# Can Local People also Benefit from Benefit Sharing in Water Resources Development? Experiences from the Orange-Senqu River Basin

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**Abstract**

The concept of sharing benefits derived from beneficial uses of water is increasingly embraced in numerous international discourses in place of sharing water in volumes among nations sharing common water bodies. Many benefit-sharing efforts involve building of dams and inter-basin transfer schemes. These infrastructures have been blamed to be posing environmental and social costs and directly affecting local people. This paper attempts to find attributes that lead towards recognising the rights of affected people and the mechanisms that may ensure access of direct benefits to them.

Four theoretical factors are identified as key in recognising the rights of the affected people and were adopted as the analytical framework: a. Appropriate legal and policy framework, b. Public participation, c. Sustainable compensation measures, and d. Equitable access of derived benefits. In order to complement these theoretical factors, the study compared two large water development projects in the Orange-Senqu river basin: the Orange River Development Project and the Lesotho Highlands Water Project. In both projects several large dams were constructed and water was transferred from one river into another:

The following are the findings of the paper: a) the political environment through the legal and institutional framework plays a major role in protecting or marginalising the affected people; b) compensation measures for lost properties left many affected people destitute and food insecure; c) affected people mainly benefited from the indirect benefits of the projects instead of direct benefits. In order to ensure access of direct benefits to the affected people it is recommended that a) the national legislation must support the concept, b) mechanisms for allocating benefits to the affected people must be laid at project planning and should aim at long-term development goals, and c) local authorities must have sufficient capacity to ensure smooth operation.

*Key words:* benefit sharing, compensation, equity, human rights, public participation

## 1 Introduction

The concept of "benefit sharing" in transboundary water resources management has of late been proposed at a number of international conferences and in a number of publications as a concept that brings positive sum solutions to water allocation problems (see Sadoff and Grey, 2002a, 2002b). The argument in favour of benefit sharing is that all involved parties eventually gain from the arrangement, while on the other hand

sharing water may introduce losers. However, in many cases benefit sharing arrangements lack well defined framework for equitable sharing that actually extends to the local communities and affected people in order to ensure access of benefits and improve their livelihoods. The issue of "who benefits?" involves consideration of rights of local communities, sustainable development of the country as a whole, fair and equitable sharing of benefits among different stakeholders, also bearing in mind the intergenerational dimension. The World Commission on Dams (WCD) supports the recognition of rights of local communities, placing such communities as primary beneficiaries of water infrastructure projects (WCD, 2000a).

Many dam projects are planned with a view of promoting equitable distribution of costs and benefits among different stakeholders. Lately there is a growing consensus that local communities and affected people should share benefits of such projects in addition to being compensated for inevitable environmental and social costs of developing a project (Milewski *et al*, 1999). In many cases sharing of benefits to the affected people have been interpreted in the form of monetary transfers as compensation. The present paper discusses the manner with which the issues of recognising rights of people and access to benefits were dealt with in the Orange-Senqu River Basin.

The Orange-Senqu river basin is shared by four sovereign states. The river originates from the small landlocked Kingdom of Lesotho and drains into the Atlantic Ocean in the Republic of Namibia. The Republics of South Africa and Botswana are also part of the basin. Orange-Senqu stretches for 2,300 km and covers an area of 1,000,000 $km^2$, which makes the basin the second largest after Zambezi in the Southern African region. The basin is home to at least 13 million people (Savenije & Van der Zaag, 2000). The basin generates an average 11.5 x $10^9$ $m^3$ $a^{-1}$ of water (Table 1). The Orange-Senqu is a heavily developed river by way of dams and transfer schemes.

