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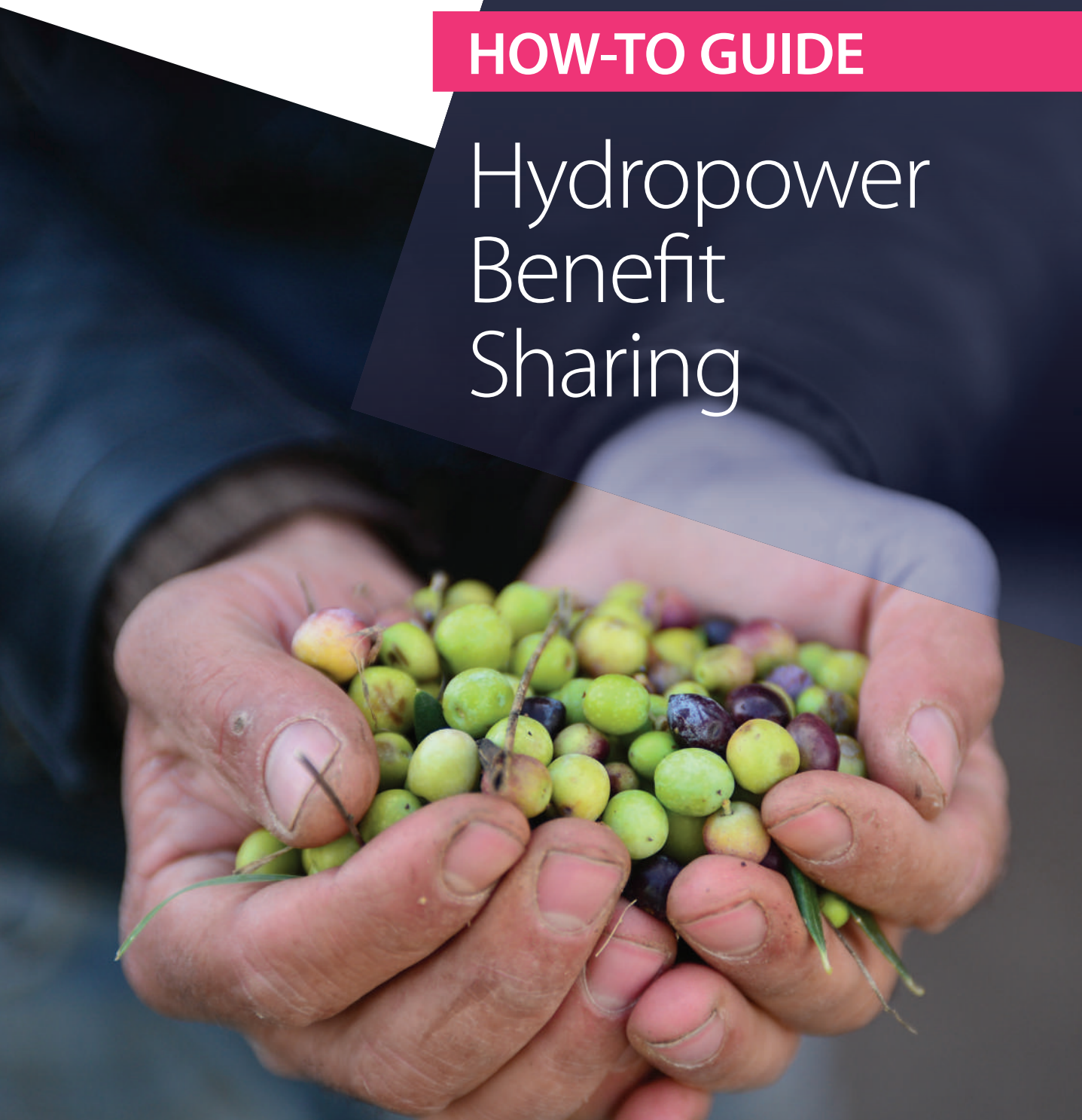
HOW-TO GUIDE

Hydropower Benefit Sharing



A guide for hydropower project developers and operators on delivering good international industry practice

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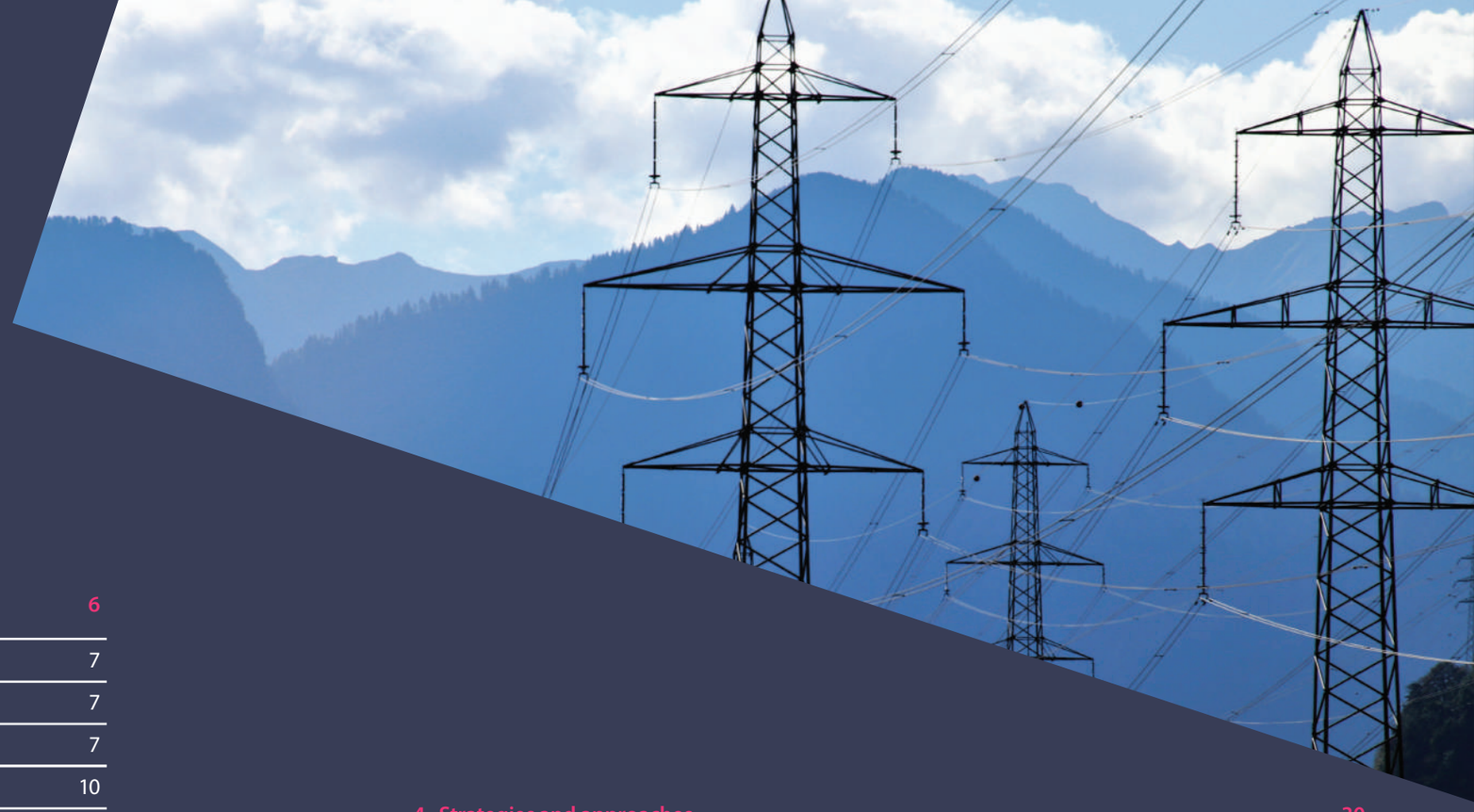

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Fish farming and organic agriculture project near Jirau Hydropower Plant, Brazil.
Photo credit: ENGIE Brasil

Introduction

Hydropower projects are built and operated to provide electricity and other services such as irrigation or flood management. In addition to these core functions, they can also provide further benefits in nearby areas.

A fair and transparent process for sharing project benefits with local stakeholders and affected communities ensures that projects contribute to sustainable development. A well-designed programme of benefit sharing demonstrates that developers and operators are acting responsibly towards local communities. This may in turn facilitate public acceptance, avoid business risks, and increase the economic viability of a project.

Visitor centre near Romanche-Gavet Hydropower Project operated by EDF, France
Photo credit: Bernt Rydgren

1.1 This How-to Guide

1.1.1 Aim

This How-to Guide aims to contribute to increasing knowledge and understanding of the practical measures that can be undertaken to meet good international industry practice, in conformance with the internationally recognised Hydropower Sustainability Tools (see Box 1.1).

This guide expands upon the Hydropower Sustainability Guidelines on Good International Industry Practice (IHA, 2018) and is designed to provide support to practitioners and stakeholders in sharing the socio-economic benefits of a hydropower project.

