from all the regions in the country.

The workshop concluded with a commitment by the 48 participants, which was expressed in a People's Declaration Against Large Dams. The Declaration asserts: "The state of our life has made it clear that large dams are not development effective and have not addressed the need to sustain life and facilitate development." It calls for a stop to all ongoing dam projects, a moratorium on the construction of new dams, full compensation and provision of sustainable livelihoods to affected communities, and the immediate rehabilitation of damaged ecosystems around the area of existing dams. The declaration further called on the government of President Gloria Macapagal-Arroyo to respect and uphold the rights of dam-affected peasants and indigenous peoples, and to develop efficient, equitable and sustainable options for water and energy development.

Cordillera Peoples' Alliance

CASE STUDY 3 – Ugandan NGOs Use WCD to Highlight Problems With Bujagali Dam

Uganda is one of the world's poorest countries. About 95% of the population does not have access to electricity, and most could not afford it even if they were offered connections to the national grid. In 1996, the US-based AES corporation, the world's largest independent power producer, was granted a concession by the Ugandan government to construct a $530-million hydroelectric dam at Bujagali Falls. The project has faced stiff opposition from local environmental and human rights groups, the local whitewater rafting industry and international organisations.

The groups identified some of the ways in which the Bujagali project clearly failed to meet WCD recommendations. The project was moving forward without a number of important background studies that the WCD recommends before a decision for a specific dam project is taken. For example, there was no "needs assessment" to determine the most pressing energy needs of Uganda's citizens; no comprehensive options assessment to identify the best ways to meet those needs; no analysis of the project's cumulative impacts (the dam would be the third in a short stretch of the Nile); and no public accounting of the project's risks to citizens.

After writing letters to potential funders, including the World Bank, about the project's problems and its non-compliance with various WCD recommendations, Ugandan groups filed a claim with the ombudsman's office of the IFC (the private-sector lending arm of the World Bank, and a major Bujagali funder). This claim stated: "We are calling for the project to be independently reviewed against the newly released report of the World Commission on Dams," and then listed the ways in which the project failed to meet the recommendations. One of the key items identified by NGOs was the risk to "involuntary risk bearers." They used WCD language to push for a public release of the

project contract (called a Power Purchase Agreement or PPA), which outlines how various parties bear specific economic risks (for example, who bears the costs if the project fails to produce as much energy as predicted). This document is rumoured to lay much of the project's risks onto Uganda.

The IFC's ombudsman's office agreed that the project "is seen as a benchmark" in light of the WCD report, and that "it is difficult if not impossible to have a useful discussion regarding the economic implications of Bujagali without access to the PPA." The ombudsman's report backed many of the concerns raised by NGOs. However, Bank management issued a brief reply that dismissed most of the concerns, and refused to release the PPA.

In December 2001, the World Bank released a short report on how the project met WCD recommendations; it began with a disclaimer that the project was well underway when the WCD report was released, and did not mention the issue of risk at all. The next day the Bank's Executive Directors approved funding for the Bujagali Dam.

Lessons learned

While this project was not stopped by NGOs' efforts to use WCD recommendations, it was delayed by their efforts, and there will continue to be greater scrutiny of Bujagali's impacts. Some of the lessons learned in this campaign include:

1. Begin with education. Work with key government agencies, the media, other citizens' groups and your own members to discuss the WCD and its implications for your nation. The recommendations, when quoted out of context, can be vague enough to allow dam proponents to easily refute any analysis showing a project does not meet them. This tactic serves them well with the media, which has a short attention span and is ill-equipped to do extensive research.

2. Agencies like the World Bank will use the argument of "national sovereignty" for not implementing many of the recommendations of the WCD. For example, regarding Bujagali's lack of a needs assessment, the Bank states: "The World Bank notes that in both developed and developing countries, the state has the right to make decisions in the best interest of the community as a whole and to determine the use of natural resources based on national priorities."

3. Early on in the campaign, address the topic of options and needs. Try to get independent academics and experts to do research on these topics. Large dams are often far along when citizens' groups get involved, and so it is important to "begin at the beginning" and try to compile strong data on the nation's needs and best options for meeting those needs. Bujagali campaigners tried to push the Bank and other funders to do this work, but were constantly dismissed by pro-dam parties as "just anti-development" and "without good alternatives" to the dam.

Lori Pottinger
IRN Africa Campaigns

CASE STUDY 4 — Use of WCD Contributes to Ilisu Campaign Success

In November 2001, UK construction firm Balfour Beatty and its Italian partner Impregilo withdrew from the controversial Ilisu Dam in Turkey, citing economic, social and environmental grounds. The companies' withdrawal means that the $2.5 billion project no longer has the financial support of the UK, US and Italian governments, casting its future in doubt.

Balfour Beatty's withdrawal was the result of a two-year campaign by a coalition of British human rights and environmental groups which formed the Ilisu Dam Campaign. The Campaign's main aim was to oppose the UK export credit agency's proposed $200 million support for Balfour Beatty's construction of Ilisu.

The Ilisu Dam is planned for the Tigris River in the Kurdish region of Turkey. The dam would affect up to 78,000 people, the majority of them Kurds, in an area

Launch of the Ilisu Dam Campaign in front of the UK's Department of Trade and Industry in London. Credit: Richie Andrew

where human rights abuses are widespread. It would also flood unique archaeological sites, including the 10,000 year old city of Hasankeyf.

The Campaign used many different tactics, including strategic use of the World Commission on Dams' recommendations, to target both the UK government and Balfour Beatty.

Targeting the government

In order to challenge the UK and other governments' support for the Ilisu Dam, the Campaign consistently pointed out how the project failed to meet international guidelines, including those of the WCD.

In October 2000, a fact-finding mission to the Ilisu Dam area revealed that the project remained seriously flawed: among other problems, there had still been no meaningful consultation with local communities, and political conditions in the region made fair and just resettlement unattainable.

In the run-up to the WCD report's London launch in November 2000, the Campaign succeeded in getting the Ilisu Dam issue covered in leading national newspapers, so that media were primed for the NGO press conference on the launch day. Ilisu was then picked up by the world's media as a key example of a dam which would not get built under the WCD's new criteria.

On the day of the WCD launch, the Campaign issued an open letter to the UK government stating that the project violated all seven strategic priorities of the WCD. The Campaign then received a great boost when WCD Chair Kader Asmal said "it does not take much intelligence to see Ilisu does not meet the guidelines for new dams."

Throughout the year that followed, the Campaign published further reports detailing the ways in which Ilisu violated the WCD's recommendations and submitted these to parliamentary committees, Members of Parliament, and relevant ministries. This was backed up by public pressure, through letter-writing and meetings with representatives.

Targeting Balfour Beatty: shareholder activism

At Balfour Beatty's 2001 Annual General Meeting (AGM), Campaign member Friends of the Earth proposed a shareholder resolution calling on the company to adopt the WCD's recommendations. The Campaign's main argument was that Balfour Beatty's involvement in Ilisu and other controversial projects posed risks to Balfour Beatty's reputation. The shareholder resolution argued that the WCD recommendations would form an ideal framework for new forward-looking corporate policies.

In the run-up to the AGM, campaigners held meetings with key investors in Balfour Beatty, and sent them briefings and letters, seeking their support for the resolution. Many of these investors then met or corresponded with the company before the AGM, forcing Balfour Beatty to justify itself to its major investors.

The Campaign also produced a "spoof" annual report – Balfour Beatty counter-report 2001, Balfour Beatty's Annus Horribilis – imitating the company's own annual report. The report highlighted key controversial projects in which the company was involved, including the Ilisu Dam, and argued for adoption of the WCD's recommendations. The report was used to brief the media, institutional investors and shareholders.

One hundred "shareholders" from the Campaign and Friends of the Earth then attended Balfour Beatty's AGM and dominated the agenda with questions about the company's involvement in the Ilisu Dam, other controversial projects and financial risk.

The final results of the vote on the resolution were 1% for the resolution and 57% against, with nearly 41% abstentions. For the Board to "fail to win the support of more than 40% of institutional shareholders," in the words of the *Financial Times*, was a major blow to Balfour Beatty. Although the resolution was defeated, a strong warning was delivered to Balfour Beatty's Board of Directors.

The Campaign's impact was demonstrated by Balfour Beatty's public statement on the day of the AGM that it "has committed itself to taking the WCD principles, criteria and guidelines into account in determining whether and how it should be involved in any future hydroelectric projects." Six months later, Balfour Beatty withdrew from the project.

Kate Geary
Ilisu Dam Campaign

Box 6 — HOW TO ORGANISE A MULTI-STAKEHOLDER FOLLOW-UP PROCESS TO THE WCD

Liane Greeff from the South African NGO Environmental Monitoring Group, offers the following suggestions for how to organise a multi-stakeholder process in your country on the WCD's findings and recommendations.

1. Gain the support of your allies for organising a multi-stakeholder process. Then meet with key players in the local dams debate. When talking with the different players, be clear about the WCD process and the nature of the Commission, which included representatives from all sides of the debate. This may help to draw different stakeholders into the process.
2. Send a letter to the government (approach the highest-ranking officials and send copies to the lower levels) requesting a multi-stakeholder meeting. Make suggestions about who should host the meeting or process. Ensure that the host organisations represent the different sides of the debate (for example, government, NGOs, affected people, academics, funding agencies, unions, etc.).
3. Contact the Dams and Development Project to get their support and help in lobbying the government and other players in your country.
4. Keep pressure on the government to respond and move the process along.
5. Hold a preliminary meeting to agree on how the process will operate and who should be on the Steering Committee. Try to ensure a balance of stakeholders and perspectives. If possible, include representatives from groups working on alternatives such as water conservation or energy efficiency. If you have access to a WCD "expert" such as a Commissioner, Secretariat staff or forum member, it would be good to include them in this initial meeting.
6. Form the Steering Committee. In South Africa, the Steering Committee consisted of the South African National Committee on Large Dams (the South African arm of ICOLD), the Department of Water Affairs and Forestry, the Environmental Monitoring Group and IUCN. The Steering Committee met over a four-month period.
7. Obtain copies of WCD resource material for the Steering Committee — WCD full report, summary reports, CD-ROMs of the knowledge base, power point presentations.
8. Explore different funding options — from governments, donor agencies, research institutions etc. Ask the DDP for advice on funding. Ensure that civil society organisations have the necessary funds and resources to participate in the process.
9. The Steering Committee should discuss the following:
   - What kind of process is most appropriate?
   - What is the desired outcome? For example, is it to encourage institutions to adopt WCD recommendations, is it to raise awareness, conduct research or other purposes?
   - If organising a workshop or conference, the Steering Committee needs to agree on speakers, agenda, scale (local, provincial, national, regional) and focus (whether the discussion will focus on a specific dam or be open-ended).
10. Select representatives from industry, government, academia, NGOs, indigenous people, river basin authorities, affected people, labour, alternatives, local water authorities, financing organisations. Ensure there is a balanced representation.
11. Most importantly, agree at the outset to respect different opinions and to work cooperatively.

