Social Change and Water Resources Planning and Development

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ABSTRACT: *In the old approach, disregard for civil rights of project affected people during the planning, construction and operation phase of large dam projects, which are typically built in remote areas rather than in urban areas, can result in confrontation, conflicts and resistance movements that can be avoided or minimized if a public participatory approach is adopted . In the new approach, to ensure broad acceptance of projects or system development alternatives, it is important to present and discuss as early in the planning stage as possible all the pros and cons of competing scenarios with interested parties, including the persons directly affected by the project and NGOs, taking into account technical, economic, financial, environment, social, institutional, political and risk factors. It is the purpose of the paper to describe this process of consensus-seeking in greater detail based on the experience gathered on two water resources development projects, the Itaparica hydropower scheme and the Castanhao multipurpose Scheme, situated in the nort-east of Brazil.*

Introduction: Trends In Planning

The Old Approach

Not long ago, the terms of reference for planning studies for large Hydraulic Infrastructure projects generally required a future demand (water, power, irrigation) to be covered in a least-cost manner. The planning procedure was to develop alternative technical solutions, to select the least-cost option, and to mitigate the environmental and social impact of the plan or scenario to a minimum.

The economic analysis was usually restricted to the life span of the project only. Post project life, or day after scenarios were not given too much attention and heritage, depleted or exhausted natural resources were left behind. Rehabilitation and recovery in such cases could lead to insurmountable costs for next generation entrepreneurs or faced economic non-feasible situations.

In the past, if the expected benefits of a dam exceeded the predicted costs the project went ahead. The narrow nature of the technical and economic analyses undertaken not necessarily mean that public authorities that chose dams as a development option were unaware of the social and environmental costs. Rather, within the context of knowledge available and the value system of those making decisions at any given time, the sacrifices were judged to worth the benefits of pushing ahead with the project. This approach to decision making continues largely intact today.

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0790-0627 Print/1360-0648 On-line/02/010183-13 © 2002 Taylor & Francis Ltd
DOI: 10.1080/07900620220121747

Parameters for project appraisal cost-benefit analysis (CBA) emerged between the 1950s and 1970s as the dominant economic tool supporting decision-making on dam projects. Initially it was limited to a number of parameters, most of them internal to the dam owner and relatively easy to assign values to. Efforts in the last two decades to expand the scope of CBA to cover social and environmental issues have rarely led to comprehensive social and environmental valuation, and have usually been limited to incorporating the costs of resettlement and environmental mitigation.

Review of multilateral bank appraisals and the performance of CBA more generally leads to the following conclusions on the adequacy of CBA as applied to the appraisal of large dam projects.

- projections of project costs are systematically understated;
- social and environmental impacts are not valued explicitly or are only indirectly accounted for through mitigation or resettlement budgets;
- difficulty in predicting inter-annual volatility of hydrological flows, growth in demand and final design capacity (hydropower, irrigation and other benefits);
- difficulty in predicting market conditions and farmer behavior over time (irrigation benefits);
- employing social discount rates that are too high;
- sensitivity and risk analysis is inadequate; and
- the effect of uncertainty and irreversibility of investment is ignored.

In other words, the historical and actual practice of dam project appraisal often violates the conditions under which it could, in theory, provide a reliable measure of the change in economic welfare produced by a dam project. It is worth emphasizing that it is not a foregone conclusion that the net effect of fixing all of these problems would be to lower the economic profitability of dams. A number of the weaknesses of CBA may lead to understatements of the net project benefits. At the same time, it is clear that quite a number of the weaknesses can have important impacts in terms of lowering net project benefits. Improved application of CBA would assist in identifying projects that are not economically viable.

The emergence of equity as a critical ingredient of development underlines that this "balance sheet" approach is unacceptable as it ignores the typical mismatch between the distribution of the gains and losses of a project across different societal groups. Large dams can be seen as an extreme example of this dilemma, as public resources – both monies and rivers – are devoted to projects that all too often result in inequitable distribution of costs and benefits.

The construction of a dam requires an investment of human-made capital and, as a result, generates a series of new entitlements that are then distributed – either through political-administrative means or through markets – to members of society. At the same time, the construction of a large dam will have profound effects on the natural and social landscape of the setting in which the dam is located. These changes will affect the legal, customary, or the facto entitlements to natural resources, environmental quality and socio-cultural integrity experienced by local communities and others holding rights to the resources in the area.

