

International financing institutions and hydropower in the developing world

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This paper examines the role of the World Bank and other IFIs with respect to the provision of hydropower in the developing world. The author contends that the IFIs still have a vital role to play in financing, deploying knowledge and reputation, and defining the terms of the global debate on development.

In the decades after World War Two, financing of major water and energy infrastructure was the central task of the IFIs*. After the 1980s, investment in major infrastructure (including hydro by IFIs declined precipitously as a consequence of insufficient attention to resettlement and other local social issues and the rise of the anti-large-infrastructure environmental and social NGOs. Over the past decade there has been a fierce battle of ideas on the IFIs. While there is now a broad consensus that hydro (and other infrastructure, small and large) is essential for development, the IFIs have not made the necessary changes in their internal incentive structures, human resources or operational policies. In the meantime, new sources of financing, especially from the middle-income-countries who have no question about the essential role of hydro and infrastructure, has changed the rules of the game.

1. A brief history of the IFIs and hydropower

1.1 Infrastructure and hydropower and the origin of the IFIs

The international financing institutions came into being at the end of the second world war. It seemed obvious to everyone at the time (including the great economist John Maynard Keynes)

(a) that reconstructing infrastructure in the developed countries which had suffered heavy destruction during the second world war was key to their stabilization and growth; and,

(b) that then-poor countries had to invest in major infrastructure, to grow and reduce poverty. The name of the first of the IFIs, the International Bank for Reconstruction and Development, (the formal name for the World Bank) reflected this dual role.

The gap that the IFIs filled was because of the discrepancy between:

(a) the need for long-term low-cost capital for the building of long-lived public infrastructure; and,

(b) the reality that poor countries did not have mature domestic capital markets which could provide long-

term funding, and they were not considered credit-worthy by private financial institutions in the rich world.

The genius of the IFI concept was to use 'callable capital' (which has never been called after 60 years) from the rich, so that public goods in poor countries could benefit from long-term global capital at modest interest rates.

The early history of the World Bank, both in destroyed economies (like Japan) and developing countries (like Brazil) was basically one of financing the infrastructure, especially power, water and transport, that was known to be essential for economic growth. Over the first 12 years, the Bank financed 12 major hydroelectric projects in Brazil.

The 'development theory' behind this focus was simple: increasing labour productivity was the essence of the challenge of development. A platform of high-quality infrastructure services was an essential platform for such productivity enhancement and growth. Every country which had developed economically had made these investments in major infrastructure, and it seemed obvious that poor countries which aspired to be rich would have to make such investments too. For the most part, these were domestic investments justified by high domestic rates of return. But sometimes such infrastructure investments were also the key to attaining more complex objectives: for example, the investments in the Tarbela and Mangla dams in Pakistan, which were essential components of the World Bank-brokered historic Indus Waters Treaty.

1.2 Infrastructure and hydropower in the IFIs during the last 20 years

In the 1980s this simple logic started to be questioned, largely because of the rise of rich-country NGOs concerned with social justice and the environment. These were (and are) dominated by four main streams:

- a deep distrust of the capitalism, which has made their countries rich in these red-green coalitions;
- a concern that the environmental costs of development had not been adequately addressed;
- an aversion to scale ('small is beautiful' despite the fact that they get their electricity and food and water from large projects); and,
- a notion that they should stop the poor from making the same mistake by following the well-trodden path to affluence.

This coincided with the emergence of some real and serious infrastructure-related challenges in the developing world. The post-case is the Sardar Sarovar project on the Narmada river in India, a story to which there are two parts.

* The IFIs include the World Bank Group, the regional development banks (ADB, IDB, AfDB) and some sub-regional banks (such as CAF). This paper focus heavily on the World Bank, for three reasons. First, because much that applies to the World Bank applies to at least some of the other IFIs. Second, because the author worked for 20 years in the World Bank and knows very well how it works. Third, because the World Bank plays a dominant role in relation to the other IFIs in terms of defining development philosophy.

Part one, very well known, is that the resettlement of large numbers of poor (and often tribal) people was (and is) handled badly. This led to a mobilization against the project in the halls of the World Bank. Eventually the Government of India withdrew its application for a second loan, paid off the first and showed the World Bank the door. But the repercussions were not over. Now the coalition of environmental and social NGOs who focused on the World Bank pushed for the Bank (and their country's bilateral lenders) to move away from 'big, bad infrastructure' and to invest in 'small, beautiful and soft' solutions.