5

Lessons from the WCD Process

Despite some weaknesses, the WCD process was a great success. Various institutions have expressed an interest in setting up similar "multi-stakeholder" processes to review performance in other sectors. If NGOs consider getting involved in such processes, they should pay attention to the following lessons from the WCD:

- NGOs and people's movements had organised successful campaigns against numerous dams in the years prior to the WCD, and therefore entered the WCD process from a strong position. The industry and governments had found it increasingly difficult to secure funding for dam projects, and were often forced to accept people's movements and NGOs at the negotiating table, and on the Commission. NGOs might not be in an equally strong position in other sectors, and industry or governments might not be equally inclined to accept a strong NGO role in other "multi-stakeholder" processes.
- A strong and united international network of dam critics existed at the time the WCD was established. The network was sufficiently open to integrate new regional or issue-based groups whenever it was appropriate. At the same time, a high level of mutual trust allowed the network to reach decisions in smaller circles if this was required by the pressures of time.
- The WCD helped to strengthen and broaden the NGO coalition working on large dams, through encouraging stronger cooperation among NGOs, and between NGOs, movements and other allies, both internationally and within many regions.
- While the NGOs that monitored the WCD process were very well coordinated, the same was not true for the dam industry. They were not experienced in advocacy or public relations work. As commercial competitors, the companies were not used to working together, and they did not have a competent lobbying association. For other sectors, the situation may be different.
- The core NGOs put an extraordinary amount of work and commitment into the WCD process. The work demands were high; from the preparations for the original seminar in April 1997 through to the launch of the WCD report in November 2000 and the follow-up processes.
- NGOs and activists who serve as members of a commission like the WCD, and activists who monitor and pressure such bodies from the outside, must play different roles. They are exposed to different pressures, expectations and obligations. It is important that NGOs are aware of these differences, so that potential conflicts do not result in a loss of confidence.

- While NGOs insisted that the WCD be balanced, they also wanted the industry and government side to be represented by major players, so that the Commission's report would come from the broadest base of interests, and have a strong impact. The high personal integrity and commitment of the representatives of the dam industry, the governments and dam operators were an important reason why the WCD was able to reach a consensus report in spite of the very different backgrounds and perspectives of its members.
- The WCD's secretariat played a major role in every aspect of the WCD process and report. External consultants wrote many of the most important parts of the WCD's knowledge base. Most of them had a traditional development background and perspective. The NGOs initially underestimated the crucial role of the secretariat and the consultants. It proved difficult to find, and motivate, trusted NGO experts who were prepared to work for the WCD on the secretariat or as consultants, or who had the time and expertise to review lengthy reports in English.
- The strong input of dam-affected communities and their movement was absolutely critical for a process which was supposed to review the real-world impacts of large dams. Even if the WCD was officially committed to an open and participatory process, the mainstream perspectives of the secretariat and consultants and the very real scarcity of time and resources meant that affected communities were often excluded from the process. Many important documents were available only in English, and time was often not sufficient to allow affected communities to attend meetings or to prepare written comments. Even the NGO network monitoring the WCD process sometimes neglected consulting grassroots movements or facilitating translation, which affected the quality of its outputs and the cohesion of the network. NGOs and movements getting involved in similar processes need to constantly push for an open process which allows communities and groups from outside the expert circles to participate.

6

Key WCD Findings

This Chapter outlines the WCD's key findings from its global review of large dams. The global review is contained in Part One of the WCD report, consisting of the following five chapters:

- Chapter 1 provides a general overview of water, development and large dams.
- Chapter 2 reviews the technical, financial and economic performance of large dams.
- Chapter 3 examines the environmental performance of large dams, including ecosystem and climate impacts.
- Chapter 4 evaluates the social performance of large dams, looking especially at the displacement of people, and the distribution of gains and losses from dam projects.
- Chapter 5 looks at various alternatives to large dams for meeting the needs of irrigation, drinking water, electricity and flood management.
- Chapter 6 considers the planning, decision-making and institutional arrangements that guided the development of water and energy resources.

This summary is arranged in the same order as the WCD report.

As this is a summary only, we recommend that you consult the full WCD report when using it in your campaigns. Each section in this summary has a reference to the pages in the full WCD report where you can find more information.

CAMPAIGN TIP!

The WCD's findings can help support your own analyses of the economic, social, and environmental impacts of dams. You can point out that the common patterns the WCD found are likely to have some local relevance.

6.1 GENERAL

Dam construction has slowed worldwide

The WCD calculates that there are currently over 45,000 large dams worldwide. While dam construction around the world peaked in the 1970s at about 5,400 annually, construction has fallen by 60 percent since then (see Figure 3). The WCD calculates that annual spending on large dams during the 1990s was $32-46 billion. Throughout the 20th century, an estimated $2 trillion was spent on dams.[1]

6.2 TECHNICAL, FINANCIAL AND ECONOMIC PERFORMANCE

The WCD shows that dam promoters systematically exaggerate the benefits of their projects. Dams have on average generated less power, irrigated less land and provided less water supply than predicted, and have actually placed some populations at greater risk of suffering damages due to floods.[2] Since most information came from dam operators and funders, it is likely that the WCD's conclusions understate just how poor dam performance has been.

Power generation

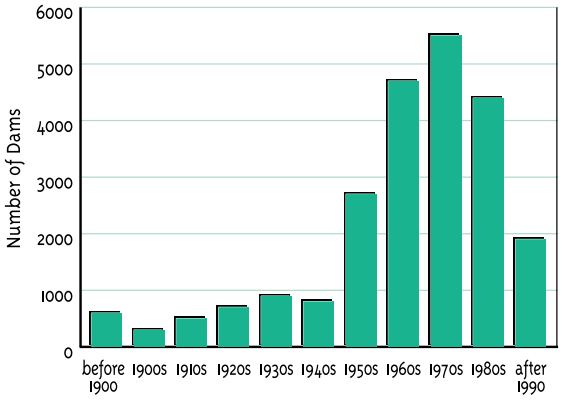
Hydropower dams studied by the WCD showed "an overall tendency to fall short of targets." Fifty-five percent of dams with a hydropower component generated less power than projected. A quarter of the 28 dams that met or exceeded their targets did so because their installed capacity was increased, thus requiring larger investments than predicted.[3]

Irrigation

"Large dams designed to deliver irrigation services have typically fallen short of physical targets." The 52 irrigation dams analysed by the WCD all irrigated less land area and supplied less water to fields than predicted. After 15 years, only about 75 percent of irrigation area targets were met on average. The WCD notes that the larger irrigation dams have the worst record.[4]

The WCD produced global statistics on the contribution of large dams to world food production. While dam industry publications have repeatedly implied that a third of world food production is made possible by irrigation from dams, the WCD estimates that dams contribute to 12-16 percent of world food production.[5]

Figure 3 — RATE OF DAM CONSTRUCTION WORLDWIDE



Source: ICOLD, 1998. Note: Information excludes dams in China

Water supply

Water supply dams have fared even worse than irrigation projects. "Water supply dams in the WCD Knowledge Base have generally fallen short of intended timing and targets for bulk water delivery..." On average, 70 percent of water supply dams did not deliver as much water as predicted. One quarter of the dams delivered less than half as much water as claimed.[6]

Flood control

"[W]hile dams have provided important flood control benefits," the WCD states that "some dams have increased the vulnerability of riverine communities to floods." Downstream communities have faced "significant downstream damage" when reservoirs have not been operated properly or equipment has failed. Some have died when peaking operations of hydropower plants have caused an unexpected surge of water and warning systems have "not been effective or heeded."

Dams can exacerbate damages caused by floods. They provide a false sense of security and encourage settlement on flood-prone areas. "When the exceptional flood finally arrives, there are more people and higher-value property at risk than there otherwise would have been. Damages may therefore be larger than if floods continued to be normal events." Between 1960 and 1985, the United States government spent $38 billion on flood control, mostly on structures such as

dams. Yet average annual flood damage continued to increase – more than doubling.

Where "normal" floods have been eradicated by dams, there have been high costs to farmers, fisherpeople and others dependent on floodplain resources. [7]

Cost and time overruns

"Large dams have demonstrated a marked tendency towards schedule delays and significant cost overruns." On average, the construction cost overrun for 81 large dams studied by the WCD was 56 percent (see Figure 4). The largest cost overruns were in Central and South Asia, where they averaged 108 percent and 138 percent, respectively. Half of the dams studied by the WCD had construction delays of one year or more (see Figure 5).[8]

Economic returns

The WCD had great difficulty finding reliable statistics on the economic returns from dams. They were, however, able to analyse the results of a few project evaluation reports carried out by the World Bank, Asian Development Bank (ADB) and African Development Bank. These indicate that on average, large dams have been at best only marginally economically viable.[9] Of 20 hydropower dams funded by multilateral banks, about half failed to meet their economic targets. Nine of the dams had an economic internal rate of return (EIRR) under 10 percent.[10] Infrastructure projects in developing countries are typically judged successful if they have an EIRR exceeding 10 percent.