The key decision-makers for benefit sharing are the hydropower companies that develop, own and operate projects, as well as governments. The guide can help developers and operators identify and deliver benefits to project-affected communities, thus enhancing the development contribution of projects and increasing their public acceptance or 'social licence to operate'.

1.1.2 Approach and structure

The approach of this guide is to map out the necessary steps or deliverables that the developer or operator must take or prepare in order to meet good international industry practice, in relation to the project life cycle, from early concept through to detailed design, construction, and operation.

The guide is presented in five chapters and three annexes:

- **Chapter 1** – Introduction
- **Chapter 2** – Understanding benefit sharing in hydropower
- **Chapter 3** – Achieving good international industry practice
- **Chapter 4** – Strategies and approaches
- **Chapter 5** – Conclusions
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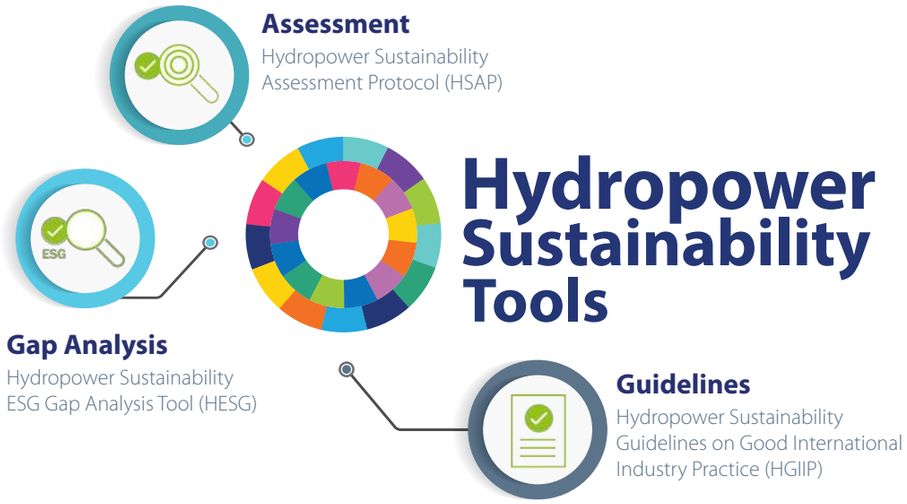

The Hydropower Sustainability Tools are governed by the Hydropower Sustainability Assessment Council, a multi-stakeholder group of industry, government, financial institutions, and social and environmental NGOs. The tools are supported by the International Hydropower Association (IHA), the council's management body.

Sustainability guidelines

The Hydropower Sustainability Guidelines on Good International Industry Practice define expected sustainability performance for the sector across a range of environmental, social, technical and governance topics. Released in 2018, the 26 guidelines present definitions of the processes and outcomes related to good practice in project planning, operation and implementation. As a compendium, the guidelines are a reference document for meeting the expectations of lenders, regulators and consumers. Compliance with each guideline can be specified in commercial contracts between financiers and developers, and between developers and contractors. The guidelines are based on the performance framework of the Hydropower Sustainability Assessment Protocol.

Project benefits

The Project Benefits good practice guideline addresses the additional benefits that can arise from a hydropower project and the sharing of these benefits. Adherence to this guideline is measured using the HSAP and the HESG.

Further information

Visit Hydrosustainability.org

Assessment protocol

The Hydropower Sustainability Assessment Protocol offers a framework for objective assessments of hydropower project performance. It was developed between 2007 and 2010 following a review of the World Commission on Dams' recommendations, the Equator Principles, the World Bank Safeguard Policies and IFC Performance Standards, and IHA's own previous sustainability tools. Assessments are delivered by independent accredited assessors and can examine different stages of a project's life cycle. Evidence collected during an assessment is used to create a sustainability profile and benchmark performance against both good and best proven practice. The assessment protocol was updated in 2018 with a new topic covering hydropower's carbon footprint and resilience to climate change.

Gap analysis tool

The Hydropower Sustainability ESG Gap Analysis Tool enables hydropower project proponents and investors to identify and address gaps against international good practice. Launched in 2018, the tool is based on the assessment framework of the HSAP's environmental, social and governance topics.

It provides a gap management action plan to help a project team address any gaps and is divided into 12 sections that are compatible with both the IFC Environmental and Social Performance Standards and the World Bank's Environmental and Social Framework.

1.2 Benefit sharing in the Hydropower Sustainability Tools

The hydropower sector now has a suite of Hydropower Sustainability Tools to harmonise the understanding of sustainability in hydropower.

A separate topic on project benefits is included in all three of the main HSAP tools that correspond to the project life cycle stage – preparation, implementation, and operation – and requirements on benefit sharing are also set out in the HESG. These provide a definition of good international industry practice in the management of project benefits, in relation to criteria on Assessment, Management, Conformance and Compliance, and Outcomes.

The intent of the Project Benefits topic is that:

- Opportunities for additional benefits and benefit sharing are evaluated and implemented (or 'fulfilled' in the Operation tool), in dialogue with affected communities, so that benefits are delivered to communities affected by the project.

1.2.1 Objectives of this How-to Guide

The objectives of providing additional benefits to affected communities are as follows:

- To avoid situations where benefits are disproportionately provided to the users of a project's core services while 'leaving behind' affected people (for example, when electricity from a project is sent to a distant industrial area and no provisions are made for electrification of villages around the project). Such an approach could deepen regional disparities.
- To promote public acceptance or, in other words, a 'social license to operate'. In most parts of the world, it is no longer the case that decision-makers can tell those affected that they have no choice but to bear the impacts of projects in the interest of the nation. A lack of fairness and public acceptance can lead to multiple challenges at the project level, and the resulting conflicts can undermine political support for hydropower.
- To promote development in remote areas. Hydropower projects are often located in remote, underdeveloped areas, and can serve as development poles to foster regional equity, transformative change and capacity building.
- Hydropower projects typically lead to additional local economic activity during the construction period, but much of this is captured by non-local contractors, suppliers, workers, and camp followers. In the longer term, projects that have no specific provisions for benefit sharing and employ only a small number of staff during operations may have negligible positive impacts on local livelihoods. To reach the objectives listed above requires dedicated initiatives for benefit sharing.

It is important to recognise why many decision-makers are still reluctant to share benefits. Initially, benefit sharing increases the costs or reduces the revenue of projects. In public sector projects, any benefits generated by a project are by definition shared between different segments of the public (electricity consumers, citizens as the owners of the utility, taxpayers, local communities, etc), and benefit sharing with local communities amounts to a redistribution of these benefits. In private sector projects that operate in regulated markets, it may be possible for increased costs to be rolled over into the sales price of electricity (in other words, the benefits for consumers are reduced). In private sector projects that operate in competitive markets, increased costs may reduce profits (in other words, the benefits for investors are reduced).

While redistribution is often well-justified, one additional objective of benefit sharing is to identify opportunities to go beyond a simple redistribution of benefits, or a 'zero-sum' mechanism. Ideally, benefit sharing should

be a win-win situation where sharing is in the own best interest of other stakeholders such as investors, ratepayers, and taxpayers.

Beyond these utilitarian arguments, benefit sharing is also part of an attitude or mindset that seeks to establish hydropower projects as 'good neighbours' of affected communities: "The notion of benefit sharing ... treats both displaced people and communities that host the hydropower project in their locality as legitimate partners in the project and first among its beneficiaries." (Haas et al, 2007)

1.2.2 Scope

The scope of this guide follows the definitions of the Project Benefits topic of the HSAP, which addresses the "additional benefits that can arise from a hydropower project, and the sharing of benefits beyond one-time compensation payments or resettlement support for project-affected communities".

Benefit sharing does not concern:

- Mitigation of negative impacts, which have to be identified and addressed separately. For example, when private land is acquired at market rates, no additional benefit is provided to the previous landowner, but a zero-sum exchange of assets takes place. The same applies to longer-term compensation (for example, a lease agreement at market rates). In fact, land acquisition involves considerable disruption and risks for affected people and 'perfect' mitigation is so difficult to achieve that developers should generally pay more than market rates or provide larger replacement plots in order to compensate for some of these risks.
- Benefits that are built into the design of the project and are unavoidable or unintentional. Hydropower projects can provide many benefits to local communities simply as a result of normal construction and operation activities. They may supply power at a lower cost than from alternative sources; allow usage of an access road; or provide some local employment and procurement. Activities that do not cause additional costs should not be considered as additional benefits.
- In practice, as the following examples show, there may be fine lines or a 'grey zone' between these categories. The purchase price of land may be quite generous, meaning it includes additional benefits. A project access road may be built with a more permanent surface, may be maintained by the project after it is no longer needed for construction, or may be aligned to include access for a local village; again, this includes an element of additional benefits. Payments to landowners in the catchment for environmental services may have some benefits for the developer, but those benefits may be difficult to estimate and one of the purposes of the payments scheme may be to redistribute resources to a poor upland area. Only a part of the payments would then compensate the catchment landowners for restrictions on land use, while another part would be considered an additional benefit. A community development fund may administer not just shared revenues but also compensation payments for customary communally-owned land, and it may not be obvious to recipients which part is compensation and which part is an additional benefit. Many of the principles outlined in this guide are applicable to both mitigation and compensation measures on the one hand and benefits on the other.

