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Policy pointers

For the rural poor, simple compensation for lost assets leaves them as poor after resettlement as before. Benefit sharing is a complementary and more effective strategy to ensure resettled people are better off and one that will help developers gain a social licence to operate.

Developers and policymakers should consider sharing 2–3% of the revenue generated throughout a dam's operation phase as a necessary cost, equivalent to the annual operation and maintenance budget of the dam itself.

Revenue sharing allows affected communities to benefit directly from the infrastructure that has disrupted their lives and gives them a clear stake in a project.

It is never too late: existing hydropower projects where resettlement is known to have been problematic should engage local affected communities to build trust and implement investments that can improve their livelihoods.

Sharing the benefits of hydropower to improve displaced people's livelihoods

As the world pivots towards low-carbon energy generation, hydropower is once again in the spotlight. Hundreds of new dams are due to be built this decade. The hydropower industry recognises that new plants will only be viable with strong social acceptance and that benefit sharing is a way to build support. But the concept is not yet widely understood, and successful examples remain rare. Benefit sharing should be thought of as a 'sustainability intervention', which has additional and long-term positive impacts on project-affected people, well beyond compensation for lost assets. Increasing the social acceptance of hydropower through benefit-sharing agreements requires building long-term partnerships with resettled people, establishing appropriate institutional arrangements and investing a proportion of hydropower revenues over the long term.

The International Energy Agency (IEA) has highlighted the potential future role of sustainable hydropower in meeting energy demands and balancing intermittent power generation from renewables in a low-carbon economy. It estimates that global hydropower capacity is set to increase by 17%, or 230 GW, this decade.¹ This is equivalent to 1,150 new dams, assuming an average of 200 MW each. By 2030, more than 75% of new hydropower capacity worldwide is expected to come from large projects in Asia and Africa commissioned by state-owned enterprises.

Hydropower dams frequently involve resettlement of local communities displaced by the flooding of the reservoir. In 2000, the World Commission on Dams estimated that 40–80 million people had been resettled globally. Historical resettlement approaches that disenfranchised affected communities led, in part, to the emergence of an anti-dam movement that has significantly slowed dam construction since the 1990s. As the IEA

notes, renewed hydropower investment requires increased public acceptance and a key dimension of this is improving the livelihoods of affected people.

Experience indicates that while compensating affected people for the loss of tangible assets such as houses is feasible, it is much harder to identify and support alternative livelihoods, particularly as use of local resources such as grazing, farmland or fisheries is significantly disrupted following resettlement.

Current practice too often involves a short (usually five-year) financial and investment plan to help resettlers re-establish their livelihoods. Yet despite the millions of dollars invested in such schemes, few peer-reviewed case studies exist of successful livelihood restoration following resettlement.² It is relatively easy to build new infrastructure and many governments point to new houses, roads, clinics and schools as visual evidence of resettlement success. In reality, those who were poor pre-project often

The key to social acceptance is the provision of clear development opportunities for those affected

remain so afterwards. Their lack of income and livelihood resilience remains unmeasured and unseen. Hydropower developers can — and should — do better in offering development opportunities for local people. Excluding resettlers from the economic benefits that hydropower development can generate is a social injustice.³

Rebuilding livelihoods can only happen following just compensation for lost assets. But even the very best compensation schemes will always leave poor rural communities poor. The key to social acceptance is the provision of clear development opportunities for those affected.

The development needs of resettled communities will evolve over the project's lifetime. However, in most cases, funding is only available during a dam's typical design and construction phases (Figure 1). The lack of funds to address changing social needs during a dam's operation phase exposes the weakness of the five-year Local Development Plan approach to livelihood restoration.

Benefit sharing is one response to this challenge. It can be thought of as a 'sustainability intervention', in that its focus is on making an additional and positive long-term impact on wellbeing and livelihoods, beyond replacing or marginally improving on lost assets. This requires a tangible improvement in development status with strong participation by project-affected people.

Benefit sharing includes two distinct components: first, the definition of resources (fisheries, land, forests, markets, electricity etc) that resettled

people will benefit from and under what conditions. This is part of resettlement plan and local development plan design. The second component is a share of the revenue during the operations phase that can be used to address unforeseen issues, support emerging livelihood opportunities, repair resettlement infrastructure or correct project design errors. This should be long term, accountable and flexible to address changing needs and markets.

