

Contributing Paper

Assessing the Project - Social Impacts and Large Dams

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Social Impacts of Large Dams Equity and Distributional Issues

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This is a working paper of the World Commission on Dams - the report herein was prepared for the Commission as part of its information gathering activity. The views, conclusions, and recommendations are not intended to represent the views of the Commission. The Commission's views, conclusions, and recommendations will be set forth in the Commission's own report.

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Introduction

The following submission looks at a number of questions about the social impacts of large dams. The author is not an expert on the sociology of large-scale development or, indeed, on the affects of dams around the world. This means that this paper does not set out original or integrated findings in these matters. Rather, the material here comes from experience in a number of roles in relation to a number of specific projects. These include:

- Anthropologist and research co-ordinator for studies of the impacts of large-scale developments in Canada, especially in the arctic and British Columbia.
- Anthropologist and documentary film-maker working on projects in the Canadian arctic, sub-arctic and north Pacific coast, each of which raised the impacts of large-scale developments.
- As a member of the Independent Review (Morse Commission), looking at the Sardar Sarovar Projects in western India. This entailed both on the ground inquiries and examination of the various contexts in which Sardar Sarovar, and related Narmada developments, were taking place.
- As Chairman of the Snake River Independent Review, looking at impacts of the Hells Canyon dams on the Snake River, in the northwest United States. This involved looking at other dams on the Columbia River system.

In this paper for the World Commission on Dams I set out findings and reflections that emerged in the course of these projects. There are a number of conceptual and theoretical matters that my work in relation to these projects have suggested to me. I give these as the last section of this paper.

1. Northern Dams

1.1 The W A C Bennett Dam, northern British Columbia

Both the W A C Bennett and Peace Canyon Dams are located within 25 km of the town Hudson's Hope, situated along the Peace River. Part of the Crown Corporation BC Hydro, these dams are the biggest employers in Hudson's Hope. The two dams have a combined capacity of 3,425 megawatts, and can supply more than 50 % of British Columbia's electrical demand.¹

The Bennet Dam is 2 km long, 850 meters across at the base and 9 meters across at the crest. Located behind the dam is Williston Lake. This reservoir covers an area of 177,300 hectares. The lake took five years to fill. Williston Lake is backed up 362 km through the Rocky Mountain Trench.

The energy producing potential of the canyon had been noted in the early part of the twentieth century. Construction began in 1962 and was completed in 1967. The first power was generated in 1968. Plans for the Bennett Dam began in the 1950s, . Built as part of the Social Credit government's massive infrastructure expansions, the dam was named after WAC Bennett who was premier of British Columbia from 1952 until 1972.

No pre-project impact assessments were done regarding impacts on people for this dam.²

Post-project cost-benefit studies have not been done. One obstacle to doing these studies is the lack of good baseline (i.e. pre-project) data. Anecdotally, decreases in tax revenue result from flooding of agricultural land, while recreation opportunities increase land value and add to the tax base. A Federal commission found that river regulation effects of the dam were adverse in Fort Chipewyan, a community twelve hundred kilometres downstream of the dam. Direct losses in traditional economic activities (trapping, hunting, fishing, and gathering for food) in Fort Chipewyan have been estimated at between \$112,500 and \$210,000 per year.³

¹ For details about B.C. Hydro dams, see their website
http://www.hhcn.prn.bc.ca/district/bc_hydro/bchydro.html

² Colin Gurnsey, Manager of Community interests B.C. Hydro, Vancouver Canada, personal communication, October 18 1999.

See also Pollon E.K. and Matheson S.S. This Was Our Valley, Detselig Enterprises Limited, Calgary, Canada, 1989 The following is of particular interest: "in a major project then-Cabinet minister Ray Williston remarked that the area of the reservoir 'was an absolute wilderness and there were no people there, no nothing. Outside of Fort Ware, where there were a few Indians and so on, there was nothing in the whole area.'" [page 334] And: "There was never an impact assessment done by any of them, Hydro, or the Indian agent, or you may as well say the B.C. government. Nothing. Not of this area. No one ever came to explain, they never said anything to that point until the day that they came, in 1965, around that area. The DIA (Department of Indian Affairs) went to certain people, told them "There's going to be a flood.'" [page 336]

³ S. Adams, Fort Chipewyan Way of Life Study, An Assessment of the WAC Bennett Dam on the People of Fort Chipewyan and the Peace-Athabasca Delta, Stuart Adams & Associates Planning Consultants Limited, Vancouver, Canada, 1998

The Bennett Dam flooded lands at high altitude in a region of marginal relevance to agriculture or even animal husbandry. The surrounding terrain was on a vast scale, and therefore the environmental losses - to forest and other features of the region's ecology - appeared to represent minor impacts. At the same time, the dam was expected to generate employment in a remote location and create recreational facilities for local residents and future tourists.

At the time, displacement by the dam was said to be exclusively on European settlers. Families with farms in the reservoir area were given compensation based on current land valuations. The significance of the flooded areas to trappers (most but not all of whom were Indians) received some attention. This was a region where traplines - areas licensed to individuals for the taking of fine furs for marketing purposes - had been registered in the 1920s and 30s. As the dam was filling and the people were relocated in 1965, initial payments of \$2700 were made to each family having a trapline affected. Of this money, each family received \$100 to \$200 cash-the remainder was "administered" by the appointed (non-native) Indian Agent. The number of families so compensated is unclear, however the group was limited to those having traplines directly flooded

Subsequently, in 1987, as the result of a campaign led by a member of the British Columbia Legislative Assembly, the Sekanni people living at Ingenika were awarded \$180,000 (in total) by the B.C. government. There were 92 residents in the community at this time.⁴

It may well have been the case that too little was known about the uses of the area by indigenous families and communities. The dam was built, and flooding took place, before any land use and occupancy studies - the body of research that in many parts of Canada has created baseline data for impact assessment for indigenous peoples - had been carried out. Also, the dam was built in an era of Canadian administration of "Indian Affairs" when large-scale development was rarely if ever challenged or even modified by indigenous interests. This was part of a widespread faith in such projects, and a profound confidence in their social value - both locally and, more decisively, to the province or nation as a whole. The macro economic and macro social interests were interlinked, and the project welcomed as a more or less unquestionable good.

With the benefit of hindsight and changing models of both economic and social wellbeing, new questions have been asked about the W A C Bennett Dam. Hypothetical land for farming, cumulative impacts of loss of habitat, disruption of ungulate habitat and the economics of the energy sector of British Columbia are all arenas where doubts have been raised. But the regional consensus about the project is that it was "a good one."

In the course of working in the region in the late 1970s and early 1980s, I met a number of Athabaskan Indians originally from the Ingenika Band, who had lost a great deal as a result of the dam. Evidently a significant number of families had been forced to move and had seen their territories, camp sites, cabins, resources, grave sites and much equipment disappear under the lake. They confirmed that they had never been informed about the project, still less had they been

⁴ Pollon and Matheson op cit, 336-7. Also, for many aspects of this and linked issues in British Columbia see Nancy Knight What We Know About the Socio-Economic Impacts of Canadian Megaprojects: An Annotated Bibliography of Post-Project Studies, University of British Columbia Centre for Human Settlements, Vancouver Canada, 1993.

consulted. They had never sought or been offered any kind of compensation. They had, instead, adjusted as best they could.

