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Redistribution of revenues from hydropower dams

Review of benefit-sharing mechanisms
and local control

Author information

Jamie Skinner
Judith Krauss
Peter Newborne

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International Institute for Environment and Development
80-86 Gray's Inn Road, London WC1X 8NH, UK
Tel: +44 (0)20 3463 7399
Fax: +44 (0)20 3514 9055
email: info@iied.org
www.iied.org

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Executive Summary

This study has reviewed dam projects and benefit-sharing mechanisms in 11 countries in Asia, Africa, North and South America, and Europe. The cases reviewed illustrate a range of approaches to involving local communities in development opportunities and sharing benefits, in a diversity of contexts.

The different measures established by hydropower developers and their partners, including government, may be designed for the purpose of 'compensation' for project impacts, 'enhancement' of local development conditions, and 'benefit-sharing' for 'redistribution' and 'partnership'. Compensation and enhancement measures are usually financed by the project investment budget, while benefit-sharing is typically financed by other means, including out of the operating income from the sale of hydropower. In the case of four projects reviewed, the benefit-sharing component was added onto the original project years or decades after the dam had commenced operation.

The cases reviewed illustrate different legal mechanisms for transferring funds from dam operators to recipients. Countries such as Norway, Nepal and Colombia employ legislation to effect transfers of hydropower revenues to project-affected populations, by stipulating that dam operators pay a specified tax or levy, and thereby redistributing a share in the economic rents generated. An alternative mechanism used in countries in West Africa is a tax on infrastructure assets which is a fixed percentage of the value of the capital asset, independent of annual production. A third type of arrangement is a development fund established between project developers or operators and representatives of project-affected communities or government. In the cases of project-specific funds, dedicated institutional structures are usually set up to govern and redistribute funds.

Five cases – namely, the Resettlement Trust Fund of the Volta River Authority (VRA RTF), the relationship between the Cree Nation and the Government of Québec relating to *inter alia* the Eastmain 1 and Eastmain 1-A/Rupert dams in Canada, the Glomma & Laagen projects in Norway, the Investment Fund for Local Development of the areas affected by the Kandadji dam in Niger, 'FIDEL-K' by its acronym in French (subject to final approval) and the Columbia Basin Trust (CBT) in Canada – comprise legal mechanisms separate from both project developer and government. In other cases – Makawanpur district in Nepal, the Sélingué project in Mali (post decentralisation), the annual payments by the electricity company 'SONABEL' at Komienga and Bagré in Burkina Faso and the revenue transfers to regional environment agencies and municipalities at Urrá in Colombia – the funds for 'redistribution' are paid into decentralised government budgets. In the case of the Lesotho Fund for Community Development, a major question has been raised as to political capture, which effectively puts it in a special category. For the Binga project in the Philippines, a parallel mechanism has been created to national legislation: the government levies a fixed amount of 1 centavo per kWh and the company dedicates 1 per cent of projected net income after tax to a voluntary corporate sustainability responsibility fund.

Partnerships between project-affected communities and dam operators have been established where local communities have the possibility of acquiring equity stakes, namely in the Cree Nation and Glomma & Laagen cases. Such active partnership in the business venture will entail business risks.

This review shows that the creation of such benefit-sharing mechanisms, described by one commentator in 2008 as "still rare", has now evolved into a substantial body of experience. The cases reviewed underline, however, the challenges of establishing and maintaining local benefit and control. Where funds are paid into government budgets, the risk is that they will be absorbed and applied as general expenditure. Despite the intent to create a 'benefit-sharing' mechanism, the needs and aspirations of local communities may still be subordinated to national, or regional, development priorities. To outweigh that, adequate representation of local communities on the decision-making bodies responsible for allocating funds is crucial. In principle, one may expect that local benefit and control will be more likely realised through an entity that is separate and independent of both the project developer and government; in practice, this will depend on the degree of accountability and transparency of decision-making.

At the heart of this issue are the policy goals and objectives – the extent to which redistribution to project-affected populations is intended. Where funds are transferred into a government budget at national level to finance a national strategy, as for example in the Nam Theun 2 case in Laos, their role is prescribed as extending beyond the project area, acting as a vehicle for redistribution of revenues in the national interest, rather than being motivated by local development. Funds distribution will, *a priori*, be remote from local perceptions of local need. In contrast, the funds from the VRA RTF were designated for the benefit of the 52 resettlement townships, and the future FIDEL-K fund at Kandadji also envisages targeted support for local populations. The degree of local control is mapped as illustrated by the cases reviewed. As are the range of economic, social and environmental activities that the different benefit-sharing mechanisms are designed to fund.

The scale of benefits and volume of funds deployed by these cases of benefit-sharing varies greatly. Overall, this body of experience points to a wide range in terms of the ‘acceptability’ of the level of royalties, between a minimum of 2 per cent and a top level of 15 per cent of project revenues. In terms of the weight of funds at municipal level, the levels vary between 1.9 per cent of municipal budgets in Norway and 90 per cent in Mali. The percentage levels provided for in these cases do not seem to be based on an assessment of ‘need’, or least not one arrived at by a systematic needs assessment. Preferred mechanisms are a tax or royalty on either installed capacity/infrastructure and/or on income streams from hydropower sales. In contexts of increasing variability in rainfall and river flows, it will be important to avoid a dependency on a sole source of funds. In the case of the Cree Nation, the funds are drawn from three different types of resource extraction, likely to guarantee funds in every year, whereas in other cases revenues only generated by hydropower may drop substantially in some years due to drought, dam repairs or for other reasons (e.g. local conflicts and political instability). The scale of benefits arrived at will, typically, be the product of the politics of engagement between project developers and project-affected populations, with the best settlements for local people – for example in the Cree Nation and CBT cases – resulting from their ability to mobilise and organise themselves and to negotiate through their representation on relevant decision-making bodies.

The cases presented here demonstrate that there is no single approach, but a range of possible measures and mechanisms to be adapted to local and national circumstances. They show that governments around the world have responded creatively to using revenue streams to address local social and environmental issues, or to create central funds to stimulate investment in national development. This shows that where hydropower dams are highly profitable some of their financial resources can be used to support local development in flexible ways, or to mitigate environmental and social impacts arising during their lifetime.

List of abbreviations

ADB	Asian Development Bank
AfDB	African Development Bank
CAR	Autonomous Regional Corporation (Corporación Autónoma Regional), Colombia
CBT	Columbia Basin Trust
CCoC	Constitutional Court of Colombia
CIPA	Inter-community committee of affected populations, Kandadji, Niger
CoC	Congress of Colombia
CRT	Columbia River Treaty
CSR	Corporate sustainable responsibility
CVS	Corporación Autónoma Regional de Los Valles del Sinú y del San Jorge
DDC	District development committees (Nepal)
EDM	Electricité de Mali
EIA	Environmental Impact Assessment
ESIA	Environmental and social impact assessment
ESIA	Environmental and social impact assessment
FGD	Focus Group Discussion
FIDEL-K	Investment Fund for Local Development of the areas affected by the Kandadji dam, Niger
GCC	Grand Council of the Crees
GDD	Ghana Dams Dialogue
GDP	Gross domestic product (PIB in Spanish)
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoG	Government of Ghana
GoL	Government of Lesotho
GoM	Government of Mali
GoN	Government of Norway
GoNe	Government of Niger
GoNp	Government of Nepal
GoP	Government of the Philippines
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
GW	Gigawatt
GWI	Global Water Initiative
HCDNV	High Commission for the Development of the Niger Valley
HSAP	Hydropower Sustainability Assessment Protocol
IADB	Inter-American Development Bank
IHA	International Hydropower Association
IIED	International Institute for Environment and Development

IUCN	International Union for the Conservation of Nature
IWMI	International Water Management Institute
KfW	<i>Kreditanstalt für Wiederaufbau</i> , the German development bank
kW	Kilowatt
KWh	Kilowatt hour
LFCD	Lesotho Fund for Community Development
LHDA	Lesotho Highlands Development Authority
LHRF	Lesotho Highlands Revenue Fund
LHWP	Lesotho Highlands Water Project
MW	Megawatt
NGO	Non-governmental organisation
NIGELEC	Société Nigérienne d'Electricité
NRA	New Relationship Agreement (Cree Nation and Québec Government)
NT2	Nam Theun 2 hydropower project
NTPC	Nam Theun Power Company
PoC	President of Colombia
PPP	Purchasing power parity
RoC	Republic of Colombia
RSA	Republic of South Africa
SONABEL	<i>Société Nationale d'Electricité de Burkina</i>
SP	Strategic Priority, as set out in the report of the World Commission of Dams
UNEP	United Nations Environment Programme
USD	United States Dollars
VRA	Volta River Authority
VRA RTF	Resettlement Trust Fund of the Volta River Authority
WB	World Bank
WCD	World Commission on Dams

1. Introduction

1.1 Large dams and their impacts

Policies on engagement and involvement of populations affected by large dam projects have undergone a process of substantial evolution over recent decades.

According to the report of the World Commission on Dams, published in 2000, 40–80 million people (WCD 2000a: xxx) have been displaced by dams worldwide during the 20th century. Historically, dam projects paid little attention to the adverse impacts caused to those affected populations and to surrounding environments. Compensation for the uprooting of lives and disruption of livelihoods, and mitigation of environmental damage, was too frequently inadequate or even non-existent, leading the Commission to say that:

“Dams have made an important and significant contribution to human development, and the benefits derived from them have been considerable” (WCD 2000a: xxxviii), however “in too many cases an unacceptable and often unnecessary price has been paid to secure those benefits, especially in social and environmental terms, by people displaced, by communities downstream, by taxpayers and by the natural environment” (ibid).

Local needs and aspirations were too often ignored, or subordinated to national development priorities.

1.2 Sharing of benefits

The WCD report stimulated intense debate and proposed a major policy shift. Under the fifth of seven WCD ‘Strategic Priorities’ (SP 5), instead of displacing people from their lands and livelihoods “without giving them any control over alternatives” (WCD 2000a:240), States and project developers were urged to ensure that “adversely affected people are recognised as first among the beneficiaries of the project” and that “mutually-agreed and legally protected benefit-sharing mechanisms are negotiated to ensure implementation” (ibid, emphasis added). The WCD report emphasised that affected populations had an entitlement to participate fully in the identification of compensation/mitigation and appropriate development measures.

1.3 Purpose of this review

The present review has examined benefit-sharing mechanisms in Asia, Africa, North and South America, and Europe. The cases reviewed illustrate a range of approaches to involving local communities in development opportunities offered by dam projects, and sharing of benefits from them, applied in a diversity of contexts.

In several instances, the dams are located on international rivers, with two examples of a benefit-sharing mechanism attached to a trans-boundary agreement. The focus of this study has, however, been on how benefit-sharing mechanisms operate within national territories.

The purpose of this review is to analyse and review the growing body of experience of benefit-sharing mechanisms that are, increasingly, allowing project-affected groups and other populations in the locality or district to be party to accruing benefits, often empowering them to use those benefits as they choose to meet their own local development objectives.

1.4 Methodology

This review has comprised, first, a desk study of relevant literature and documents relating to the particular cases of benefit-sharing mechanisms; second, informant interviews and informal discussions with persons who have direct knowledge of the projects and countries in question.

1.5 Comparative analysis: points of comparison and key questions

On the basis of the information gathered, this report sets out, in Section 3, descriptions of the projects and benefit-sharing mechanisms, and then presents a comparative analysis of the latter, in Section 4. The five principal points of comparison, and the key questions considered here, are as follows:

- **Governance:** how is each benefit-sharing mechanism set up, with what type of structure? How far is it established as a separate entity – separate from the project developer and government – and independent in terms of decision-making? i.e what is the degree of local control, e.g. through representation of affected communities on the governance body/ies?
- **Scale of benefits/volume of funds:** how much funding is made available, and for whom (for how many resettled persons)?
- **Basis of calculation:** from what sources are funds drawn, by what legal mechanism for funds collection and transfer from dam operators to recipients, and on what basis of calculation in each case (e.g. percentage of income; per kWh)? How continuously are funds being paid?
- **Targeting:** to what extent are funds targeted towards villages/communities and municipalities, for local benefit?
- **Use of funds:** what types of activity are stated as being the intended use of funds, and (where different) on what activities are funds being spent in practice?

As will become clear from Sections 3 and 4 of this report, the cases of benefit-sharing reviewed demonstrate different levels of local benefit and control.

A key element of governance for local benefit and control is the decision-making structure established and process employed by the benefit-sharing entity to the spending of funds, and the extent to which project-affected populations can directly influence the use of funds.

While the cases referred to in this report come from five continents, this review does not purport to be a comprehensive global study. Further research could usefully identify and document further examples of innovation in benefit-sharing.

1.6 Projects and benefit-sharing mechanisms reviewed

The dam projects and benefit-sharing mechanisms reviewed during the course of this analysis are listed in **Table 1**. They are presented in chronological order, according to either the first filling of the reservoir or the establishment of the mechanism the subject of study. Different project ‘phases’, noted in some cases in the table, indicate where a benefit-sharing mechanism was established later, called ‘retro-fitting’. In five cases – Akosombo, Sélingué, Komienga, Bagré and the Columbia Basin Trust (CBT) – the benefit-sharing mechanism was added later, as a deliberate retrofit or as a consequence of broader legal and institutional changes (e.g. decentralization).

All the cases in Table 1 are hydropower projects, with a number having irrigation components or other express uses of the reservoir waters (fishing, flood control, grazing etc).

1.7 Report structure

The report is organised as follows.

Section 2 situates this review within existing approaches to analysis of ‘benefit-sharing’, considering classifications proposed by leading actors and commentators, and noting (alongside the key points of comparison above) four possible principal purposes of the measures adopted in favour of project-affected populations.

Section 3 describes the cases of benefit-sharing and summarises the key features of each according to three points of comparison noted in section 1.5 (namely: governance, scale of benefits/volume of funds and use of funds – the other two points are discussed in Section 4)

Section 4, first, considers which of the cases reviewed come, in terms of their principal purpose, within ‘benefit-sharing’, and, second, undertakes a comparative analysis, responding to the questions under the points of comparison noted in section 1.5 (to the extent the information available has allowed).

Section 5 sets out the conclusions of this review.

Table 1. The projects and benefit-sharing mechanisms reviewed

Project	Country/ Countries	Timing/status of the project and benefit-sharing mechanism
1. Akosombo 1960–1996 1996– ongoing	Ghana	Two distinct phases of the project: (i) the first 30 years, from the 1960s; (ii) from the creation in 1996 of the Resettlement Trust Fund by the Volta River Authority (the VRA RTF).
2. Sélingué 1981–1996 1996– ongoing	Mali	The dam was filled in 1981. Two phases: (i) 1981–1996: without benefit-sharing; (ii) from 1996, pursuant to decentralisation laws: a fixed tax on infrastructure (60% to municipality; 40% to province/region).
3. Lesotho Highlands Water Project (LHDA)	Lesotho – and RSA	The 1986 Treaty between Lesotho and South Africa provided for payments to Lesotho of royalties relating to the LHDA: 1996–1999 to the Lesotho Highlands Revenue Fund (LHRF); from 1999: to the Lesotho Fund for Community Development (LFCD).
4. Kompienga	Burkina Faso	The reservoir was filled in 1988. The introduction of the annual payment mechanism by SONABEL signalled a second project phase, with a fixed tax on the value of infrastructure paid to Kompienga municipality.
5. Bagré	Burkina Faso	The reservoir was filled in 1994. The introduction of the annual payment mechanism by SONABEL signalled a second project phase, with a fixed tax on the value of infrastructure paid to Bagré municipality.
6. Makawanpur	Nepal	In accordance with legislation, starting with the 1992 law, the Makawanpur district has received a transfer of royalties from hydropower production.
7. Columbia Basin Trust (CBT)	Canada – and USA	Established in 1995 to remedy environmental and social issues relating to existing dams on the Columbia River basin’s Canadian side.
8. Glomma & Laagen Basin	Norway	The system of taxes and equity-sharing in Norway was established by laws updated in 2000. Project revenues began to be transferred in 1998.
9. Urrá	Colombia	Construction of the Urrá1 hydroelectric project took place from 1994 to 2000, contemporaneously with national legislation on revenue transfers from power projects to regional environment agencies (‘CARs’ in Spanish).
10. Cree Nation – Eastmain 1 and Eastmain 1-A/Rupert	Canada	The 2002 ‘Agreement’ respecting a New Relationship between the Cree Nation and the Government of Québec’, plus the Boumhounan and Nadoshtin agreements relating to inter alia the Eastmain 1 and Eastmain 1-A/Rupert hydropower projects.

Project	Country/ Countries	Timing/status of the project and benefit-sharing mechanism
11. Nam Theun 2 (NT2)	Lao, PDR	The project came onstream in June 2010, with revenues generated from the sale of electricity to Thailand being applied to fund programmes under the National Growth and Poverty Eradication Strategy.
12. Binga	Philippines	In addition to a mandatory levy on power operators, the Binga operator has, since 2010, made voluntary transfers to a fund for local development.
13. Kandadji	Niger	The 'Investment Fund for Local Development of the areas affected by the Kandadji dam' or 'FIDEL-K' by its name in French, is envisaged to commence operation in 2016 (subject to approval by Niger government').

2. Approaches to Analysis of ‘Benefit-Sharing’

2.1 Approaches to analysis

Different approaches have been taken towards analysing and classifying measures in favour of local populations affected by large dam projects. The points of comparison that are the subject of this review of benefit-sharing mechanisms have been stated in section 1.5, together with the particular focuses here – local benefit and local control.

This section recalls classifications proposed by leading actors and commentators, and then proposes a simple characterisation of measures in favour of project-affected populations.

2.2 The WCD classification

The WCD classification – see **Box 1** – distinguishes between ‘compensation’ measures intended to make good losses suffered by dam-affected populations (WCD 2000a:106), mitigating for lost assets or reduced access to resources as a result of dam construction, from benefits shared with populations, making them party to the stream of advantages resulting from a dam’s operation (WCD 2000a:300). The former often originate from a project’s investment budget (Wang 2012:4) and fulfil the function of offsetting or mitigating losses sustained, particularly during the construction period. By contrast, benefit-sharing mechanisms, the WCD report says, aim to ensure that populations affected by the dam and populations living in its vicinity draw palpable development benefits from dam operation lasting beyond the short term (WCD 2000a).

Box 1. Sources of project benefits, according to the WCD

1. The WCD report distinguished between six sources of project benefits:
2. (i) project revenues-related, such as percentage shares of revenues, royalties or other profits or equity-sharing;
3. (ii) project benefit-related, such as rights to irrigated land or fisheries;
4. (iii) project construction and operation-related, such as employment in construction or training;
5. (iv) resource-related, such as preferential access to catchment resources/development (fruit trees, reforestation);
6. (v) community services-related, such as provision of better health care, education, roads etc.;
7. (vi) household-related, such as skills training, interest-free loans for economic activities.

Source: 2000a:300

As shown in Box 1, the WCD report focused on the sources from which benefits accrue, though not on the mechanisms adopted to target those benefits to affected populations. In the WCD report, no particular distinction was made between monetary and non-monetary benefits. As the WCD list implies, benefits from dam projects can be as diverse as monetary proceeds from electricity sales or, in the non-monetary realm, e.g. a proportion of procurement being effected with local businesses (Rossouw 2010).

The WCD emphasises the importance of properly identifying affected people, with the requirement that the adversely affected people should “participate in the identification, selection, distribution and delivery of benefits” (WCD 2000a:243). The adversely affected people, the government and the developer/ financier should “assess and agree on the level of benefits” (WCD 2000a:243). As a general principle, the level of benefits should be “sufficient to induce demonstrable improvements in the standard of living of the affected people” (ibid).

2.3 The UNEP Compendium and background paper

The 2007 UNEP compendium 'Dams and development' sought to establish a distinction between financial and other benefits accruing from dams. The compendium moved from WCD's focus on sources of benefits towards different arrangements to administer them and to ensure they reached affected populations. Making a threefold distinction between in-kind and monetary compensation, monetary benefit-sharing and non-monetary benefit-sharing, the compendium proposed (UNEP 2007:73) three non-monetary mechanisms:

- 'livelihood restoration and enhancement';
- 'community development';
- 'catchment development';

and five monetary benefit-sharing mechanisms:

- 'revenue-sharing';
- 'development funds';
- 'equity-sharing';
- 'property taxes';
- 'preferential electricity rates'.

The second list above largely reflects the classification by Egré et al. (2002).

The distinction between monetary and non-monetary mechanisms may not always be clear. For example, while preferential electricity rates entail lower revenues for dam operators and avoided costs for users (Egré 2007:15), since there are usually no direct disbursements to communities or individuals (rather, reduced rates if and when they consume electricity), the mechanism seems more akin to non-monetary schemes granting preferential access to natural resources. Moreover, this type of mechanism entails a bias towards consumers with higher demand, drawing greater benefits due to their higher consumption levels.

Egré (2007), in a background document for the UNEP 2007 Compendium, details 12 different case studies and the monetary benefit-sharing mechanisms adopted. He argues that monetary benefit-sharing, defined as mechanisms channelling part or all of a dam project's revenues or profits to project-affected populations (2007:7), serves to make dam-affected populations party to the economic rents that dams frequently generate, with the potential to establish a partnership with local populations or build a long-term fund for economic development (Egré 2007:3). The paper uses the same five categories as the UNEP 2007 Compendium: 'revenue sharing'; 'development funds'; 'equity sharing or full ownership'; 'taxes paid to regional or local authorities'; 'preferential electricity rates or other water-related fees'.

Egré (ibid) then analyses the 12 cases according to this fivefold typology and finds that multiple examples resort to more than one mechanism (we see this reflected below, in section 2.6). He concludes that monetary benefit-sharing mechanisms defined in legislation will often involve transferring part of hydropower revenues to municipal or regional entities, generating indirect non-monetary benefits for project-affected populations, such as infrastructure, even though the funds do not target them directly. The two trans-boundary cases studied both involved transferring part of project revenues into project-dedicated funds. Overall, he notes that monetary-benefit-sharing mechanisms are recent developments.

2.4 The Hydropower Sustainability Assessment Protocol

The 2010 Hydropower Sustainability Assessment Protocol (HSAP) dedicated one section each in the preparation, implementation and operation stages of the HSAP process to project benefits, as well as to project-affected communities and livelihoods and to indigenous peoples. The HSAP differentiates between benefits and compensation payments, although the sections on benefit-sharing do not distinguish between monetary and non-monetary benefit-sharing, listing diverse examples without distinguishing between them, ranging from revenue-sharing, via capacity-building, to equitable access to electricity (IHA 2010).

2.5 The SWECO report for the World Bank

A SWECO report in 2011 for the World Bank was part of the latter's investigation of benefit-sharing in hydropower since 2008, aiming to explore lessons learned and best practice (SWECO 2011). Examining in depth 10 case studies, the report noted that the distinction between compensation and benefit-sharing may be project-specific and then identified compensation and mitigation as originating from EIA or license processes, whereas benefit-sharing is viewed as pursuing a more developmentally-oriented goal rather than mitigating impacts (SWECO 2011:12).