Figure 4 – COST OVERRUNS OF LARGE DAMS

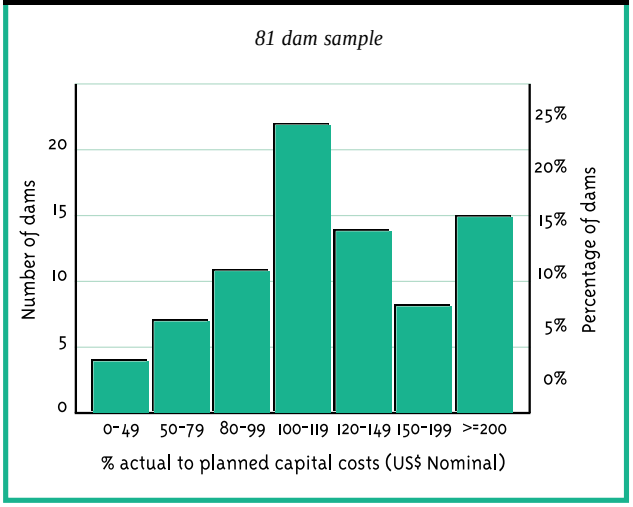
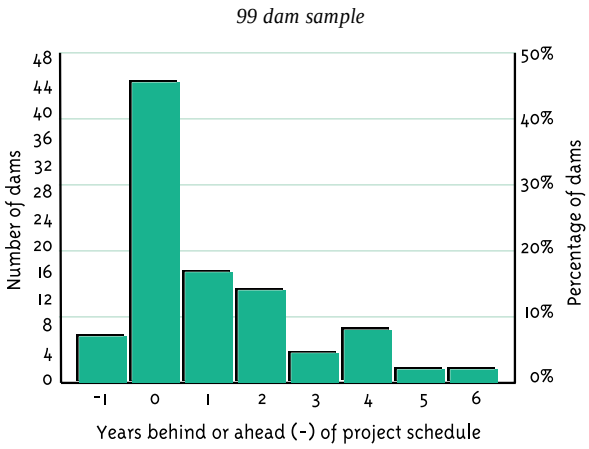


Figure 5 – PROJECT SCHEDULE PERFORMANCE



Irrigation dams "did not recover their costs" and "have all too often failed to deliver on promised financial and economic profitability." For 14 irrigation dams funded by the World Bank and ADB, the actual EIRR averaged 10.5 percent, compared with an estimated EIRR of 15 percent when the projects were approved.[11]

Water supply dams have "exhibited poor financial cost recovery and economic performance."[12] Three out of four water supply dams funded by the World Bank and ADB had EIRRs "well below" 10 percent.[13] Multipurpose projects tend to fall even further behind their economic targets than single purpose projects.[14]

Sedimentation

The WCD estimates that 0.5-1 percent of world reservoir volume is lost from sedimentation annually. Sedimentation can affect a project's physical and economic performance, and will eventually affect project life by filling the reservoir's storage area.[15]

Waterlogging and salinisation

One-fifth of irrigated land worldwide is affected by waterlogging and salinity due to dam-fed irrigation. This has "severe, long-term and often permanent impacts on land, agriculture and livelihoods..." Facilities to drain affected land are often omitted from initial project plans, leading to the "overestimation of project net benefits. Resolving waterlogging and salinity problems entails significant rehabilitation costs...and loss of productivity."[16]

6.3 ENVIRONMENTAL IMPACTS

Fisheries

"Substantial losses in downstream fishery production as a result of dam construction are reported from around the world." "Marine or estuarine fisheries are also negatively affected when dams alter or divert freshwater flows." The use of fish passes to mitigate the impacts of dams has had "little success."[17]

Downstream impacts

Storage dams can "significantly disrupt the whole flow regime," dramatically altering the riverine environment and changing the water temperature. Dams alter natural habitat, often allowing exotic plant and animal species to take over native species. The WCD states that large dams have led to "the loss of aquatic biodiversity, upstream and downstream fisheries and the services of downstream floodplains, wetlands and riverine estuarine and adjacent marine ecosystems." Environmental flow requirements are "increasingly used to reduce the impacts of changed streamflow regimes on ecosystems downstream."[18]

Blocking sediments and nutrients

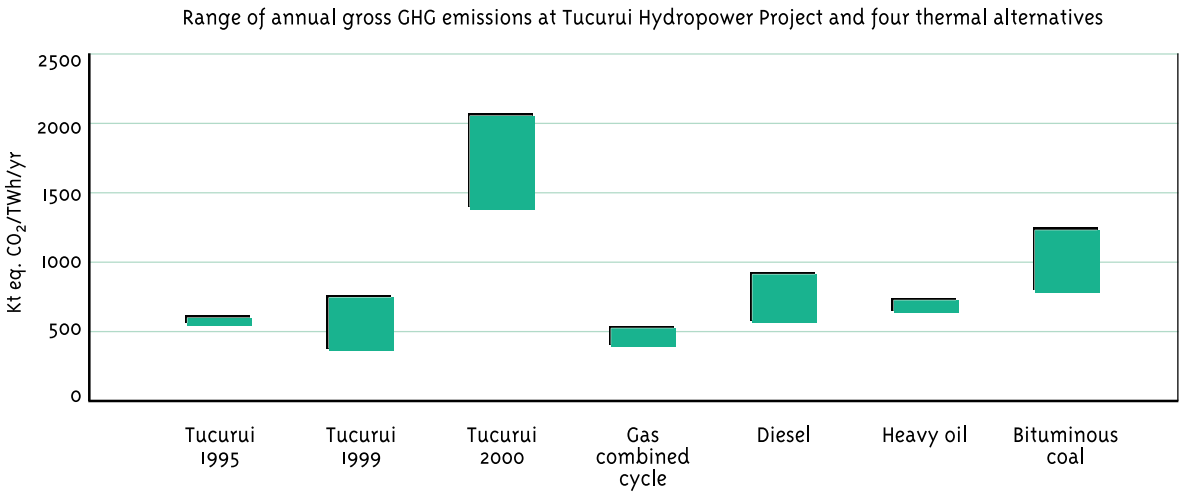
"The reduction in sediment and nutrient transport in rivers downstream of dams has impacts on channel, floodplain and coastal delta morphology and causes the loss of aquatic habitat for fish and other species." Eliminating the natural flood cycles can decrease the fertility of floodplains, lead to "dramatic reductions" in bird species and "severely" diminish recharge of groundwater in floodplain areas.[19]

Failure of mitigation measures

Mitigation efforts "have met with limited success owing to the lack of attention to anticipating and avoiding impacts, the poor quality and uncertainty of predictions, the difficulty of coping with all impacts, and the only partial implementation and success of mitigation measures."[20]

Figure 6 – GREENHOUSE GAS EMISSIONS AT TUCURUI RESERVOIR, BRAZIL

Monitoring of greenhouse gas emissions in the Tucurui reservoir show that emissions are large and vary from year to year. The figure below compares measurements of emissions at Tucurui for three different years with emissions from fossil fuel plants. In most cases, the gross emissions (which do not account for natural pre-impoundment emissions) at Tucurui are equal to or higher than the fossil fuel alternatives.



Source: WCD

Box 7 – RESERVOIRS CONTRIBUTE TO CLIMATE CHANGE

The WCD found that reservoirs are a significant contributor to climate change, and that hydropower schemes in some cases may have a greater impact on global warming than fossil fuel power stations. The WCD quotes a "first estimate" that gross emissions from reservoirs may account for between 1% and 28% of all global greenhouse gas (GHG) emissions released due to human activities. The Canadian researchers who developed this estimate later refined it, suggesting that reservoirs are responsible for 7% of the global warming potential of greenhouse gas emissions.

The WCD states that "all reservoirs emit GHGs" and that "in some circumstances the gross emissions can be considerable, and possibly greater than the thermal alternatives." However, "some values for gross GHG emissions are extremely low and may be 10 times less than the thermal options."

The WCD explains that decomposing vegetation and soils flooded under a reservoir emit carbon dioxide and methane. Organic matter washed into a reservoir from upstream and the decomposition of aquatic plants and algae also generate a large amount of these gases. Thus, emissions may continue for the lifetime of the reservoir, long after all vegetation in the reservoir has decomposed.

"Current understanding of emissions suggests that shallow, warm tropical dams are more likely to be major GHG emitters than deep cold boreal dams," the WCD states. "To date, no experience exists with minimising, mitigating, or compensating these impacts." The Balbina reservoir in Brazil, which in places is only four meters deep, is expected to produce three million tons of carbon dioxide equivalent annually over its first 20 years. A coal-fired power station of the same capacity would produce 0.35 million tons of carbon dioxide a year.

Calculations of the contribution of new reservoirs to climate change must include an assessment of the natural pre-dam emission or sink in order to determine the net impact of the dam. The WCD states that land use changes induced by displacement of people, resource extraction and other activities associated with construction of a dam may form part of the net contribution of dam projects to greenhouse gas emissions.

For more information, see p. 75 of the WCD final report and the WCD Thematic Review, "Dams and global change", available at www.dams.org or on the WCD CD-ROM.

Cumulative impacts

The WCD found that multiple dams in a river basin have led to "cumulative impacts on water quality, natural flooding, and species composition…" Adding more dams to a basin may lead to "an increased and cumulative loss of natural resources, habitat quality, environmental sustainability and ecosystem integrity."[21]

6.4 SOCIAL IMPACTS

"Pervasive and systematic failure to assess the range of potential negative impacts and implement adequate mitigation, resettlement and development programmes for the displaced, and the failure to account for the consequences of large dams for downstream livelihoods have led to the impoverishment and suffering of millions…"

"The poor, vulnerable groups and future generations are likely to bear a disproportionate share of the social and environmental costs of large dam projects without gaining a commensurate share of the economic benefits."

Displacement

The WCD estimates that 40-80 million people have been displaced by dams. The WCD states that "all too often this physical displacement is involuntary and involves coercion and force – in a few cases even killing."

