

FINANCING AN EXPANSION OF WATER STORAGE – GETTING DOWN TO THE ULTIMATES

Dialogue Facilitation Paper

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1. A NEW PARADIGM?

“High on the abutment where the dam would be, stood the dam promoter and high on the other abutment stood the financier. And they called across to each other to tell of the great things they could do. But the rush of the mighty river drowned their words so that each did not hear the other.”

Anon

“In order to meet the special needs of Africa, we call upon our governments,, and development partners, to extend concrete, substantial and tangible support to the following quick impact actions:

***.....mobilise investments to attain the necessary water infrastructure platform
.....deepen our regional partnerships over water use infrastructure,, and looking for opportunities to invest in infrastructure of regional importance”***

AMCOW¹

“Governments since the time of the ancient Egyptians have financed the capital costs of irrigation infrastructure out of general tax revenue”

UNDP²

“Because dam building is typically an amoral, nation-building enterprise, not just the large dams – the Hoovers, Grand Coulees, Sardar Sarovars, Bujugalis, Karibas and Three Gorges – even the millions of smaller dams, if you scratch their surface, became possible only through market-distorting subsidies to those individuals, collectives and municipalities who construct, own and operate them.”

James Workman³

“The necessary (infrastructure) expansion is on a scale that means that in the short term only a small fraction could be funded by African public finances. Experience has told us that only a small fraction will come from the large private sector operators”

Commission for Africa⁴

“In 2006, private capital flows to sub-Saharan Africa overtook official aid for the first time.”

International Monetary Fund⁵

“We have told our story. What happens next is up to you”.

World Commission on Dams⁶

¹ African Ministers Council on Water (AMCOW). Ministerial Declaration on Accelerating Water Security for Africa's Socio-Economic Development. First African Water Week - March 26-28, 2008 Tunis.

² UNDP. Human Development Report 2006. p191.

³ Workman J. Closing Address. Conference on Global Perspectives on Large Dams: Evaluating the State of Large Dam Construction and Decommissioning across the World. Publication Series. Report Number 13. Yale School of Forestry & Environmental Studies. 2006

⁴ Commission for Africa. *Our Common Interest*. March 2005. p234.

⁵ International Monetary Fund. Regional economic outlook : Sub-Saharan Africa. 2008

⁶ World Commission on Dams. Dams and Development: A New Framework for Decision-Making. Earthscan Publications. 2000. www.dams.org.

2. FINANCE AT THE CORE

Ultimately (the first of the “ultimates” this paper will identify), there are only four groups that pay either directly or through a financing mechanism, for development projects, including storage dams⁷:

- Beneficiaries, through paying for services;
- Domestic tax-payers through government budgets;
- Foreign taxpayers through donor agencies; and
- Philanthropists (which group can be ignored in dam context).

The international financing system rests on the first three in a complex web of institutions and financing instruments.

Ultimately, there is no magic bullet, someone pays.

3. THE BENEFITS OF STORAGE DAMS

Storage dams are usually built with the intention of spreading benefits among the broader society and are motivated, mostly, on socio-economic rather than financial grounds. Benefits include hydropower, water supply, irrigation, flood protection, recreation and others. Many of today's dams are multi-purpose and have “hybrid” financing models. Table 1 indicates the relationship between benefits, economic classification and financial implications.

TABLE 1: THE BENEFITS OF STORAGE DAMS AND FINANCING IMPLICATIONS		
BENEFIT	ECONOMIC CLASSIFICATION	FINANCING IMPLICATIONS
Hydropower	Private good	Electricity tariffs are generally sufficient to support the financing of the dam and for private sector equity investment through “project finance” arrangements
Water Supply	Private / Merit good	The Dublin Principles declared water supply as an “economic” good but “and social good” was subsequently added. Strong economic regions and large cities are generally able to finance most of the dam through tariffs. Private sector is generally not an equity investor but may provide financing partially secured by real or implied government guarantees. The merit good nature arises from health benefits to the general population.
Irrigation	Private / Merit / Public good	Irrigation schemes generally do not pay for the provision of dam infrastructure and therefore private financing is not a realistic option. Governments motivate the projects on economic grounds, particularly employment and food security.
Flood mitigation	Public good	Use is non-consumptive and no individual beneficiaries can be identified and the benefit is usually financed from the local or national government budget.
Recreation and aesthetic use	Public good	Use is non-consumptive and no individual beneficiaries can be identified and the benefit is usually financed from the local or national government budget.

⁷ Modified from James Winpenny. Personal Communication.