The working definition of benefit-sharing in the SWECO report refers to “distributing social, economic and environmental benefits *to the widest possible range of stakeholders*” (SWECO 2011:11, emphasis added), i.e. this compares and contrasts with the emphasis on local benefit specifically for affected people in the present report.

In terms of benefit-sharing, the SWECO report proposed the following five categories:

1. project design and operations;
2. ancillary investments outside core infrastructure e.g. in physical infrastructure such as roads or bridges, or socio-environmental matters such as watershed protection or social infrastructure including schools or health facilities;
3. direct disbursements, i.e. legally binding transfers pertaining to royalties, taxes, revenue-sharing, license fees or development funds;
4. institutions and capacity building;
5. policies and regulatory frameworks such as legally binding mechanisms for distributing benefits across stakeholder groups.

This classification arguably has the demerit of referring to both uses of funds (e.g. ‘institutions and capacity-building’) and administrative mechanisms for transferring them (such as ‘direct disbursements’).

Few actors or commentators now dispute that considering projects' impacts on the livelihoods of affected populations is a key prerequisite, although there remains debate on the degree to which such “externalities” should be addressed by government, by the project developer or by the donor or financier (where there is one).

2.6 Purposes of measures in favour of local populations

The present report proposes a simple four-fold characterisation of the different measures that may be put in place by project developers and partners, including government, in terms of the purpose of those measures. Cernea (2008:95) raises this issue as to the policy goal, or policy objectives, of the proposed measures.

The four headings in **Figure 1** – namely ‘**A. Compensation**’, ‘**B. Enhancement**’, ‘**C. Benefit-sharing: redistribution**’ and ‘**D. Benefit-sharing: partnership**’ – refer to the range of possibilities in terms of principal purpose of engagement with, and involvement of, local affected populations. There may be more than one purpose to the measures proposed/planned, in which case their character will (according to this analysis) depend on which purpose is dominant.

‘Enhancement’ typically comprises activities conducted in accordance with time-bound management plans especially when funded by multilateral donors with safeguard policies – typically before, during or immediately after construction for a 5 to 10 year period.

A key point is that provisions for ‘compensation’ alone clearly fall short of ‘benefit-sharing’, as they do not involve populations receiving a share of the benefits accruing from the dam project. “Compensation is necessary”, notes Cernea (2008:90), “but unfilled by other financing sources”, it is not sufficient:

“Without any doubt, compensation for expropriated lands and assets” ... with the attendant ills of “uprooting, dispossession, emotional pain” is “economically justified, legally obligatory and indispensable. But it is not capable of achieving what it is assumed to achieve: livelihood restoration and improvement”. It leaves a financial gap...”.

As will be seen in Section 3, all of the cases reviewed in this report come, in terms of their principal purpose, within ‘Benefit-sharing’, under the ‘C’ or ‘D’ headings, except four projects in their first *phases* prior to retrofitting (it has been seen that different project phases are noted in some cases in Table 1).

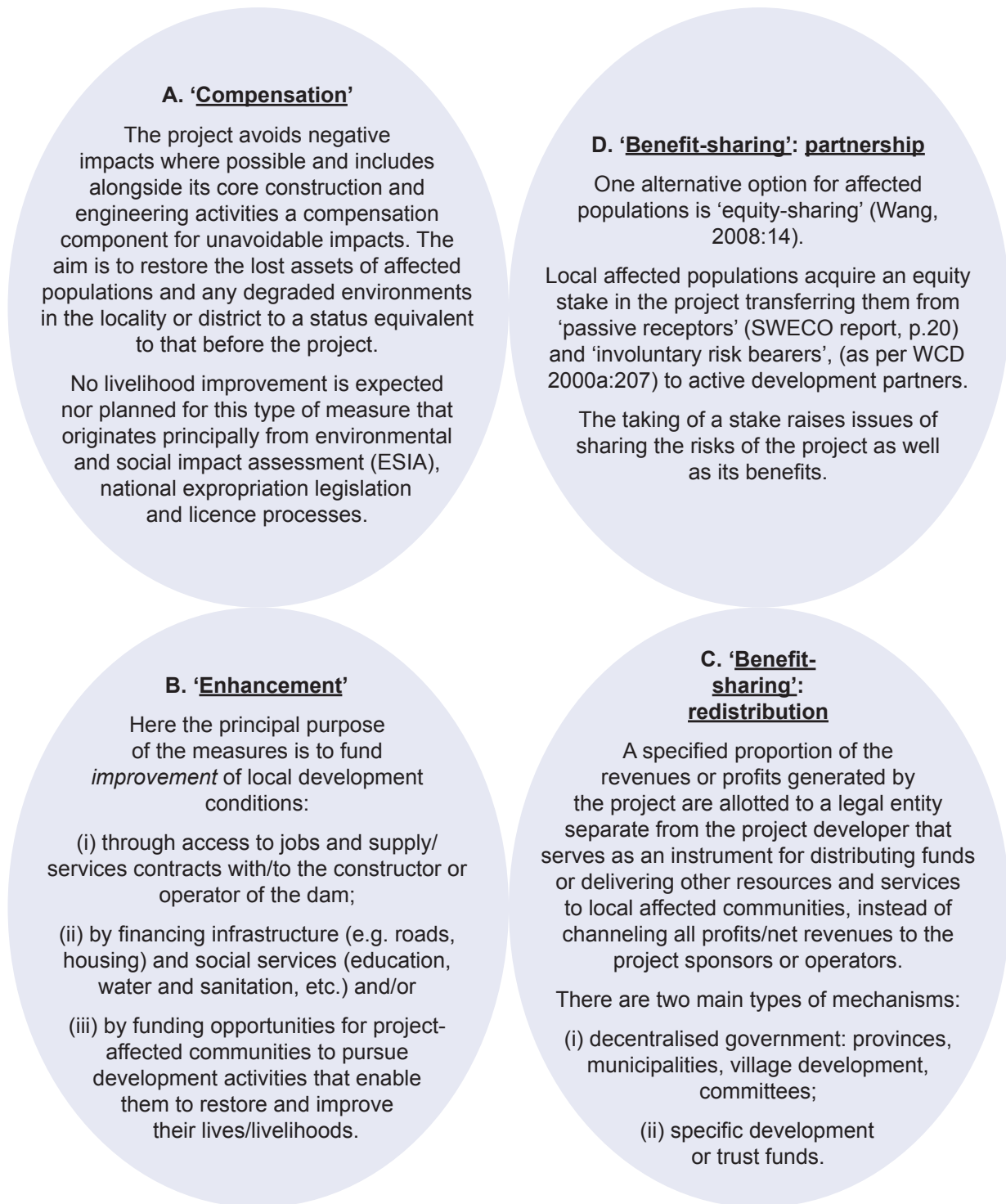
Cernea highlights how ‘compensation’ has commonly been restrictively interpreted. The extent of remuneration to those who have suffered expropriation of land and other assets must include “*the lost development opportunity intrinsic in the asset*”, instead of payment for the current value of the undeveloped asset (Cernea 2008:100).

In terms of the mechanism employed for benefit-sharing, a key difference between compensation/enhancement measures and benefit-sharing, as observed by the WCD and noted in section 2.2 above, is that the former are usually financed by the project investment budget, while the latter are typically financed by other measures, including the operating income of a hydropower project.

In practice, it can be difficult to draw a categorical line between compensation – and enhancement – on the one hand and benefit-sharing on the other, because benefit-sharing mechanism may be an extension of compensation and enhancement (Wang, 2012:5).

The cases reviewed here illustrate the different kinds of legal mechanism which may be created for benefit-sharing in different contexts, including countries with greater or lesser degrees of decentralisation. Two of the cases in this selection correspond to D. the ‘partnership’ mechanisms for benefit-sharing. “Giving shares to displaced people ... while positive in itself, also exposes them to a whole new set of risks related to how the shares will be priced by markets” ... “paper shares cannot be eaten – they need other accompanying benefits” (Cernea 2008:100). Benefit-sharing mechanisms designed to benefit local communities may also be prone to “elite capture” (Wang 2008:18). Section 4 includes a specific focus on local control and benefit.

Figure 1. What is the principal purpose of the proposed/planned measures in favour of local populations?



3. Descriptions of Benefit-Sharing Mechanisms

This Section describes each of the cases reviewed, and summarises (in sections 3.1.6, 3.2.8 and 3.3.2) the following key features of each, according to the following points of comparison, namely in this Section:

- **Governance:** how is each benefit-sharing mechanism set up? with what type of structure?
- **Scale of benefits/volume of funds:** how much funding is made available, and for whom (for how many resettled persons)?
- **Use of funds:** what types of activity are stated as being the intended use of the funds?

The projects and benefit-sharing mechanisms presented illustrate a wide range of approaches to involving local communities in development opportunities offered by dam projects – in terms of governance structures to manage the benefit-sharing, scales of benefits/volumes of funds, and use of funds.

3.1 Cases of benefit-sharing mechanisms in operation – Africa

3.1.1 Akosombo, Ghana

The project

The Akosombo dam (1038 MW) was constructed by the Volta River Authority (VRA) on the Volta River in Ghana in the 1960s, as a multi-purpose dam with a primary focus on hydropower generation. As a result, 80,000 people were displaced (Skinner et al. 2009). At the time of its completion, in 1965, it was not yet international practice to consider the trade-offs between national development priorities, such as electricity production, and socio-economic disadvantages to families and villages affected by the dam.

The 'Volta River Authority Resettlement Trust Fund'

The 'Volta River Authority Resettlement Trust Fund' (VRA RTF) was established in 1996 by the Government of Ghana and the VRA (VRA RTF 2006). Almost exactly 30 years after the dam was completed, a mechanism was thus set up to ensure that revenues arising from the Akosombo dam's operation would be beneficial to the populations affected by the dam's construction and operation.

The VRA RTF is managed by a Board of Trustees and its mission is to finance development projects in 52 resettlement townships (JVE 2011). Every year, the fund should receive the Cedi equivalent of USD 500,000 from the VRA. The funds are to be spent on a stated set of basic needs, education, water and sanitation, health and community infrastructure as decided by communities (through the District Assemblies) and approved by the Board (VRA RTF 2005).

The Trust Deed provides for the following members of the Board of Trustees (VRA RTF 2005):

- a Chairman appointed by the Minister of Energy;
- ten Members of Parliament from affected constituencies in the four regions of Ghana;
- two representatives from the VRA;
- three representatives from the Ministry of Energy;
- one trustee appointed by the Energy Minister.

The minimum number of trustees required by the Trust Deed is 12, with 17 being the maximum (VRA RTF 2010). The Members of Parliament are appointed to the Board by the Regional Co-ordinating Councils, a key requirement being that they have at least one resettlement township in their constituency, with the number of trustees representing each region determined in accordance with the number of resettlement townships they house (VRA RTF 2005). In recent years, the number of trustees was 15 as two outgoing trustees were not replaced immediately by the Ministry of Energy (VRA RTF 2007, 2008, 2009, 2010, 2011).

Basis of calculation

A sum of money is allocated to each of the 52 Resettlement Townships. The amount per township is calculated based on a formula taking into account population, size and existing amenities, although there have been complaints concerning this matter over time, which the Board has moved to address (VRA RTF 2005). Equally, the resettlement communities have seen some ethnic and political conflicts, rooted in issues relating to land compensation and disagreements between host communities and resettlers (VRA RTF 2006, 2007), which makes governance challenging.

The annual financial contribution from the VRA constitutes the chief source of revenue, but the trustees, in accordance with the Trust Deed, may pursue other sources of funding, including fund-raising activities, contributions from NGOs and earnings from investments (VRA RTF 2005). Since the VRA has been in arrears on several occasions over the past decade, due to operational difficulties and drought affecting total power revenues, earnings from invested capital have become a particularly important source of steady revenue to ensure the continued functioning of the fund and financing of projects (VRA RTF 2005, 2006, 2007, 2009). Of the Trust Fund's income 75 per cent is allocated to resettlement communities, with the remainder applied towards the administration of the VRA RTF's Secretariat (VRA RTF 2008, 2009, 2010). Since the USD 500,000 is a fixed amount not adjusted for inflation, the VRA RTF is unable to provide for all developmental needs of the 52 resettlement townships, given population growth from the 80,000 people originally displaced, price rises and inflation (VRA RTF 2007). In 2006, the report's narrative section explained that out of 109 project applications received, only 19 could be executed due to lack of funding, down from 21 in the previous year (VRA RTF 2007).

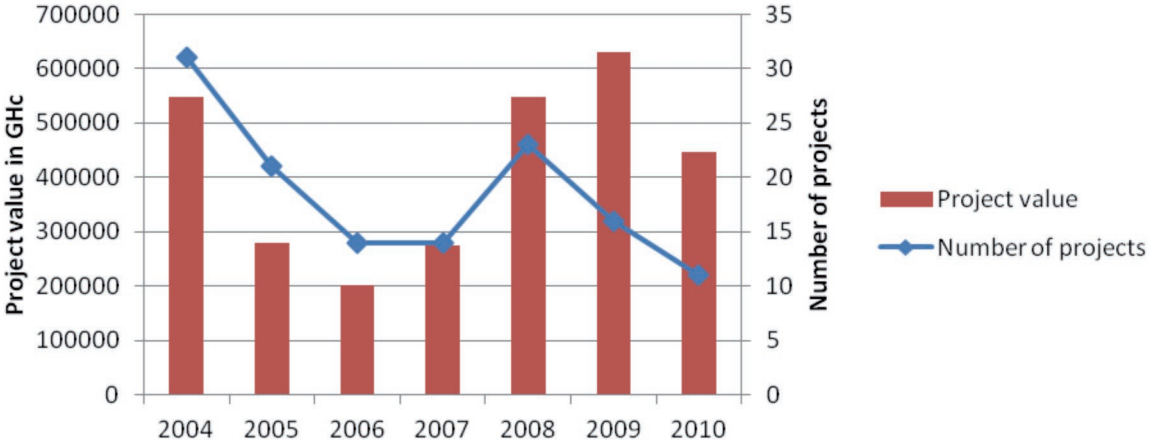
Use of funds

A particular goal of the VRA RTF has been to provide potable water to all settlements, with the VRA RTF joining the Ghana Coalition of NGOs in Water and Sanitation in 2004 and reporting collaborations with the Community Water and Sanitation Agency and Danish cooperation agency DANIDA in the following years (VRA RTF 2005, 2006, 2007, 2008, 2009). Recurring priorities have been basic-needs including water and sanitation, education and health infrastructure as well as electrification, with the first phase of electrifying all 52 townships stated to have been completed in 2003, but subsequent progress was marred by reshuffling in the sector ministry (VRA RTF 2006, 2008, 2009). The VRA RTF has also supported the acquisition of five tractors requested by the communities to facilitate agricultural projects, involving the Community and District Assemblies in the decision (VRA RTF 2006). The 2007 Annual Report announced a new 'basic needs' approach, prioritising water and sanitation, education, health, other infrastructure and human development (in that order), with an emphasis on kindergarten education (VRA RTF 2008).

This highlights that, even 30 years after the Akosombo dam began its operation, its resettlement communities have an acute need for such basic facilities as schools, health centres and sanitation. In 2007, the first stakeholder conference was organised to convene relevant actors, give communities a chance to tell their story and remedy funding shortages by tapping into alternative sources – the latter with limited success (VRA RTF 2008). The 'basic needs' priorities were retained in the following years, improving access to education by constructing kindergarten blocks or repairing primary and secondary school blocks, constructing teachers' and nurses' quarters and rehabilitating latrines (VRA RTF 2009, 2010, 2011).

The following chart shows the projects which, according to the appendices of the VRA RTF's annual reports, received funding between 2004 and 2010 (VRA RTF 2005–2011). The red blocks signify the total amounts spent, while the blue line shows the total number of projects supported according to the annual reports' appendices in the respective year. The values for the years prior to the Cedi's devaluation in 2007 have been converted into 'new' Cedis for ease of comparability:

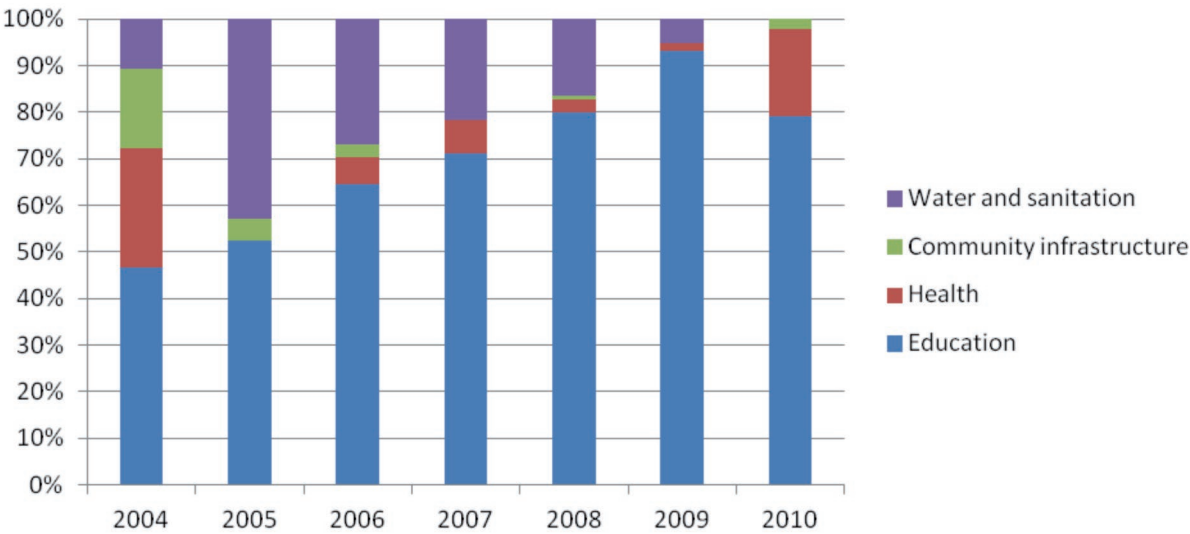
Figure 2: Values and numbers of projects financed by VRA RTF 2004–2010



The above chart shows that there is a slight tendency to support fewer projects over time. The expenditures vary considerably, which may be explained by the variances in funding available from the VRA and by return on capital investments in different years. The 2004, 2005 and 2006 Annual Reports testify to the VRA being in arrears for previous and running years’ contributions (VRA RTF 2005, 2006, 2007). The 2008 Annual Report reports water shortages reducing revenues from power generation (VRA RTF 2009).

The project types financed over the years vary considerably, as the following chart shows. The projects listed in the Annual Reports’ appendices were categorised into health, water and sanitation, community infrastructure and education projects, typically in accordance with the classification in the Reports’ narrative sections, with a library complex thus assigned to ‘education’. Some allocations are not clear-cut, as the electrification of a school block could be either community infrastructure or education; it was counted as ‘education’ here. Similarly, where more than one type of projects was listed in the same expenditure line, such as “construction of 10-seater KVIP latrines and teachers’ quarters”, the amount spent was split evenly across two or three categories. Furthermore, the calculation was based on the number of projects and values stated in the appendices, not in the narrative sections. Given these caveats, the classification below should only be taken as an approximation. The following chart represents the monetary amounts dedicated to each project type per year as percentages of the overall funding spent:

Figure 3: Monetary amounts dedicated to each project type per year as % of the overall funding spent on projects financed by VRA RTF, 2004–2010



This chart also illustrates how priorities are flexible in determining the ends to which project funds are to be dedicated. Whereas 2004 saw similar proportions spent on health and community infrastructure, with a smaller proportion funding water and sanitation projects, later years saw the focus on education projects becoming more marked, with high proportions of funding spent on the construction, rehabilitation or further equipment of kindergartens, primary schools and secondary schools. The ‘basic needs’ approach adopted from 2007 aimed to give first priority to water and sanitation projects, followed by education initiatives, but projects will be implemented in accordance with applications received, and educational facilities such as schools will usually also include sanitation facilities.

3.1.2 Sélingué, Mali

The project

The reservoir of the Sélingué dam was filled in 1981 after a four-year construction period, causing the relocation of over 12,000 local people (Bazin et al. 2011) and affecting roughly 30 villages and hamlets, with joint agreements between relocated and host populations concluded (Maïga et al. 2010). The project involved a range of donors, including the Malian government and the African Development Bank (AfDB 1988). The dam’s chief function was electricity generation to reduce the country’s dependency on thermal energy and meet growing energy demand. Further goals were, however, making a large rice-growing area of 5,000 hectares available to the population, enabling double-cropping of rice, improving navigation on the Niger River and creating opportunities for fishing and tourism (Bazin et al. 2011:39). The dam did succeed in initially providing stable electricity to Bamako and its outskirts, providing three-quarters of its energy needs from 1983 to 1985 and reducing oil imports considerably (AfDB 1988). A further initial benefit was the development of fisheries, although stocks and revenues were threatened by over-exploitation a few years later (AfDB 1988).

The Sélingué dam provoked significant inward migration, with the population of six host villages around the dam seeing their population almost quadruple from 6,178 to 22,789 over 20 years (Bazin et al. 2011:42). The municipality of Baya, for example, due to its location at the dam site, became a crossroads for provisions and services, changing from a rural into a semi-urban community (Favreau 2012). Conflicts over land emerged, between population groups and the State over rights to irrigated plots, and between host populations and ‘immigrants’, whether migrants or displaced people, eroding previous strong social ties due to growing conflicts over access to farmland and natural resources (Bazin et al. 2011:44, Favreau 2012).

Compensation

In terms of measures aiming to compensate for the Sélingué dam’s negative impacts, the compensation decided by authorities and simply agreed to by local populations materialised with varying degrees of success. Whereas on the one hand infrastructural measures concerning basic social infrastructure, reconstructing houses or improving roads were implemented (Maïga et al. 2010), on the other hand planned steps to restore local people’s livelihoods through financial or in-kind compensation for lost productive investments proved insufficient or poorly implemented. In terms of the dam’s economic benefits, the newly created fishery provided livelihoods for 2,700 professional fishers in 2009, 95 per cent of them migrants from other parts of Mali (Bazin et al. 2011:13). The industry also supports wholesalers and ice vendors, with processed products exported to the capital and other cities (Bazin et al. 2011:49). Meanwhile, the irrigated perimeters were intended to promote rice-growing as the new staple crop and open up revenue streams from marketing rice surpluses. Migrant Dogon farmers arrived with knowledge of how to grow rice successfully on irrigated plots, and in combination with government and former dam workers settling permanently, ever more applications for plots were received (Bazin et al. 2011:49). Commercial activities expanded considerably due to the population increases around the dam, with trades such as welding and carpentry seeing a sharp rise, promoting youth employment and services newly available in the area (Maïga et al. 2010).