In the late 1970s, at the time when the Ingenika story was being revealed, B C Hydro announced that an early plan for a second dam on the upper Peace was ready for development. This was known as Site C, and involved a dam 88 km downstream of the W A C Bennett project. Site C has the potential to flood an area of about 9400 hectares (22,500 acres). Above the proposed dam site are several islands in the Peace are likely to receive special protection status. Current government policy regarding acceptable uses in Protected Areas clearly states that flooding would not be an acceptable use. This would preclude future hydroelectric development opportunities.⁵

By the time Site C was proposed for construction (1979-80), Canada had established environmental impact assessment procedures, while B C Hydro was concerned to put in place a consultation and review process. As a result, public hearings were held into the social impacts of the Site C project.

These hearings gave the region's impacted communities, especially the region's Dunne-za and Cree Reserves, a chance to spell out their views of the project, and to call their own experts to analyse possible social and ecological consequences. Evidence was presented over a period of several days, and those most affected were able to create an extensive public record in which they set out many fears and a set of impacts about which they were deeply apprehensive.⁶

In the end, the combined doubts about the Site C project caused it to be postponed. It continues to be a project B.C.Hydro hopes to develop. But the continuing surplus of energy in North America, as a result of abundant supplies of natural gas and existing hydro capacity, makes such undertakings of doubtful economic viability. This means that the decision to go ahead or postpone is, for now, informed by dominant factors in energy economics, rather than in the arena of socio-economic or human rights debate. It is not a project, however, that has generated wide ranging social impact assessment. This is because such work - as opposed to cost-benefit analysis - is undertaken when a project has its go-ahead. Base line data from impact assessment is required for mitigation, not measurement of the merits of the project.

1.2 The Churchill Falls Dam

The Churchill Falls hydro project has a capacity of 5,225 megawatts (MW). Construction began in 1967 and was completed in 1971. The area of the dam, flooding wide and shallow valleys, is 665,000 hectares - among the largest of the world's hydro dams. (Compare: Venezuela's Guri Complex with 426,000 hectares, and Mozambique Cabora Bassa with 380,000 hectares.) The flooded lands lie in the eastern subarctic area of interior Labrador, though the river, upstream of the dam, rises in northern Quebec. The first power was generated in 1971.

⁵ Details here can be found at the Fort Seaweed. John Land and Resource Management Plan website: <http://www.litchi.gov.bc.ca/slupinbc/fstjohn/stjohnlrmp/6-7.htm>

⁶ These exist in the transcripts of the Site C Hearings. Also, aspects of Dunne-za and Cree apprehensions about the cumulative impacts of developments in the region can be found in my [Maps And Dreams](#).

Potential for hydroelectric power production from the Churchill River was first noted in 1939. The remoteness of the site prevented development of a project however. In the mid 1950's the feasibility and practicality of developing a hydroelectric dam were established. An agreement to develop the resource was made in 1966 by Hydro-Quebec and Churchill Falls (Labrador) Corporation Limited.⁷ No pre-project impact assessments were done regarding impacts on people for any of these dams. As part of pre-project economic studies, a study was done with respect to taxation. To make the project more attractive, the government removed taxes on gas and insurance for the project.

Post-project cost-benefit studies have not been done. When questioned about benefits additional to electricity production, the example given was "A permanent settlement with population about six hundred was established near the dam to service it. This town, [Churchill Falls], still exists".⁸

Like other dams of the same era, Churchill Falls was built in a geo-political context that favoured such projects. The demand for energy in the northeast United States and south eastern Canada was high and increasing fast. And the project, like the James Bay hydro developments, was in a vast, uniform landscape for the most part deemed to be "uninhabited."⁹

The cost-benefit analysis of this project therefore depended on measuring the pure economics - the price to be got from the energy generated, against the costs of building and maintaining the dam and transporting power long distances. The social and environmental sides of any hypothetical calculations were not given analytical potency. In reality, the Churchill Falls project, like the James Bay dams, flooded indigenous peoples' lands. Those affected in this case were the Innu, Algonquian Indians whose territories are an interconnected set of family hunting, fishing and trapping areas throughout subarctic Labrador.

In the course of conducting interviews in the Labrador village of Sheshatshui and on a journey with them to the dam site and Churchill Falls itself, Innu elders reported to me that they were never told that their lands were going to be flooded. As a result they lost property, resources and, as the wide expanse of shallow dam reached across more and more of their territory, found grave sites inundated. They did not lose permanent homes, because the traditional economy was built on a seasonal round of camps and resources - the things they did lose. This also meant that families returned after long absences to affected areas to find them under water. As a result they lost property, resources and, as the wide expanse of shallow dam reached across more and more their territory, many grave sites were inundated. The reservoir took several years to fill to its maximum extent.

The interests of the Innu in the lands affected by Churchill Falls dam have never been calculated into the costs of the project, and no compensation has thus far been offered or devised. The area is part of a wide reaching Innu land claim, however, and there is a possibility that in due course settlement of the claim will take into account the losses the project has caused to the Innu.

⁷ Details can be found in Coté Langevin, Heritage of Power. The Churchill Falls Development From Concept to Reality, Churchill Falls (Labrador) Corporation Limited, Seaweed. John's Canada, 1972. And: P. Smith, Brinco. The Story of Churchill Falls, McClelland and Stuart Limited, Toronto Canada, 1975.

⁸ Kelly Hickman, Lower Churchill Group, Seaweed John's Canada, telephone communications, October 18-21 1999.

⁹ The James Bay Project always recognized that there was a problem of human occupation of areas to be flooded. But its development took place in the late 1960s and early 70s - at time when environmental and human rights activists had drawn attention to the impacts of large projects on both wilderness ecosystems and indigenous peoples.

It is hard to see where the Innu (or, in the case of the Bennett Dam, Athapaskans in northern British Columbia) might have benefited from these northern projects. They have not received cheap power, are not beneficiaries of tourism associated with the dams, while reservoir fisheries are of very little relevance to their domestic economies.

In data pertaining to the Churchill Falls Dam, the number of "oustees" is given as zero.¹⁰ Since no other peoples lived in the area, the social implications of the project have never included assessment of its actual impacts on human communities. And the wider, macro-social considerations have taken the form of a general acceptance of the economic benefits, to the society as a whole, of the development. The project is strongly associated with the name of Joey Smallwood, the populist premier of Newfoundland whose commitment to this, and similar, developments was unquestioning and, for the most part, very popular.¹¹

1.3 Social costs and "wilderness"

The W A C Bennett and Churchill Falls projects, along with several other projects in the northern provinces of central Canada, including the entire James Bay Hydro scheme, can be classified as "wilderness developments". The advantage of using this phrase lies in its directing us to a particular kind of impact assessment. The cost-benefit analysis of power generation of such undertakings establishes their economic value to a province or the nation as a whole. This specific benefit is allied to a separate idea that schemes of this kind in remote areas, at or beyond the margins of settlement and farming, are ways of developing areas that are otherwise of little economic value. The development of wilderness areas thus can be said to contribute to national expansion and important ideals of overall national growth and progress.

In wilderness regions there are, of course, environmental and social impacts. But the wilderness is, in many cases, immense in scale, and overall ecological diversity relatively unimpaired. And the populations of such areas, as exemplified in the cases of the Bennett and Churchill Falls projects, are deemed to be either so small, so poor, or so nomadic as to render the usual impacts of reservoir to be negligible. If regional and national tendencies to overlook or minimise the needs of indigenous groups is added to ideas about both wilderness and development at frontiers, it is easy to see that social costs of such projects are likely to be understated.

