Sharing the benefits of large dams in West Africa

Edited by Jamie Skinner, Madiodio Niasse and Lawrence Haas

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Contents

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About the Global Water Initiative

The Global Water Initiative (GWI), supported by the Howard G. Buffett Foundation, addresses the challenge of providing long term access to clean water and sanitation, as well as protecting and managing ecosystem services and watersheds, for the poorest and most vulnerable people dependant on those services.

Water provision under GWI takes place in the context of securing the resource base and developing new or improved approaches to water management, and forms part of a larger framework for addressing poverty, power and inequalities that particularly affect the poorest populations.

This means combining a practical focus on water and sanitation delivery with investments targeted at strengthening institutions, raising awareness and developing effective policies.

The Regional GWI consortium for West Africa includes the following partners:

- International Union for the Conservation of Nature (IUCN)
- Catholic Relief Services (CRS)
- CARE International
- SOS Sahel (UK)
- International Institute for Environment and Development (IIED).

GWI West Africa covers five countries: Senegal, Ghana, Burkina Faso, Mali, and Niger.

Executive summary

West African countries have built over 150 large dams on the region's rivers, increasing water storage capacity and regulation of water courses to support the economic development of the countries of the region. Over the next 30 years, many more will be built, not least as a response to increasingly fluctuating rainfall. However, the construction of these dams has often led to the complex and difficult displacement and relocation of populations, often affecting thousands of people: 80,000 people in the case of Ghana's Lake Volta created by the dam at Akosombo; 75,000 people with the dam at Kossou in Ivory Coast.

The first part of this report reviews the documented West African experience with resettlement. The second part analyses the issues further by reviewing the tools and approaches currently in use around the world to better share the benefits from large dams. It seeks to stimulate multi-stakeholder dialogue on ways to formulate a step-wise, collaborative strategy to introduce benefit sharing on large dams suited to West African needs. While it focuses on the equitable sharing of benefits with local communities and traditional river users, it acknowledges that benefit sharing between states is also essential for effective cooperation to manage West Africa's international river systems sustainably.

Only a handful of publicly available assessments have been made of relocation projects linked to the dams already constructed in West Africa. In some countries, where new dams are proposed, there are few existing projects, which means that national knowledge and experience is often limited. Thus, plans for future projects urgently need to be informed by experience – so efforts to record this experience and to foster regional learning processes are sorely needed.

Undoubtedly, population displacement and relocation processes have been problematic, with many issues as yet unresolved. On the positive side, short-term objectives have often been achieved - planners and decision-makers involved in dam construction have provided the displaced people with infrastructure and the means to alleviate the short-term consequences of displacement. Displaced populations have generally had access to adequate drinking water and health services, and education has been significantly improved. However, countless flaws have also been observed, many of these stemming from a lack of socio-anthropological sensitivity amongst relocation project managers. Furthermore, the level of compensation paid has rarely met the displaced populations' expectations. Delayed payment processes have had a negative impact on the process of resettlement and development of the relocation zones. Consequently, living conditions amongst the displaced and host populations have often deteriorated some 5-10 years after relocation, often when the project-specific development funding linked to the construction of the dam comes to an end. This situation poses an ethical question of fairness, especially when the displaced bear the environmental and social brunt of the dams while other groups (city-

dwellers and industrialists for example) may receive the benefits throughout the lifetime of the dam.

Today, the stakes are high in terms of development, adaptation to climate change, culture, demographics, land tenure and distribution of wealth. It is therefore increasingly vital to ensure that displaced people benefit directly from the development opportunities generated by dams in order to improve their living standards throughout the lifetime of the dam – which may be 50-80 years or more – and not just for the first 5-10 years when the projects' main supporters are still engaged.

Where a favourable political environment for the sharing of benefits exists, decision-makers have developed some useful strategies to redress injustices affecting displaced populations. Although the stated principle of leaving affected people "better off" has often eluded projects in practice, some river basin authorities have achieved considerable success in operationalising the principle of sharing the profits generated by hydro electric and irrigation facilities. For example, the Senegal River Authority (OMVS in French) is strongly committed to socioeconomic development and protection of the environment of the basin following the construction of major infrastructure for the control of water resources at Diama and Manantali. A fiduciary fund was set up by the Volta River Authority in Ghana to provide the displaced populations with electricity, clean water, sanitation, education and road facilities.

We conclude that the prospects for better living conditions are improving with the relocation projects for some upcoming West African dams (e.g. Kandadji, Sambagalou, Fomi, Taoussa and Bui) that have already anticipated engagement on benefit-sharing issues by setting up local development plans. But the challenge will be to ensure that these programmes are sustainable and able to persist over the entire lifetime of the dam.

The equitable sharing of benefits is a way of thinking, as well as a practical approach to catalyse and fund local actions that join many strands of water governance reform and sustainability planning under a framework for integrated water resource management. The approaches can reinforce social equity in infrastructure strategies and promote sustainability, rather than narrowly optimising dams as physical assets that deliver water and energy services, or navigation benefits.

Close examination shows that the introduction of benefit sharing mechanisms is positive from all stakeholder perspectives. They allow project-affected people and traditional river users to become partners in projects, giving them a stronger voice in decisions that affect them, and an opportunity to be first among project beneficiaries, not last. From the government perspective, benefit sharing is a practical policy tool to achieve greater social inclusiveness and improve livelihoods of local people.

From the dam operator perspective, benefit sharing promotes good community relations that reduce the risk of project delays. From the perspective of potential investors, realistic provisions for local benefit sharing mean that locally affected communities and the public are more likely to support a dam project. As a consequence, the investor's risk exposure is reduced and investors are more inclined to become financing partners.

Benefit sharing also helps to address past shortcomings in dam planning and management that are well documented. These include failures to honour social commitments made to project-affected communities and failures to finance environmental mitigation measures. It addresses the need to ensure that there is a stream of financing to meet such needs over the longer term (e.g. a percentage of electricity sales included in the bulk tariff).

We conclude that many mechanisms for benefit sharing exist, where there is a political will for their implementation. A process is laid out for developing an improved approach for benefit sharing in West Africa that goes beyond thinking of local communities only in terms of compensation for land or property loss and short-term resettlement payments – to recognize that they have legitimate entitlement to part ownership of the economic rent that dams generate. Equally, dam-affected populations have a legitimate stake and role to play in the sustainable operation of dams. Collectively such actions are likely to reduce the long term social cost of large dams and ensure that affected people are among the direct beneficiaries of large projects.

Acronyms and abbreviations

ABV	Volta Basin Authority
ADB	Asian Development Bank
ANBO	African Network of Basin Organizations
BCA	Bumbuna Conservation Authority (Sierra Leone)
BWMA	Bumbuna Watershed Management Agency (Sierra Leone)
CAEA	Canadian Act on Environmental Assessment
CBD	Covention on Biological Diversity
CBT	Columbia Basin Trust
CDD	Community-driven development
CEDEAO-CSAO/OCDE	Economic Community of West African States – Sahel and West Africa Club/OECD
CIDA	Canadian International Development Agency
CPC	Columbia Power Corporation
CSO	Civil society organisation
DFID	Department for International Development
ERA-V	Electricity Regulatory Authority of Vietnam
ERPA	Emission redemption purchase agreement
FAO	Food and Agriculture Organisation
GWh	Gigawatt hour
GWI	Global Water Initiative
GWP	Global Water Partnership
HEP	Hydroelectric power plant
HSAF	Hydropower Sustainability Assessment Forum
IAIA	International Association for Impact Assessment
ICID	International Commission for Irrigation and Drainage
ICOLD	International Commission on Large Dams
IEA	International Energy Agency
IHA	International Hydropower Association
IISD	International Institute for Sustainable Development
IWRM	Integrated water resources management
LFCD	Lesotho Fund for Community Development
LHWP	Lesotho Highlands Water Project
MDG	Millennium development goals
MRP	Manantali Relocation Project (Mali)
Mw	Megawatt
NBA	Niger Basin Authority
NGO	Non governmental organisation
NGPES	National Growth and Poverty Eradication Programme (Laos)
OECD	Organisation for Economic Co-operation and Development
OMVG	Gambia River Authority
OMVS	Senegal River Basin Authority
PAP	Project-affected people

PDIAM	Downstream Manantali Integrated Farming Project (Mali)
PDL	Local development plan
PES	Payments for ecological or environmental services
PGIRE	Integrated water management programme (OMVS)
PPA	Power purchase agreements
RBO	River basin organization
RP	Relocation plan
SFE	State forest enterprise
USAID	United States Agency for International Development
USCDI	Upper Seli Community Development Initiative (Sierra Leone)
VDC	Village development committee (Nepal)
WCD	World Commission on Dams
WWF	World Water Forum
UN	United Nations

Part one

West African experience in managing people displaced by large dams

By Mame Dagou Diop and Cheikh Mamina Diedhiou
with Madiodio Niasse

Introduction

The construction of large dams in West Africa is one government response to the challenges of water management to meet national needs for irrigation or for electricity. However, their construction has often generated major socioeconomic and environmental impacts that require heavy investments to mitigate them.

The case of displaced populations still remains a major issue that decision-makers and planners must address. Directly impacted by the construction of the dams, they remain vulnerable to poverty, considering the economic limits that the relocation areas offer (shortage of arable land, absence of income generating activities, and so on). In short, these populations benefit less from the dams than others who have not suffered any direct impacts.

The debate hinges on the recognition of the rights of those affected and the sharing of the benefits. It means that dam promoters, entrepreneurs and regulators must initiate actions to support the development and the well-being of local and regional communities impacted by dams.

In this context, the Global Water Initiative (GWI) is committed to addressing the issue of equitably sharing the benefits generated by the dams in West Africa. The present document has been drafted on the basis of the current literature and looks at large dams and displaced populations in West Africa; the displacement/relocation process; and improved mechanisms to share the benefits that large dams generate.

4

Large dams and displaced populations in West Africa

Human mastery of water resources is at the heart of sustainable development and the well-being of West African societies. This required the states of the sub-region to build many dams, which has brought about the massive displacement of populations, among other impacts.

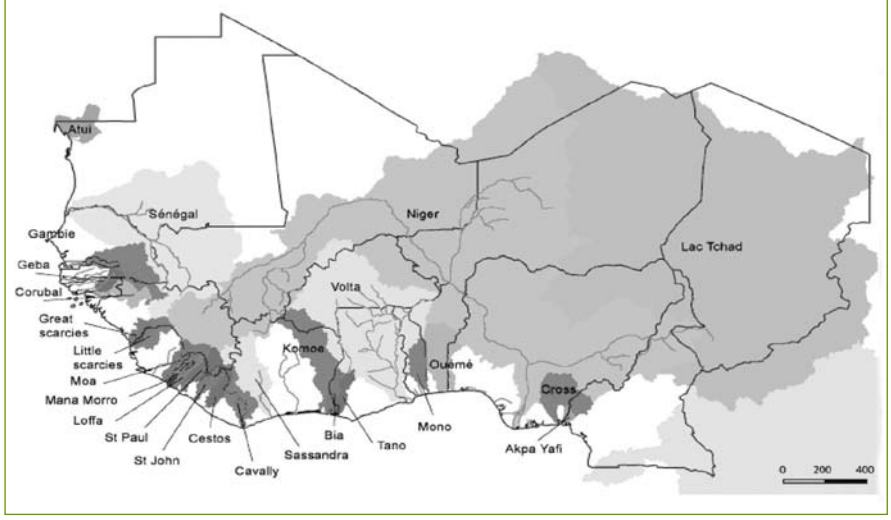
This chapter reviews the potentials for water and dams in West Africa and sums up the statistics as well as the criteria applied during displacement operations.

2.1 Water resources and large dams in West Africa

West Africa counts 28 cross-border river basins that cover 71 per cent of the region (Figure 1). The most important are the Niger (shared by 11 countries if one takes into account the non-active part of the basin), the Senegal (4 countries), the Volta (6 countries), Lake Chad (8 countries), and the Comoé (4 countries). The sub-region also has fresh water reserves, of several billion cubic metres, stored in deep water tables.

Paradoxically, this part of the world is often prone to shortages of this resource when it is needed. The unavailability of fresh water in West Africa is all the more acute as it is compounded by sharp variations in rainfall and climatic conditions. In the absence of adequate infrastructure to control those vagaries, national economies have been buffeted by flooding and droughts at the same time. To

Figure 1. Water resources of West Africa



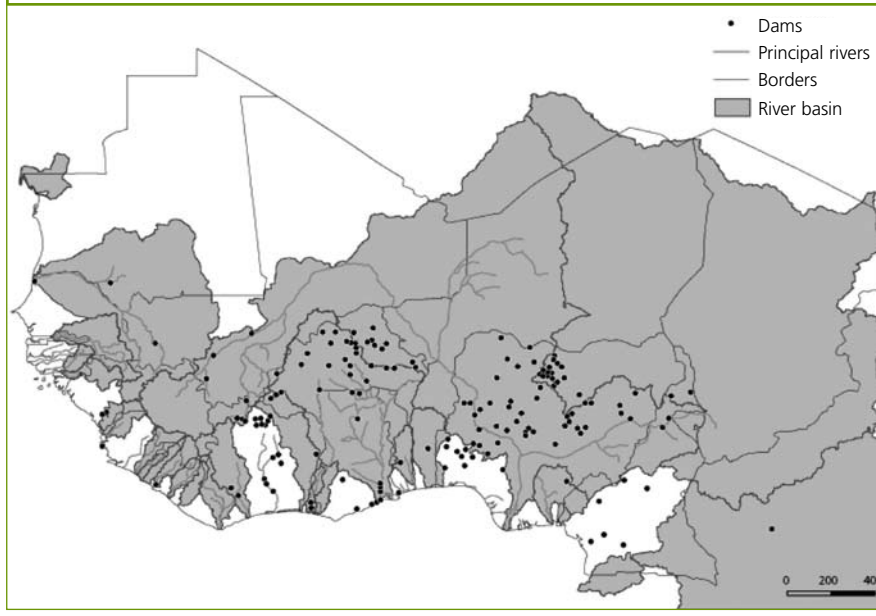
Source: CEDEAO-CSAO/OCDE, 2006a

face up to the deteriorating hydro climatic context, the construction of dams is a logical solution to increase water storage capacities, to regulate water flows and to contribute significantly to the economic development of the countries of the sub-region.

In West Africa, the transformation of rivers has a long history (the Kurra dam in Nigeria 1929, the Tougouri dam of Burkina in 1950). However, the emergence of large dams[1] goes back to the early years of independence when they were first constructed to generate energy (eg. Akossombo in the Ghana 1964, Kossou in Ivory Coast 1970). According to data from FAO's AQUASTAT database (FAO, 2009) and on the basis of the definition of big dams by ICOLD, West Africa has more than 150 of the 1300 large dams spread throughout the continent and the 45,000 throughout the world.

The map of large dams in West Africa (Figure 2) clearly shows their limited number in comparison with the rest of the world (CEDDEAO-OCDE, 2006a). Two factors account for this situation. On the one hand, the weakness of the economies of the sub-region countries reduces the funds for such constructions; on the other hand, vocal opposition throughout the world against these constructions has made national and international public opinion, as well as the international institutions, reconsider their support for such projects.

Figure 2. West Africa's dams



Source: CEDEAO-CSAO/OCDE, 2006a

1. A widely accepted definition of large dams, by the International Commission on Large Dams (ICOLD), is 'those having a height of 15 meters from the foundation or, if the height is between 5 to 15 meters, having a reservoir capacity of more than 3 million cubic meters'.

The two largest dams in West Africa are the Akossombo dam on the Volta River in Ghana, with a height of 134m (fourth in Africa) and a capacity of 150 billion cubic metres (third in Africa), and the Kossou dam on the Bandama stream in Ivory Coast, with a capacity of 28 billion cubic metres (sixth in Africa). Annex 1 presents the key features of large dams in West Africa.

More than 50 per cent of West Africa's large dams are intended for hydroelectric production. The Niger basin is currently the most exploited with more than 2004 Mw of hydroelectric capacity (Niger River Basin Authority, 2007). The dams also allow for the regulation of natural flows, variable according to the seasons and between years, to meet the demand for hydroelectricity, for industry, for navigation, and for drinking water and irrigation. The potential for irrigated agriculture to lead to the achievement of food self-sufficiency, and to a larger extent for enhancing development in West Africa, has been made possible by the building of these dams.