Enhancements

As far as improvements to infrastructure and services are concerned, both water and electricity access was associated with considerable expenses. Water supply was, for example, provided, but it entailed high user costs and no maintenance mechanisms were established (Maïga et al. 2010, Bazin et al.

2011). As for electricity, the formerly state-run, since privatised, Malian electricity company, *Electricité du Mali* (EDM), does not provide local connections to local populations around the dam (Favreau 2012), nor any preferential treatment such as lowered connection costs or supply, with the minimum charge for household connections unaffordable for many families (Bazin et al. 2011:50).

Overall, the dam caused some bitterness as local communities felt that most dam-related benefits, including drinking water, electricity and rice-growing plots, were going to urban populations or new settlers (Maïga et al. 2010, Bazin et al. 2011). Whereas their region was supplying electricity for urban consumers, their own electricity supply remained one of the worst in the country (Bazin et al. 2011:53). Despite initial frustration, however, communities eventually grew to benefit from the influx of migrants and their expertise to acquire skills in irrigated rice-farming, with income-generating opportunities also in market gardening and service provision for public and private administrative bodies by women's groups and youth (Bazin et al. 2011:53).

Post decentralisation – fixed tax on electricity sales

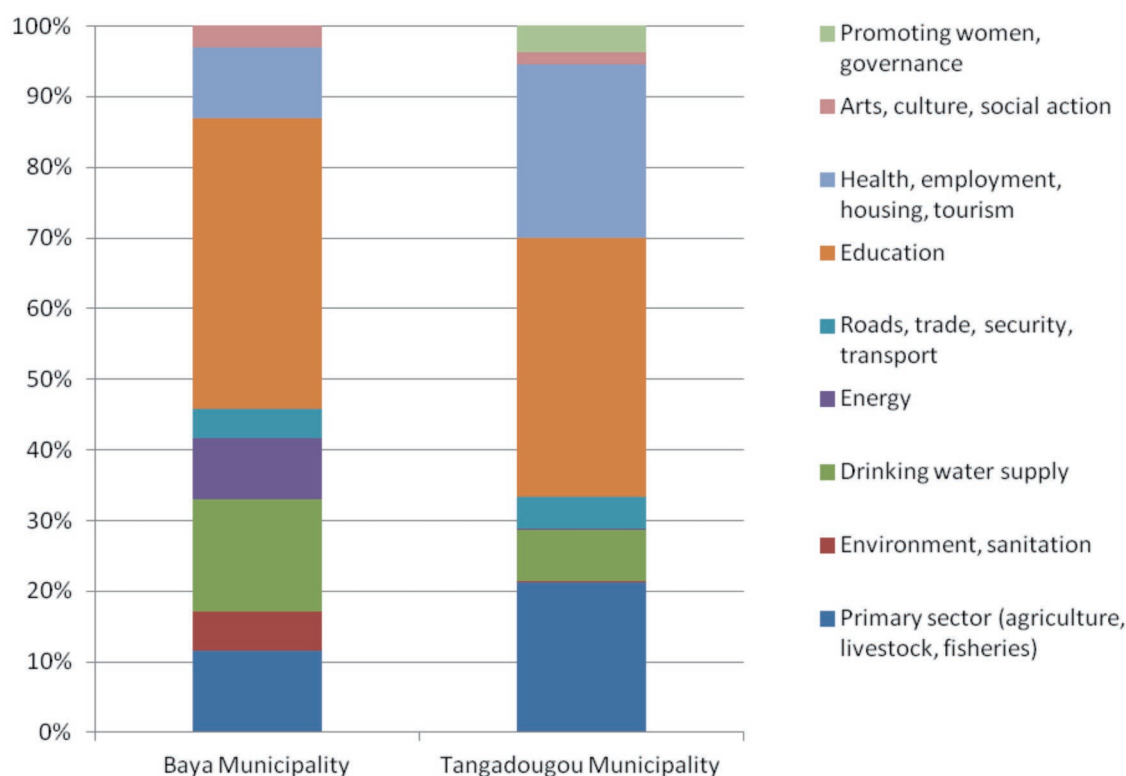
Beyond the non-monetary benefits accruing to populations in the field of economic opportunities and improved access to some services, there is also considerable tax revenue accruing to local municipalities to consider. Since 1996, under the decentralisation legislation and Law No. 96-050, the management and protection of natural resources in Mali falls under the responsibility of local government (WRI 2011, GoM 1996). With decentralisation, 80 per cent of taxes levied on EDM's sales of water and electricity has been transferred to regional authorities (Bazin et al. 2011). The tax is not specific to hydropower, but constitutes a fee levied on all economic activities of companies or trades generating revenues, with EDM the largest company active in Baya Municipality (Favreau 2012). The sum is calculated based on the value of EDM's installations, recuperated by the Tax Service and then passed on to the Treasury (Favreau 2012). Local populations are mostly unaware that payments are made (Maïga et al. 2010).

Scale/volume and use of funds

Of the above tax, 60 per cent amounting to FCFA 96 million per year (USD 400,000 2005 PPP), goes to Baya municipality, which physically houses the dam wall. Three neighbouring municipalities are affected by the reservoir and irrigation schemes. The remainder is shared 25–15 between Yanfolila 'circle' (*cercle* in French) council and Sikasso regional assembly (Bazin et al. 2011:24, Favreau 2012), with the total value steadily at FCFA 159 million since 2000 (Favreau 2012 – USD 662,000, 2005 PPP). The mayor of Sélingué has strongly criticised the absence of regular and full payment of the tax, saying that power operator, EDM, has not transferred the funds owing for 2011 and 2012 (Le Combat 2012). For 2011, for instance, more than FCFA 120 million are outstanding, constituting 90 per cent of the municipal budget (Le Combat 2012 – USD 500,000, 2005 PPP). Delays also occurred in previous years (Maïga et al. 2010). Overall, the mayor states that EDM owes over FCFA 250 million to the municipalities (USD 1.04m, 2005 PPP).

When paid, the funds generated by these taxes go directly into the municipal budget, contributing to diverse types of expenditure for the entire population not just those affected. As such, they are available to contribute to expenditure planned under multi-year development plans. The graph below shows the budget for two municipalities affected by the dam, one of which (Baya) receives tax income from the dam, while the other (Tangadougou) does not. While there are some similarities between the two municipalities that share a focus on education, it is interesting to note that primary sector activities vary greatly in magnitude, with Baya planning to dedicate only 10 per cent on livelihood-supporting measures. Secondly, the orders of magnitude are quite different, recalling that 60 per cent of dam-related taxes benefit Baya Municipality housing the dam, a level of financing that is envied by the other municipalities (Favreau 2012). The planned budget expenditure for Baya is almost twice that for Tangadougou, standing at over FCFA 1 billion compared to FCFA 630m for Tangadougou (USD 4.17m/2.62m 2005 PPP). Actual expenditure depends on whether tax revenues allow for full delivery of the budgeted plan.

Figure 4: Multi-year development plans: planned expenditure



Source: Favreau 2012

3.1.3 Lesotho Highlands Water Project, Lesotho

The project

The Lesotho Highlands Water Project (LHWP, 276 MW) falls into the category of trans-boundary projects, with the dam built in Lesotho, but considerable benefits accruing to South Africa in terms of water and power availability. The LHWP was established through a bi-national treaty between the Kingdom of Lesotho and South Africa signed in 1986 (Egré 2007), laying the foundation for high-quality water from the mountains of Lesotho to be exported to South Africa's water-scarce Gauteng Province (Scudder 2003). Phase 1 included the construction of Kate reservoir and Muela hydropower station as Phase 1A and Mohale dam as Phase 1B, stretching from 1988 to 2004 overall (Mokorosi and van der Zaag 2006). The first water from the LHWP flowed into South Africa in 1998, the same year as the first electricity was generated (Scudder 2003). It is estimated that 27,000 people were displaced due to the Phase 1A construction, with a further 325 households for Phase 1B (Thamae and Pottinger 2006).

In terms of non-monetary benefits, substantial employment opportunities were generated from construction (WB 2010c), particularly for local populations (LHDA 2009). Total jobs created through LHWP were estimated at 14,000 as of 2003 (WB 2005b). Ultimately, even loss of access to common property resources, such as grazing and fuel, were accepted as a project responsibility and cost, somewhat unprecedented at the time, although compensation for grain and common-property loss were often delayed in practice (Scudder 2003). Repeated shortcomings occurred in terms of synchronisation between social and environmental mitigation activities and construction (WB 2008). Provisions for environmental and social aspects represented 15 per cent of project costs in Phase 1A and Phase 1B, totalling USD 190 million (Yu 2008). Although the World Bank only financed 3 per cent of total Phase I costs, it financed technical support such as engineering, the environmental and social Panels of Experts and the Disputes Review Board (WB 2010b).

The development authority – responsibility for enhancement

The Lesotho Highlands Development Authority (LHDA) was established to oversee engineering, construction, operation and maintenance on the Lesotho side of the project, capturing and transferring water from Lesotho to South Africa in exchange for royalties, generating hydropower for Lesotho and promoting sustainable development in the project-affected area (Egré 2007). Among other things, the LHDA was charged with ensuring livelihoods of affected populations would not be inferior to prior living conditions (LHDA 2008), with some questioning whether this goal was achieved (Scudder 2003). Together with its South African counterpart, the Trans-Caledon Tunnel Authority, the LHDA reported to the bi-national Joint Permanent Technical Commission, later reorganised into the Lesotho Highlands Water Commission. According to critics, the Commission was composed mainly of engineers who viewed issues, including environmental and social matters, from the viewpoint of their discipline, looking for technical solutions (Scudder 2003). This opinion accords with the assessment that the overall project performed well on technical issues, but was not so well-positioned to address the complex social and environmental issues, highlighting the importance of social and environmental ‘software’ to complement the technical ‘hardware’ (WB 2008, WB 2010c).

Calculation of royalty

The 1986 treaty calculates the royalty payments that accrue to Lesotho on the difference in cost between two hypothetical systems, with the more cost-effective Lesotho Highlands Water Project implemented (Egré 2007): South Africa pays Lesotho, not for the water itself which would flow to South Africa anyway, but for the cost savings contributed by the project design (Yu 2008), with the Republic of South Africa bearing all construction costs and thus repaying the loans granted by aid agencies and lending institutions including the World Bank (Egré 2007). The benefits are split between Lesotho and South Africa at a ratio of 56:44 (Mokorosi and van der Zaag 2006). The royalty payments consist of two types of monthly payments (Egré et al. 2002, Matete 2010):

- a fixed component paid from 1996 onwards for 50 years representing the saved capital costs;
- variable payments per cubic meter of water delivered, representing saved operation costs and calculated based on cost of electricity and inflation indicators.

Lesotho Highlands Revenue Fund

As a mechanism to receive part of project revenues, Lesotho established the Lesotho Highlands Revenue Fund (LHRF) in 1991 (GoL 2009). The World Bank had insisted that a fund be established to further project-affected communities’ economic development (Scudder 2003). However, the LHRF was subsequently found in need of restructuring, with improper practices alleged (Egré 2007:89), leading to its restructuring into the Lesotho Fund for Community Development (LFCD) in March 1999, which was to be a transparently managed vehicle for poverty reduction and promotion of the country’s general development, particularly community-based development projects (LHDA 2009, WB 2010c), with funds contributed by royalties as well as a World Bank grant (Skinner et al. 2009).

Lesotho Fund for Community Development – benefit-sharing

The LFCD was designed with a particular focus on five poor districts and the capital’s peri-urban parts (Skinner et al. 2009), the intention being to use community-driven, pro-poor, transparent participatory processes to implement small subprojects improving social infrastructure, such as village water schemes or training centres (WB 2010c). The LFCD received M144 million (USD 41.3m, 2005 PPP) between 2000 and 2005, with 101 projects identified (Egré 2007), including community infrastructure, water supply, waste management, school construction, agriculture, public health, conservation and community training centres (LHDA 2005b). Primary focuses were feeder roads, conservation and water supply projects. Low budget allocations, however, caused disruption in project implementation (Egré 2007).

Despite design representing best practice and some success in practical implementation of local-development initiatives, various aspects of the LFCD have been criticised (Skinner et al. 2009). First, for not fully implementing the reforms and transparency-promoting mechanisms suggested in the wake of its predecessor, the LHRF, including new budgeting procedures and publicly available annual audits (Egré 2007). In its project performance assessment report of Phase 1B and the Community Development Support Project, the World Bank criticised the LFCD for its vulnerability to political

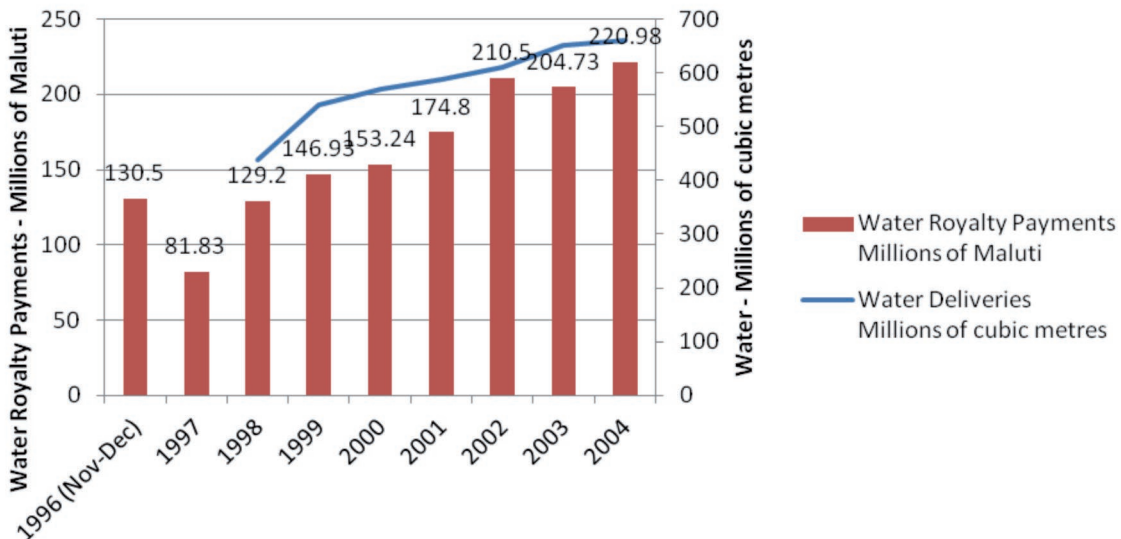
capture. Second, the LFCD's Board included four and later six ministers rather than technical experts, and the royalties received ultimately financed politically chosen, non-participatory investments (WB 2010c:26 and x–xi). Similarly, the LFCD Board, to which the two designated community members were never appointed, also was alleged to have curtailed the ability of the LFCD's management unit to function as a community development agency by dispensing with internal audit, capacity-building and technical departments (WB 2010c:26). A further challenge in implementing the LHDA's goal was the abolition of District Development Councils and Village Development Councils in 2001. These actors who were to provide technical support and play a key role in community-directed development approaches were thereby removed from the equation (Skinner et al. 2009). The lack of human resources and an alteration of agreed institutional structures affected the project's capacity to implement participatory approaches (Egré 2007).

Furthermore, compared to the original M75 million disbursement target per year (USD21.5m 2005 PPP), an average of M22 million were disbursed annually, providing cumulative expenditures of M200 million between 1991 (LHRF) and 2002 (Yu 2008 – USD 57.3 m, 2005 PPP) in lieu of the expected more than M750 million. The World Bank also drew the conclusion that directly financing LFCD from royalties raised vulnerability to capture, with funds being considered a windfall and entitlement for people and politicians. It expressed the view in its project performance assessment report that channeling funds through the central government budgetary processes would have been preferable (WB 2010c), although others argue that most revenue already accrued to the general budget rather than either of the two project funds (Egré 2007). A further comment is that project revenues have partly not been used for defined purposes (Scudder 2003) and designated for poverty reduction, but not reaching project-affected populations (Egré 2007), with other voices taking issue with the logic of simply establishing a fund and expecting transparent management without oversight by an independent committee and by civil society (Horta and Pottinger 2006:26).

Use of funds

Overall, it is estimated the LHWP contributed 4.8 per cent to Lesotho's GDP in 2007 (WB 2008), unsurprising given the project's size relative to the Lesotho economy (Yu 2008). LHWP expenditures are classed as one of three major elements influencing economic growth in Lesotho alongside manufacturing and remittances (LHDA 2005c). Royalty payments received from South Africa by the end of 2006 equalled M1,918 million (USD 550m 2005 PPP), exceeding expectations by 167 per cent (Yu 2008). The precise breakdown was:

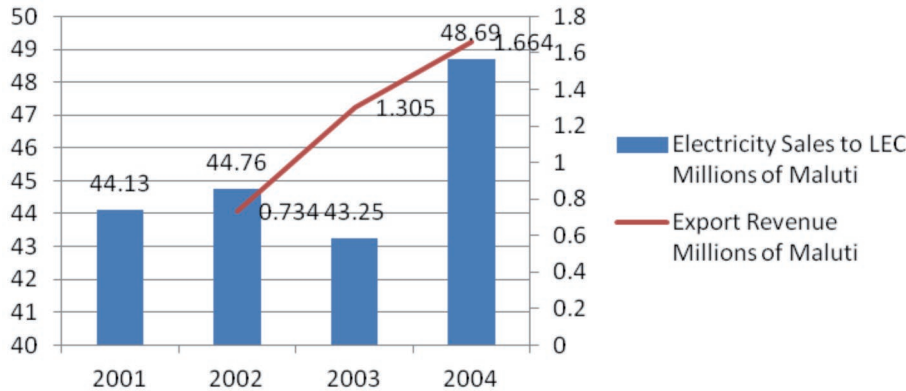
Figure 5: Water deliveries and royalty payments LHDA 1996–2004



Source: LHDA 2005a

Annual energy production of approximately 400GWh suffices to satisfy domestic needs and export surpluses, yet power generation costs are higher than costs for importing electricity from South Africa. In 2005, less than 1 per cent of total production was exported. Future prospects depend on opportunities for cost reduction for instance through full-capacity operation and growth in demand for hydropower (Yu 2008).

Figure 6: Electricity generation and sales revenue LHDA 2000–2004



Source: LHDA 2005a, LEC: Lesotho Electricity Corporation

In summary, the LHWP has been seen as controversial given the considerable environmental impacts caused and a lack of involvement of riparian communities and stakeholders (Hensengerth et al. 2012:20) as well as the impacts on both those resettled and those affected downstream, with an absence of political will to improve, not only restore livelihoods (Scudder 2003). The World Bank’s project performance assessment report rated the project Phase 1B as ‘moderately satisfactory’ and the community development support project ‘unsatisfactory’, stating that royalties were not aiding poverty reduction as initially intended (WB 2010c). The project also highlighted the importance of institutional capacity in dealing with environmental and social issues (Scudder 2003), with the absence of sound institutional procedures and two-way communication with beneficiaries cited as further problematic aspects (Skinner et al. 2009). Interestingly, in the trans-boundary domain, the project and treaty is lauded as possessing learning opportunities for other projects (WB 2010c, WB 2010d, Hensengerth et al. 2012:10), suggesting that trans-boundary benefit-sharing between States was more effectively managed than community development for local populations.

3.1.4 Kompienga, Burkina Faso

The project

Marking the beginning of a strategy laid out in Burkina Faso’s first five-year development plan, 1985 to 1989, the Kompienga hydro-electric dam (14MW), the first of its kind, was part of the country’s strategy to meet the energy demand particularly of the capital city, Ouagadougou, with the dam intended to supply 20 per cent of its electricity (Bazin et al. 2011). Previously, the country’s energy demand was covered 91 per cent by wood and 9 per cent by hydrocarbons (AfDB 1993).

Other objectives, including agricultural development, fishing and tourism, clearly were to take a secondary role to the dam’s hydro-electric function (Bazin et al. 2011). The dam was controversial even before its construction due to doubts over its financial and technical viability, leading to the withdrawal of donors including the World Bank. Nevertheless, given the strong political will of the Burkinabé government which considered the dam a national priority, other donors including the African Development Bank stepped in (Bazin et al. 2011), with a total of nine donors including the government ultimately involved (AfDB 1993). The dam led to the displacement of 1,372 people, testament to the region’s low population density (Bazin et al. 2011).

Compensation – extent

The government made compensation arrangements, though that was more at the instigation of the African Development Bank than required under national law, since the State did not recognise land ownership rights on the part of the local populations (Bazin et al. 2011). Populations were consulted on their choice of resettlement sites, subject to certain basic requirements such as fertile soils and building materials for housing (IUCN/GWI 2010b). Overall, the compensation arrangements for the displaced were considered inadequate, with collective communal social infrastructure measures provided after a considerable time lag; individual cash compensation was granted only to five villages, not to others also affected by rising water levels, while compensation levels were considered low and paid out late (Bazin et al. 2011). Similarly, the preferred choices for resettlement were not heeded, and cultural damage as well as effects on production systems were not compensated (Bazin et al. 2011).

Enhancement

Whereas numerous activities to promote economic development including hydro-agricultural facilities and the construction of a tomato-processing facility were planned, they did not materialise (IUCN/GWI 2010b). Further, activities to support livelihood adaptation to the new conditions were scarce, with the provision of ploughs and oxen for more intensive production systems and support for women's income-generating activities realised only sporadically (Bazin et al. 2011).

Considerable influxes of people followed the Kompienga dam, attracted by new economic opportunities linked to agriculture, livestock rearing and fishing and favoured by the improvement of road infrastructure (Bazin et al. 2011). With the number of inhabitants rising considerably, pressure on land increased and lands available to local populations for agriculture decreased due to the reservoir, reservoir bank protection measures and natural conservation areas, forcing production systems to change (Bazin et al. 2011). An increased number of conflicts materialised between local populations and migrants in the face of the former's fear of losing control over customary lands and the latter's increasing number. Additionally, agricultural farmers and pastoralists were in conflict due to the increased numbers of animals passing through areas in high demand. Finally, local populations and the newly arrived fishermen clashed over the latter's attempts to control groups managing fisheries-generated financial resources (Bazin et al. 2011).

The activities resulting from the dam's construction included, indirectly, the opening up of communication and trade routes and improvement of road infrastructure. Equally, fishing became a key source of livelihood, also attracting migrants. Access to water and fodder for pastoralists improved, while agriculture such as market-gardening activities also benefited (Bazin et al. 2011). Pama, seat of the province, has recently benefited from electrification, although other villages directly affected by the dam have not (IUCN/GWI 2010b). Generally, local populations feel their standards of living have improved since the dam was built, although it is unclear to what extent this is attributable directly to the dam or national public policy (Bazin et al. 2011).