Those displaced "face a broad range of impoverishment risks that include landlessness, joblessness, homelessness, marginalisation, food insecurity, increased morbidity, loss of common resources, and community disarticulation that result in a loss of sociocultural resilience."[22]

Tribal musicians who would be displaced by the Sardar Sarovar Project in India. Credit: Harikrishna & Deepa Jani

Affected groups not counted or compensated

"At the planning stage, the numbers of both directly and indirectly affected people have frequently been under-estimated…" In the eight WCD Case Studies, initial project assessments "failed to account for all the affected people," undercounting by 2,000 to 40,000 people. A study of World Bank projects revealed that the actual number of people to be resettled was 47% higher than the estimate made at the time of appraisal.[23]

Millions displaced due to canals, powerhouses and project infrastructure are not counted or considered for resettlement. Nor are communities living upstream and downstream of dams who suffer livelihood losses. "[C]ompensation has usually gone only to those in possession of legal titles, leaving out a large number of people – often the poorest – who depend on common resources such as forests and grazing grounds for subsistence."[24]

Failure of resettlement, mitigation, and compensation

Those resettled "have rarely had their livelihoods restored, as resettlement programmes have focused on physical relocation rather than on the economic and social development of the displaced."

Resettlement has been "involuntary, traumatic." Development opportunities have been denied to communities "for years and often decades." "Little or no meaningful participation of affected people in the planning and implementation of dam projects – including resettlement and rehabilitation – has taken place." Cash compensation, often delayed if provided at all, "has usually failed to replace lost livelihoods." The WCD concluded that many projects have had "inadequate compensation, unsuitable mitigation, and lack of recourse."

Affected people have "often been forced to resettle in resource-depleted and environmentally degraded areas around the reservoir…The replacement of agricultural land, basic services, and infrastructure at resettlement sites has often failed to materialise, was inadequate, or was delayed for many years." Without a source of livelihood, affected people have been forced to "abandon resettlement sites and migrate." The WCD states that "at least 46% of the 10 million Chinese resettled as a consequence of reservoirs are still in 'extreme poverty.' In the case of India, 75% of the people displaced by dams have not been rehabilitated and are impoverished."[25]

Indigenous peoples

"Large dams have had serious impacts on the lives, livelihoods, cultures and spiritual existence of indigenous and tribal peoples. Due to neglect and lack of capacity to secure justice because of structural inequities, cultural dissonance, discrimination and economic and political marginalisation, indigenous and tribal peoples have suffered disproportionately from the negative impacts of large dams, while often being excluded from sharing in the benefits."[26]

Downstream communities

The WCD states that downstream impacts are "not only among the most significant unassessed and unaddressed aspects of large dams, they are also indicative of the magnitude and spread of impacts associated with an altered river regime." Downstream impacts can extend for hundreds of kilometres and well beyond the river channel. Millions of people living downstream from dams, particularly those who depend on floodplains and fisheries, have "suffered serious harm to their livelihoods and had the future productivity of their resources put at risk."[27]

Impact on women

The WCD states that dams have "widened gender disparities" among affected communities and that "women have frequently borne a disproportionate share of the social costs and were often discriminated against in the sharing of benefits." Despite the adoption of policies by governments and funding agencies to address gender issues in development, "actual project planning and implementation continue to overlook gender aspects."[28]

Cultural heritage

The WCD states that large dams have "had significant adverse effects on cultural heritage through the loss of cultural resources of local communities and the submergence and degradation of plant and animal remains, burial sites and archaeological monuments." "In most cases no measures have been taken to minimise or mitigate the loss of cultural and archaeological resources."[29]

Human health

Dams can have "significant adverse health outcomes for local populations and downstream communities." In tropical countries, resettled communities can face increased risk of diseases like schistosomiasis and malaria. High levels of mercury can accumulate in reservoir fish, poisoning people who eat the fish. "In recent years, the high incidence of HIV/AIDS in construction and settlement areas is a growing concern." Further, "[d]estruction of community productive bases in agriculture and fisheries can give rise to food shortages, leading to hunger and malnutrition."[30]

Equity and distribution of costs and benefits

The WCD Case Studies "show that the direct adverse impacts of dams have fallen disproportionately on rural dwellers, subsistence farmers, indigenous peoples, ethnic minorities, and women. …In downstream areas, communities suffering from altered river flows are mainly subsistence farmers whose livelihoods are largely based on the exploitation of resources offered by the natural flow of the river (fisheries, floodplain farmlands, and pastures)."

The WCD concludes that by failing to take into account the true social and environmental costs and benefits of large dams, the "true economic efficiency and profitability of these schemes remains largely unknown."[31]

CAMPAIGN TIP!

Organise a briefing for the media to discuss the WCD's findings and its implications for your region. Invite local experts to discuss specific projects' impacts and alternatives.

6.5 ALTERNATIVES

A key part of the WCD's mandate was to assess the different options available for meeting the services provided by large dams. The WCD assessed possibilities for demand-side management, supply-side efficiency measures and new supply options in the four areas of agriculture, energy, water supply and flood management. The WCD emphasises that the options it lists are not exhaustive, and that selecting the most appropriate option depends on giving all the options equal and appropriate consideration in the assessment process.

It should be noted that the WCD did not analyse and compare the various options it considered on an equal basis to dams. That is, the WCD did not look at the climate impacts of alternatives, did not examine cost recovery and economic viability, nor projected versus actual output of the various options. Instead, the WCD outlined a number of different alternatives, and a framework for assessing them.

The WCD states that demand-side management (DSM) has "significant untapped and universal potential and provides a major opportunity to reduce water stress." DSM options include reduced consumption, recycling and technological and policy options that promote efficient use of water and power. Improving system efficiency at the supply side can "defer the need for new sources of supply by enhancing supply and conveyance efficiency. Needless loss of power and water can be avoided through reductions in water leakages, improving system maintenance and upgrading control, transmission and distribution technology in the power sector."[32]

A short summary of the findings of the WCD on options for water and energy resources development follows.

Agriculture and irrigation

"In the irrigation and agriculture sector, preference is for improving the performance and productivity of existing irrigation systems; and alternative supply-side measures that involve rain-fed, as well as local, small-scale, and traditional water management and harvesting systems, including groundwater recharge methods."[33]

"Some 80% of agricultural land world-wide is under rain-fed cultivation, contributing to 60% of food production."

To improve the performance and productivity of existing systems, the WCD identifies the following options:

- Improved basin and system level management, including sediment flushing and catchment management can increase the efficiency and life of irrigation systems.
- Controlling salinity and reclaiming saline land is an urgent priority in order to increase productivity of existing land. New drainage and maintenance of existing drainage is one method, but is insufficient in itself. The WCD recommends an integrated approach combining management of surface water, groundwater and agricultural practices. Salt-tolerant crops and vegetation can remove excess surface water and lower water tables.
- Controlling the loss of seepage in canals could save up to 14.8 billion m^3/yr of water. Canal lining is one way to control losses, as well as maintenance of irrigation systems.
- Technologies exist for improving the efficiency of surface irrigation, through cultivation of less water intensive crops in dry regions, and micro-irrigation methods such as sprinkler and drip systems.
- Pricing structures for irrigation water which reflect the cost of supplying water and associated externalities can encourage efficient use of water and should be designed with stepped rates to provide security for basic livelihood needs.

Some alternative supply-side measures include:

- Enhancing rain-fed agriculture and supporting local irrigation technologies. "Some 80% of agricultural land world-wide is under rain-fed cultivation, contributing to 60% of food production. Given the number of low-income households that rely on rain-fed agriculture throughout the developing world, the enhancement of opportunities in this sector can have a major effect on productivity and livelihoods."[34] Some examples of appropriate technologies include treadle pumps and low-cost drip systems, small motorised ground pumps, rainwater tanks, and rainwater harvesting using small dams and embankments to trap run-off.
- Reuse of irrigation drainage water and urban wastewater.

Power

"The priority for a sustainable and equitable global energy sector is for all societies to increase the efficiency of energy use and the use of renewable sources. High-consumption societies must also reduce their use of fossil fuels. Decentralised, small-scale options based on local renewable sources offer the greatest near-term and possibly long-term potential in rural areas."[35]

The WCD estimates that the technical potential of demand-side management (DSM) in countries with a high per capita consumption, such as the United States, may be up to 50%. DSM is about consumers using less electricity and using it more efficiently in the residential, industrial, commercial and government sectors. One major DSM measure is replacement of energy inefficient appliances. Generally, investments in promoting consumers' use of efficient appliances are much cheaper than new supply options.

Alternative renewable supply options include biomass, wind, solar, geothermal, ocean energy sources and cogeneration.[36]

- "Wind power is the fastest growing of the renewable energy options and is competitive with other conventional options when a back-up generation source is available and when government support is provided as an incentive." The European Wind Energy Association estimates that by 2020 a total of 1.2 million MW of wind capacity could be installed world-wide, providing 10% of the world's electricity.

By 2020, it is estimated that 1.2 million MW of wind capacity could be installed worldwide.

- "The cost of solar photovoltaics (PV) has dropped 80% in the past two decades and will need to fall by a further 50-75% in order to be fully competitive with coal-fired electricity." While this technology will not significantly contribute to grid power in the short-term, the long-term potential is considerable.
- Solar thermal systems can almost compete with conventional thermal power in settings with high solar insolation levels.
- Biomass options are commercial where biomass fuel is readily available. The greatest potential is in decentralised local systems.
- Fuel cells show great promise, and are expected to be commercially available for use in vehicles and in grid and off-grid electricity supply by 2005.

In rural areas, decentralised options provide an opportunity to reach some of the 2 billion people who currently have no access to electricity. Some options include simple household lighting systems and mini-grids powered by diesel generating sets, small gas turbines, micro-hydro units, windmills, and photovoltaic systems. These are simple and flexible ways to expand energy services to remote areas, have a short construction time and have low environmental impacts.

Water supply

Domestic, municipal, and industrial consumption accounts for less than one-fifth of water use worldwide, and only about 5% in Africa, Central America, and Asia.