In addition to the agricultural production recorded in the rainy season, the dams allow for off-season farming all year round because of the permanent availability of water through floodgate operations. At the local level, these second crops are important in improving the livelihood of local people while assuring them year-long production. Finally, the dams encourage leisure, tourism, fishing and fish farming, and can sometimes improve environmental conditions.

2.2 Populations displaced from dams and the criteria applied

The construction of dams often brings about complex and difficult operations of displacement and relocation of thousands of people. Table 1 illustrates displacements caused.

The displacements of people have been carried out in compliance with the environmental and social policies of the bilateral or multilateral development agencies. For the displacements undertaken before the first handbook of the

Table 1. Number of people displaced for several large dams

Name of the dam	Country	Displaced persons	Date of displacement
Akossombo	Ghana	80,000	1963
Kossou	Cote d'Ivoire	75,000	1970
Kandji	Nigeria	44,000	1967–1968
Sélingué	Mali	15,000	1980
Nangbéto	Togo/Bénin	10,600	1987
Manantali	Mali	10,000	1986–1987
Garafiri	Guinée	2,140	1999

Source: de Wet 1999; Niasse and Ficatier, 2008

World Bank was issued in 1980, the criteria used were inspired by national laws that favoured state interests rather than those of the displaced. Thus, in Akossombo, Ghanaian land laws (Land Act of 1962 and later modifications) upheld the national interest in land acquisition, and the Volta River Development Act of 1961 gives to the Volta River Authority the power to manage the land affected by, and surrounding, the dam reservoir (World Bank, 1993:12).

In the late 1980s and early 1990s, the World Bank played a leadership role in the development of voluntary relocation policy instruments. The Bank designed comprehensive guidelines for the study of the social impact of development strategies. These policies concerned operational guideline 4.00 A of October 1989 on impact studies, as well as the Sourcebook on the studies of impacts dated 1991; guideline 4.00 B on environmental policy on dams and reservoirs of April 1989; and operational guideline 4.30 of June 1990 on the displacements and relocation of populations. The last strongly recommended the improvement of their income and livelihood through development programmes. To achieve those goals, the guideline lays down a certain number of measures, as follows:

- The displacement of populations must be avoided or minimized while exploring all possible alternatives in the design of the project considered.
- When involuntary displacements are unavoidable, a resettlement plan must be elaborated and implemented. This plan must be conceived as a development plan which will provide the displaced populations with the necessary preparation and assistance so that they can capitalize on the benefits of the dam project.
- The losses incurred by the displaced populations must be compensated for according to their actual value.
- The populations to be displaced must be attended in the process of displacement and continually assisted in their resettlement sites during the transition phase.
- The displaced populations must be assisted in their efforts to improve their livelihood and their levels of incomes and production in relation to what they were before their displacement. For lack of improvement, the previous standard of living of the displaced must be maintained at least.

Other stakeholders have developed good practice criteria in the management of hydroelectric projects. The Canadian Act on Environmental Assessment (CAEA) of 23 June 1992 is also used and contains among other requirements: (a) an environmental assessment of the project must be carried out if the Canadian International Development Agency (CIDA) is the promoter and/or is in charge of its implementation, even partially; or (b) provides the funds or a loan guarantee or any other financial help for its realization (Canadian Environmental Assessment Agency, 1992). In addition, in 2000, the World Commission on

Box 1. Recommendation 5 on the recognition of rights and the sharing of the benefits

The negotiations with displaced persons should be conducive to impact alleviation measures on the basis of common consent. It is then incumbent upon the state or the project promoter to implement those measures. The groups which are affected are considered to be on top of the list of recipients. The benefit sharing procedures are negotiated accordingly.

World Commission on Dams, 2000

Dams (WCD) made strong recommendations advocating the recognition of displaced people's rights and their share in the benefits of dam projects (Box 1).

In other words, after 50 years of experience in population resettlement, dam promoters, operators and regulators should commit themselves to supporting the development and the well-being of the local and regional communities impacted by the dam during the whole lifespan of the project (50–100 years). This consensus also recognizes that the conflicts and the complaints are minimized if the displaced populations become genuine stakeholders in the development process and do not harbour any feeling of marginalization; that they will actually be 'better off' when those policies are carried out and feel joint ownership of the project.

10

Revisiting the relocation process in West Africa

The displacement and relocation of people affected by dams have mobilized enormous human and financial efforts. On the basis of current evaluations, the results have been average on account of the factors reviewed in this chapter.

3.1 A truncated relocation process

The classic sequence of displacement and relocation is a four-step process (Niasse and Ficatier, 2008), namely: phase 1 deals with scheduling the relocation operations and the realization of the first infrastructures; phase 2 the transition phase when people actually move; phase 3 with economic and social development; and phase 4, which winds down the initial aid-project and fully incorporates displaced people in the regional economic fabric.

In West Africa, most displacement processes and relocation have focused on phase 1 and to a lesser extent on phase 2, considering the financial, human and time constraints (Manantali) and the change of rural development policy (Akosombo). To illustrate, the Manantali Relocation Project (MRP) was not conceived as a development project. USAID, the main donor, had decided that the project would not have an economic development orientation. Consequently, the pre-existing infrastructure was simply rebuilt and the losses beyond retrieval were compensated for (Niasse and Ficatier, 2008). In Ghana, President Kwame Khruma perceived the resettlement of the populations affected by the Akossombo dam as a special project with communities acting as 'spearheads' of agricultural modernization. Unfortunately, his successor, President Busia, favoured reorganizing his country's farming rather than targeting state interventions in the Volta project.

The result was that the displaced populations did not receive adequate assistance, and coincidentally, the resettlement project, which was not implemented as an instrument of development, led to the deterioration of people's living conditions (de Wet, 1999). Furthermore, the sustainability of the projects undertaken during the transition phase constitutes one of the major problems because funds tend to dry up at the end of phase 2. Therefore, the bottom line seems to be that a lasting income must be assured in order to help displaced people meet their needs gradually.

Outbreaks of conflict also constitute major unforeseen hurdles, which stall the construction of dams. The multiplication of large dam projects, the high degree of interdependence of the West African countries concerning water, and the considerable reduction of surface water availability may often strain relations between neighbours. Whenever conflicts break out, they disrupt the

process of financing these works both at the national and the international levels. And when the conflict is internal or opposes countries directly involved in the realization of the dam the project is frozen pending a settlement, which may take a long time. During that period, the process of managing the local people affected by the dam project is put on hold. For example, the 15-year gap between the end of the construction of the Manantali dam (1988) and the beginning of energy production (2003) was due in large part to the strained relations between Mauritania and Senegal following the 1989 crisis.

3.2 Mixed relocation process

On the whole, the assessments have revealed positive short-term benefits. The displaced populations have benefited from the projects in so far as access to drinking water, to health and to education has distinctly improved. Thus, the Kandji dam in Nigeria has been hailed as an example of successful resettlement (de Wet, 1999) with broad consultation with the populations during the scheduling process and the flexibility of the proposed amenities that the displaced populations had the liberty to change to suit their needs. The relocation of the populations of the Manantali dam in Mali has been praised as a technical achievement (Niasse, 2005). Among the positive aspects of the relocation process, one can note: (i) the compensation payments greatly increased the availability of cash within households; (ii) quality dwellings have been constructed while respecting the local architecture; (iii) quality social infrastructures (schools, modern water facilities, health centres) hitherto unknown have been achieved; (iv) dirt roads and paths have opened up landlocked areas and eased exchanges between villages; (v) finally, some of the resettled populations took jobs on dam construction sites.

However, numerous cases of serious failures have been observed, sometimes due to the fact that those who managed the resettlement phase of the dam projects lacked socio-anthropological sensitivity.

This was the case in Garafiri where: (a) the loss of river bank areas and rice fields was not taken into account; (b) the techniques of seasonal traditional river fishing (shallow water fishing, angling or sweep net fishing) proved ill adapted to fishing in deep reservoir waters all year round (Niasse, 2005). Moreover, the compensation did not always meet the displaced populations' expectations. Whatever the compensation policy, payments were generally delayed. In Akossombo the host villages had not received compensation for the plots of land that they had put at the disposal of the displaced people, which caused land disputes (de Wet, 1999). In Nangbeto, the displaced people had to wait for three years before they received the final cash payment for their houses.

In Garafiri, the displaced people were provided with no awareness building or meaningful training for efficient use of the compensation payments. There is reason to believe that most of the monetary compensation may have been squandered within a few months or weeks of resettlement. In Sélingué, the

displacement of the population (25,000 to 30,000 people) was carried out just before reservoir flooding and in total chaos as the programme received no funds other than those from the state of Mali. The compensation was not paid in cash but was given as land grants, village reconstruction activities and, a few years later, irrigated plots of land. Such delays had a negative impact on the resettlement processes and development of the host areas.

3.3 A disappointing 'not worse off' policy

Since the middle of the 1990s, the norms concerning the displacement and relocation of people affected by dam projects have noticeably changed. In order to improve the compensation policies of the 1980s, decision-makers and planners committed substantial sums to shore up the living conditions of displaced populations or, if necessary, to avoid leaving them worse off than they were before the displacement/resettlement procedure. However, the living conditions of those displaced and those of their hosts deteriorate a few years after their resettlement. The assessments carried out report growing dissatisfaction among the displaced populations who continue, in spite of the ongoing assistance, to blame their predicament on their involuntary displacement and the lack of long-term vision in the resettlement processes. This situation poses an ethical question of fairness, especially when those displaced bear the environmental and social brunt of the dams while other groups (city-dwellers, industrialists and others) receive the benefits.

Today, the stakes are high in terms of development, culture, demographics, land tenure and distribution of wealth. It is therefore paramount to make sure that resettled people benefit from opportunities generated by dams in order to improve their living standards in the short and long term. The following examples demonstrate the urgency in meeting expectations that have been dashed for more than a decade.

Box 2. Access to wealth in the Kossou Lake area

A survey carried out by the UK Department for International Development (DFID) and FAO (Fabio *et al*., 2002) on the profile of poverty round the Kossou lake has revealed that, according to the people of the area, the destruction of the coffee and cocoa plantations is primarily the cause of local poverty. The flooding of the lake immersed 201,400 hectares of forest, savannah, plantations and villages, representing 5.6 per cent of the total region. By washing away 20,000 ha of coffee and cocoa plantations, the operation dealt a fatal blow to the mindset and practices that were shaped by those critical cash crops. The population of Kossou Lake had always believed that wealth could not be generated without coffee and cocoa. To this day, food crops are consequently destined essentially for home consumption. Any income generated by the sale of surplus food crops is ploughed back into the household. Even when surpluses are generated, the lack of organization and the fragmentation of demand inhibit profits. With rudimentary techniques and a lack of water management expertise, the outputs remain very modest and do not generate a commercial surplus. Currently, fishing appears as an important alternative for resource and income generation. For most of the youth who practise it, this activity is novel. They do not know the different techniques and practices adapted to the different water levels and the different fishing seasons. Notwithstanding, youths, including university graduates, take to fishing because of idleness and job scarcity.

Demographic stakes and land ownership issues

The land ownership constraints on the resettlement sites of the displaced people of Manantali constitute major bones of contention. Indeed, the first socioeconomic studies had underestimated the need for land and cattle raising. In addition, the demographic dynamics have not sufficiently been taken in account because the population that was displaced 20 years ago (1986 to 2006) has nearly doubled, growing from 10,000 at the time to 25,000 today. These combined reasons have raised the pressure and caused concern in the relocation area of Manantali. Likewise, the fate of the host populations still remains a major stumbling block. The village of Sobéla hosted the relocated villages of Tintila and Koukouding. Despite the village benefiting from the resettlement programme, it is still confronted with land shortage. According to the village chief, Sobéla is overcrowded and good neighbourliness is deteriorating. The plight seems to be compounded by the periodic arrival of transient populations. This situation seems so fundamentally serious that the consequence of the Manantali dam is viewed negatively by the villagers. In Nangbeto, Togo, the reservoir displaced 10,600 people in 1987. The inward migrations and the natural demographic growth have now created overpopulation, which upsets the traditional system of extensive agriculture with crop rotation. Because their incomes do not allow them to buy fertilizer, improved seeds and the other necessary inputs to protect the soil fertility, the displaced people are often sucked into a downward spiral of falling yields and incomes (World Bank, 2000).

Cultural stakes

The culture issue is often difficult to address. In Garafiri in Guinea, the flooded mosques have been neither rebuilt nor compensated for, which is indicative of a major shortcoming in the resettlement programme. Offering a place of worship should have been a matter of course to help the displaced population cope with the trauma of leaving the place where they were born and where the ashes of their loved ones and ancestors lie; now that they live in a 'foreign' land that they may believe to be haunted by evil spirits. At Manantali, the problem of flooded cemeteries and the forebears who were buried under water still remains a taboo question. It is one of the most delicate problems to handle throughout the world in involuntary displacement programmes.

Given this complex background, it is therefore important to ensure that resettled people benefit from the opportunities generated by dams in order to improve their livelihoods in the short and long term. To achieve those goals, long-term 30–50 year development programmes that do not depend on 3-, 5- or 10-year 'projects' should fulfil the classic replacement and compensation measures for lost assets and livelihood resources. All populations that are expected to be negatively affected by the dams must be entitled to the opportunities stemming from the dams: electricity (for hydro agricultural dams) irrigated land (for dams built for agricultural ends), drinking water, fishing, etc. Whenever possible, part of the revenues generated by a dam (for instance, the incomes generated by

the sale of electricity produced) must help to support productive activities or to improve livelihood conditions for the people who were moved to allow for the dam's construction.

3.4 Improved compensation and development packages

The 'Dams and Development' report (World Commission on Dams, 2000) has demonstrated that 'dams contributed largely to the human development and that their benefits have been considerable'. However, the report added that 'the resettled populations rarely recovered their means of subsistence, the programs of resettlement being centred on housing problems rather than on economic and social' development. Besides, it noted, the main recipients of the dams' benefits often live far away from the dam sites. The people who live in the vicinity and are affected by the negative impacts of the dams often hardly benefit.

It is therefore necessary to take innovative steps to indemnify affected people and to share with them some of the benefits that are generated during the construction and exploitation of the dams (see Part Two). The mechanisms for sharing out the advantages are generally considered to be one of the most efficient means of dealing with the failures of compensation-in-cash and redressing the ways in which people displaced or affected by projects have been treated. From the ethical and social justice point of view, it is logical that part of the proceeds should be returned to the local populations (Egré, 2007). In order to give impetus to this, the World Bank included in its Action Plan for the scheduling and management of dams a section dedicated to the sharing of the profits generated by the dams (World Bank Group, 2002). The Global Water Initiative (GWI) has also instigated a debate on the sharing of the advantages generated by dams in West Africa.

The Volta River Authority special allocation fund for resettlement

Thirty years after the displacement/relocation, reports have been made on the deterioration in living conditions. While urban populations and industries benefit from the dams in terms of inexpensive electricity, displaced communities are confronted with problems of public health and insufficient compensation (Kalitsi, 2004).

Consequently, the Ghanaian government and the Volta River Authority in 1996 set up a special allocation fund for resettlement. With an endowment of $500,000 USD per year, the objective of the fund is to improve conditions for the people resettled following the construction of the Akossombo dam. The fund is financed by the Chinese government. Between 2000 and 2003, the fund paid for the electrification of the resettlement villages, the setting-up of modern water and sanitation facilities, and supported improved education and health, and improvements to paths and access roads.

A policy of making displaced people 'better off' through development programmes

To meet the challenges of displacement, some decision-makers have set more ambitious objectives, for example including in dam projects a strong support component on behalf of displaced people to ensure that the project is a development opportunity for them.

The Senegal River Basin Authority (OMVS in French) invested in the socioeconomic development of the basin, and the protection of the environment, following the construction of the Diama and Manantali dams for the regulation of water resources. In addition to these macroeconomic programmes, OMVS included actions to improve local people's standard of living, incomes and productivity. Thus, the people already benefit from the potential for water supply and energy generated by the dams. Supplementary measures are undertaken through: (i) the electrification of the Manantali zone (the location for the resettlement villages); (ii) implementation of a rural electrification programme for the main villages neighbouring the basin (10 villages per country); and (iii) launching income generating activities supported by micro subsidies in order to reinforce poverty reduction.