This means that the central issue for "wilderness projects" is one of indigenous and human rights. They raise, in very clear and extreme form, questions about balancing incommensurable. How does a government calculate the earnings from export of hydro power against the dispossession and disorientation of several hundred tribal peoples? Similarly, how does the loss of a particular animal population, with consequent reductions in wild protein available to a score of aboriginal families, get weighted in a cost-benefit analysis? These are not items that can be converted into dollar values without a serious misrepresentation of what actual losses mean. This is an issue to which I shall return, but it requires special emphasis when thinking about how large dams have been understood,

¹⁰ See for example the table on p 85 of the IUCN Workshop Proceedings, April 11-12, 1997.

¹¹ There is a striking link between the populist politics of men like W A C Bennett or Joey Smallwood and centralised economic planning that will, in public imagination if not always in reality, deal with widespread issues of poverty and marginalisation. The economics of certain kinds of administration may well be inseparable from their populist styles and sources of power.

assessed and valued in regions where indigenous populations rather than settler or "mainstream" society are impacted.

The case of the James Bay hydro projects in northern Quebec represents a somewhat different process, although they have been developed in a "wilderness" area. Cost-benefit analysis of this scheme rested on a calculation that exporting electricity to the northeastern United States represented a long-term economic base for the projects. The costs were identified in relation to infrastructure, construction and some relocation of communities. The costs to the James Bay Cree emerged as a result of intense lobbying and legal action. The success of an injunction against the development created intense pressure for a settlement with the Cree, as also with the Quebec Inuit and Naskapi, the two other indigenous groups to be affected.

Dispute between the affected peoples and Hydro Québec caused many of ecological, cultural and social impacts of the projects to receive attention. It was through litigation and then combative negotiations that these implications of the projects developed into an equivalent of social impact assessment. The James Bay Settlement, in particular the measures aimed to secure indigenous families' rights and capacities to live on and from their lands, can be seen as mitigative measures designed to meet the concerns and needs of the affected populations and, through their interests, the region's ecology.

However, these forms of social impact assessment and mitigation emerged in complicated circumstances. The view of the day, held by most of those involved on both sides, was the James Bay development was not to be stopped or, in any fundamental ways, modified. The risks to its proponents and financiers lay in delays that organised opposition and litigation could cause. In this crucial regard the James Bay settlement process and its measures were *ex post facto*. They did not emerge through a wish to establish impacts and mitigative possibilities that could then contribute to design and implementation of the projects.

3. The Columbia River Dams

3.1 Canada

The series of four dams built on the Canadian portion of the Columbia River resulted from the Columbia River Treaty signed between Canada and the United States in 1964. The projects are:

- Duncan Dam, operational in 1967.
- Hugh Keenleyside Dam, completed in 1968.
- Mica Dam, completed in 1976.
- Revelstoke Canyon Dam, completed in 1984 (10)

These four dams are all operated by B.C. Hydro. Revelstoke Canyon Dam has an installed capacity of 1,843 MW and an ultimate capacity of 2,764 MW. At its maximum, this dam would be the largest hydroelectricity producer in British Columbia.

No pre-project social impact assessments or "post-audit" studies were done for the Duncan, Mica or Keenleyside Dams. The first time B.C. Hydro did a socio-economic assessment before and after a dam was built was in 1975 for the Revelstoke Dam.¹²

This work, however, was of a narrowly economic form. Results include the following:

¹² For details of these and much other detail dams see: DPA Group, Revelstoke Canyon Dam Socio-Economic Impact Monitoring, prepared for Ministry of Environment Province of B.C., 1986. And: Columbia basin hydroelectric projects, website <http://www.cqs.washington.edu/crisp/hydro/> and links therefrom.

The Revelstoke Canyon Dam generated \$312 million (1985 dollars) in income to the region. About \$213 million was attributable directly to the Revelstoke project. Sectors that benefited most from regional income effects included household servicing, business servicing and construction. The retail sector also benefited, but not to the extent many local businesses had expected.

During construction, the project created beneficial impacts in many respects (e.g. 11,055 direct person-year jobs over an eight year period) but also some negative ones. These included increasing housing and food costs for the region. This was felt particularly by pre-existing residents not fortunate enough to work on the new dam construction. Dam construction also brought a large number of high-paying jobs that displaced jobs in other economic sectors in the region, notably forestry and the railway.

The project also caused income disparity. "Cost-benefit" analysis did not explicitly address multiplier benefits, loss of timber resource, increased tax base or rates of economic growth beyond the actual construction. However, after construction, the local economy went through a rapid letdown. The dam created only 42 permanent jobs for operation. The local communities seem to be left with "economic conditions not significantly different from what they were before the project."¹³

3.2 The Columbia River: American Dams

Construction of dams and reservoirs has transformed the Columbia River from a system characterized by swift-flowing rapids and dramatic waterfalls to quiet pools, carefully managed to reduce the potential for flooding and to provide maximum benefit for hydropower, navigation, irrigation, and recreation. The one exception on the Columbia River to this set of reservoir is the segment of the river passing through the Hanford Nuclear Reservation in eastern Washington state.¹⁴

There are eleven dams on the United States portion of the Columbia River. These were built and are operated by several agencies. The United States Army Corps of Engineers (USACE) and United States Bureau of Reclamation (USBR) operate the largest of these dams. They are

- Rock Island Dam, completed in 1933, capacity: 1,212 MW
- Bonneville Dam*, completed in 1938, capacity: 1,050 MW
- Grand Coulee Dam**, completed in 1942, capacity: 6,465 MW
- McNary Dam*, completed in 1957, capacity: 980 MW
- The Dalles Dam*, completed in 1960, capacity: 1,780 MW
- Chief Joseph Dam*, completed in 1961, capacity: 2,069 MW
- Priest Rapids Dam, completed in 1961, capacity: 907 MW
- Rocky Reach Dam, completed in 1961, capacity: 1,347 MW
- Wanapum Dam, completed in 1964, capacity: 1,038 MW
- Wells Dam, completed in 1967, capacity: 774 MW
- John Day Dam*, completed in 1971, capacity: 2,160 MW

¹³ DPA Group 1986, op cit

¹⁴ As a result, the 51 undammed miles of the Hanford Reach, from Priest Rapids Dam downstream to McNary Reservoir, are critical Columbia river spawning habitat for fall Chinook salmon. Up to 90 percent of the 530,000 salmon harvested in 1989 were spawned in the Hanford Reach area.

No pre-project impact assessments were done regarding impacts on people for any of the dams operated by the U S Army Corps of Engineers (which built and oversees the dams marked *) or by the U S Bureau of Reclamation (responsible for the dams marked **). Nor was any assessment done of the cumulative affect of dams on the Columbia River watershed. Before developing phase 3 of The Grande Coulee Dam in the 1970's, a benefit-cost analysis was done of the direct construction activities on local communities. This study was limited to construction only, hence broader societal benefits and costs were not estimated.¹⁵

No "post-audit" studies or reports have been performed for U S Army Corps of Engineer dams or The Grande Coulee Dam. Such studies have been tentatively proposed but not initiated because estimated costs of doing the studies have been high (several million dollars) and there has been no pressing perceived need for them. It is felt, however, that other benefits have accrued because of the dams. These include flood damage prevention, navigation and enabling the aluminium industry to manufacture product for World War II. Of these benefits, flood prevention damage is recorded and reported annually. Additional benefits of The Grande Coulee Dam include irrigation water and enhanced fish and wildlife habitat resulting from wetland and lake formation. But assessment of benefits to any of these Columbia River dams, in Canada or the United States, has to take account of the large-scale losses of anadromous fish stocks - a decline, in the system as a whole, estimated between 25 million and 50 million fish per year.¹⁶

3.3 Columbia River Dams: The Context and Implications

The 1957 edition of the Encyclopedia Britannica refers in the opening sentence of its entry on the Columbia River to its being "one of the world's great hydroelectric streams." And goes on to report that "More than 30% of the potential hydro power of the United States is located within its watershed."