"In the water supply sector, meeting the needs of those currently not served in both urban and rural areas through a range of efficient supply options is the priority. Further efforts to revitalise existing sources, introduce appropriate pricing strategies, encourage fair and sustainable water marketing and transfers, recycling and reuse, and local strategies such as rainwater harvesting also have great potential."[37]

Demand-side management measures are relevant in industrial countries and among high-consumption urban water users in developing countries. Some measures to reduce consumption include:

- Regulatory standards for appliance and equipment manufacturers and subsidies to consumers to install water-saving devices such as low-flow toilets, showers and washing machines;
- Tariff structures that start low and progressively rise for high levels of consumption;
- A significant proportion of high-quality domestic water is used in sewerage systems to transport waste. A number of low-cost and alternative sanitation systems that have low water requirements are available, such as pit latrines and septic tanks.

Supply-side alternatives include:

- Stabilising and reducing losses from piped systems through leakage and other problems can save a substantial amount of water.
- Rainwater harvesting through rooftops, tanks and other methods are an alternative source of domestic water supply.
- Recycling of wastewater for agriculture, groundwater recharge, landscape irrigation and industry.

Integrated flood management

"In the case of floods, as absolute flood control may be neither achievable nor desirable, it is necessary to manage floods so as to minimise flood damages and maximise their ecological benefits." [38]

The WCD outlines an integrated approach to flood management and control which consist of three complementary approaches, namely:

Getting water in Burkina Faso.

- Reducing the scale of flood through a number of structural and non-structural means;
- Isolating the threat of floods through structural, technological and policy alternatives; and
- Increasing people's capacity to cope effectively with floods.

Reducing the scale of floods implies managing the quantity and quality of surface water runoff. Catchment management measures include:

- Groundwater recharge measures, such as infiltration trenches, detention basins, infiltration ponds, retention ponds and wetland areas to reduce runoff;
- Forest protection, lower impact logging practices, avoidance of clear-felling and less intensive agriculture to reduce soil erosion and landslides that lead to channel siltation;
- Small-scale storage of runoff and improvements in drainage can mitigate floods.

Isolating the threat of floods can be done through:

- Flood embankments that do not cut off natural drainage patterns;
- Flood proofing of houses and other structures through waterproofing walls, fitting openings with permanent or temporary doors or gates; raising houses; or building boundary walls around the house;
- Limiting floodplain development.

Increasing people's coping capacities can be done through:

- Integrated catchment and coastal zone management, and wise planning and use of floodplains and coastal zones;
- Emergency planning such as forecastings, warnings, evacuation plans and post-flood recovery. Compensation and insurance should be considered as part of this.

6.6 DECOMMISSIONING

The WCD report states that dam decommissioning "may be necessary due to safety concerns, dam owners' concerns about lower profits, or concerns about social and environmental impacts." In the US and France, dams have been decommissioned to "restore key environmental values, often related to migratory fish (salmon), and often as a condition of project relicensing."[39]

The WCD's final report recommends that dam design should include provisions for decommissioning and project licenses should define the "the responsibility and mechanisms for financing decommissioning costs." The WCD's thematic review on Financial, Economic and Distributional Analysis proposes that funds be "set aside for decommissioning at commissioning and/or during the period the project is under license and generating revenues." This is accepted practice with nuclear power plants in the United States and other countries.

6.7 POLITICAL ECONOMY OF DAM-BUILDING

The WCD looked at the decision-making, planning and compliance processes pertaining to large dams.

Role of foreign assistance

Multilateral development banks and bilateral aid agencies "have played a key strategic role in spreading the technology to developing countries, lending legitimacy to emerging dam projects, and fostering the technological and human resources required to build and maintain dams."

The World Bank started financing dams in the 1950s, providing on average over $1 billion per year. At the peak of lending in 1980-1984, total financing for large dams by multilateral development banks and bilateral aid agencies was more than $4.5 billion annually.[41]

Bias towards large dams

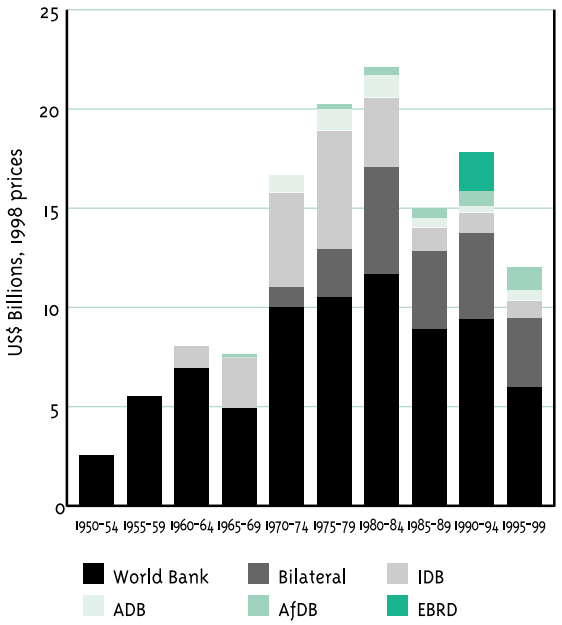
The WCD reports that "[p]olitical economy or intellectual barriers often pre-determined what options were considered in a given context." "[O]ptions assessment was typically limited in scope due to political and economic interests driving dam projects, lack of familiarity with other options, the perceived need to quickly proceed with large-scale projects to meet large projections in demand, and the relative ease of developing new supply relative to undertaking policy or institutional reform."

Overstated predictions of future demand for water and power "has militated against a gradual approach of adopting smaller, non-structural options and has pushed decision-makers into adopting large-scale dam projects because they seem to be the only adequate response to the large gap between existing supply and forecast demand."[42]

Conflicts of interest

"The end result of the influence exerted by vested interests, and the conflicts of interest that have arisen, has been that many dams were not built based on an objective assessment and evaluation of the technical, financial and economic criteria applicable at the time, much less the social and environmental criteria that apply in today's context."[43]

Figure 7 – DEVELOPMENT ASSISTANCE FOR LARGE DAMS



Source: WCD.

Notes: Data for bilateral agencies also includes financing by the Commission of the European Community and includes only all hydropower investments from 1975 to 1997

Failure of EIAs

Environmental impact assessments (EIA) still frequently fail to influence decision-making. EIA "consists mostly of measures to compensate or mitigate the planned impacts and render them acceptable when the decision to proceed has already been taken." "Most dam proponents see an EIA as an administrative hurdle to be cleared, or a requirement to secure funding." Often "huge political, technical and financial investment" has been made before the EIA is even launched.[44]

Lack of participation and transparency

The WCD found that "there has been a generalised failure to include and recognise affected people and empower them to participate in decision-making." Insufficient time, resources and information have been made available for public consultations. Opportunities for participation, when provided, "often occur late in the process and are limited in scope." This has "magnified the negative impacts of such pro-

jects and alienated affected communities," leading not only to serious social impacts but also "schedule delays, cost overruns and poor financial and economic performance."[45]

Lack of compliance

Poor outcomes and mistrust "stem from the failure of dam proponents and financing agencies to fulfil commitments made, observe statutory regulations and abide by internal guidelines…It appears that business is still often conducted as usual when it comes to planning and decision-making. Further, past conflicts remain largely unresolved and past impacts largely unmitigated."[46]

"As a development choice, large dams often became a focal point for the interests of politicians, dominant and centralised government agencies, international financing agencies and the dam-building industry."[40]

Corruption

"[T]he opportunity for corruption provided by dams as large-scale infrastructure projects further distorted decision-making, planning and implementation." "Decision-makers may be inclined to favour large infrastructure as they provide opportunities for personal enrichment not afforded by smaller or more diffuse alternatives… Allegations of corruption have tainted many large dam projects in the past but have seldom resulted in prosecution in court."[47]

FOOTNOTES

1 pp. 8-11	9 p. 68	17 p. 84	25 p. 106	33 p. 163	41 p. 170
2 pp. 68-69	10 p. 54	18 p. 77	26 p. 110	34 p. 143	42 p. 178
3 p. 49	11 pp. 68 and 47	19 p. 81	27 p. 112	35 p. 164	43 p. 191
4 pp. 42-43	12 p. 68	20 p. 93	28 p. 114	36 p. 151	44 p. 182
5 p 12	13 p. 58	21 p. 88	29 p. 116	37 p. 164	45 p. 176
6 p. 56	14 p. 68	22 p. 102	30 p. 118	38 p. 164	46 pp. 192-193
7 p. 58	15 p. 65	23 p. 104	31 p. 120	39 p. 92	47 p. 186
8 p. 39	16 p. 66	24 p. 105	32 p. 163	40 p. 168	

Note: All references are to Dams and Development: A New Framework for Decision-Making, *Earthscan Publications Ltd., November 2000*

7

The WCD's Recommendations

The WCD developed a framework for assessing options and making decisions for water and energy resources development, along with a set of criteria and guidelines for the planning, design, construction, operation and decommissioning of large dams. These are contained in Part Two of the report.

The WCD's recommendations establish a framework for decision-making not just on dams but on energy and water planning in general. Beyond energy and water, the recommendations have implications for the ways that all types of development projects are planned and implemented. Most importantly, the report outlines how the directly affected people who have conventionally been forgotten in the name of development may gain the power to either reject, or benefit from, projects.

The WCD's overall framework is based on a "rights and risks" approach to development. This means that all stakeholders whose rights might be affected, and all stakeholders who have risks imposed upon them involuntarily, should be included in decision-making on development. This is a radical departure from previous top-down decision-making on development projects. The WCD believes that this approach "offers an effective way to determine who has a legitimate place at the negotiation table and what issues need to be included on the agenda." It is highly significant that what is being discussed is "negotiation", which implies an attempt to reach agreement between both sides, rather than merely "consultation", the usual term favoured by the developers.