Benefit-sharing

The focus on hydroelectricity generation for Ouagadougou also meant that there would be a steady revenue stream from this source, even though no provisions were made to connect the municipality housing the dam to the grid (Bazin et al. 2011:103). SONABEL, *Société Nationale d'Electricité de Burkina*, the power company, pays an annual tax of FCFA 100 million (USD 500,000 2005 PPP) into Kompienga municipality (Bazin et al 2011:103), amounting to slightly less than 2 per cent of the revenues from hydropower sales (Bazin et al. 2011). The local people are largely unaware of this monetary benefit and cannot directly influence whether these funds are used to compensate for the dam's consequences as it accrues to the municipality's core budget. In addition, the payout to Kompienga is viewed negatively by neighbouring Pama municipality, which is also affected by the dam, but does not receive any finance (Bazin et al. 2011:103).

3.1.5 Bagré, Burkina Faso

The project

Prior to the reservoir filling in 1994, the local economy in the area of Bagré chiefly revolved around agriculture, cultivating both subsistence and cash crops, with also some hunting, trade and pastoralism (Bazin et al. 2011). The dam (16 MW) was viewed as a tool to develop the Bagré area, improving self-sufficiency and food security, as well as producing hydropower, increasing livestock farming and fishing (IUCN/GWI 2010a). It thus had a broader remit than the hydropower-focused Kompienga project, aiming to also develop other benefits of a large-scale dam. Given the low population density, few people were displaced as a result of the dam construction, with only one village, Fougou, of 618 inhabitants relocated (IUCN/GWI 2010a, Bazin et al. 2011). There was significant migration into the area after the dam was built and pressure on land mounted due to a combination of demographic growth and declining availability of land. The number of conflicts over land increased, with competition for land between local populations and settlers as well as between agricultural farmers and pastoralists. Similarly, local populations occupied the irrigated plots designated for agribusiness (Bazin et al. 2011).

Compensation – extent

The dam project made little provision for compensating local populations losing land due to flooding, resettlement or the construction of dam facilities. The gap in compensation was supposedly justified due to the low local population density – the argument was that the land was not being used (Bazin et al. 2011). Resettlement occurred at a time when land legally belonged to the state (IUCN/GWI 2010a). Nevertheless, the government tried to prioritise local people in allocation of the irrigated plot perimeter to compensate for livelihood impacts, hoping to turn them into irrigated rice producers. Success was, however, limited (Bazin et al. 2011:85). Measures to compensate for negative impacts included improved community infrastructure for displaced populations including wells, educational, health and commercial facilities such as a primary school and a warehouse (IUCN/GWI 2010a). Furthermore, each displaced household received one year's worth of food, but no compensation for farmlands lost (Bazin et al. 2011:85). Other indirect and collective compensation measures have included subsidised agricultural inputs, training and credit for fishing, as well as the establishment of infrastructure and natural resource management committees (IUCN/GWI 2010a).

Enhancement

In terms of new livelihood opportunities after the filling of the Bagré dam, local people did not systematically receive irrigated rice-growing plots in compensation of their land lost given strict plot allocation criteria, a lack of interest in rice-growing and a preference to rent out rice plots to migrants, which was not permitted according to the handover criteria (Bazin et al. 2011). The public institution in charge of dam construction, has engaged in various activities to support rice growers including community organisation, agricultural extension services and providing farmer inputs (Bazin et al. 2011). For pastoralists, two pastoral areas have been designated (IUCN/GWI 2010a). To promote fishing, considerable infrastructure including 15 landings and housing lots for two fishing villages have been established (IUCN/GWI 2010a). Equally, the Taiwanese development agency supported a fish-farming project, with the Bagré reservoir declared an aqua-cultural economic interest area in 2004 (Bazin et al. 2011). Limiting factors to local economic development include difficulties with cooperatives growing rice on allocated irrigated plots, as the organisations proved inefficient. There were also problems marketing the rice (Bazin et al. 2011). Finally, eco-tourism is to be promoted thanks to the local diversity of fauna (Skinner et al. 2009), although this development is currently on hold (Bazin et al. 2011).

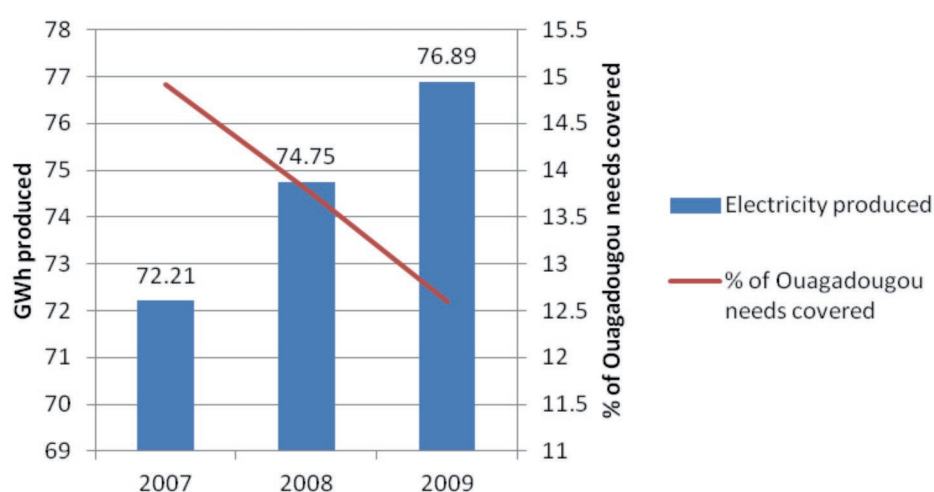
Regarding non-monetary benefits, similar to Kompienga, it thus seems that the Bagré dam has significantly transformed the local economy and the living conditions of the local population, diversifying economic opportunities, improving nutrition, transforming the region into a commercial crossroads attracting traders and providing socio-economic and community infrastructure (Bazin et al. 2011:92). Nevertheless, the advantages resulting from commercial ventures and socio-economic and community infrastructure are perceived as being unequally distributed between local indigenous populations and immigrants, accruing mostly to the new villages (Bazin et al. 2011). The results has been frustration among local families having lost their land and feeling their living conditions have deteriorated, with land-related tensions mounting (Bazin et al. 2011).

Benefit-sharing

The dam operator, SONABEL, uses 85 per cent of the reservoir's water to drive its turbines as per its agreement with the Burkinabé government (Bazin et al. 2011:87). Yet, there has been a move towards involving local communities into managing the dam and its benefits. The Bagré local water committee was established in 2007 encompassing representatives from administrative and technical services, local authorities including village development committees and municipalities, users and civil-society organisations (IUCN/GWI 2010a). This entity is intended to ensure stakeholders' involvement in local water management, although it is beset by persistent resource shortages (Bazin et al. 2011:87).

While almost 97 per cent of electricity goes to the capital, there is good, but partial, access to electricity in the dam project area thanks to local electrification campaigns funded by SONABEL (IUCN/GWI 2010a) – evidence of one of several advances in community involvement compared with the Komienga experience. Only villages whose land has been properly divided into housing lots have, however, been electrified, with some still waiting (Bazin et al. 2011:87).

Figure 7: Electricity production, Bagré 2007–2009



Source: IUCN/GWI 2010a

As far as direct financial flows are concerned, SONABEL pays Bagré municipality a sum designated for local development purposes, equalling FCFA 45 million in 2005 (Bazin et al. 2011:89; USD 225,000 2005 PPP). Frequently, however, the local population is unaware of these transfers and does not feel the impact (Bazin et al. 2011), while other municipalities such as Boussouma also do not receive payments, although 40 per cent of the reservoir is in its territory, causing tensions (IUCN/GWI 2010a). Furthermore, the amount has been criticised as being insufficient to meaningfully advance local development (IUCN/GWI 2010a:69).

3.1.6 Summary

Table 2 summarises key characteristics of these cases from Africa: the benefit-sharing mechanism, its governance, the volume of benefits/number of people resettled, and the description of the activities to be funded, i.e. the intended use of funds, at least as stated on paper. The sources of information are noted at the foot of the table. If not originally stated in USD, all monetary values have been converted into USD 2005 PPP (WB ICP 2008).

Table 2. Summary of benefit-sharing mechanisms in operation – Africa

Project/ country	Benefit-sharing mechanism	Governance	Volume of benefits/number of persons resettled	Activities to be funded
1. Akosombo, Ghana	VRA Resettlement Trust Fund (the 'VRA RTF').	Trust Fund, composed of Members of Parliament from affected constituencies, representatives of Ministry of Energy, representatives from VRA.	USD 500.000 p.a. 80,000 people, 52 resettlement townships	'Basic needs'. Education, water and sanitation, health; community infrastructure.
2. Sélingué, Mali	60% of royalties to be passed on to the municipality; 40% to province and region.	By local elected municipality as part of their budgetary process.	USD 662,500 (2005 PPP) p.a. – 12,490	As per annual municipal budget.
3. LHDA, Lesotho	Lesotho Highlands Revenue Fund – LHRF; Lesotho Fund for Community Development – LFCD.	Since, 1996, sales revenue for water/ electricity paid to LHRF (until 1999), then LFCD. Board composed of Ministers. 2 local community positions not appointed	2000–2005: USD 41.3m (2005 PPP)	Rural infrastructure. Conservation. Education Water and sanitation. Public health. Livelihoods.
4. KOMPIENGA, Burkina Faso	A fixed tax on infrastructure value paid to provincial/ municipal government	Local elected municipality.	USD454,000 (2005 PPP) – 1,562	As per annual municipal budget.
5. Bagré, Burkina Faso	A fixed tax on infrastructure value paid to Bagré municipality.	Local elected municipality.	USD225,000 (2005 PPP) p.a. – 618	As per annual municipal budget.

Sources:

VRA RTF 2005–2011.
 Bazin et al. 2011, Favreau 2012 Maïga et al. 2010.
 Egré 2007, LHDA 2009, Scudder 2003, WB 2008, WB 2012c.
 Bazin et al. 2011, IUCN/GWI 2010b.
 Bazin et al. 2011, IUCN/GWI 2010a, Skinner et al.

3.2 Cases of benefit-sharing mechanisms in operation – Asia, the Americas and Europe

3.2.1 Makawanpur, Nepal

Electricity and hydropower in Nepal

About two-thirds of the population in Nepal do not have a connection to the electricity grid. Even those who do, regularly face shortages, particularly in the dry, cool season when the hydropower plants can only deliver a fraction of their normal performance (KfW 2008). A considerable hydropower potential of 83,000 MW is ascribed to the country given its 6,000 rivers and steep slopes (Singh 2010), with the technically and economically feasible possibilities judged to be 42,000 MW (GoNp 2001). Hydropower development began as early as 1911, taking a new turn after 1970 due to bilateral and multilateral funding support and hydropower export opportunities to India being discussed (WECS 2010).

The 1992 and 2001 Hydropower Development Policies, the 1992 Water Resources Act and the 1992 Electricity Act, inter alia, govern the management of water resources and hydropower generation (WECS 2010, GoNp 2011a). The income tax holiday on hydropower had been scrapped, hydropower has been brought under corporate taxes, and royalty contributions raised (WECS 2010). When electricity generation projects encouraged rural electrification, the 2001 Hydropower Policy stipulated an exemption from the energy royalty over the first 15 years (GoNp 2001). A rural electrification fund was to be established for developing micro-hydropower and rural electrification through funds drawn from the royalty payments (GoNp 2001), an idea also incorporated into the Tenth Development Plan 2003–2008 (USAID 2003). These measures suggest a willingness to ensure that the benefits accruing from hydropower development also aid the national and local populations affected.

Royalties

As far as monetary benefits are concerned, since the 1992 Hydropower Policy and 1992 Electricity Act, hydropower projects have been obliged to transfer royalties to the government (Skinner et al. 2009). These royalties are being partially redistributed to municipal and regional levels through the 1999 Local Self-Governance Act and Rules (GoNp 1999a,b). The 2001 Hydropower Development Policy defined two royalty regimes for commercial projects up to 1,000 MW capacity, one for projects providing electricity for domestic consumption, and one for export-oriented hydropower (GoNp 2001). Two types of royalty are payable, an annual capacity royalty per kW, and one energy royalty to be paid per kWh, with both increasing after 15 years of commercial operation (all USD values are 2005 PPP) – see **Table 3**.

Table 3. Nepal – royalty corresponding to domestic consumption

Electricity Capacity	Up to 15 years		After 15 years	
	Annual capacity royalty, per kW	Energy royalty, per kWh	Annual capacity royalty, per kW	Energy royalty, per kWh
1 Up to 1 MW	–	–	–	–
2 From 1 MW to 10 MW	Rs. 100/USD 4.42	1.75%	Rs 1000/USD 44.15	10%
3 From 10 MW to 100 MW	Rs. 150/USD 6.62	1.85%	Rs 1200/USD 52.98	10%
4 Above 100 MW	Rs. 200/USD 8.83	2.00%	Rs. 1500/USD 66.23	10%
5 For captive use	Rs. 1500/ USD 66,23	–	Rs 3000/USD 132.45	-

Source: GoNp (2001:26)

For export-oriented projects, royalties are considerably higher:

Table 4. Nepal – royalty relating to export-oriented projects

Type	Up to 15 years		After 15 years	
	Annual capacity royalty, per kW	Energy royalty, per kWh	Annual capacity royalty, per kW	Energy royalty, per kWh
1 Export-oriented 'run-of-the-river' projects	Rs. 400/USD 17.66	7.5%	Rs. 1800/USD 79.47	12%
2 Export-oriented storage projects	Rs. 500/USD 22.08	10%	Rs. 2000/USD 88.30	15%

Source: GoNp (2001:26)

Use of funds

Under the amended Local Self-Governance Rules 1999 and the 2007 Electricity Ordinance, hydropower royalties have been redistributed between the national exchequer, the district development committee and the development region housing several DDCs: the national exchequer receives 50 per cent, the remainder is split between a regional share benefiting all districts of the concerned development region (38 per cent) and the district share going directly to the DDC, which receives 12 per cent (IUCN/GTZ 2005, Singh 2010). The provision of hydropower royalties to DDCs also supports devolution of decision-making to the local level by making financing available (IUCN/GTZ 2005). There is no legal provision, however, for how the funds are to be used, other than that they must not be spent on administration (GoNp 1999b), leading to some uncertainty as to their eventual use. The Department of Electricity Development redistributes the royalties received to the DDCs (IUCN/GTZ 2005), with NRs 390 million distributed to 66 out of 75 DDCs in 2011–2012 (GoNp 2011b – USD17.2m, 2005 PPP). There have, however, been issues relating to the continuity and promptness of payments in the past, for instance in 2003/04 (IUCN/GTZ 2005). The redistribution of both district and regional shares poses questions of equity when several districts jointly host dam infrastructures, as does the division of regional royalties between districts that already receive the district shares and those which do not (IUCN/GTZ 2005).

Makawanpur – use of funds

Similarly, Makawanpur DDC has developed its own policy, in the Guidelines for Distribution and Use of Hydroelectricity Revenue (DDC 2006a in Khatri 2011). Makawanpur is home to 43 village development committees and one municipality (Khatri 2011), with 65 per cent of the total DDC’s revenues contributed by hydropower royalties in fiscal year 2001–02 (Upadhyaya 2006:83, cited in Egré 2007). Makawanpur DDC is still the recipient of the highest single amount of royalties, at NRs 32.4 million in 2011–2012 (GoNp 2011b–USD 1.43m, 2005 PPP).

The Guidelines governing revenue distribution obliges the Makawanpur DDC to spend the royalty principally in accordance with the Local Self-Governance Act. It further stipulates that 50 per cent of the electricity revenue received will be redistributed to hydropower-affected communities as follows (DDC 2006a, DDC 2006b reproduced in Khatri 2011, Joshi n.d.): 20 per cent for the upstream watershed area, 15 per cent for the downstream area; and 15 per cent for the area affected by hydropower infrastructure. The revenue is to be spent on activities in five categories (DDC 2006a, DDC 2006b cited in Khatri 2011): ‘social mobilisation and poverty reduction’; ‘conservation’; ‘rural electrification’; ‘infrastructure development’; and ‘human resource and institutional development’. A provision prohibiting the use of funds for administrative expenditure is restated in the Guidelines. Upstream communities’ share of the revenue is to be managed by the Environmental Management Special Fund, coordinated by a DDC sub-committee. That is with a view to improving local communities’ livelihoods and environmental conditions (DDC 2006a,b in Khatri 2011).

In addition, the private sector hydropower companies are obliged to sell shares to locally affected communities in accordance with the Securities Registration and Issue Regulation 2008, requiring 10 per cent of shares to be reserved for the residents of the industry-affected, who cannot sell them within three years of purchase (Sebon 2010).

3.2.2 Columbia Basin Trust, Canada

The Trust

The Columbia Basin Trust (CBT) is an example of a trans-boundary arrangement, with the project involving both the United States and Canada. Some benefits of the infrastructure built on Canadian soil accrue to the United States (Hensengerth et al. 2012:11). Some 2,300 people were displaced by dams and 60,000 hectares of high-value land were flooded, with cultural heritage and burial sites also submerged (Egré 2007). The bi-national Columbia River Treaty (CRT) was signed in 1961 and ratified in 1964, terminable at the earliest in 2024 provided a ten-year advance notice is given (CRT 2012). The construction of three storage dams in Canada that also generated power and flood control advantages for the U.S. downstream were to be compensated through an upfront fixed payment equalling the discounted present value of the flood control plus the rights to half of the extra electricity produced thanks to additional storage. The energy rights were then sold on to British Columbia (Egré et al. 2002).

Through this compensation architecture, the design of a unilateral project upstream in Canada was altered to increase aggregate benefits, with compensation accruing to the party incurring potential losses and the benefits of cooperation shared bi-nationally (Hensengerth et al. 2012:11). Canada ceded its obligations under the treaty to the province of British Columbia, with operator BC Hydro now operating the hydropower facilities in the upper Columbia basin (Skinner et al. 2009). The benefits accruing to the United States in the way of electricity production and flood prevention were sufficient to finance the infrastructure in Canada, with the projects managed so as to generate substantial income for Canada and endow the CBT for the benefit of 170,000 basin residents (Hensengerth et al. 2012:16).

Retrofit

The CBT was established in 1995 to remedy environmental and social issues pertaining to existing dams on the Columbia River basin's Canadian side (UNEP 2007:83). The CBT's creation followed repeated petitions from project-affected people to address outstanding issues through the considerable economic rent generated by the dams (UNEP 2007:83). At that time, benefits were accruing to population centres, but few direct economic benefits were going to local populations, with particularly First Nations' representatives coming together in the early 1990s to voice disappointment at the lack of prior consultation on dam decisions and make their case for recognition of these inequities (Skinner et al. 2009). The CBT was formed with the express purpose of investing assets to promote all three facets of sustainability, i.e. the social well-being of the region's residents, environmental protection in the basin and the region's economic development (CBT 1996).

Transfer and use of funds

The agreement for establishment of the CBT provided for the transfer of CAD295 million to Basin residents from British Columbia (USD 244m 2005 PPP), with CAD45 million used as an endowment for the CBT (CBT 2008). By way of a steady revenue stream, the CBT received an annual CAD2 million from 1996 through to 2010 for operations (CBT 2008). A further CAD250 million was transferred by the province of British Columbia to the Columbia Power Corporation, an entity functioning as the CBT's joint venture partner in power projects which transfers 50 per cent of its net profits to the CBT to benefit basin residents (CBT 2008). CBT is also a half-owner of three power infrastructures in the Columbia Basin, while its non-power portfolio comprises a number of investments ranging from business loans to deposits (Egré 2007).

Governance

A board of 12 directors governs CBT, with the five regional districts and the Ktunaxa Nation Council designating at least one and at most four nominees. Beyond one appointee each, the other six directors are appointed directly by the Province (CBT 1996, 2011b, 2012b). Guidelines have been defined governing the desired mix of attributes and competencies of directors, as well as the diversity of the board (CBT 2011b). The Delivery of Benefits Committee, comprising between three and six

directors, can approve community development projects within limits defined by the board, as well as recommending strategies on 'delivery of benefits' to the board (CBT 2011b). It is a requirement that all directors be resident in the Columbia Basin. The directors must, uphold standards such as transparency, participation and commitment and the values of the Columbia Basin Management Plan (CBT 1996, 2012b).

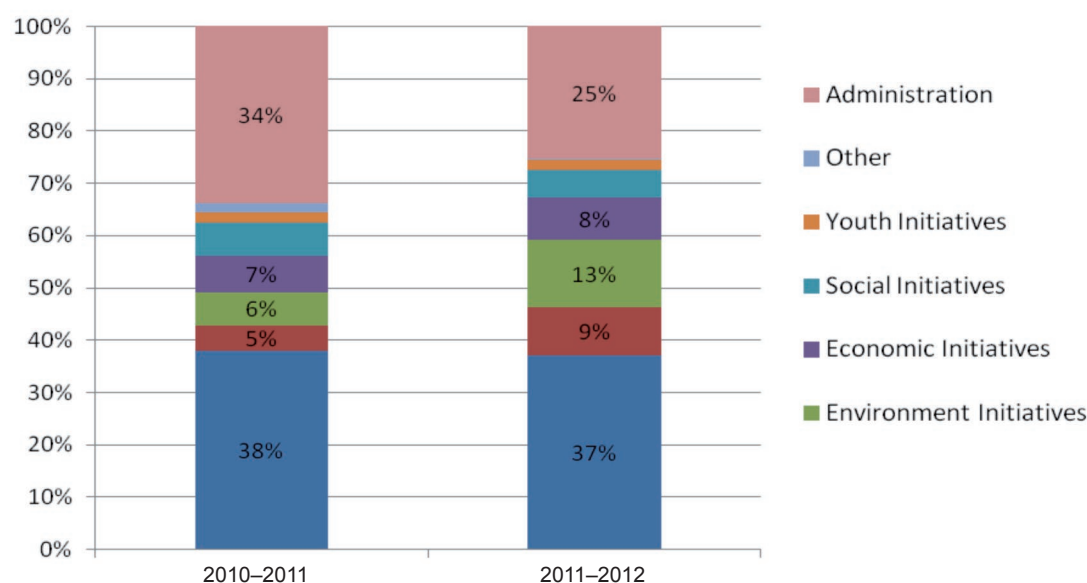
Use of funds

The CBT uses its net income to deliver benefits in consultation with three volunteer advisory committees for social, economic and environment issues, and another two programme advisory groups advising on youth and water initiatives, contributing community perspectives (CBT 2012b). Equally, advisory committees, which are to include residents from different Basin communities, constitute a mechanism holding CBT accountable to Basin residents, facilitating input while also ensuring communities are kept informed (CBT 2012c). Through this mechanism and its annual reports including indicators on the basin's ecological, economic and social health, the CBT doubles as a public monitoring mechanism (Skinner et al. 2009). The CBT's mission consists in investing capital and managing the assets of CBT through its Investment Program, but also spending the income earned to deliver benefits to the Columbia Basin and its residents in accordance with its strategic priorities, including encouraging long-term stewardship of natural assets and supporting local communities (CBT 2011a). According to its own surveys, three-quarters of residents and 96 per cent of partners believe CBT is attaining its goal of making a positive difference (CBT 2012b).