This indicates the extent to which the entire river - one of the largest in the world, with an annual discharge of water volume that equals that of the Nile - and with a watershed that comprises the entire northwest United States and a significant proportion of southwest Canada - came to be seen as having hydro as its destiny. I use the word "destiny" advisedly: faith in this immense development, and its related inevitability, were integral to how American economists and administrations came to see this vast network of hydro developments.

Voice was given to the fate and purpose of the Columbia River by Woody Guthrie, among the most popular of American folk-musicians of all time. In "Roll On, Columbia", sung to the tune of "Irene, Goodnight", Woody Guthrie sang of the Columbia that has "to run the factories and water the land." This was one of twenty-six songs that he wrote under the sponsorship of the U.S. Department of the Interior and the Bonneville Power Authority.¹⁷ What Guthrie expresses and epitomises is the extent

¹⁵ Al Reiners, Economist United States Bureau of Reclamation, telephone communication, October 22 1999.

¹⁶ Reflections on the Grand Coulee Dam came from: Ed Woodruff, Economist United States Army Corps of Engineers Portland District, Portland USA, telephone communication, October 18 1999, and Al Reiners, Economist United States Bureau of Reclamation, telephone communication, October 22 1999.

¹⁷ I am much indebted to Professor Edward Chamberlin of the University of Toronto, and former adviser to Mitchell Sharp when he was Deputy Prime Minister of Canada and then responsible for the Northern Pipeline Agency, for his reflections on

to which the Columbia dams were built with a sense of triumph and unquestionable achievement: for "the people" as well as "the government" they were the mark of progress. In Guthrie's words again:

"Uncle Sam he took the challenge in the year of 'thirty-three
For the farmer and the factory and for all of you and me.
He said 'Roll along, Columbia, you can ramble to the sea,
But river, while you're rambling, you can do some work for me.

"Now in Washington and Oregon you can hear the factories hum,
Making chrome and making manganese and light aluminum,
And the roaring flying fortress wings her way for Uncle Sam,
Spawned upon the King Columbia by the big Grand Coulee Dam."

Popular music is hardly a substitute for social cost analysis and impact assessments. But in the mood of the day, songs established that the dominant view of the damming of the Columbia was high optimism - although the hydro industry's extensive funding of Woody Guthrie's work does suggest that this optimism was not completely relied on. Opinion was encouraged to share the vision of the developers in popular lyrics.

In fact, the Columbia River dams fitted into a series of developments. Rural electrification programmes across the United States began in 1936, and were completed by the early 1950s. Navigation, flood control and irrigation have been integral to plans for the Columbia since the first dams were designed. The multiple social and socio-economic benefits of the Columbia dams have long been identified separately and with a view to their cumulative potential to generate long-term growth. Consideration of these dams can be said to have been benefit focused, though there was never more than general affirmation of the projects' "obvious" value.

What has been missing, therefore, has been either project-specific or basin-wide impact assessment. When these dams were conceived, planned and built, little thought was given to ecological consequences, still less of the impacts on existing peoples or traditional land uses in the areas upstream and downstream of the dams. This was often complicated by effects that crossed jurisdictional (provincial, state, national, First Nations) borders.

This approach to dam building in the United States may well have cast a long shadow. Given the importance of American finance, expertise and paradigms of growth economics to dams in other parts of the world, construction without social impact assessment was far more easily established as a norm than might otherwise have been the case. And when it came to making loans for construction of high dams in the developing world, American institutions were not influenced by habits of social or ecological accounting and scrupulous mitigation of impacts in the history of their own country. In these way the Columbia Dams may have played a large part in how such projects have been proposed, assessed and judged far beyond their own time and geography.

3.4 The Snake River Dams

Woody Guthrie's place in the story of the Columbia. In a submission to the Snake River Independent Review, Professor Chamberlin noted of Guthrie that: "He came to the northwest out of the dust bowl and the depression, and with a deep sense of the plight of the dislocated and dispossessed." This explains his links to the populist politics of the day, and his willingness to be recruited by the hydro industry to celebrate the developments that it was undertaking on the Columbia.

Failure to consider the impacts of Columbia River Dams on the indigenous peoples of the Columbia River Basin has meant that a number of disputes have arisen between tribes seeking acknowledgement of and compensation for the affects they claim the dams have had on their lands, resources and communities. One such dispute arose between the Nez Perce Tribe and the Idaho Power Company, responsible for building and operating three high dams on the Snake River - the southern and major tributary of the Columbia.

The first of the Idaho Power Company Snake River was Brownlee, completed in 1959. At 396 feet, this was one of the highest of the world's rock-filled dams. Oxbow, at 205 feet, was completed in 1961. The last of the complex was Hells Canyon, with a height of 320 feet, completed in 1968. These three dams were conceived as a single project.

As in the case of the dams further down the system, on the Columbia itself, the Idaho Power Company dams were not preceded by the kinds of environmental or social impact studies that 1990s standards for such projects require. They too were endorsed by the national commitment to projects of this kind, and by strong faith in the benefits these would bring to the society as a whole.

There were, of course, losses to farmlands and fisheries. Ranches, land, wildlife habitat, a small town and archaeological sites were inevitably inundated. The natural salmon and steelhead runs into the Snake River declined to almost zero. At the time of construction, these impacts were noted, and generated - especially in the case of the fisheries - a good deal of alarm. In subsequent disputes about the damage to fish, responsibility has to be shared between the Snake River projects and the impacts on the Columbia River dams. But the important point to note, for the purpose of this submission, is that mitigation measures put in place in anticipation of these overall impacts were virtually nonexistent. Subsequently, the Idaho Power Company has been required to implement extensive hatchery projects as part of its obligations under its licence to operate the dams. And these have been accompanied by analogous endeavours set up and run by state agencies. But the cumulative effects of the projects were not foreseen, and played no part in the assessment of other projects.¹⁸

Here again, therefore, we see a lack of social accounting; and, instead, an overarching belief in the value of these projects to "society" as a whole.

¹⁸ In the run up to the Idaho Power Company's receipt of its licence to build and operate the Hells Canyon Dams, issued in 1955, debate centred on the choice between licensees rather than on the implications of the projects. Also, operation under Federal License means that Idaho Power can argue that much responsibility for the terms and conditions for the dams, including their social impacts, lay with agencies in Washington rather than the Company that actually built the dams.

4. Saradar Sarovar Projects

4.1 Introductory note

The report of the Independent Review, often known as the Morse Commission, is well known. However, there may be implications that can be drawn from the Review process, and a reconsideration of some of our findings, that are of help to the WCD. In this section, therefore, some

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of these are recapitulated, along with a number of observations (in both this and subsequent sections) about the ways in which social impacts were articulated.