Part two, less well known, is that this was viewed quite differently by developing countries. The massive (ongoing) resettlement problems associated with Sardar Sarovar notwithstanding, the project has gone ahead. A fascinating study by the University of Sussex showed that while the English-language press in India often took a strong anti-Sardar Sarovar position, the vernacular press (with 20 times the circulation of the English-language press) was uniformly supportive of the project. This is obvious from looking at election results – all elected Chief Ministers of the affected States have been strongly in favour of the project. The highly-visible and vocal opposition knows this well and thus sensibly decides to simply declare itself 'the voice of the people', but never puts this claim to an electoral test.

The ramifications of Sardar Sarovar in the halls of the IFIs were profound. Over the following years a 'zero tolerance' set of social and environmental 'safeguards' were put in place, as was the Kafka-esque Inspectional Panel. Especially with the advent of Jim Wolfensohn as the President of the Bank, the reality was that there would be zero tolerance for any 'sins of commission'. What was not discussed or described was that there were to be no books kept for 'the sins of omission', the cases where Bank nervousness meant poor people were being denied a platform for their development.

A parallel and related phenomenon was the development of a 'development philosophy' which essentially (but never explicitly) said that the rich would only support the poor if they embarked down a road 'the Millennium Development Goals' where the social came first and the economy second and where, therefore, basics like infrastructure and agriculture were now no longer of primary importance. (The minor fact that no now-rich country had ever followed such a path was not worthy of much analysis.) A few figures from the World Bank give a sense of this change: infrastructure had historically accounted for about 50 per cent of Bank lending; by 2000 this was down to 20 per cent. Agriculture had accounted for about 20 per cent of lending in 1975; by 2005 it was down to 3 per cent of all lending. Hydropower lending fell by 90 per cent over the course of the 1990s.

The governing boards of the IFIs comprise a mix of rich (Part 1) and borrowing (Part 2) countries. These changes were driven entirely by the governments of the Part 1 countries, often as a result of heavy pressure from the NGOs in their countries. Part 2 countries were unhappy, but did not mobilize effectively to oppose this change. A group of emerging economies (led by China, India and Brazil) had large (and rapidly-growing) internal resources, which they could use to finance their own priority investments, including infrastructure. They bemoaned the high transactions costs. Two cases from my own experience as the World Bank Country Director for Brazil give a flavour of this. One was the finance minister who said "I

would rather pay a premium of a couple of per cent in the market, than have to jump through all the hoops which the Bank requires in sectors like hydropower". The other was the Governor of Ceara, who complained "When I want to build a small dam in the middle of the empty semi-arid, the Bank requires due diligence as though I were building Itaipu".

The result of this was that the middle-income countries, the countries with choices, basically walked away and no longer even thought of getting financing for hydro and other infrastructure from the World Bank.

The situation was both similar and different for the poorer countries of the world. Similar, in that they complained bitterly about unrealistic demands, risk aversion and high costs of doing business. But different because, unlike the middle income countries, they had no alternative funding sources.

1.2 The last decade

The situation described above continued until the late 1990s. Within the World Bank there were then two related processes: response to the report of the World Commission on Dams, and the development of a new Water Resources Strategy.

The WCD turned out to be, in many ways, the final catalyst for change. As described in detail elsewhere [McCully, 2001¹ and Briscoe, 2010²] the WCD was ostensibly a process which would bring all interested parties together, to find a common and reasonable way forward. In fact the process was, with the skillful help from the Secretary General of the WCD (now the DG of UNEP), hi-jacked by extreme NGOs who, in their own words, pushed out governments, side-lined the IFIs and the private sector and then mounted campaigns for the IFIs and governments to adopt the WCD's guidelines. The reaction from developing countries was unanimously negative. Finally the directors from the middle-income countries on the Board of the World Bank said "enough is enough" and voted to not adopt the WCD guidelines.

This change in de facto governance in the borrowing countries finding a consolidated and principled voice on the Board of the World Bank, was decisive in the formulation of the World Bank's 2003 Water Resources Sector Strategy. The Strategy showed how infrastructure was central for growth, and pointed out that every Part 1 country had made massive investments in storage and hydro. It made the case that developing countries had to make large investments in infrastructure (including hydro) if they were to develop. And it implicitly highlighted the hypocrisy of countries who have developed 80 per cent of their hydro potential telling countries who have developed 1 per cent that they cannot develop more.

As the recent World Bank review of the implementation of the 2003 Water Strategy documents [World Bank 2010³], this was a turning point for both governance and investment patterns at the Bank. Infrastructure lending has again come to front and centre stage, with the proportion of Bank lending to infrastructure doubling over the past six years.

While this is good news, on the other hand nothing has been done to dismantle the rules and regulations which underlie the high transactions costs and risk-averse culture. There have been large increases in Bank investment in uncontroversial infrastructure, but very little return to the high-risk/high-return infrastructure which was the core discussion in the 2003 Water Strategy.