A significant project-generated rent, in combination with the persistence of project-affected populations, thus enabled the creation of a community-managed trust fund supporting various projects, with communities themselves defining priorities (CBT 2012b). Its direct funding benefits in 2011/12 stood at CAD18.2 million (USD15 million, 2005 PPP), exceeding the previous year's result by 60 per cent (CBT 2012b:3). Funds to deliver benefits are usually spent through grants to community projects, community partner-delivered programs, partnerships with complementary organisations and support for community and regional discussions (CBT 2012b). Its forecast has benefits to be delivered in 2012/13 rising by CAD1.8 million, to CAD20 million overall (USD16.5 million 2005 PPP). In 2011/12, however, it recorded revenue deficits due to an unplanned shutdown for repairs and one-off financing costs for two power projects, highlighting the unpredictability associated with a single source of revenue. This uncertainty is to be moderated through a conservative investment approach always retaining enough funds to ensure continual delivery of benefits (CBT 2012b). Projects in various spheres are eligible for funding from the CBT operating under the motto 'a legacy for the people'. The CBT runs programmes ranging from an affordable rental housing initiative via community-directed youth funds to environmental initiatives, with programmes delivered through community partner organisations (CBT 2012a).

In 2011/12, the CBT introduced a community-directed funds initiative aiming to 'shift decision-making from CBT to groups of communities' working together to administer funds in accordance with their priorities (CBT 2012b). This initiative complements the long-running 'community initiatives program' fostering ideas which may not have been pursued otherwise, with funds distributed once a year to local government partners with their own processes for selecting worthy projects. All areas receive this funding, with funds allocated per-capita, supplemented by funds from the 'Affected Areas Program' assigned to the areas most affected by dam construction under the CRT (CBT 2011c). Through this provision strategy, communities are empowered to make their own funding decisions in accordance with local priorities (CBT 2011c). Further examples of initiatives include student wage grants as well as funds to support the Nature Conservancy in preserving a property on Columbia Lake's east shore, with another example being the delivery of high-quality broadband access through a new subsidiary to improve both private connections and business competitiveness (CBT 2012b). The diversity of project fund use can be seen from the following chart:

Figure 8: CBT expenditure – annual reports 2010/2011 and 2011/2012



Source: CBT 2012b

Although it is unsurprising that, as the figure shows, community development constitutes the greatest item of funding at roughly one-third, there is a considerable diversity of objectives on which funds are spent, ranging from environmental to youth matters, to ensure benefits to a wide range of recipients. Thanks to its sophisticated governance structure, the CBT brings on board community priorities in allocating funds to different uses, using volunteer advisory committees on social, environmental, economic, youth and water matters for advice. Further, thanks to its community investment programme/affected areas programme, funds are allocated directly to local government delivery partners to answer to priorities identified in the respective community.

The case of the CBT thus encompasses an endowment, a share in the income and partial ownership of the infrastructure, thereby sharing benefits with project-affected communities through a number of revenue streams while also ensuring they are represented in the decision-making in a number of ways. It is worth noting that the CBT was established 30 years after the original treaty was ratified following repeated requests from project-affected communities, also constituting an instance of 'retrofitting'. It is evident that even if provisions were not made originally, a participatory structure spreading benefits to diverse target groups can be established retroactively.

3.2.3 Glomma & Laagen Basin, Norway

Hydropower in Norway

Norway has the world's highest hydropower production per capita, drawing 96 per cent of its electricity production from hydropower in 2009 (GoN 2010) and 99 per cent in 2010 (IJHD 2010), and exporting electricity to other Scandinavian nations (Skinner et al. 2009). The Watercourse Regulation Act from 1917, the Energy Act 1991 and the Water Resources Act from 2000 govern hydropower and benefit-sharing in Norway (Egré 2007, SWECO 2011). Overall, the largely run-of-the-river hydropower dams have caused little displacement (Wang, 2012), with national legislation requiring impact assessments for plants over 30GWh if significant environmental or community impacts are expected (GoN 2008b). Local authorities wholly or partly own about half of all electricity generation or distribution companies, equating to approximately 55 per cent of Norway's generation capacity, with the State owning a further 30 per cent of companies. Dividends accruing to the public sector from hydropower generation are thus substantial (Egré 2007).

Diversity of mechanisms for benefit-sharing

As dams generate a significant economic rent, Norwegian legislation makes provision for various types of benefit-sharing, including revenue sharing, equity sharing, development funds, property taxes and preferential electricity rates (UNEP 2007). The mechanisms are founded on the logic that project-affected people in local municipalities must be made privy to project benefits beyond mitigation. Relative contributions of hydropower to the municipal budgets are, nevertheless, small (Egré 2007), 1.9 per cent in the case of Glomma & Laagen basin (WCD 2000b).

Hydropower operators are required to share revenues with the general public in a number of ways: a tax of 28 per cent is payable on all profits of power companies (GoN 2008a), with 20.75 per cent going to the State, 2.5 per cent to the county and 4.75 per cent benefiting municipalities (Egré et al. 2002). Hydropower producers transfer NOK 0.013/kWh (US cents 0.14, 2005 PPP) in natural resources tax to municipal and county authorities irrespective of the operator's profitability, with NOK 0.011 thereof allocated to the municipal authority and NOK 0.002 to the county authority (GoN 2008a). The tax is determined per power station on the basis of the plant's total electricity output in the income year and six previous years, but that does not constitute an extra financial burden since the tax paid can be deducted from income tax (GoN 2008a). A basic interest tax of 30 per cent on calculated revenue minus operating costs is levied on returns above the tax-free income (Nordenergi 2012). In 2006, the total revenue from natural resources and basic interest taxes equalled NOK 5.3 billion (GoN 2008a:35 – USD 0.6bn, 2005 PPP).

Municipal authorities are also entitled to levy a property tax on the production plant calculated on a profitability basis (GoN 2008a). Property tax rates stood at 0.7 per cent of the calculated market value of the power plant prior to 2011, which varied from NOK 0.95/kWh to NOK 2.35/kWh (USD 0.11–0.27 2005 PPP). The maximum will rise by 5 per cent from 2012 and another 11 per cent from 2013 (Nordenergi 2012). Total income from property taxes for hydropower plants is thus expected to increase by NOK100 million in 2012 and NOK320m in 2013 (Nordenergi 2012 – USD 11.3m/USD36.2m 2005 PPP).

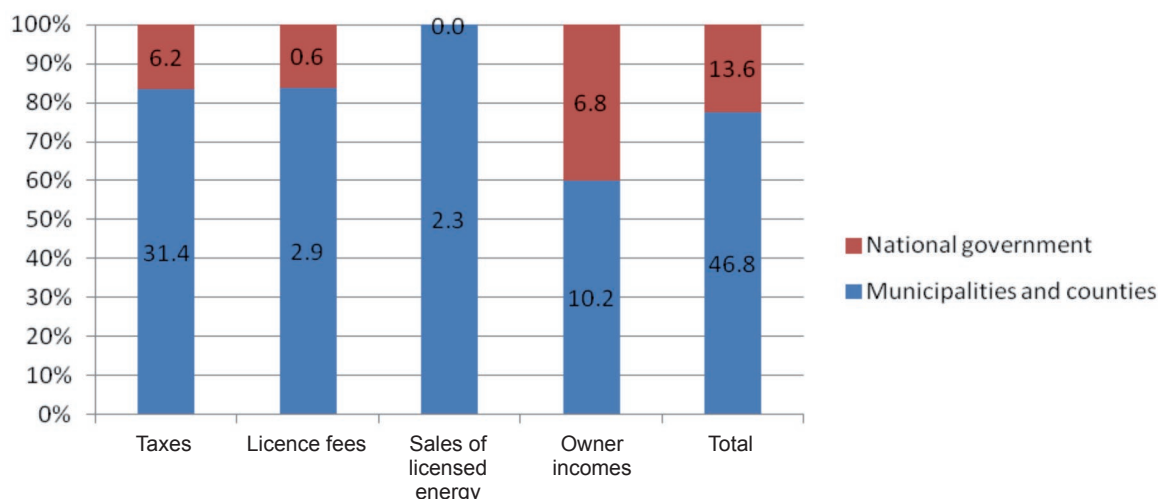
A further vehicle is licence fees, representing compensation for damage caused to districts through exploitation of water resources (GoN 2008a). They are calculated within a minimum–maximum bracket by an assessment attaching importance to degrees of environmental disturbance and profitability (GoN 2008a). The Norwegian Water Resources and Energy Directorate can adjust the fee every five years, with municipal authorities receiving NOK520 million and central government NOK126 million in 2007 (GoN 2008a – USD58.9m/14.3m PPP 2005).

Hydropower-affected municipalities have the right to buy a proportion of the generated power. Licensees can be required to sell at cost price to different levels of government: up to 10 per cent of electricity generated to the municipalities (Nordenergi 2012), with the county entitled to purchase any surplus if the municipality does not consume the full 10 per cent (GoN 2008a), and up to 5 per cent to the central government (GoN 2008a). As municipalities own equity shares in the hydropower project, they also receive benefits, with a non-recurrent amount also to be paid to municipalities to support a business development fund benefiting the local area (Skinner et al. 2009). There is, thus, a wide range of mechanisms in place to ensure benefits accrue to the areas hosting the hydropower project: business development fund, licence fees, preferential electricity rates, equity sharing as well as natural resource and profit taxes.

Equity-sharing

The Glomma & Laagen Basin in Norway is a good example of equity-sharing, as the majority of power companies in the Basin are publicly owned (Wang, 2012), giving public authorities a duty to balance all existing interests between the five counties and 60 municipalities and national ministries and directorates involved in the management of the companies (SWECO 2011). Although no displacement occurred, the contributions thus constitute a recognition that the use of water for hydropower generation may mean local populations are deprived of using the resource in a different way (Egré et al. 2002).

Figure 9: Glomma & Laagen public hydropower revenues, 1998 (in millions of USD 2005 PPP)



Source: WCD 2000b:54

The total payout in 1998 amounted to NOK 534 million (USD 60m, 2005 PPP). Overall, in 1998, the counties and municipalities of the region received roughly 80 per cent of total revenues redistributed to government by power companies, chiefly from taxes and dividends, representing 1.9 per cent of their budgets on average, but rising to over 5 per cent for some municipalities (WCD 2000b). As state subsidies in municipalities receiving large energy incomes are reduced, the net energy revenues account for roughly 1.5 per cent of municipalities' aggregate annual incomes (WCD 2000b).

3.2.4 Urrá, Colombia

The project

The Urrá I hydroelectric project was constructed from 1994 to 2000; 18,000 hectares of land inhabited by roughly 7,300 inhabitants were acquired. The land in the upstream Sinú valley is used traditionally by indigenous people and has been settler-occupied since the 1950s, with very low government presence, high poverty and frequent conflicts (Egré 2007). The degree of real consultation and compensation of local communities has been variable with some payments made to individuals while the collective rights of communities were not economically compensated (Durango Alvarez 2008). Formal arrangements with communities were partial, involving five of the 20 communities making up the Embera Kali people (CSC 2001)

The private-sector operator, Urrá S.A., describes the benefits accruing to the municipal and regional authorities, as 'environmental education', 'sanitation', 'flood control', 'employment generation' and the 'clean energy' produced that contributes to more reliable energy supply (Urrá S.A. 2012c-f). Regarding resettlement, Urrá state offered cash or resettlement, with 589 families opting to resettle. They were provided with better housing conditions and supported with measures for livelihood restoration in line with their previous livelihood activities, as well as restitution of social infrastructure through a five-year accompaniment programme for those displaced in 1994/5, and a three-year programme for those displaced in 1998. Some accompanying measures continue as part of the company's corporate sustainable responsibility (CSR) activities, such as programmes to strengthen family and community life as well as social participation (Urrá S.A. 2012g).

Legislation governing revenue transfers and use of funds

Law 99 of 1993, Decree 1933 of 1994 and Decrees 1933 of 1994 and 4629 of 2010 constitute part of Colombian national legislation governing environmental and renewable-energy management and revenue transfers from the power sector to regional environmental agencies and municipalities. These laws and decrees determine the revenue-sharing arrangements for Urrá 1 (CoC 1993, 1996; PoC 1994, 2010). Originally, Section 45 of Law 99 of 1993, governing the power sector, indicated that hydropower projects exceeding 10MW installed capacity were to transfer 6 per cent of gross energy sales, with

half going to the regional environmental authorities (called 'autonomous regional corporations', or *corporaciones autónomas regionales* ('CAR') in Spanish), with administrative jurisdiction over the area that houses the watershed and the reservoir (CoC 1993). Legally, the use of these funds is expressly limited to protecting the environment and watershed in the project's area of influence. The other 3 per cent benefits the municipal and district entities in the watershed (50 per cent), and those affected by the reservoir (50 per cent), respectively. The use of these funds is restricted to activities defined in the municipal development plans, with a priority placed on basic sanitation and environmental improvement activities. A maximum of 10 per cent may be used to cover administrative costs (CoC 1993).

The Presidential Decree No. 1933 passed in 1994 maintained the 6 per cent, but clarified the distribution in cases where more than one region or municipality was affected. The respective percentages are unchanged, but are to be distributed *pro rata*, as a function of the share of the total watershed surface within the territory of the respective entity (PoC 1994). In 1996, National Law 344 established the Environmental Compensation Fund, financed by the regional environmental authorities using 20 per cent of their transfers from the energy sector, thereby slightly altering the permitted use of hydropower funds (CoC 1996). In 1998, the Constitutional Court ruled that the funds were not taxes, but contributions paid for the use of natural resources, confirming that their dedication to environmental objectives was therefore constitutional (CCoC 1998, Consejo de Estado 2003).

In December 2010, Presidential decree 4629 was passed in the context of the country's state of emergency due to the damage wreaked by La Niña 2010/2011. The decree determined an interim measure for the use of funds (PoC 2010). It stipulated that the funds received by the regional environmental authorities were to be used for activities mitigating the state of national social, economic and ecological emergency in their territories, such as works in flood, soil and vegetation management and improvement. Similarly, the funds going to municipalities and districts equally were only to be used for emergency or rehabilitation works, including provision of drinking water, solid waste management and the restitution of services as well as measures to reduce imminent risks (PoC 2010). The National Development Plan 2010–2014, codified through Law 1450 in 2011, in turn stipulated another nuance, while maintaining both the 10MW threshold and the 6 per cent as follows: if the municipalities or districts, home to the hydroelectric plants, do not receive any funds because they were neither part of the watershed nor house the reservoir, they should in future be in receipt of 0.2 per cent, deducted in equal parts from benefits for the municipalities and districts housing the reservoir and the watershed. From 2012 onwards, municipalities are to use at least 50 per cent of these resources for potable water, basic sanitation and environmental protection projects (RoC 2010, CoC 2011).

Over the years, several attempts have been made to alter the details of the law, for instance in terms of the size of hydropower facilities obliged to contribute, the percentage to be paid or the permitted uses of funds, one example being a draft bill from February 2012 aiming to include hydropower installations with capacity over 3 MW (CoC 2012). A decree aiming to increase the percentage going to regional environmental authorities as part of the country's overall state of emergency was ruled unenforceable by the Constitutional Court in 2011 (CCoC 2011b). The fact that some 20 years later, the original law is still subject to proposed modifications and still being challenged in the Constitutional Court, points to the controversial nature of the scale, volume and use of these funds.

Urrá 1: use of funds

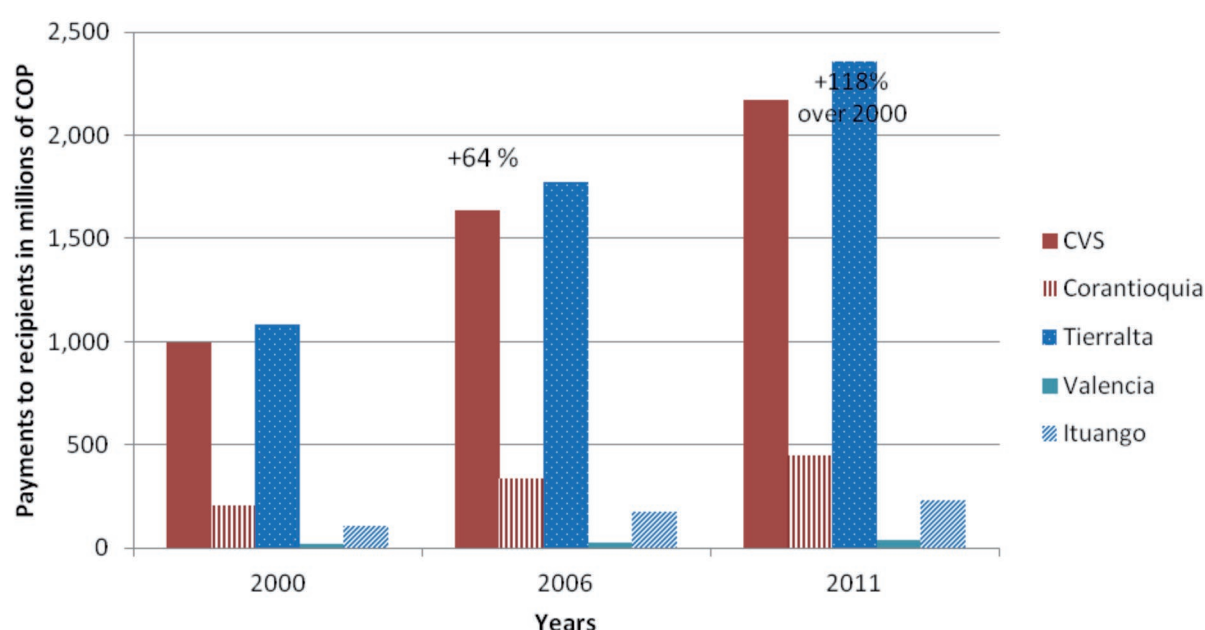
For Urrá 1, the entities in receipt of the funds are, at municipal level, Tierralta, Valencia and Ituango, housing the watershed. The regional environmental authorities receiving funds are Corantioquia and 'CVS' (Corporación Autónoma Regional de Los Valles del Sinú y del San Jorge), the entity in charge of the Sinú and San Jorge Valleys (Urrá S.A. 2012a). From 2000 to 2011, they have been in receipt of increasing funds. See **Table 5** (Urrá S.A. 2012b):

Table 5 Total funds received by municipalities from Urrá S.A. 2000–2011 (Colombian Pesos)

	Recipients	2000	2006	2011
Regional authorities	CVS	998.187.635	1.636.306.670	2.173.403.785
	Corantioquia	206.916.355	339.193.354	450.529.313
Local authorities	Tierralta	1.081.942.363	1.773.603.922	2.355.767.135
	Valencia	17.895.794	29.336.175	38.965.406
	Ituango	105.265.834	172.559.927	229.200.556
	Total	2.410.207.981	3.951.000.048	5.247.866.195

Source: Urrá S.A. 2012b

Figure 10: Payment to recipients (in millions of Colombian Pesos), 2000–2011



Data Source: Urrá 2012b

This highlights that receipts for the regional and municipal entities, taken together, increased by 64 per cent by 2006 over 2000 and more than doubled by 2011. The total payments in 2011 amounted to approximately USD 4.85m, 2005 PPP. For the regional environmental authority, CVS, Urrá's contribution constituted roughly 3 per cent of the total 2011 revenue (CVS 2012).

Colombian legislation establishes a clear framework for the volume, use and governance of funds. They are earmarked for environmental and watershed protection activities only, with the exception of emergency and rehabilitation works related to the La Niña-related state of emergency. Although it would appear that social and economic projects directly benefiting project-affected populations are thus generally excluded, an analysis by the Procurator-General and the Comptrolling Office in 2009 of the use of the funds by the receiving entities found that they were not being used solely in the manner stipulated by law, but were spent on municipal infrastructure, roads, agricultural development, arts and culture or education (CCoC 2011c). The report criticised the management of the funds by the regional environmental authorities, stating that budgets did not correspond to funds received and timeframes were not kept (CCoC 2011c). A prior report by the General Comptroller had also lamented the absence of a system with which the performance of investments from revenue transfer funds could be evaluated (Egré 2007), suggesting that despite clear rules stipulated, there is still room for improvement in governance including monitoring and evaluation.

3.2.5 Cree Nation, Eastmain 1 and Eastmain 1-A/Rupert projects, Canada

The Agreement between the Cree Nation and Québec Government

In February 2002, the Québécois Government and the Cree Nation signed the 'Agreement Respecting a New Relationship between the Cree Nation and the Government of Québec'. It codified a sharing of revenues from resource extraction in terms of hydropower, mining and forestry on the Cree Nation's traditional lands (GCC 2012a) and also included Cree consent to planned hydropower development, subject to environmental and social impact reviews (GCC 2002). The '*Paix des Braves*', literally the 'Peace of the Braves', marked the beginning of a new relationship after decades of disagreement over how the Cree Nation was to regulate and benefit from the extraction and use of natural resources within its territory (GCC n.d.). The Paix des Braves Agreement was accompanied by the Boumhounan and the Nadoshtin Agreements, covering remedial works for the Cree Nation, and employment, training, contracts for Cree enterprises as well as other issues pertaining particularly to the hydropower developments proposed for the Eastmain 1 and Eastmain 1-A/Rupert projects (GCC 2002, GCC n.d.). In a Cree referendum, 70 per cent voted in favour of the Boumhounan and the Nadoshtin Agreements (HydroQuébec 2012), signalling public support.

Enhancement

The 2002 New Relationship Agreement (NRA) has a broader remit than just sharing revenues from hydropower. First, it governs funds from hydropower, mining and forestry. Second, the funds serve to broadly enhance the ability of the Cree governments to deliver local government services to citizens in accordance with their own priorities. There has been a history of agreements between the national and provincial governments of Canada and First Nations relating to the terms of use and extraction of natural resources and the benefits to be shared, including the 1975 landmark James Bay and Northern Québec Agreement and the 'Agreement concerning a new relationship between the Government of Canada and the Cree of Eeyou Istchee' in 2007 (GCC 2012b,c).