4.2 Project data

The Narmada is India's fifth largest river, rising in Madhya Pradesh, and flowing through Gujarat and Maharashtra. Until the Sardar Sarovar Dam was begun in the 1960s, its main stem had never been dammed.¹⁹

The Sardar Sarovar scheme is a mixed hydro and irrigation project. In 1969 the Narmada Water Disputes Tribunal set the height of the dam itself at 455 feet. This would create a reservoir covering about 37,000 hectares. A canal system is designed to go from the dam, following existing topography, reaching northward to Saurashtra, Kutchch and into Rajasthan. A main canal is to feed a network of irrigation canals reaching a total command area of about 1.8 million hectares in Gujarat, and the Barmore and Jalore districts of Rajasthan. This canal system is estimated to require 80,000 hectares of land.

The number of potential beneficiaries of the Sardar Sarovar Projects has been deemed to be as high as 40 millions, who will receive drinking water and irrigation. Other benefits are said to include the availability of power to the industries of Gujarat, and the protection of those living in areas susceptible to periodic, extreme droughts in Saurashtra and Kutchch.

The impacts on families to lose their homes and some or all of their lands has been a matter of great controversy. Estimates of the number of so-called "oustees" or "project-affected people" have ranged from 75,000 to 400,000 individuals. Similar controversy has surrounded the many questions that have arisen about compensation, resettlement and rehabilitation.

The first work on the dam site took place in 1960-61. But the foundations for the Sardar Sarovar dam wall were laid much later, while work on the main canal began in 1987. The World Bank became directly involved in this project in 1985, when it entered into a loan agreement with India and the states of Gujarat, Maharashtra and Madhya Pradesh to help build the dam and the canal. The work is, of course, ongoing - although its progression has been much affected by protests, litigation and problems of finance. The World Bank ceased to be a contributor in 1993.

4.3 Social Impact Assessment

The World Bank's policies on involuntary resettlement, along with protocols set out by the International Labour Organisation in 1957 and the Narmada Water Disputes Tribunal Award of 1979, establish a number of objectives and processes for ensuring that those to be displaced or dispossessed are given necessary kinds of protection.²⁰ These forms of protection are, in effect, standards of compensation for individuals and mitigation for a project. They set economic standards, in particular,

¹⁹ See Sardar Sarovar, The Report Of The Independent Review, Ottawa: RFI inc. 1992. See especially p3-7, as well as particular chapters dealing with the social consequences for each of the riparian states and for the tribal people of the Narmada Valley.

²⁰ The relevant documents are: the World Bank's Operational Manual Statements 2.33, February 1980, and 2.34, February 1992; and ILO 107, adopted in 1957 and ratified by India on September 29, 1958.

by which compensation and mitigation can be judged to be adequate. One such standard has been given wide acceptance: those being resettled should be at least as well off after the project as before it.

These policy objectives, and the sociological detail that they require for implementation, establish a framework within which to look at the direct social impacts of a dam. In the case of Sardar Sarovar, this meant that those to be affected had to be identified, the extent and nature of their lands identified, and means designed whereby they could be compensated or resettled. The difficulty has been that the kinds of research into the impacts of both the dam and the reservoir on the basis for which assessments of this kind could be made had never been done.

It is important to remember that Sardar Sarovar began at a time when standards for mitigation were relatively low, and before the World Bank was involved. As far as I am aware, no social impact assessments were done prior to the first displacement of families at Kewadia in the 1960s. Estimates were made, of course, of numbers to be displaced for the purposes of the 1979 Tribunal. But these appear to have been based on estimates for each region of the potential reservoir, and not on detailed sociological work.²¹ This means that when the Bank came to consider its loans the task of Project Appraisal - the process established for judging, *inter alia*, the resettlement component of the projects, it was faced with a severe shortage of baseline data.

In effect, the Bank's assessment of the social impacts of Sardar Sarovar began after the fact. The 1982 and 1983 pre-appraisal missions had been limited to technical and economic aspects of the project. Downstream impacts did not figure in any calculations - either at this time or in subsequent catch-up evaluations. In 1983, When Professor Thayer Scudder carried out the first real social impact review, and made his first trip to the Narmada, among his most important findings was that there was simply too little information to be had on which basis any proper appraisal of displacement could be made. As a result, Professor Scudder was given a second, 'post-appraisal' mission. His findings this time included the observation that too little information was available, along with other reasons for considerable scepticism about the prospects for those who would be displaced.²²

Lack of data continued to create many difficulties for the Sardar Sarovar Projects. Alongside absence of data, however, the Bank proceeded to make loans, while Gujarat, supported by the other states involved, pressed ahead with construction of the dam and main canal.

One of the difficulties that emerged with ever greater magnitude was a failure on the part of state authorities to consult with those to be affected by the projects. Lack of consultation has been inseparable, of course, from lack of crucial and basic information. The project had a momentum of its own, independent of the needs of those it would dispossess. In this regard, Sardar Sarovar has not been unlike the North American dams of the 1950-80 period.

The nature of this similarity pertains, above all, to the macro-social cost-benefit considerations. I shall return to this in the discussion below on conceptual aspects of social assessments of large dams (see section 5). It is important to say something here, however, about the way in which the Independent Review heard about the broad implications of Sardar Sarovar. The Review was in India at a time when opposition to the dam was intense, and

²¹ I believe that the first sociology of peoples to be affected by the Sardar Sarovar dam was carried out by Vidyut Joshi who did field work in Gujarat submergence villages in the 1980s.

²² See Report Of The Independent Review, p 43-44

proponents of the projects were accordingly concerned to affirm its overall socio-economic value. We heard many statements about regional and national interests.

Proponents and supporters of the Sardar Sarovar Projects repeatedly made two kinds of argument. These were:

1) They identified the large number of potential beneficiaries, referring to the millions of villagers and peasant farmers in dire need of clean water and irrigation. They also spoke, in this regard, of the general economic benefits of large scale developments in under-developed nations or regions. This kind of argument refers to what might be called macro-multiplier benefits. Improving the circumstances of a region - be it health, crops, infrastructure or industries - leads to greater productivity, more markets, sturdier populations, more investment, and so on.

2) They observed that this kind of large-scale investment, especially in the form of hydro and irrigation projects, has been one of the means by which many of the developed countries of the world built their economic strengths. On this view, these developments constitute a central and indispensable feature of long-term progress, from "third" to "first" world status. To oppose a crucial step in overall and long-term development, it is thus argued, would be to deny to those who most need it the very conditions and opportunities that the wealthy nations of the world have relied upon themselves.

This echoes some of the ideological framework within which the Columbia River dams were built. The significance of these arguments made to the Review by the supporters of Sardar Sarovar, and the Narmada dams in general, lies in its relationship to the arguments made by the projects' opponents. These pertained to the specific impacts of the dam on population and environment, along with doubts about its actual capacity to function as planned. In other words, the arguments against the dam looked at the specifics of the project, and at predictable impacts, as well as wider issues of development paradigms.