For the hydropower industry, local benefit-sharing funds that share the revenues of hydropower throughout the lifetime of the project can be compared to the operations phase of the dam. The industry understands that the operations phase brings with it requirements for monitoring, operating adjustments and regular maintenance. This can be estimated at 3–5% of capital costs and annual budgets run into millions of dollars. A local benefit-sharing fund follows the same principle for the livelihood restoration component of the project, which needs maintenance and support in exactly the same way if it is to meet its objectives over the long term. If a dam isn't maintained, then over the ensuing decades, safety and energy generation capacity is put at risk. If local livelihoods are not similarly maintained, an equivalent decay in social acceptance is likely to occur. Benefit-sharing funds can also be introduced at any point in a project's lifetime to offer redress to affected people.

A growing number of development banks, international organisations and professional associations such as the International Hydropower Association have begun to develop guidelines for benefit sharing.^{4–6} However, project developers don't always clearly distinguish between compensation for lost assets, provision of public services available to all

Figure 1. Typical timing of benefit sharing over phases of a dam project



Note that preferential employment and procurement schemes can be thought of as a benefit that can be shared during or potentially before the construction phase.

citizens, things that a dam developer would do anyway and those specific interventions that seek to explicitly share benefits and improve livelihoods for the lifetime of a hydropower dam.

What activities qualify as benefit sharing?

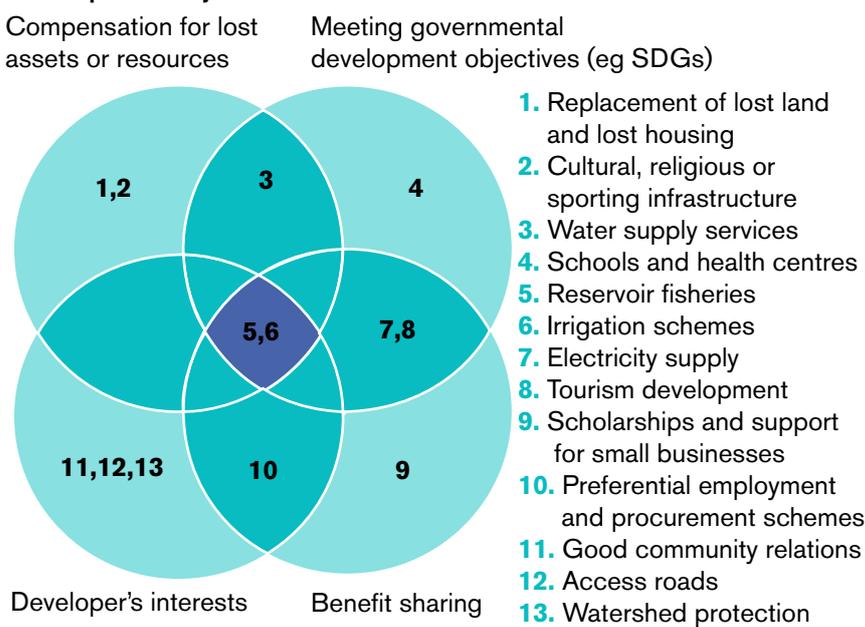
Compensation and benefit sharing are substantially different with regards to the resources and services provided (see Figure 2, which illustrates what may and may not count as a benefit to be delivered via hydropower benefit sharing). Benefit sharing covers a wide range of potential benefits, ranging from physical infrastructure to preferential employment schemes and scholarships. It primarily targets communities or groups of project-affected people, rather than distributing cash to individuals, and benefits typically have a collective, 'public good' character to them.

The basket of potential livelihoods is set out during the project design phase (Environmental and Social Impact Assessment (ESIA)/Resettlement Action Plan/Local Development Plan) (Figure 1). Once the project is operating, the dam owner should also provide a revenue stream that allows communities to benefit fully from those opportunities and address any unforeseen issues or changing circumstances (for example, water supply breakdowns, changing market prices, resource stress due to growing populations).

Our analytical framework for understanding benefit sharing is shown in Figure 2. We propose that some resources and services will fall into the categories of 'compensation' or 'benefit sharing', as well as two additional categories: 'developer's interests' and 'governmental development objectives' (such as achieving the United Nations' Sustainable Development Goals). Categories often overlap. The key distinguishing feature of governmental development objectives is that they apply to all citizens and are not specific to a hydropower project. For example, governments invest in water or electricity supply throughout the country to benefit the health of all citizens. Many will receive this 'benefit' without having been resettled. It is therefore a misrepresentation to suggest that such investments are somehow specific to a hydropower or resettlement project.