Transfers to Limited Partnership

In terms of the monetary benefits to be shared, the 2002 Agreement provided for considerable sums to be transferred since the NRA also entailed responsibility transfers from Québec to the Cree Nation to allow the Cree to implement obligations in accordance with their own priorities decided by the Cree Nation governments (Eenou-Eeyou 2010). It thus fulfils the function of a revenue-sharing scheme, but far exceeds most such arrangements in terms of its consequences for Cree Nation self-governance. The NRA stipulated that a limited partnership to be created by the Grand Council of the Cree, would receive the payments from the Québec Government (GCC 2002). In March 2002, the 'Eenou-Eeyou' Limited Partnership bringing together the nine Cree bands was established as the recipient of funding, charged with managing, investing, using and allocating the payments for community and economic development (Egré 2007). The 2002 Agreement's Chapter 7 stipulates total payments for the first three financial years of CAD 140 million (USD 116 m 2005 PPP) and stipulates the greater of two values for 2005–2052: either CAD70 million (USD 58m 2005 PPP), or 'an amount corresponding to the indexed value' of CAD70 million, rising as resource extraction from Cree Nation territories increases (GCC 2002). To provide some perspective, the 'Cree Nation Funding Profile' for 2005/06 shows that funds from HydroQuébec Agreements and from HydroQuébec as part of the Paix des Braves agreement accounted for a combined 4 per cent of total funding received by Cree Nations governments (GCC n.d.).

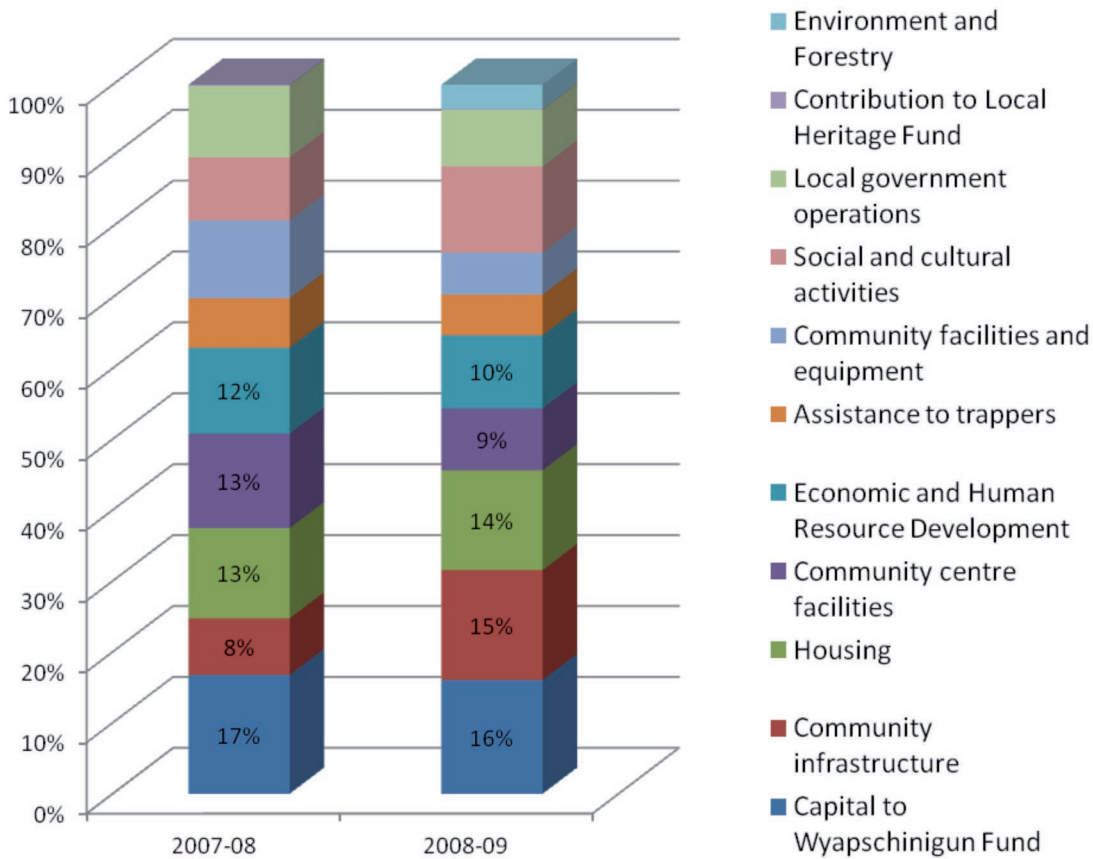
The provision regarding the funds to be transferred annually has a threefold benefit. It ensures a minimum payment, derived from not just one source which may be subject to unforeseen fluctuations in certain years, but also from hydropower, mining and forestry. Second, it includes a reference period of five years and excludes in the calculation both the minimum and the maximum year, thereby controlling for unusual fluctuations between years. Finally, it ensures that a higher rate of resource extraction will be rewarded accordingly, pegging the pay-out to the actual resources extracted. In return, the Cree Nation give, amongst other things, consent for the Eastmain 1 hydropower project as well as the Eastmain 1 A/Rupert diversion project provided that the relevant environmental and social protection regimes are fulfilled (GCC 2002).

Developing the Eastmain 1 A/Rupert project (as it came to be known) had been under discussion since the 1975 Agreement, with HydroQuébec wishing to move towards implementation at the end of the 1990s and utilising a cooperation-based approach, inviting chiefs and representatives of the Cree communities to informal meetings and public assemblies (Egré 2007). For new hydropower production or transport projects, HydroQuébec now aims to implement public participation programmes (HydroQuébec 2010, 2011a, 2011c, 2012). In 2011, it spent CAD30 million (USD 24.8 million PPP 2005) on community investment projects including higher education facilities and environmental programmes (HydroQuébec 2011b).

First Nation rights in Canada

These agreements need to be seen in the light of increasing recognition of First Nation rights in Northern Canada. The Cree Nation has been provided with funding to assume key government tasks, such as providing and improving housing, overseeing local government operations and encouraging social and cultural activities. Creating job opportunities for young people through training and educational programmes, such as supporting a ‘hire a student’ scheme with local businesses, also constitutes an area of spending as part of economic and human resources development (Eenou-Eeyou 2010). Local government operations entail support to youth camps as well as sports activities for youth, whereas drainage systems and canoe landings are constructed or repaired under the ‘community facilities and equipment’ heading (Eenou-Eeyou 2010). At the same time, activities to support traditional trapping and clean-up campaigns in environment and forests are also being supported (Eenou-Eeyou 2009), evidencing a wide use of funds, offering the possibility for benefits to reach a broad spectrum of target groups. One recipient of funding is the Wyapschinigun Fund, an innovative heritage fund which provides a revenue stream for coming generations equal to or exceeding contributions from the Province of Québec (Eenou-Eeyou 2010).

Figure 11: Eenou-Eeyou Ltd, Partnership – uses of funds 2007/08 and 2007–08/2008–09



Source: Eenou-Eeyou 2009/2010

3.2.6 Nam Theun 2, Lao

The project

Nam Theun 2 is a large-scale hydropower development project (1070 MW) in Lao PDR, one of the poorest countries in the world which has a predominantly rural economy (Scudder 2003). NT2 had been under discussion since the 1970s, including intense debate and questions raised by some stakeholders as to the merits of the project. Despite those, the dam was built, and finally came on-stream in 2010. It is seen by government as a cornerstone of the national growth and poverty reduction strategy (Porter and Shivakumar 2010, WB 2010b). Its potential environmental, social and economic impacts have been the subject of many assessments and studies (NT2 2012). Financing was contributed by 27 parties, including the World Bank Group and the Asian Development Bank, with the project jointly implemented by Nam Theun 2 Power Company and the Government of Lao (WB 2012b). It is estimated that, up to 2034, NT2 will generate approximately US\$2 billion in revenues, which, if spent 'efficiently, and transparently', would contribute significantly to poverty reduction and environmental management (WB 2012b). One of the explicit goals of NT2 was to use the revenues generated from exporting its hydropower to Thailand to fund programmes in line with the National Growth and Poverty Eradication Strategy.

The planning for the project has involved the World Bank since the 1980s. Scudder (2003) states that the World Bank required studies and commitments from the Government of Lao as a condition of its involvement, since a partial guarantee from the World Bank had been requested by private-sector participants in the project and the Government of Lao. The dam is run by the Nam Theun Power Company (NTPC), generating power both for domestic use and export to Thailand.

Enhancement

The resettlement of around 6,300 people in 15 villages was effected in three phases: consultation and planning, physical relocation and livelihoods development (Gray, 2012). Following consultations on resettlement sites, house and village design and livelihood opportunities, the physical resettlements began in 2006, with livelihood activities including agriculture, livestock, fisheries, forestry and non-farm activities (Gray, 2012) – a declared aim being that villagers be aided in attaining higher living standards than prior to the project (WB 2012d). According to the report for the World Bank (Gray 2012), non-monetary benefits accruing from the project to affected people include largely improved living conditions for resettled villagers, including improved road access and employment, 200 villages downstream benefiting from a development programme and the protection of biodiversity-rich areas. The NTPC has committed to improving average incomes of re-settler households by year 5 after relocation over the national poverty line or a USD800 income threshold based on June 2002 values (Serra et al. 2011:56). Critics have asserted, however, that some relocated communities have struggled to recover livelihoods due to poor land quality in resettlement sites (International Rivers 2010).

To address the socio-economic impacts of NT2 on the Xe Bang Fai River, which provided water, irrigation and fishing opportunities to 100,000 people (Serra et al. 2011:58) downstream from the NT2 project, a downstream programme was instigated. This approach is relatively new in hydropower projects and it included infrastructure measures, restoring livelihoods, monitoring fish catch, water quality and socio-economic impacts (Gray 2012). The total volume of funding was estimated to be USD10m prior to the dam becoming operational and an additional USD6m afterwards (NT2 n.d., Illangovan 2011). Critics argue, however, that downstream livelihoods have been negatively affected due to declining water quality and fish catch, inadequately compensated, and that the budget is insufficient (NGO Coalition 2010, International Rivers 2010, 2012).

Transfer of revenue – to national government

Some 75 MW of the NT 2 electricity-generating capacity is available for domestic use in Laos; the remainder (around 1,000 MW) enables NTPC to export electricity to neighbouring Thailand, and to pay considerable royalties from the power operator to the Government of Lao PDR (Gray 2012):

- in the first 10 years, an annual nominal royalty of USD 30 million due to commercial debt service;
- from 2020 to 2034, an annual average of USD110 million.

The concession period for NTPC runs for 25 years until 2035 (WB 2010a). The NT2 revenue management arrangements are reported to have helped establish processes for transparency and accountability in management and monitoring of expenditure (WB 2010a).

Use of funds

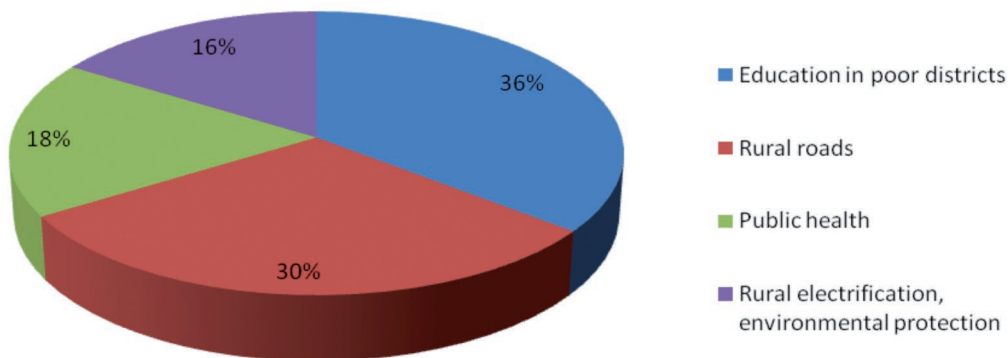
The government allocated the funds to initiatives in health, education, rural roads, rural electrification and environment, although the precise breakdown is not available (WB/ADB 2012). Given the mode of payment to the Government of Lao budget, the range of beneficiaries may extend beyond project-affected communities as the dam is considered essential to funding the national growth and poverty reduction strategy (WB 2010b).

Reports diverge slightly on the exact royalty payments made in the 2009/10 Lao FY, ranging from 5.4 million (WB/ADB 2012) to approximately USD5.6 million (WB 2012d). In a 2011 World Bank factsheet (2011b), the breakdown showed USD 2 million having been invested in education in poor districts, with rural roads receiving USD 1.7 million and USD1 million for public health, with the remaining funds promoting electrification in rural areas as well as environmental protection (cf. figure below).

In 2012 NT2 revenues have been used to finance priority poverty-reduction programs, including teacher training, learning materials, health in poor districts, rural roads and electrification and environmental protection (WB 2012d). In financial year 2011, the NTPC paid approximately USD19 million in royalties to the government. Payments are projected to rise to USD27 million for the FY 2012 (WB/ADB 2012), slightly below the projected revenue targets of USD30 million per year.

Critics assert that access to information regarding compliance with commitments has been scarce (NGO Coalition 2010), putting into question the transparency of the project.

Figure 12: Use of royalty payments from NTPC until 2011



Source: WB 2011b

3.2.7 Binga, Philippines

The project

Binga Dam (100–125MW) was constructed during the 1950s and was inaugurated in 1960. It lies just downstream of the Ambuklao dam on the Agno river in Benguet Province of the Philippines . The river catchment forms part of the ancestral lands of the Ibaloi (or Ibaloy) people. Initially built as part of the National Power Corporation infrastructure, unresolved issues related to compensation and damages for flooded lands at Binga arose during the design and construction of the nearby San Roque Dam in the 1980s but are not well documented.

In 2008 local campaigners through the Cordillera Peoples Alliance called for historical grievances to be addressed when public assets of the National Power Corporation were sold to private operators SN Aboitiz Power (a joint venture between Norwegian and Philippino companies) . According to the latter, some 200 families were initially displaced at Binga and through a process of applying the Hydropower

Sustainability Assessment Protocol (2006) of the International Hydropower Association the new dam operator reviewed its social and environmental responsibilities. As a result of this process, SN Aboitiz Power set up a series of CSR activities, described below, while noting that it was up to the National Power Corporation to pay any outstanding monies for compensation or damages that may be due to the resettled communities. The operator in 2013 provided connection grants and power subsidies to 207 local families originally displaced by the dam as part of the provisions under the Electric Power Industry Reform Act.

Mandatory levy on power operators

In the Philippines, power operators active in non-urbanised settings are obliged to pay 1 centavo (US cent 0.05, 2005 PPP) per kWh, divided between three different national state funds as follows (GoP 2006):

- 50 per cent to the Electrification Fund (= PHP0.005/kWh)
- 25 per cent to the Development and Livelihood Fund (= PHP0.0025/kWh)
- 25 per cent to the Reforestation, Watershed Management, Health and/or Environment Enhancement Fund (PHP0.0025/kWh).

Voluntary transfers by project operator

In addition to these government-mandated funds, at Binga Hydro, the operator SN Aboitiz Power, has established a voluntary CSR fund which receives 1 per cent of the anticipated net annual income after tax (Azanza 2011). In 2011, approximately PHP4 million (USD 184,000, 2005 PPP) were spent on funding 13 CSR projects for Binga Hydro's host communities. After the indicative budget is established, funds are pre-allocated among host communities. Allocations decrease towards smaller governance units, from provinces via municipalities to 'barangay' (i.e. village or community). Indigenous communities receive a separate allocation. They can propose CSR projects against their allocation within one of seven key priority areas: the environment, livelihood and eco-tourism, social infrastructure, education and information technology, community health, indigenous peoples' focus, and governance. Applications for projects benefiting mainly individuals or not covering any of the priority areas are rejected. If a project proposal is submitted before year-end and an allocation is not used up within the year, it is carried forward to the following year, as with allocations for unfinished projects started within the year.

Host communities are requested to identify their own needs and propose their own projects to improve ownership and self-determination. Community relations officers provide technical support and assist in transforming ideas into proposal format, with awards available to reward 'green' proposals. The company's local CSR teams evaluate proposals, with the management team making the final decisions. The operator will usually approve projects which are in the spirit of the communities' medium-term development plans approved by the local councils. If approved, the community relations officer drafts an agreement between the host community (the project proponent), and the company (as provider of the funds), serving as a basis for subsequent implementation reports. The objective is for funds to be paid out expeditiously and directly to service providers such as construction companies to minimise leakage.

One example of a project supported by the CSR fund is the annual Mount Ugo summer climb, an award-winning initiative promoting eco-tourism and providing livelihood opportunities recognised at an annual national tourism convention in 2012 (Sun.Star Baguio 2012).

3.2.8 Summary

Table 6 summarises the key characteristics of these cases from Asia, the Americas and Europe: the benefit-sharing mechanism, its governance, the volume of benefits/number of people resettled, and the description of the activities to be funded, i.e. the intended use of funds, at least as stated on paper. The sources of information are noted at the foot of the table. If not originally stated in USD, all monetary values have been converted into USD 2005 PPP (WB ICP 2008).

Table 6. Summary of cases of benefit-sharing mechanisms in operation: Asia/Americas/Europe

Project/ location/ country	Benefit-sharing mechanism	Governance	Volume of benefits/no. of persons resettled	Activities to be funded
6. Makawanpur, Nepal	Royalty paid to national level by hydropower operator on hydropower sales, redistributed to local/district level.	Managed by district development committee; distributed to upstream, downstream and infrastructure-affected communities.	USD 1.43m (2005 PPP) (= 12% of royalty paid to DDC, 65% of DDC budget 2001/02)	Social mobilisation and poverty reduction. Conservation. Rural electrification. Infrastructure. Human resource and institutional development.
7. Columbia Basin Trust, Canada (Eastmain/Rupert)	Trust Fund specific to Columbia basin hydropower projects, from revenues. Equity sharing.	Board of Directors constituted by basin residents. Approval committee, consulting with advisory committees comprising members of public.	USD244m (PPP 2005) initial endowment (=5% of downstream benefits) – 2,300 people displaced through flooding	Environmental. Social. Economic. Youth. Water. Community Development.
8. Glomma & Laagen Basin, Norway	28% tax on profit, property taxes, natural resource taxes, licence fees, contribution to business development fund, preferential electricity rates.	Budget of local municipality, budget of county, business development fund, national government.	1998: USD 60m (2005 PPP) (= 1.9% of municipality and county budgets) – None displaced	Local county and municipality budget expenses. Local business development.
9. Urrá, Colombia	3% of gross hydropower sales to regional environmental authorities, 3% to municipalities/districts.	By regional environmental authorities (CARs) and districts and municipalities.	USD 4.85m (2005 PPP) (= 6% of gross hydroelectricity sales) – 7,300 people displaced	Protection measures for environment and watershed (env. authorities). Local development measures (priority: sanitation and environmental protection). -> Diverted to emergency/rehabilitation works for 2011 state of emergency.

Project/ location/ country	Benefit-sharing mechanism	Governance	Volume of benefits/no. of persons resettled	Activities to be funded
10. Cree Nation, Canada	Payments from Government of Québec for resource extraction (hydropower, forestry, mining).	To Limited Partnership fund redistributing to Cree governments.	The greater amount of: USD58m (2005 PPP) or indexed USD58m (rising with actual resource extraction).	Community development. Economic development. Social activities. Traditional economic pursuits. Youth. Housing. Environmental activities. Local government.
11. Nam Theun 2, Lao	Revenue from electricity exports to Lao PDR Government.	Redistributed by national government for poverty reduction in whole country, including project-affected communities through national budget process.	USD30 million p.a. (2010–2019); USD110 million p.a. (2020–2034) – 6,300 people in 15 villages.	Education in poor districts. Rural roads. Public health. Rural electrification. Environmental protection. Livelihood opportunities. Teacher training.
12. Binga, Philippines	Voluntary CSR fund National legislation: percentage of hydropower sales, paid into three national funds.	Spent on community-proposed projects, decisions made by company's CSR representatives/ management Nationally managed electrification/ development, livelihood/ reforestation and watershed management fund.	PHP4 million (USD 184,000 2005 PPP) in 2011 – 1% of net income after tax for CSR 1 centavo/USD cent 0.04) per kWh paid to national funds. 207 families affected.	Environment, livelihoods and eco-tourism, social infrastructure, education and information technology, community health, indigenous peoples' focus, governance: decided by communities, approved by company management. (Electrification, community development, environment).

Sources:

DDC 2006a,b in Khatri 2011; GoNp 1999, 2001, 2010; Singh 2010; Upadhyaya 2006 in Egré 2007.
 CBT 2008; CBT 2012a-c et Egré et al. 2002; Hensengerth et al. 2012.
 Egré et al. 2002; Egré 2007; Skinner et al. 2009; GoN 2008a,b; Nordenergi 2012; WCD 2000b.
 CCoC 2011a,b,c; CoC 1993; CoC 1996; CoC 2012; Consejo de Estado 2003; Egré 2007.
 Eenou-Eeyou 2009, 2010; Egré et al. 2002; Egré 2007; GCC 2002.
 NT2 2012; Skinner et al. 2009; WB 2010a,b; WB 2012d; WB/ADB 2012.
 Azanza 2011; GoP 2006; Pers. Comm. 2012

3.3 Benefit-sharing mechanism proposed in Africa

3.3.1 Kandadji, Niger

The project

In Niger, the Kandadji dam, due for completion in 2015, is seen as a critical project combining a dam and a hydroelectric power station of 130MW, to produce 620 MWh per year. In 2009, it was estimated that 5,290 households comprising 34,710 people would be displaced (Skinner et al. 2009). Later estimates have put the figure at 38,000 individuals, corresponding to 29 per cent of the population of five municipalities (Magagi et al. 2012a,b) (those numbers remain indicative – they are likely to evolve with inward and outward migration). The total compensation to be paid is estimated to amount to FCFA 54.1 billion (USD 238m 2005 PPP), including a reserve fund of FCFA 8.8 billion to absorb potential inflation (Skinner et al. 2009).

Enhancement

The Kandadji dam is designed as part of wider development of the Niger basin (Magagi et al. 2012a). The resettlement strategy comprises a local development plan consisting of a short-term and a medium-term programme, the goal being to restore and improve on prior living standards (Skinner et al. 2009). The local development programme is part of the project design, intended to restore livelihoods over a 10-year period. In addition, the High Commission for the Development of the Niger Valley (HCDNV) proposes to establish a development fund financed from project revenues.

The draft constitution of Niger dating from November 2010 declares that all natural resources belong to the people and in application of this text, part of the revenues derived from exploiting natural resources can be transferred to municipalities to conduct compensatory and developmental activities (GoNe 2010). Already, the mining sector pays a royalty that is split 85–15 between the central government and local municipalities (Magagi et al. 2012a). A review of prior experiences in Niger in the 1980s with establishing fund-based solutions revealed positive experiences with using the public treasury for resource transfer mechanisms, funds managed in accordance with public accountability rules, competence transfer, consensual definition of rules of engagement between actors and indicative definition of endowment based on the number of inhabitants (Magagi et al. 2012a). Negative experiences occurred where technical services were operating as both judge and jury and where there was little knowledge of tender procedures (Magagi et al. 2012a).

The proposed fund for the Kandadji dam project would require altering Law 2003–004 from 31 January 2003 relating to the Electrical Code governing all sources of energy, in order to allow revenue-sharing from hydropower generation. This proposal has been approved in principle by HCDNV and by affected populations in workshops in 2012 and has been submitted to the Ministry of Energy for consideration.