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4. THE DIS-BENEFITS OF STORAGE DAMS

Of more importance to the financing of dams is that dams also have many **dis-benefits** such as environmental degradation and the loss of livelihoods and spiritual, cultural and aesthetic amenities. It is probably the distinguishing factor from other sectors. These dis-benefits are not localised to the storage dam area, but extend throughout the society and even internationally for example through issues such as biodiversity. Dam detractors claim that hidden dis-benefits are usually greater than benefits. Many hoped that the World Commission on Dams would settle most of the issues. However, judging from a recent dialogue at Yale University, the debate rages on⁸. What most commentators agree on is that post-WCD and post UNEP-DDP the international community is able to build dams that go much further towards satisfying environmental sustainability, social equity and economic efficiency, the core of integrated water resources management. The question becomes can a storage dam be financed if all of the dis-benefits, so long conveniently externalised to others (often the poor), must be compensated?

In the new storage dam paradigm, all of the stakeholders in the above three groups of ultimate "payers" as well as those affected by or even interested in the storage dam have an influence on how the storage dam is conceived, planned, procured, constructed, operated, maintained and finally decommissioned. This introduces considerable complexity into the financing mechanisms. From the perspective of the financing institution, the dis-benefits of storage dams magnify the factor that determines all financing – the question of risk.

5. RISK

Risk manifests in many forms⁹ and is usually regarded as a technical issue but in the storage dam context the focus is often on the risk of offending societal norms and values and the consequent alienation of stakeholders. Ultimately (the second ultimate) financial institutions of every form, particularly the type that might finance dams, are risk-averse. A large part of project analysis concerns the identification, reduction and mitigation of risk and its assignment to the participant best positioned to carry it. To illustrate this, the World Bank, as an example of a development finance institution, has sophisticated risk analysis procedures that protect its financial sustainability. It also has a "safe-guards" mechanism that protects firstly, the values given to it by its governance system and secondly, its reputation. The safe-guard policies are:

- 4.01 Environmental assessment
- 4.04 Natural habits
- 4.09 Pest management
- 4.10 Indigenous peoples
- 4.11 Physical cultural resources
- 4.12 Involuntary resettlement
- 4.36 Forests
- 4.37 Safety of Dams
- 7.50 Projects on international waterways
- 7.60 Projects in disputed areas.

This concern with a wide range of issues is not confined to multi-lateral institutions or other public institutions. A growing number of private banks have adopted the guidelines of the International Finance Corporation for development projects (the Equator Principles)^{10,11}. The

⁸ Conference on Global Perspectives on Large Dams: Evaluating the State of Large Dam Construction and Decommissioning across the World. Publication Series. Report Number 13. Yale School of Forestry & Environmental Studies. 2006.

⁹ Matsukawa T and Habeck O. Review of Risk Mitigation Instruments for Infrastructure Financing and Recent Trends and Developments. Trends and Policy Options No 4. The World Bank. 2007.

¹⁰ Calcagno AT. Key Challenges for the future: Financing Dams and Sustainable Development. UNEP-DDP Secretariat 2004.

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hydropower industry itself embraces a similar (some would say watered-down), set of criteria¹².

International Conventions also play a significant part in determining the norms (and conversely the risks) for storage dams, for example the Convention on Biodiversity. Regional instruments such as the Southern African Development Community Treaty espouse principles such as environmental sustainability.

The point is that all dam storage projects, if they are to have reasonable prospects for being financed, must satisfy an extensive set of non-financial international norms. And this means analysis, analysis, analysis and more analysis. Ultimately, (the third ultimate) the outcome is the avoidance, mitigation, securitisation and assignment of risk or acceptance that the project must pay for any residual risks through a premium on the interest rate. This applies whether it is a public development finance institution or the private sector involved.

6. THE PROJECT CYCLE

In the 1960's when world dam building was approaching its peak, a storage dam's project cycle consisted simply of feasibility (enough to satisfy politicians to assign budget), design (in the engineering sense), construction (by government teams) and operation (by a government department). Today, we have the additional steps in the process such as creating an enabling environment, prefeasibility, procurement and decommissioning. More importantly, the issues of international relations, public participation, environmental sustainability, financing and relocation have come to the fore and each creates a parallel or concentric inter-linked cycle each with designs, programmes and compliance issues.

Each of these cycles cries out to commence earlier in the process – and so it is with financing. From the earliest stages, project proponents must consider their potential financing partners.