A policy inspired by fair sharing

The majority of large dams are located in cross-border river basins that today are managed by transnational organizations (eg. ABV, NBA, OMVS, OMVG), which have designed the political instruments for the fair distribution of the benefits generated.

In the Niger River Basin, for example, the NBA's 'Shared Vision' of the basin's strategic development demonstrates the member states' recognition of their rights and obligations regarding the use of the surface waters they share and the part these must play in helping to reduce poverty, to increase food security, and to protect the environment (Principle 3 of the Declaration of Paris). The sharing of the benefits are based on an analysis of the multi-use withdrawals of water (irrigation, cattle raising) while also taking account of non-consumer use (fishing, navigation, electricity, environment) (NBA, 2007).

3.5 A new generation of resettlement plans

In future dam projects undertaken by some basin agencies (for example, OMVG, NBA), the resettlement strategies include local development plans 'so that the affected populations can adapt their economic activities to the new realities and be the main recipients of the opportunities created by the programme' (NBA, 2007).

The Kandadji resettlement strategy

The Kandadji dam project is considered to be a major programme for Niger. The project intends to combine a dam and a hydroelectric power station of 130 Mw with a yearly energy production of 620 megawatt hours. In addition the work will permit the storage of 1.6 billion cubic metres of water and exploit 222,000 ha for a yield of 320,000 tons.

It is estimated that in total 5290 households will be displaced – some 34,710 people. Total compensation amounts to FCFA 54.1 billion, which includes a reserve fund of 8.8 billion in anticipation of rising inflation. Beyond compensation payments, the resettlement strategy involves a local development plan that aims to allow displaced people to achieve a standard of living equivalent or superior to their previous one. It includes a short-term programme (phase 1) and a medium-term programme (phase 2).

The five-year phase 1 aims to support the 3600 people of the Kandadji dam area, who will be the first to be displaced to permit the initial construction of the dam. The intention is to help these people start economically profitable activities quickly and thus contribute to the lasting economic development of their communities.

The 10-year phase 2 aims to upgrade the available resources to meet the needs of a further 31,000 people who will be displaced by the reservoir. It will support the development of the primary sector, mainly (agricultural, livestock, fishing), secondary sector (manufacturing units, handicraft, etc.) and tertiary sector (tourism, etc.) thus opening new development prospects.

Long-term support projects beyond this period will depend on the state being able to find the funding.

The resettlement strategy of the future Sambangalou dam (Gambia River Basin)

To develop the energy potential of the Gambia River, the Gambia River Basin Authority (OMVG in French) has developed a programme for the hydroelectric sites of Sambangalou (120 Mw, 400 GWh/year of low energy), and of Kaléta (105 Mw, 900 GWh/year low energy).

As the Sambangalou project will affect about 2500 people (African Development Bank, 2004), a resettlement strategy is being finalized. In addition to the resettlement planned for people affected by the project (PAP), the main complementary initiative will be the local development plan (PDL in French) (OMVG, 2006). The PDL will aim to improve the resettlement strategy and turn its disruptive impacts into development opportunities. The local development plan supports the economic transition of the people displaced, not only to restore their standard of living, but to increase it, and to bring concrete answers to local problems. Its implementation should be closely monitored. The plan will take into

account the real preoccupations of the local communities in accordance with the process of decentralization in progress in Senegal and in Guinea. The local development initiatives that will be included in the PDL will generate additional economic activity that will benefit the people directly affected by the project as well as the populations of the region. The Sambangalou PDL is consistent with the objective of poverty reduction that the governments of Senegal and Guinea have set.

Turning dams into lasting tourism opportunities

Bagré, Burkina Faso, known for its large hydro agricultural dam, its rice growing plains and its fishing resources, is hosting eco friendly tourism development, due to the presence of about a hundred hippos, forty species of fish, and a variety of bird fauna. The objective of this project is not only to develop tourism but also 'eco citizenship'. The eco-tourist centre at Bagré, which is 85 per cent completed, will boast 28 air-conditioned villas that can accommodate 150 people, a restaurant, a bar, swimming pool, a room for handicraft, and a conference hall for 100 people. The centre also plans to develop an animal park, an arboretum for students and researchers, and a medical centre. The centrepiece will unquestionably be the artificial beach covering 3 km.

Conclusions

The decision-makers of West Africa have been involved in the construction of dams for 40 years, with the support of their partners (World Bank, African Development Bank, USAID, Islamic Development Bank, Kuwait Saudi Funds and a number of other countries including France, Germany and Canada). These provide valuable resources and development opportunities that reduce the vulnerability of the people facing recurrent poverty, notwithstanding the numerous impacts.

The value of dams for the development of the sub-region is unquestionable. But of the 150 big dams already constructed in the sub-region, there are very few resettlement assessments in the public domain – perhaps 10 altogether. It is legitimate to wonder if training programmes at the regional level have been held to help improve the chances of success for future projects. Some countries have very few dams, or even none, and therefore have little relevant experience. Yet the Niger River Authority's development plan is considering the construction of more than 26 new dams for which such experience would be relevant. Although the process of displacement/resettlement of peoples has not been totally satisfactory, decision-makers and planners of the dams should provide them with infrastructure and the means to mitigate the short-term consequences of displacement.

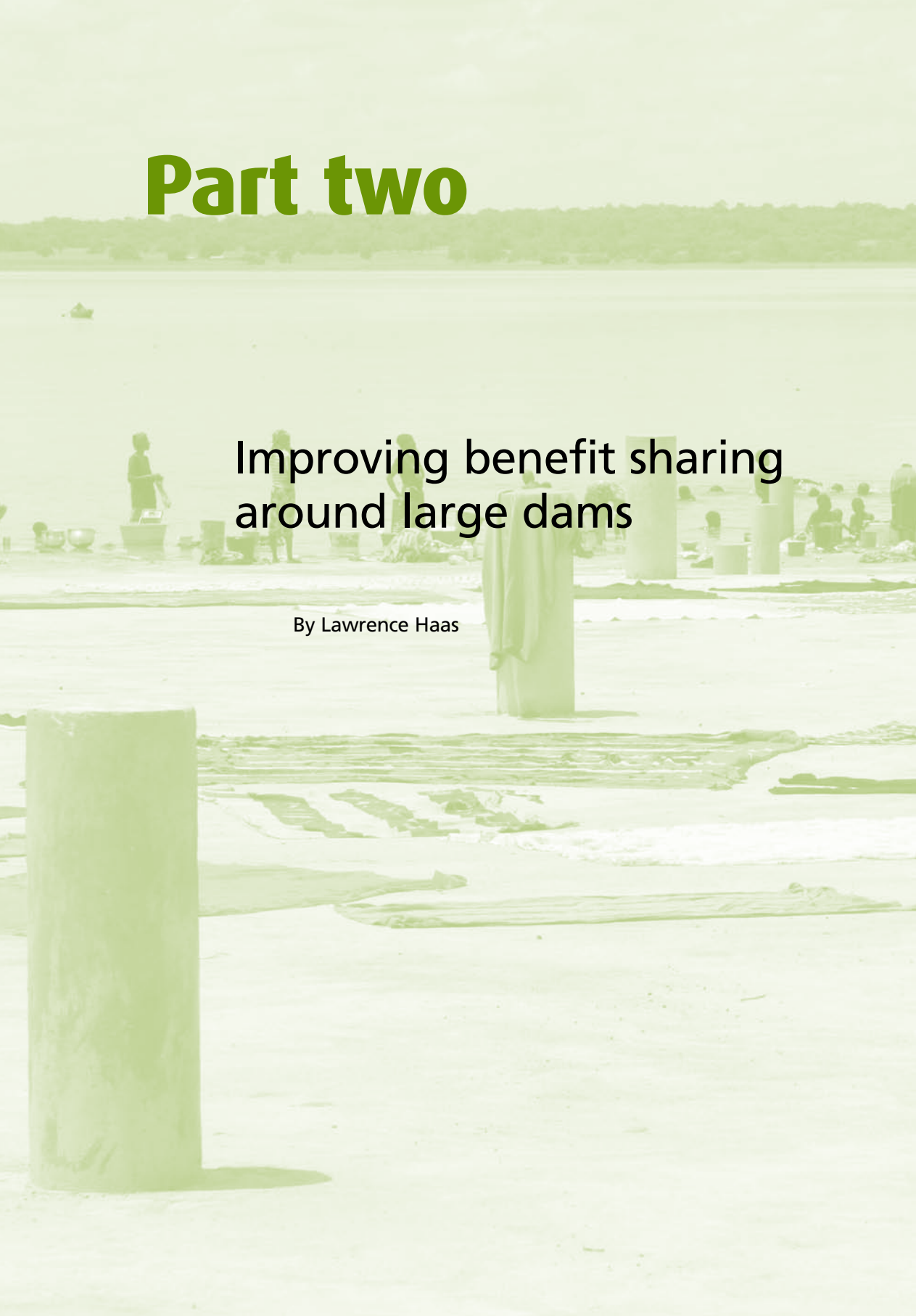
In the absence of resources and long-term development strategies, displaced people find it difficult to cope, not to mention the psychological shock they suffer from having seen part of their heritage obliterated by the reservoirs. After the initial lavish period of compensation payments, many displaced people experience the deterioration of their livelihoods over time. Land shortage, growing demography, the absence of income-generating activities and conflicts with the host communities constitute many more obstacles. Displaced people have the feeling of being abandoned, of being sacrificed to the march of progress; they do not often share directly in the advantages of the dams that have exacted such a heavy price from them.

Thanks to a political environment favourable to the sharing of benefits, decision-makers seek to develop strategies to curb the injustice done to displaced people and development programmes have been put in place to create a favourable productive environment for them. Although it is hard to lay down rules for implementing the principle that 'affected people should be better off', some basin agencies are trying to promote the sharing of benefits such as hydro electricity and irrigation. Bearing in mind the mistakes of the past, the resettlement strategies for future dams already anticipate these issues by designing local development plans. The challenge to meet is ensuring that these programmes are structurally linked to the lifespan of the dams.

Part two

Improving benefit sharing around large dams

By Lawrence Haas



Introduction

Ways to sustainably develop and manage large dams and more equitably distribute their benefits and costs within society have recently come to the forefront of international thinking. This is partly because the principles of equitable sharing benefits are embodied in several broader, complementary trends in water governance reform and sustainable development taking place worldwide.

There are ongoing efforts to ensuring safeguards in different settings, including:

- Concrete ways to adopt integrated water resources management (IWRM) principles that treat water as an economic, social and environmental good must be found. All stakeholders, rather than water organizations alone, must work in partnerships to achieve the integration of these elements and dimensions.[2]

- Poverty alleviation must be given an explicit focus in infrastructure provision, especially for large dams that often have a disproportionate adverse impact on local communities and traditional river users.

- Cross-sectoral synergies in land management, local income generation and sustainable management of dams as physical assets must be captured. For example, extending operating lives of reservoirs by planting trees in headwater areas or shifting to agriculture and livestock grazing practices that combat desertification, soil erosion and sediment processes in river catchments – providing multiple benefits.[3]

- Local actions to protect and manage aquatic ecosystem functions and services in rivers, flood plains and wetland areas that people rely upon for livelihoods must be funded.

- Innovative measures and incentive mechanisms that build local capacity to adapt land-water resource systems to climate change must be provided.[4]

The equitable sharing of benefits is a way of thinking, as well as a practical approach to catalyze and fund local actions that join many strands of water governance reform and sustainable thinking under the IWRM framework. The mechanisms reinforce social equity in infrastructure strategies and promote sustainability, rather than narrowly optimizing dams as physical assets that deliver water and energy services, or navigation benefits.

2.These calls were made at the Third World Water Forum and Ministerial Conference held in Japan, 2003 and were reinforced at the Fourth World Water Forum in Mexico, 2006.
3. Extending the operating lives of dam reservoirs extends multiple benefits and revenue generation.
4. In connection with the role benefit sharing plays in increasing capacity to implement community-managed catchment management measures that help adapt to climate change, as well as adaptively manage dams to maximize development returns over the longer term, as hydrological conditions vary.

Beyond the dams sector, benefit sharing is today actively pursued in other natural resource extraction and transformation sectors. There are numerous models from the mining, petroleum and forestry sectors that range from nationally administered revenue funds that target improvements in public services to affected communities, to revenue sharing contracts between companies (or state production enterprises) and local communities (Fischer, 2007).[5] Benefit sharing is now widely accepted as a way to spread resource utilization benefits across the economy, catalyze broader-based growth and support social equity policies.

The practice is also found in emerging resource management fields. For example, the Convention on Biological Diversity (CBD) and intergovernmental bodies under the UN are actively developing national guidelines to cover international bio-trade in genetic resource utilization. The philosophy is to share income from sources, like international patents, among governments and local communities where medicinal plants are found.[6]

More closely connected to dams, payments for ecological or environment services (PES) is a new tool to provide incentive to change land management practices important for river basin management (Sadoff *et al*., 2008). Financial resources for PES can come from several sources, including revenue sharing from dams (especially relevant where PES empowers local actions that extend operating lives of reservoirs and sustain long-term revenue flows from dam services, as previously noted). It makes economic and financial sense when the assurance of small payments to local community organizations, or individual land users from the project revenue stream, tips the balance in favour of a mutually beneficial land use.

This report analyses experience and approaches around the world in promoting the sharing of benefits from large dams and makes proposals for moving forward on this issue in West Africa. This is best done through a multi-stakeholder partnership of government, industry and civil society interests to maximize the value added by through a shared learning approach that provides for wide dissemination of results.

5. Fischer looks at examples in the mining petroleum industries. In Vietnam, individuals and communities receive payments for protecting watersheds by planting trees under Forestry Program 661. Other laws provide for direct sharing of revenue from forest product sales between local communities and state forest enterprises (SFEs) to 'ensure a harmonious benefit-sharing relationship between, on one hand, labourers and the State and the SFEs, and on the other, between SFEs and localities' – Article 2 (item 3) of the PMO Decision 187, 1999.
6. See www.cbd.int/abs

Towards inclusive and sustainable solutions

Benefit sharing can have a large and transformational impact on how societies collectively approach decisions concerning dams and development.

6.1 Why bother with benefit sharing?

Several crosscutting themes illustrate why benefit sharing has received growing attention in connection with dams.

Positive from all stakeholder perspectives: Perhaps most significantly, closer examination always shows that the introduction of benefit sharing mechanisms is positive from all stakeholder perspectives. It allows *project-affected people* and *traditional river users* as well as basin residents involved in catchment management to become partners in projects. And it provides them with a stronger voice in decisions that affect them, and an opportunity to be first among project beneficiaries, not last.

From the *government* perspective, benefit sharing is a practical policy tool to achieve greater social inclusiveness and balance social, economic and environmental factors in planning, design, implementation and operation of dam projects.[7]

From the *dam operator* perspective, benefit sharing increases capacity to work effectively with local communities. Good community relations are important for many reasons, ranging from the reduced risk of project delays to improved prospects for local cooperation in catchment management and implementing environment mitigation measures as prescribed by law, and reputational risk. From the perspective of potential *investors*, the presence of an explicit policy framework with realistic provisions for local benefit sharing is an indicator that locally affected communities and the public are likely to support a dam project – all things considered. As a consequence, the investor risk exposure is reduced and investors are more inclined to become financing partners.

Ultimately from a *consumer* perspective (domestic, service sector or industry) it means that decisions can be reached to optimally develop water resources and provide what are potentially more secure, reliable and less expensive water and energy services.

Addressing past shortcomings: Benefit sharing helps to address many past shortcomings in dam planning and management that are well documented.[8]

7. If dams are best development option it also means less vulnerability to international oil price shocks in power generation and related unsustainable debt burdens for fuel imports in countries such as Sierra Leone.
8. These include multi-stakeholder processes like the WCD of 2000.

Among these include failures to honour social commitments made to project-affected communities and failures to finance environmental mitigation measures.[9] All too often these commitments have been based on assumptions that money was available from already overstretched government budgets, or temporary donor budgets. The predictable result is that many commitments are not kept. It addresses the need to ensure there is a stream of financing over the longer term.

Advancing sustainable solutions: Benefit sharing complements other water management reforms and efforts to deliver sustainable infrastructure strategies. For example, tangible content is given to subsidiary principles of IWRM when benefit sharing mechanisms empower local action to eradicate extreme hunger, react to unexpected environmental circumstances in the operation of dams, and facilitate local development partnerships. More generally, arrangements for equitable sharing perceived as fair and developed in a collaborative way can turn potential conflict into consensus in dam planning and management. This offers scope for basin communities and all stakeholders to focus on creating synergy to maximize local development opportunities within national investments in infrastructure provision.