Each of the categories is linked to a different set of decision makers and governance structures. Ultimately, benefit sharing seeks to make affected people better off and ensure that they benefit directly from the hydropower dam that has disrupted their lives. This contributes to meeting one recommendation made by the World Commission on Dams: that affected people should become a 'beneficiary' of large dam projects to improve public acceptance.

Figure 2. Substantive differences and commonalities between benefit sharing, compensation, developer's interests and governmental development objectives



The importance of process and participation by affected people

Local people have detailed insights into their real needs and priorities as these change over time. Their meaningful participation and empowerment in decision-making processes around benefits increases the likelihood that 'benefits' truly are benefits.⁷⁻⁹ Benefit sharing should not include scenarios where benefits are unilaterally determined and imposed by developers or government.^{7,8}

Box 1. Government-led benefit sharing arrangements

Where there is comparatively high government capacity, legally mandated benefit-sharing mechanisms such as taxes, licence fees or royalties may be appropriate, since these will more reliably ensure that some form of benefit sharing will be realised. This is typically (but not exclusively) the case in countries with multiple hydropower sites and more likely at the national level of government.

Government-led benefit-sharing mechanisms may operate at national, provincial or local levels of government. Local taxes, in particular, allow democratically legitimatised local authorities to tailor spending priorities according to local preferences and needs.¹³ In Québec, Canada, royalties are directly tied to revenues (eg a certain percentage), whereas taxes are paid independent of the volume of electricity sales.¹⁴ In Nepal, royalty payments are dependent on the installed capacity of a hydropower plant and annual electricity generation, and are shared between central government, regional authorities and local district development committees.¹⁵

Government-led benefit-sharing activities imply that developers lose some influence over the benefit-sharing process; however, if implemented well, they may also increase business predictability, with developers effectively outsourcing part of their social and environmental responsibilities to government institutions. Ultimately, determining the balance between public interest and private profit in the management of water resources is the responsibility of governments.

The timeline from compensation to benefit sharing

The dynamics of compensation and benefit sharing change over the dam's lifecycle. In the context of dam construction in remote rural areas, developers are initially the actor best prepared to deal with the specific challenges and disruptions that a new dam brings, and they often have previous experience with dams. During the construction stages, developers will be legally required to arrange adequate compensation, although in practice many developers have failed to allocate sufficient budgets for proper compensation.¹⁰

During the operation phase, developers prioritise their core business: operating dams for optimal hydroelectric energy production. Managing any revenue-sharing arrangements and dealing with project-affected people isn't the developer's main focus, even if preferential employment and procurement schemes and the good community relations resulting from well managed benefit-sharing agreements may benefit developers (see Figure 2). At this point, developers need to identify state and non-state actors who can legitimately support livelihood restoration for communities. These may include bespoke NGOs formed by affected communities, local government, private contractors and/or government agencies.

Once a project has repaid most of its debt, usually about 10–12 years after commissioning, there is an increase in available funds as the project begins to return revenues to the developer and the risks to investors have decreased substantially. The last 15–20 years under a private concession for a dam is typically the most cash-rich for the developer, opening opportunities for more flexible financial investments in benefits for project-affected people and communities.¹¹ Allocating funding for communities later in the project is likely to be financially viable for the developer while also responding to community needs.

