



Sustainable Funding Models for Development Programmes in Transboundary River Basins

Kelbesa Megersa

Institute of Development Studies

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Question

- What are the lessons learned from development programmes that managed to transition to a sustainable funding model after the initial public funding stopped?

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1. Overview

Often, the investments made, and funds committed to the water sector fall short of actual financing needs. These financial inadequacies are particularly prevalent in the field of transboundary water (TBW) development initiatives.¹ While 60% of all freshwater flow worldwide occurs in transboundary basins and transboundary aquifers are of vital, yet insufficiently understood importance, funding for TBW is even more limited than funding for the water sector. Most international public financing is diverted into the Water, Sanitation and Hygiene (WASH) sector and most private capital flows into large infrastructure projects at the national level. Transboundary water development initiatives that do not directly relate to investment opportunities in infrastructure face difficulties of attracting investment. The deficiency of commitment of states to allocate scarce financial resources to TBW development is also an obstacle (Raadgever, 2015; UNECE, 2018). Consequently, transboundary water resources are not sufficiently developed and managed. This has led to wasted opportunities for cooperation that could provide benefits to riparian populations and countries. Sometimes, it could even lead to disagreements and conflicts between riparian states over shared resources, ultimately creating additional costs and losses. (INBO and GWP, 2012; GWH, 2017a; Raadgever, 2015; UNECE, 2018)

Notwithstanding the importance of the topic, academic and policy-oriented analyses have thus far mostly neglected the question of financing transboundary water development projects and cooperation. The few existing studies usually have a narrow scope and focus on particular financial necessities or financing mechanisms: either with an emphasis on development cooperation (e.g. GIZ 2007; EUWI 2013); or on international private investments and often only cover one basin or region (e.g. SADC, 2010). Conversely, in recent years, the funding of transboundary water management is being realized more and more through the financing of climate change adaptation (World Bank 2018).

Owing to the lack of academic literature, this report mainly relies on grey literature and various reports issued by development agencies that implement programmes. Further, the list of sample projects reviewed in Section 2 (i.e. to draw lessons) mostly include non-transboundary water infrastructure projects. This is because of the difficulty of identifying such specific infrastructure projects with funding extensions (or other relevant financial innovations) in the limited amount of time available to prepare this report. Thus, the report tries to complement the limited availability of exemplar transboundary water projects in Section 2 (i.e. projects with history of a transition in their financing models) with a generic discussion of sustainable financing models and sources of financing in Section 4.

Key highlights:

- The **Mara River Basin Management Project** in East Africa was launched in 2006 through funding from the Swedish International Development Cooperation Agency and Norwegian Agency for Development Cooperation. Later, it took advantage of funding from the World Bank - Nile Basin Initiative Trust Fund, the Nile Cooperation for Results and Cooperation in International Waters.

¹ Transboundary waters, according to (UNECE, 2018), refers to rivers, lakes and aquifers.

- Mobilizing resources for implementation of the identified investment opportunities was a major challenge for the project. Lack of political goodwill and commitment from partners also posed difficulties.
- Despite problems, the project had shown high potential for sustainability. This was helped by institutionalization and strategies of lobbying for political goodwill as well as efforts of packaging projects into proposals to raise funding.
- The **Private Infrastructure Development Group** was launched in 2012 through financing from DFID and other donors.
 - The programme has faced some financing challenges due to the departure of several donors. The funding problem had led to a rising share of DFID's funding and an additional funding from some donors such as Switzerland and Australia.
 - The approval of a new five-year Strategy shows that the program will have some sustainability. However, realizing long-term financial self-sustainability requires further work.
- The **Regional Infrastructure Programme for Africa** was launched in 2012 and involved DFID and other partners and funds such as the EU-Africa Infrastructure Trust Fund, and NEPAD Infrastructure Project Preparation Facility (IPPF).
 - The project has failed to attract additional funding (at the rate initially forecasted) for some of its output components – due to persistent management and staffing challenges.
 - Infrastructure continues to be a key constraint and sustainability cannot be easily guaranteed. It may also take many years to better assess the benefits of the programme.
- The **India Infrastructure Loan Fund** was launched in 2013 through DFID funding and together with its local partner - the Infrastructure Development Finance Company.
 - The project has faced challenges in presenting bankable projects due to changes in priorities, especially by the local partner. There are also risks linked to fraud and corruption as well as that some projects may not be pro-poor.
 - The project also faces risks of loss of DFID money and early closure.
 - However, institutionalization of the program has been its strength and may ensure the sustainability of the programme.

2. Key lessons from transboundary water (TBW) and other infrastructure projects

Case 1: Mara River Basin Management Project

Brief programme summary: (MRBMP Project Report, 2015 & MRBMP Final Evaluation Report, 2013)

- Full title: Mara River Basin Management Project (MRBMP)
- Donors and partners: Sweden, World Bank, Kenya and Tanzania
- Initial Funding:
 - The Swedish International Development Cooperation Agency (Sida) and Norwegian Agency for Development Cooperation (Norad) funded the initial project preparatory phase (2006-2010) with US\$3.3 Million.