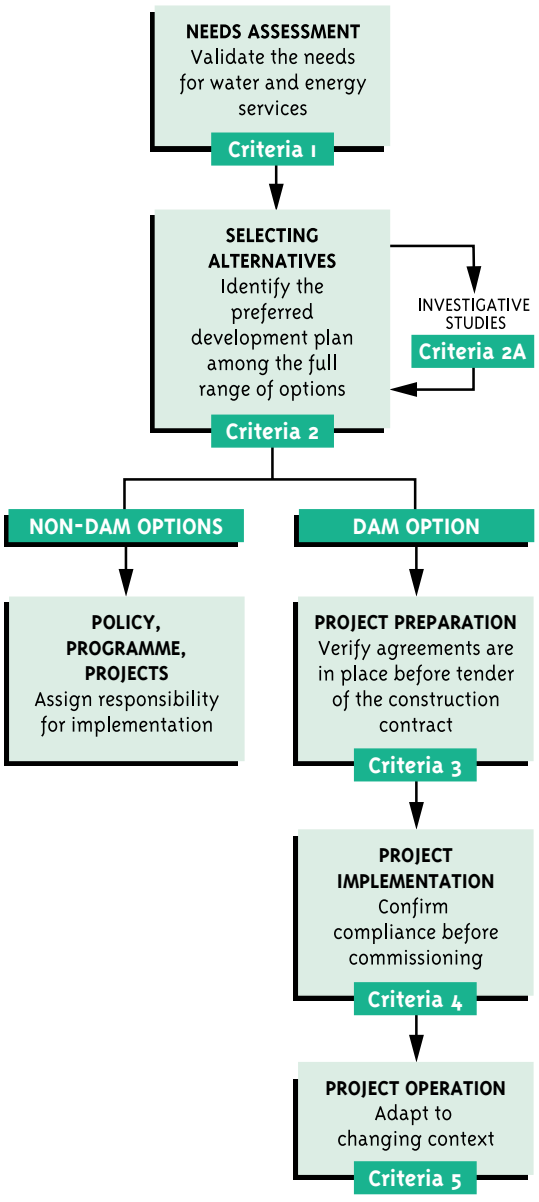
The WCD's recommendations consist of a number of components, the two most important of which are:

- **Seven broad strategic priorities that should guide decision-making.** Each one includes a set of principles that, if applied, should lead to more equitable and sustainable outcomes. Some examples include gaining public acceptance for all key decisions, and comprehensive options assessment. The strategic priorities can be used as a basis for analysing whether a particular project complies with WCD principles. See p. 49 for a complete list of strategic priorities.
- **A step-by-step process for how to make decisions on water and energy development, called the "criteria and guidelines".** Five stages are identified in the decision-making process, and at each of these stages a set of key criteria describe the processes required for compliance. The criteria and guidelines can be used to push for a new approach to planning development projects. They can also be used to show how the decision-making process for a particular project has not followed the WCD's recommended process.

In addition, the WCD recommendations include:

- **A special section on dams in the pipeline,** which describes how to apply the strategic priorities to projects already at an advanced stage of development
- **Twenty-six "guidelines for good practice,"** which provide more explanation of how to implement principles outlined in the strategic priorities.

Figure 8 – FIVE KEY DECISION POINTS



7.1 FIVE KEY DECISION POINTS: THE WCD CRITERIA AND GUIDELINES

The five key decision points present a comprehensive framework for decision-making on water and energy services. The framework is based upon the seven strategic priorities and upon recognising the rights and assessing the risks of all stakeholders in the process. Five key decision stages are identified, and at each of these stages the WCD recommends a set of criteria that describe the processes that are required for compliance. These provide a way of determining whether the Commission's recommendations have been followed and whether the process can proceed to the next stage of planning or implementation.

1.Needs assessment: validating the needs for water and energy services.

Stakeholders should develop a clear statement of water and energy services needs at local, regional and national levels. A participatory assessment should produce a clear set of development objectives that guide the assessment of options.

2. Selecting alternatives: identifying the preferred development plan

The second stage outlined by the WCD involves selecting alternatives and identifying the preferred development plan from various options. Stakeholders should participate in creating a list of options, assessing options and in negotiating those outcomes that may affect them. At this stage a comprehensive multi-criteria assessment should be used to select preferred options from the full range of alternatives, with social and environmental aspects given the same significance as economic and technical factors.

2A. Investigative studies

Once the preferred options are chosen, there should be meaningful participation in preparatory studies such as baseline, impact and investigative studies for individual projects. The studies and impact assessments should be "open and independent" and a careful analysis must be undertaken to recognise the rights and assess the risks of all stakeholder groups. Project-related impact assessments should include social, environmental, health and cultural impacts. For the proposed project to be part of a preferred development plan, the acceptance of the project-affected people and the prior informed consent of indigenous people should be obtained.

3. Project preparation: verifying agreements are in place before tender of the construction contract

Only after stages 1 and 2 have been completed should project preparation take place. Stakeholders should participate in the project design and the negotiation of outcomes that affect them. Indigenous and tribal peoples should give their free, prior and informed consent to the project as designed. Licenses issued for development of a project should incorporate any conditions that emerge from the options assessment process. Mitigation, resettlement, monitoring and development plans must be agreed with affected groups, and contracts signed, before construction starts. Benefit-sharing mechanisms must be agreed and set in place with affected groups.

4. Project implementation: confirming compliance before commissioning

The implementation stage covers procurement of goods and services and construction. Clearance to commission the project is not given by authorities until all commitments are met, including benefit sharing and mitigation measures. The operating license should be confirmed, including specific requirements for monitoring, periodic review and adaptive management.

5. Project operation: adapting to changing contexts

Dam operation must be guided by development-oriented goals that include social and environmental considerations rather than purely technical concerns. Any decisions to modify facilities, operating rules and license conditions to meet changing contexts should be based on a participatory review of project performance and impacts. Monitoring should take place regularly and feed back into project operation. A process should be initiated to decide on reparations, if necessary.

CAMPAIGN TIP!

Call for an open and participatory review of a dam that is already in the pipeline. Use the WCD recommendations as a basis for undertaking the review.

7.2 DAMS IN THE PIPELINE

The WCD recognises that its strategic priorities and policy principles are as relevant to projects already at an advanced stage of planning and development as they are to the selection of a project in the earlier options assessment stage. The WCD calls for an open and participatory review of all ongoing and planned projects to see whether changes are needed to bring them into line with the WCD strategic priorities and policy principles. In general, regulators, developers and, where appropriate, financing agencies should ensure that such a review:

- Uses a stakeholder analysis based on recognising rights and assessing risks, in order to identify a stakeholder forum that is consulted on all issues affecting them;
- Enables vulnerable and disadvantaged stakeholder groups to participate in an informed manner;
- Includes a distribution analysis to see who shares the costs and benefits of the project;
- Develops agreed mitigation and resettlement measures to promote development opportunities and benefit sharing for displaced and adversely affected people;
- Avoids, through modified design, any severe and irreversible ecosystem impacts;
- Provides for an environmental flow requirement, and mitigates or compensates any unavoidable ecosystem impacts; and
- Designs and implements recourse and compliance mechanisms.

Governments may also use the review of dams in the pipeline as an opportunity to compare the existing policy framework for planning and implementation of water and energy options with the criteria and guidelines proposed by the Commission.

This process of review implies added investigations or commitments, the renegotiation of contracts and the incorporation of a compliance plan.

7.3 SELECTED GUIDELINES FOR GOOD PRACTICE

The WCD proposed 26 guidelines to support the application of the decision-making processes outlined in the WCD report. Guidelines regarding negotiated decision-making; free, prior and informed consent; and strategic impact assessment are summarised below.

> Free, prior and informed consent is a "continuous, iterative process of communication and negotiation spanning the entire planning and project cycles."

Negotiated decision-making processes

Negotiation processes should be conducted in which all stakeholders have an equal opportunity to influence decisions. Following are the attributes of a fair negotiation process:

- Representatives for the stakeholder forum should be chosen through a free process of selection to ensure the legitimate representation of all interests.
- The integrity of community processes should be guaranteed through assurances that communities will not be divided or coerced. Communities may decide to pull out of the process if their human rights are not respected or if they are intimidated.
- Adequate time should be allowed for stakeholders to assess, consult and participate.
- Special provisions should be made to resolve disputes regarding prior informed consent for indigenous and tribal peoples (see opposite).
- Adequate financial resources should be made available to stakeholder groups who are politically or financially weak or who lack technical expertise to enable them to participate effectively in the process.
- Transparency should be ensured by defining criteria for public access to information, translation of key documents and by holding discussions in a language local people can understand.
- Negotiation should be assisted by a facilitator or mediator, when requested, selected with the agreement of the stakeholders.

To ensure a legitimate process, stakeholders should agree on the appropriate structures and processes for decision-making and mechanisms for dispute resolution; agree that the interests at stake and legitimate community needs are clearly identified; ensure that available alternatives are given full consideration; and agree on the timeframe for key milestones within the decision-making process.

When a negotiated consensus cannot be achieved through good faith negotiations as described above, the agreed-upon independent dispute resolution mechanisms are initiated. Where a settlement does not emerge, the State will act as the final arbitrator, subject to judicial review.

Free, prior and informed consent

Free, prior and informed consent of indigenous and tribal peoples is conceived as more than a one time contractual event. Rather, it is a "continuous, iterative process of communication and negotiations spanning the entire planning and project cycles." Progress to each stage in the cycle should be guided by the agreement of the potentially affected indigenous and tribal peoples.

Prior, informed consent should be broadly representative and inclusive. How it is given or expressed will be guided by customary laws and practices of the indigenous and tribal peoples and national laws. At the beginning of the process, indigenous and tribal peoples will tell the stakeholder forum how they will express their consent to decisions including endorsement of key decisions. An independent dispute resolution mechanism should be established with the participation and agreement of the stakeholder forum at the outset.

For more information, see the WCD Thematic Review, "Operationalisation of Free Prior Informed Consent," available at www.dams.org or on the WCD's CD-ROM.

