

Contributing Paper

Dams in the Context of Transboundary/International Waters

Len Abrams
Water Policy International, UK

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River basins-institutional frameworks and management options

For further information see <http://www.dams.org/>

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World Commission on Dams

Submission: Len Abrams

Dams in the context of transboundary international waters

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1. Integrated water resources development

The development of large hydraulic structures such as dams should be undertaken within the broad context of water resources management as a whole. Such infrastructure clearly has an impact on downstream water resources in a wide variety of ways, and similarly, the management of water resources upstream will have an impact on the development under consideration. It is therefore not possible to adequately manage a dam or other hydraulic structure as an isolated entity - they must be integrated into the management of water resources as a whole.

2. River basin as the management unit

Water resources management should ideally be undertaken at the basin level - using a rational system-wide approach. In this way the comparative advantages of using water resources differently in different parts of the basin to achieve optimal overall benefits will result in the most efficient use of the resource. The construction of dams and other hydraulic structures must fit within the overall planning and management of water in the basin. However, because transboundary rivers by definition cross the political boundaries of sovereign national states, managing an international river basin as an entity is usually very complex.

3. Water resources development as a means-to-an-end

Water resources development, including the development of large hydraulic structures, should be regarded as a means to an end and not an end in itself. The ultimate objective should be sustainable economic development with the added objective in developing countries of the eradication of poverty. This is a particularly important point in order to avoid the construction of infrastructure which does not meet economic objectives, thereby contributing to national indebtedness. In this regard, the temptation to satisfy short term political objectives through the development of prestige projects etc. should be avoided. The construction of a dam, therefore, is not "development" per se but rather a necessary prerequisite for development, the benefits of which are derived from or made possible by the dam.

It is necessary to further unpack the objective described above. "Sustainable" economic development incorporates the notion of the protection of water resources and the aquatic environment so as to ensure a continued benefit stream to current and future generations. Further, economic development is possible without the eradication of poverty - indeed, it can exacerbate poverty resulting the rich getting richer and the poor getting poorer - hence the added objective of poverty eradication needs to be explicit.

4. Transboundary water resources development as a focus for regional economic co-operation

Whilst the development of water resources (including the construction of dams) is often a necessary requirement for economic development, it is insufficient in itself. Development in other sectors is also required, such as transport, communication, power trade, food and goods trade etc. However, the joint development of transboundary water resources can act as a catalyst for regional economic co-operation in sectors other than water, as is seen in the potential development of the Nile Basin [See Table 1. below]. This is as a result of a variety of factors, not least of which is the "knock-on" effect of the trust and co-operation which has to be built between countries in order to reach agreement on the management of a common resource. In many international river basins, especially in the developing world, the only thing that flows between countries of the basin is the river.

In the light of both items 3 and 4 above, planning for the development of dams on transboundary rivers should seek to maximise the opportunities for furthering economic co-operation in a region.

5. Sharing benefits rather than water

Broadening the perspective of development (eg a dam is a means to an end, not an end in itself) and engaging in basin wide development planning can lead to the redefining the concept of equity with regards to water resources utilisation. It becomes possible to shift the emphasis to ensuring that all parties gain an equitable share of the benefits of development and away from attempts to equitably share the water itself. Sharing of the resource itself is fraught with complexities and agreement is difficult to reach. Difficulties include the need for agreement on data and information collection, accuracy, presentation and interpretation. Basin wide water resources development and management enables benefits to be maximised across the basin in a way which is not possible if each country seeks to develop the resource within its boundaries in isolation from its neighbours (the whole is greater than the sum of the parts).

The corollary to this is the difficulty in determining the benefits to each riparian country of a particular development such as a dam. When planned in the context of a whole basin, there may be benefits to upstream riparian countries such as assistance in watershed management and protection, including incentives for improved land-use practices, which are also of benefit to the entire basin. It is often not possible to motivate and finance such projects on their own merits but they become feasible when linked to infrastructure development projects which, although they are in the same international river basin, may be situated in a different country.

6. Aiming for maximum mutual benefit

Agreements reached between countries will generally result in the need for each country to adapt its domestic policies which implies a compromise of sovereignty. The benefits perceived to be gained by each country must exceed the cost if equitable agreement is to be reached. In order to achieve this the national interests of each riparian country must be established. These may vary substantially and be contradictory, for example in the Mekong River basin between the interests of Thailand, Cambodia and Vietnam .

7. Politics of transboundary waters

The development of transboundary water resources is predominantly a political process rather than a technical process. Political factors include:-

- a) Political issues which have nothing to do with water often have a primary influence on the process. Reaching agreement on the development of infrastructure is therefore often a protracted process of political negotiation where decisions are usually not made by water professionals alone.
- b) Foreign policy often precedes water policy in such cases which makes the application of the principle of basin wide integrated development difficult.
- c) The political terrain involves not only the political interests of riparian countries but also the political interests of potential financiers. The financing of large-scale water infrastructure is often driven more by the interests of foreign policy than by the economic interests of recipient countries, a practice which did not end with the closing of the Cold War era.
- d) A further factor which has considerable political influence is the interaction between hydro-politics and regional political issues, for example in the Middle East.
- e) Finally, water infrastructure development is invariably influenced by local and often very personal political interests within riparian countries. Hence a dam may be as much a statement and symbol of national security and prestige as of water resources management.

As a result of politics of transboundary water resources development:-

- a) International agreements, particularly where large-scale infrastructure is involved, often take many years to conclude and are often not concluded until there is some major political change which has nothing to do with water, for example in Southern Africa and the 1959 agreement between Egypt and Sudan.
- b) Decisions are not made on the basis of sound development and economic principles which results in the failure of projects causing social and environmental problems and an increase in national indebtedness.