- The World Bank-Nile Basin Initiative Trust Fund (NBTF) has funded project preparatory studies with US\$ 2.049million. This raised the total project budget to US\$5.434 million.
- Extra Funding:
 - Sida and NORAD have funded the bridging phase (2010-2012) at US\$ 1,755.806
 - Phase II of bridging Phase funded by Sweden (2013-2014) at US\$ 2,346,194 million.
 - Nile Cooperation for Results (NCORE)/Cooperation in International Waters (CIWA) funded the project over the Jan 2015-June 2017 period at US\$ 605,660
- Start/Closing Date:
 - Phase I: Jan 2006 to March 2010;
 - World Bank-NBTF Supplemental Financing (Bridging Phase): April 2010-March 2012
 - Phase II (of Bridging phase): 2013-2014

Programme details: (MRBMP Project Report, 2015 & MRBMP Final Evaluation Report, 2013)

- The overall objective of the project was to setup a sustainable cooperative framework for the joint management of the water resources of the Mara River Basin in order to prepare for sustainable development investments that will improve the living conditions of the people while protecting the environment.
- The Mara river basin is among the most important river basins in East Africa as it traverses the world-famous Maasai Mara Serengeti ecosystem recently declared one of the new seven natural wonders of the World. In spite of this global and regional significance, the river remains threatened by destruction of forest cover, unsustainable farming practices, high population growth rate and climate change. Accordingly, the seasonal water quantities have changed significantly in the sense that there are now higher peaks and lows in the river flows. Consequently, floods have become more common and large parts of the Tanzanian Mara wetlands have become more permanent instead of temporary wetlands. These issues require a whole of basin approach to their management.
- Recognizing these threats, the project is preparing several investment proposals in the fields of water infrastructure, watershed management and irrigation infrastructure for subsequent funding within a consistent basin development strategy.
- The project addresses the following medium- and long-term objectives;
 - I) Improved water resources development through development multipurpose storage reservoirs for Irrigation, water supplies and Small hydroelectric power
 - II) Improved River Basin Management through Integrated Watershed Management Projects (Environmental Integrity/Alternative Livelihoods).

Key achievements: (MRBMP Project Report, 2015)

- The Mara River Basin Project contributes to improved living conditions of the basin communities by facilitating an enabling environment for sustainable development-oriented investments and building capacity of riparian staff and communities in integrated water resources management and development.
- The project has attained some of the following tasks (integrated watershed management projects):

- Land and Water Management (US\$ 11.4m) – interventions with emphasis on improved land
- Livelihoods Diversification (US\$ 39.7m) – interventions with potential to improve incomes and thus livelihoods
- Watershed Management Project (US\$ 21,612m)
- Sustainable Wetlands Management Project (US\$ 7,134m)
- Water Pollution and Sanitation Project (US\$ 4,461m)
- Cross-cutting activities (US\$ 2,313m)

Challenges/Risks noted: (MRBMP Project Report, 2015 & MRBMP Final Evaluation Report, 2013)

- Main challenge: Mobilizing resources for implementation of the identified investment opportunities
- Other challenges: slow processes in reforming the water sectors; low commitment and political goodwill by key partners (e.g. government departments) and lack of financial capacities of local Water Resources Management (WRM) institutions to for self-sustainability.
- Key areas of failure were:
 - Lack of dissemination of lessons learnt from the documentation mainly in Tanzania
 - Failure to guarantee that Water Resources Management Authority (WRMA) took full responsibility for the water resources monitoring data
 - Involvement of stakeholders from the private sector was weak
- Lessons learnt: i) Political good is key for the success of the projects; ii) Adequate time for community engagement is required

Program Sustainability: (MRBMP Project Report, 2015 & MRBMP Final Evaluation Report, 2013)

- The activities initiated by the project have high potential for sustainability given the extent of institutionalization through Water Resources Users' Associations (WRUAs)/Water Users' Associations (WUAs). These institutions can mobilize resources internally through registration and subscription, from WSTF in Kenya and civil society organizations such as Community Development Trust Fund (CDTF) and regional programs such as the Nile Basin Initiative (NBI). The private sector although not well mainstreamed by the project but is also another potential area from where resources can be mobilised to sustain and upscale the Integrated Water Resources Management (IWRM). IWRM processes. In Kenya, WRMA has developed a concept to incorporate livelihoods within the SCMPs as a means of promoting WRUA participation and consequently sustaining IWRM processes. The issue of livelihood is a noble idea which although was scaled down by the project but offers potential for sustainability of IWRM processes
- Strategy to sustain the gains: i) Lobby for political good will for projects ownership ii) Lobby National governments and local governments/Counties to pick some prepared projects for implementation. iii) Package prepared projects into proposals for mobilizing finances for implementation

Case 2: Private Infrastructure Development Group

Brief programme summary: (PIDG Business Case, 2015 & Project Completion Review, 2018)

- Full title: Core support to the Private Infrastructure Development Group (PIDG)

- Initial Programme Value at commencement (business case): £477m
- Final Programme Value (full life): £524,246,994
- Start Date Feb 2012 & End Date (final): March 2018
- Programme Code: 203232-101
- DevTracker link to business case: http://iati.dfid.gov.uk/iati_documents/3716864.odt

Programme details: (PIDG Business Case, 2015)

