Detlef Schwefel

The Social Impact of Large Dams in Latin America

Why, for Whom, and at Whose Expense Are Dams Built?

It is not just a matter of cafeterias, concubines, churches, and cinemas at camp which have to be considered in determining the social impact of dams. The site, the natural and social environment are changed and change the living conditions of people. Utilization of electricity, irrigation, and drinking water which dams make possible also entail social side effects. Research results and discussions at a seminar conducted by the Economic Commission for Latin America, the Organization of American States, and the DSE on the "social impact of large dams in Latin America" pointed to a great variety of frequently neglected social problems which are caused by dams.

In response to the oil price increases of the early seventies, Latin American governments built new dams to reduce dependency on the world energy market in the longer term, even if they increased indebtedness in the short term. Particularly with multi-purpose dams, indirect effects and side effects were expected for the surrounding areas, the land, and the relationship with neighboring countries, if the dam was constructed as a joint venture.

Dams are built to provide a renewable energy source nationally and convert it into electricity for industry and agro-industry, irrigation for agriculture, and drinking water. Development of new regions, navigability, savings in foreign exchange (compared to oil), drought and flood control are other potential benefits in a long list of goals, potential effects, hopes or justifications with which dams are credited.

But dams are also getting some bad publicity. They are cited as examples of gigantic technocratic development projects which entail a multitude of follow-up costs: Disastrous impact on the environment, abominable, chaotic resettlements or ruthless displacement of people, energy and irrigation which is of no use to the poor. Information on their social impact is often locked into inaccessible "gray" project reports; speculations abound. The churches and self-appointed defenders of the affected population groups deserve credit for having pointed out these negative effects which accompany almost every dam project.

Even from a macro economic point of view, dam projects are controversial: Uncertain total costs (sometimes up to ten billion US dollars), uncertain financing conditions, limited financing possibilities, excessive indebtedness, inflationary consequences (due to the large requirements of foreign exchange for skilled personnel, materials, and equipment), politically negotiated low prices for electricity (at times below production costs) and overestimated demand at times makes one doubt that water is really the best source of energy – even disregarding the social and ecological follow-up costs. A correct and comprehensive answer can be given only by comparing it with alternative sources of energy.

Does the plus offset the minus?

Dams are frequently built in regions where the people are poor. In Latin America, individual dam projects caused the resettlement of more than 100 000 people. But until now, only technical and financial questions were

Traditional habitats along riversides are often destroyed by flooding after construction of large dams. Resettlement of large populations creates serious social problems.

Photo: WHO by P. Almasy

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answered in connection with most dam construction – occasionally economic, rarely ecological, and almost never social questions. Unintended effects and side effects and social problems were addressed only if they delayed and threatened the progress of the project.

Until now, "social aspects" meant above all the social services needed for the 40 000 dam workers at camp. Aside from the total isolation of workers from their families with corresponding consequences, a number of other typical problems are reported:

- Difficulties due to all these different people and professions living together at closest quarters.
- Different work requirements in different construction phases with the temporary loss of jobs and labor shortages (in other sectors).
- Wages which sometimes are below the subsistence level of a family or often far above comparable wages, with consequences for other economic branches.
- Overexertion of workers due to many hours of overtime and very hard, often dangerous work.
- Labour law violations, particularly by sub-contractors.
- Taking workers from the surrounding regions, with ensuing bottlenecks and price increases.
- Taking workers from nearby farms, resulting in production decline, price increases, malnutrition of the socially weakest – after all, the workload does not decrease at the construction site during harvest times.
- Local inflationary developments can be observed at almost all Latin American dam projects. Price increases for basic foodstuffs, real estate, increased demand for goods and services are the obvious typical regional symptoms of dam construction projects.
- Small-scale farmers and the subsistence population in the surrounding areas become used to the purchase and sale of human energy.

What happens to workers when the dam is finished?

Since the construction of dams and hydropower plants is finished at some point in time, there are usually serious social problems when construction work ceases: Loss of individual jobs, loss of qualification, extensive unemployment in the region, abandonment of infrastructure and services, deterioration of settlements, ending in ruins or ghost towns. There have hardly ever been systematic plans to deal with such problems – for instance with the fate of construction workers after the project is finished.