While the generic advantages are clear, the triggers that motivate governments to introduce local benefit sharing mechanisms are context specific.

As noted in Annex 2, it was a combination of local political pressure and national power market reforms that tipped the balance to advanced benefit sharing in Vietnam.[10] Sierra Leone's agreement to incorporate benefit sharing arrangements in the 50 Mw Bumbuna hydropower project was motivated by multiple considerations. Apart from the strategic aim of helping to address root causes of the 11-year civil war by ensuring local communities realized benefits from resource development, there were a range of project-specific reasons, as noted in Table 2.

6.2 General principles and perspectives in benefit sharing

The general principles of benefit sharing apply equally to sharing between riparian states and sharing between national and local levels.[11] Three broader approaches to share national benefits of dam developments with local communities and river basin populations are:

9. Failure to honour commitments was a frequent cause of controversy around large dams, especially commitments made for livelihood restoration of project-affected communities, beyond compensation and resettlement support.
10. Local political pressure amplified to provincial pressure stemmed from the fact it was taking up to 10 years to restore dam-resettled communities to even pre-project living standards.
11. Multi-country arrangements are typically more complicated because of cost sharing dimensions, benefits that each country realizes vary, and agreements can take decades to realize if political relations between states are complex.

Table 2. Multiple aims for incorporating benefit sharing arrangements in the 50 Mw Bumbuna HEP in Sierra Leone

To meet immediate needs and expectations of the poorest communities in the project area	In addition to restoring national power supply as a post-war reconstruction priority, isolated, poor rural communities in the catchment expected to benefit from the project (when in fact there was no budget for rural electrification in the near term).
To avoid inter-community conflict over who receives benefits from the project and who does not	Ensuring indirectly affected communities had access to benefits, when only the adjacent resettlement and resettlement host communities were entitled to receive support from the project compensation and resettlement budgets, by current laws.
To support the new decentralized development policy of government	Creating a community-based fund that complemented limited government resources to deliver decentralized development. The operation of the fund was linked to the traditional tribal and new district development systems and to develop capacity.
To finance the long-term environment management and social components of the dam project	Using the Bumbuna Trust as a multi-window financing mechanism not only for benefit sharing but also as a secure source of funds for long-term catchment management and environment management measures, which government budgets could not fund.
To establish a precedent for local sharing in national water resource development	Sierra Leone's first major hydropower project could also serve as a model for future components of the project development scheme (Bumbuna is phase 1 in a multi-phase development) and build public confidence in inclusive approaches to resource development.

1. *Equitable sharing of project services:* where local populations as target beneficiaries receive equitable access to the water and energy services produced by dam projects to support their development and welfare opportunities.[12]
2. *Non-monetary forms of benefit sharing:* where target beneficiaries receive entitlements enabling their access to other natural resources, or support to pursue other forms of livelihood and welfare improvement, which offset permanent loss or reduction of land or water resource access caused by the dam.[13]
3. *Revenue sharing:* where target beneficiaries share part of the monetary benefits the project generates, typically expressed as a portion of revenue from bulk electricity sales or bulk water sales on an annual basis.

12. For electricity services, a range of measures can be considered such as (i) mandatory electrification of resettlement communities; (ii) priority in rural electrification programmes for connection or improved levels of service; (iii) financial assistance for individual household service connections, and possibly energy efficient appliances, eg. lighting; and (iv) preferential electricity tariffs for a stipulated period of time.

13. Non-monetary benefits can be as valuable to local communities as the monetary benefits, especially measures that empower and build local capacity for management of natural resources and access to ecosystem services. But they may also have an indirect cost. The cost may be minor, such as deferment of potential local tax revenue, when local fishermen are granted preferential licences for reservoir fisheries; or have a more measurable impact on overall project economics, such as when water is released from reservoirs to maintain recession agriculture downstream (though the net development and sustainability gain still remains positive).

These arrangements are generally permanent, or maintained over the economic life of the dam project. They commence after the project becomes operational.

Other forms of benefit sharing may start during project implementation stages, which can span several years. These include investments to maximize local employment in the construction workforce and local supply of goods and services to the project, as well as investments in physical infrastructure such as local roads (eg. that increase community access to agriculture markets or access to healthcare for villages near reservoirs) and other public services that have sustainable, long-term benefits for communities.

a. Underlying principles: Three underlying principles for revenue sharing frequently cited in the literature are:

- Large dam projects generate significant 'economic rent' and public benefits that can be justifiably shared with local populations affected by the project on several ethical and development grounds.[14]

- Primary beneficiaries of dams usually live far away from the dam sites or are not exposed to the adverse impacts. Inclusive development means dam benefits should be equitably shared between affected rural populations and urban centres outside project areas, taking into account all the development impacts.[15]

- Recognizing the scale of investments in large dam developments, national investments in them should be conceived as part of local and regional development strategies, and to catalyze more inclusive growth.

The notion of benefit sharing on dams goes beyond thinking of local communities only in terms of compensation for land or property loss and short-term resettlement payments – to recognize they can claim entitlement to part ownership of the economic rent that dams generate. Equally, dam-affected populations have a legitimate stake and role to play in the sustainable management of dams.

In the West African context, there is typically no longer-term recognition of project-affected communities in government development planning (eg. beyond five-year budget cycles and development plans), even though the actual long-term development opportunities of project-affected populations are constrained or transformed by the project. When donors support programmes to re-establish livelihoods, there also comes a point when the funding lapses.

14. In resource development, economic rent is the competitively determined price of services minus the marginal cost of producing the service. In order for benefit sharing to be viable on dams there must be an economic surplus, where the cost of all factors, say of electricity production, is less than the tariff.
15. It is analogous to the principle of compensation to a state that is obliged to waive an activity in order to reconcile divergent uses that benefit other states, as contained in the Niger Basin Water Charter (2008).

b. Beneficiary preference principle: Beneficiaries should be empowered with choice on how revenue sharing funds are used as well as measures for non-monetary sharing. Generally, this means the use of community-driven development approaches (CDD) to organize the delivery of benefits. Local preference may be for rural credit facilities run by community-based organizations. Or local communities may prefer increments in budgets of existing government programmes, such as agriculture or fisheries extension services. Best practice is to enable beneficiaries to construct and then choose from a 'menu' of development options consistent with official rural development plans and priorities.

c. Institutional efficiency principle: It is important to minimize the creation of new institutional structures for benefit sharing, especially where an existing institution is well suited for the role. The philosophy is generally to do more with less.[16] While there are different institutional options to coordinate benefit sharing, best practice arrangements involve partnerships between local communities and community-based organizations, dam owners or operators, local government structures and river basin organizations.

d. User pays principle: Regardless of the actual mechanism for revenue sharing, whether it's a water utilization fee, tax or budgetary transfer, ultimately the cost must be reflected in the tariffs for project services. Revenue sharing helps internalize the costs of social and environment components of dam projects (performance in terms of these dimensions of sustainability) in end-user electricity or water tariffs.

This key principle addresses some common misconceptions that can confuse or slow the adoption of benefit sharing. For example, revenue sharing is sometimes confused with profit sharing. There is also a misconception that revenue sharing is a capital budget item for dam projects, like resettlement and compensation for land or property recovered by the state, and therefore one that raises the cost of dam projects significantly and so discourages investment.

Benefit sharing is fundamentally a social contract between the main consumers of electricity and water services in towns, cities, commerce and industry with the local communities who give up land or resource access for the project, facilitated by government regulation. Benefit sharing should not be seen as a negotiation between the local community and dam owners. In fact, most governments would be reluctant to impose a system of arbitrary negotiation of 'profit sharing' that reduced the nation's ability to attract dam project financing, or lead to inconsistent arrangements between projects in the country, and spawn new controversy.

16. The role of central government is to provide the enabling policy and legal framework and establish rules on the level of benefit sharing (by prescription or negotiation) and define financing mechanisms (eg. how revenues are collected from the power or navigation sector). Local government, together with river basin organizations, CSOs and NGOs who normally work closely with project-affected groups would provide guidance and support on the delivery mechanisms. In certain cases there may be a development board associated with the dam project, such as the Lesotho Highland Development Authority.

Good practice is to reflect revenue sharing formula, as stipulated in government regulations, in the bulk supply tariff for the various project services that generate revenue, eg. in power purchase agreements (PPAs) or bulk water supply agreements, or fees for navigation services. It is a 'pass through' cost for dam owners. At the same time, the principle does not preclude additional agreements where the dam owner would agree to contribute directly to local communities' development needs in various forms.[17]

From a political perspective, what is important is to find an equitable balance between the impact on average tariffs (often a small, marginal increase) and generating sufficient funds to empower local development of dam-affected populations.[18] Public acceptance is based on perceptions that the balance struck is fair and reasonable.

Two additional perspectives that embody good practice are:

e. Transparency and accountability perspective: Worldwide experience shows the presence of corruption or abuse of power erodes public confidence in benefit sharing Therefore, it is important to ensure that all transactions, especially around revenue sharing, are fully transparent (who is eligible, what expenditures are eligible, how benefit sharing funds are apportioned among affected groups), to involve beneficiaries and CSOs in monitoring the use of funds, and to ensure the accountabilities of all actors are clearly defined. Transparency International offers a variety of good practice tools and techniques.[19]

f. Poverty alleviation perspective: In West Africa, the communities most adversely affected by the operation of dams live at or near subsistence levels. Often these communities have marginal access to government services. Similarly, in many developing countries dam-affected people are among the poorest and most vulnerable groups in society, and are often ethnic or tribal minorities who enjoy special status in the constitution and development policy framework. Good practice therefore is to link revenue sharing arrangements to a targeted reduction in poverty levels among the dam-affected population.

17. For example, in Brazil, the Itaipu Authority signed long-term contracts to contribute the development of the resettlement communities, which come on top of the direct payments allocated to affected municipalities that came from the national water use tax, the cost of which was recovered from power tariffs. When there is a single, large multi-purpose dam owned by the state (ie. a single shareholder) regulation is less an issue, but the principle holds unless there is a justifiable case for a state (general taxpayer) subsidy.
18. There is a wide range of experience. In developing countries it ranges from 1 per cent to as high as 10–15 per cent. Benefit sharing in the range of 2 –3 per cent of the gross generation is more typical.
19. Transparency International offers handbooks on successful practice to ensure transparency and accountability and otherwise prevent and detect corrupt practices in local development initiatives by working closely with beneficiaries. One key is multi-stakeholder approaches to the governance mechanisms. www.transparency.org/tools/e_toolkit

6.3 Different approaches to operationalize benefit sharing

The literature shows there is no single approach to operationalize benefit sharing with dam affected communities and residents of river basins (Égré, 2007). Much depends on the country legal framework and whether a functional river basin organization exists. The approach can be influenced by the ownership structure of the dam.[20] There may also be a development board like the Lesotho Highland Development Authority. Several features are nevertheless common to all models for benefit sharing.

Enabling regulations: There needs to be clear policy with enabling legislation or regulation for benefit sharing. What is generally needed in this respect includes:

- a comprehensive approach that advances all three forms of benefit sharing in a consistent way, adapted as required to existing and new dam projects (eg. introducing measures only on new dams generates controversy)
- coordination of decisions on benefit sharing with existing rural development planning systems so investments complement and reinforce, rather than undermine, existing local development structures and capacities[21]
- clear linkages and scope to assign priority to dam-affected communities within existing rural electrification programmes[22]
- clear procedures to bring long-term benefit sharing considerations into discussion of resettlement and livelihood restoration provisions on new dams, and processes to design or update environment mitigation/management programmes for dams
- clear procedures to ensure benefit sharing thinking is reflected in all stages of dam planning, design, implementation, operation and rehabilitation to help ensure that 'east-cost' approaches for benefit sharing are pursued.[23]

20. Different approaches to operationalize benefit sharing may be considered when dam developments are wholly government owned, special project companies set up as public-private ventures, and purely private sector projects or independent power producers. Local communities or local governments may be part of the ownership structure and derive benefits from the share of equity.
21. As noted in the Annex, the Bumbuna Trust is to be coordinated with the local council budget expenditures, and line ministries must sign off on measures that involve government budgetary commitment such as teachers for schools or medical staff for rural health posts. In Vietnam all expenditures must be consistent with the integrated rural development plans sanctioned by the People's Committee's from the village to provincial level.
22. Especially in situations where rural electrification requires considerably more investment that available, revenue sharing funds need to cover non-power development aspects. For example, legislation may require resettlement communities to be electrified as part of the project capital budget. Dam-affected communities along the reservoir perimeter may receive priority in the province, district or national rural electrification programme.
23. Experience worldwide shows there are opportunities, for example, to build flexibility into structures (eg. bottom flow outlets, variable level intakes where appropriate) to enable flood simulation releases and adjustment of environment flow releases over time.

Whether fresh legislation is needed, or amendments to existing regulation suffice, depends on the existing legal framework. Ministries or regulators responsible for dams, or river basin organizations (if so empowered) would lead a collaborative process to prepare the necessary regulations. If a phase approach is decided, they may also lead field trials of provisions.

Sources of funds: The range of financing mechanisms employed to channel monetary benefits of dams to local populations today include those listed in the country examples provided in Annex 2, namely:

- a portion of the project revenue stream, royalty payments or water resource utilization fees generated by dam projects, according to a formula defined in regulations, typically linked to the project capacity or annual outputs[24]
- part or full equity ownership of the project by a representative local community entity (equity sharing), for which the annual return on equity is used as a fund
- annual revenue transfers from general taxes to affected municipalities, watershed management agencies and conservation authorities in the basin of the dam, that stem from public benefits of dams (eg. flood management benefits if there is no revenue stream from the project)

- local authorities levying property taxes on land used for dam facilities and reservoirs, the measure can reduce taxes paid by local communities and/or raise funds
- direct long-term contracts between the dam owner and affected communities
- more recently, use of carbon financing to capitalize local development funds as explored in the Bumbuna HEP in Sierra Leone mentioned earlier.

Box 3. Beneficiary preferences on use of funds in Vietnam

Local communes prefer to invest in a mix of local development initiatives suited to their needs:

- measures to improve access to forests resources, changing crops and farming techniques, improving livestock and poultry rearing
- rural credit schemes operated by local mass organizations (eg. farmers' and women's unions)
- aquaculture and reservoir fisheries
- supporting the poorest families, war widows and disadvantaged with access to electricity services, where individual households were required to pay for power connections once rural power lines reached villages.

Source: Haas and Vu Tung, 2007

24. This is most common. While it leads to some multi-year variation in actual funds available for revenue sharing (due to hydrological variability) it has not proven to be a serious concern to date for various reasons and can be planned for in disbursement of revenue sharing funds.

A specific measure or mix of measures needs to be chosen. Revenue mechanisms are more complex on multi-purpose projects that have no hydropower component. Though revenue streams from bulk water tariffs, navigation fees or irrigation supply can be tapped, there is less international experience with these approaches.

Uses of funds: The types of investments supported by revenue sharing on dams must be tailored to the local development needs and community preference. Example expenditures in developing country settings include:

- village or commune-scale infrastructure including marketplaces, rural roads
- agriculture, forestry and fisheries extension services
- skills and local entrepreneur development, rural credit programmes
- improved health and sanitation services
- youth, women's or community culture programmes.

Box 3 indicates the range of preferences communities had around the A'Vuong dam in a pilot test of Vietnamese legislation. Preferences varied depending on where people lived in the project impact area (eg. upstream or downstream of the dam, or along the reservoir perimeter).

Categories for the use of funds should be identified, for example, the portion of funds that will be allocated to provide incentive for local action concerned with:

- managing river ecosystem services that are impacted by the dam project (eg. fisheries and recession agriculture);
- facilitating payments for ecological services such as tree planting, or maintaining vegetation coverage in the immediate catchment (eg. linked to PES);
- supporting biodiversity protection and management values with identified measures;
- meeting specific health improvement, welfare or poverty reduction targets.

Box 4. Example topics in a benefit sharing fund charter (Vietnam)

- fund mandate and vision
- general principles
- types of benefit sharing
- the benefit sharing council and fund management board
- eligible parties: communes and groups
- use of funds and criteria for awarding grants
- arrangements for other benefit sharing measures
- transparency and accountability
- reporting and communication
- acceptance and update of the charter.