- In 2002, the UK Government, with other donors, established the Private Infrastructure Development Group (PIDG) to encourage and mobilise private sector investment into infrastructure in the frontier markets of Sub-Saharan Africa and South-East Asia.
- PIDG consists of many separate facilities or companies that all support private investment in infrastructure and seek to tackle different gaps throughout the project development cycle. For example, the weak enabling environment, the lack of early stage project development, the lack of affordable debt finance and an absence of local currency loans, or risk guarantees to support currency lenders finance private sector investment in infrastructure.
- To address these issues, PIDG's early stage facilities, InfraCo Africa and InfraCo Asia, developed "greenfield" projects or help restructure or co-finance existing projects that may be stranded. In both cases they take projects to financial close, and in some cases through to operation, to prove that the projects are viable before they exit the deal and reinvest in their project pipelines.
- PIDG Facilities can access PIDG's Technical Advisory Facility (TAF) funding to make sure the projects they implement are affordable and commercially viable. PIDG's debt arm, the Emerging Africa Infrastructure Fund (EAIF) and its local guarantee vehicle (GuarantCo) play an important role in mobilising private finance from international and domestic markets, which not only helps deliver vital infrastructure in frontier markets but also assists in developing the local banking sector and alleviates the pressure facing countries' balance sheets if they had to support the financing of these projects themselves.
- Initial support to PIDG was relatively small, growing gradually as additional facilities were added. However, in 2011 DFID decided to significantly scale up its support through a new business case - making funding of £477 million available, between March 2012 and March 2015. It made a further £223 million available under a performance-based contestability mechanism. DFID also committed £73 million to a new PIDG facility, Green Africa Power. The period of the business case was subsequently extended through two extensions to March 2018.

Key achievements: (PIDG Project Completion Review, 2018)

- Over the period 2012-2018, the PIDG facilities have largely met or exceeded their targets, continually leveraging private sector finance and know how to deliver infrastructure projects in challenging markets.
- By using small amounts of donor capital, PIDG has been able to mobilise and increase substantial flows of local and investor capital, lending and expertise. To date, for every \$1 of donor funds PIDG has helped mobilise \$17 of private local and foreign commercial financing (\$23 including Development Finance Institutions DFIs).
- Based on DFID's positive assessment of PIDG's performance, the significant strengthening in PIDG's overall governance, and an independent review commissioned by DFID of PIDG's niche, that confirmed its unique role compared with other entities such as

CDC and the IFC, DFID Ministers approved a new Business Case, providing a further tranche of funding to PIDG covering March 2018 – March 2022 of up to £435 million and a contingent liability (“Callable Capital”) of £90 million.

Challenges/Risks noted: (PIDG Project Completion Review, 2018)

- Over the period of the business case, PIDG’s membership changed and several donors decided to leave the organisation. Many of the remaining donors also faced funding challenges which meant that DFID’s proportion of PIDG’s overall funding increased significantly, and the UK provided almost three-quarters of the funding.
- DFID funding has, however, continued to crowd in other like-minded donors as well, with Switzerland and Australia contributing further contributions to PIDG, and recently DGIS on behalf of the Netherlands is considering new funding as well.

Program Sustainability: (PIDG Project Completion Review, 2018)

- The completion and approval by donors of a new five-year Strategy for PIDG ensures that the programme remains at the frontier but also delivers greater transformational impact, and a degree of self-sustainability.
- GuarantCo (which is the local guarantee vehicle for PIDG’s debt arm, i.e. the Emerging Africa Infrastructure Fund (EAIF))² is on the way to financial sustainability and has recorded a profit in 2017 (of US\$8.2m – largely due to reversal of provisions following successful restructure of a project, as well as fair value gains). This is against losses recorded in previous years. However, profits may reduce in the coming years (or lead to losses again) as a result of the impact of new accounting rules). Hence, GuarantCo still needs to work towards ensuring long-term financial self-sustainability.

Case 3: Regional Infrastructure Programme

Brief programme summary: (RIPA Business Case, 2012 & Project Completion Review, 2017)

- Full title: Regional Infrastructure Programme for Africa (RIPA)
- Initial Programme Value at commencement (business case): £39.25 million
- Final Programme Value (full life): £66.72 million
- Start Date Nov. 2012 & End Date (final)³: Dec. 2016
- Programme Code: 202579
- DevTracker link to business case: <http://devtracker.dfid.gov.uk/projects/GB-1-202579/documents/>

Programme details: (RIPA Business Case, 2012)

- The Regional Infrastructure Programme for Africa (RIPA) was designed in 2012 to enhance economic growth and trade flows in sub-Saharan Africa, by strengthening the preparation of regional infrastructure projects and the availability of investment financing for their implementation.

² The Emerging Africa Infrastructure Fund (EAIF) and its local guarantee vehicle (GuarantCo) play an important role in mobilising private finance from international and domestic markets, which not only helps deliver vital infrastructure in frontier markets but also assists in developing the local banking sector and alleviates the pressure facing countries’ balance sheets if they had to support the financing of these projects themselves. (PIDG Project Completion Review, 2018)

³ Amendments/extensions: on November 2013, an additional £40 million to the EU-Africa Infrastructure Trust Fund (ITF) was approved, bringing total programme budget to £79.25 million. At the same time, the programme end date was extended to 2016.