Investment fund for local development – ‘FIDEL-K’

Under the name “Investment Fund for Local Development of the area affected by the Kandadji Dam” (FIDEL/K in French), the proposed fund would commence operation from 2016. The proposal is that it be endowed with funds on the basis of a 2 per cent to 3 per cent in tax on the hydropower generated and sold to power operator, la *Société Nigérienne d’Electricité* (NIGELEC) (Magagi et al. 2012a). This 2 per cent or 3 per cent would generate between FCFA 200 and 300 million per year (Magagi et al. 2012a – USD 880,000 to 1.32m, 2005 PPP), with additional funds for FIDEL/K possibly drawn from those executing projects and mobilised by the overseeing body (Magagi et al. 2012b). FIDEL-K would be overseen by an inter-community committee of affected populations (CIPA), with a local pre-selection committee, a regional allocation committee and the National FIDEL/K Committee also playing supporting roles. Each of those committees would include at least 30 per cent women and 20 per cent young people (Magagi et al. 2012a).

Governance

The decision-making structure for project proposals would begin with the inter-village committee consisting of three representatives per resettled village, deciding what proposals to present to the ten-member municipal pre-selection committee chaired by the mayor, comprising representatives of

the inter-village committees and the municipal planning commission (Magagi et al. 2012a). The actual decision would then be taken by the CIPA, composed of two representatives per inter-village committee and five mayors of concerned municipalities, comprising a maximum of 35 members (Magagi et al. 2012b). At regional level, the allocation committee would convene twice a year, bringing together CIPA representatives, mayors, regional representatives and the Governor of the region to allocate the financial budgets to the five individual funds and to individual municipalities (Magagi et al. 2012b). Finally, the National FIDEL/K Committee, including Energy and Home Affairs Ministries, representatives of NIGELEC would meet at the beginning of each year to validate the annual financial contribution by the hydropower operator (Magagi et al. 2012a).

There would be a technical assistance facility for CIPA, consisting of a financial officer and a capacity development structure, with a code detailing the rules governing the drafting, selection and monitoring of projects, prescribing the roles and responsibilities of each actor and proposing sanctions in case of mismanagement (Magagi et al. 2012a). Facilities for monitoring and evaluation would be established from the first year of implementation, with the monitoring of financial activities ensured by management committees on the basis of simple, specific indicators, aided by decentralised technical services. The decision-making entities would organise regular supervisory missions, with external audits regarding performance, efficiency and functioning to be conducted by specialised service providers once every two years and the books and selected micro-projects to be audited annually (Magagi et al. 2012a).

Proposed revenue transfers to FIDEL-K

Alongside the 2 per cent–3 per cent drawn from hydropower sales for FIDEL/K, the proposed legal changes would provide that overall revenues from hydropower generation be distributed between central government and municipalities in an 85–15 split, akin to the mining sector. The proposal thus pursues a two-tier strategy of establishing a project-dedicated development fund, while also allocating greater financial resources to municipalities based in hydropower-generating areas (Magagi et al. 2012a).

Use of funds

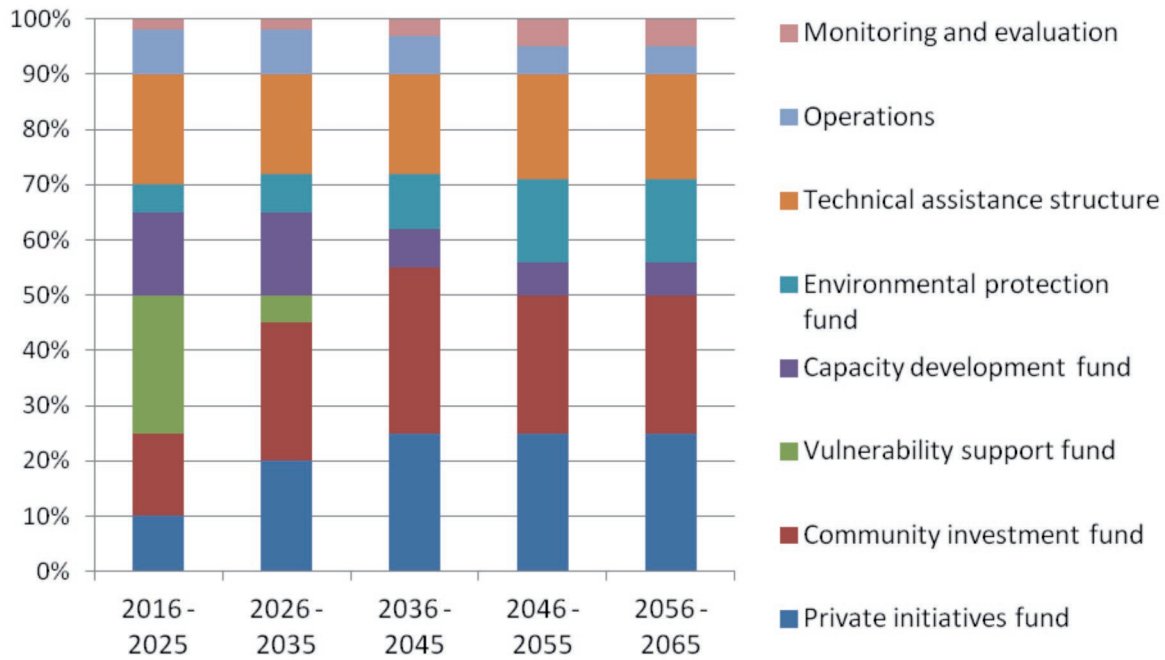
FIDEL-K would function for the lifetime of the Kandadji dam (50–100 years) and aim to contribute to a lasting improvement in the living conditions of displaced and host communities, beyond that envisaged by the 10-year local development programme. It would do so by facilitating food security, income-generating activities and basic social infrastructure, a set of goals supported by a large majority of stakeholders (Magagi et al. 2012a). In tangible terms, this would mean financing municipal investment projects to provide basic social services to affected populations in line with local development plans, while also aiming to reinforce capacity and farmer organisation activities, support university scholarships and study trips as well as supporting micro-finance facilities and income-generating activities (Magagi et al. 2012a). Project proponents eligible to apply for funding would be development associations, inter-village associations, women's and youth groups, cooperatives, vulnerable households and municipalities (Magagi et al. 2012b). The institutional infrastructure would provide for five funds with separate, but complementary purposes (Magagi et al. 2012a,b):

- 'Community investment fund', supporting investments in the fields of agriculture, livestock, health, commerce outside the municipal budget
- 'Support fund for private initiatives', financing income-generating activities
- 'Support fund for assisting vulnerable affected households' in the longer term
- 'Fund for community micro-projects' for environmental protection or restoration
- 'Capacity development fund', financing various capacity-building projects and potentially scholarships for youth from vulnerable households.

It is anticipated that the priorities for the fund would change over time and that this would constitute a flexible response to the changing development needs of the resettled communities.

The following initial use of funds is proposed (Magagi et al. 2012b):

Figure 13: Initial funding allocations Kandadji: 2016–2065



These funds would assist only affected populations, i.e. individuals having lost goods, lands, property or resource access, households comprising at least one such individual, communities if every single member was affected, vulnerable groups such as women-headed households, the elderly or orphans.

The proposal for FIDEL-K on the above terms, validated by affected communities and by HCDNV, has been submitted to the Ministry of Energy for consideration (Magagi et al. 2012a).

3.3.2 Summary

Table 7 summarises the key characteristics of this case from Africa: the benefit-sharing mechanism, its governance, the volume of benefits/number of people resettled, and the description of the activities to be funded, i.e. the intended use of funds, at least as stated on paper. The sources of information are noted at the foot of the table. If not originally stated in USD, all monetary values have been converted into USD 2005 PPP (WB ICP 2008).

Table 7. Summary of a benefit-sharing scheme proposed in Africa

Project/ country	Benefit-sharing mechanism	Governance	Volume of benefits/no. of persons resettled	Activities to be funded
13. Kandadji, Niger	'Investment Fund for Local Development' – FIDEL/K.	Inter-Community Committee of Affected Populations (CIPA) makes decisions, supported by committees representing affected populations, municipal and national political decision-makers.	USD 880,000 to 1.32m (2005 PPP) (= 2 to 3% of revenue generated from electricity sales)/ 37,891 estimated.	Community investment, income generation, vulnerability reduction, environmental protection, capacity-building.

Source: Magagi et al. 2012a, 2012b.

4. Comparative Analysis

This section compares the cases of benefit-sharing, according to the following principal points of comparison, namely:

Governance: how far is each benefit-sharing mechanism established as a separate entity – separate from the project and government – and independent in terms of decision-making? i.e. what is the degree of local control, e.g. through representation of affected communities on the governance entity/ies?

Targeting: to what extent are the funds targeted towards villages/community and municipalities, for local benefit?

Basis of calculation: from what sources are funds drawn, by what legal mechanism for funds collection and transfer from dam operators to recipients, and on what basis of calculation (e.g. percentage of income; per kWh)? How continuously are they being paid?

Use of funds: how do the types of activities identified for funding under these benefit-sharing mechanisms compare? On what activities are funds being spent in practice (where different)?

First, however, it will be important to consider which of the cases reviewed come within 'benefit-sharing' in accordance with the characterisation in section 2.6.

4.1 'Benefit-sharing'

In terms of their principal purpose, all the examples reviewed in this report come within 'Benefit-sharing', i.e. under the 'C' and 'D' headings referred to in section 2.6, except the following:

- Akosombo, in its first 30 years, prior to the creation of the VRA RTF;
- Sélingué in its first stage prior to decentralization legislation;
- Bagré and Kompienga prior to the SONABEL annual payment mechanism.

In those four cases, the benefit-sharing mechanisms have been subsequently added onto the original project design as a 'retrofit' (as noted in section 1.6), years or even decades after the dam had commenced operation.

In the case of the CBT, as described in section 3.2.2, local communities were made party to benefits 30 years after the initial agreement between Canada and the U.S. (Hensengerth et al. 2012:28).

The recent increase in such cases of retrofitting underlines the shift in dams policy – the perception of benefit-sharing no longer as a gift, but as an entitlement. The retrofitting demonstrates that, if necessary, measures to benefit local communities can be put in place after initial design and implementation of dam projects, although it will be generally preferable to establish adequate mechanisms for benefit-sharing from the outset – to avoid the accumulation of a sense of injustice. For retrofitting, a complicating factor is the time elapsed between effect and compensation, rendering the identification of affected populations more difficult, and raising questions about base years and inflation rates to be applied.

As for 'D', partnership approaches to benefit-sharing are gaining currency (Skinner et al. 2009). In Section 3, it has been seen that partnerships between project-affected communities and dam operators have been established in two cases – the Cree Nation and Glomma & Laagen examples and is an option in others (e.g. Nepal) – where local communities have the possibility to acquire equity stakes. That effectively means they become active partners in the business venture itself (with the risks that entails).

As for the projects whose principal purpose comes under 'B' Enhancement', there were some improvement and enhancement activities at Kompienga, although that was not its principal aim. In the first phases of Sélingué and Bagré, the principal purpose was Enhancement.

4.2 Governance and targeting

Based on the governance and targeting criteria proposed in this report (section 1.5), different levels of local control and local benefit are illustrated by the cases reviewed – see **Figure 2**.

The cases that come in the top right hand corner of Figure 2 – namely, the Cree Nation in Canada, Glomma & Laagen in Norway, the VRA RTF in Ghana, the future FIDEL-K fund in Niger and the CBT – best fit the characterisation of benefit-sharing proposed in this report (in section 2.6).

Further, these five cases – namely, the VRA RTF, Cree Nation, Glomma & Laagen, FIDEL-K at Kandadji (subject to approval) and the CBT – comprise entities separate from both project developer and government.

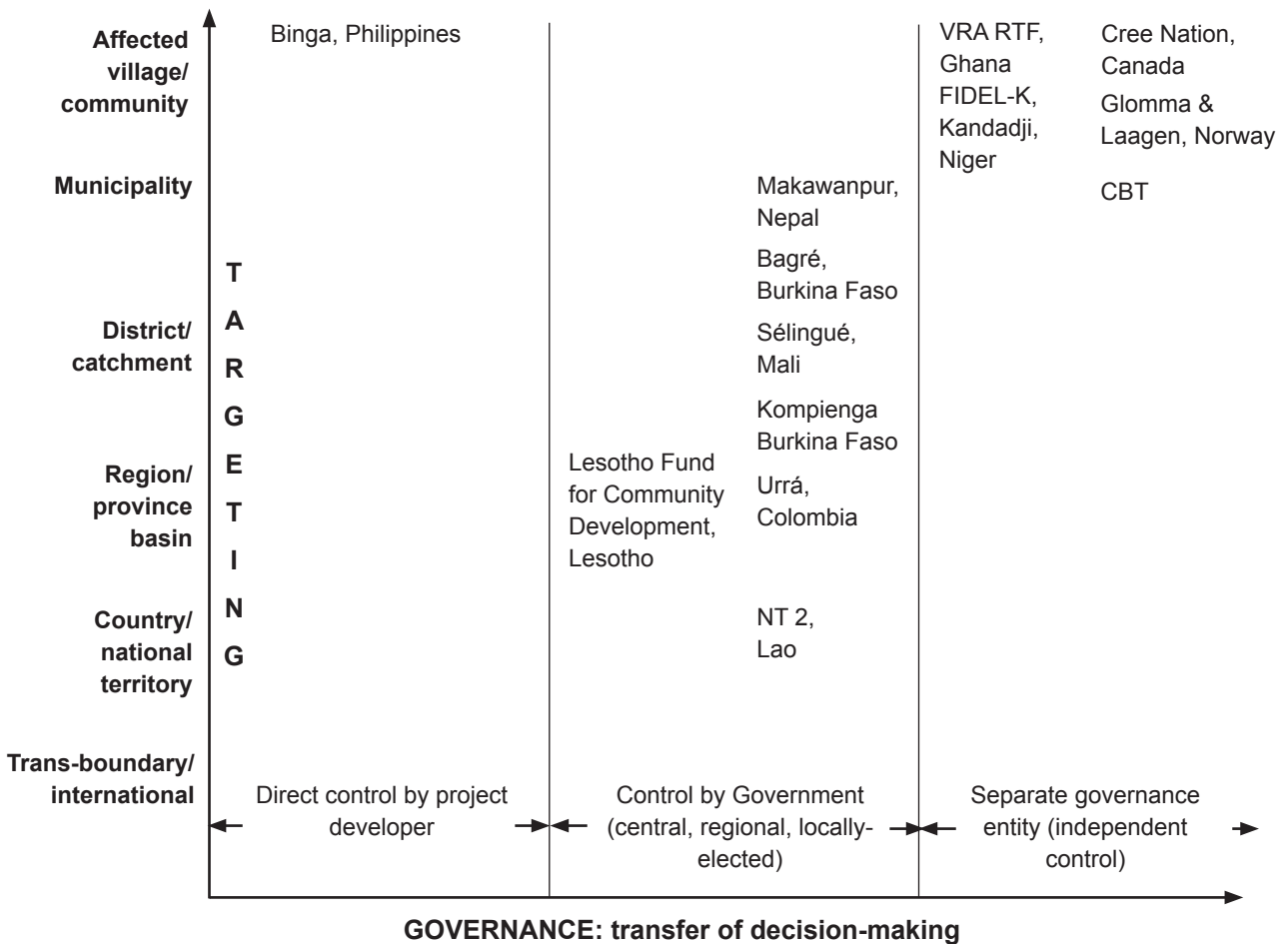
A second grouping is constituted by the following cases:

- Makawanpur in Nepal;
- Sélingué (post decentralisation) in Mali;
- the annual payments by the electricity company SONABEL at Kompienga and Bagré in Burkina Faso; and
- the revenue transfers to regional environment agencies and municipalities at Urrá in Colombia.

In each of these cases, the funds for ‘redistribution’ are initially paid into government budgets.

As discussed in section 3.1.3, in relation to the Lesotho Fund for Community Development a major question has been raised as to political capture, which effectively puts the LFCD in a special category.

Figure 14. Benefit-sharing: mapping local benefit and control



Issues of local and regional equity may emerge in the case of areas which have been affected by the siting of a dam in the neighbourhood. For example, in each of the Sélingué and Komienga cases, most of the funds went to the municipality in which the dam was physically located, and that gave rise to discontent in other municipalities in the district that were equally affected by reservoir or resettlement (or other impact), but do not receive part of the tax revenues. These taxation tools are relatively blunt instruments as they apply to all economic activity and do not recognise the specificities of hydropower. The Nepalese approach had recognised this dilemma in the way it provides for the sharing of hydropower royalties, whereby the higher-level development region that houses several district development committees is required to distribute royalties between central government and different levels and entities of devolved government. The Norwegian legislation follows a similar logic, using different methods from preferential electricity rates, via various taxes, to equity-sharing designed to ensure that government, county and municipal level, and by extension different groups of citizens, all benefit from hydropower developments. In Colombia, regular revisions of the redistribution criteria reflect a constant search for more equitable outcomes.

4.3 Legal mechanisms for funds collection and transfer

The cases reviewed illustrate alternative taxation mechanisms for transferring funds from dam operators to recipients.

Countries such as Norway, Nepal and Colombia employ legislation to effect transfers of hydropower revenues to project-affected populations, by stipulating that dam operators pay a certain tax or levy, and thereby redistributing a share in the economic rents generated.

An alternative mechanism used in countries in West Africa is a tax which is a fixed percentage of the value of the capital asset, independent of annual production (*taxe de main morte* in French). National legislation applies this tax to all infrastructure assets indiscriminately.

A third type of mechanism is the development fund established between project developers or operators and representatives of project-affected communities or government. In the cases of project-specific funds, dedicated institutional structures are usually set up to govern and redistribute funds. Development funds can apply to wider geographical areas – regions within a country – and, as such, can be implemented even in cases when there are no populations affected by the project, e.g. in diversion and ‘run of the river’ hydropower projects, in which case the benefit may be simply for ‘local development’.

The cases corresponding to the different types of legal mechanism are shown in **Table 8**.

Table 8. Benefit-sharing: legal mechanisms for funds collection and transfer

Legal mechanism	Examples
National legislation	Glomma & Laagen, Norway Makawanpur, Nepal Urrá, Colombia Binga, Philippines
Tax (fixed tax on the value of infrastructure) (<i>taxe de main morte</i>)	Sélingué, Mali Komienga and Bagré, Burkina Faso
Development fund (project-specific)	Cree Nation, Canada Columbia Basin Trust, Canada VRA RTF, Ghana NT2, Lao Lesotho Highlands Water Project, Lesotho Kandadji, Niger (subject to approval).
Voluntary	Binga Philippines

Additionally, energy may be supplied at preferential rates, e.g. in Norway, or property and local government taxes being paid, such as Norway, and assigned to affected areas (WCD 2000a).

4.4 Basis of calculation

Table 9 shows the basis of calculation employed in each case.

Table 9. Benefit-sharing: basis of calculation – by project

Project/country	Basis of calculation	Total amount	Numbers of persons affected
1. Akosombo, Ghana	Fixed amount, legislation specific to Akosombo.	USD 500.000 p.a.	80,000
2. Sélingué, Mali	Fixed tax ('taxe de main morte') calculated as a percentage of the value of the capital asset, independent of annual production, with national legislation applying to all infrastructure assets.	USD 662,500 p.a. (2005 PPP)	12,490
3. LHWP, Lesotho	Water/electricity sales revenue. Project specific.	Variable USD 41.3m 2000–2005 (2005 PPP)	4,000
4. Kompienga, Burkina Faso	Fixed tax, based on national legislation applied to infrastructure assets.	Fixed. USD 454,000 (2005 PPP) per annum	1,562
5. Bagré, Burkina Faso	Fixed tax based on national legislation applied to infrastructure assets.	Fixed USD 225,000 (2005 PPP) per annum	618
6. Makawanpur, Nepal	Royalty on hydropower project: 12% to District Development Committee and 38% to development region, based on national legislation applying to all dams.	USD 1.43m (2005 PPP) per annum	329 households for Kulekhani hydropower project
7. CBT, Canada	Initial endowment: 5% of downstream benefits in 1995 owned by British Columbia, plus equity ownership and flood control benefits. Negotiated within trans-boundary basin.	USD 244m (2005 PPP) in 1995	2,300 through flooding
8. Glomma & Laagen, Norway	Tax on profit, property taxes, natural resource taxes, contribution to business development fund, preferential electricity rates for local communities. Specific to Glomma-Lagen basins; locally negotiated.	28% tax on profit /USD 60m (2005 PPP), per annum, constitutes 1.9% of municipality and county budgets	None

Project/country	Basis of calculation	Total amount	Numbers of persons affected
9. Urrá, Colombia	Royalty on gross hydropower sales: 6%. National legislation applied to all dams.	USD 4.85m (2005 PPP) in 2011	7,300
10. Cree Nation, Canada	Indexed amount; project specific negotiated with Cree.	USD 58m (2005 PPP)	
11. NT 2, Lao PDR	Fixed amount: hydropower sales revenue.	USD 30m p.a. (2010–2019); USD 110m p.a. (2020–2034)	6,300
12. Binga Hydro	Percentage (1%) of company income, voluntary CSR fund (private sector operator) USD 0.05/kWh to three national funds.	Voluntary, variable, USD 184,000 (2005 PPP) per annum	
13. Kandadji, Niger	Electricity sales: 3%, based on legislation specific to Kandadji.	USD 880,000 to 1.32m (2005 PPP; estimated)	38,000 (estimated)

Table 10 shows the basis for calculation referred to in Table 9, organised by type of calculation.

Table 10 Benefit-sharing: basis for calculation – by type

Basis of calculation	Rationale	Case	Country
% of revenue/sales (hydropower/water)	Proportional to project success. Promotes buy-in from local communities. Voluntary contribution to CSR fund.	Kandadji Urrá CBT LHDP Makawanpur Binga	Niger Colombia Canada Nepal, Lesotho, Philippines
Joint ownership	Project-specific negotiations give a stake in project, generates a revenue stream for trust funds.	CBT Glomma & Laagen	Canada Norway
Fixed amount	Paid irrespective of project success.	Akosombo NT2	Ghana Lao
National taxation policy	Levied on all infrastructure assets in a municipality.	Sélingué, Kompienga, Bagré	Mali Burkina Faso
Preferential electricity rates	Share in benefits generated by project (for municipalities/communities).	Glomma/Laagen Binga	Norway Philippines

An individual case may employ more than one type in Table 10 – for example the benefit-sharing mechanisms in Norway appear at two places.

In the Binga case in the Philippines, a parallel mechanism has been created to national legislation: the government of the Philippines levies a fixed amount of 1 centavo per kWh. Beyond this legal requirement, the company dedicates 1 per cent of projected net income after tax to the voluntary CSR fund.