2 Understanding benefit sharing in hydropower

Livelihood project at an olive orchard near Banja Hydropower Project, Albania
Photo credit: Statkraft

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Understanding benefit sharing in hydropower

Benefit sharing is a relatively new term in the hydropower sector, with interpretations, objectives and practices that are not yet widely understood. This chapter sets out a range of dimensions encountered in practice to set the scene for the more specific requirements and approaches described in Chapters 3 and 4. The dimensions covered here include the spectrums between:

- Local and national beneficiaries
- Benefits that are built into siting, design and operational decisions, and those which are identified later
- Regulatory and voluntary benefits
- Minimum-effort and more ambitious levels of benefit sharing
- Monetary and in-kind benefits
- One-time and permanent benefits
- Participatory and top-down benefit governance mechanisms

2.1 Beneficiaries

The primary target group to share benefits with are affected people and communities, i.e. populations surrounding hydropower projects that are negatively or positively impacted. A community can be a settlement such as a village or a wider group with a collective identity.

There are a number of reasons to consider affected people as priorities for benefit sharing and these go back to the objectives of benefit sharing as described in Section 1.1:

- Project-affected areas may be remote and underdeveloped. By definition, hydropower projects are often in mountainous and wet terrains, not necessarily the most productive lands. Early projects are also often developed close to load centres to reduce transmission costs, but over time more remote sites have to be developed. Thus, it is often the case that project-affected communities are disadvantaged compared to the average standard of living in their countries.

- Mitigation and compensation of negative socio-economic impacts may not be as effective as intended and may not reach all affected people. The focus is often on land acquisition and resettlement, while other affected groups are neglected.

- Project-affected communities may not be in a position to benefit from core project services. For example, they may have low consumption of electricity or no access at all. In the absence of additional benefits, this would tend to perpetuate and deepen regional disparities.

- The consent of project-affected communities is more important than that of any other social group. In the absence of consent, project-affected people are most likely to be able to delay or disrupt a project, for example through lawsuits or blockages.

A secondary target group for project benefits are regional and in some cases, even national populations. Key reasons to expand the concept of beneficiaries beyond the direct neighbours of a project are as follows:

- The allocation of benefits may be disproportional where benefits are substantial and recipient affected communities are small or relatively well-off. For example, it may not be appropriate to restrict fishing rights on a new, highly productive reservoir to a handful of families who happened to live in the reservoir area. This can also be related to the concept of 'absorptive capacity', i.e. the degree to which a recipient can turn the benefits into improved outcomes. In smaller countries with multiple

hydropower projects, the benefits may be an important component – perhaps one of the few options – of the national development strategy and need to be spread across the country.

- Distance to the project may be a poor predictor of impacts, and in some cases other characteristics (such as gender, ethnicity, or vulnerability) should be taken into account in the definition of beneficiaries. Where project impacts – for example, along the downstream river – range over large distances, at the very least benefits should be distributed over equally large areas.

- Different types of benefits may have different distributions of beneficiaries. Some benefits may lend themselves to a distribution by administrative unit (e.g. municipalities), while others may be based on physical impacts (e.g. proximity to river or roads).

- The appropriate balance between a narrower and a wider interpretation of beneficiaries will be specific for each project and each country.

Finally, benefits could go to individuals or individual households, for example in the case of livelihoods training or the distribution of cash payments or equity shares. They could also go to communities, for example in the case of communal infrastructure or equity holdings at the community level. This is a matter of community preferences as well as equity, efficiency and effectiveness considerations.

2.2 Siting, design and operational benefits

Benefit sharing is often still an afterthought, an issue to consider once siting and design are optimised, operational rules are agreed, and all relevant technical and commercial decisions are taken. However, this is not generally the most efficient and effective approach as additional benefits could also result from siting, design and operational decisions.

This is perhaps most obvious in the case of multi-purpose reservoirs. Most hydropower projects are single-purpose, i.e. either they are run-of-river projects with minimal storage or projects that include storage but have no purposes other than hydropower generation. While this is to be expected from commercially oriented developers who expect no revenues from providing other services, it is not necessarily in the public interest. Through regulation or incentives, governments could ensure that reservoirs are indeed designed and operated for a combination of purposes. This may include contributions to climate change adaptation, or adaptation to other changes arising over time.

Related to this is the issue of public use of project facilities. The use of a multi-purpose reservoir for recreation or aquaculture, for example, requires public access in terms of both rules and practicality (e.g. boat ramps). Consideration should be given from an early stage and in dialogue with relevant government agencies to potential public uses of project facilities (e.g. roads, health centres, schools, reservoirs) during construction and operations. If feasible, adjustments can be made to project siting, design and operations to achieve better local benefits. The capacity, quality and costs of facilities may have to be higher if designed as permanent rather than temporary. There may also be public safety and liability implications that need to be considered. Following the construction stage, some facilities may be handed over to appropriate government agencies for operations.

2.3 Regulatory and voluntary benefits

Almost all countries prescribe certain benefits through their regulatory frameworks. These range from taxes and royalties (i.e. instruments that are generic and applicable to all projects in the sector) to highly project-specific license conditions (for example, operational constraints on reservoir management, designed to achieve some flood management benefits). It is rare to see a project that does not produce any additional benefits, for example when it is fully exempt from any taxes because government assigns a very high priority to the core function of providing low-cost power.

In addition, most developers also have some voluntary programmes, often under a Corporate Social Responsibility (CSR) or sponsorship mechanism. In some cases, larger contractors and suppliers engaged on projects have their own CSR programmes and will provide some benefits to communities in the project area, either independent of or in coordination with the developers' programmes.

Regulatory benefits have some advantages because they create a level playing field where developers cannot evade responsibility for benefits and communities have clarity about their entitlements. However, voluntary benefits are often more innovative and sometimes more ambitious, creating new levels of performance that may in time become regulatory requirements.

2.4 Levels of ambition

Closely related to the choice between regulatory and voluntary mechanisms is the choice between more and less ambitious programmes. By this, we mean the proportion of investment or operational costs, revenues, or profits delivered as shared benefits. The scope of such programmes differs substantially, ranging from a minor sponsorship activity that is almost better described as a communications measure (and in fact is sometimes administered by the corporate public relations department) to major regional development programmes. Rather than one 'correct' level of ambition, there are many factors determining what could be seen as an appropriate level in a particular case.

For private companies, the level of ambition depends on the interest of their leadership as well as on any tangible advantages that they expect. For public companies, which include most large hydropower companies around the world, markedly different expectations are set by their owners, i.e. governments. Some governments want to actively use the projects for development and want to capitalise on their presence in a region to accomplish other objectives, such as road-building. Other governments, however, do not consider this to be the core business of their companies, and strictly limit the amounts that can be used for such purposes so that direct government revenue is maximised. This is to avoid the risk that public sector projects with generous benefit sharing programmes could operate outside the budget, not be subject to the regular financial management mechanisms, and follow their own objectives which might not be fully aligned with government priorities.

Since hydropower projects are often located in regions that have seen few public investments, possibly even a history of denial of rights and of exploitation, there may be high expectations on the part of the community. It is important to be aware of and manage such expectations, clarifying that one project or company cannot rectify historical neglect by itself but also acknowledging legitimate claims to inclusion.

The level of ambition not only depends on the willingness but also the ability to pay. The cash flow situation of companies undergoes major shifts during the project life cycle. Sometimes, lenders may restrict cash outflows for non-core activities; some projects are also inherently more profitable than others. In the longer term the market position of hydropower projects may shift, increasing or reducing their ability to provide benefits.

Giving communities a sense of the level of ambition or scale of benefits that they can expect is an important part of expectation management. This can be done, for example, by relating the planned level to concepts they may be familiar with (e.g. the annual budget of the local municipality).

2.5 Monetary and non-monetary benefits

Benefits can be delivered in cash or in kind. For instance, a school building for a local village can be built directly by project staff or by contractors hired by the project's procurement division; alternatively, construction can be organised by the recipient of a grant from the project, for example a municipality or NGO, or it can be part of a school-building programme financed by tax receipts from the project.

Recipients (whether individuals, communities, governments, or NGOs) can have very different preferences regarding financial or in-kind contributions. Some recipients may prefer the project to handle the delivery of the benefit because they are sceptical about their own organisation's capacity to spend money effectively

and efficiently; others may value the increased scope for decision-making that comes with a financial grant. The distinction between monetary and non-monetary benefits is also used to categorise different kinds of benefits in Chapter 4.