Given the political realities of the development of transboundary waters and the need to ensure that decisions are made on sound development and economic principles, there are a number of factors which are required in order to enhance the prospects of success. Many of these factors are not of a technical nature - they include:-

- a) There is a need to develop trust and build relationships between the negotiating parties, as individuals and collectively, at all levels from the technical experts to ministers. This needs to be specifically recognised, planned for, budgeted for and undertaken.
- b) Distrust and prejudice between peoples of different countries builds up over many generations and takes time to address. Time must therefore be provided for in the reaching of agreements and the planning of the development of infrastructure on transboundary rivers.
- c) Processes should be as inclusive as possible with the involvement of all riparian countries if agreements are to stand the test of time and of equity in future.
- d) Skills other than technical engineering expertise are required to facilitate and enable the process. Diplomatic and negotiation skills are needed together with an understanding of the technicalities.
- e) The process of reaching agreement between countries is greatly facilitated if sound water resources management policy has been adopted domestically in each of the riparian countries.

8. Levelling the playing field

The development and management of transboundary rivers necessarily involves the interaction of two or more sovereign countries. Inevitably there will be substantial differences between these countries. Some of the differences will be natural such as differences in climate, topography and natural resources whilst others will be social, economic and political differences. The natural differences between countries will generally give different countries comparative advantages in different areas such as making some countries more suitable for hydroelectric power generation whilst others may be more suitable for food production. The social, economic and political differences may result in differences in economic and military power in a region and differences in the availability and quality of professional and technically qualified personnel. These differences may make the establishment of equitable agreements and the proper management of basin wide resources very difficult. Substantial investment may need to be made over considerable periods of time to "level the playing field". The Nile Basin Initiative is currently planning such programmes.

9. Institutional arrangements

Development of large dams in transboundary contexts requires the adoption of international agreements and usually the establishment of institutional mechanisms for the management of the resources. In the developing world the sustainability of institutional arrangements is a major problem. Many such institutions have been established and after a very short period of time exist essentially in name only.

The four main reasons for the failure of such institutions are:-

- a) the lack of domestic political will in the countries involved,
- b) inadequate financing of the institutions which is often due to an initial over dependence on foreign financing,
- c) the lack of adequately skilled personnel available to be appointed to staff the institutions,
- d) and a variety of external factors including political and military conflict (for example in several situations in Africa).

The establishment of institutional instrument should be undertaken with great care so that they stand a reasonable chance of being sustainable and so that the factors noted above are taken into account.

10. Linkages between national and transboundary water management

Management of transboundary waters and the construction and management of dams in international rivers implies linkages between domestic issues (water resources management policy, institutional arrangements, national economic development objectives and legislation) and transboundary river management. Agreements reached between countries will generally result in the need for each country to adapt its domestic policies.

If each country has undertaken a thorough process of water resources management policy development and implementation which has effected the rationalisation of institutional arrangements and a review of national legislation, and if this has been based on sound principles of integrated water resources management, then agreement between countries on the development and management of water resources will be facilitated.

11. Retaining riparian control

The entire development process should be planned, managed and controlled by nationals of the countries concerned. In the instance of large infrastructure programmes this is often not the case with the process being de

facto controlled from outside the countries by financiers, consultants and contractors. This inevitably leads to long-term sustainability problems in developing countries. Where the professional expertise does not exist in-country, which will often be the case in specialised disciplines, whereas the detailed work may be done by foreign experts, the decision making process must remain in-country. Support may need to be provided as part of the project to develop sufficient expertise in-country to ensure that control remains in the hands of the riparian countries.

12. Information sharing in transboundary rivers

The sharing of information and the development of joint decision making processes is a necessary prerequisite for transboundary water resources management. In some instances however, particularly where there is an imbalance in the power relationships between countries, hydrological information is regarded as a matter of state security and is not made available to other riparian countries. The sharing of information and technical protocols for the standardised collection, recording and interpretation of data needs to be agreed upon between countries and is often a particular point of negotiation when preparing riparian agreements. This is specifically the case where attempts are made to divide and share the water resources themselves as shares will be based on the river flow and other data. Generally the economic benefits arising from the development and utilisation of transboundary water resources and easier to determine and hence share than the water resources themselves.

Table 1. Possible project areas agreed by the Nile Basin Council of Ministers

<p>I. Generic Water Resources Management Project Possibilities</p> <ul style="list-style-type: none"> • Water Supply & Sanitation • Irrigation & Drainage Development • Fisheries Development • Hydropower Development & Pooling • Watershed Management • Sustainable Management of Wetlands & Biodiversity Conservation • Sustainable Management of Lakes & linked Wetland Systems • River Regulation • Flood Management • Desertification Control • Water Hyacinth & Weeds Control • Pollution Control & Water Quality Management • Water Use Efficiency Improvements <p style="text-align: center; padding: 10px 0 10px 40px;">II. Other Related Joint Development Project Possibilities</p> <p><i>Infrastructure:</i></p> <ul style="list-style-type: none"> • Regional energy networks, including power interconnection and gas pipelines • Telecommunication development • Regional transport, including: railway and road networks; river and marine navigation; aviation <p><i>Trade and Industry:</i></p> <ul style="list-style-type: none"> • Promotion of trade (including border trade) • Industrial development • Regional tourism development • Promotion of private investment and joint ventures • Marketing and storage of agricultural products • Forest crop harvesting <p><i>Health, environment, other:</i></p> <ul style="list-style-type: none"> • Malaria and other endemic diseases control • Protection of wildlife • Environmental management • Disaster forecasting and management
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Appendix 1: Nile Basin Initiative Policy Document