Source: Haas and Vu Tung, 2007

It is equally important to avoid creating unfunded commitments, for example to allow local schools or health posts to be built, if there is no ongoing capacity to pay for teachers or health workers, and no prior-agreement for normal government budgets to do so.

Institutional and governance arrangements: There are two broader models to organize the delivery of benefits to dam-affected populations.

The first approach is to provide 'ring fenced' increases in the development budgets of the villages and municipalities where affected populations live and the surrounding development region (or a block grant allocation, with the condition it is used for beneficiary defined development initiatives and not for administration). Existing local governance structures would then prioritize the use of benefit sharing funds (and non-monetary forms of sharing) in consultation with dam-affected populations. This model does not preclude the local government, village or tribal councils from sub-contracting for targeted delivery of benefits to community-based organizations representing dam-affected groups.[25]

The second generic approach is to establish a long-term fund, or trust with a distinct identity. Typically budgets would be set for different local development programmes or grant application programmes (or a mix). The governance arrangements are necessarily integrated with existing local development and basin management organizations (where they exist). This approach is used in many countries, as noted in Annex 2.

Choosing between the two broader approaches depends on many contextual factors.[26] When a fund is preferred, best practice is to establish a multi-stakeholder steering committee (board or council) to provide oversight:

- The main role of the committee is to prepare a fund charter in a collaborative process and thereafter take strategic decisions on the operation of the fund, within the remit of government regulation – being responsible to the communities.[27]

25. This approach is adopted by Nepal, where a percentage of the royalty charged to hydropower production was transferred to budgets of the village development committees (VDC), and also to the district accounts of the development region where hydropower projects are located (See Annex 2). Similarly in Colombia, legislation prescribes revenue transfers from the power sector to regional municipalities and environmental agencies.
26. Such as whether local government capacity is weak, or under-resourced, whether there is synergy to be gained with the introduction of catchment management, and the preferences for one model or other of the beneficiary. The fund approach offers advantages of flexibility, rapid response to development needs and local ownership, and is more amenable to implementation of IWRM approaches and to consistency as affected communities can typically spread among different locations and municipalities.
27. Membership typically consist of representatives of local government, the dam project and river basinauthority and community representatives who adequately reflect the socio-economic interests among the project-affected population, as well as local or national CSO/NGOs.

- The charter provides the framework of principles and procedures for benefit sharing (eg. who is eligible to participate, activities supported, criteria for allocating funds, and so forth). In this respect, the charter is similar in purpose to the water charters for the Niger Basin (2008) and Senegal (2004), which encapsulate principles and procedures for benefit sharing between riparian states.

- The charter also establishes the mandate for the entity responsible for day-to-day administration and associated coordination activities.

Box 4 illustrates the main sections of the charter for the pilot project in Vietnam, initially prepared by the multi-stakeholder Benefit Sharing Council.[29]

Fund administration arrangements: A suitable organization must handle day-to-day management and administration of the fund, reporting to the multi-stakeholder governance body. These functions broadly include:

- managing the process to select programmes and initiatives to fund each year (or extend multi-year support) using transparent processes and criteria set out in the charter

- administration of grants and contract awards, audits of money flows and monitoring and reporting on the effective use of funds, meeting targets and so on

- communication and interaction with participating communities, newsletters, community radio, convening meetings all aspects of the fund operation and benefit sharing issues according to the charter

- coordination as required between different levels of government, development agencies and CSOs / NGOs in the delivery of benefits.

Ideally the fund administration function would be handled within an existing development organization. For example, while operating at arm's length it may be affiliated with a functional river basin organization.

Over time, benefit sharing must have both a project and a river basin perspective because some adverse effects of dams are local and project-specific, whereas others arise from the combined effect of all dam projects in the basin.

28. The Columbia Basin Trust in Western Canada (see Annex 2) has a 12-page charter that focuses on the mandate, vision, mission, core values, public involvement and accountability.

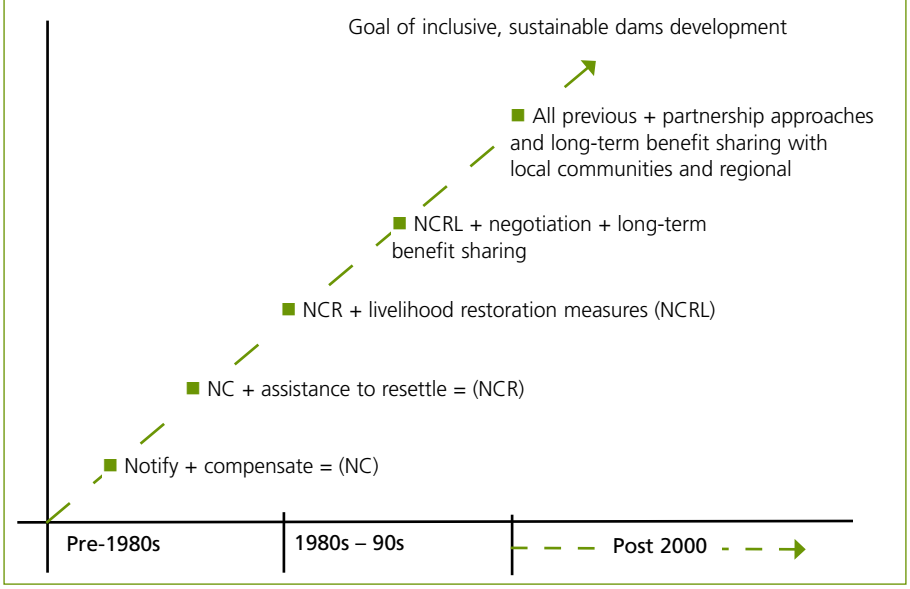
Growing international experience with benefit sharing

Benefit sharing is a logical progression in how affected communities have been viewed and treated in relation to dam projects from a historical perspective. Figure 3 is a generic illustration of the change in thinking that has occurred over time. Practices common in different countries today can be located along different points of this spectrum.

As shown in Figure 3, in the early part of the 20th century and even in the pre-1980 era in some countries local communities were only notified they must move for a dam, and then offered some compensation for land or property. Eventually it became standard practice in most regions of the world (as it is today) to offer some form of resettlement support. But there is a vast difference in levels of support offered. In some settings there is still a difference between the resettlement support offered on dams supported by international donors and resettlement carried out by countries on their own.

Practices have evolved to where sustainable or 'good practice' is to ensure that local communities become development partners that are materially supported with mechanisms for long-term local and regional benefit sharing.

Figure 3. Evolution in the view and treatment of dam-affected communities



The concept of benefit sharing on dams in West Africa has been around for several decades, for example on the Senegal River. Similarly, the 1986 treaty between South Africa and Lesotho recognized the real benefits from riparian state cooperation and explicitly defines the mechanisms by which the two countries share the cooperative gains from joint water resource development.

But it has only been since the mid-1990s that interest in directly sharing benefits with local communities affected by dams has grown.[29] It is no coincidence this parallels (i) the rise in interest in adoption of IWRM principles; (ii) recognition of partnership approaches that treat local communities as development partners; and (iii) re-definition of sustainable forms of water infrastructure in terms of achieving a contextual balance with economic, social and environmental performance.

7.1 What positions have international development institutions taken?

In the last 10 years the international community has actively explored steps to expand benefit sharing on dams. National multi-stakeholder dialogues have also been instrumental in raising awareness with governments.

For example, at the international level the WCD, in its final report *Dams and Development: A new framework for decision-making* (2000) captures emerging benefit sharing trends in two of its seven strategic priorities: SP-5 'Recognizing entitlements and sharing benefits', which incorporated sharing with local communities; and SP-7 'Sharing rivers for peace and development', which incorporated sharing between riparian states. This is illustrated in Box 5.

At the government level, Vietnam participated in a process to review the scope to contextualize the WCD recommendations in Vietnam. Benefit sharing was flagged as an important theme to advance sustainable hydropower. It was eventually taken up in 2006, when the new Electricity Regulatory Authority of Vietnam (ERA-V) collaborated with the Asian Development Bank (ADB).[30]

Similarly, a multi-stakeholder forum to contextualize the WCD in South Africa identified unresolved social issues around existing dams as the most important issue, and provided recommendations to elaborate implementation mechanisms for recognizing entitlements and sharing benefits in South Africa (United Nations Environment Programme Dams and Development Project, 2004).

The World Bank has helped to catalyze national efforts on Bank-supported dam projects in the past decade. These include the formative Bumbuna Trust

29. Based in particular on the conclusions of the United Nations International Conference on the Environment and Development (Rio de Janeiro, 1992), through the Rio Declaration on the Environment and Development and Agenda 21.
30. While the initial intent was to explore the policy opportunities in more depth, the multi-stakeholder process resulted in preparation of a draft decree being pilot tested.

in Sierra Leone and Lesotho Fund for Community Development (LFCD).[31] These initiatives are valuable, not only in offering good practice lessons but practices to avoid; and in particular to ensure that funds have genuine multi-stakeholder governance (see Annex 2).[32]

To compile and disseminate emerging good practice, the World Bank in 2002 supported a desk study, *Benefit Sharing from Dam Projects* (Egré *et al.*, 2002), which drew on 11 case studies from Canada, China, Latin America, Norway and Southern Africa (Egré *et al.*, 2002). Most are hydropower projects. The principal author updated this study for the Dams and Development Project in 2007 (Egré, 2007). More recently, as part of scaling-up its investments in hydropower the World Bank has embarked on a new programme of case studies and the preparation of a toolkit for operational staff and client governments.[33]

There are other examples of international organizations working on benefit sharing. The International Association for Impact Assessment (IAIA) looked at concepts and models for benefit sharing with local communities at its 2008 annual conference. Various papers explore benefit sharing among different types of communities, community involvement techniques and lessons to… 'help proponents understand that community involvement and providing benefits needs the use of "good practice" techniques and these take time'.

Box 5. Benefit sharing as an evolution in thinking about dams

(SP-5) Adversely affected people are recognized as first among the beneficiaries of the project. Mutually agreed and legally protected benefit sharing mechanisms are negotiated to ensure implementation.

(SP-7) 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.

Source: World Commission on Dams, 2000

31. The LFCD was to be capitalized with up to $US 40 million revenue from the Lesotho Highland Water Project and a $US 4.9 million grant from IDA agreed in 1999.
32. LFCD encountered many problems that illustrate the importance of establishing and implementing sound institutional procedures to manage such funds. The internal World Bank Completion Report for the LFCD regards the project outcome as highly unsatisfactory; in part due to the governance arrangements not being appropriate. Instead of a mix of community representation, local government and project authorities, the governing board was mainly comprised of ministers. The LFCD was to be governed by a nine-member board, with four ministers (as opposed to the design teams' recommendations of principal secretaries) and NGO representation. (World Bank, 2004)
33. The initial steps in 2008 brought together international experts and Bank staff to discuss and provide inputs from their own experience in a three-day session on Enhancing Development Benefits to Local Communities in Hydropower Projects. Work on the toolkit is ongoing in 2009. From the World Bank website: 'The main deliverables of the work program are a series of individual case studies with synthesis report highlighting the main lessons learned, good practices and key success factors for effective enhancement of benefits, and a guidance note/toolkit for use by Bank staff. Examples of benefits-sharing programs will be assessed using social, economic and institutional indicators. The study will pay particular attention to non-monetary forms of benefits sharing such as water management, community participatory mechanisms, and other innovative approaches.'

7.2 What do industry and the private sector think?

The dams industry and private sector generally welcome benefit sharing as it reduces project risk including reputational risk and facilitates good community relations. It is important to restate that according to the 'user pays' principle, benefit sharing is a relationship between consumers of dam services and dam-affected populations. It is reflected in tariffs for dam services ultimately set by governments directly, or via independent regulators.[34]

Table 3. Distribution and sustainability of ecomomic benefits

Auditing and monitoring show the distribution and sustainability of economic benefits to the affected local community and broader region	
Sustainability scoring	
5 = Highest	Auditing and monitoring programme indicate positive and sustained economic benefits shared across the affected local community and broader region.
3 = Medium	Positive and sustained economic benefits to the local community only.
1 = Low	Limited benefits to the local community.
0 = Zero	No auditing/monitoring programme, or benefits solely distributed to shareholders and direct participants.

Source: IHA, 2004

Industry associations and inter-governmental agencies like the International Energy Agency (IEA) actively promote all forms of benefit sharing on hydropower projects. They see it as a way to advance public acceptance of sustainable dam projects, rather than hinder government-defined infrastructure strategies.

The International Hydropower Association (IHA), for example, whose membership is drawn from government, industry and private sector interests in 81 countries around the world, in its 2004 Hydropower Sustainability Guidelines and Compliance Protocol calls for more attention to benefit sharing with local communities. Table 3 is an extract from the protocol. It is a scoring system to evaluate sustainability context and performance of hydropower projects.[35]

As illustrated, projects that feature arrangements to share benefits across affected local communities and broader region receive high scores; whereas projects with no explicit benefit sharing provisions receive a '0' score.

A multi-stakeholder Hydropower Sustainability Assessment Forum (HSAF) is currently updating the protocol in a IHA-facilitated process. It is expected that benefit sharing will feature prominently in the new protocol that will be available in late 2009.

34. It is reflected in tariffs for dam services ultimately set by governments directly or via independent regulators. Benefit sharing is not a product of a negotiation between dam developers and dam operators, and local communities. The only exception is where the dam operating entity is wholly government-owned. Governments can direct the utility that develops and operates dams (eg. Hydro Quebec, BC Hydro and Manitoba Hydro in Canada) to act on its behalf – which has produced the highest value revenue sharing arrangements on dam projects in the world to date.

35. Including the IHA, ICOLD, ICID and the International Energy Agency (IEA). See the IEA Hydropower Agreement. Annex III/5: Hydropower and the environment: present context and guidelines for future action, Vol. II: Main report and Vol. III Appendices. http://www.adb.org/Water/topics/dams/pdf/HyA3S5V2.pdf

8

Advancing local benefit sharing in West Africa

How West Africa's water resources are developed and managed is pivotal to the long-term development of the 16 countries and over 250 million residents of the region.[36] Benefit sharing on the region's large dams can also help with the more immediately needs in tackling poverty and building capacity to achieve targets embodied in Millennium Development Goals (MDGs).

8.1 Creating the enabling conditions

Similar to integrated water resource management (IWRM), benefit sharing requires an enabling legal and policy framework. Drawing lessons from elsewhere, it is important to first prepare an overall advocacy strategy for a multi-stakeholder process, within which consideration of the enabling legal arrangements would then be made.

Key steps concerning an assessment of enabling conditions include:

- Conducting a *policy review* of existing legislation in all sectors relevant to benefit sharing. On a national basis this would illustrate how principles and concepts of benefit sharing are currently embodied in laws, and identify where it is best to anchor regulation on benefit sharing.

- The policy review must also consider (i) statutes and regulations of river basin organizations (RBOs), given their potential role as key innovators and considering that IWRM practices are largely driven via RBOs in West Africa; and (ii) the regional agreements and international conventions relevant, including how agreements on international rivers in West Africa that now facilitate benefit sharing between riparian states can facilitate benefit sharing with dam-affected populations.

- Preparing *provisional guidelines* in the form of draft enabling regulations following discussion of the policy review. The guidelines will then serve to focus and facilitate discussions of the more substantive issues and to firm up the subsequent preparation of a pilot project to field trial selected provisions.

- In preparing guidelines, it is important to keep in mind the need to establish (i) clear roles for governments, civil society and private sector actors; (ii) identify capacity building requirements at all levels; (iii) procedures for both new and existing dam projects; (iv) cover both the monetary framework and non-monetary aspects of benefit sharing and electricity access; and (v) update the overall *advocacy and communication strategy* to move from guidelines to legislation.

36. Map: UN Cartographic Section, Map of West Africa, February 2005. No. 4242.

Among the substantive issues that need to be addressed in developing guidelines are:

- whether the basic model for delivery of benefits is to establish a fund, or to provide incremental support or 'block grants' to affected municipality budgets
- whether the approach is project-based or to emphasize strengthening existing and nascent river basin organizations to deliver the benefits
- how mechanisms can be introduced systematically and consistently on both new and existing dam projects
- the linkage, or relationship to environment protection and water resources protection funds and their objectives
- the scope of non-monetary benefits and the priority for specific measures to improve electricity access among populations affected by dams.