- RIPA aimed to address some of the binding constraints for regional infrastructure in Africa. These include technical capacity, the high cost (and risk) of project preparation, linkages between governments and financiers, the availability of financing to meet the needs of a project, and coordination between multilateral organisations. RIPA's goals are directly aligned with the African Union's Programme for Infrastructure Development in Africa (PIDA) and the priorities contained in its Priority Action Plan (PAP).
- RIPA brought together, in a single programme, DFID support for several activities that were previously funded through separate projects, each of which had a unique role in relation to regional infrastructure.
- The programme consisted of four complementary components:
 - £15m to the NEPAD Infrastructure Project Preparation Facility (IPPF), which commissions early-stage preparation of regional projects;
 - £2m to the Infrastructure Consortium for Africa (ICA) to strengthen regional coordination and monitoring of infrastructure investment in Africa;
 - £60m to the EU-Africa Infrastructure Trust Fund (ITF) to help development finance institutions to fund the implementation (and later stage project preparation) of regional projects
 - £2m to fund up to five DFID secondments to multilateral organisations – the European Investment Bank (EIB), African Development Bank (AfDB) and World Bank – to augment their capacity and strengthen their coordination on regional infrastructure.
- A central motive for this programmatic approach was to exploit synergies between the different initiatives and increase linkages with DFID's sub-regional programmes that sought to boost intra-Africa trade along the main transport corridors in East and Southern Africa.⁴ By bringing these interventions into one programme, RIPA could deliver a greater impact than the sum of its parts.

Key achievements: (RIPA Project Completion Review, 2017)

- Since the start of RIPA, the ITF has approved 12 technical assistance grants and five investment grants for regional infrastructure projects.⁵ Some of the highlights include:
 - €13m for the Rusumo Falls Hydropower Project, which will increase cross-border power supply to Rwanda, Burundi and Tanzania.
 - €2m for the Interconnection of the Electric Grids of Nile Equatorial Lakes Countries, which involves construction of 946 km transmission lines and 17 associated substations in Burundi, Democratic Republic of Congo, Kenya, Rwanda and Uganda, leading to lower electricity costs and greater access to electricity in those countries.
 - €20m for the Kagitumba-Kyonzo-Rusumo Road Rehabilitation Project, which will rehabilitate 208km of this regional priority road connecting Rwanda with Uganda and Tanzania. The project includes improvements to road safety and the construction of two cross-border markets.⁶

⁴ Trade Mark East Africa (TMEA) and Trade Mark Southern Africa (TMSA)

⁵ Excludes grants under the SE4All window and cancelled grants.

⁶ Further details of projects funded with ITF grants can be found here: <http://www.eu-africa-infrastructure-tf.net/infocentre/publications/EU-AITF%20Annual%20Reports/index.htm>

- Since the scale-up of DFID's contribution to the ITF in 2013, €111m of grants have been approved under the Regional Envelope, leveraging more than €2b of additional financing for regional infrastructure (a leverage ratio of 1: 18.3).
- DFID played an important role in incorporating the Sustainable Energy for All (SE4ALL) window into the ITF. DFID's influence led to the maintenance of a separate window for regional projects, as well as non-EU members being allowed to remain in the Project Financier's Group. DFID also helped ensure that lessons from the ITF informed the design of a new European blending instrument, the Africa Investment Facility (AfIF).
- DFID's role in the IPPF Oversight Committee was instrumental in ensuring a joint donor approach to the Facility's performance issues, which resulted in improved management oversight, staffing and reporting standards. During the RIPA programme, the IPPF approved 24 regional project preparation grants and took 11 projects to financial close for implementation.
- DFID helped extend the ICA, initially a G8 initiative, to all of the G20. DFID was heavily involved in the ICA's Strategic Business Plans and helped to maintain a focus on project preparation.
- DFID secondees contributed to many important initiatives at the World Bank, EIB and AfDB. RIPA's programmatic approach to secondments – which enabled some level of coordination between secondees – was reported to be better than DFID's previous *ad hoc* approach.

Challenges/Risks noted: (RIPA Project Completion Review, 2017)

- It is difficult to assess the benefits of interventions, given the time lag involved in infrastructure projects to convert inputs to outputs/outcomes and eventual impacts and the challenge of attribution. Therefore, it may take several years to know whether RIPA has delivered the full returns expected in the business case.
- For the IPPF, DFID's financing was expected to lead to more projects receiving preparation grants. It was forecast that every £1 of project preparation expenditure from the IPPF would lead to £20 of additional funding from financiers in the implementation stage. Even with the reduced DFID contribution to the IPPF, the persistent management and staffing challenges have meant this conversion rate from preparation to investment may not have been fully achieved.
- The programme risk of funds not being used as intended is minor, as the funds are disbursed through known mechanisms in reliable host institutions.

Program Sustainability: (RIPA Project Completion Review, 2017)

- At the end of the programme, regional infrastructure remains a serious constraint to economic growth in Africa and there is no obvious, sustainable institution in place to continue to address the challenge of navigating projects through to implementation.