The social consequences of resettlement vary. Most of the problems concern the impoverished population which seldom has any negotiating power and little capability for self-help. At a number of Latin American dam projects, members of the churches and non-governmental organizations have acted as legal representatives of the affected people and attended to the following, in part longterm problems:

Longterm problems of resettlement

- Lack of legal procedures for forced resettlement.
- Frequent lump sum compensation, instead of individual reimbursements, partly based on incorrect land records, which for instance do not take account of real income, which is reduced by the loss of access to free forest products, fish, and game; no compensation for earnings and crop losses during resettlement.
- Reducation of economic productivity and income of the resettlements due to a lack of investments and adjustment difficulties, for instance when conventional agricultural methods are changed.
- Uncertainty about the location of the new settlement and late, at times chaotic resettlements, "when everyone is already up to his neck in water," high subsequent follow-up costs due to wrong planning; sometimes, compensation is made only gradually after the move; there have been reports about families which had been forcibly resettled several times.
- Inadequate information about resettlement plans and nonparticipation of the population in their design.
- Resettlement of residents and spontaneous settlement of strangers; "voluntary", non-compensated exodus to the cities or deeper into the forest.
- Social disintegration and destruction of traditional community structures and social as well as cultural ties, crucial, for instance, for taking care of the old; increasing indebtedness and dependency of settlers and resettlers.
- Traumatic stress reactions, individual disorientation, psycho-social phobias, loss of independence and self-reliance by becoming used to (later often reduced) social services.
- Greater impact of resettlement on women, the old, and ethnic minorities who lose some of their cultural independence.
- Insistence upon prior or fraudulent title deeds, amounting to land robbery; forced resettlements or displacements using (para) military force to regions which are sometimes thousands of kilometers away.

A number of anthropological and sociological studies have identified these major problems related to resettlement and have made recommendations for a solution. But meanwhile – it is asserted – more is done for and made public about the resettlement of animals, graves, and archaeological monuments than for the resettlement of people.

Who benefits from the dam after construction?

The social consequences of utilizing the dam or hydropower plant have rarely been examined. Although – or actually because – there is sometimes great uncertainty about future demand, the direct and indirect uses of energy, irrigation, drinking water etc. are also essential for the social evaluation of a project.

Electricity: Power-intensive industries – aluminum works, electro-metallurgy, primary chemical industry – are far removed from the end consumer and have been found to actually benefit more the affluent consumers. The majority of people in developing countries makes only minimal indirect use of the electricity consumed by the industrial and commercial sector; there is hardly any evidence that the poor use energy productively. Rural electrification programmes have almost always been unproductive. Often, they only transfer the savings of the poor to the state in the form of increased taxes, and create profits for merchants dealing in radios and television sets. For the most part, electricity is used for cooling beverages, and for lighting, but not for more vital activities such as cooking, transportation, or processing of food. For these, alternative sources of energy are used.