**Table 1: Runoff Contributions of Orange-Senqu Basin States** (Source: Heyns, 2004)

| Country | Surface area in the basin | | Mean annual Runoff | |
|---|---|---|---|---|
| | ($10^6$ $m^2$) | % | $10^6$ $m^3$ $a^{-1}$ | % |
| Botswana | 120,000 | 11 | 0 | 0 |
| Lesotho | 30,000 | 5 | 4,700 | 41 |
| Namibia | 250,000 | 25 | 500 | 4 |
| South Africa | 600,000 | 60 | 6,300 | 55 |
| Total | 1,000,000 | | 11,500 | |

The paper argues that in order to fully embrace the benefit sharing concept, local communities and affected people should also be given due consideration. First the paper highlights the fact that recognition of the rights of people is of great importance in the discussions around benefit sharing. Key aspects that need to be considered when recognising the rights of the people affected by water resources development projects are first discussed in the paper. The paper goes on to recommend the means with which available benefit sharing mechanisms can be employed in such a way that access to benefits of water projects by local and affected people is ensured.

# 2 Recognising Rights of Affected People

The 1948 Universal Declaration of Human Rights and the 1966 International Covenant on Economic, Social and Cultural Rights Article 1(2) advocate for recognition of human rights in relation to benefit sharing. Despite the existence of an international human rights framework many governments and dam proponents are reluctant to fully recognise the rights of affected communities. Nevertheless, lately there is an increasing consent that local stakeholders especially those adversely affected by water projects should have access to the benefits accrued, in addition to compensations for environmental and social costs of developing such projects (Milewski *et al*, 1999). The question in this regard is what are key aspects that need to be considered to ensure recognition of affected people rights in sharing benefits of water use? A review of the relevant literature shows that the following four aspects are key in recognising the rights of affected people and may lay a framework for recognising them as primary beneficiaries of water development projects: a. Appropriate legal and policy framework, b. Public participation, c. Sustainable compensation measures, and d. Equitable access of derived benefits.

## a. Appropriate Legal and Policy Framework

The final report of the World Commission on Dams (WCD, 2000a) acknowledges that there must be policies and/or laws that contain the intention to respect the rights of people. Chintan (2004) argues that benefit-sharing efforts through recognition of fundamental rights of the affected people, together with stipulations on the issue of compensation in cases of lost property, can only be realised within the framework of national legislation. A proper institutional framework is required to ensure that all the parties involved have equitable access to the benefits derived from the use of water resources. A strong political commitment is a key driver to change existing policies and to provide institutional support. The institutional support includes providing clauses in the national legislation, formulating policies and guidelines that target specifically the idea that local stakeholders should also be involved in benefit sharing arrangements.

## b. Public Participation

Curtin (2000) argues that public participation regarding water management is so crucial that it is regarded as an emerging human right. Cosgrove (2003) states that redistribution of benefits at national level needs a parallel stakeholder involvement process and should be integrated with poverty reduction strategies. Public participation is generally believed to improve transparency and democracy, increase the quality of decisions and promote public acceptance (Mostert, 2005). If organised well, public participation can result in valuable information for planners and decision-makers. It can ensure that effects are not overlooked and may promote that legitimate concerns are addressed. It may reduce controversies over dams with net benefits and may help to stop dams with a net loss (Mostert, 2000). It has been observed that serious problems of water security and management occur at the local level, this calls for the recognition that civil society is among the best suited to address local issues.

## c. Sustainable Compensation Measures

According to the WCD (2000a) compensation is understood to refer to specific measures intended to make good the losses suffered by the people affected by the dam.

The commission suggests that compensation needs to be aimed at providing the displaced people with an opportunity to achieve a sustained improvement in their livelihoods. Compensation is best given in a form that provides opportunities to the displaced people to become economically self-reliant and must be consistent with the noble aspirations of the community. Ideally, compensation has to be aimed at providing the displaced people with an opportunity to achieve a sustained improvement in their livelihoods. The United Nations principles on habitat emphasise that 'whatever the original conditions of the displaced community habitat amenities, the new homes must meet the basic needs of comfort, health and dignity' (as cited in the Kariba case study commissioned by the WCD).