Notes

¹ IEA (2021) Hydropower Special Market Report. IEA, Paris. www.iaea.org/reports/hydropower-special-market-report / ² Hay, M, Skinner, J and Norton A (2019) Dam-induced displacement and resettlement: a literature review. FutureDAMS Working Paper 004. The University of Manchester, Manchester. <http://dx.doi.org/10.2139/ssrn.3538211> / ³ Zhao, X, Wu, L and Qi, Y (2020) The energy injustice of hydropower: development, resettlement, and social exclusion at the Hongjiang and Wanmipo hydropower stations in China. *Energy Research & Social Science* 62,101366. <https://doi.org/10.1016/j.erss.2019.101366> / ⁴ Vanclay, F and Hanna, P (2019) Conceptualizing company response to community protest: principles to achieve a social license to operate. *Land*, 8(6), 101. <https://doi.org/10.3390/land8060101> / ⁵ Hartmann, J (2019) How-to-guide: hydropower benefit sharing. International Hydropower Association, London. www.hydropower.org/publications/hydropower-benefit-sharing-how-to-guide / ⁶ Wang, C (2012) A guide for local benefit sharing in hydropower projects. *Social Development Working Papers*, No. 128. World Bank, Washington, D.C. <https://openknowledge.worldbank.org/handle/10986/18366> / ⁷ de Wet, C. 'Can the benefits of development projects be shared in the context of development-enforced displacement and resettlement?' Paper presented at Meeting of the International Network on Displacement and Resettlement (INDR), Nanjing, China, 30 August–3 September 2019. / ⁸ Morgera, E (2016) The need for an international legal concept of fair and equitable benefit sharing. *European Journal of International Law* 27, Issue 2, 353–383. <https://doi.org/10.1093/ejil/chw014> / ⁹ Suhardiman, D, Wichelns, D, Lebel, L and Sellamuttu, SS (2014) Benefit sharing in Mekong Region hydropower: whose benefits count? *Water Resources and Rural Development* Vol. 4, 3–11. <https://doi.org/10.1016/j.wrr.2014.10.008> / ¹⁰ Akça, E, Fujikura, R and Sabbağ, Ç (2013) Atatürk Dam resettlement process: increased disparity resulting from insufficient financial compensation. *International Journal of Water Resources Development* 29:1, 101–108. <https://doi.org/10.1080/07900627.2012.738497> / ¹¹ Devernay, JM (2008) Public versus public-private partnership. In: *Hydro finance handbook*. HCI Publications, Kansas City, USA, pp. 37–47. <https://bit.ly/3oVREwd> / ¹² Soliev, I, and Theesfeld, I (2017) Reframing for sustainability: exploring transformative power of benefit sharing. *Sustainability* 9(8): 1486. <https://doi.org/10.3390/su9081486> / ¹³ Norwegian Institute for Nature Research, Eastern Norway Research Institute (2000) The Glomma and Laagen Basin, Norway. World Commission on Dams. Cape Town, South Africa. / ¹⁴ Égré, D, Roquet, V and Durocher, C (2007) Monetary benefit sharing from dams: a few examples of financial partnerships with Indigenous communities in Québec (Canada). *International Journal of River Basin Management* 5:3, 235–244. <https://doi.org/10.1080/15715124.2007.9635323> / ¹⁵ Shrestha, P, Lord, A, Mukherji, A, Shrestha, RK, Yadav, L and Rai, N (2016) Benefit sharing and sustainable hydropower: lessons from Nepal. ICIMOD Research Report 2016/2, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal. <https://doi.org/10.53055/ICIMOD.623>

Local institutions often lack the immediate capacity to manage funds transferred to them by a developer in an accountable, participatory and transparent manner. Developers will need to deliberately assist the emergence of effective management processes before transferring funds. This should be a more explicit component of ESIA processes than it has been, where the developer is often seen as the principal 'operator' that delivers development plans through to completion. Developers are not best placed to play this role in the long term.

Handing over control of financial resources to project-affected people poses significant and novel governance challenges and requires building of institutional capacity. The transfer of decision-making power needs to be a gradual and flexible process that enhances communities' agency for their own development and helps them seize opportunities and cope with uncertainties.¹²

Benefit sharing: investing in sustainability and social acceptance

Benefit sharing should be understood as an investment in sustainability. The choice of an appropriate mechanism for implementation depends on the government and institutional capacity (see, for example, Box 1). In practice, a mix of mechanisms and institutional arrangements is possible and desirable.

If implemented well, benefit sharing will support livelihoods for resettled people over the long term and significantly increase the public acceptance of hydropower as part of a low-carbon economy.

Jamie Skinner and Christopher Schulz

Jamie Skinner is a principal researcher in IIED's Natural Resources Group. Christopher Schulz is a research associate in the Department of Geography, University of Cambridge.

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Contact

Jamie Skinner
jamie.skinner@iied.org

Third Floor, 235 High Holborn
London, WC1V 7DN
United Kingdom

Tel: +44 (0)20 3463 7399
www.iied.org

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Design and Assessment of water-energy-food-environment Mega-Systems