Dams take a set of resources – a river and the lands along its banks, generating food and livelihood for local people; and transform them into another set of resources – a reservoir, hydro power and irrigation, providing benefits to people living elsewhere. There is a sense, therefore, in which large dams export rivers and lands, removing them from the productive domain of one community to make them available to another.

In the developed countries some form of public discussion and feedback on design has been ensured through legislative and regulatory processes involving hearings. In several developing countries, the same procedures are slowly being adopted, however, decisions on development options have generally been taken in isolation by governments, sectors and utilities together with the international funding agencies, following the aforementioned least-cost approach.

The reaction to this technological-economic planning approach has been the call for a more 'sustainable development' and to the formation of interest groups that wanted more attention to be paid to additional variables beside the usually focused technical and economic issues. For a considerable time these groups, generally NGOs, Associations or Unions, were seen as nay-sayers, or project opponents, having as sole objective, halting or obstructing the implementation of infrastructure constricting development.

The more stubborn the reaction of the technocratic world to this opposition, the more fanatic and spectacular became the opposition of these organized groups or movements. This has been, of course, ideal food for the media and opposition politicians, and the result has been that many projects, in particular large infrastructure projects, stalled during the planning process as decision – makers and/or funding agencies did not want to be affected by bad publicity. Other large projects were implemented in spite of considerable opposition but turned out to be no longer the least – cost project as a result of costly delays and modifications during the implementation phase.

Should governments have the power to enforce the destruction of entire and often ancient communities in order to generate electricity and increase irrigation, primarily to cater for the growing urban population rather than improve the opportunities for the people relocated? The frequent practice of withholding information from concerned groups, blocking objections and then later halting construction in the face of large-scale protests is clearly highly inefficient, destabilizing and destructive to the people and environments involved.

Equity:

Very often it is demonstrated that there is a lack of connection between groups benefiting from dam projects and those adversely affected. Normally it is said that very few are affected in order to benefit many. That might be true at the first sight, however, those locally (in rural areas) affected, usually have their livelihoods completely disrupted, whereas, the benefited population (urban areas) does not even realize where their benefit comes from. Therefore, the intensity of the negative and the positive impacts at individual level is extremely disproportionate. The proper weighing of these impacts must be evaluated properly for decision-making purposes.

Co-operation and negotiation between stakeholders, peoples and states would help more sustainable alternatives to big engineering structures and would encourage a more trusting relationship between those involved.

Disregard for civil rights of aboriginal people living in the forest and rural communities by those in charge of decision making, such as "technocrats" or autocratic, has led to numerous flagrant violations of human rights during the planning, construction and operation phase of large dam projects, which are typically built in remote areas rather than in urban areas. The issue of ethics should come to the forefront in the interest of all stakeholders .

Water & Ethics - Ethical Principles for Water Management

Public participation in water administration and allocation is so crucial that it can also be regarded as an emerging human right. People must be informed and empowered in water issues and

management decisions as a key component in the process towards more transparent, just and stable societies.

According to the Universal Declaration of Human Rights, Article 25 (UN 1948) every human being has the right to life sustaining resources, including water for drinking, food industry and well being. Access to safe drinking water and sanitation, as well as, water for economic development, is essential for alleviating poverty and sustaining peace and stability.

The water crisis is primarily one of uneven distribution of water in time and place, and of sharing knowledge and resources. Water scarcity is primarily site specific and due to lack of knowledge and capacity. Current water shortfalls are site specific, must be addressed with meaningful participation of community, regional, governmental and international constituencies.

Today, the solution to water problems must be addressed with the participation of the local communities, regions, provinces or states. A better balance between bottom-up and top-down approaches is needed. More bottom-up approaches can bring more economic efficiencies and aligns with the UN Declarations.

Better (fair) pricing is one of several solutions to current water problems. Better (fair) pricing of water is needed. Perverse subsidies must be reduced. However, in an unregulated market economy, pricing may lead to severe hardships for the poor, and undermine development projects. Water is a shared common good and of public domain. Water markets and pricing depend on legitimate forms of governance which oversee rights to use and not ownership.

The Public, at all levels, whom water management will impact must be informed and engaged in all decisions related to water policies and projects. They must participate early, when opinions are being formed, and not informed after basic decisions on options have been taken. This is especially true in discerning and accepting levels of risk and vulnerability to natural hazards and investments to prevent disaster and to mitigate their effects.