A further substantive issue is whether a phased approach to introduce benefit sharing mechanism is appropriate.[37]

8.2 Avoiding missteps, clearing up misconceptions

Challenges other countries have faced introducing benefit sharing are documented in the literature. These include comprehensive works on sharing benefits with local communities (Égré, 2007), and sharing between riparian states on international rivers (Yu, 2008).

Among the missteps that can undermine successful outcomes include:

- lack of transparency and accountability resulting in corruption, which is perhaps the single greatest threat to successful introduction of benefit sharing measures and to community and public acceptance
- poor or ill advised implementation mechanisms that are not coordinated with the local planning system and IWRM implementation
- creating unrealistic expectations among affected populations from the start
- using multi-stakeholder discussion of benefit sharing as a new ground to fight ideological battles (pro- or anti-dam), rather than focusing creative energy on enhancing the sustainable performance of existing dams and those under development
- assuming that past concerns about social injustice on resettlement concerning dam projects can or should be left off the agenda.

37. Assuming one of the 16 countries in the region would host a pilot project, and otherwise take the lead in advancing legislation and regulation.

Box 6. Addressing 'remaining social problems' with revenue sharing

In 2007 **China** introduced a national programme for retroactive payment (600 RMB/year – about $US 100, for 20 years) to all dam-resettled persons since creation of the modern Chinese state in 1949.

In 2004, **South Africa's** multi-stakeholder review to contextualize the WCD agreed that addressing past social injustices on the 539 large dams in South Africa using benefit sharing mechanisms was a priority issue.

In 2005 **Sierra Leone**, prescribed that payment of pre-war compensation claims from 1987 for persons displaced by transmission lines, were the first and priority use revenue sharing funds when the Bumbuna project became operational.

On the final point, Box 6 illustrates how revenue sharing was seen as a constructive mechanism to address past social injustice in dam resettlement in three countries, including China where almost half the world's large dams have been built.

In terms of avoiding confusions, or in clearing up misconceptions that can delay or distort approaches, it is important to ensure stakeholders understand:

- There is a distinction between compensation and resettlement[38], and longer-term benefit sharing mechanisms. Benefit sharing addresses a wider range of affected people and serves as a regional development catalyst. Benefit sharing is implemented even if there are no resettled people.

- Revenue sharing is not part of the project capital budget, it is derived from the revenue stream the project generates.

- Similarly, revenue sharing is not negotiated between local communities and dam owners. It is a relationship between consumers of dam services and dam-affected populations that is stipulated by government regulations.

- Revenue sharing is not something only for rich developed countries, nor is it too complex for developing countries. It is a source of financing to support local development initiatives with the advantages of being long term and secure.

Most important, revenue sharing is not politically unfeasible. Experience shows that if it is clearly explained how a small increment tariff pays for equitable sharing with dam-affected rural communities – the public is generally willing to share.

38. Compensation for land or property recovered by the state is generally governed by separate laws.

8.3 Constructing a multi-stakeholder dialogue platform as a first priority

Based on experience elsewhere, a multi-stakeholder dialogue platform is needed to kick-start and maintain momentum to introduce benefit sharing mechanisms. A systematic and coherent approach to this task would encompass some of the following aspects:

- A clear advocacy strategy to raise awareness on how benefit sharing overcomes real and perceived shortcomings in dam planning and management, and clear up common misconceptions that confuse and slow its adoption. This strategy would be based on a policy review and stakeholder analysis and regional and international experience would inform the strategy.

- A critical mass of multi-stakeholder partners and a dialogue platform to identify the sort of leadership, coalitions and practical next steps needed to contextualize successful models for benefit sharing to the West African situation.

- A suitable dam project(s) and river basin to field trial local benefit sharing mechanisms and to refine and amplify good practice.[39] The design of the pilot would ideally:
  - provide flexibility to allow innovation, and to explore and evaluate a range of feasible mechanisms for non-monetary and monetary benefit sharing
  - link to the introduction of basin IWRM measures and incorporate field trials on introducing mechanisms on an existing dam and proposed new dam
  - accommodate financing partners and multi-stakeholder in the review (typically a pilot needs a two–three year trial and will incorporate a multi-stakeholder process to review and offer advice on the pilot at critical milestones).

- Political will to link the outcomes of field trials to a government-led process to decide and prepare follow-up legislation and regulations, drawing also from the growing body of international and regional experience (including reasons for success and failure in other settings).

- A coalition of financial partners from the international development community to help achieve the critical threshold of consensus as early as possible, after which the national and regional efforts will become self-sustaining.

In the West African context, this requires linking to existing initiatives promoting dam planning and management in the IWRM river basin management context and knowledge sharing with other West African States. For example, it would involve regional networks like Global Water Partnership (GWP/WAWP) and African Network of Basin Organizations (ANBO). Major river basin organizations in West Africa such as Senegal, Niger and Volta would also be appropriately involved.

39. It emphasises the importance of coalition approach, based on common interest to develop and trial at pilot a benefit sharing mechanisms linked to the introduction of basin IWRM.

Conclusions

It is likely that benefit sharing will play an important role in dams and development in West Africa in future. The question is really what is the best implementation approach? The timing depends on advocacy and successfully making the case that equitable sharing of benefits is both a philosophy and a component part of sustainable development.

In multi-stakeholder discussions it is important to keep in mind that non-monetary forms can be as valuable to rural populations as the monetary forms of benefit sharing. It is not just about sharing revenue; it is also about empowering self-reliant community development, ensuring commitments to sustainably manage dams are kept, and to unlock the potential of local entrepreneurs to advance new ideas such as payments for ecological services. The greatest value is achieved when all forms of benefit sharing function together.

On monetary aspects, it is important to keep two key questions separate: (i) the source of money for revenue sharing, which is a government economic regulation decision, and (ii) the mechanisms for the allocation and delivery of benefits to dam-affected and local populations, which is a local development decision.[40]

In any advocacy strategy, two important points to promote are first, that benefit sharing is in the interests of all stakeholders directly or indirectly engaged in dam planning and management, both consumers and those affected by dams; and second, that multi-stakeholder dialogue will help to define a viable approach that:

- has both a practical and ethical orientation
- adds value for all stakeholders
- creates synergy with existing government development policy initiatives
- builds on and reinforces the roles of existing institutions, local development and water resource management institutions.

40. On the first question, it is important to see revenue sharing as a relationship between consumers of services and local communities who give up resource access, which enables dams to be built and operate. In that way the political decision is not abstract, it is a clear question about the adjustment in water and electricity tariffs needed to equitably share the benefits and costs of dam development. The second question, one that is more challenging, is whether it is best to provide incremental funds for development budgets of villages, municipalities and districts where affected populations live, or to establish a fund with a separate identity linked to river basin organizations.

In parallel with the identification of benefit sharing mechanisms for dams within national boundaries, dialogue on how to bring benefit sharing with all project affected populations into existing arrangements for international rivers can take place.[41]

41. Recognizing processes to reach a cooperative agreement can take decades, largely because of the technical complexity of regional projects, the difficulty in establishing benefits and costs and reaching an equitable division of gains, differing policy and political environments, and unclear roles and responsibilities among project, national and regional institutions.

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Annex 1. The dams of West Africa

(Source: FAO, 2009)

Name of dam	Country	River basin	Date completed	Height	Reservoir volume	Utilisation								
				(m)	(x1000 m^3)	Irrigation	Water supply	Flood control	Hydropower	Navigation	Recreation	Pollution control	Pastoralism	Other
Ilauko	Benin	Oueme	1979	22	23 500		x							
Lac dem	Burkina Faso	Nakambe	1950	–	4 000	x	x						x	
Samou	Burkina Faso	Faga	1962	–	5 000		x						x	x
Badadougou	Burkina Faso	Comoe	1977	–	6 000		x							
Dablo	Burkina Faso	Faga	1977	–	6 000	x	x						x	
Tougouri	Burkina Faso	Faga	1950	–	6 000	x	x						x	x
Tougouri	Burkina Faso	Nakambe	1987	–	6 000		x							x
Sitenga	Burkina Faso	Gorouol	1978	–	10 000		x						x	
Yalgo	Burkina Faso	Faga	1954	–	10 000		x						x	x
Lac Bam	Burkina Faso	Nakambe	–	–	31 000		x							x
Loumbila	Burkina Faso	Nakambe	1947	–	35 000	x	x						x	x
Douna	Burkina Faso	Leraba	1987	–	50 000	x							x	
Toussiana	Burkina Faso	Comoe	1982	–	6 100		x							
Boudieri	Burkina Faso	Niger	1963	–	4 159	x							x	x
Louda	Burkina Faso	Nakambe	1958	–	3 200	x	x						x	
Boura	Burkina Faso	Mouhoun	1983	–	4 200	x							x	
Koubry II (Nayarle)	Burkina Faso	Nakambe	1972	–	7 200	x	x						x	
Lery	Burkina Faso	Mouhoun	1976	–	250 000	x							x	
Tougou	Burkina Faso	Nakambe	1962	–	4 254	x	x						x	
Thiou	Burkina Faso	Sourou	1981	–	4 300	x							x	
Itengué	Burkina Faso	Nakambe	1987	–	3 350	x	x						x	

Name of dam	Country	River basin	Date completed	Height	Reservoir volume	Irrigation	Water supply	Flood control	Hydropower	Navigation	Recreation	Pollution control	Pastoralism	Other
				(m)	(x1000 m^3)	Utilisation								
Bazega	Burkina Faso	Nakambe	1961	–	5 350	x	x						x	x
Kompienga	Burkina Faso	Oti	1984	–	1 400 000				x					
Sambissogo	Burkina Faso	Mouhoun	1961	–	3 400	x	x						x	
Liptougou	Burkina Faso	Faga	1962	–	7 423		x						x	x
Bagre	Burkina Faso	Nakambe	1980	–	3 500	x							x	
Tamassogo	Burkina Faso	Nakambe	1978	–	3 500	x							x	
Dakiri	Burkina Faso	Faga	1960	–	10 500		x						x	x
Tapoa	Burkina Faso	Niger	1950	–	5 510	x								x
Fada I	Burkina Faso	Niger	1951	–	4 613		x						x	
Titao	Burkina Faso	Nakambe	1951	–	3 700	x	x						x	x
Monkuy	Burkina Faso	Mouhoun	1965	–	8 763									
Karamassasso	Burkina Faso	Ngora Laka	1958	–	11 800	x								
Korsimoro	Burkina Faso	Nakambe	1984	–	4 900	x	x						x	
Tingrela	Côte d'Ivoire	Bagoe	–	17	3 000	x								
Nouple	Côte d'Ivoire	Bandama Blanc	1976	13	4 000	x								
Yabra	Côte d'Ivoire	Bandama	1974	13	4 000	x								
Nabyon	Côte d'Ivoire	Nzi	1982	17	14 000	x								
Koua	Côte d'Ivoire	Ba	1979	23	17 000	x								
Gbemou	Côte d'Ivoire	Bagoe	1979	14	18 000									
San Pedro	Côte d'Ivoire	Sassandra	1980	15	25 000	x			x					
Nafoun	Côte d'Ivoire	Bagoe	1976	15	60 000	x								
Ayme II	Côte d'Ivoire	Comoe	1964	35	69 000				x					
Taabo	Côte d'Ivoire	Bandama	1979	34	69 000				x					

Name of dam	Country	River basin	Date completed	Height	Reservoir volume	Irrigation	Water supply	Flood control	Hydropower	Navigation	Recreation	Pollution control	Pastoralism	Other
				(m)	(x1000 m^3)	Utilisation								
Nindio	Côte d'Ivoire	Bandama Blanc	1975	13	3 100									
Buyo	Côte d'Ivoire	Sassandra	1980	37	8 300				x					
Solo Mougou	Côte d'Ivoire	Bandama Blanc	1974	15	14 300	x								
Loka	Côte d'Ivoire	Nzi	–	23	22 300	x								
Lataha	Côte d'Ivoire	Bandama Blanc	1973	13	3 400	x								
Dekokaha	Côte d'Ivoire	Bandama Blanc	1973	13	3 600	x								
Natiokobadara	Côte d'Ivoire	Bandama Blanc	1974	14	3 600	x								
Gbon	Côte d'Ivoire	Bagoe	1976	12	7 700	x								
Ayme I	Côte d'Ivoire	Bia	1959	30	900 000				x					
Kossou	Côte d'Ivoire	Bandama	1972	58	27 675 400				x					
Tchimbele	Gabon	Komo	1980	36	220 000				x					
Kpong dam/ Dikes	Ghana	Volta	1981	20	–	x			x					
Barekese	Ghana	Pra	–	–	34 000		x							
Weija	Ghana	Densu	1978	16	139 000	x	x							
Ashaman	Ghana	Densu	–	–	6 200									
Vea	Ghana	Nakambe	–	–	17 300									
Kwanyaku	Ghana	Densu	1969	–	1 360									
Bontanga	Ghana	Nakambe	–	–	25 350									
Afife	Ghana	Volta	–	–	29 450									
Tono	Ghana	Nakambe	1977	19	76 537	x	x							
Mankessim	Ghana	Densu	–	–	5 670									
Inchaban	Ghana	Ankobra	–	–	1 800									
Dawhenya	Ghana	Densu	–	–	5 800									

Name of dam	Country	River basin	Date completed	Height	Reservoir volume	Utilisation								
				(m)	(x1000 m^3)	Irrigation	Water supply	Flood control	Hydropower	Navigation	Recreation	Pollution control	Pastoralism	Other
Akosombo (main)	Ghana	Volta	1965	134	147 960 000				x					
Kale	Guinea	Konkoure	1963	20	14 000				x					
Banieya	Guinea	Konkoure	1969	30	223 000				x					
Selingue	Mali	Sankarani	1982	23	2 170 000	x		x	x	x				
Markala	Mali	Niger	1947	8	175 000	x								
Manantali	Mali	Bafing	1988	70	11 270 000	x				x				
Foum Gleita	Mauritania	Senegal	1988	38	500 000	x								
Gusau	Nigeria	Sokoto	–	22	3 000	x	x							
Bokkos	Nigeria	Benue	–	15	5 000	x	x							
Pankshin	Nigeria	Benue	–	31	5 000		x							
Swashi	Nigeria	Niger	1992	9	5 000	x								
Jabi	Nigeria	Gurara	1982	15	6 000				x					
Shiroro	Nigeria	Kaduna	1984	125	7 000				x					
Pada	Nigeria	Hadedja	1980	14	12 000	x	x						x	
Kainji	Nigeria	Niger	1968	79	15 000 000				x					
Kurra	Nigeria	Gongola	1929	19	17 000				x					
Ero	Nigeria	Kampe	1987	22	20 000	x	x							
Guzan	Nigeria	Kaduna	–	–	20 000	x	x							
Waya	Nigeria	Gongola	–	23	21 000	x	x							
Tugan Kawo	Nigeria		1988	12	22 000	x								
Y. Gowon	Nigeria	Gongola	1981	35	30 000		x							
Ankwil	Nigeria	Gongola	1964	26	31 000				x					
Ruwan Kanya	Nigeria	Hadedja	1976	22	33 000	x							x	

Name of dam	Country	River basin	Date completed	Height	Reservoir volume	Utilisation								
				(m)	(x1000 m^3)	Irrigation	Water supply	Flood control	Hydropower	Navigation	Recreation	Pollution control	Pastoralism	Other
Asa	Nigeria	Niger	–	27	43 000		x							
Kagara	Nigeria	Kaduna	–	31	43 000		x							
Suleja	Nigeria	Gurara	–	28	52 000	x								
Kubli	Nigeria	Niger	1992	17	70 000	x								
Balanga	Nigeria	Gongola	1987	41	73 000	x								
Liberty	Nigeria		1973	27	77		x							
Erinle	Nigeria	Oshun	1989	27	94 000		x							
Ussuman	Nigeria	Gurara	1984	45	120 000		x							
Kafin-Chiri	Nigeria	Hadedja	1977	16	31 120	x	x							x
Eagauda	Nigeria	Hadedja	1970	20	22 140	x	x							x
Tenti	Nigeria		1943	14	14 150				x					
Zobe	Nigeria	Bunsuru	1983	19	177 000	x	x							
Obudu	Nigeria	Cross	–	15	4 200	x								
Lantang	Nigeria	Benue	1979	19	5 200		x							
Oshun	Nigeria	Niger	1977	11	8 200		x							
Gari	Nigeria	Hadedja	1980	22	214 000	x								
Karaye	Nigeria	Hadedja	1971	15	17 220		x							
Omi	Nigeria	Kampe	–	42	250 000	x	x							
Ikere Gorge	Nigeria	Ogun	–	48	265 000	x	x		x					
Kangimi	Nigeria	Kaduna	1977	19	59 210	x	x							
Oyan	Nigeria	Ogun	1983	30	270 000	x	x		x					
Tagwai	Nigeria	Chanchaga	1978	25	28 300		x							
Kontagora (2)	Nigeria	Niger	–	32	340 000	x								