7. FINANCING MECHANISMS FOR STORAGE DAMS

The nature of potential financing instruments varies greatly. Innovation keeps producing new mechanisms and this is not confined to the private sector. Recent public finance concepts to emerge are “output based aid” and “sector budget support”. Other mechanisms include:

- User charges (mostly for hydro)
- Environmental charges
- Grants
- Loans
- Mixed credits and export funds
- Bond markets
- Equity markets
- Direct private Investment
- Public private partnerships and private finance initiatives
- Project finance
- Carbon credits
- Sector wide approaches and sectoral funds.

8. IDENTIFYING POTENTIAL FINANCIAL SOURCES AND INSTRUMENTS

The Monterrey Consensus¹³, reached at the International Conference on Financing for Development, guides international financial and technical cooperation for development. As

¹¹ <http://www.equator-principles.com/principles.shtml>

¹² International Hydropower Association. Sustainability Guidelines. February 2004.

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far as sourcing official development aid is concerned, the system is expanding, increasingly complex, fragmented and insufficiently coordinated. There is an increasing number of new donors. The international aid system now consists of a loose aggregation of more than 150 multilateral agencies¹⁴.

In 2006, to clarify the complexity in financing sources and their instruments, the Economic Community of West African States (ECOWAS) published a Financing Guide that is aimed at West African-based organisations looking for grants and/or soft loans to finance projects and programmes in the broader water sector. More recently, the ICA Secretariat, with PPIAF, has produced a Financial Products User Guide¹⁵. This provides a brief description and a broad classification of financial instruments and a list of the facilities available from a number of financial institutions. Similarly, the EUWI with GWP and Cap-Net has produced a web-based guide¹⁶ that intends to become a comprehensive collection on finance mechanisms for the water sector. New mechanisms are also emerging. For example, the **Pan African Infrastructure Development Fund (PAIDF)**¹⁷, launched in 2007, is a private initiative that will provide long-term equity financing and other forms of investment such as quasi equity, structured finance and debt. The fund will invest in regional infrastructure developments across the African continent with particular focus on energy, transport, telecommunication and water and sanitation.

All financing sources have been set up for a particular purpose and have differentiated governance systems. This determines the nature of the financial instruments it offers and the conditions it attaches to offering the finance. Ultimately, (the fourth ultimate), the financing quest is to align the financing source with the storage dam project in terms of policy, objectives, norms, scope, size, etc.

9. PROJECT PREPARATION

The key to financing a storage dam project lies in thorough preparation. The complexity of dam risks means that the preparation phase for dam projects is much longer than for other development projects. To assist with project preparation, ICA has been instrumental in the publication of a general project preparation guide¹⁸ as well as a specific project preparation guide on public-private partnerships¹⁹. The work of the WCD²⁰ and the UNEP Dams and Development Project²¹ must be factored in. Ultimately (the fifth ultimate), a financing package can only be concluded if the financing partner has confidence that project preparation adheres to the principles of good governance.

Apart from the traditional sources of project preparation funds, a number of new initiatives have been launched in recent years:

- **The NEPAD Infrastructure Project Preparation Facility (NEPAD-IPPF)** was established at AfDB to assist African countries, regional economic communities and related infrastructure development institutions, to prepare high quality, viable regional

¹³ United Nations. Follow-up to and implementation of the outcome of the International Conference on Financing for Development. Report of the Secretary-General. A/62/217. 10 August 2007

¹⁴ Source: UNESCO. Coherence, coordination and cooperation in the context of the implementation of the Monterrey Consensus: Note by the Secretary-General 19 March 2007

¹⁵ <http://www.ica.org>

¹⁶ <http://financeguide.euwi.net/index>

¹⁷ <http://www.harith.co.za/>

¹⁸ ICA with PPIAF. User guide to project preparation. 2006

¹⁹ ICA with World Bank and PPIAF Attracting Investors to African Public-Private Partnerships A Project Preparation Guide. 2009

²⁰ World Commission on Dams. Dams and Development: A New Framework for Decision-Making. Earthscan Publications. 2000. www.dams.org.

²¹ UNEP - DDP Secretariat. A Compendium of Relevant Practices for Improved Decision-Making on Dams and their Alternatives. 2007.

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infrastructure projects in energy, trans-boundary water resource management, transport, and ICTs, which would then be ready to solicit financing from public and private sources in support of the objectives of NEPAD. A secondary objective of the NEPAD-IPPF, is to support the creation of an enabling environment of private participation in infrastructure as well as to support targeted capacity building initiatives in infrastructure;

- **The Investment Climate Facility (ICF)**²² is a private-public partnership vehicle for improving investment conditions in Africa. Key African institutions, including NEPAD, major donor agencies and key private sector interests, have endorsed it. It provides the private sector, G8 countries, and donor agencies with a practical opportunity for reducing barriers to investment in Africa. It addresses the first stage of the extended project cycle ie creating the enabling environment.