Case 4: India Infrastructure Loan Fund

Brief programme summary: (IILF Business Case, 2017 & Annual Review, 2018)

- Full title: India Infrastructure Loan Fund (IILF)
- Initial Programme Value at commencement (business case): Up to £38 million

- Final Programme Value (full life - expected): £38 million (original budget) plus at least £120 million (private investment)
- Start Date Oct. 2013 & End Date (final): May 2023
- Programme Code: 202869
- DevTracker link to business case: http://iati.dfid.gov.uk/iati_documents/4002506.doc

Programme details: (IILF Business Case, 2017)

- The programme was approved to deploy up to £38m under two components. Specifically, £36 million towards a concessional line of credit to Infrastructure Development Finance Company (IDFC Ltd)⁷ to deliver early stage, long-term debt to pro-poor infrastructure projects in the low-income states, in turn attracting other lenders and investors. This will be in sectors such as:
 - Clean Energy: Biomass, Solar, Wind, Hydro, Waste to Energy;
 - Agri Infrastructure: Grain warehouses, cold-storage chains, irrigation infrastructure, etc;
 - Roads and transport: state, district roads, transport (e.g tractors, cold storage trucks);
 - Urban Infrastructure: Solid waste management, wastewater etc.
 - Social infrastructure: healthcare (e.g. hospitals) and education infrastructure
- £2 million to buy expertise that helps improve the design of infrastructure projects; improve the quality of environmental, social and governance standards applied by IDFC to investment proposals; conduct monitoring and evaluations that generate knowledge about what works best; and disseminate this to other investors and infrastructure companies.
- The programme guarantees complementarity with DFID HQ programmes: CDC and PIDG (InfraCo Asia, GuarantCo, DevCo, TAF etc.) and through multi-laterals (World Bank, IFC, AsDB) and bilateral agencies which are active in India's infrastructure development. These agencies typically operate (a) on a pan-India basis unlike DFID's focus on the eight poorest states (b) with large investments in more mature infrastructure sub-sectors (e.g. telecommunications, national highways) (c) with typically larger funding amounts per investment (from £10m to £100m+) and (d) with either concessional or tied funding on sovereign lending (e.g. \$5-bn Japanese investment in Delhi-Mumbai corridor) and (e) with more established industry players in the non-sovereign category.

Key achievements: (IILF Annual Review, 2018)

- The programme is expected to directly result in:
 - At least 12 new private sector-led projects, at least £120 million of private investment mobilised
 - An estimated 280 000 people get access to new/improved infrastructure services such as electricity, sewerage, and transport
 - An estimated 1500 long term jobs / 3000 short term jobs generated directly
- Two projects have reached financial closure and two others are on-track at advanced stages within IDFC (expected to reach financial closure soon).

⁷ IDFC Ltd. has transitioned into a Bank on 1st October 2015. The required formalities, in line with similar arrangements that IDFC Ltd followed with other lenders, were completed by DFID timely and in consultation with FCPD. IDFC Bank does have a broader mandate on small loans to infrastructure projects which augers well with the mandate of the loan fund programme. (IILF Annual Review, 2018)

- Well-diversified across states and sectors: The sector split for the £22.75m anticipated approved spend is 45% in clean energy, 33% in road and transport and 22% in agri-infra/allied:
- There are clear positive signs supporting the value for money proposition in the BC. As it is early to evaluate the performance formally, the following measures were agreed to improve VFM:
- Leveraging private funds as much as possible: DFID provides line of credit to proposals where IDFC is also investing (e.g. for the one investment this is £15m of IDFC's against DFID's £4m. The promoter has brought in £6.3m).
- Alignment facility with vis-à-vis local market: IDFC is using the line of credit to on lend to projects and will return the capital to DFID on pre agreed terms. Allowing IDFC to reuse funds within the overall timeframe multiplies development impact per £, e.g. current and term lending.

DFID and IDFC have worked closely to look at the commercial and development aspects of projects. They have looked at ways in which we can most effectively target DFID's funding to groups that were most deserving such as for the project in the transport sector, DFID suggested the target group include women, people with disability, youth from poorer background e.g. SC/ST or minorities.

Challenges/Risks noted: (IILF Annual Review, 2018)

- Lack of pipeline for bankable projects due to i) Changing priorities and focus due to IDFC's transition into Bank and ii) delays in execution of existing projects. To mitigate this,
 - DFID has decided to facilitate deal flow with state governments including through existing DFID TA programmes
 - Close working with Partner on pipeline e.g. adding sub partners "conduits"
 - Review of investment policy to expand pro-poor sectors
- There are some challenges linked to Fraud & Corruption Risk. In this regard, DFID's assessment of due diligence confirmed IDFC's Corporate Governance (e.g. audits, DFID's ACCF and mitigation) as strong. Contractual documents also emphasise DFID's policy on fraud and corruption.
- There is a development risk - as investments fail to have pro-poor impact. DFID's mitigation measures include enforcing contractual obligations to focus on development outcomes and joint decision making on investments.
- Other risks include;
 - Loss of DFID money (DFID measure: legal obligation on partner to bear credit risk (AAA rated) and fully hedging of currency risk)
 - Early closure of project due to underperformance (DFID measure: direct support to Partner; scenarios /options with pros/cons developed)
 - Policy environment restricts implementation of projects (DFID measure: DFID Technical Assistance to improve investment climate to the extent possible, e.g. Jharkhand roads sector)

- Reputational risk related to investments (DFID measure: Legally binding loan agreement; joint decisions on investments; Due Diligence on IDFC's systems e.g. environmental, social and governance (ESG))
- **Lessons learnt:** Through investments in pro-poor sectors in India and working with our partners, the programme aims to catalyse capital into the low-income states. Key learning in the review period (i.e. as of 2018) were:
 - Understanding the need within target sectors and how effectively a facility can respond with patient capital vis-à-vis market as being important for development capital investment programmes. DCI programmes, especially those supporting small infrastructure projects, require significant time, effort and flexibility to marry the development criteria with the commercial, to ensure value for money.
 - Embedding the programme and getting ownership of the team within IDFC ensured that the strengths of the entire institution were mobilised. Institutionalisation of project initiatives and ethos at various levels of the organisation ensures sustainability as the programme transitions from primarily focus on project investments to portfolio monitoring by the next annual review.