Name of dam	Country	River basin	Date completed	Height	Reservoir volume	Utilisation								
				(m)	(x1000 m^3)	Irrigation	Water supply	Flood control	Hydropower	Navigation	Recreation	Pollution control	Pastoralism	Other
Tomas	Nigeria	Hadedja	1976	14	60 300	x	x							x
Shen	Nigeria	Benue	1979	–	3 400		x							
Hadejia	Nigeria		1994	9	11 400	x								
Gubi	Nigeria	Gongola	–	27	38 400		x							
Bakolori	Nigeria	Sokoto	1978	48	450 000	x								
Bagoma	Nigeria	Kaduna	1974	17	5 455	x	x							
Otin	Nigeria		1974	14	5 455		x							
Gfant's House	Nigeria		–	26	6 500		x							
Egbe	Nigeria	Osse	1983	22	21 500		x							
Jekara	Nigeria	Hadedja	1976	14	6 519 000	x								x
Doma	Nigeria	Benue	1988	16	37 500	x	x							
Mohammadu Ayuba	Nigeria	Hadedja	1975	16	5 535 000	x	x							x
Oba	Nigeria	Oshun	1964	13	4 546		x							
Jebba	Nigeria	Niger	1984	40	3 600 000				x					
Igbojaiye	Nigeria	Ogun	1991	18	5 600	x	x							
Ejigbo	Nigeria		–	20	14 600		x							
Kiri	Nigeria	Gongola	1982	20	615 000	x								
Guzu Guzu	Nigeria	Hadedja	1979	17	24 600	x								x
Watari	Nigeria	Hadedja	1980	20	104 550	x			x					
Faw Faw	Nigeria	Ogun	1967	15	668		x							
Magaga	Nigeria	Hadedja	1980	19	19 680	x								x
Kafin Zaki	Nigeria	Jamaare	–	40	2 700 000	x								
Ouree	Nigeria		1936	21	6 700				x					

Name of dam	Country	River basin	Date completed	Height	Reservoir volume	Utilisation								
				(m)	(x1000 m^3)	Irrigation	Water supply	Flood control	Hydropower	Navigation	Recreation	Pollution control	Pastoralism	Other
Kontagora (1)	Nigeria	Niger	1989	20	17 700		x							
Iku	Nigeria	Gurara	–	28	42 700	x								
Ajiwa	Nigeria		1973	14	22 730	x	x							
Marashi	Nigeria	Hadedja	1980	11	6 770	x								x
Pedan	Nigeria		–	33	5 800		x							
Awon	Nigeria	Ogun	1962	15	9 800		x							
Tudun Wada	Nigeria	Hadedja	1977	21	20 790	x								
Jibiya	Nigeria	Bunsuru	1990	22	142 700	x	x							
Zuru	Nigeria	Gulbinka	1978	15	5 850		x							
Dadin Kowa	Nigeria	Gongola	1988	42	2 855 000	x	x		x					
Tiga	Nigeria	Hadedja	1974	48	1 874 000	x	x							
Biu	Nigeria	Gongola	–	–	11 900	x	x							
Zaria	Nigeria	Kaduna	1975	15	15 911		x							
Challawa Gorge Dam	Nigeria	Hadedja	1992	42	930 000	x	x							
Goronye	Nigeria	Rima	1983	20	942 000	x								
Asejire	Nigeria	Oshun	1969	26	32 913		x							
Diama	Senegal	Senegal	1986	18	250 000	x								
Nangbeto	Togo	Mono	1987	44	1 710 000	x			x					
Kprime	Togo		1963	16	900				x					

Annex 2. Country examples of benefit sharing

Africa: Lesotho and Sierra Leone

Lesotho offers the example of the Lesotho Fund for Community Development (LFCD), co-financed by revenue derived from the bi-national Lesotho Highlands Water Project (LHWP) and a World Bank grant. The larger context was the 1986 treaty between the governments of Lesotho and South Africa that formed the basic agreement between the two states to implement the LHWP. The treaty, amended in 1999, explicitly defines the mechanisms for the two countries to share the cooperative gains from joint development, instead of physically sharing water itself.

It was envisaged that the LHWP would contribute to economic growth, but it was not specifically geared to employment creation and needs of the rural poor (World Bank, 2005).[42] In 1999 the government and Bank agreed to establish the LFCD, aiming to ensure community-driven development (CDD), employment generation, and poverty reduction.[43] The LFCD was designed with preferential focus on five pre-identified poor districts in the Highlands as well as the poor peri-urban areas of Maseru, the main urban centre and capital city. The initial design of the LFCD was the culmination of a participatory process to agree on how to utilize revenues from the LHWP in line with the government's stated objective of poverty reduction.

While the concept of the LFCD represented best practice and numbers of local development initiatives have been successfully implemented by the LFCD mechanism,[44] it also illustrates the type of challenges and avoidable failures that can occur in implementation of such funds.

The World Bank ended its involvement in the LFCD in 2003. The internal World Bank Completion Report (ICR) for the LFCD rated the project outcome as highly unsatisfactory, partly due to the governance arrangements not being appropriate (World Bank, 2004). For example, a nine-member board governed LFCD, with four ministers – as opposed to the participatory process and design team's recommendations of appointing principal secretaries, community and NGO representatives. Other reasons cited for the highly unsatisfactory performance rating included the failure to fully test the CDD approaches

42. Initially, royalties from the LHWP began to flow in 1996 and a significant portion of them was initially put into the Lesotho Highlands Revenue Fund (LHRF). The intention was that some expenditure could have have been used to alleviate poverty, but because of a number of weaknesses the fund was suspended in 1997. All of the LHRF assets and liabilities were transferred to LFCD, including 18 ongoing sub-projects, which the LFCD was expected to complete.
43. The government of Lesotho's use of a portion of the revenues from LHWP for poverty reduction was a pre-condition for the Bank going to the board with Phase 1B in June 1998 (World Bank ICR Report).
44. It is reported that by 2002 the money had gone into building 1100 km of rural roads, 210 earth-fill dams, 60 footbridges and forestry conservation works.

(which were recommended and expected by the consultative process to be at the core of delivering benefits as), lack of beneficiary involvement in producing the operating manuals (OMs) for the fund, and failure to monitor impacts on poverty levels.

Another factor was that in 2001, as the LFCD became operational, the existing district development councils and village development councils were abolished. These had been expected to play a major role in CDD and in providing technical, supervisory and monitoring support to sub-projects, and their abolition left a vacuum.

A retrospective comment on the LFCD (Yu, 2008) was that the problems faced were due to numerous factors… ' including weak and politicised implementation, low capacity of communities to manage large construction projects, lack of local government structures, (selection of) projects that are not demand driven, lack of technical support, and lack of a monitoring strategy'.

The LFCD lessons illustrate the importance of establishing and implementing sound institutional procedures to manage such funds. They demonstrate the importance of investing in two-way communication with the beneficiaries. Additionally, they shows how a poorly executed benefit sharing project can discourage further initiatives of its kind – even if proper arrangements are made drawing lessons from the previous failure. And as some observers noted, they emphasized the importance of transparent mechanisms, 'Specific rules on ensuring transparency in the management of the Fund, and public information on its activities and programs, should have been put in place. An independent oversight committee with the participation of civil society representatives could have helped ensure that the funds would have been allocated to benefit the population of Lesotho and in particular the affected communities in the Highlands.' (Thamae and Pottinger, 2006 cited in Egré, 2007).

In **Sierra Leone** the Bumbuna Trust is to be established for the 50 Mw Bumbuna hydropower project, originally expected to be commissioned in 2007, now due to be commissioned in 2009–10. The Bumbuna Trust was conceived as a multi-purpose trust to finance long-term benefit sharing arrangements for local communities as well as programmes related to the project's sustainable social and environmental management. This will relieve government budgets of the responsibility (government had little money), and at the same time develop synergy between local development and sustainable management of the project in a basin context.[45]

The 50 Mw Bumbuna project is the first stage of a potential five-stage 275 Mw hydroelectric development on the Seli River, which flows to the Atlantic

45. Details of what was planned in 2005 are provided in the Project Appraisal Document www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2005/05/27/000012009_20050527095956/Rendered/INDEX/31844.txt

north of Freetown. Construction was 85 per cent completed when it was abandoned in 1997 due to the escalating rebel war. After the restoration of peace in 2002, the international community pledged to support completion as a post-war priority, to restore power supply to the Freetown area where many of the war refugees from rural areas have located and where much of the commerce is based. Benefit sharing arrangements with local communities were incorporated in the design of the completion project.[46] It was recognized that a major contributing factor to the 11-year war had been the lack of local sharing of resource development revenue, especially from mining development. Moreover, the real risk of rekindling previous inter-communal conflict around the question of who was to receive benefits, and who was not, was to be avoided. This issue was particularly important given that all local communities in the post-war situation fully expected to receive some benefit from the Bumbuna project as it was a major national investment.

A large section of the rural population, some living in absolute poverty (Sierra Leone was then ranked as the poorest country in the world), had been marginalized from the political process during the war and was deprived of social services and economic development opportunities. The completion project was intended to meet their immediate needs in particular, in rural areas, access to electricity services that had long been promised but for which the government had no financial resources in the near term.

Two stages were planned to establish the local community benefit sharing mechanism. The first stage was the pilot Upper Seli Community Development Initiative (USCDI) developed in consultation with the local communities (World Bank, 2005). A World Bank grant was to provide two–three years' funding for this during the project completion stage of Bumbuna (just under $US 2 million) to deliver a menu of community selected micro projects and youth capacity building initiatives at the district, ward and community levels. This was targeted at local communities living in the immediate catchment upstream and downstream, who were not part of the compensation and resettlement programmes but adjacent to the communities who were.[47] The USCDI would serve to test-delivery CDD mechanisms for the longer-term Bumbuna Trust, assist with CDD capacity building in local governance, and test the trust's governance arrangements.

The Bumbuna Trust itself would come into operation when the project was commissioned, financed by two main sources. The first was from the government selling certified emission reduction credits deriving from thermal GHG emissions from diesel power stations offset by power from the hydropower project. An Emission Reduction Purchase Agreement (ERPA) was signed in 2005 between the governments of Sierra Leone and the Netherlands, to provide

46. And an associated grant under the Bumbuna environmental and social management project.
47. The USCDI will run in parallel with the compensation, resettlement and livelihood restoration programmes for the adjacent, directly affected communities.

financing of nearly $US 2 million annually up to 2012. All money derived from the ERPA was to be deposited in the Bumbuna Trust account. Core financing for the trust was also to come from the Bumbuna revenue stream, provisionally up to 0.5 cents US/kwh, once the project started operating.

The Bumbuna Trust itself is to be governed by a multi-stakeholder board, using different grant-financing windows.[48]

- The benefit sharing window supporting community-managed projects (eg. for village micro-infrastructure such as local roads, schools, health posts, market areas, etc., and for grants to youth groups for social activities, training and trade skills development). This will cover all communities in the wider project area (under the USCDI) as well as the resettled communities. The basis for accessing the funds will be a grant application. Trained community coaches will provide support to prepare grant applications. Implementation will be linked to government support services, as needed, but otherwise CDD approaches will be followed, with independent CSO/NGO monitoring.

Other financing windows of the trust are intended to support:

- A new Bumbuna Watershed Management Agency (BWMA), to deliver land and soil management, agro forestry and agriculture transformation programmes in the catchment, which have combined aims to modernize agriculture practices, raise farm incomes, and provide erosion and sediment management to minimize reservoir sedimentation; and fisheries programmes for communities in the reservoir and downstream of the dam.

- A conservation offset, the Bumbuna Conservation Authority (BCA) to support a community-managed protected wildlife area in the catchment for biodiversity conservation (financed initially by a Global Environment Facility project).

- Another grant window will fund electrification in the towns immediately around the project including the district headquarters (which had its power supply destroyed in the war).

- Over time, additional grant windows will be considered, such as for small-scale renewable options for off-grid areas and revolving rural micro-credit schemes. Other financing partners will be sought.

Unfortunately a number of difficulties were encountered in the overall Bumbuna project implementation that moved the original completion date from 2007 to 2009–2010. This in turn affected the benefit sharing arrangements and led to reformulation of some of the implementation

48. A World Bank grant will finance the environment and social management components during project implementation and lay the groundwork for establishment of the Bumbuna Trust.

aspects and financing. Additionally, there was a failure to secure approval for the ERPA from the Clean Development Mechanism after three applications, due to what was cited as 'uncertainty over the level of reservoir emissions'. As a consequence, a refinancing plan for the Bumbuna Trust is needed, while a change in government means there may be some uncertainty about the revenue sharing arrangements. The USCDI itself is proceeding under a rescheduled and restructured World Bank grant and arrangements to establish the trust have been made.

Lessons drawn for the West African context include the importance of reflecting agreements appropriately in legislation, beyond commitments in donor-supported initiatives. In this case, while legislation was prepared and approved by parliament, (i) to endorse the Kyoto Protocol to enable participation in the Clean Development Mechanism for the ERPA, and (ii) to create the public private special project company structure for the Bumbuna project, no legislative provisions were made for the revenue sharing aspect, despite the overwhelming support of the previous government for the arrangement. Otherwise, the approach is a good model as an integrated approach to sustainable management of hydropower projects and benefit sharing with poor rural communities – as well as dealing with post-war realities.

Asia: China, Vietnam, Laos and India, Nepal

Benefit sharing has featured for several years in **China** where close to half the world's largest dams have been built. From the 1980s a portion of the hydropower revenue from the Danjiangkou dam, which created the largest man-made lake in Asia when it was built in 1966, was placed in a 'remaining problems' fund[49] This fund financed livelihood restoration for people living around the reservoir perimeter and measures to rectify social problems associated with previous project phases.

Since the 1980s benefit sharing has been introduced on a project-specific basis.[50] More recently Chinese legislation on post-resettlement and rehabilitation for hydropower projects has been strengthened. In 2007, the government announced major programmes that serve to introduce uniformity in revenue transfers from the power sector to regional and local authorities to (i) boost regional development around dam projects, (ii) provide infrastructure financing for reservoir areas, including areas where dam-affected people are resettled, and (iii) provide an additional long-term and also retroactive compensation to dam resettled populations.

49. Discussion is provided in the book, *The Future of Large Dams: Dealing with social, environmental, institutional and political costs.* (2005) by Thayer Scudder, former Commissioner of the WCD.
50. For example Hubei hydropower development in poor areas with partnership agreement using equity sharing and revenue sharing and funding of poverty alleviation plans on a World Bank supported project.

Two elements of the current policy are:

A national resettlement fund:

- a nationwide programme to fund future and retroactive payments to people resettled from dams dating back to the establishment of the People's Republic of China in 1949;[51]
- the fund pays 600 RMB to each resettled person every year for 20 years, equivalent to about $100 US per year – family of five would receive $US 500 per year;
- funds are derived from an .08 cents/kwh standard charge on the bulk electricity tariff from all hydropower projects in the country, regardless of the number of settled people;
- payments are automatically applied on dams under construction, and will be applied to future projects; for existing projects, this requires investigating who was resettled.

As a model, this would be extremely difficult to implement in countries that have not maintained a system of records on resettled populations, particularly on older dams.

Reservoir area infrastructure improvement fund:

- A national programme that establishes a new permanent Reservoir Area Development and Maintenance Fund that replaces previous funds of more limited scope.[52] The fund is supported by a 0.08 cent/kwh charge on the bulk electricity tariff from hydropower generation paid to the provincial finance authority.
- The province then allocates the money to prefecture and local government authorities to 'develop production and improve living conditions of residents after relocation and to realize stable and sustainable development of the residents living and working conditions'.[53] In addition, dam owners implement measures set out in a poverty alleviation plan in resettled areas. The investments are allocated to schools, housing, recreational facilities and other local needs that are decided by the village councils of people residing in reservoir areas.