2.6 One-time and permanent benefits

Benefits can be delivered as a single 'stock' or as a permanent 'flow'. Almost all of the benefits described in this guide offer both options. For example, a cash payment may be made as a one-time lump sum or as an annuity. In some cases, the choice is left to recipients. For example, a community can sell a new piece of land or a community centre, or a household can sell equity shares to a third party, converting the asset into cash and investing it in other ways.

In designing a benefits scheme, there will be two competing objectives. On the one hand, a more permanent arrangement may be required to achieve the objectives listed in Section 1.1. There is a risk that individuals or communities cannot maintain assets or will sell assets and not invest them prudently, thus undermining the original objective. This is related to the argument that in-kind compensation such as land-for-land is preferred over cash compensation, or at the very least cash compensation should be provided under a lease and not a sales agreement.

On the other hand, the developer will not want to be burdened with long-term maintenance obligations (although this could be avoided by making a one-time payment into a maintenance trust fund). The value of the benefit will also be reduced for the recipients if unnecessary restrictions are imposed. For example, if a household cannot sell their shares even in an emergency situation or if a community cannot convert a public building to a new, more important use, they will not value the benefit as highly as if there were some flexibility.

2.7 Governanceandmonitoring

Benefits are governed through project staff, recipients, or through third parties. For example, a community development fund may be run by the developer's CSR department, the public works department of a district administration, or as an independent entity. The different possible arrangements also imply different levels of beneficiary involvement, partnership and control.

Two potential pitfalls are well-known. Firstly, projects may have their own views of what is best for the community, and may proceed with a top-down provision of 'benefits' that no one wants or with a non-transparent selection process that encourages communities to constantly petition the project, hoping for handouts. Secondly, projects may absolve themselves of any responsibility and hand over funding to recipients, only to see these parties making unwise choices.

Bringing different levels of government into the implementation arrangements may help avoid such pitfalls. Governments often already possess prioritised investment plans (which may be underfunded) or have an established capacity to create new plans, which enables projects to step in and support the implementation of such plans. Governments also have established decision-making mechanisms, for example through elected councils, as well as financial management, procurement and audit mechanisms which support accountability. In the case of regulatory benefits, developers have no choice but to work through government mechanisms. For voluntary benefits, they will need to evaluate the advantages and disadvantages of various mechanisms, including the risks that benefits may be politicised or that people may be unaware of who provided the funds if government mechanisms are involved.

It is good practice to formalise arrangements through a community agreement which clarifies rights and responsibilities. This can be a non-binding letter of intent or memorandum of understanding, or preferably a legally binding document. Communities may benefit from independent support such as legal or negotiation advice before making commitments, and the projects may consider providing funding for such support. By turning beneficiaries into rightsholders, an agreement can also change the psychology of benefit sharing. Many communities are used to having to petition powerful politicians or landowners for public works or other benefits, which instils a sense of dependence, instead of seeing themselves as citizens and taxpayers who deserve their share of public expenditure. The same psychology then applies to how they approach a large business such as a hydropower project. A formal agreement will empower communities by ensuring they have co-responsibility for the spending of resources as opposed to being mere supplicants.

Where benefits are recurring and not just one-time, monitoring and evaluation of the effectiveness of the arrangements need to be built into any governance structure. Even for one-time arrangements, without monitoring and evaluation there will be no learning process for other projects in the sector.

3 Achieving good international industry practice

3

Achieving good international industry practice

This chapter explores the commonalities, i.e. aspects that all good practice benefit sharing approaches have in common. Following the logic of the HSAP, these are first discussed by stage in the project life cycle (preparation, implementation, operation) and then by the different criteria (assessment, management, stakeholder engagement, conformance/compliance).

Technical assistance for local cocoa production, Chaglla hydropower project, Peru
Photo credit: Joerg Hartmann

3.1 Benefit sharing in the project life cycle

During the early stages of a project, before an investment decision is taken, there is usually limited scope and funding for benefit sharing. What funding is available may be focused on 'quick wins' and tangible benefits to build community trust and goodwill towards the upcoming project. If they can be implemented quickly enough, 'ribbon cutting' projects such as community centres will support these objectives. Key potential improvements during the preparation stage are:

- The inclusion of benefits in siting, design and operational considerations. This can be done most effectively during the preparation stage, as changes after this stage can become impractical and expensive.

- The inclusion of benefits in the Environmental and Social Impact Assessment (ESIA), the Environmental and Social Management Plan (ESMP) and stakeholder consultation processes, resulting in benefits that are long-lasting, fit into the local context, are prioritised by communities, are formally agreed to, and whose effectiveness can be monitored against a well-documented baseline.

The benefits defined in many ESMPs are temporary and focused on the construction phase. If organised well, construction can lead to a local economic boom with lasting positive effect. Local employment and procurement can lead to an accumulation of human, physical and financial capital. However, the willingness of developers to invest in additional benefits is often limited during the construction phase as project teams are busy and cash outflow is substantial. Key potential improvements during the implementation stage are:

- The inclusion of dedicated capacity (human and financial) for benefit sharing in project management arrangements;

- Starting local procurement and employment programmes as early as possible, with dedicated training and other preparatory activities; and

- Aiming for broadly effective benefit sharing, going beyond groups who benefit directly from employment and procurement opportunities, and who are often not the most vulnerable groups.

In the operations stage, when projects start earning revenue, more permanent and sustainable benefits can be delivered. Benefit sharing can be used to supplement mitigation and compensation when

they are finished, with the objective of ensuring that any gains from the mitigation and compensation programmes are not lost and are sustainable in the long term. Longer-term benefits may include community development programmes, micro-credit programmes, and shared revenue streams. Key potential improvements during the operation stage are:

- Maintaining some permanent community liaison and social management capacity in the project organisation, tasked with monitoring, evaluation and adaptive management of the benefit sharing programme.

3.2 A systematic approach to benefit sharing

The remainder of Chapter 3 will discuss common elements of good practice as defined by the HSAP criteria. Regardless of whether benefit sharing is considered from the beginning of project preparation or is introduced into a long operating project where originally no commitments to benefit sharing were made, the same systematic approach should apply. It should include an assessment of the situation and the project's options, and a management plan to select, design and deliver benefits. These assessments and plans should be developed in consultation with stakeholders. Finally, delivery should be in compliance with regulatory requirements and in conformance with corporate policies, plans and commitments. Box 3.1 describes how the HSAP topic on project benefits relates to the project life cycle.

Synopsis of HSAP and HESG criteria on the topic of Project Benefits:	
Assessment	**Preparation Stage:** An assessment of opportunities to increase the development contribution of the project through additional benefits and/or benefit sharing strategies has been undertaken; and the pre-project baseline against which delivery of benefits can be evaluated post-project is well-documented. **Implementation Stage:** Opportunities to increase the development contribution of the project through additional benefits and/or benefit sharing have been assessed. In cases where additional benefits or benefit sharing have been made, monitoring is being undertaken on delivery of these commitments. **Operation Stage:** Monitoring is being undertaken to assess if commitments to project benefits have been delivered and if management measures are effective; and ongoing or emerging issues relating to delivery of project benefits have been identified.
Management	**Preparation Stage:** Project benefit plans and processes have been developed for project implementation and operation that incorporate additional benefit or benefit sharing commitments; commitments to project benefits are publicly disclosed. **Implementation Stage:** Measures are in place to deliver commitments by the project to additional benefits or benefit sharing; and commitments to project benefits are publicly disclosed. **Operation Stage:** Measures are in place to deliver commitments to project benefits, and to manage any identified issues relating to these commitments; and commitments to project benefits are publicly disclosed.
Stakeholder Engagement	**Preparation Stage:** The assessment and planning process relating to project benefits has involved appropriately timed and often two-way engagement with directly affected stakeholders; ongoing processes are in place for stakeholders to raise issues and get feedback.
Conformance and Compliance	**Implementation Stage:** Processes and objectives relating to project benefits have been and are on track to be met with no major non-compliances or non-conformances, and any additional benefits or benefit sharing commitments have been or are on track to be met. **Operation Stage:** Processes and objectives in place to manage project benefits have been and are on track to be met with no significant non-compliances or non-conformances, and commitments have been or are on track to be met.
Outcomes	**Preparation Stage:** Plans deliver benefits for communities affected by the project. **Implementation Stage:** Communities directly affected by the development of the hydropower project have received or are on track to receive benefits. **Operation Stage:** Communities directly affected by the development of the hydropower facility and any other identified beneficiary of the facility have received or are on track to receive benefits.

3.2.1 Assessment

An assessment of potential project benefits can be undertaken as part of the ESIA, or through separate studies over time. The assessment should cover:

- Regulatory requirements for project benefits;
- Local needs, priorities or objectives, which may be expressed in national, regional or local development plans and strategies;
- Feasibility of various approaches to deliver on development objectives, including any possible risks and requirements for safeguards;
- Options to protect and target vulnerable groups (for example, through preferential treatment in local employment and procurement);
- Options to achieve sustainable service delivery (for example, through handover provisions to local governments); and
- Establishment of the pre-project baseline status and options for monitoring over time so that effectiveness of the benefit delivery can be demonstrated or adaptive management efforts can be initiated.