Education is necessary to transmit information to all concerned parties, as well as, for providing the basis for active participation in finding solutions and implementing them. The gender issues as a whole require special educational programs. Water is a common symbol of life, spirituality, and embodies the regenerative and creative powers of nature. Water is to be valued, not as a commodity but as the very substance and meaning of life. Water as such should serve solely as the highest medium for cooperation aimed at human well being.

It would inevitably lead us to deeper questions of human values – in particular, how to narrow the unacceptably wide gap between the 'haves and have-nots' while remaining within the bounds of what natural systems can sustain. Living by such an ethic would mean less whenever we can, and sharing what we have. It is about being good neighbors –as individuals, companies, communities, states, provinces, and nations. And it establishes norms of responsible behavior against which to judge the actions of each global citizen.

In practical terms, a water ethic is part of a sustainable code that entails a wholly new approach to economic progress, one that harmonizes economic goals with ecological criteria, and individual ethics.

In short, we need a water ethic, a guide to right conduct in the face of complex decisions about natural systems we do not and cannot fully understand.

The essence of such an ethic is to make the protection of water ecosystems a central goal in all that we do. This may sound like an idealistic prescription in light of the ever more crowded world of needs and aspirations in which we live. Yet it is no more radical a notion than suggesting that a building be given a solid foundation before raising it as a skyscraper.

Water is the basis of life, and our stewardship of it will determine not only the quality but also the staying power of human societies.

Adopting such an ethic would represent a historic philosophical shift away from the strictly utilitarian, divide-and-conquer approach to water management and toward an integrated, holistic approach that views people and water as related parts of a greater whole

A society guided by a water ethic would have set of indicators to monitor these trends, and would make course corrections to restore ecosystems to health before irreparable harm is done. We may see glimmerings of such an ethic at work where scientists are trying to undo the damage caused by unsustainable economic development. But these are attempts to bring ecosystems back from the brink of destruction. They are costly, and offer no guarantees of success. When a previous equilibrium is lost a new balance is created and nature adapts to this new reality, obviously, at a cost. Were an ethic operating at the outset, different economic choices would have been made, and the degree of violence done to nature greatly lessened

The New Approach

Planning should avoid unnecessary expenditure and effort on projects that in the end will not be carried out. Planning procedures must therefore be geared toward maximized acceptance and full-fledged public participation in during the planning and decision making process. Participation should be tailored according the education level, social organization or overall perception of the participants of the magnitude and intensity of the impacts or changes that are to be expected.

To ensure broad acceptance of projects or system development alternatives, it is important to present and discuss as early in the planning stage as possible all the pros and cons of competing scenarios with interested parties, including the persons directly affected by the project and NGOs, taking into account technical, economic, financial, environment, social, institutional, political and risk factors. The interested parties should jointly formulate a limited number of alternative plans to cover the future demand. These plans should be diverse with respect to their impacts and should include plans featuring demand-site measures (such as promotion of drip irrigation in the agricultural sector) as well as the no project option.

Subsequently, the necessary studies should be done to quantify and evaluate the alternative plans in sufficient detail to be able to outline the consequences of each plan. Workshops should then be organized in which all interested parties can discuss the results and try to reach consensus about the best plan to be adopted for implementation.

One method would be for interested parties to first receive a fairly comprehensive presentation of the results of the study of alternatives, and give ratings to each of the project alternatives with respect to economy, environment, impact on local population, etc.

The environmental component, for example, would first be ranked and then have assigned weights to possible numerous environmental factors to be considered. Then scores could be given to the various factors under consideration. The scores would be multiplied by weights and then summed to arrive at an overall rating for environmental issues for each alternative (similar to the Leopold Matrix). After completion of a cause x effect matrix, it is possible to display graphically this relationship and visualize whether the benefits off set the detrimental effects. The decision to proceed with the feasibility studies envisaging future project implementation, is a result of a participatory approach and a pragmatic analysis of the importance and magnitude of the cause x effect relationship.

The new planning procedure diagram would be as given on figure (1) The major difference from previous planning practices would be the attempt to reach a consensus of all parties concerned at as early a stage as possible, thus avoiding last – minute surprises after years of development expenditures, as has happened with several large projects in the recent past.

Background History of the two Projects: Itaparica's past experiences versus Castanhão present experience.