Proponents of the project of course combatted as best they could the arguments about impact. Debates about hydrology, potential salinisation or waterlogging, and the links between Sardar Sarovar and Narmada Sagar involved matters of technical sophistication; both sides of the argument cite technical data and analyses in support of their opposing analyses. Similarly, the ability of the riparian states to meet the needs of those displaced by the reservoir and the canal is a matter of ongoing dispute. That there are extensive impacts on people in the reservoir area and downstream of the dam, however, are beyond dispute. Administrative resolve, resources and effectiveness are at issue - matters about which opinion, political judgment and historical evidence are of great importance. But these arguments go to the scale of the problem: when it comes to actual displacement almost no one denies that there are human costs. Those involved may argue about numbers, cultural needs and about the related prospects for rehabilitation; but the actual nature of these costs is in some considerable measure irrefutable.

Proponents set these costs alongside the overall development potential of the projects. They are the price that has to be paid. In this regard people often spoke to us of the "sacrifice" that had to be made. The macro-economic advantages are believed in; the costs are worthwhile. Some local people and lands must suffer so that the region or the nation as a whole can prosper.

This is something of an oversimplification of the arguments of all parties. But I think that the essence of the issue is that Sardar Sarovar required some degree of faith. Just as in the case of the Canadian

and American examples I have referred to, the sheer scale of Sardar Sarovar means that governments are heavily involved, and that it has a place in very long-term thinking about a large region of the country. Under these circumstances, the commitment to, and then support for the Sardar Sarovar projects is likewise expressed by reference to macro and long-term benefits. The wider social implications of the projects are located in the language of society, using a political rather than a technical discourse. Benefits, therefore, tend not to be given in a detailed, systematic analysis, but in broad, optimistic, resolute and rhetorical terms.

5. Conceptual and theoretical issues

5.1 Introduction

In 1977, the Quebec government celebrated the opening of the James Bay Hydro Project. A ceremony of several hours length was broadcast on national TV. It included a small group of dancers performing a romantic ballet on top of the new turbines. The entire event was remarkable for its blend of sentimentality and nationalist fervour - a notorious combination of art and politics often to be found in relation to development projects that are said to represent the very core of a country's economic interests.

The manner in which Quebec expressed official enthusiasm for the James Bay project does not tell us anything about the balance of its social impacts. But some of those who watched the official opening will have noticed the absence of the indigenous peoples whose lands had been flooded. The costs of the dams were obscured by the festivities. Indeed, rhetoric and music that play on feelings achieve, even if not intended to do so, a silence of debate. But this obscuring of costs tells us something about the way in which that vast project had been considered: those supporting it were deemed to be for the nation, while those against it were enemies within. This polarization of the debate in Quebec, a region in the throes of nationalist upsurges, may have been more symbolic than real. There had been the 1970s James Bay Agreements, in which Cree, Inuit and Naskapi opposing the project were given forms of compensation. But the episode points to the way in which an examination of the balance of a dam's social costs raises theoretical, and even epistemological problems.

5.2 The "common good"

Large dams are inseparable from large, collective interests. Their scale, as a matter of both actual financial costs and distribution of benefits, means that they implicate some form of "the common good" of a people. Usually, of course, this is at the level of national interests. This means that the arguments in favour of such projects use the language of macro-economics and very generalised sociology. It also means that project proponents must convince high levels of government. Therefore economic and political interests come into play that can be as elusive as they are complex. This means, in turn, that once a project is labelled as in the common good, it has great momentum and is justified by reference to abstract as much as practical, social or economic considerations. Thus the Sardar Sarovar Dam has been celebrated as "the lifeline of Gujarat", just as the Columbia River dams became the subject of popular song and populist ideology in 1950s America. This is a matter of epistemology in so far as the very meaning of such projects becomes inseparable from various forms of goodness - be they economic or moral.

A result of this has been intense difficulty in defining social costs and benefits in terms that avoid the worst kinds of Benthamite utilitarianism. There can be a hedonistic calculus, in which sophisticated analyses are carried out in order to show how many people will be better off, and how many worse off. On this basis, a totalized cost-benefit analysis can be done for the social impacts of a project. Thus in the Sardar Sarovar case, the potential beneficiaries are listed as those to whom the irrigation system could bring water (as many as 40 million) plus those who would benefit from increased electric power in the region (several millions); and the potential losers are identified as those whose

homes, lands or livelihoods will be reduced or caused to disappear (between 100,000 and 400,000).²³

This calculation can be refined by looking at further benefits through secondary economic processes and multiplier effects; and at mitigation of losses through compensation and resettlement programmes.

There are many kinds of problem with this form of analysis, and I do not wish to take the debate backwards, seeming to ignore all the sophistication that can be brought to bear on each part of social impact assessment. The issue to consider, however, is stark and troubling: if the common good is being served by a macro-project, then there are imbalances and obstacles in the debate that seem to me to be intrinsic. Large regional or national impacts are immensely difficult to know, and faith all too easily takes the place of social-science. At the same time, doubts about such projects tend to arise in relation to its local, immediate impacts on people and lands. But these are necessarily of a quite different scale. In so far as the one is balanced against the other, there is no conceptual parity. This imbalance is a case of comparing incommensurable, "apples and oranges," rather than authentic argument about comparable realities.

5.3 Ideals of development

The notion that a society can create growth or overcome economic depression by large-scale and centrally planned projects is an element, of course, in both Keynesian and communist approaches to economic management. The history of nation states, discoveries of new building materials and techniques, the problems of mass unemployment and related cycles of growth and slump, and international conflict on an unprecedented scale - each of these factors lies behind the place of mega projects in twentieth century economies. It was in the wake of the depression and instability of the 1920s and 30s, and then in the aftermath of the Second World War, that the building of large dams became a central part of national visions of development.

Thus in the 1950s nations and states defined the common good alongside ideals of large scale development. Mega-projects came to have an intimate link to nationalism. A result of this place for large projects in visions of national economic success has been to make the underlying benefits of high dams, for example, a matter of belief. Nehru's remark, in 1948, that dams were the Temples of economic development is profoundly resonant. In the same way, the status of the Asswan, Grande Coulee and the Narmada projects all share this place in an ideal of development.

The comments thus far do no more than point to a difficulty when it comes to a review of the ways in which a social balance sheet for judging the appropriateness of a dam can play a part in the process. As I noted above, many advocates of large dams in India insisted in presentations to the Independent Review that the Euro-American model of development was indeed successful, and that this success had relied heavily on large dams. Similarly, in the course of the Snake River Independent Review, lawyers and officials representing the power companies pointed out that development of a series of dams in the Columbia River Basin was integral to the very considerable prosperity of the western United States.

²³ The Narmada Water Disputes Tribunal's 1979 assessment gave the number as 6,147 families - about 39,700 people. The World Bank experts' 1987 figure was 12,000 families - that is, about 60,000 people. The Independent Review found that if displacement by the Canal was included, a more reliable total for the Sardar Sarovar projects was 200,000. If the downstream impacts on fishing families is included, a further 20,000 should be added. This could still constitute something of an understatement of numbers.

And if a project is part of an ideal, with intrinsic long-term benefits for a nation as a whole, how can it be subject to the kind of social cost-benefit scrutiny that is now so often said to be essential? The calculation of gains and losses could, perhaps, go to the macro-economic level and a set of predictions about the future of a project or a region. In this regard, of course, a discovery that a dam will silt up, or that a watershed has insufficient water to make it function as designed, or that an irrigation system will create saline or waterlogged farmlands - these and similar findings can show that the national interest, the common good, or the developmental ideal, will not be secured. But many large dams are part of a general plan to transform the nature of a society, being part of a new "industrial" system with shifts of economic activity, population and forms of prosperity. A change from an "old" way to the "new."