The assessment does not necessarily have to be initiated by the developer. There may be analyses of options and priorities available from potential recipients or from third parties, but the developer would have to be satisfied that these analyses cover the information requirements listed above.

3.2.2 Management

As described above, plans for project benefits should be based on the results of an assessment and should cover:

- Delivery of regulatory benefits;
- Selection of voluntary benefits; and

- Delivery approaches for each voluntary benefit, including responsibilities for implementation, budget allocations, time targets, procurement, financial management and operations and maintenance (O&M) arrangements, and monitoring of effectiveness.

These plans may be collated in an ESMP, a community agreement, or documented through separate plans. Where regulatory benefits such as taxes are well understood, a plan may not be necessary.

Project benefits should be predictable both for the developer and the recipients. Any commitments should be formally recognised and publicly disclosed. For regulatory requirements such as license conditions, court decisions and regulations, the developer should check whether that is the case. For voluntary initiatives, the developer should make sure signed commitments (which may be bilateral, also covering the recipient's obligations) are publicly accessible. It is also advisable to regularly make information about any payments or other progress in delivery of benefits publicly available to ensure transparency and accountability.

3.2.3 Stakeholder engagement

Potential beneficiaries and other stakeholders should be engaged to increase the development contributions and reduce the risks of poor outcomes from project benefits. They should be consulted on their priorities for benefits and should be involved in governance mechanisms.

Depending on the prescribed or selected benefits, such governance mechanisms could include a community fund steering committee or a local council. In many cases, existing mechanisms can take on these roles. However, there may be limitations on effective community participation where governance practices are not democratic or where developers are implementing 'blueprint' CSR programmes prescribed by corporate headquarters instead of priorities identified locally, and this should be taken into account when selecting and implementing benefits.

Great care needs to be taken in engagement processes to ensure that benefits are strategically identified to support development objectives and are not just popular 'wish lists', which may emerge from a flawed consultation process or may create winners and losers within communities. An example would be for a community to prioritise a new football field while urgent social services remain dysfunctional. In such cases, it is important to determine whether that request came only from a sub-section of the community or whether it is representative, and to make sure communities do not lose opportunities. Where there is a history of dependence on handouts, communities may have to gain experience in making decisions on priorities.

Appropriate timing, culturally appropriate, and two-way processes are important components of good practice. 'Appropriately timed' means that engagement should take place early enough so that the project can respond to issues raised, those affected by the project can provide inputs before decisions are taken, and engagement activities take place at times suitable for people to participate. Project benefit stakeholders should be supportive of the timing of engagement activities. 'Culturally appropriate' means that methods of engagement respect the cultures of those involved and allow adequate provisions to fit with the discussion and decision-making processes typically followed.

Stakeholder engagement processes that are culturally sensitive consider, for example, meeting styles, venues, facilitators, language, information provision, the community's decision-making processes, time allocation, recording, and follow-up. Engagement processes need to consider gender and the inclusion of vulnerable social groups. 'Two-way' means that project benefit stakeholders can give their views on the project benefit plans that will affect them rather than just being given information without any opportunity to respond. Examples of two-way processes include focus groups, community meetings, and public hearings.

Processes for project beneficiaries to raise issues could include, for example, designated community liaison officers or other contact personnel, periodic briefings or question/answer opportunities, or suggestion boxes at easily accessible areas. Feedback on issues raised could be demonstrated by means such as written correspondence or meeting minutes. A register should be kept by the developer of the source, date and nature of issues raised and how and when each was addressed and resolved. For smaller benefit sharing initiatives, grievances may be resolved through the project's or local government's regular grievance processes. For more substantial benefit sharing programmes there are more likely to be concerns and grievances (e.g. about eligibility), and it may be necessary to include a dedicated grievance and redress mechanism in the governance structure.

3.2.4 Conformance/compliance

Benefit assessment, selection, delivery and consultations need to be compliant with relevant legal and administrative requirements; expressed in licence or permit conditions or in legislation, corporate policies, procedures and commitments, and community agreements.

It is important to document what is required and committed to and its actual delivery. Non-delivery – or the perception of non-delivery – can cause issues with regulators and affected communities. Evidence of adherence to commitments can be provided through, for example, internal monitoring and reports, government inspections, or independent review. Variations to commitments should be well-justified, documented and approved through the same process as the original commitment.

4 Strategies and approaches

On-site activities for National Aboriginal Day near Keeyask Hydropower Project, Canada
Photo credit: Manitoba Hydo

Strategies and approaches

A wide range of benefits have been delivered by hydropower projects in practice and these can be grouped or categorised in different ways. This chapter describes the most important considerations and lessons learnt in the sector, and catalogues the strategies and approaches to achieve good international industry practice on the topic of benefit sharing.

4

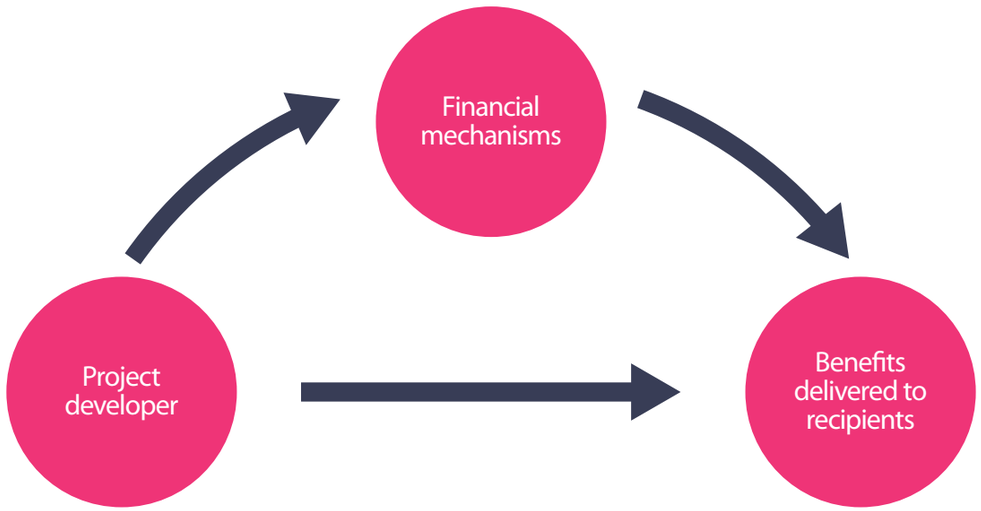
Reservoir at Dikchu near Teesta-V Hydropower Project, India
Photo credit: Joerg Hartmann

A key distinction is whether benefits are delivered directly by the project, or whether financial resources are passed on to individual households or a community, or to a third party such as a government agency, community development fund, or NGO, to make their own spending decisions.

In principle, the recipients of financial resources may choose to invest in the same types of benefits as the project would choose. In such cases, how to deliver the benefits is simply a matter of practical considerations:

1. Is the project or the recipient more likely to manage funds and implement the activities effectively?

Figure 1 – Flows of benefits from developer to recipients



2. Will the project's contribution be visible so that it can be acknowledged appropriately, increasing goodwill among the population?

3. How important is it to empower recipients by trusting them with financial management, prioritisation and procurement decision? In practice, projects and recipients are likely to have somewhat different priorities.

Because affected communities can be quite diverse (geographically, ethnically, socio-economically, etc.) and not all benefit sharing initiatives are likely to be equally effective, there are advantages (during the initial stages at least) to having a diversity of benefit sharing processes. This will increase the likelihood of being able to provide effective support for all relevant community groups.

4.1 Financial mechanisms

Funds may come from initial preparation and construction budgets or, during the operation stage, from regular revenues or earmarked revenues (e.g. from extra income from the sale of carbon or renewables certificates). In some cases, they may also include government grants for an area affected by hydropower projects. It is important that financial contributions are made transparent, following the principle of 'publish what you pay' in order to reduce the risk of corruption and mismanagement.

4.1.1 Taxes

Governments at all levels require revenues to finance public services and investments, and taxes are the most basic contributions that projects make to government budgets. Depending on each country's tax regime, the following taxes are likely to be most relevant:

- Customs duties. Projects often require the import of items such as construction and electro-mechanical equipment.

- Corporate income taxes. Project developers and contractors pay taxes on their profits, typically at their corporate headquarters.

- Personal income taxes. Staff from developers and contractors pay taxes on their personal incomes, at their place of residence.

- VAT and other forms of sales taxes. Transactions during preparation, construction and operation may be subject to sales taxes.

- Property taxes. Land acquired by developers, contractors, staff and others may be subject to property taxes.

- Increased tax revenues will also result from second-round or induced economic activities. For example, a project employee may build a home or a farmer may be able to irrigate additional land, leading to additional tax payments.