### d. Equitable Access of derived benefits

Equity deals with the distribution of wealth or resources among sectors or individuals of society. The issue of equity is however challenged with differing perceptions of fairness**.** Van der Zaag (2005) posits that benefit sharing may require a consensus over basic entitlements, and once such entitlements have been agreed upon compensation arrangements can be worked out. Hassan (2002) argues that cooperation is bound with notions of mutual recognition of rights and obligations, mutual respect and acceptance, which are underpinnings of justice and equity. Sustainable cooperation is not possible without promulgation of justice and equity among nations and within societies as they are the very foundation of cooperative ventures. Figure 1 shows a schematic summary of the key aspects that may ensure recognition of affected people rights and may lead to access of derived benefits.

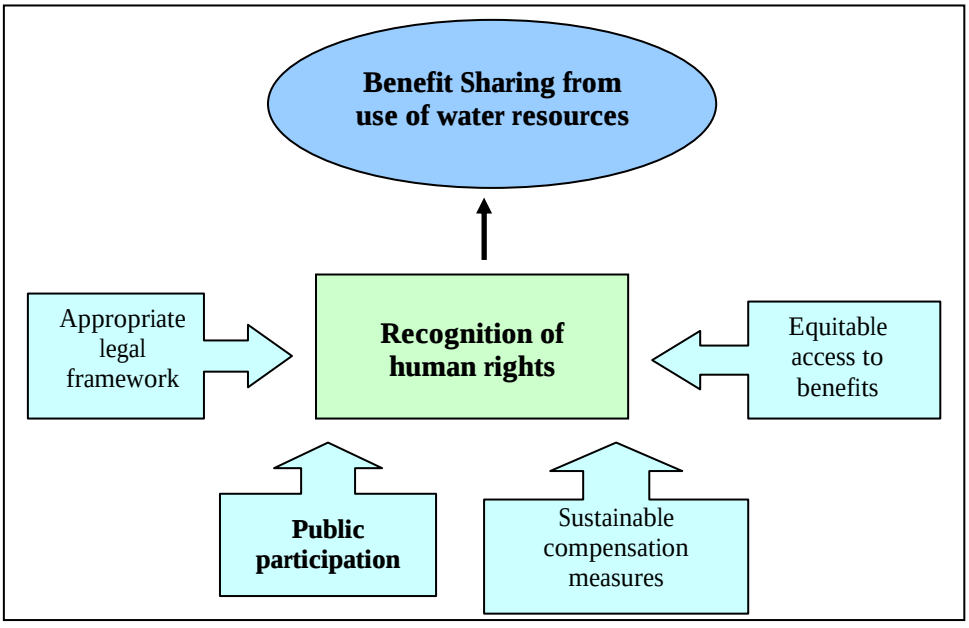


**Figure 1: Key aspects in ensuring recognition of affected people rights**
(Source: Raliile, 2006)

# 3 Ensuring Access of Benefits to Local Affected People

Dam projects pose numerous long-term costs to many stakeholders who depend on the water and land resources in the river basin, while they yield significant economic benefits to other stakeholders. There are two concerns associated with the transfer of benefits among beneficiaries. Firstly, some of the social and cultural implications extend beyond economic or financial considerations. Secondly, the trend in many dam projects shows that the cost bearers, which in many cases are affected communities, have not reaped the benefits of the development. Water development projects are expected to yield benefits that outweigh the costs, so that the net benefits can be shared in an equitable manner. Whereas a lot has been written about benefit sharing arrangements *between riparian countries*, there is increasing interest in how the costs and benefits are distributed among the different stakeholders *within country*.

The idea of equitable distribution of benefits is defended by Giordano and Wolf (2003) in that it allows for positive-sum agreements, often incorporating non-water related gains where dividing water itself allows only for winners and losers. It is therefore understood that if the concept of benefit sharing is considered to provide the win-win solutions, then this may mean that all the involved parties should ultimately become winners and have access to the derived benefits.