This deep form of change is not something that can be dissected in a cost-benefit analysis of any kind. Scepticism can be brought to bear on any given aspect of the changes entailed. Stakeholders with interests that are at risk can be identified and will, of course, be as vocal as they can in speaking of the impacts of a project on their homes and lands. But the change as a whole tends to be an agreed process that exists in very subtle, intensely political and, often, essentially moral form. There is a language of development, a paradigm, that shapes the way in which many national and powerful interests speak about dams. It is a language that allows no meaningful debate about the basic decision to proceed or not proceed. It does not preclude consideration of how to mitigate negative impacts. But these are given a post hoc status - following a priori commitment to build.

Under these circumstances, it is hard to see how a social costs and benefits analysis can reach the fundamental decisions to build or not build. Rather, a debate is needed about the paradigm itself - a discussion of the language of development and national economic thinking.

5.4 The question of numbers

The reflections thus far refer to the underlying problems of social cost analysis that bear on the wider impacts of a dam. They also help to reveal the place of numbers in debates about social costs assessment.

Assessment of the social implications of any dam must include an account of the numbers of people who will benefit, along with the number of those who will lose. This must then be followed, of course, by the sociology: what are the circumstances of those to be affected? What are the implications for economic, family and community? Typically, the numbers pertain first and foremost to people who will lose their lands and livelihoods as a result of infrastructure or flooding - these are the "oustees". A direct human and social cost of a project is to be seen in the total for oustees - obviously, the larger that total, the more alarming these social costs of a project can be seen to be, and the more complex the need for resettlement and attendant mitigation. Downstream impacts include, for example, the loss of fisheries, and therefore a possible drastic decline in nutrition and fishing economies. Changes in water flow have other impacts on people, from loss of agricultural land to drying up of wells. Lists of these are easy enough to put together.

In the case of hydro-electric schemes, it is possible to calculate the number of oustees per megawatt of power to be produced. A table of this kind, dealing with 32 projects in countries around the world, is given by Robert Goodland in his 1997 presentation to IUCN.²⁴ In three cases given on this table, I

²⁴ See p 85, figure 8.

am familiar with the social impacts of the projects. These are: Churchill Falls in Canada, Grande Coulee in the United States and Narmada Sagar in India. In each of these cases, the numbers given are questionable if not seriously misleading. This overview is not designed to be a detailed critique of particular social cost analyses. But the data in these three cases may well illustrate two kinds of problem: the first is empirical or sociological, the other conceptual.

Consider, then, the actual data set out in the Goodland table. In the case of the Churchill Falls dam, the number of oustees is given as zero - from a dam that created a reservoir of 665,000 hectares. (The second largest of the examples in the table.) As already mentioned, the Churchill Falls project, like the James Bay dams, flooded Innu lands. In the case of the Grande Coulee dam, the number of oustees is given as 10,000 for a dam area of 33,306. In reality, the impacts of Grande Coulee were felt by all the Salishan or Plateau salmon fishing peoples of that part of the Columbia Basin, implicating a vast geographical area. Nobody knows how many of these peoples relocated as a result of this and related change. No information exists as to what changes in diet resulted from loss of the anadromous fishery, and what other impacts flowed from changes in the economic base for the people of the region. As noted above, no impact assessment that could provide such numbers was ever carried out. In the case of the Narmada Sagar dam, the number of potential oustees is given as 80,500, for a dam of 90,820 hectares. In fact, this estimate is based on estimates made by regional officials and rather uncertain census data. In all probability, this number is a very considerable understatement of actual impact even of the submergence zone.

To these examples can be added the cases of the three high dams on the Snake River, in the upper part of the Columbia basin. As we have seen, minimal impact assessments were done for these, and none that look at total social impacts on local people. The region's Nez Perce and Shoshone Tribes speak of the losses they experienced, including village site and fisheries.

This simple aspect of the number problem - namely, that numbers are so often wrong - means that the most direct related social costs again and again have been understated. This point is well made by Professor Scudder.²⁵ But we must go from this recognition of the number problem to asking how any other part of a social costs analysis can be relied upon. If the basic matter of numbers goes awry, then what else does? It will be said that this problem of numbers is a matter of analytical sophistication, and that due priority and sufficient commitment of intellectual resources could ensure that numbers were got right. But I fear that the difficulty is deeper: the ideological and entrepreneurial momentum that are intrinsic to large, costly national projects means that those who are potentially or hypothetically in their way are going to be obscured. The underestimates are the indicators of this phenomenon.

This obscuring of costs is the conceptual difficulty. In practical terms, its scale and relevance are amplified by the role of governments, national or regional, in the creation of base-line statistics. Outsiders can not use samples or limited survey techniques to create this crucial part of the data base. The numbers must come from official sources, and be developed with official help. The engagement of these officials in the advocacy for the project is not a contingent matter: for the reasons already given, the endorsement and defence of large-scale projects binds them to ideals of nationhood, theories of the common good and passionately espoused paradigms of development. So how are data pertaining to tens of thousands of people to be assembled?

²⁵ See IUCN 1997, *op cit* p 6 for summary of his thoughts on this and related issues)

It is important to be clear about this set of issues. Any given dam can be judged, in the early planning stages, to be a bad idea. But once it becomes a part of an image of progress, and has a place in macro-economic ideals of regional or national development, then a number of profound forces for momentum come to dominate decision making, and a number of pro-dam arguments coalesce into a generalised "common good" position. This does not mean the dam is a bad idea. Rather, that it becomes hard to generate, sustain or have faith in subsequent social assessment processes that aim to explore the decision as a whole.

This leaves large areas of perfectly meaningful debate and inquiry, including all many aspects of resettlement, compensation, public health and concerns generated by local environmental change. Mitigation of many kinds becomes the arena for coherent thinking, strategy and disagreement. Meanwhile, the large and more fundamental issue of a wide social balancing of macro-level impacts tends to have been bypassed.

5.5 Human rights

In the Benthamite calculus, the interests of the majority achieve a greater moral weight than those of any minority. What is best for most of a society is, on this account, right for the society. This nineteenth century theory of right and wrong has a modern, and seemingly more sophisticated counterpart in many kinds of cost-benefit analysis. In so far as a decision about a project is to rely on the relation between its social advantages and its social disadvantages, the calculus of benefits is relied upon to define and thus secure the common good. Inevitably, in such calculations, the interests of the majority prevail over those of the minority. Again, it is theoretically possible that a macro-economic and long-term sociological (along with parallel environmental) analysis will yield a cost-benefit ratio that reflects the overall interests of all. But the reality is that the benefits of large projects are believed to reach so deep into national and economic purposes that such a calculation will in the end be too unwieldy to be understood, or too subordinate to matters of judgment and ideology to achieve their scientific purpose. The outcome of these kinds of wider analysis is most likely to alert those concerned with a project to its costs, urging that these be mitigated as well as possible. The questions about whether or nor such a project should take place lies in positions taken by those who govern.

Most 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 dams export river and land, removing them from the productive domain of one community to make them available to another. Often the community whose resources are thus being taken from them live in remote and rural areas. Many of them are "traditional" peoples, be they indigenous cultures or isolated groups within a larger society. Their interests are distinctive, and defined by the water and land that is close by.