While most of these taxes are paid to the central government, some of the funds are redistributed to lower levels of government. Some taxes (often property and sales taxes, as well as user charges) are specifically raised by local jurisdictions, which may also have the authority to determine tax rates.

Tax receipts may not reach directly affected areas because: (1) certain activities may be tax-exempt in order to attract hydropower investments or reduce electricity tariffs; (2) taxes may be due at certain project components but not at others, leading to unequal distribution of revenues (for example, if only the municipality with the powerhouse receives property taxes); and (3) the central government may not redistribute tax revenues to lower levels (for example when redistribution is guided by political considerations rather than by an agreed formula). Tax receipts may also be used to reduce the burden from other taxes, leaving a larger share of disposable income with citizens and businesses.

Tax and fiscal transfer systems are designed by governments. Fiscal decentralisation is the devolution of fiscal powers and responsibilities from central to local government levels. Each country needs to find a balance between the greater technical capacity of the central government and the greater local knowledge, accountability and responsiveness of local governments.

The choices made by governments determine whether taxes should be considered as project benefits. In large countries where tax collection is concentrated at the central level and tax revenues related to hydropower projects are used uniformly across the entire country, any benefits for affected communities are highly diluted. Small countries, countries with decentralised taxation, and countries that redistribute revenue according to the level of impacts are capable of providing more meaningful benefits to affected communities. For instance, it makes a significant difference whether the formula for providing health care funding to local governments includes only permanent residents or also temporary workers and camp followers.

As an example for benefit sharing through taxation, Peru's 'canon' is a fiscal mechanism to redistribute the corporate income tax from projects such as mines, gas fields and hydropower stations between different levels of government. In the case of the 456 MW Chaglla hydropower project, these revenues are estimated at USD 30 million/year, of which 50 per cent remains with the central government while the other 50 per cent is divided between affected departmental (1/4) and district administrations (3/4). In districts with major projects, the 'canon' can be the most significant source of funding. Norway has a similar system, as well as a number of additional taxes on hydropower projects.

In general, relying on taxation for benefit sharing is likely to be most successful in developed countries, where a larger share of revenues is typically raised by subnational governments and where these entities have higher financial management capacities. Developers should estimate tax payments not only for their financial models but also for their planning of benefit sharing arrangements, and they should develop an understanding of the spending priorities at different levels of government to determine how their payments are likely to be used. This depends, among other things, on whether the central government redistributes funds as general 'block grants' or as 'earmarked grants' which can only be used for a narrow set of expenditures.

4.1.2 Royalties and fees

While taxes are raised from any economic activity within the jurisdiction, other forms of revenue-raising are specific for certain activities such as hydropower. Fees are generally understood to be reimbursements for specific government services. A fee for a water right, for example, will help to pay for the water agency's operational costs. A royalty, on the other hand, is understood to be payment for the right to use a resource owned by the nation. Royalties capture part of the economic 'rent' that exclusive users of a resource enjoy, whether they are a hydropower developer, a mine operator, a logger in a public forest, or a fisherman with a quota.

Royalty revenues generally go to the central treasury but may also be assigned to a variety of government agencies and levels. In Colombia, for example, 3% of revenues go to municipalities and 3% to regional environmental authorities, while in India state governments receive 12% of generation as 'free power'.

Much like taxes, the collection and redistribution of royalties is determined by governments. They may choose to use royalties primarily for central government expenditures or for regional development in areas affected by mines, hydropower projects, and similar projects. There are some concerns that small jurisdictions which happen to host projects (and may not necessarily be particularly poor or strongly impacted) can become over-funded and receive an unfair share of the benefits.

Developers again have to consider whether relying on a royalty mechanism is sufficient to provide meaningful benefits to affected communities.

4.1.3 Equity shares

Projects may form joint ventures with – or offer shares to – governments, local area organisations, local individuals, or employees either for free or at below-market costs. There are also examples where projects have facilitated borrowing at preferential rates to enable communities to make an equity contribution. These shareholders can then remain shareholders permanently and benefit from dividends; in some cases, they can also sell the

shares. In Canada, joint ventures with indigenous communities have been created for a number of projects, and in Nepal local populations have a constitutional right to invest in most hydropower projects. In South Africa, the Renewable Energy Independent Power Producer Procurement (REIPPP) programme mandates minimum and maximum shareholdings by black citizens and by communities.

All financial mechanisms discussed so far are likely to fluctuate from year to year (although fixed or minimum payments are possible in principle). Such fluctuations can be particularly pronounced for dividends and share prices, as better or worse performance than expected can lead to strong swings in valuation. Depending on arrangements, share values may also decline towards the end of the concession or licence period. These may be challenges for poorer recipients who are more dependent on predictable incomes.

4.1.4 Development funds

Development funds are arrangements whereby resources are allocated by community representatives to different local infrastructure and social services projects based on the amount of funding available as well as local priorities. Funding is generally provided by donors and central governments, and earmarked for a list of eligible activities. The fund either contracts out the selected goods and services, or supervises procurement and implementation by communities. Sometimes there are requirements for matching contributions from communities, for example to provide unskilled labour during construction. Where several communities receive funding, their share is typically determined through a formula that is based on objective attributes such as levels of poverty or impacts.

Projects may make direct contributions to existing local area development funds, or support the creation of new development funds. The contributions could remain the same from year to year or depend on variables such as revenues, profits or hydrology. In some cases, a foundation or trust fund may be set up to channel the contributions and smooth out contributions over time. Contributions to such funds may also be made indirectly through governments, where taxes, royalties or dividends are disbursed through development funds.

Funds should be based on effective community consultations, building of trust, managing expectations by clearly defining roles and responsibilities, development of appropriate capacity, setting of measurable goals, and public reporting on progress to enhance transparency and accountability. Plans should ensure the sustainability of initiatives either through long-term commitment from the developer or through agreements with local governments and other partners on O&M responsibilities.

4.2 Capacity building for local institutions

There are several reasons to consider capacity building as a form of sharing benefits:

- It can be a contribution to development in its own right. Lack of information and capacity of government agencies, non-profit organisations and businesses may be the most important development obstacle in some regions. A lack of capable contractors can impede delivery of benefits. In some settings rural water supply or agricultural extension programmes may already exist, but communities may not know how to access them. In such situations, some hydropower projects have supported communities in identifying potential donors and existing programmes, writing proposals, and managing funds.

- It can be a precondition to channelling financial resources such as taxes, royalties, shares or development funds through local institutions. Financial management in particular must be simple, reliable, effective, efficient and transparent, subject to audits and community monitoring. Many hydropower projects would most likely prefer to contribute benefits through existing financial mechanisms, thus enabling them to focus on their core business. An early investment in capacity building can have a particularly high pay-off where a long-term benefit mechanism is established.

Although priorities for capacity building will differ from place to place, they will often include elements of capacity for development planning, budgeting, and procurement. Civic education is also important for communities to better understand their rights and responsibilities, and hold decision-makers accountable for their management of benefits.

4.3 Workforce training and local employment

Local communities frequently mention employment opportunities as their most important request. Rural areas within developing countries often suffer from underemployment, low productivity, high transport costs, lack of land and other resources, dependence on weather, and out-migration. In such areas, employment in a hydropower project – even a temporary job during construction – may be the first step out of an uncertain subsistence economy; therefore, preferences for local workers, or more specifically for workers from households affected by the project, can significantly increase the project's local development contribution.

Both during construction and during operation local workers will compete for positions with workers from outside the area who may be better skilled and more experienced, while some foreign contractors will also want to bring significant numbers of foreign workers with them. The project in question would need to undertake local labour market studies to determine employment potential and assess potential wage increases and their impact on community members. For example, local farmers may lose part of their workforce if workers become hired by the project.

Targets or requirements can then be developed and reported on regularly, both for the developer and for the contractors. This process may also include targets and requirements for groups with lower employment prospects such as ethnic minorities, women, and the handicapped. They are most effective if workers are available in the right numbers and with the right skill sets, which may entail training before or during employment and either formal external training or on the job training. For more complex occupations, such training may have to start years before construction begins. The project can cooperate with labour authorities and local government to match local workers with employment opportunities. Some local contract workers can be identified for the future O&M workforce.

After the project is built and relatively few positions remain in the operations stage, workers may use their newly acquired skills and any savings in other businesses. Even if they leave the community to work in other places, they may still benefit the community through financial support for relatives (remittances), invest in homes or businesses, and return for retirement.

Some projects, particularly in the public sector, are clearly overstaffed and effectively act as public employment programmes. Instead of such arrangements, which benefit a relatively small number of families, it may be preferable to reduce costs and apply the savings in broader based initiatives.

4.4 Local procurement

The major procurement categories for hydropower projects include large-scale specialised civil works, such as dams and tunnelling, and specialised hydromechanical and electrical equipment. Investment costs can be several orders of magnitude larger that the local economy, and many goods and services are clearly not locally available. Quality, safety and other requirements of large projects may appear daunting for local suppliers and providers. However, there is potential to contract regional and local companies for general civil works (such as buildings and roads), a wide range of services (such as maintenance, security and transport), the provision of food to project personnel by local farmers' groups, and similar inputs.