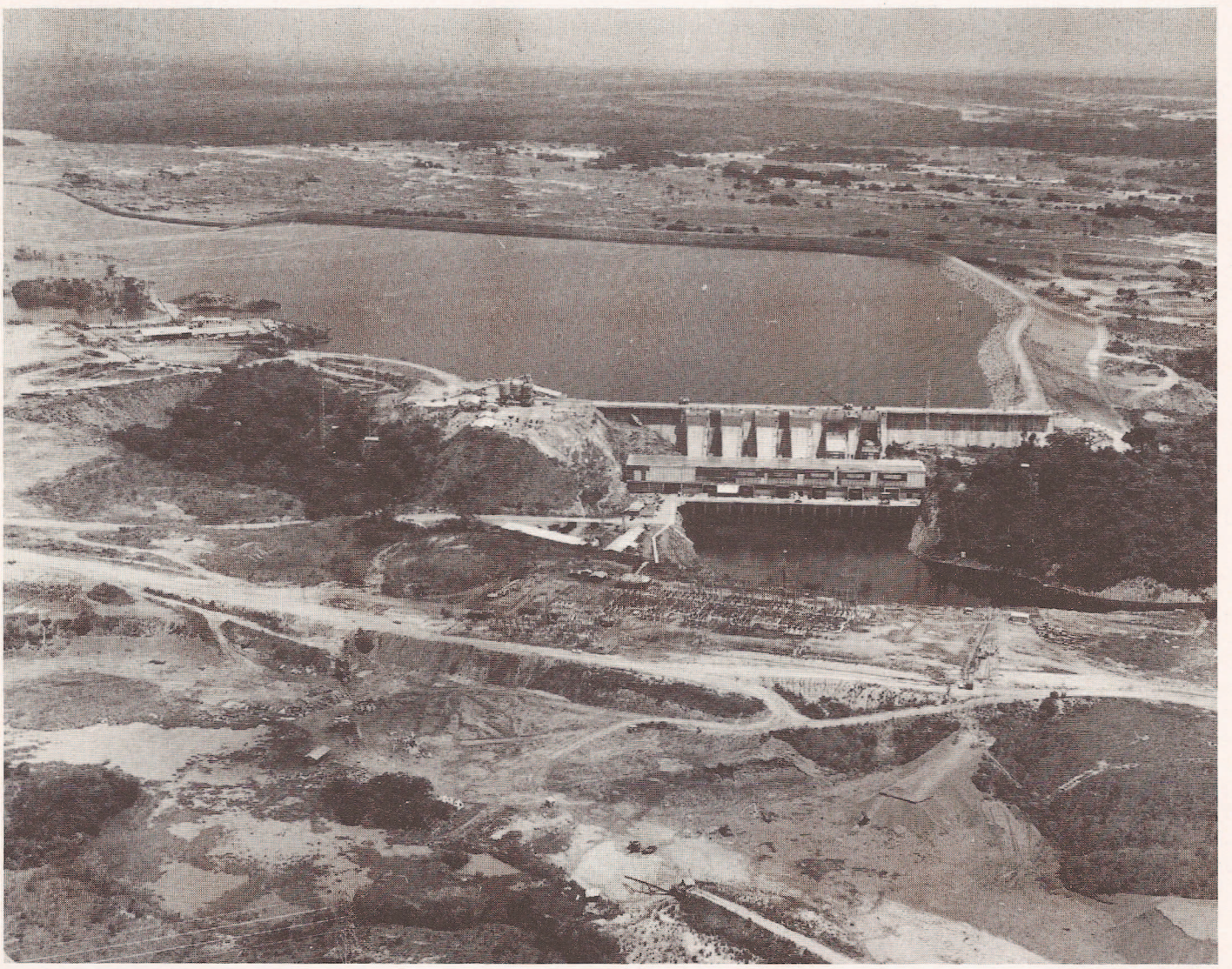
Irrigation: In positive cases, which are not very frequent, reservoirs and artificial irrigation expand cultivated land and increase food production. However, food crops are not as water-intensive as export crops or crops needing further industrial processing, such as sugar which, converted into alcohol, becomes a gasoline substitute. Accordingly, existing production and living habits are often totally overturned: From dry rice to paddy, from small-scale to large-scale production, from multi food crops for home consumption to export mono cultures. Small-scale farmers usually do not employ the necessary new cultivation methods, seeds, artificial fertilizers, and machinery, least of all the marginal populations which originally settled at the dam site.

Other uses: River fishing often changes from free fishing rights for personal protein supply to commercial fish breeding for affluent markets. The social impact of drinking water must be determined case by case.

Impact studies needed before the dam is built

Dams offer many advantages Otherwise, they would not be built. But who benefits? Power plants produce, use, and destroy energy. But who utilizes this energy and for what purpose? Is it utilized for a nebulous industrialization, compared to which any side effects can be downplayed, embellished, or concealed? Are not crucial social questions raised by dams often passed on to lame committees or commissions without power and authority? Are there really not enough financial backers for the alternative – many small projects, such as hydropower plants with a capacity of up to 1 MW – or are the expectations for small, cute projects also an illusion, since their impact can be determined even less precisely?

Neither denunciations and fear of progress nor false optimism due to the concealment of side effects make sense. The conference on the "social impact of large dams in Latin America" has demonstrated that it is possible to argue rationally and objectively about the benefits and disadvantages of dams as well as their social and follow-up costs. What is needed is a scientific, forthright study of the preconditions and impact of any large project; a systematic approach, which follows the winding paths and correlations between direct and indirect effects, up to the rat infestations caused by the dams.