The resettlement of Itaparica, situated on the São Francisco river near the border between Bahia and Pernambuco, Northeastern region of the country, was the result of the involuntary relocation of communities that were situated inside the present area occupied by the inundation area of the reservoir. Approximately 120.000 people were affected either directly or indirectly. Some 4.600 families who lived in the small submerged towns, were transferred to new homes specially constructed to lodge them. Another 5.900 families that used to live alongside the former São Francisco river banks, and were dedicated to fishing and agriculture activities, were to be resettled alongside the newly formed reservoir borders. However, besides the areas suitable for irrigation situated in the vicinity of river banks, no additional feasible areas could be found within the range of a few hundred kilometers. This is one of the main characteristics or difference between this project and others in this country, were resettlements were necessary due to the construction of large hydraulic infrastructure projects. However, this huge social component, during the initial stages of project planning, was largely overlooked leading to social tensions and unrest.

The Castanhão Project, also situated in the Northeast, in the State of Ceará, on the Jaguaribe river was conceived to harness this water course by means of the construction of a Dam/Reservoir complex. The town of Jaguaribara will disappear completely upon completion of the dam and filling up of the reservoir displacing some 10.000 people. However, the affected population took part at the planning phase and decision making process from the very beginning. This participatory process involved the population in the design of the new town a program to benefit their economic activities, prior to the project implementation.