Projects can undertake local market studies to determine the supply potential and can then formulate targets (e.g. for local content, small businesses, businesses led by members of ethnic minorities or by women). Like local employment, supplier development programmes can increase the competitiveness of local suppliers and their ability to provide appropriate quantities and qualities. Projects can inform local businesses about goods and services needed (e.g. through

a procurement centre), train local suppliers, can provide finance, equipment or raw materials, and facilitate partnerships between local businesses and third parties. There are also several ways in which projects can provide preferential treatment to local businesses in the procurement process:

- Assigning higher preference weightings to local businesses in competitive bidding processes;
- Sole-sourcing arrangements with local businesses;
- Price matching, i.e. allowing local businesses to match the price of other suppliers;
- Breaking large contracts into smaller ones (unbundling) to create opportunities for smaller local businesses; and
- Requiring outside suppliers to subcontract locally or enter joint ventures with local businesses.

Some local procurement will continue into the operations stage, and the combination of training, experience gained during construction, and established relationships will increase the likelihood that farms and businesses will find new customers when project-related procurement declines.

Regulatory local content requirements are not typical in the hydropower industry, although they are common in comparable industries such as oil & gas, mining, or wind and solar developments. While local content targets can increase costs, in the longer run there may be business benefits as a result of having qualified providers close by and due to increasing community goodwill towards the project. A potential concern that needs to be managed is price increases and their impacts on community members and other businesses in the area, for example if a large share of the local fleet of trucks is contracted by the project.

4.5 Livelihoods development

As described above, people who are displaced economically by losing their land, access to resources, or other foundations of their livelihoods may need support for restoring these livelihoods; however, this is considered a mitigation measure as opposed to a benefit.

In the context of benefit sharing, livelihoods development is primarily directed towards the broader local community and the indirectly affected; however, in practice, there will again be a fine line or grey zone between mitigation and benefits. Support for the indirectly affected is important because some of these individuals may not be compensated for damages, either because of legal constraints or the difficulty of establishing the value of damages. For example, while a farmer may be paid the current market value for their land, their farm workers who lose their jobs may not receive support. Moreover, the farmer may not be compensated for the future development potential of their land, such as increasing land value if a city expands and adjacent farmland is acquired for commercial development. Finally, the initial compensation and livelihoods restoration measures for directly affected people (including resettled people) may also have been only partially successful. Due to lack of experience, people may have invested their cash compensation in businesses that fail or agricultural advisors may have recommended the wrong crops for the replacement land. A broad livelihoods development programme would aim to cover such cases and provide a safety net for unforeseen circumstances.

In rural areas, livelihoods development would aim at diversification and improved productivity of farms as well as non-farm businesses. It may include vocational training; storage and processing, transport and market infrastructure; advisory and extension programmes; banking and insurance services; support for cooperatives; or the provision of tools, improved seeds and breeds, and other inputs. As an example of a non-farm activity, tourism development may include reservoir recreation, visits to the dam and powerhouse, improved trekking routes or other visitor destinations, and better access to and protection of cultural heritage sites.

Livelihoods development can be time-consuming and challenging with multiple uncertainties. New agricultural initiatives such as fruit trees may take years to bear fruit, and new small businesses may take years to break even. Hydropower project staff

themselves may often not be well equipped to identify opportunities and risks in other sectors such as agriculture or tourism. This requires guidance from professionals with an understanding of specific technology and business issues, adapted to local conditions. Local procurement by the project may assist by providing markets and quality assurance during the initial stages.

4.6 Social services

As a result of hydropower projects, existing social services may be disrupted or overextended by a population influx and may require support for maintaining pre-project standards of service; however, such support is considered a mitigation measure and not a benefit.

Water supply and sanitation, health, education and recreation facilities, community centres, emergency services, low-cost housing, and other social services are at the heart of well-functioning communities. They all require a combination of infrastructure, equipment, and operational and maintenance capacity. Support for improving such services not only helps to improve the quality of life for individual users, but also the social capital and cohesion of the community.

One low-cost option is to retain certain parts of the construction camps and convert them for community use after the construction period. These generally include buildings and facilities that may be useful for community administration, dispensaries and primary schools, sports and recreation, and housing.

A recurring problem is the operation and maintenance of service facilities. While it is relatively easy to provide the community with infrastructure, there are many examples of buildings, water supply schemes, etc that are non-functional and ultimately abandoned. There are a variety of reasons:

- Low construction quality;
- Overestimated demand for services (for example, as people out-migrate after construction is finished);
- Unclear responsibilities for continuing O&M or an expectation within the community that the developer will step in if they do not perform O&M as agreed; and
- Low priority of the service.

All of these issues can be prevented with adequate, participatory planning.

4.7 Economic infrastructure

As a result of hydropower projects, existing economic infrastructure may be disrupted or overextended and may require support for maintaining pre-project standards of service; however, such support is considered a mitigation measure and not a benefit.

Economic infrastructure includes roads and other transport facilities, markets, telecommunications, transmission and distribution lines, pipelines, industrial zones, bank branches/ATMs, storage facilities, and others. Such infrastructure is indispensable for economic development and livelihoods improvement.

At a minimum, hydropower projects can offer their own equipment and facilities for public use. For example, construction equipment can be used to help clear landslides on public roads, and flat areas (e.g. workshops, spoil dumps, quarries) that are no longer needed for the project can be re-purposed for commercial development.

Beyond that, projects can make important contributions by helping to identify and remove infrastructure bottlenecks. Costs may be reduced by including such works in the scope of the project contractors, which are already mobilised.

4.8 Electrification and electricity subsidies

Because the core function of hydropower projects is the generation of electricity, benefits related to electricity are often the most obvious and the first to be considered. Sending power to distant load centres while bypassing local villages without any sources of power may appear hard

to justify. Some governments have introduced regulations regarding the provision of electricity to local areas. Because they receive 12% of the generated power for free, Indian state governments and their utilities in hydropower regions have significantly lower supply costs, which enables them to expand electrification and reduce tariffs. They can also sell surplus power to other state utilities, thus expanding their revenue base.

There are a number of reasons why local electrification may not be the highest priority for benefit sharing. There are some technical issues (e.g. with voltage levels, dispatch schedules and reliability) that need to be resolved if small villages are to be supplied directly from a large generation plant. In scenarios where governments are still working towards full electrification, extending the grid to local villages (which may have low demand and low willingness or ability to pay) may not be the highest priority. National or regional electrification programmes may have identified other areas to be electrified first. A hydropower generation company may also have minimal experience and interest in acting as a local distributor or may not be licensed to operate in the distribution business. Subsidised tariffs are difficult to raise later and can lead to distortions which cause permanent problems for utilities. Local villages, if given a choice, may also prefer other benefits over improved electricity.

However, none of these issues are insurmountable if electrification is indeed a priority. For example, projects can contract with local power distribution companies to extend their services to the affected villages or can finance and arrange for off-grid or micro-grid solutions, such as a local mini-hydro facility or household solar and battery installations. In Bhutan, the hydropower development programme not only enabled exports to India but also rapid electrification of the entire country, rising from almost no access to electricity in 1990 to 100% in 2016.[1]

4.9 Reservoir use and operational management

Even single-purpose reservoirs, which are designed and operated exclusively for hydropower generation, can have alternative uses. For example, there may be some boating for transport, recreation or fishing. This requires that reservoirs are accessible for the public. If necessary, access can be limited by licenses or other regulations. Reasons for that may include fisheries management (e.g. prevention of overfishing), public safety (e.g. restriction of tourist boats to licensed operators), or restriction of usage to locals to ensure they have priority access. Single-purpose reservoirs are generally owned by the generating company, which will have to make arrangements for public access or outsource this role to a third party, such as a local government.

Multi-purpose reservoirs which are generally owned by governments or public utilities can provide much more significant benefits, but are also inherently complex to manage. Their siting, design and operations need to balance several objectives and purposes, such as municipal and industrial water supply, irrigation water supply, flood control, navigation, recreation, fishing and aquaculture. They can be said to provide additional benefits beyond hydropower because this balancing generally imposes operational constraints on hydropower, thus reducing generation and revenue. For example, a project that releases water during the dry season to maintain navigability downstream may be forced to generate during times of low demand and prices; alternatively, a project that needs to maintain stable reservoir levels to support recreation may spill water and not be able to use it for generation. Operational rules are often rather inflexible and the opportunity costs of the benefits thus provided are rarely made transparent. It is good practice to revisit operational rules and update the balancing of different objectives from time to time. Some countries have time-bound licenses with re-licensing mechanisms that can be used for this purpose.