Many tribunals and agencies have affirmed that the rights of such peoples have to be given a particular kind of respect. This is the purpose of ILO 107 and World Bank directives dealing with indigenous peoples. If a group has distinctive rights in lands, cultural heritage that is both distinct and vulnerable and a reliance on local resources, especially in the form of subsistence, then the impact of dams have to be judged from their point of view. To some extent, the priority of rights sets aside the balance of numbers. Concern for human rights, in these cases, exists precisely in order to ensure that vulnerable minorities are not overwhelmed and disregarded by the wishes or interests of majorities.

Chapter 3 of the Independent Review's report concludes with the following paragraph, which sums up this issue of human rights in the light of World Bank and other policies in relation to vulnerable minorities:

"These policy changes reflect the worldwide development of concepts of human rights, for they constitute a recognition that large-scale projects, especially in rural, forest, and frontier areas may displace people just as do war and natural calamities. They focus on people who are being displaced by the advance of development, and require that in any project the human rights of the oustees must be respected. According to the ILO, these are rights not to be impaired on grounds of national sovereignty or national economic interest. Such considerations may justify a project; they do not justify the nullification of these basic human rights."²⁶

²⁶ P 37-8. And see p 23-36 for details of the policies themselves.

6. The right to be heard.

The downstream impacts of dams are to do with both geography and history, reaching through the command area and into the future of a region or society as whole. The impacts on those who live closest to the projects are often on peoples whose relationship to geography and history are distinctive, and unlike those of "mainstream" potential beneficiaries. They can not easily relocate, for their kinds of knowledge and heritage attach them in inflexible ways to their traditional lands. And when they do locate, they are at extreme risks to both community and family. This combination of rights and vulnerabilities gives them an entitlement to be heard.

The James Bay Corporation has in recent years announced a policy of going ahead with no project unless and until it has the endorsement of the indigenous people living in lands that are to be flooded. The World Bank assessment process, were it to be followed according to the letter, establishes more or less the same principle. Insistence that there be full consultation, proper research into the social and economic needs of those to be affected, that there be a convincing resettlement plan to secure genuine rehabilitation, and that this plan amount to real development opportunities, prior to agreement to providing loans - these amount to giving affected populations a right to be heard and an authentic place in the planning process.

Consultation and planning in collaboration with those most directly affected by a dam can also be seen as a form of bargaining. If the communities at greatest risk must be heard, understood and persuaded of a project's benefits even to them, developers of such projects would have the task of finding remedies and mitigation that convince the most vulnerable that they are being fairly compensated. The point has been made by various commentators on mitigative measures for 'oustees' that the obligation on the developers is to observe strict guidelines strictly. The measures exists, and that the sociological work necessary to make them real can be achieved.²⁷ But this requires diligent and sustained attention to research, consultation, collaborative planning and monitoring. These things exist on paper; they can and should be put into practice. In reality, they rarely this. This is for reasons of momentum, scale and ideas of "the common good" referred to in the earlier sections of this paper.

²⁷ It is in this context that the work of Michael Cernea is of such importance. He has argued for many years, from within the World Bank, that resettlement can and must be a development opportunity. His most recent thinking on this subject is to be found in Michael Cernea, ed, *The Economics of Involuntary Resettlement, Questions and Challenges*, Washington, DC: The World Bank, 1999. See especially his introduction to the volume, p 1 - 5, and his essay 'Why Economic Analysis Is Essential to Resettlement: A Sociologist's View,' p 5 - 38.

The difficulty with the notion of strictness is that, as a requirement in and of itself, it creates its own risks. These are easy enough to see: what governments or agencies are going to be trusted to fund and carry out such work at appropriate levels and with the necessary lead times? How is the momentum, describe above, that gathers around such projects to be reduced or resisted? How is the implementation of "strict" measures to be monitored, ensuring that any falling short of the necessary standards is identified and acted upon with due accuracy and speed?

If collective rights underpin the measures and processes developers must observe, then there must be institutional powers of some kind that represent those who have those rights. The James Bay Cree and the Quebec Inuit associations came to have that kind of influence as a result of political developments and the James Bay Agreement. Hydro Quebec has had to negotiate with these organisations and accept the powers that they have - of both formal and informal kinds. If there is a representative body of this kind, then any given assessment and consultation procedure, along with resettlement plans, can be subject to some real scrutiny. No such bodies are perfect, of course. Community organisations can fail to represent some of their people's own interests. But where they exist, the starting point of a planning and mitigation process is different; and there can be checks along the way that might secure the appropriate "strictness".

A further means by which "strictness" can be secured could be an internationally mandated appeals process. A parnational body, on the model of, or perhaps as an adjunct to, the International Court of Justice at the Hague, could be brought into existence. Its function would be to respond to appeals by projected affected groups that the agreed standards for consultation, planning and mitigation were not being observed. Appeals could then be based on standards that were themselves a matter of parnational accords, and related principles of human rights.

It may be said that the campaigns led by organisations like the James Bay Cree Association or Narmada Bachao Andolan, with their use of international lobbying and alliances with NGOs around the world, constitute a form of appeal. Some of these campaigns have indeed been effective in raising questions about social and environmental impacts, giving 'oustees' far more of a voice than they would otherwise have achieved, getting aspects of projects re-examined and even interfering with finances for construction of dams. But the campaigns that do have effects have relied on the existence or creation of sophisticated levels of organisation. And in the end these organisations, for all their ability to shape debate or disrupt processes on the ground, have nowhere to go where issues can be considered by an authoritative, informed and independent body.

Experience of developments strongly suggests that in the absence of institutional and independent process of some kind, founded on the real dangers to vulnerable peoples, linked to international accords on human rights, and with some real power to intervene in financing, the problems of the past will spread far and wide into the future. If such institutions were brought into existence, social impact assessment and design of measures to mitigate impacts could play a much more real part in the design, construction and maintenance of dams. Until these or equivalent ways of protecting the vulnerable are devised, the lessons of the history of dams will continue to give strong support to those who call for a worldwide moratorium on their construction.

6. Principles

The following set of principles emerge from this submission.

6.1 Dams take one set of resources - a river and the lands along its banks - and transform them into another set of resources - a reservoir, hydro power and irrigation. The means of production and livelihood for one group of people are changed into benefits for people living elsewhere. This is the fundamental issue of social impact assessment of high dams.

6.2 Powerful economic and political interests attach to such undertakings. The larger the dam, the more costly the project, the greater its construction momentum.

6.3 The greater this momentum, the more important it is to balance the development process with social impact assessments prior to any finalisation of plans or commencement of actual construction. This applies to infrastructure as well as the dam itself.

6.4 The larger the project and the greater is momentum, the greater the risks to the social wellbeing and human rights of those directly affected.

6.5 The rights of those directly affected must include the right to be heard.

6.6 To recognise and meet their right to be heard, the people most affected must be consulted fully and participate effectively in project design, social cost assessment and development of mitigative measures.

6.7 For consultation and participation to be authentic and effective, they must take place in a way and at a time when they can influence decisions about the project and mitigation of its impacts.

6.8 Failure to recognise the rights and meet the needs of those affected has to be anticipated. This means that there must be institutional and internationally recognised procedures for appeal.

6.9 In the absence of these principles being in place, social impact assessment, and appropriate mitigation of social costs, will continue to arouse high levels of scepticism about, and opposition to, such projects. These will, in turn, diminish the prospect of any strict guidelines being implemented strictly.