2. Do the IFIs still matter today?

As the current economic crisis shows, global economic geography has changed considerably. Now the rich struggle to find their feet, while the MICs have weathered the storm remarkably well, and it is now China, India and Brazil who are expected to sustain global economic growth.

This change is striking in the area of development financing. An anecdote illustrates the point. "How much does the World Bank have available to lend?" President Lula of Brazil asked Robert Zoellick, President of the World Bank in 2007. "About \$30 billion a year" he replied. "For Brazil?" asked Lula. "No, for the whole world" replied Zoellick. "For the whole world! But the BNDES lends more than twice that amount and it is just the development bank for Brazil!" replied Lula.

While Brazil and India are rapidly growing in importance in development financing, China, with its trillion dollar reserves, is by far the largest actor.

This is all highly relevant for a discussion of the IFIs and hydro. China now finances more than 200 major dams around the world (compared to less than a handful financed by the World Bank). And Brazil's BNDES is an important source of financing for hydro in Latin America and Africa. So does this mean that the IFIs no longer matter?

Let us first consider financing. On the one hand, the IFIs matter far less than in the past, because now poor countries have some choices. On the other hand, poor countries still can benefit greatly from IFI funding, because the cost of money from the IFIs for poor countries is much less than the commercial rates of the Chinese.

Second, consider the complementary 'good housekeeping' role which IFIs can play, even in middle-income countries where there is no need for financing. Again drawing on personal experience, I will cite the example of Brazil. Building of the 7000 MW complex of hydro plants on the Rio Madeira was the highest priority of President Lula's government in his second term. He was unable to get an environmental licence from the federal environmental licensing agency. The reasons were spurious and ideological. The World Bank was asked by the Energy Ministry to help, not with money, but by bringing in 'beyond reproach' technical expertise and backing it with the reputation of the World Bank. This proved to be decisive and the environmental licence was granted. This was followed by bringing, the same combination of knowledge and reputation to ensure that an emerging monopoly was broken and that the Brazilian consumer would get excellent value for money from the projects. This is a role which the World Bank can (and should) play much more regularly with all its clients.

The third arena where the IFIs (and particularly the World Bank) matter is with respect to defining development philosophy. Here, too, there has been a complex and interesting evolution.

In the early days it was so obvious that poor countries needed help building infrastructure that there was little discussion of 'development philosophy'. With the rise of environmental and social NGOs, the World Bank was no longer able to draw simply on its governance 'a development cooperative owned by (almost) all of the countries of the world' to legitimize its policy formulations. This gave rise to the era of the multi-stakeholder commissions to try to articulate development philosophies which could be accepted by all.

Two of the most prominent of these can be taken as examples.

The first was the WCD which, as described above, which ended up as an audacious attempt by NGOs to impose policies on governments and inter-governmental institutions. The overreach was so great that even normally placid governments reacted and the core, the WCD guidelines, were rejected by all governments building dams and by all IFIs. (A few rich country governments where green parties are strong, notably Germany, remain doggedly committed to the WCD.)

The second of these was an even larger effort known as the IASSTP, which had the primary function of examining issues of agricultural strategy, including GMOs. The trajectory was remarkably similar to the WCD. The process started with all relevant actors in the room and ended up with the extreme NGOs dominating and driving industry out and many governments to the sidelines. The report (again) was so extreme that it has basically been rejected by those with responsibility.

These experiences suggest that the days of such commissions are over, for the governments who have to take decisions (and, hopefully, the IFIs) are unlikely to embark again on such voyages.

This leaves the field of articulation of development philosophy at a crossroads. On the one hand, the IFIs have lost their legitimacy as articulators of development philosophy. But so, too, have the favoured solution of the past 20 years, the multi-stakeholder commissions. It is not clear where this will go, but does perhaps matter. The brightest hope is that the developing world will succeed in getting a greater voice with respect to the IFIs and will have the capability of using this voice to re-establish these institutions as a legitimate voice of development policy. As outlined elsewhere, this is not an easy task, and is unlikely to be achieved through the elaborate discussions on voting power. Key would probably be the appointment of a President of the World Bank from the developing world, a President who could re-establish the Bank as the legitimate voice of the governments of the world, who could rein in the priority-distorting off-budget contributions from rich countries, and could address the massively distorted internal incentive systems (for every hydro engineer in the World Bank there are at least dozens of 'safeguard specialists').