Program Sustainability: (IILF Annual Review, 2018)

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3. Factors that may hinder or facilitate transition to sustainable funding model

Risks that hinder transitions to an alternative and sustainable funding model

Investing in water services through bankable projects entails the provision of enabling finance facilities (such as grants; credits; risk guarantees; matching funds). However, the preparation of solid bankable projects is costly and time consuming in a developing country context due to political, technical, environmental, financial and social risks. These project preparations and subsequent due diligence make private sector hesitant to engage in water related projects at the transboundary and national levels. Donors can therefore play a major role in preparing a pipeline of solid regional projects for subsequent due diligence by different financiers (public and private). (EUWI and SIWI, 2010)

limited national budgets and inability to anticipate actual cost recovery levels (pricing), taxes and charges by regions (specifically in slower growing regions with poor governance structures) are some of the key structural blockages that negatively impact on the private sectors' appetite for engagement. (Escribano et al., 2010)

Donors can play a role in mitigating structural blockages that limit access to private sector capital and local sources of finances (as a result of ineffective cost recovery mechanisms) e.g. through the output-based aid approach. The limited capacity of bilateral donors to identify bankable projects

and engage with what is perceived as complex financial transactions, limits their willingness to engage in these activities. Significant opportunities exist for donors to engage in transaction advisory services on specific investment projects. (EUWI and SIWI, 2010)

While donor involvement in all activities adds political weight and capacity to the formulation of joint objectives and projects, ironically the reputational risk to the bilateral donors' increases as they focus on service delivery. Service delivery is key to meeting the development targets and donors can not only focus on the governance or the water information aspects when supporting transboundary waters transformation. Risks increase as donors engage on projects with service delivery as the Bujagali HEP in Uganda illustrated, where financial closure was delayed by several years due to minor corruption and bilateral disbanding. (EUWI and SIWI, 2010)

In the transboundary context, it is necessary to structure the operational and financial mechanisms across political and geographical boundaries, requiring further donor support to facilitate investment from different sources. At the same time the absence of good industry standards for financing different sets of key water activities on both a transboundary and national scale brings unclear incentives for private sector investors. This is further compounded by lack of international taxation regimes for TBW projects. Amongst water services related activities water for energy seems to be able to attract most financing today. The public sector-oriented aspects of delivering multipurpose storage or ecosystem services is not as easy to finance partly due to unclear revenue streams. (EUWI and SIWI, 2010)

Private financiers require donors and IFIs to share the risks including political, regulatory and sub-sovereign. The split between private and public (including international public) sources depends on the proper identification of public (national and international) goods, and goods and services that can be marketed. For TBW projects there is an increased political risk that most private investors would be reluctant to accept. The donor community can help by covering this risk. At the same time the donor community is risk averse when it comes to reputational risks that can be associated with major transboundary water development projects and storage schemes. (EUWI and SIWI, 2010)

Factors and actions that facilitate the transition to sustainable funding models

Appropriate project finance structures are required that balance, for example, grants and loans, with risk sharing and guarantees. IFIs have been reactive and developed several innovative mechanisms to address these concerns (e.g. the Private Investment Development Group's (PIDG)⁸, Guarantco⁹, providing guarantees as credit enhancement of local currency debt, the World Bank Group's MIGA providing political risk insurance and investment guarantees, and Swedfund¹⁰). There are opportunities to consider how these instruments can be used for TBW development activities in general (soft investment) and regional water infrastructure investments in particular (hard investment).

Guarantee schemes give investors comfort that their projected cash flow will not be disrupted by events beyond their control, or if they are that the costs of disruption will be partially or wholly offset by a guarantee. Fundamental to this formula is that the underlying cash flow of the project is sufficient to attract and retain their interest (i.e. some minimum guaranteed level of cost

⁸ See World bank (2019f)

⁹ <https://guarantco.com/>

¹⁰ <https://www.swedfund.se/en>

recovery). To stimulate greater investment flows to the sector, a supply of bankable projects is needed. (EUWI and SIWI, 2010)

While guarantee instruments have achieved some success in providing risk mitigation for investments in infrastructure projects in power, telecom and transport, these instruments have been used only rarely in the water sector. This underscores the specific nature of risks affecting investments in water activities (in particular cost recovery issues). Donors can play a role in mitigating these risks, either through supporting existing IFI mechanisms e.g. with marketing efforts; modifying existing schemes to fit transboundary initiatives; or through directly establishing member state funds. (OECD, 2009)

4. Sustainable funding models for TBW infrastructure projects

An important aspect for ensuring sustainable transboundary basin development is funding. The scarcity of sustainable funding models however often prevents countries from developing TBW resources. Many countries also face problems in financing transboundary water development projects from national financial sources because the benefits of TBW development projects are not always known and funding is usually targeted to national and local water projects. Sustainable funding models for transboundary basin development are therefore crucial. (UN, 2019)

International financial resources (beyond discrete bilateral ODA)

International financial resources usually help finance transboundary water projects. These sources can be alternatives or complements for domestic resources (which are inadequate to meet financing needs in many regions) – either due to actual financial capacity gaps in the corresponding countries or due to the low importance rendered to transboundary water resources development.