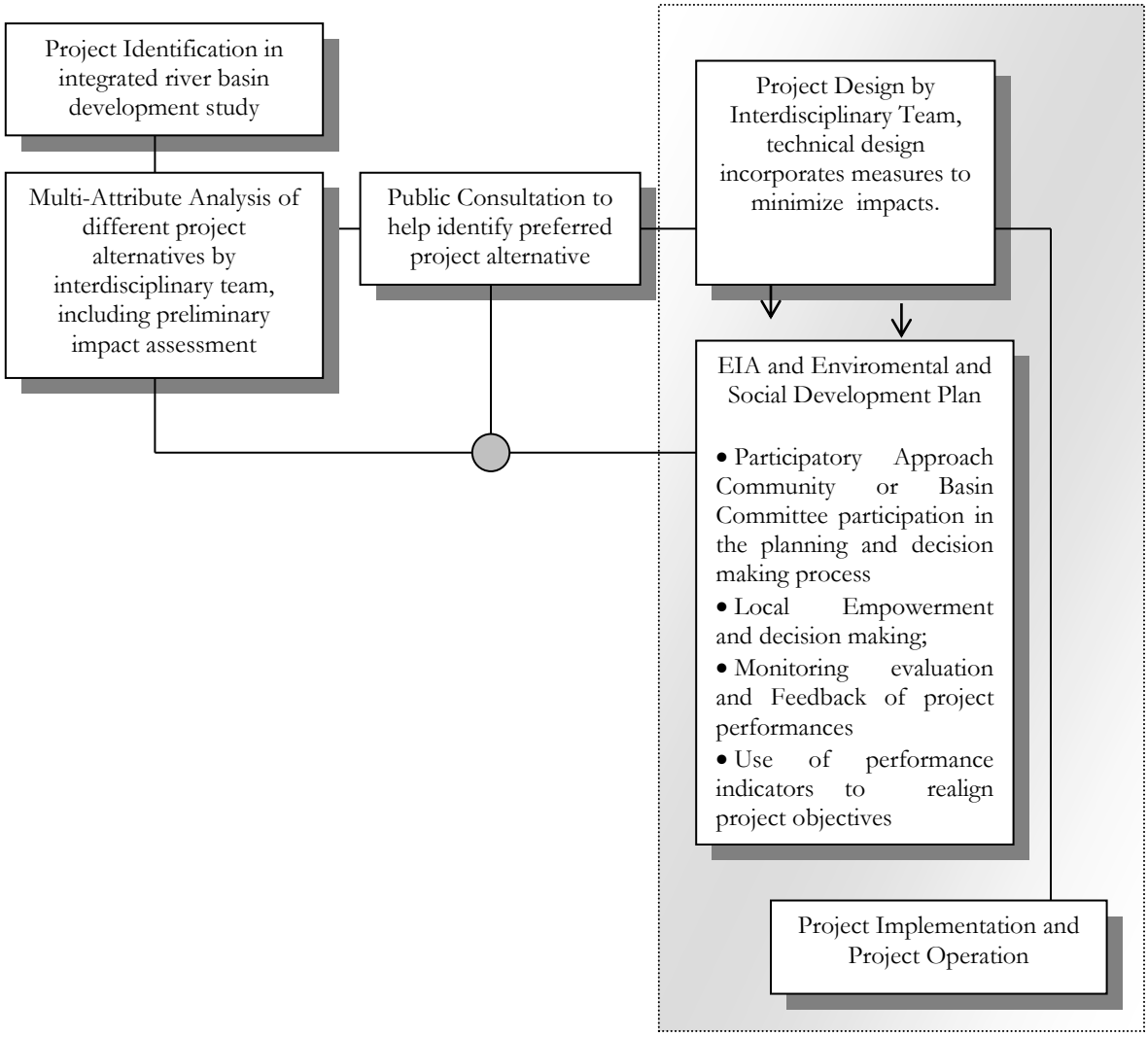

Fig. 1 - Planning and development of large hydraulic infrastructure: new planning procedure

The two examples represent opposite views, reflecting the need to implement non-authocratic "top-down" approaches, a full-fledged participation of the public in the planning and decision making process is becoming mandatory and should become widespread. An acceptable model devised to accommodate the many different actors and perspectives, is to be elaborated based on common aspects but should also be capable to handle peculiarities of specific projects and environments.

Specific Aspects to be Considered

Positive Aspects

A major option for assisting project affected people to become beneficiaries is to incorporate them within irrigation schemes. Several examples of incorporations as such were reported in Asia, where resettlers and downstream hosts were given priority over all other categories of participants. The same has happened with the Castanhão Project, the population of the town to be submerged Jaguaribara in the State of Ceara Northeast-Brazil, was fully integrated in the process of resettlement.

This participatory approach was initiated through public audiences in due time at the beginning phase of Dam design. Therefore, an integrated participation was assured from the very incept of the site selection for the new town to be constructed and the new homes for the displaced people, up to transfer of monuments or location of the public infrastructure such as schools, hospital, churches and city parks.

If well designed, implemented, managed and maintained, major irrigation schemes and appurtenant infrastructure can produce significant increases in both production and living standards in an environmentally sustainable fashion.

Unfavorable Aspects

The most disadvantageous situation for project affected people is when they are not only unincorporated within an irrigation project, but are actually evicted from their land to make way for it. There are innumerable cases where the land base of unincorporated project affected people has been reduced to make way for irrigation projects on which government selected settlers are predominantly immigrants. Although cases where hosts to a scheme are evicted from their lands without compensation are far fewer, the danger exists that their proportion in increasing as more and more people compete for less and less natural resources. Large dams are especially vulnerable to political considerations (Fredericksen, 1992; Ribeiro, 1994, and Waterbury, 1979), with large-scale projects frequently influenced by the political ideologies of heads of state (Scudder, 1994).

As land and water resources become scarcer, political elites will be increasingly tempted to either access them or use them to achieve political goals.

Disadvantages

Where project affected people are included within irrigation projects are the same as those for all participants where projects are poorly designed are maintained. Environmental problems affecting project life included siltation of reservoirs, water logging and salination, and loss of biodiversity. Public health problems include increased incidence of malaria, schistosomiasis, dysenteries and other waterborne diseases.

Socioeconomic problems arise from insecurity of tenure and poor land preparation and water distribution as well as from poorly designed production and marketing systems that prevent settler

households from raising their living standards beyond a subsistence level. A separate problem is the frequency with which focus on a single cash crop lowers the status of women, especially in cases where they had their own pre-project fields or crops. Notwithstanding such problems, incorporation within an irrigation project is still a better option for project affected people than exclusion. Technical and participatory (e.g., water user associations) solutions to all of the above disadvantages exist and are well known. What is lacking is their incorporation within plans followed by their implementation.

Methodological Approach to Promote the Changes: Optimization Of Projects In System Context

Large dam projects, particularly those producing hydropower or designed to meet a single purpose, need to be optimized in a system context.

First, this means that in selecting the best dam sites, it should be kept in mind what the other developments in the river basin can be and how these affect each other. In other words multipurpose or multi-objective projects should be considered in order to optimize and maximize the benefits of the development of water resources in a watershed. The systems analysis requires the use of complex multi objective functions models, and the analysis of a range of alternatives, with and without the project, with and without demand side management measures needed to select the overall best configuration.

The same reasoning is applicable to large irrigation projects were high technology is utilized (central pivots, monitoring and evaluation models, automated operation systems, tele-metering, scada, etc) and are operated based on a well established infrastructure of canals, pumping stations, reservoirs and aimed to produce profits and returns on the investments made specially if foreign loans are involved.