Benefit sharing mechanisms are situation specific and depend to a large degree on the capacity and autonomy of the implementing agencies. A proper benefit sharing mechanism that enables the affected people to gain from the direct benefits of the project should be laid down during initial planning stages of a water development project. Such mechanisms should aim at long term development goals, such that also future generations will benefit from the project. The following benefit sharing transfer mechanisms are suggested by Milewski *et al* (1999) and can be employed to transfer the project benefits to the local and communities affected by the water development projects:

- Preferential rates
- Property taxes
- Revenue sharing
- Equity shares.

# 4 Case Studies: Two Water Development Projects in the Orange-Senqu Basin

This paper reviews benefit-sharing aspects of two large-scale water development projects in the Orange-Senqu basin. The Orange River Development Project was implemented more than 30 years ago in the South African part of the basin whereas Lesotho Highlands Development project was implemented during the last 15 years and involved two riparian countries (Lesotho and South Africa).

## 4.1 The Orange River Development Project (ORDP)

The Orange River Development Project (ORDP) is storage development and inter-basin transfer scheme. The project was implemented between 1969 and 1977 and comprises two large dams: Gariep (earlier known as Hendrick Verwoerd), and Vanderkloof Dams with a storage capacity of 5,960 $Mm^3$ and 3,160 $Mm^3$ respectively. The project was

initiated and implemented by South Africa unilaterally without consulting the other riparian countries on the Orange-Senqu (Lesotho, Botswana and Namibia).[1] The major reason for South Africa to launch the scheme was to promote and stabilise irrigation along the Orange River and in the eastern Cape, as well as to generate hydropower and to supply water to towns and industries in the catchment area of the Great Fish River (WCD, 2000b).

Given the then apartheid political system in the Republic of South Africa, the national laws favoured the white racial group such that the whites had exclusive land property rights, while the other racial groups did not have title to land. This political system influenced marginalisation of non-white racial groups and eventually the manner in which different racial groups were affected and accessed the direct benefits of the project. With regard to the four key aspects discussed in Section 2 related to recognition of the rights of people and distribution of project benefits the following outcome can be deduced: Table 2 provides a summary of the distribution of costs and benefits of the ORDP project.

**Table 2: Distribution of benefits and costs, ORDP project** (Source: Raliile, 2006)

| **Benefits** | **Who Gained?** |
|---|---|
| Irrigation | White farmers |
| Urban Water Supply | Municipalities and industries |
| Reduced Floods | Downstream farmers & property owners |
| Hydropower Electricity | White farmers, urban centres & municipalities, businesses, administrative centres |
| Increased Food Productivity | South African consumers |
| Recreation and Tourism | Global community |
| Avoided thermal emission | Global community |
| **Costs** | **Who Paid?** |
| Loss of arable land & property, loss of livestock to black fly | White farmers |
| Loss of jobs, property, dignity (staying by the side of the road), drowning of graves and loss of ancestral land. | Farm workers |
| Loss of biodiversity (e.g. mayfly) | South Africa |
| Potential reduced flows and/or modified flow regime | Downstream basin states (Namibia) |

Approximately 30 farms were expropriated to make way for construction of the Gariep and Vanderkloof dams. As a result farm owners and workers around the project area of

[1] At the time, downstream Namibia was still under South African occupation, while the interest of Botswana as a riparian nation may be extremely limited due to geographical and hydrological characteristics, while upstream Lesotho was not directly affected by these developments down the river.

ORDP had to be displaced. In the process farmers lost their farming lands, farmhouses, and farming equipment. On the other hand most farm workers lost their jobs, shelter, and personal properties. However, since laws related to property rights favoured the white racial group the farmers were generously compensated of their losses such that most of the farmers considered the compensation fair and generous. During planning of the project farmers were notified of the project. In response to this notification farmers established a committee whose task it was to collect the views of the farmers, negotiate and present a united front to the relevant department regarding compensation issues. However, the farmers committee did not have much voice in the major decisions of the project including determining compensation arrangements As a result there was some dissatisfaction from few farmers about compensation issues. The committee did not exist for long as some of the farmers resorted to negotiate their compensation issues with the Department of Water Affairs on an individual basis. On the other hand the farm workers were neither notified of the planned project nor compensated for their losses.