While there are many ways to classify the diverse financing sources, the background document prepared for the “High-Level Workshop on Financing Transboundary Basin Development” (held in Astana, Kazakhstan on 9 October 2018) lists the key international/external sources as: donor financing through development cooperation; international financial institutions (IFIs); and international climate funds (UNECE, 2018).

Development cooperation and donor financing (pooling multiple donor resources)

Transboundary water development has been facing considerable domestic financing difficulties. Yet, it has been (more and more) promoted by the international community as the way to handle the challenges that arise from the transboundary character of many of the world’s water resources (in the framework of the paradigm shift towards integrated water resources management (IWRM)). Accordingly, the international donor community has progressively engaged in financing cooperation efforts in the developing world. (INBO and GWP, 2012; EUWI, 2013)

In recent years, **several bilateral donors** have supported transboundary water development in different basins.

- Some basins have garnered considerable financial support from several donors (e.g. the **Nile River Basin**, which in 2011 was funded by ten different donors or the **Zambezi** which in the same year was financed by five different donors (EUWI 2013). While this can be observed as a signal of importance (i.e. international attention) to these basins, it can also come with difficulties linked to **donor coordination**.
- Other basins have enjoyed insignificant or no support. Generally, in the African continent, in 2011 only 21 out of the 59 transboundary basins have enjoyed substantial development financing (EUWI, 2013), thus leaving most basins in the region without external financial support.

International financial institutions (IFIs)

A specific type of development cooperation is the support by IFIs – primarily in the form of multilateral development banks (MDBs) like the World Bank, which also comprise of regional development banks in beneficiary countries. (GWI, 2017; DFID, 2015; World Bank, 2019a)

IFIs may fund projects through long-term loans at market rates, very long-term loans (i.e. credits) below market rates, and through grants – based on the recipient country’s development level. (PIDG Business Case, 2015; RIPA Business Case, 2012; UNECE, 2018)

- In the field of transboundary waters, examples include the **World Bank’s** projects in the Mekong River Basin with the Mekong Integrated Water Resources Management Project (World Bank, 2019b), in the **Lake Victoria Basin** with the Lake Victoria Environmental Management Program (GEF, 2019) and in the **Volta Basin** with the Volta River Basin Strategic Action Programme Implementation (World Bank, 2019c).

At times, IFIs such as the World Bank also manage trust funds that bundle funds from various donors (often bilateral ones) for a region and/or sector. Major examples include:

- **World Bank’s Cooperation in International Waters in Africa (CIWA)** program, that aims to support governments in shared basins in Africa to cooperatively manage their water resources for sustainable and climate-resilient growth (CIWA, 2018),
- World Bank’s South Asia Water Initiative (SAWI), which supports water resources management at the basin level (World Bank, 2019d), and
- World Bank’s Central Asia Energy Water Development Program, that tackles basin-level challenges relating to transboundary water and energy issues (World Bank, 2019e).

The Global Environment Facility (GEF) is a special mechanism for supporting (among other topics) cooperation over shared water resources. With the help of its implementing agencies, it supports countries or entire basins and their countries in the development and implementation of transboundary water management. (GEF, 2015)

- **Basins supported by GEF**, include the Bug and Neman Basins (and the underlying aquifer system), the Danube River Basin, the La Plata Basin, the **Nile River Basin** as well as the **Pungwe, Buzi and Sabi River Basins** (GEF, 2018). As GEF is also an applying mechanism for financial dimensions of the United Nations Framework Convention on Climate Change (UNFCCC) and manages several climate funds, it is (partially) also a climate finance mechanism (which will be discussed in the next sub-section).

IFIs can also leverage private funding into TBW projects, e.g. by boosting the attractiveness of investments to private investors with improved risk management (e.g. through institutional investment guarantee and risk management frameworks like what is provided by the World Bank's Multilateral Investment Guarantee Agency (MIGA)). These financing schemes are usually applied for large projects, particularly in the hydropower sector. (World Bank, 2019f)

Domestic financial resources

Financing transboundary water management through financial resources emanating from the basin itself can ensure ownership of the cooperation process. Within the realm of domestic financing, this can be differentiated between public and private financing.

Domestic private financing (mainly infrastructure)

It is, however, important to note that domestic private investments are typically focused on investments within a specific country – even in transboundary basins. There are only a few examples of investments crossing borders and targeting infrastructure schemes of transboundary scope.