10. CHALLENGES IN FINANCING STORAGE DAMS

The Camdessus Panel²³ identified a number of constraints in financing the **water sector**. These were broadly grouped into governance issues which the water sector shared with other sectors and those occasioned by the specific characteristics of the water sector. The latter included (with reference to the general water sector but readily identifiable as applying to storage dam projects) :

- Project profile: capital intensity with high initial investment and long payback period;
- Low sector rate of return;
- Foreign exchange risk: mismatch between local currency earnings and foreign currency funding;
- Sub-sovereign risk: responsibility with local entities lacking financial powers, resources & credit standing;
- Risk of political pressure on contracts and tariffs and absent, weak and/or inconsistent regulation; and
- Contractual risk: projects of long duration entered into with poor initial information.

The European Union Water Initiative, addressing mainly the **water services and sanitation sub-sector**, built on the constraints identified by the Camdessus Panel and classifying them into four groups of common problems²⁴:

- Commercial risks;
- Political risk and governance issues;
- A lack of good projects; and
- A lack of national capacity.

The EU Report identifies unsatisfactory governance as the most significant constraint (pVI).

The Thematic Report²⁵ for the World Commission on Dams, in addition to factors similar to the above, identified as important the public good nature of storage sites, the ownership of the site, water rights and the regulation of natural flows.. It also stressed the importance of the financing of non-dam options.

In 2004, a UNEP Dams and Development workshop identified the following summarised challenges to financing dams^{26,27}:

²² <http://www-za.investmentclimatefacility.com/index.htm>

²³ Report of the World Panel on Financing Water Infrastructure. *Financing Water For All*. 2003

²⁴ The European Union Water Initiative: Final Report of the Financial Component. October 2003

²⁵ Ljung, P., Head, C., Sunman, H. Trends in the Financing of Water and Energy Resources Projects, Thematic Review III.2 prepared as an input to the World Commission on Dams. www.dams.org.

²⁶ Calcagno AT. Key Challenges for the future: Financing Dams and Sustainable Development. UNEP-DDP Secretariat 2004.

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- Providing a diversified mix of public, public-private and private investment mechanisms appropriate to the different economic and governance settings;
- Providing an expanded portfolio of interventions to meet the diverse needs in rural, peri-urban and urban settings;
- Improving governance in a broad sense including policy reforms, institutional reforms, regulatory reform and the engagement and involvement of the public as stakeholders.
- Establishing consensus within a country on investment priorities and balancing immediate needs with longer-term economic development aims.

11. CONCLUSION

The financing of dams presents many challenges not least that the dam sponsors and potential financial institutions seem unable to talk the same language. This paper has identified the channels and mechanisms for storage dam financing along with five “ultimates”. Ultimately:

- there are only four groups that pay for storage dams either directly or through a financing measure, namely beneficiaries, domestic tax-payers, foreign taxpayers and philanthropists;
- financial institutions of every form, particularly the type that might finance dams, are risk-averse;
- risk analysis is about the avoidance, mitigation and assignment of risk or acceptance that the project, if below the unacceptable risk threshold, must pay for any residual risks through a premium on the interest rate;
- the financing quest is to align the financing source with the storage dam project in terms of risk, safe-guard policies, objectives, norms, scope, size, etc; and
- a financing package can only be concluded if the financing partner has confidence that project preparation adheres to the principles of good governance.

12. POSSIBLE QUESTIONS FOR THE DIALOGUE

Is Nepad (STAP and MLTSF) promoting and guiding the development of storage dams?

Has NEPAD-IPPF been used effectively for storage dams?

Is private sector financing for storage dams illusory?

What progress has been made since the WCD?

Is the need for an enabling environment recognised and have there been advances? Is ICF active in relation to the storage dams sub-sector?

What African lessons are to be learned from Mohale (Lesotho), Bujagali (Uganda), Busanga (DR Congo), Samba Gallo (Nile region), Bui (Ghana), Kainji, Jebba and Shiroro (Nigeria) and others?

Is poor governance hampering the implementation of storage dams?

What more can be done to facilitate financing of storage dams in Africa?

²⁷ UNEP-DDP Secretariat. Financing Dams and Sustainable Development. Proceedings. Issue-Based Workshop No. 3. 2004.