In Nepal, the Philippines and Colombia, there is an explicit effort to redistribute royalties, and percentages are fixed through a political process that can be revisited (e.g. Colombia). Inherent in the negotiation, is the seeking of a compromise between the objectives of making the transfers of sufficient volume to meet the declared objectives of the benefit-sharing, without an excessive impact on the internal rates of return of the investment. In Mali and Burkina, the level of taxation is a national standard and there has been no process to adapt the system for hydropower. In the Cree Nation case, negotiations may be part of processes redefining broader relations between the parties. In other cases, the amounts transferred depend on local politics and /or relationships with the financier.

As discussed in section 3.2.3, the Norwegian system is designed to generate benefits for citizens of hydropower-generating regions through several different, linked mechanisms, with some funds originating from taxes only levied on profits and others derived per unit of electricity sold. The CBT, meanwhile, benefits from partial ownership of power structures, a steady incoming revenue stream, alongside the initial CBT endowment.

As for the continuity of flow of benefits, even those cases which define fixed amounts to be paid, such as the VRA RTF, NT2 or Kompienga and Bagré, nevertheless, depend immediately on operations as the stream of revenue will be stifled if revenues or revenue-sharing cease temporarily due, for example, to drought or necessary repairs. The VRA RTF reports in several years that the VRA was in arrears. As described in section 3.3.1., that was echoed by the mayor of Sélingué stating that the national energy company in Mali owed his and other municipalities several years' worth of contributions. According to the mayor of Sélingué, 90 per cent of his municipality's budget derives from the tax payments from the power company which in theory is independent of electricity production. This means the reported absence of payments is likely to have considerable impacts on the provision of local services. Unlike the case of a trust fund, when the absence of payments would affect the scale and number of projects supported, in the case of a municipality a variety of different services offered by government will be affected. The discrepancy between the flows agreed between dam developers and local communities, and actual payments may be explainable by factors beyond the actors' control, such as drought or political unrest, but the consequences on the intended beneficiaries may be severe.

More explicitly, many of the example mechanisms 'peg' payments to the revenue stream generated, or to the actual rate of resource extraction, as for the Cree Nation, or levy royalties on hydropower or water sales, as with the Lesotho Highlands Water Project. Conversely, this also creates a benefit from higher revenues with greater production and makes the prospect of expanding hydropower financially attractive.

In the case of Sélingué in Mali and Kompienga and Bagré in Burkina Faso, all payments are being made to local authorities, but bear no relation to the number of people resettled as a result of the dam: Sélingué receives FCFA 96 million for 12,500, Bagré FCFA 45 million for 618, and Kompienga FCFA 100 million for 1,500 people, meaning that Sélingué and Kompienga have similar revenue flows, despite a very different scale of resettlement challenges, but also almost identical project costs at FCFA 35 billion and almost identical reservoir capacities at 2 billion m³: this is because the measure used to calculate taxation is independent of the impact on local people.

An advantage in the case of the Cree Nation is that the funds are drawn from three different types of resource extraction, likely to guarantee funds in every year, whereas revenues only generated by hydropower may literally dry up in some years due to reasons of drought, repairs or political unrest. This is an issue both in the case of dedicated project funds, which are likely to have only one source of income, having been specifically set up for the purpose of managing hydropower funds, and in cases where municipal authorities depend greatly on royalty payments.

Unlike royalties negotiated between the parties to revenue-sharing arrangements, taxes levied will frequently depend on sets of variables outside their direct control, being defined by different actors within government. The degree to which budgets depend on dam revenues varies greatly, from 1.9 per cent in Glomma & Laagen municipality and county budgets, to 65 per cent for one DDC in Nepal, to 90 per cent for Sélingué, to 100 per cent for several project-dedicated funds. Although it is interesting to note these discrepancies in magnitude and sources of revenue, generalisations appear unhelpful since the specific remit and responsibilities of the receiving bodies are just as varied as the percentages and volumes of dam-related revenues they receive. The detailed revenue-sharing measures are conceived according to the intended purpose of the benefit-sharing or redistribution mechanism in question.

The Cree Nation case is a good example, as revenues transferred are a different order of magnitude than for most other schemes due simply to the much greater remit of governmental tasks they are to finance. They derive from forestry and mining as well as hydropower. The logic, however, governing the calculation of the funds is interesting. Although a minimum level is set for a 45-year period below which the funds cannot drop, the pay-out will be increased if resource extraction from those three sources also increases, thereby counteracting the danger of inflationary forces undermining the availability of substantial resources. The stationary level of funds as in the case of the VRA RTF constitutes a conceivable risk whenever fixed amounts over long periods of pay-out have been agreed in advance, as is also the case for example at NT2. The dual approach of having one fixed figure, and one figure due to rise with the pace of resource extraction, as well as a calculation basis stretching over five rather than just one reference year, may be a useful option in other cases. In the case of the Lesotho Highlands Water Project, although eventual pay-outs were lower than expected, the benefit-sharing mechanism comprised monthly payments composed of one fixed component over 50 years, representing cost savings, and one variable component paid per cubic metre of water. That model ensures that the pay-out can rise with actual consumption, while guaranteeing a fixed payment base.

If payment values are set in advance for long periods without building in adjustment mechanisms, beneficiaries may become frustrated given the absence of provisions for population growth, price rises, inflationary forces or, if fixed in a foreign currency, exchange rate fluctuations. These factors are likely to effectively reduce the availability of funds over time, thereby constituting an agreement with a built-in progressive budget reduction.

The solution agreed in the Cree case may be viable in such cases. The New Relationship Agreement between the Cree and the Québec government stipulated that the larger of two sums be paid out annually: either a fixed amount, or an indexed amount rising at the same pace as overall resource extraction. The agreement of a fixed amount precludes populations from participating in greater revenues generated (globally, hydropower plants are increasingly profitable as the price of electricity rises), although, in theory, protecting them from reductions should be incorporated as operational or weather issues limit electricity production.

4.5 Use of funds

Table 11 presents an overview of the types of activity intended for funding, according to the terms of the documents governing the benefit-sharing mechanisms. Some of these topics overlap (e.g. poverty reduction vs community development vs economic development) but they are presented here as found in the original documents.

As Table 11 shows, there is a wide variety of initiatives that the different benefit-sharing mechanisms are designed to fund, encompassing economic, social and environmental objectives. Many activity types in the table are labelled according to general headings.

The economic domain includes initiatives as diverse as training and skills development for livelihood improvement. Potential access to credit and agricultural extension services as well as infrastructure-building programmes also falls within this category.

In terms of social activities, activities may include the construction and improvement of educational or health facilities as well as support for youth or women's programmes.

As for environmental activities, biodiversity-protecting or – restoring schemes as well as watershed protection, related to the long-term sustainability of the benefit-generating infrastructure, are eligible for support. This is especially the case in smaller steeper catchments subject to deforestation or degradation pressures that might impact the storage capacity or functioning of downstream infrastructure.

In both Colombia and Nepal, restrictions are set on the total administrative or operating costs, with the rules in Nepal expressly forbidding that type of expenditure and Colombia allowing a maximum of 10 per cent. By contrast, the VRA RFT allocates 25 per cent of its funds to day-to-day administration through the Secretariat.

Table 11 Benefit-sharing – use of funds

Activity	VRA RFT	Sélingué	LHWP	Kompienga	Bagré	Makawanpur	CBT	Norway	Urrá	Cree	NT 2	Binga	Kandadji
Services													
Water and sanitation	✓		✓						✓				
Health	✓		✓								✓	✓	
Education	✓		✓								✓	✓	
Development													
Poverty reduction						✓					✓		✓
Community development							✓		✓	✓			✓
Watershed protection							✓		✓				
Economic development			✓				✓	✓		✓		✓	✓
Infrastructure	✓		✓			✓				✓	✓	✓	
Other Categories													
Social/cultural activities							✓			✓		✓	
Environmental protection			✓			✓	✓		✓	✓	✓	✓	✓
Core budget – local government		✓		✓	✓			✓		✓			
Specific youth focus							✓			✓			
Capacity-building			✓			✓					✓		✓
‘Other’			✓			✓				✓	✓	✓	
Specific limit on administrative/ operating costs						✓			✓				✓

The CBT, by spreading its funding across a broad array of activities, ranging from youth groups to environmental causes, aims to ensure benefits accruing to the entire project region, while also allocating funds to local governments to be spent in accordance with their needs.

The Cree Nation case, albeit on a slightly different basis given the wide-ranging governmental responsibilities taken on by the Cree Nation governments, also aims to spread its funds across a wide range of activities, ranging from housing to supporting trappers and building community infrastructure. It could be argued that this strategy of 'spreading the benefits' will diminish the impact per individual sector, but by distributing funding across a wide range of issues, benefits to a very large part of the community are ensured.

The individual breakdown of funding activities, however, differs between the CBT and the Cree Nation case, with the CBT devoting over one-third of its funding to community development and environment the next largest item at approximately one-eighth of funding. For the Cree Nation, combining different community-related expenditure items such as community centres, community infrastructure and community facilities and equipment, this item accounts for one quarter of expenditure for 2008/09, closely followed by local government tasks and housing combining for 22 per cent. A special expenditure item provided for by the Cree's Eenou-Eeyou Limited Partnership is a heritage fund receiving 15 per cent of the annual allocations, which is to provide a long-term revenue stream for coming generations, constituting a long-term investment choice to ensure sustainable revenues.

The cases reviewed illustrate how the same general benefit-sharing mechanism may be applied to spend funds on different purposes locally: for example, the Nepalese Sinhupalchowk district development committee chooses to prioritise education, poverty reduction and health, whereas the Makawanpur DDC emphasises conservation, institutional and human resource development, rural electrification, social mobilisation and infrastructure. The VRA RTF also shows that, where autonomy is clearly built into a trust fund's statutes, the uses to which funds are put may be adapted to local need and circumstances at different times. At the same time, it is noteworthy that only four types of projects – namely, water/sanitation, education, health and community infrastructure – have been supported by the VRA RTF over the years, with the basic needs approach championed from 2007, narrowing it down further to the first three, and in 2009, a high proportion of funds was spent on a single topic, education. This suggests that even 30 years after the Akosombo dam came into operation, there is still an acute need for such basic needs to be addressed and funds are inadequate to meet all identified needs across the spectrum.

The Colombia case is an example of a historically strong environmental focus and a clearly prescribed use of funds. Even prior to the current governing law, transfers from the energy sector equalling 4 per cent of energy sales from all energy producers, as required by a 1981 law, were to be dedicated to environmental protection measures (Consejo de Estado 2003). The current legislation demands that 3 per cent of gross hydropower sales be transferred to regional environmental authorities (the CARs) who are obliged to use the funds to protect the environment and watersheds in the project's area of influence. A further 3 per cent is devolved to municipalities and districts for infrastructure projects provided for in municipal development plans, with water and sanitation infrastructure a priority. In practice, it seems, however, that some Colombian local and regional authorities have circumvented the legal requirement to spend on environment and watershed protection and they have spread their funds more widely (CCoC 2011c).

A regular criticism of hydropower projects is that the electricity they generate flows outside the generation area to the capital, while many dam communities remain off the grid. Nepal's 2001 Hydropower Policy stipulated that 1 per cent of the royalty paid to government would be passed to the village development committees specifically for rural electrification.

Several cases tie in the prescribed uses of funds with the goals and objectives stipulated in local development plans. In the Colombia, Binga and FIDEL/K cases, albeit by national legislation and project-specific benefit-sharing funds, respectively, all support the same strategy of integrating development activities funded from hydropower benefits into locally stipulated objectives. By virtue of taxes constituting considerable budget items in the Sélingué, Kompienga and Bagré cases, these funds are spent on local development plans indirectly as part of the municipalities' ordinary budgetary processes.

4.6 Representation of local communities in decision-making; empowerment

As for local control, in the case of project-specific funds, the dedicated institutional structures that are set up to govern and redistribute funds may allow for a broad range of participation including representatives of communities and civil society. In other cases, the direct involvement of project-affected communities may be less strong. For example, where funds are paid into different local government levels, participation will only extend as far as the usual electoral process, which may involve representation by both individuals unaffected by the dam and dam-affected groups. That said, the devolution of funds and responsibility to municipal or regional levels can serve to empower local/regional entities and processes.

In the case of project-dedicated funds, the composition of boards deciding over the direction of funds is crucial for the 'voice' of local communities in the application of funds. At the VRA RTF, the managing trustees include local MPs who are the legitimate representatives of local people, elected through universal suffrage. Affected people, however, only constitute a proportion of that electorate, spread over several different constituencies.

The case of the proposed FIDEL/K mechanism governing Kandadji makes detailed provisions designed to ensure that community, municipal, regional and national levels are represented in the decision-making process on a project proposal, specifying the presence of women and young people on the various committees. The resulting proposal is a complex, multi-tiered structure. It remains to be seen how well it works in practice. While the programme requires review and endorsement at different levels, affected communities are the only parties who can initiate a funding proposal, and the only eligible beneficiaries.

The CBT ensures communities have a 'voice' by involving their representatives through the consultation of voluntary advisory committees, specialising for instance in environmental, social or youth matters, while stipulating that all directors serving on its Board be resident in the basin. Further, thanks to its community investment program/affected areas program, funds are allocated directly to local government partners to answer to priorities identified in the respective community.

The influence that local affected communities exert may also be quite limited, as in the cases of Sélingué, Kompienga and Bagré. In those cases, not only are people largely unaware of the funds, but they also have no way of directly influencing the activities on which the budget contributions are spent, beyond the right to vote for, and thereafter influence, elected councillors. In the case of the Urrá project in Colombia, national legislation prescribes how hydropower-generated royalties must be applied, for environmental and watershed protection measures, with the regional/municipal authorities nevertheless interpreting the law broadly, and deciding on other uses of funds – decisions in which communities may have a limited direct say.

One may hypothesise that, the farther from local communities funds are received, the less control those communities may have over the resources and the less likely they will be to benefit. In the case of the Lesotho Highlands Water Project, the World Bank came to a different conclusion. The World Bank project performance assessment report on Phase 1B and the Community Development Support Project expressed the view that channelling funds through the central government budget would have been a preferable option, since (according to their observations) the established fund proved inefficient and non-participatory (WB 2010c). In some ways, this contradicts other experiences in which it is precisely the channelling through central government budgets which raises criticisms from local project-affected communities as to transparency and accountability of funds management. The case of LHWP would seem to be a counter-example, since, as noted above, the decision-making has been criticised as politicised due to over-representation of ministers on the Board, in the absence of civil society representatives.

The Binga project in the Philippines constitutes a special case, as it is conceived as a CSR fund in which the company directly approves projects received from the community and dispenses funds usually directly to service providers such as construction companies, rather than to a trust fund or a local authority. From the company's perspective, this reduces inefficiencies and possible misuse of funds. Further research would, however, be needed to establish whether this approach may constrain opportunities for empowered decision-making by communities.

4.7 Accountability and transparency

As alluded to above, a recurring theme throughout all institutional arrangements and legal mechanisms is accountability and transparency in the governance process, including the extent of information that is made publicly available.

When funds are paid directly into local budgets, this can constitute an enhancement of local decision-making by making financial resources available to a local level of government. The case of the Cree Nation with the contributions made under the New Relationship Agreement stands out: the devolved funds have played a considerable part in empowering an indigenous community, enabling Cree Nation governments to manage and spend funds also in educational, social and economic development domains in accordance with community priorities.

The governance mechanism stipulated by the District Development Committee at Makawanpur, Nepal is an example of a devolved entity choosing to fill a legislative vacuum with a directive of its own making. It effectively established a project-dedicated fund of its own accord, without, however, ties to the project operator because funding is received from the central government: the portion of the DDC-reallocated royalty benefiting upstream communities is paid into a special environmental management fund run by a sub-committee, with local organisations able to get involved in the planning and monitoring of environmental and development projects if they wish. The case appears, therefore, to constitute an instance of dual empowerment, of a devolved entity and of local organisations. The same can be said for both the CBT in Canada and the VRA RTF in Ghana, since the funds are disbursed explicitly in cooperation with local development partner organisations.

Where funds are absorbed directly into local or national budgets without affected community oversight, accountability and transparency of decision-making may pose a challenge. It has been noted above that local people in Mali and Burkina Faso are not aware that the hydropower operators of the Sélingué and Kompienga and Bagré projects pay a local tax that funds municipal budgets. The negative impacts that they perceive are not, therefore, outweighed or balanced by awareness of this general community benefit accruing to some of the municipalities affected.

As regards project-dedicated funds, issues around accountability and transparency have also arisen, in relation to, for example, the entity (or entities) tasked with managing the funds derived from the Lesotho Highlands Water Project (WB 2010c). Critics have also called on the World Bank to make monitoring reports on project impacts and use of funds regarding NT2 more readily available in future (NGO Coalition 2010). By contrast, the Cree Nation agreement and the CBT are examples of satisfactorily accountable and transparent policies and processes on the use of funds.

Skills in funds management may not be in place from the outset and may therefore need to be developed over time with support from training. In Norway, for example, the intricate web of legislation and different mechanisms to ensure wide community benefits is predicated on a well-functioning administration able to set, enforce and monitor the various mechanisms in place, which may not be a given in all contexts.

5. Conclusions

This review has examined cases of benefit-sharing and described how they are structured and operated. The following are preliminary conclusions from this selection of cases.

5.1 Accumulated experience of benefit-sharing

The cases reviewed illustrate different mechanisms for redistributing benefits – both ‘C’ and ‘D’ in section 2.6. Whereas, in 2008, cases of benefit-sharing in the hydroelectric sector were noted as being “still rare” (Cernea 2008:98), the “novel trend” noted at that time (ibid) has now been consolidated into a substantial body of experiences in benefit-sharing.

5.2 Local benefit and control

The cases reviewed underline the challenges of establishing and maintaining local benefit and control:

A key element of governance for local benefit and control is the decision-making structure established and the extent to which project-affected populations can directly influence the use of funds.

- Where funds are paid into government budgets, the risk is that they will be absorbed and applied as general expenditure, without benefitting actors external to government, including local populations. In other words, despite the intent to create a ‘benefit-sharing’ mechanism, local needs and aspirations may still be subordinated to national, or regional, development priorities. To outweigh that, adequate representation of local communities on the decision-making bodies responsible for allocating funds is crucial.
- In principle, one may expect that local benefit and control will be more likely realised through an entity that is separate and independent of both the project developer and government. In practice, this will depend on the degree of accountability and transparency of relevant decision-making processes.
- Within a legislative framework established at national level, the cases suggest that there can be room for manoeuvre to adapt a fund to local needs. At Makawanpur in Nepal, for example, the district development committee developed its own rules and regulations on resource use. The cases of Komienga and Bagré in Burkina Faso, and the Cree Nation and Columbia Basin Trust (CBT) in Canada, demonstrate that even within an identical national legislative environment, there can exist leeway for local adaptation.
- At the heart of this issue are the policy goals/objectives – the extent to which ‘redistribution’ to project-affected populations is intended. Where funds are transferred into a government budget at national level to finance a national strategy, as for example in the Nam Theun 2 case in Lao, their role is prescribed as extending beyond the project area, acting as a vehicle for redistribution of revenues in the national interest, rather than being motivated by local development. Funds distribution will, *a priori*, be remote from local perceptions of local need. In contrast, the funds from the VRA RTF were specifically designated for the benefit of the 52 resettlement townships established, and the future FIDEL-K fund at Kandadji also envisages targeted support for local populations.
- Project-specific development funds may, on the other hand, be set up specifically to ‘ring-fence’ funds and target them to local development objects.
- In contexts of increasing variability in rainfall and accompanying major variations in river flows, it will be important to avoid a dependency on a sole source of hydropower related funds. So, for example, in the case of the Cree Nation, the funds are drawn from three different types of resource extraction, likely to guarantee funds in every year, whereas revenues only generated by hydropower may drop substantially in some years due to drought, repairs or political unrest. This is an issue both in the case of dedicated project funds, which are likely to have only one source of income, having

been specifically set up for the purpose of managing hydropower funds, and if municipal authorities depend greatly on local taxation of infrastructure.

5.3 Scale of benefits/volume of funds

As for the scale of benefits and volume of funds deployed by these cases of benefit-sharing, these vary greatly. Overall, this body of experience points to a (wide) range in terms of the ‘acceptability’ of the level of royalties, between a minimum of 2 per cent and a top level of 15 per cent of project income. In terms of the weight of funds at municipal level, the levels vary between 1.9 per cent of municipal budgets in Norway and 90 per cent in Mali. The percentage levels provided for in these cases do not seem to be based on an assessment of ‘need’, or least not one arrived at by a systematic needs assessment. Preferred mechanisms are a tax or royalty on either installed capacity/infrastructure and/or on income streams from hydropower sales.

Box 1 Main issues to consider when designing benefit-sharing processes

1. Equity in allocations between administrative units reflecting the geography of the watershed/reservoir/affected communities
2. Are affected populations, or possible environmental impacts, sufficiently large to justify a project-specific fund?
3. What degree of control (subsidiarity) between government, elected officials and local communities?
4. What percentage of revenues is appropriate to meet needs while ensuring the dam is financially viable?
5. What is the appropriate balance between social and environmental targeting of funds?
6. If there is drought or maintenance and revenues are reduced, what risks do these generate for beneficiaries?
7. Are there specific problems the revenue stream should address (targeting) or can allocation of funds be delegated to local elected institutions?

5.4 Negotiated outcomes

The scale of benefits arrived at will, typically, be the product of the politics of engagement between project developers and project-affected populations, with the best settlements for local people – for example in the Cree Nation and CBT cases – resulting from their ability to mobilise and organise themselves and to negotiate through their representation on relevant decision-making bodies. The centrality of ‘negotiated outcomes’ was highlighted in the report of the World Commission on Dams which emphasised that:

“Only decision-making processes based on the pursuit of negotiated outcomes, conducted in an open and transparent manner and inclusive of all legitimate actors involved in the issue are likely to resolve the complex issues surrounding water, dams and development” (WCD 2000a:xxxiv)

The WCD noted that the reaching of satisfactory negotiated outcomes depended, in great part, on governments fulfilling their roles “as planners and enablers of development choices”, as well as their “responsibility to ensure the provision of services and safeguarding of entitlements”. The cases presented here demonstrate that there is no single approach but a wide range of possible measures and mechanisms to be adapted to local and national reality.

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Building of large dams is increasing rapidly after a lull in construction at the end of the last century. Global drivers of this growth include demand for low carbon energy and structural reform of energy markets and this report analyses these processes in more depth. It assesses the compulsory, donor driven and voluntary frameworks for ensuring sustainable environmental and social outcomes from large hydropower dams, their application to individual projects and makes recommendations to improve results on the ground.



Project materials

Water

Keywords:
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International Institute for Environment and Development
80-86 Gray's Inn Road, London WC1X 8NH, UK
Tel: +44 (0)20 3463 7399
Fax: +44 (0)20 3514 9055
email: info@iied.org
www.iied.org

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