Strategic impact assessment

Strategic impact assessment (SIA) can be used to recognise the rights to be accommodated, assess the nature and magnitude of risks to the environment and affected stakeholder groups, and determine available development options. SIA takes the concept of project-level impact assessment and moves it up into the initial phases of planning and options assessment. It is a broad assessment covering entire sectors, policies and programs and ensures that environmental, social, health and cultural implications of all options are considered at an early stage in planning. This term includes sectoral, basin-wide, regional and cumulative environmental assessments.

The general goals of strategic impact assessment are as follows:

- Recognising the rights of stakeholders and assessing the risks;
- Incorporating environmental and social criteria in the selection of demand and supply options and projects before major funds to investigate individual projects are committed;
- Screening out inappropriate or unacceptable projects at an early stage;
- Reducing up-front planning and preparation costs for investors and minimising the risk that projects encounter serious opposition; and
- Providing an opportunity to look at the option of improving the performance of existing dams and other assets.

CAMPAIGN TIP!

Prepare an analysis of how a proposed project complies with WCD recommendations and distribute this to government agencies and funders.

7.4 FOLLOW-UP STRATEGIES FOR SPECIFIC SECTORS

The WCD proposed a number of follow-up strategies to push forward the ideas outlined in the WCD report.

National governments

- Establish an independent, multi-stakeholder committee to address outstanding issues with existing dams.
- Require a review of existing procedures and regulations concerning large dams.
- Develop a specific policy statement governing stakeholder participation in options assessment and planning.
- Review legal, policy and institutional frameworks to assess and remove any bias against resource conservation, efficiency and decentralised options, and any barriers to open participatory processes.

Line ministries

- Issue criteria and guidelines for promoting independent review and dispute resolution around large dams.
- Adopt the practice of time-bound licenses for all dams.

Suppliers, contractors, developers and consultants

- Abide by the provisions of the anti-bribery convention of the Organisation for Economic Co-operation and Development.
- Develop and adopt voluntary codes of conduct, management systems and certification procedures for best ensuring and demonstrating compliance with the Commission's guidelines.
- Consulting companies should use and refine the tools proposed by the Commission, such as distributional analysis, multi-criteria analysis, rights-and-risks approach and environmental flow assessments.
- Put in place mechanisms to ensure that dam designers either participate in or at least receive evaluations of predicted social, environmental, financial and economic performance five years after construction. Make these evaluations publicly available.

Private financiers

- Develop criteria for bond-rating systems for use in financing all options in the water resources and electric power sectors.
- Incorporate the principles, criteria and guidelines of the Commission in corporate social responsibility policies and statements.
- Use the Commission's guidelines as social and environmental screens for evaluating individual projects.

Bilateral aid agencies and multilateral development banks

- Ensure that any dams for which financing is approved adhere to the WCD's guidelines.
- Accelerate the shift from project- to sector-based finance. Increase financial and technical support for transparent and participatory needs and options assessment, and the financing of non-structural alternatives.
- Review past projects to identify those that may have underperformed or present unresolved issues and share in addressing the financial burden of such projects for borrower countries. This may involve cancelling the outstanding debt related to them, converting debt repayment into development assistance targeting affected areas, or providing new support to help borrower countries address unresolved economic, social and environmental problems.
- Review internal processes and operational policies in relation to the WCD recommendations to determine changes needed.

Export credit agencies

- Introduce and adopt common environmental, social and transboundary criteria for financial guarantees and strengthen institutional capacity to appraise projects against such criteria.
- Improve coordination among international agencies to ensure that dam projects refused by one agency are not accepted by others.
- Require private-sector applicants for dams to meet due diligence criteria or voluntary codes of conduct that conform to the WCD recommendations.
- Promote consultation and information disclosure as normal procedure.

Academics

- Evaluate dam case studies following WCD methodology.
- Undertake research on alternatives to dams such as demand-side management, and ensure this is available to decision-makers.
- Assist in improving the WCD knowledge base, particularly in terms of comparative data on the development effectiveness of large dams and the impacts of dams on local, regional and national development and on affected people and the environment. The WCD lays out specific areas for research in Chapter 10 of the report.

7.5 THE WCD'S STRATEGIC PRIORITIES

The following seven strategic priorities are taken directly from the WCD report. No changes to language have been made. Each strategic priority contains a key message and a set of supporting policy principles. Each of the policy principles are described in greater detail in the WCD report.

STRATEGIC PRIORITY 1

GAINING PUBLIC ACCEPTANCE

Key Message

Public acceptance of key decisions is essential for equitable and sustainable water and energy resources development. Acceptance emerges from recognising rights, addressing risks, and safeguarding the entitlements of all groups of affected people, particularly indigenous and tribal peoples, women and other vulnerable groups. Decision-making processes and mechanisms are used that enable informed participation by all groups of people, and result in the demonstrable acceptance of key decisions. Where projects affect indigenous and tribal peoples, such processes are guided by their free, prior and informed consent.

Effective implementation of this strategic priority depends on applying these policy principles:

1.1 Recognition of rights and assessment of risks are the basis for the identification and inclusion of stakeholders in decision-making on energy and water resources development.

1.2 Access to information, legal and other support is available to all stakeholders, particularly indigenous and tribal peoples, women and other vulnerable groups, to enable their informed participation in decision-making processes.

1.3 Demonstrable public acceptance of all key decisions is achieved through agreements negotiated in an open and transparent process conducted in good faith and with the informed participation of all stakeholders.

1.4 Decisions on projects affecting indigenous and tribal peoples are guided by their free, prior and informed consent achieved through formal and informal representative bodies.

STRATEGIC PRIORITY 2

COMPREHENSIVE OPTIONS ASSESSMENT

Key Message

Alternatives to dams do often exist. To explore these alternatives, needs for water, food and energy are assessed and objectives clearly defined. The appropriate development response is identified from a range of possible options. The selection is based on a comprehensive and participatory assessment of the full range of policy, institutional, and technical options. In the assessment process social and environmental aspects have the same significance as economic and financial factors. The options assessment process continues through all stages of planning, project development and operations.

Effective implementation of this strategic priority depends on applying these policy principles:

2.1 Development needs and objectives are clearly formulated through an open and participatory process before the identification and assessment of options for water and energy resource development.

2.2 Planning approaches that take into account the full range of development objectives are used to assess all policy, institutional, management, and technical options before the decision is made to proceed with any programme or project.

2.3 Social and environmental aspects are given the same significance as technical, economic and financial factors in assessing options.

2.4 Increasing the effectiveness and sustainability of existing water, irrigation, and energy systems are given priority in the options assessment process.

2.5 If a dam is selected through such a comprehensive options assessment process, social and environmental principles are applied in the review and selection of options throughout the detailed planning, design, construction, and operation phases.

STRATEGIC PRIORITY 3

ADDRESSING EXISTING DAMS

Key Message

Opportunities exist to optimise benefits from many existing dams, address outstanding social issues and strengthen environmental mitigation and restoration measures. Dams and the context in which they operate are not seen as static over time. Benefits and impacts may be transformed by changes in water use priorities, physical and land use changes in the river basin, technological developments, and changes in public policy expressed in environment, safety, economic and technical regulations. Management and operation practices must adapt continuously to changing circumstances over the project's life and must address outstanding social issues.

Effective implementation of this strategic priority depends on applying these policy principles:

3.1 A comprehensive post-project monitoring and evaluation process, and a system of longer-term periodic reviews of the performance, benefits, and impacts for all existing large dams is introduced.

3.2 Programmes to restore, improve and optimise benefits from existing large dams are identified and implemented. Options to consider include rehabilitate, modernise and upgrade equipment and facilities, optimise reservoir operations and introduce non-structural measures to improve the efficiency of delivery and use of services.

3.3 Outstanding social issues associated with existing large dams are identified and assessed; processes and mechanisms are developed with affected communities to remedy them.

3.4 The effectiveness of existing environmental mitigation measures is assessed and unanticipated impacts identified; opportunities for mitigation, restoration and enhancement are recognised, identified and acted on.

3.5 All large dams have formalised operating agreements with time-bound license periods; where re-planning or relicensing processes indicate that major physical changes to facilities, or decommissioning, may be advantageous, a full feasibility study and environmental and social impact assessment is undertaken.

STRATEGIC PRIORITY 4

SUSTAINING RIVERS AND LIVELIHOODS

Key Message

Rivers, watersheds and aquatic ecosystems are the biological engines of the planet. They are the basis for life and the livelihoods of local communities. Dams transform landscapes and create risks of irreversible impacts. Understanding, protecting and restoring the of ecosystems at river basin level is essential to foster equitable human development and the welfare of all species. Options assessment and decision-making around river development prioritises the avoidance of impacts, followed by the minimisation and mitigation of harm to the health and integrity of the river system. Avoiding impacts through good site selection and project design is a priority. Releasing tailor-made environmental flows can help maintain downstream ecosystems and the communities that depend on them.

Effective implementation of this strategic priority depends on applying these policy principles:

4.1 A basin-wide understanding of the ecosystem's functions, values and requirements, and how community livelihoods depend on and influence them, is required before decisions on development options are made.

4.2 Decisions value ecosystems, social and health issues as an integral part of project and river basin development and prioritise avoidance of impacts in accordance with a precautionary approach.

4.3 A national policy is developed for maintaining selected rivers with high ecosystem functions and values in their natural state. When reviewing alternative locations for dams on undeveloped rivers, priority is given to locations on tributaries.

4.4 Project options are selected that avoid significant impacts on threatened and endangered species. When impacts cannot be avoided viable compensation measures are put in place that will result in a net gain for the species within the region.

4.5 Large dams provide for releasing environmental flows to help maintain downstream ecosystem integrity and community livelihoods and are designed, modified and operated accordingly.

STRATEGIC PRIORITY 5

RECOGNISING ENTITLEMENTS AND SHARING BENEFITS

Key Message

Joint negotiations with adversely affected people result in mutually agreed and legally enforceable mitigation and development provisions. These provisions recognise entitlements that improve livelihoods and quality of life, and affected people are beneficiaries of the project. Successful mitigation, resettlement and development are fundamental commitments and responsibilities of the State and the developer. They bear the onus to satisfy all affected people that moving from their current context and resources will improve their livelihoods. Accountability of responsible parties to agreed mitigation, resettlement and development provisions is ensured through legal means, such as contracts, and through accessible legal recourse at national and international level.