- They include the **Lesotho Highlands Water Project (LHWP)**, through which **South African investments** (secured by the **World Bank** and **other international support**) helped build an infrastructure scheme in Lesotho that eventually benefitted both countries. (GWH, 2017a)
- However, **attracting private funding is particularly difficult** in cases with lots of practical operational challenges and projects with **high political risks** (such as where large TBW infrastructures are involved). **Guarantees provided by development banks** and **well-functioning basin institutions** can reduce such (perceived) risks. The private sector has little appetite for residual political risks – these will often ultimately have to be borne by the taxpayer. However, since the history of finance is one of innovation, this can change – though not all financial innovation has turned out beneficial. (GWH, 2017a)
- It is worth to specifically mention **green bonds** (sometimes also referred to as blue or **climate bonds**). These bonds aim to mobilize private capital resources (at the domestic – but also at the international level) for specific projects, including water management (**potentially also at the transboundary level**).

A **key challenge** for generating private financing is the **lack of bankable projects**. Private financiers require bankable projects in which they can invest based on a risk assessment that relies on information on the risks related to the investment and the expected return on investment. Such information is often lacking – specifically in the transboundary water development context – thus further impeding private investment opportunities. (World bank, 2019a)

- **Project preparation facilities** have tried to overcome these challenges by pooling project preparation in a more efficient manner and enhancing individual actors' capacity in preparing projects. Examples include:
 - **SADC Infrastructure Project Preparation and Development Facility (IPPDF)**, hosted by the Development Bank of Southern Africa (DBSA),
 - Inter-American Development Bank (IDB)'s Project Preparation Facility and
 - **African Water Facility (AWF)**.

Another way to overcome challenges relating to private investments can be **blended financing**. Blended financing is a mechanism that uses public (and often international development) finance to mobilize additional private finance in order to scale up overall financial flows into the water sector. The inclusion of public resources helps to improve the risk-return profile of investments that are otherwise not attractive to private financiers due to the high risks associated with them. (World Bank, 2019a; ODI, 2018; BFT, 2018)

Especially for transboundary water management, where risks are high and returns on investment not always immediately visible, such blended finance could be an important vehicle to overcome investment shortages. So far, practical experience with the use of blended financing for transboundary water management are, however, limited. If at all, they relate to the development of infrastructure. In addition, international development banks such as the World Bank are increasingly developing guarantee mechanisms for facilitating private investments, also reflecting the increasing acknowledgement that due to the specific nature of the water sector a combination of public and private financing is required. (UNECE, 2018)

Domestic public financing

One can differentiate between public financial resources that originate from a government's general budget (raised through taxes and other mechanisms of government income) and financial resources originating out of specific funding mechanisms for the water sector (such as fees and charges directly relating to water use, water pollution, etc.). In any case, strong legal, institutional and procedural linkages between basin level cooperation processes and national or even sub-national planning, management and budgeting processes are required. In addition to the question of the origin of public financing, it is also important to note the different ways to allocate or share such financial responsibilities in the transboundary context: Basin organizations, for instance, are typically financed by their respective member states, which happens through different mechanisms. In relation to this, UNECE (2018) notes that:

- Financing can thereby occur both through direct financial contributions (membership contributions) or through in-kind contributions (member states, for instance, providing the building and premises for a basin organization's secretariat – such as South Africa in the case of Orange-Senqu River Commission (ORASECOM)).
- Financial contributions in the form of membership contributions are typically borne out of a state's direct budget. There are, however, exceptions: International Commission of the Congo-Oubangui-Sangha Basin (CICOS), for instance, is financed partly through a regional organization, the Central African Economic and Monetary Community (CEMAC), which contributes parts of its income generated through its import tariffs to CICOS for those CICOS member states that are CEMAC members.
- Financial contributions can be shared by member states in an equal manner or based on a specific cost-sharing mechanism (or a combination of the two). Such mechanisms are typically based on specific indicators (e.g. the share of a country in the basin) or a set of such indicators (e.g. in the case of the Mekong River Commission, where annual budget increases are shared based on a formula that consists of the share of a state in the basin's territory, its average flow contribution, its irrigated area, its population and its per capita GDP).
- Often, these sharing mechanisms change over time. The ICPDR, for example, moved towards equal cost-sharing as downstream riparians developed economically, and the

Mekong River Commission is currently revising its cost-sharing mechanism in the context of its overall organizational reform, aiming at establishing an equal cost-sharing principle.

- In addition to membership contributions – whether in-kind or through financial means – some basin organizations have tried to explore alternative financing mechanisms such as basin funds, funds for specific purposes or business activities such as providing services against certain fees, etc. ORASECOM, for instance, has explored opportunities for establishing an ORASECOM Conservation Fund that would acquire and provide financing for specific conservation projects in the basin that have been identified through the basin management cycle that is based on a thorough assessment of the state of the basin and the challenges it faces. The fund would be its own legal entity under ORASECOM's management (with the involvement of member countries, donors and other stakeholders) and qualify as a charitable company under South African (ORASECOM's seat) company law (ORASECOM, 2009). Despite significant interest in this innovative mechanism, it was never set up for several administrative and legal reasons.
- Similarly, the Mekong River Commission (MRC) has discussed establishing a fund fed by hydropower charges (of 0.1% of hydropower incomes from mainstream projects) that would fund environmental protection and management measures in the basin, which, however, also never materialized due to the different interests of individual MRC member states.
- Another type of alternative income can be found in the hydropower charges collected by the Zambezi River Authority (ZRA) from the operation of Kariba Dam and the distribution of electricity, although constituting a specific case as the ZRA is not a typical basin organization, but rather a transboundary infrastructure operator owned jointly by two countries.

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