51. Before 1949, China had no more than 40 small hydroelectric dams and only a few large-scale reservoirs.
52. Reservoir maintenance funds for hydropower projects have been available since 1981, managed by local county resettlement offices and hydropower plant authorities. They are used to maintain reservoir facilities; infrastructures used for irrigation, drinking water and transportation infrastructures, benefiting displaced populations.
53. Introduction of Shuibuya Resettlement and Sharing of Benefits arising from the Project, Hubei Quigjiang hydroelectric development Company Ltd. October, 2008. This project is an 1840 Mw hydropower project on the largest upstream tributary of the Yangtze River, above the Three Gorges Project.

The 22 provinces in China have the option not to participate in this particular programme. The main limitation of the arrangement is that it does not cover affected communities upstream of the dam beyond the reservoir area, or downstream of the dam. Chinese officials, however, indicate that additional money is available to these areas from increased municipal tax revenue, based on ongoing assessments of project effects and impacts.[54]

In **Vietnam** the government is currently pilot-testing draft legislation for benefit sharing on both existing and new hydropower projects. Following the 2004 Electricity Law, the government embarked on a multi-year programme to establish competitive electricity markets, starting with the establishment of competitive electricity generation markets in 2010. Competitive retail markets will be introduced by 2022. The Electricity Law also calls for improved social and environmental performance of hydropower projects. In this respect a national forum in the post-WCD period had recommended benefit sharing as a key step to enhance the promotion of sustainable hydropower in Vietnam. And Vietnamese environmental legislation in 2005 legally defined sustainability as 'development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs, on the basis of a close and harmonized combination of economic growth, assurance of social advancement and environmental protection'.

In 2006 a multi-stakeholder process supported by a technical assistance project funded by the Asian Development Bank was initiated with the new Electricity Regulatory Authority of Vietnam (ERAV). This was created in 2005 to guide all aspects of power market reform. One goal was to explore if market mechanisms for revenue sharing could be implemented in parallel with power market reforms so as to improve the sustainable performance of dam projects.

A three-phase technical assistance process was designed to explore the best feasible approach:

Phase 1. *A policy review:* to assess the extent to which Vietnam's current laws and policies enable local benefit sharing, management of ecosystem services impacted by hydropower, and sustainable financing of measures. This included a sector-by-sector review and SWOT analysis of primary and secondary legislation and policies (ie. the state constitution, plus primary and secondary legislation in the power, water resources, environment, forestry, fisheries, agriculture and rural development, land administration and social sectors, including laws relevant to ethnic minorities and international conventions and agreements.

Phase 2. *Preparation of draft guidelines:* to introduce benefit sharing into planning, implementation and operation stages of hydropower projects, based on the policy review and consultation processes, and drawing on experiences

54. Communication with Shuibuya project authorities, and report on the Shuibuya Resettlement and Sharing of Benefits, Hubei Province.

with benefit sharing from other countries. This stage incorporated rapid appraisals of three hydropower projects to evaluate conditions and attitudes of local residents to preferred forms of benefit sharing (on an existing dam, a dam under construction, and a proposed dam).

Phase 3. *Pilot project work plan:* to prepare detailed guidelines on a selected project (the 210 Mw A'Vuong project ready to be commissioned in 2008 was selected). This phase incorporated workshops and meetings with provincial authorities, and focus group sessions with residents in different locations of the A'Vuong project impact zone to establish their reaction to the guidelines and preferences for measures, including preferences on whether support was delivered via government development programmes, community-based organizations or through supervised schemes for local entrepreneurs and enterprises on a group or individual basis.

The governance structure established for the technical assistance included a multi-agency steering committee responsible for the major decisions on the guidelines, led by ERAV. A national stakeholder forum – consisting of invited government interests, national non-government organizations, international NGOs active in Vietnam (eg. WWF, IUCN), dam development interests and donors agencies – was convened. Three workshops were held, one after each phase to gather reactions and comments.

What actually transpired was that instead of preparing general guidelines for future consideration, the steering committee and national stakeholder forum concluded that the best approach was to prepare draft legislation. While implementation of the legislation could not be guaranteed, it was a highly significant step. Multi-stakeholder collaboration was key to arrive at that decision, including (i) engagement of local dam-affected communities in surveys and to consider what could be proposed as legislation and detailed regulation; (ii) provincial level workshops, where the provinces expressed a strong desire for financial assistance in dealing with social impacts in dams, as it was taking up to 10 years to restore families to even pre-project conditions and living standards (in Vietnam the provinces are primarily responsible for rural development and establishing river basin organizations); and (iii) the strong consensus of the national stakeholder forum, including the international NGOs who were active members and offered support such as independent legal review of the draft legislation and technical expertise on CDD rural development models.

The pilot project is in two stages. Stage 1, now under way, aims to:

i) establish a benefit sharing council and temporary revenue sharing account;

ii) prepare a model fund charter and other key instruments needed to implement revenue sharing grants according to the guidelines, introducing modifications as appropriate;

iii) undertake activities consistent with the guidelines to assess and recommend measures for equitable sharing of electricity access and enhanced entitlements for natural resource access (non-monetary benefits);

iv) provide at least one-cycle of grant application and award to test the delivery and monitoring mechanisms for measures that typically will be supported by revenue sharing grants; and

v) prepare a systematic article-by-article review of the guidelines (draft legislation) in order to make amendments and provide recommendations on finalizing the legal instruments.

Stage 2 of the pilot aims to develop a more comprehensive set of local capacity building tools to facilitate rapid and smooth rollout of benefit sharing on existing and new hydropower projects in Vietnam, once legislation is formally approved.

In **Laos** one of the aims of the export-oriented Nam Theun 2 project is 'to generate revenues that will be used to finance spending on priority poverty reduction and environmental programs in Lao PDR through environmentally and socially sustainable exploitation of NT2's hydropower potential' (Fozzard, 2005).[55] Specific revenue and expenditure management arrangements are set out in the project agreements. These provide a framework for the transfer of power revenues when Nam Theun 2 is commissioned. The government of Lao PDR has identified five indicative programmes for the distribution of these funds on the basis of the National Growth and Poverty Eradication Strategy (NGPES), namely: basic education; basic healthcare; rural roads; local development initiatives identified through a participatory decision-making process; and environmental protection initiatives.

In **India**, states (provinces) receive an allocation of 10 per cent of electricity generation from hydropower output, which they can allocate to different electricity using sectors without charge (which they do mainly to subsidize electricity rates for farmers using irrigation pumps), or they can sell power to recover money for other state budget uses. In 2007 this state allocation was increased to 12 per cent of the generation revenue from hydropower projects. However, there was no mechanism requiring the states to target, or sharing these funds with, project-affected communities.

Recognizing that local communities were entitled to a share of the revenues and in mind of other successful models to target benefit sharing funds to local communities, in October 2007 the Indian central government, via its new hydropower strategy, announced plans that:

55. Revenue And Expenditure Management: Nam Theun 2 Hydroelectric Project, authored by Adrian Fozzard, Senior Public Sector Specialist, World Bank, 2005

- permanent local area funds will in future be established on hydropower projects;

- the local area fund will have a multi-stakeholder board composed of representatives of project-affected communities, chaired by a local government representative appointed by the state;

- beneficiary preference will be reflected in how the money is spent and expenditures will be monitored by each state.

As yet there is no information readily available on experience to date, or whether local area development funds have been established. Moreover, as information is relatively limited (mostly only reported in the media), it is not clear yet whether funds will be set up on both new and existing projects. For example, 'All memoranda of understandings (MoUs) proposed between the Central power generation companies and states like Himachal Pradesh, Uttarakhand and J&K will have a provision of separate local area development funds, besides 12 per cent free power for the states', said Union Power Minister Sushil Kumar Shinde here today.'(Indian Financial Times, 25 September 2006)[56]

In **Nepal**, the 1992 Hydropower Policy in Nepal and the 1992 Electricity Act required hydropower projects to pay a royalty to the government. In 1999, the Local Self-Governance Act and Local Self-Governance Regulations stimulated the central government to redistribute part of these hydropower royalties to (i) village development councils in the project area, (ii) district development bodies, and (iii) other districts in the region where the project is located.

While the specific arrangements changed over time, since 2004 the regulations provide that for all existing projects above 1 Mw generation:

- 1 per cent of the royalty is transferred to village development committees (VDCs) directly affected by the hydropower infrastructure to expand village electrification;

- 12 per cent of the royalty is transferred to the district development committee;

- 3 per cent of the royalty is transferred and divided among all districts of the development region where the hydropower project is located.

Apart from the stipulation that the VDC share will be dedicated to improving local access to electricity services, the regulations in Nepal do not stipulate how such amounts should be spent or distributed within a district, only that it fund development activities and not administration.

56. Other articles include 'Displaced families to get stake in hydel projects', Manoj Kumar Tribune News Service, 25 September 2006 www.tribuneindia.com/2006/20060926/biz.htm#1

There is a tax holiday on some portion of the royalties in the first 15 years, but after that royalties are 10 per cent of generation (Gwh) plus a charge on capacity (Mw). Nevertheless, the amounts have a significant impact. In some districts the hydropower revenue sharing arrangements represent up to 65 per cent of the revenue from all sources, including government administration and development budgets (Uppadyaya, 2006 cited in Egré, 2007[57]). Participants in a multi-stakeholder workshop in Nepal in 2006 on the status of the revenue sharing programmes noted that (i) while highly beneficial, there needed to be more transparency in how funds are used; (ii) revenue sharing targeted to upstream watersheds of hydropower plants should be considered, especially for payment for ecological services; and (iii) the arrangements (then) tended to focus on the powerhouse areas and ignore downstream areas, which are also affected, and those areas should also be entitled to a share of royalty (Uppadyaya, 2006 cited in Egré, 2007).

Latin America: Brazil and Columbia

In **Brazil**, rather than taxing revenue on the sale of energy, the national constitution (1988) charges a fee for water used to generate electricity. This is part of a general resource use tax that applies to other resources as well, including petroleum and mineral resources. Under a constitutional provision, 45 per cent of income generated from the water-use tax annually goes to municipalities losing land to reservoir inundation (proportioned based on the area affected); 45 per cent goes to the state or provincial authorities where the project is located; and 10 per cent goes to the federal government to finance regulatory functions (ie. 8 per cent to the Federal Electricity Regulatory Agency (ANEEL) and 2 per cent to the Ministry of Science and Technology) (WCD, 2000).[58]

In addition, some project development authorities (eg. Itipu) enter into long-term contracts with local communities that cover a range of issues including support for community development and agreements on local hiring and employment in project related activities.

Several Latin American countries also specify that payments for managing ecological functions and the environment services transformed by hydropower project must be provided through hydropower revenues. This is on top of support for social development needs of the communities that host the project. For example, in **Columbia**, legislation stipulates that 3 per cent of revenues from hydropower projects must be transferred annually to the watershed agency of the dam to fund watershed management activities, working with basin communities. The funds must be used to protect the environment in the watershed upstream of the dam and in downstream areas influenced by flow

57. Reporting on analysis of the Makawanpur District Development Committee expenditures.
58. In addition large projects such as Itapu have long-term contracts between the affected communities and the project entity.

changes. A further 1.5 per cent of project revenues must be transferred to the municipalities that border the reservoir, and 1.5 per cent to the municipalities in the watershed upstream of the dam. These funds are allocated to finance infrastructure projects identified in municipal development plans.

OECD: Canada and Norway

Benefit sharing has also evolved in developed countries, where increasingly a basin-wide orientation is adopted.[59]

To illustrate, a leading example of a basin-level programme is the Columbia Basin Trust (CBT) in the province of British Columbia in western **Canada**.[60] The Columbia River Treaty between the governments of Canada and the United States, which had been under consideration from the mid-1940s, was implemented in 1964. It stipulated the mode of development of large dams on the Canadian side of the border and represented a major bi-national benefit sharing arrangement (details of which is referred to a significant work by John Krutilla (1967) and summarized more recently by Yu, 2008). Canada later transferred its obligations under the agreement to the province of British Columbia, which owns and operates all hydropower facilities in the upper Columbia basin, through BC Hydro.

By the early 1990s it was apparent that the principal benefits from upstream storage dams in Canada were conferred upon major regional population centres where power services were delivered, while many of the local communities in dam-affected areas received little in the way of direct economic benefits. The residents in the basin (about 160,000 people today) felt there was a lack of prior consultation in decisions on the dams (including 2300 residents who at that time were displaced by flooding of their communities and farms (60,000 ha of high value land was flooded for the reservoirs). Numerous First Nations' cultural and archaeological sites were also submerged.

The communities in the Columbia Basin within Canada came together in the early 1990s to petition the provincial government for recognition of the injustice of this situation.[61] They coordinated efforts at the regional, district and tribal council levels under the Columbia River Treaty Committee, which first met in 1992. Facing growing local political pressure, the province agreed to set up the Columbia Basin Trust (CBT Trust Act, 1995) as a mechanism for sharing a portion of hydropower revenues with the residents of the basin.[62]

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59. The basin-wide orientation is partly because there is often more than one hydropower facility in a basin. Consequently, the adverse impacts, such as river flow changes on downstream communities, are difficult to disaggregate.
60. See www.cbt.org
61. As noted on the CBT website http://www.cbt.org/
62. The 1995 CBT Act granted the affected communities a part equity share in hydro projects that BC Hydro owned in the basin. In addition, the provincial government provided an establishment grant to the CBT for a period of five years. The long-term equity holdings of the CBT generated a return on investment of Canadian $3.8 million in 2004.

Specific aims were to '… support efforts by the people of the Columbia Basin to create a legacy of social, economic, and environmental well-being and to achieve greater self sufficiency for present and future generations'. The CBT also functions as a basin-wide public monitoring mechanism, publishing annual reports on the state of the basin, with indicators to illustrate changes in its ecological, economic and social health.

When it was formed the Columbia Basin Trust received a $295 million endowment from the province. Of this amount $45 million was reinvested for the benefit of basin residents through a range of community development and grant-based programmes that involved short-term cash investments, business loans, real estate ownership, and venture capital projects. In addition, the Columbia Basin Trust receives $2 million per year from 1996 to 2012, essentially paid for by royalties on generation, which is reflected in the power export tariff.

The province of British Columbia committed to transfer a further $250 million to an entity called the Columbia Power Corporation (CPC), a specialized equity vehicle, which is the CBT's joint venture partner in power projects in the basin. From the CPC, 50 per cent of net profits go to the Columbia Basin Trust to be spent on social, economic and environmental benefits for basin residents. The delivery of benefits under the CBT is community managed with an elected board.

Lessons drawn for the West African context include how the basin-level benefit sharing arrangement can be established, the sort of advocacy roles that local communities and local governments can play, and the essential governance requirements for benefit sharing mechanisms. The CBT Trust otherwise represents the case of how revenue sharing can address outstanding environmental and social issues of existing dams to the satisfaction of everyone concerned.

Norway derives virtually all its energy supply from hydropower. It also exports energy to other Nordic countries to enable them to displace fossil generation. Norway is relatively unique in the sense that there was little resettlement necessary in its hydropower development due to its geography. Generally the large storage projects are located in remote and sparsely populated mountain areas, whereas dam projects in the lowland areas are typically run-of-river, and many are part of the regulation schemes of existing natural lake systems designed for flood management.

Municipalities where hydropower projects are located, who forego former water uses and for negative environmental impacts, receive income from a variety of sources. These include:

- taxes and fees paid to regional and local authorities (from taxes on profits by power companies, licence fees and a resource use tax);

- the resource use tax, which is calculated on the basis of the average power generation from the plant over the last seven years – the rate was 0.172 ¢ per kWh in 2004 – of which 74 per cent goes to the municipality;

- equity sharing revenues received by counties and municipalities in the form of dividends – many municipalities have equity shares in hydropower projects;

- property taxes (most municipalities levy an annual municipal property tax based on 0.7 per cent of the market value of the power facilities);

- preferential electricity rates (for municipalities that host hydropower projects); and

- a non-recurrent amount from the electricity production company to be used in a local area business development fun).

The Norwegian legislation thus comprises a variety of measures explicitly recognizing that project-affected people – as part of the populations of municipalities in which water resources are exploited – must receive a share of the project benefits, over and above mitigation and compensation measures (WCD, 2000[63] and Egré, 2007).

63. WCD case study on the Glomma and Laagen basin.

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