Effective implementation of this strategic priority depends on applying these policy principles:

5.1 Recognition of rights and assessment of risks is the basis for identification and inclusion of adversely affected stakeholders in joint negotiations on mitigation, resettlement and development related decision-making.

5.2 Impact assessment includes all people in the reservoir, upstream, downstream and in catchment areas whose properties, livelihoods and non-material resources are affected. It also includes those affected by dam related infrastructure such as canals, transmission lines and resettlement developments.

5.3 All recognised adversely affected people negotiate mutually agreed, formal and legally enforceable mitigation, resettlement and development entitlements.

5.4 Adversely affected people are recognised as first among the beneficiaries of the project. Mutually agreed and legally protected benefit sharing mechanisms are negotiated to ensure implementation.

STRATEGIC PRIORITY 6

ENSURING COMPLIANCE

Key Message

Ensuring public trust and confidence requires that governments, developers, regulators and operators meet all commitments made for the planning, implementation and operation of dams. Compliance with applicable regulations, criteria and guidelines, and project-specific negotiated agreements is secured at all critical stages in project planning and implementation. A set of mutually reinforcing incentives and mechanisms is required for social, environmental and technical measures. These should involve an appropriate mix of regulatory and non-regulatory measures, incorporating incentives and sanctions. Regulatory and compliance frameworks use incentives and sanctions to ensure effectiveness where flexibility is needed to accommodate changing circumstances.

Effective implementation of this strategic priority depends on applying these policy principles:

6.1 A clear, consistent and common set of criteria and guidelines to ensure compliance is adopted by sponsoring, contracting and financing institutions and compliance is subject to independent and transparent review.

6.2 A Compliance Plan is prepared for each project prior to commencement, spelling out how compliance will be achieved with relevant criteria and guidelines and specifying binding arrangements for project-specific technical, economic, social and environmental commitments.

6.3 Costs for establishing compliance mechanisms and related institutional capacity, and their effective application, are built into the project budget.

6.4 Corrupt practices are avoided through enforcement of legislation, voluntary integrity pacts, debarment and other instruments.

6.5 Incentives that reward project proponents for abiding by criteria and guidelines are developed by public and private financial institutions.

STRATEGIC PRIORITY 7

SHARING RIVERS FOR PEACE, DEVELOPMENT AND SECURITY

Key message

Storage and diversion of water on transboundary rivers has been a source of considerable tension between countries and within countries. As specific interventions for diverting water, dams require constructive co-operation. Consequently, the use and management of resources increasingly becomes the subject of agreement between States to promote mutual self-interest for regional co-operation and peaceful collaboration. This leads to a shift in focus from the narrow approach of allocating a finite resource to the sharing of rivers and their associated benefits in which States are innovative in defining the scope of issues for discussion. External financing agencies support the principles of good faith negotiations between riparian States.

Effective implementation of this strategic priority depends on applying these policy principles:

7.1 National water policies make specific provision for basin agreements in shared river basins. Agreements are negotiated on the basis of good faith among riparian States. They are based on principles of equitable and reasonable utilisation, no significant harm, prior information and the Commission's strategic priorities.

7.2 Riparian States go beyond looking at water as a finite commodity to be divided and embrace an approach that equitably allocates not the water, but the benefits that can be derived from it. Where appropriate, negotiations include benefits outside the river basin and other sectors of mutual interest.

7.3 Dams on shared rivers are not built in cases where riparian States raise an objection that is upheld by an independent panel. Intractable disputes between countries are resolved through various means of dispute resolution including, in the last instance, the International Court of Justice.

7.4 For the development of projects on rivers shared between political units within countries, the necessary legislative provision is made at national and sub-national levels to embody the Commission's strategic priorities of 'gaining public acceptance', 'recognising entitlements' and 'sustaining rivers and livelihoods'.

7.5 Where a government agency plans or facilitates the construction of a dam on a shared river in contravention of the principle of good faith negotiations between riparians, external financing bodies withdraw their support for projects and programmes promoted by that agency.

8

Resources

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Visit this website for copies of the WCD report (in PDF format), WCD background studies and a wide variety of responses to the report.

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Includes many NGO documents commenting on the WCD report and information and links on other issues relating to large dams. IRN's website also provides links to groups all over the world involved in large dam campaigns at www.irn.org/links/damfighters.shtml.
IRN provides a free e-mail listserv with information on the WCD. To subscribe to this listserv, send a message to owner-irn-wcd@netvista.net and in the text of the message, type "subscribe <your email address>".

PUBLICATIONS

World Commission on Dams Report

Dams and Development: A New Framework for Decision-Making, The Report of the World Commission on Dams, Earthscan Publications Ltd., November 2000, paperback $29.95. Developing country NGOs are offered a 35% discount off the bookstore price. The WCD report is also available in PDF format on the WCD's website or as a free CD-ROM from the Dams and Development Project.

Represas y Desarrollo: Un Nuevo Marco para la Toma de Decisiones, the official WCD report in Spanish, can be downloaded at http://www.dams.org/report/espanol.htm. At that site, you can also download a powerpoint presentation on the WCD in Spanish. To order a hardcopy version of the report, contact the DDP.

Dams and Development: An Overview, November 2000
This 30-page summary of the WCD report is available on the WCD's website or from the DDP. This summary is available in English, French, German, Hindi, Polish, Portuguese, Russian and Spanish. These translations are available online at www.dams.org/report.

On the WCD website, some background documents are also available in French, Japanese, Portuguese and Spanish at www.dams.org/polyglot.

Selected WCD Background Studies

The following is a list of WCD background studies that are particularly useful. You can download these documents from the WCD's website or ask the DDP to send you a CD-ROM.

The Social Impacts of Large Dams: Equity and Distributional Issues, WCD Thematic Review I.1, by Adams, W., 2000. Includes useful sections on gender impacts of dams and impacts on downstream communities.

Displacement, Resettlement, Rehabilitation, Reparation and Development, WCD Thematic Review I.3 by Bartolome, L.J., de Wet, C., Mander, H. and Nagaraj, V.K. 2000. Includes case studies of experiences with resettlement in Africa, Argentina, China, India and Mexico.

Dams, Ecosystem Functions and Environmental Restoration, WCD Thematic Review II.1, by Berkamp, G., McCartney, M., Dugan, P., McNeely, J. and Acreman, M. 2000. Includes a useful background paper on instream flows and managed flood releases from reservoirs.

Dams, Indigenous People and Vulnerable Ethnic Minorities, WCD Thematic Review 1.2, by Colchester, M. – Forest Peoples Programme 2000. Includes case studies on Canada, Guatemala, India, Malaysia, Namibia, Norway and the Philippines.

Reparations and the Right to Remedy, WCD Briefing Paper, by Johnston, B.R. 2000. Articulates the legal basis for reparations.

Large Dams: India's Experience, WCD case study, by Rangachari, R., Sengupta, N., Iyer, R.R., Banerji, P. and Singh, S. 2000. Also available in Hindi from SANDRP – email cwaterp@vsnl.com.

Environmental and Social Impact Assessment for Large Dams, WCD Thematic Review V.2, by Sadler, B., Verocai, I. and Vanclay, F. 2000.

Transparency and Corruption on Building Large Dams, Contributing Paper prepared for WCD Thematic Review V.4, by Wiehen, M.H. – Transparency International. 1999.

NGO Publications

Summary Excerpts from the World Commission on Dams Final Report, prepared by International Rivers Network, November 2000. Includes 31 pages of useful WCD report excerpts, available at www.irn.org/wcd.

A Watershed in Global Governance? An Independent Assessment of the World Commission on Dams, by Dubash, N.K., Dupar, M., Kothari, S. and Lissu, T., World Resources Institute, Lokayan and Lawyers' Environmental Action Team, Washington, DC, November 2001, $25. You can download this report at http://www.wri.org/governance/wcdassessment.html.

"The Use of a Trilateral Network: An Activist's Perspective on the World Commission on Dams," by McCully, P., *American University International Law Review*, Vol. 16 No. 6, 2001. Contact IRN to get a copy.

Guardianes de los Ríos: Guía para activistas, by Aguirre, M. and Switkes, G., International Rivers Network, Berkeley, 2000.

Guardiões dos Rios: Guia para Ativistas, International Rivers Network, Berkeley, 2000.

Silenced Rivers: The Ecology and Politics of Large Dams, 2nd edition, by McCully, P., Zed Books, London 2001. Available from IRN for $25 plus shipping costs.

River Keepers Handbook: A Guide to Protecting Rivers and Catchments in Southern Africa, by Pottinger, L., International Rivers Network, Berkeley, 1999.

**International Rivers Network has produced a powerpoint presentation on the WCD. Contact IRN to get a copy.*

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
AGM	Annual General Meeting
DDP	Dams and Development Project, follow-up body to the WCD.
DFID	UK Department for International Development
DSM	Demand-Side Management
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
Ex-Im	Export-Import Bank of the US
GHG	Greenhouse Gas
HEA	Hydro Equipment Association
ICID	International Commission on Irrigation and Drainage
ICOLD	International Commission on Large Dams, the industry's main lobby group.
IDA	International Development Association, soft-loan window of the World Bank
IFC	International Finance Corporation, private sector arm of the World Bank
IHA	International Hydropower Association
IRN	International Rivers Network
IUCN	International Union for the Conservation of Nature
MW	Megawatts
NGO	Nongovernmental organisation
OED	Operations Evaluation Department of the World Bank
OPIC	US Overseas Private Investment Corporation
PPA	Power Purchase Agreement
SANDRP	South Asia Network on Dams, Rivers and People
SIA	Strategic Impact Assessment
SIDA	Swedish International Development Agency
UK	United Kingdom
UNEP	United Nations Environment Programme
US	United States of America
WB	World Bank
WCD	World Commission on Dams

All dollar figures are in US dollars.