The nature and scope for sharing the benefits of the project was laid down during the planning phase of the project and the affected farmers had direct access to the primary products of the project, which were water for irrigation, for domestic supply and hydroelectricity.

The lack of involvement of the other countries riparian to the Orange-Senqu, and especially of Namibia which is located downstream, was at the time not viewed as a weakness or an issue.

### 4.2 The Lesotho Highlands Water Project (LHWP)

The Lesotho Highlands Water Project (LHWP) is the interbasin transfer scheme that transfers water from the highlands of the Kingdom of Lesotho to the economic heartland of the Republic of South Africa, Gauteng. LHWP is a bilateral agreement between the Kingdom of Lesotho and the Republic of South Africa. The scheme consists of a series of dams, transfer and delivery tunnels. Due to its size, complexity and costs the plan was to implement the project in five phases in a period of 30 years. Presently only phase 1 of the project has been completed and is operational. Phase 1 comprises the construction of the Katse reservoir and Muela hydropower station (1988-1997; Phase1A) and Mohale dam (1997–2004, Phase 1B).

The decision to implement the LHWP was based on the cost comparison to the next viable project which would be in South Africa. LHWP being a cheaper option challenged the two countries to share the benefits of the project. Based on their interests the two countries negotiated to split the benefit, which is the saving of costs on a ratio of 56:44, whereby Lesotho receives 56 % and South Africa retains 44 %. The amount of money ranging between 16 Million and 22 Million Maluti (US$2.6M and US$3.2M) is paid per month as royalties by the government of South Africa to the government of Lesotho for the opportunity cost based on the volume of water transferred to South Africa. In the process of transferring water to South Africa Lesotho took an opportunity to generate hydropower electricity for its domestic consumption.

With ninety percent of LHWP project infrastructure located in Lesotho, most environmental and social impacts of the project were felt in Lesotho. The impoundment of the dams and the associated infrastructure displaced people who had to make way for

the infrastructure. To these people it meant loss of private and communal properties and resources. There were also experiences of reduction of fish stocks, loss of wild vegetation, and medicinal plants due to reduced water flows in the river channel to communities living in the immediate downstream of the dams.

More that 3, 000 households were directly affected by implementation of phases 1A and 1B of LHWP. Of these more than six hundred and eighty households and few commercial sites were displaced and resettled to make way for implementation of phases 1A and 1B of the project. The displaced households lost individual and communal properties such as houses, arable, pastoral and ancestral land. There were also experiences of reduced fish stocks, wild plants, medicinal plants and important grasses used for economical purposes (such as thatching and crafting) for communities living within the vicinity of the dams and downstream of the scheme. Table 3 indicates the distribution of costs and benefits among different stakeholders of LHWP.

**Table 3: Distribution of benefits and costs, LHWP project** (Source: Raliile, 2006)

| **Benefits** | **Who Gained?** |
|---|---|
| Hydropower Electricity | Lesotho urban centres, and Eastern Free state consumers |
| Urban Water Supply | Gauteng water users |
| Royalties | Lesotho Government |
| Construction Jobs | Affected people |
| Permanent Job opportunities | Qualified citizens of Lesotho & South Africa |
| Avoided thermal emissions | Global community |
| **Costs** | **Who Paid?** |
| Capital costs | Governments of South Africa and Lesotho |
| Loss of land (arable, pastoral, ancestral), psychological effects, loss of properties | Displaced Communities |
| Loss of lives to drowning, health effects (HIV/AIDS), loss of cultural values | Communities living within the vicinity of the dams |
| Loss of fish stocks, medicinal and wild plants, reduced water flows | Communities living (immediate) downstream of dam |
| Potential reduced flows and/or modified flow regime | Downstream basin state (other Orange river water users in South Africa and Namibia) |