However, those projects are usually implemented in regions were the social component plays an important role and were the vast majority of the local people are not necessarily benefited. Therefore, the "downsizing" or the "proper sizing" of such projects integrating the local values and potentials may result in even better revenues. (In Brazil to create a job in the rural areas requires a few US$ hundred dollars, whereas in the urban areas, industry based requirements range between ten thousands up to hundreds thousands US$ dollars!!). And above all, since the implementation of a project aims the well being of the people, special care should be taken in evaluating the costs and benefits regarding the impacts that may be expected to those affected (people to be resettled, usually in rural areas) and those to be benefited (usually people in urban areas).

In this respect, the judgement of what is beneficial and what is not, is frequently viewed in economic terms. However, a carefully balanced analysis including ethics as a most important variable in the decision making equation must be weighed.

Resettlement and Immigrants: The Problem Definition

Immigrants, both temporary and permanent, from without a particular river basin are major beneficiaries of river basin development projects. The largest number of temporary immigrants are associated with a project's construction phase. While employment on advanced infra-structural and the main civil engineering contracts are often listed as a benefit for local people, in fact local workers tend to be only a small minority of the labor force. There are several reasons for this situation. Most important is the fact that local people seldom have the skills required by contractors, with crash training programs seldom bringing skills up to the desired level. Moreover, contractors often bring a

significant portion of their labor force with them or recruit immigrant workers with previous construction experience.

Though a small minority of temporary workers choose to remain in the area after their contracts end, most immigrants come after the completion of the construction phase. Seeking the new opportunities created by the project, they frequently are able to compete with local people. Two major benefits of large dams are the reservoir fishery and irrigation. Though both involve project affected people as well as immigrants, the latter tend to dominate unless a special effort is made to select and increase the competitive abilities of local people.

Future Practice

The debate about dams is a debate about the very meaning, purpose and pathway of development as well as the role that the State plays in both protecting the rights of its citizens and responding to their needs through development policies and projects. It has been showed that large scale infrastructure projects such as dams can have devastating impacts on the lives and livelihoods of affected communities and ecosystems, particularly in the absence of adequate assessments and provisions being agreed to address these impacts.

Improving the development process and its outcomes must start with a clear understanding of the shared values, objectives and goals of development and their implications for institutional change. The core values informing the understanding on these issues, were grouped under five main headings:

- equity;
- efficiency;
- participatory decision-making;
- sustainability;
- accountability

These five values are highlighted and are the focus of concerns raised by the evidence. By applying these values to the evidence collected, it is believed that negotiated outcomes using a rights-and-risks approach will deliver the most favorable development results.

Reference to these values enables all stakeholders to test decisions relating to water and energy development. If these values advance significantly, it might be expected that a new policy framework for decision-making on water and energy development options that can be applied in national and local contexts. To improve development outcomes, ensure public acceptance and reduce future controversy, this new basis for judgement needs to win the support of the full range of key stakeholders. It suggests that decision-making on water and energy management will align itself with the emerging global trends on equitable and sustainable development.

Involuntary Resettlement

Recent studies of involuntary resettlement show that if countries do not have both the capacity and the commitment to handle involuntary resettlement well, they should not embark on a large dam project. For years, the infrastructure and human side of projects were utterly disconnected in most instances. That is now changing, as more countries voice their commitment to handle resettlement well. An even better indication of that commitment would be putting stronger monitoring and evaluation in place.

The best signal will be when governments treat resettlement not as a problem but as an opportunity. One key element in this is to mix land-based and diversified strategies, not just to restore people's incomes but to improve them. A second is to get outside the traditional project cycle and instruments. That means planning for income-generating opportunities well in advance of resettlement and continuing to assess how the resettlers are faring after the dam and relocation are complete. It also means going beyond the project's funds to tap other sources. The third key element is to work with NOGs, the private sector, government agencies and external donors – to improve resettlement's chance for success.

Governments are becoming more committed to good resettlement. There naturally are many levels of commitment. Sometimes there is commitment at higher, more policy-oriented levels, but relatively less at the resettlement-officer level, where the resettlement posting is sometimes viewed as an undesirable two-year career step. At other times dedicated individuals in the field are frustrated by indifference at higher levels, which robs them of the resources and other tools needed to perform effectively.