3. How might the hydro community engage with the IFIs?

The triumphalist NGO victory dance around the WCD highlighted the ineptness of the professional communities to engage and articulate their views. My own perception is that this is an accurate description, but it is complicated by the fact that professionals engaging in such efforts have other responsibilities (their jobs!) whereas for NGOs camping out and advocating IS their job. But I also see two fundamental changes.

First, there is now broad acknowledgement that critical issues (especially resettlement and other social issues which loom so large in the developing world) are of primary importance, and that local people must be made the first beneficiaries of such projects. More importantly, there are companies around the world who are putting their money and their effort where their mouth is and where local communities are now benefitting immediately and substantially.

Second, it is also my impression that the hydro profession has learned and is engaging much more effec-

tively, through processes like the IHA Sustainability Guidelines and through engagement with governments as happens at the annual hydropower conferences organized by the International Journal on Hydropower and Dams.

Third, there is a perceptible change in the attitude of important rich countries. Take the example of Norway, a country which built its economy on the back of low-cost hydropower. Incredibly Norway joined the 'we don't like dams' parade on the international stage. Today this has changed. Norway now (sensibly and proudly) counts hydropower of all sizes as renewable energy, and has mounted an effective programme for helping developing countries with all renewables.

Returning to the theme of the role of the IFIs in hydropower: I believe that the IFIs continue to have a vital role in building the sustainable hydropower which the developing world needs badly. It is worthwhile for the hydro community to continue to engage with the IFIs, in part through engagement with fellow-professional staff but also through systematically working with colleagues in developing country governments and providing information and suggestions to the political leaders of the IFIs, the Presidents and the Board members. Such investments of time and energy are likely to have substantial payoffs for the hydro industry, for the IFIs but most of all for the people of developing countries for whom clean energy is such a high priority.

4. Some challenges for the hydropower community:

The hydro professionals of the world have met in Lisbon for Hydro 2010 on a justifiably upbeat note. Driven in part by the prominence of the debate about climate change, hydro is back at front and centre stage of the development agenda. This is in part because there is an emerging understanding that most hydropower projects emit few greenhouse gases, and that hydro accordingly has a place in mitigation. It is in part because there is growing awareness that adaptation to climate change (man-made or not) is an enormous challenge and that 80 per cent of adaptation has to do with managing ever-scarcer and ever-more-variable supplies of water.

The implication of the concerns about mitigation suggest that the hydropower community needs to just 'go for it', using the model that is now, finally, gaining broad acceptance.

But the implication of concerns about adaptation point in a different direction, back, some might say, to the concerns of 'multipurpose' use of water. There are two, related, issues here:

4.1 Overcoming tunnel vision

The first issue is that a hydropower-centric view of the world can become tunnel vision, and lead to concessions which do not maximize public welfare. In this respect it is useful to consider three prominent cases, in China, India and Brazil.

- The first is Three Gorges in China. The Government of China never wavered in defining flood protection as the primary objective of the project. Yes the project would facilitate the generation of 20 000 MW of hydropower. Yes, the project would greatly reduce the cost and enhance navigation to Chongking. But despite the very considerable opportunity costs (estimated at more than a billion dollars a year) in lost revenue because of the primacy given to flood control,

the Government stuck to (and sticks to) its principles. The operating rule is not one which maximizes hydro revenues, but which maximizes flood protection. And although the reservoir is (relative to a river which discharges 1000×10^6 m³/year) relatively small, it can have a huge impact on most floods. During the floods of 2010, for example, the peak flow into Three Gorges was 70 000 m³/s, and the peak outflow just 40 000 m³/s.

- The second is the emerging set of hydropower projects in Northeast India. There is a powerful argument for storage projects on the Brahmaputra, to mitigate floods, to augment low-season flows in Assam and Bangladesh, to facilitate inland navigation and, also to generate hydropower. The Government of India and the State Governments reasonably and correctly see hydropower revenues as providing the financial foundation for these projects. The governments of the upstream states (Arunachal Pradesh, in particular) reasonably want to maximize royalties (which come only from hydro and not from public goods such as flood protection and low-flow augmentation) and minimize political opposition (which arises primarily because of involuntary resettlement and is logically much greater for storage than run-of-the-river projects). The Union Government does not play its central role, which is to take the impacts on all States and on the production of both private and public goods into account. The result is a slew of cascades of run-of-the-river projects, with the public forgoing the large public benefits which would accrue from multipurpose storage projects.