The national laws of Lesotho recognise the property rights of the affected people with an obligation to compensation in case of acquisition of such property. Nevertheless, when construction of phase 1A started in 1988 there was no clear policy for compensation of affected people. With phase 1B, which started in 1997, the compensation policy was formulated, and it attempts to improve livelihoods of affected people through: improved housing facilities, skills training for generating income and business plans for facilitating sustainability of cash compensation. The implementing agency from Lesotho's side (Lesotho Highlands Development Authority) realised the importance of undertaking regular surveys aimed at monitoring livelihoods of the project affected people. This can also be viewed as a constructive step towards a meaningful social sustainability.

As mentioned earlier the direct benefits to the Kingdom of Lesotho are royalties as cash and hydroelectricity. With regard to distribution of these benefits, the country does not have a policy framework or a defined mechanism for allocating the direct benefits to the local communities and directly affected people. The royalties are administered at national level. There are no specific preferences offered to people affected by the project regarding redistribution of the royalties. The rural electrification programme, which was initiated to connect the people around the project area to the national grid, ended up limited to public places such as hospitals and businesses. The individual households could not be connected, apparently because this service was unaffordable for them.

# 5 Comparative Assessment

The argument in favour of the benefit-sharing concept is that it ultimately fosters win-win solutions to every stakeholder, while water sharing brings zero sum solutions. However, there are two challenging issues that need to be taken into consideration. Firstly countries have to come up with a level of cooperative effort that yields highest benefits that would outweigh the costs and are also politically, socially, economically and environmentally sound. Secondly, mechanisms have to be in place for fair distribution of costs and benefits between countries and among a vast range of stakeholders within a concerned country. The United Nations declarations and the World Commission on Dams advocate the idea of recognising the rights of the people who are affected by water developments and recognising them as primary beneficiaries of the dam projects.

Numerous expected and unexpected benefits were realised during and after construction of the two water development projects reviewed in this paper. The direct benefits include hydroelectricity, tourism, urban water supply and irrigation, with few exceptions depending on the basis for decision making of building a dam. These direct benefits were more obvious at national level of the concerned countries as they have made significant contribution in the economies of those countries. The indirect benefits include provision of community services, skills training, and access to construction jobs and improved housing.

Both water development projects posed a number of environmental and social costs to their surroundings. Generally these costs involved the loss of arable land and economically useful resources to the displaced people and those who lived within the proximity of the infrastructure. Most of the impacts are long-term and some of the

consequences were realised later. Food insecurity was noted as one of the major social consequences that the affected people ended up facing, mainly because of the loss of arable land. A similar pattern has been observed in both cases with regard to the manner in which the costs and benefits of projects were distributed among different categories of stakeholders. From the comparison of the two projects it was also noted that the category of stakeholders who were first of all regarded as primary beneficiaries actually gained much from the direct benefits of the projects, while local affected people only gained from indirect benefits of the project e.g. construction jobs during dam building.

One of the general lessons drawn from comparing the two cases indicates that the institutional and legal environments play a significant role in protecting or marginalising the rights of affected people .It is through the political will that clear and effective institutions that target welfare of the affected people can be realised. The institutions should also aim at involving people in the decision-making processes and allocating benefits accrued from the use of water resources. The World Commission on Dams advocates that there should be negotiations between authorities, dam developers and the affected people. Green Cross International (1999) points out that integral to any efforts towards better water management is the need for "cooperation among stakeholders"; people-to-people cooperation opening-up channels of communication and trust between different interest groups, and considering the needs of both empowered and traditionally underprivileged.