In Brazil, although the implementing agency intended to provide the infrastructure and services resettlers needed (e.g. The Hydropower Company of the São Franciso River-Chesf and its Itaparica Project), often the federal government did not or could not allocate the funds needed to do so. This led to delays that further increased costs. In Indonesia, implementation proceeded without knowledge of the large number of affected villagers who refused to move because local governments were not responsible for reporting on their migration. Although central government's commitment was questionable in any case, the lack of follow-up at the local level aggravated the situation. The private sector can also be drawn in. Looking ahead, governments should solicit cooperation and useful inputs from the earliest stage, forging a wide range of public, private, community, and institutional partnerships.

In all circumstances, adequate resource allocations are essential both during and after the construction period. In Brazil, India, Togo and Indonesia, relocation preparations and resettlement activities lagged behind because too few resources had been dedicated to them. In Thailand, by contrast, ample resources enabled the implementing agency to achieve a satisfactory resettlement outcome (resettlers are not necessarily satisfied, as NOGs urge them to complain and get more compensation).

Compensation Must Be Adequate and Timely

Land compensation - the most difficult part of the dam-related compensation package to get right - needs to be handled early, but even this does not guarantee success.

In Brazil, if land compensation based on nearby resettlement had been considered earlier, the analysis could have led to something other than the high-cost, high-risk irrigation schemes that were negotiated.

Cash options need to be on the list. Inevitably, the dam will result in less land, sometimes of lower quality, being available for resettlers around the reservoir. Since resettlers generally wish to remain close to their original homes, a cash option provides alternatives – unavailable in the land only option – for resettlers to pursue other income-generating options or to improve their homes.

There are examples where recipients used cash compensation to make financial reallocations among household members, so that they could buy houses or land, get better education, or get ahead in an occupation. Or in other instances were the recipients', cash compensation was a significant help to the poorest resettlers, and compensation in general helped resettlers get by when the economy collapsed.

The most enterprising resettlers do best on their own and reduce the economic and management burden of the resettlement operation. Tied-cash options – with installment payments, joint accounts, and specialized training programs to steer excess families away from the land – are underused instruments. Clearly, these methods will not work everywhere, but they have good potential.

Treat Relocation as a Development Opportunity:

Countries should offer irrigated lots in the command areas (for irrigation projects) and support land-intensive activities and traditional dryland cropping elsewhere. They should also shift to diversification activities (supported by training), and use tied-compensation packages, joint accounts, and trenching payments to promote them. Experience with these options in the study projects has been no more impressive than with resettlement in rainfed areas, and the benefits have been equally elusive. That means putting the best development planners to this task, along with the best resettlement experts.

Resettlement must not be seen as an inconvenient add-on, but as integral to the project. The emerging concept of resettlement as a development opportunity rather than a burdensome obligation is a step in the right direction.

Conclusions

Future decision-making must increase the significance of social and environmental considerations, bringing them to the forefront of the screening process as is already the practice in some countries. The focus must shift from mitigation and compensation to make avoidance and minimization of social and environmental impacts fundamental criteria guiding options assessment. This approach will give society a better chance to set thresholds for what is acceptable and what is not, to consider long term priorities, and to reject options that are unlikely to meet avoidance and minimization principles. Stakeholders must agree on guiding principles to mitigate and compensate for the social and environmental consequences of options that remain on the table before taking further decisions.

Countries should shift the emphasis to improving income and living standards, opening the way for displacees who are motivated and capable of moving from their valleys to take a new place in the regional or national economy. The design of the project must not only provide water, power and other conventional benefits below the dam, but also be part of a regional development plan shaped to support the affected families above the dam. Enough benefits should be captured to justify the local social disruption and to help establish sustainable, progressive employment and incomes for the displaced. The aged, infirm, and unmotivated may not welcome the opportunity to "modernize", and should not be forced into it. But the resettlement strategy as a whole should reflect more ambitious aspirations.

Above all, displacees must be beneficiaries of the project. Merely aiming to restore standards of living and lifestyles common to isolated river valleys can be a dead-end development strategy.

The opportunity must be taken to establish new and dynamic sources of sustainable growth. In non-reservoir cases, that impulse may be less compelling, because communities are usually not so deeply disrupted. The recommendation applies especially to big dams, because they involve major social dislocations, and thus require special arrangements. Many families are likely to be apprehensive about "dynamic growth", and their legitimate concerns can be addressed only by excellent preparation of the most cost-effective alternatives, with the families' full participation.

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