- The third, similar, story concerns the development of hydropower projects in the Brazilian Amazon. As in India, these are driven by a government (legitimately) wanting least-cost energy security and developers (equally legitimately) wanting to maximize profits and minimize disruptions from concerns of resettlement. In the case of the Madeira projects, there would be very large economic and environmental benefits from opening up parts of western Brazil and Bolivia to low-cost, low-environmental impact navigation. But a Ministry of Energy does not consider this to be 'its problem', and thus licenses single-purpose projects. Again, the absence of a strong cross-sectoral capacity in government means that major economic and environmental benefits are foregone in a headlong rush for hydropower benefits.

4.2 The demise of planning

The Indian and Brazilian cases referred to above highlight a broader problem which is germane to the hydropower sector. The origin of this problem is the implementation of the 'unbundling' model of the 1980s. Take the case of Brazil, which is representative of many other developing countries. Twenty years ago Electrobras was an octopus-like parastatal: it planned, financed, generated and distributed. The result was a mess and the solution (unbundling) did and does make a great deal of sense. This was healthy from the perspective of financing (and resulted in a large increase in private financing and much greater scrutiny by financiers). It was also healthy for generation and distribution, with costs and responsibilities becoming much better defined and performance improving substantially. The only problem was that planning was largely forgotten, in Brazil and in most other countries. As government capacity to plan withered, so the vacuum was filled by developers, who naturally took a project-by-project, 'what will generate financial

returns' approach. This meant, in Brazil and in most other countries too, that there was no attention to multi-purpose projects (as described above) and no attention to the critical issues of timing and sequencing in large river basins. The Government of Brazil (for one) has realized this and has re-constructed its planning capacity, albeit primarily in the energy sector. Only now are creative ideas emerging at the basin level (such as dedicating some of the southern tributaries of the Amazon to remain undeveloped, and to grant long-term concessions for the production of electricity, navigation, water supply and environmental services in a sequenced process in others). The point here is that the hydropower sector, both public and private, needs to be at the very least receptive to approaches which ensure that benefits beyond hydropower are taken into account in the planning process.

5. Closing thoughts on ideas in the water world

For those who have spent our professional lives working on water, the glass is certainly half full. Never has there been such a lot of discussion and high degree of popular attention to the issue of water. But every silver cloud has a dark lining, as has been brought home to me vividly over the past month during which I have attended four major water conferences.

The first was the extraordinary jamboree which takes place in Stockholm every year. On the one hand it was good to see such interest in water. On the other hand it reaffirmed my sense that water must be the subject in which the ratio of those who talk to those who know something must be larger than any other subject! Great theories and brilliant solutions are bandied about, primarily by 'big thinkers' who have never felt the need to first get some dirt under their fingers.

The second was the annual conference of the International Water Association (the club of those who supply water and wastewater services), which I attended via videoconference to discuss how seasoned professionals could bring their experience and expertise to bear on the challenge of providing water and sanitation services to peri-urban areas of the developing world.

The third was the 50th annual meeting of the US National Waterways Commission. What a difference from Stockholm! Here the order of the day was modesty. "No, sir, I am not an expert, but I have served on the board of the Yazoo Mississippi Levee Board for 35 years".

And, finally, in Lisbon the environment was much the same, but global and about hydropower not management of the Mississippi. This, too, was a gathering of those who did things, not those who lived in an imagined and imaginary world. The culture at HYDRO 2010 was a 'show-me' culture, with ideas, yes, but with a heavy focus on what had worked, and intense attention to cases (some tragic like the disaster in Russia's massive Sayano-Shushenskaya project) where things had not worked out as hoped.

I say this because I see this disconnect between those who opine and advise (frequently with no practical knowledge, and usually for others to live with the consequences) and those who do and know to be a dangerous gap in this water-aware world. The truth is that informing an ever-more-interested public is a vital task. And the sad truth is that those who opine are much more effective at dealing with the media (and frequently those who define the agenda for interna-

tional financing institutions) than those who do. Therein lies, I suppose, the germ of a discussion for another day, perhaps one that can help bring together a 'coalition of those who do'!

References

1. **McCully, P.**, "The use of a trilateral network: An activists' perspective on the formation of the World Commission on Dams". *American University International Law Review* 16; 2001.
2. **Briscoe, J.**, "Overreach and Response: The Politics of the WCD and Its Aftermath". *Water Alternatives*; Vol. 3, No. 2; 2010.
3. **World Bank**, "Mid-cycle implementation progress report for the water resources sector strategy: Outcomes and way forward", Washington, DC, USA; 2010.

Bibliography

Mallaby, S., "The world's banker: A story of failed states, financial crises, and the wealth and poverty of nations", New York: Penguin Group; 2005.

World Bank, 2003. "Water resources sector strategy", Washington, DC, USA; 2003.

World Bank, "Brazil country partnership strategy 2008-2011", Washington, DC, USA; 2008.



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