Cash compensation is the most popular of the compensation methods. This compensation method is expected to contribute to improving livelihoods of the affected people. It was noted that wise expenditure of such compensation payments actually improved the livelihoods of some people, while that of others deteriorated due to spending the money unwisely. In some cases the affected people were given options to choose from in relation to land compensation. In cases where affected people did not choose land-for-land compensation but opted for payment in cash or annual food grains, they forfeited the opportunity to own such land; as a result the next generations will not be able to reap the benefits of such land. The argument here is that the short-term cash compensation is an unsustainable measure and may cause further food insecurity and impoverishment for both the present households and future generations.[2]

# 6 Conclusion and Recommendations

The benefit sharing experiences reviewed in this paper show that the applied compensation measures has driven many affected people into destitution and food insecurity. Compensation assisted few people to improve their livelihoods. The direct benefits derived from the projects reviewed in this paper include hydroelectricity, tourism, urban water supply, irrigation and cash as royalties. These direct benefits were more obvious at national level of the concerned countries as they have made significant contributions to the national economies. The indirect benefits include provision of community services, skills training, and access to construction jobs and improved housing. It was also noted that the affected people mainly benefited from indirect benefits of the projects instead of the direct benefits. In order to achieve a state where

[2] Compare this with the Chinese saying *"Someone who sells the land is one year rich; the person who buys it is one year poor"*.

the derived benefits can be distributed within a country such that all stakeholders can gain, the following aspects are considered vital.

First of all, the local affected stakeholders should be recognised as primary beneficiaries of the project. This should be clearly stipulated in the national law. National benefit sharing policy and guidelines subject to review should be formulated in order to provide guidance on how benefits should be redistributed. Access to direct benefits of the project by affected people should be regarded as a prime indicator for successful benefit sharing arrangements and water development projects.

Secondly, a right to participate should be clearly spelled out in national legislation. Involvement of all the parties potentially affected by dams should be done at the very early stage of the project plan.

Thirdly, in order to assist the implementation and to ensure that the national legislation is enforced, an implementation strategy is proposed that includes the following three aspects, as well as a clear division of responsibilities (Table 4).

*Policies and guidelines*

Mechanisms for allocation of direct benefits to the affected people should be elaborated in a national policy. Such a policy should be supported by guidelines for transferring benefits to different stakeholders. Guidelines should clarify the issues of benefit transfer to upstream and downstream stakeholders. If for example revenue sharing is the mechanism that is used then the revenue percentages that should be allocated to stakeholders have to be clarified in the guidelines. The policy and guidelines may be reviewed as and when stakeholders deem necessary.

*Capacity building*

Benefits have to be shared and accessed by local communities. Strong local authorities in terms of decision-making are therefore a pre-requisite. The authorities require skills for negotiation, financial management and administrative. Conducive institutional capacity is also required in order to enable the local authorities to have full autonomy**.**

*Stakeholder Participation*

Equitable sharing of benefits should be based on negotiations and mutual agreements. A stakeholder forum can provide a platform for the local stakeholders and the affected people to forward their interests with regard to the benefits. Involvement of all the parties potentially affected by dams should be done at the very early stage of the project plan. Documents in relation to the project should be translated into local languages in order to enable local people to have sufficient understanding and to participate fully. Non-governmental organisations can play a significant role in the people participation activities in view of their vast experience in dealing with local communities.

**Table 4: Implementing strategy: who is responsible for what?**

| Strategy | Central government | Local government | Communities |
|---|---|---|---|
| Policy and guidelines | Initiates the process, directs and formulates the documents | Facilitate community participation and coordinate | Participate in formulation of documents |
| Capacity building | Provides institutional support | Identify areas where support is needed and implement. | Participates in public workshops and special programmes |
| Stakeholder participation | Provides institutional support | Initiate, coordinate and implement. | Participate |

Finally, compensation measures against the losses should be sustainable. The affected people should be involved when compensation packages are planned. Negotiated outcomes with sufficient knowledge dissemination such that the local people can make informed decisions are important. Land compensation should aim at land-for-land options taking into consideration the value of such land. Land-for-land options should go along with soil and water management skills development as a support mechanism. Future studies on benefit sharing in water resources management could explore the success factors of the benefit sharing mechanisms to the concerned communities

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