Hydrodam on the Caroni River in Bolivar Province of Venezuela. Photo: DNI

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Backpage: Rice terraces in the upper watershed area of the Solo River in Central Java, Indonesia. Every available portion of land is cultivated. Photo: FAO/Sutcliffe

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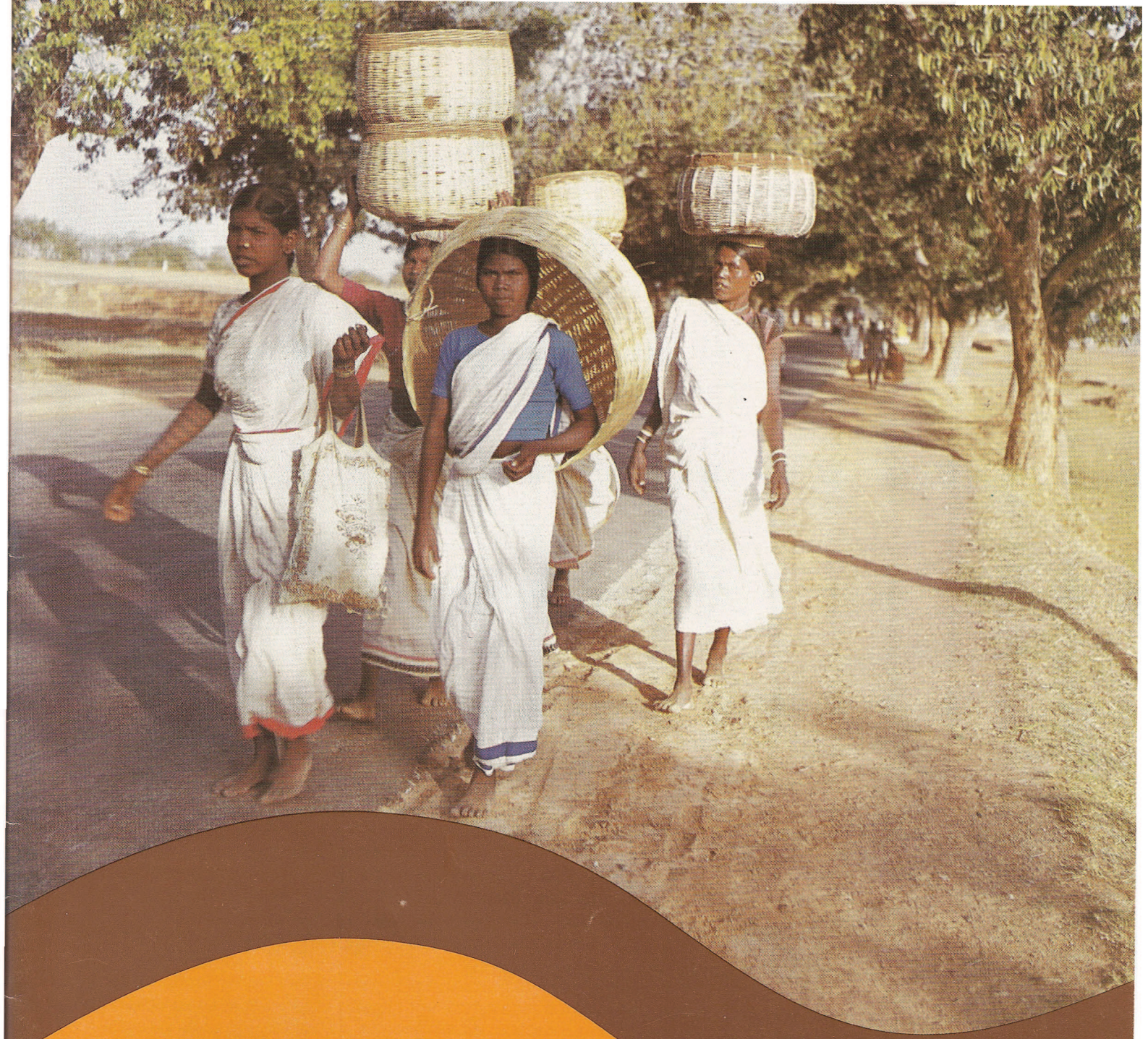

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