1 https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=BT

Sometimes releases are specifically designed for environmental purposes, but will have social side benefits (e.g. re-regulation of peaking releases from upstream, release of cool water to maintain fish habitat in a river that is warming up because of climate change, maintenance of base flows in a river suffering from excessive abstraction). Some reservoirs may regulate flows and capture sediment to the benefit of other hydropower projects in a downstream cascade.

The term 'benefit sharing' generally assumes that there is one primary investor and decision-maker (such as the hydropower developer) who agrees to share benefits with others. In the reality of multi-purpose reservoir management, it may be more useful to think of a group of stakeholders who need to agree on a 'shared vision, shared resource, shared responsibilities, shared rights and risks, shared costs and benefits' (Branche, 2015).

5 Conclusions

Conclusions

This How-to Guide has provided an overview of current knowledge on benefit sharing in hydropower projects, a relatively new field where developers and governments are still innovating. Additional benefits for affected communities are justified because they contribute to fairer development outcomes and pave the way for smoother implementation of projects. As such, while a number of good practices are already well established, the field is likely to see further development over time and expectations are likely to increase. Good practices may be borrowed from other sectors with significant experience, such as mining, and oil & gas. Fiscal decentralisation and community development funds may also inform the design of hydropower benefit sharing mechanisms.

Refurbished primary school in Porto Velho near Santo Antônio Hydropower Project, Brazil
Photo credit: Aida Khalil

Some governments may be more prescriptive and tend to use more regulatory benefits, while others will leave developers free to devise voluntary benefits. These can often replace each other, resulting in similar outcomes for the final recipients. Communities may have varying degrees of involvement in decisions over how to prioritise the use of regulatory and voluntary benefits. Although the participatory management of benefits may come with its own challenges, communities need to be empowered to take responsibility for their own development. A partnership approach depends on communities being treated as equals and with respect by projects and by government, and is a precondition for good community relations.

Annex 1

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Annex 2

Project examples

From assessments using the Hydropower Sustainability Assessment Protocol

Project	Benefits
Blanda, 150 MW, Operation stage, Iceland	• Property tax paid by Landsvirkjun on the power station, received by the Húnavatnshreppur municipality (USD 410,000 annually) • A second, smaller benefit is local income tax paid by Landsvirkjun employees to their resident municipality
Chaglla, 456 MW, Implementation stage, Peru	• The 'canon', a fiscal mechanism to redistribute the corporate income tax from projects such as mines, gas fields and hydropower stations, between different levels of government. Estimate in the case of Chaglla USD 30 m/year. In the case of hydropower, 50% of the tax revenue remains with the central government, while the other 50% is divided according to the project's location between departmental (1/4) and district governments (3/4) • Voluntary CSR measures including promotion of local training, employment and business growth, and community development support
Devoll, (Banjë and Moglicë), 256 MW, Implementation stage, Albania	• Replacement infrastructure that exceeds the standard and/or the scope of affected infrastructure (for example replacement roads) • Infrastructure to mitigate potential impacts that exceeds the standard or capacity that is necessary for mitigation only (for example Gramsh wastewater treatment plant) • This project met good practice. There was only a gap against proven best practice: a lack of processes to facilitate significant and sustained ongoing project benefits and to promote regional development
Hvammur, 82 MW, Preparation stage, Iceland	• Construction of a bridge linking the left and right banks, Rangárþing ytra and Skeiða og Gnúpverjahreppur municipalities • Provision of internet connections to all farms in Skeiða og Gnúpverjahreppur • Tax revenue for the Rangárþing ytra Municipality • This project met good practice. There was only a gap against proven best practice: no broad assessment of options, no corporate process, engagement focused on municipalities only
Jirau, 3,750 MW, Implementation stage, Brazil	• More than 20,000 direct and over 30,000 indirect jobs created during the construction phase, and most workers hired locally and trained to acquire required professional skills • Construction of schools, improvement of the health infrastructure and expansion of the public security system for affected communities • Voluntary programmes for promoting local economic and social development, such as agro-industries, fish farming and organic agriculture projects • Taxes and royalties to the local government that (more than R$65m/year) allow Porto Velho municipality and Rondônia state to improve their infrastructure, education and health services
Jostedal, 288 MW, Operation stage, Norway	• Payments to a business development fund for Luster municipality to promote industry and commerce • Roads, bridges and quays remain available for general public use • Roads, bridges and quays remain available for general public use • Maintenance of the access roads from Fåberg to Styggevatn and other access roads • Contribution of NOK 2 million to the Ministry of Culture and Science for scientific research in Luster • Provision of NOK 10 million for flood control • Yearly fee of NOK 50,000 to Luster municipality to improve fishing conditions, and in some cases wildlife in the municipality • Payment of license concession fee, share of sales of power (the Municipality may use or sell up to 10% of production, and the County may use or sell the remainder from this 10%), natural resource tax, and property tax • In addition to the commitments made in the license, during construction Statkraft employee housing was turned over to the community at low prices as part of an official agreement with Luster municipality
Kabeli-A, 37.6 MW, Preparation stage, Nepal	• Funds for four affected Village Development Committees (VDCs) over 3.5 years during the construction period • Enhancement measures to support vulnerable groups (indigenous people, Dalits and women) • Technical assistance from the financier for the Ministry of Energy (MoE) • Royalties to the Government of Nepal (GoN) during the 30-year license period to be allocated as per the national legislation: 50% for the central government and 50% for the project-affected region (i.e. the Eastern Development Region) for local development activities, with some earmarking to areas directly affected and for village electrification

Karahnjukar, 690 MW, Operation stage, Iceland	• Property tax paid by Landsvirkjun on the power station • Local income tax paid by Landsvirkjun employees to their resident municipality • National taxes, fees and dividends to the Icelandic government Agreements with Fljótsdalshreppur municipality: • Provision of electricity and a new road and bridge to Laugafell, a highland hostel owned by the municipality • Renting of Végardur community centre for use as a visitor centre during construction, including undertaking renovations to the centre • Provision of fibre optic cabling to the Végardur community centre and provision of any fibre optic cable purchased for the project but not used to the municipality for their use, e.g. to provide fibre optic cabling to properties in the municipality • Investigation into the possibility of using cooling water from the station for heating • Provision of electrical cable purchased for the project but not used to the municipality in order to improve electrical supply to properties in the area • Provision of summer jobs for high school and university students
Keeyask, 695 MW, Preparation stage, Canada	• Pre-project training opportunities • Employment opportunities and hiring preferences for local communities • Business opportunities through directly-negotiated contracts with local communities • Investment facilities and potential joint project ownership for Keeyask Cree Nations partners • Travelling times from Gillam to Thompson will be reduced
Romanche-Gavet, 94 MW, Implementation stage, France	• New domestic water supply system in the municipality • Provision of wood from felled trees as fuelwood for wood stoves • Permanent bridge in the small village of Ponants as opposed to a considerably cheaper option of a temporary bridge • Maison Romanche Energie, which is located on municipal land and will be handed over to the municipality after construction • Permanent noise mitigation outside the local school • 'Clause sociale', which requires that 5% of work time is reserved for underprivileged workers • Prioritisation of local employment and local sources of goods and services • Increased tax revenues at municipal, departmental and national levels
Santo Antonio, 3,568 MW, Implementation stage, Brazil	• Support for local businesses and suppliers • Job opportunities and qualified training for unemployed local people • Payment of royalties (over R$ 100 billion annually) to the state and municipality, accompanied by studies and capacity support • Investments in research and development (R&D) projects with potential benefits for affected communities • Voluntary programmes, sponsorships and development initiatives implemented by the developer in the project influence area

Semla IV, 3.5 MW, Preparation stage, Sweden	• Keeping old operations building, which could be turned into visitor centre • Rebuilding stoplog at canal entrance • There was no assessment of the local potential to contribute to local development, which represents a gap against basic good practice
Teesta-V, 510 MW, Operation stage, India	• Provision of an estimated INR 220 million in sales and taxes to the government, and 12% of the power generated given for free • Application of a systematic policy of preferential local employment and procurement • Broadening of the scope of community development activities (initially two model villages which was later expanded to include additional communities in the project area) • Investment of 2% of their average net profits over 3 years in corporate social responsibility activities (in line with the Companies Act 2013) • Opening of a school and a hospital in the powerhouse colony free of charge to local communities
Walchensee, 124 MW, Operation stage, Germany	Not relevant (no commitments at the time of commissioning) However, a number of benefits are described: • Payments to Bavarian Forestry • Payments to local authorities in Bad Tölz for water used • Payments to Walchenseestiftung (a charitable fund that was established following a legal suit in the 1950s with the responsibility for distributing finance to charitable causes, raised from the plant according to the exact level of the Walchensee lake and overseen by the Ministry of the Interior) • Sponsorship of events in the local community

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The International Hydropower Association (IHA) is a non-profit organisation that works with a vibrant network of members and partners active in more than 100 countries.

Our mission is to **advance sustainable hydropower by building and sharing knowledge** on its role in renewable energy systems, responsible freshwater management and climate chance solutions.