



Overview of irrigation PPPs worldwide: Issues and Challenges

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Cledan Mandri-Perrott, PhD

Why irrigation?

- ▶ **Increasing emphasis on rural and agricultural development**
 - ▶ Irrigation can be a catalyst for economic development
- ▶ **Climate change and its impact on potable water**
 - ▶ Irrigation is a big part of water resource management
 - ▶ Addressing water allocation challenges and increased competition for water usage
 - ▶ Stimulate Green Growth
- ▶ **Increasing awareness on Food Security**
 - ▶ Greater dependence on food produced on irrigated land
 - ▶ Reducing food price volatility



However, investment in irrigation has gone down

- ▶ Governments, Donors and IFIs have tended to focus their support to urban development
- ▶ Scarcity of local budgets
- ▶ High and increasing construction costs and poor production performance
- ▶ Low water charge and poor recovery rates



▶ So what is needed?



What is needed?

- ▶ Develop a better understanding of private sector involvement in irrigation
- ▶ How can the system be designed in a sustainable manner?
 - ▶ Engineering & environmental perspective but also O&M
 - ▶ Linking production to capital investment
- ▶ Develop a framework which would transcend from one implementation arrangement to the next
 - ▶ Institute appropriate contractual and institutional arrangements
 - ▶ Incentive and results-based instead of input-based
- ▶ How to ensure “market” is prepared to invest in long term assets for irrigation and agriculture

Need to combine public and private resources more effectively

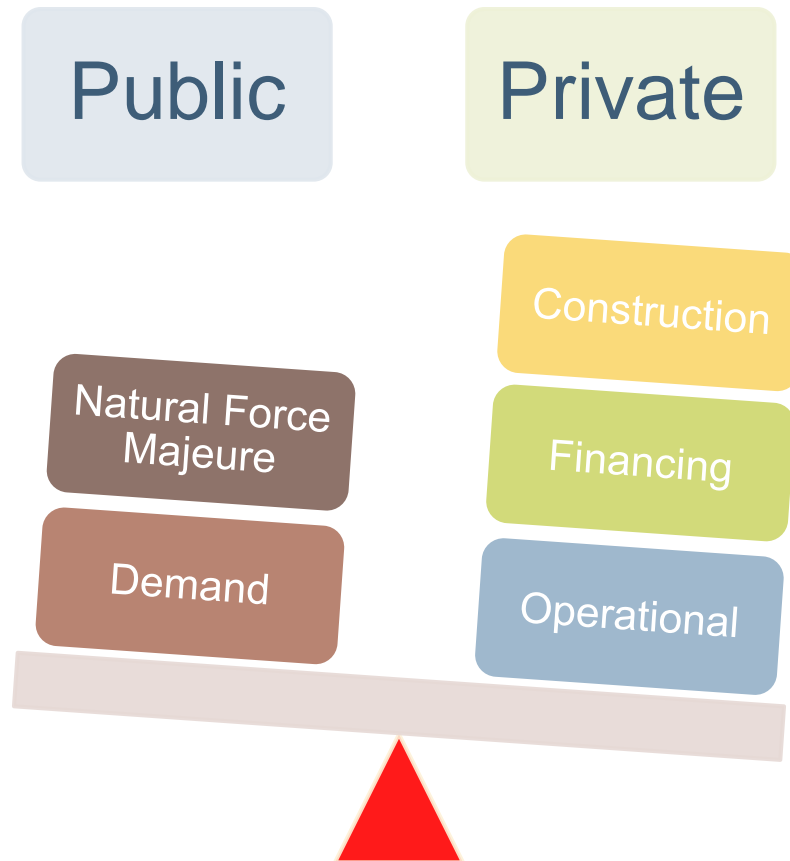
- ▶ Government support is needed
 - ▶ But in what aspect? How?
- ▶ Make the project ‘Bankable’?
 - ▶ For farmers and other users
 - ▶ For public sector
 - ▶ For private sector
- ▶ Need to view Irrigation as a “**commercial and sustainable venture**”



Mechanisms to support project bankability



How much risk transfer?



Maximum risk transfer to achieve just enough bankability

The future? Hybrid contracts

- ▶ Hybrid contracts ‘evolving’ into greater risk transfer
 - ▶ Governments may cover revenue shortfalls to compensate for the risk of lower demand or higher finance costs
 - ▶ Direct payments to support project revenue streams, or
 - ▶ Specified subsidies payable under predefined conditions.
 - ▶ Results or output-based subsidies
 - ▶ Efficient mechanism for delivering subsidies
 - ▶ Contract form must allow for other potential sources of income
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- ▶ Eg land values, special crops (ethanol etc) etc...

But need to go back to the basics

- ▶ Justify underlying investment (options, technical solution, ...) before considering how to finance it
- ▶ Focus on value for money and long-term affordability
- ▶ Use competitive and transparent procurement process
- ▶ Innovation needed in structuring projects and applying mechanisms (contract design, financing, procurement....) in sustainable way

You are very welcome to use any of this material so long as you acknowledge the author.

Thank you!

Cledan Mandri-Perrott

Head of Infrastructure and Finance, Singapore Hub

Cmandriperrott@worldbank.org

☎ +65 8722 1925

Some Project's Statistics

Underlying features	Guerdane Morocco	Chanyana Zambia	West Delta Egypt	Megech-Seraba Ethiopia
Costs	\$85 million	\$2.5 million (pilot) + \$32 million	\$450 million	\$47 million
Farmer experience	Established	Limited	Limited	Limited
Farming activity	Cash-crops	Subsistence	Mixed	Subsistence
Size and scope	Up to 10,000 ha	300-2,600 ha	80,000 ha	4,040 ha
Design feature				
Project preparation and sponsorship	Design Build Operate	BOT w/ SPV (20% coop & 80% InfraCo)	Design Build Operate	Public finance w/ private OMM
Farming model/plan	None	Professional farm management	None	Set up of Water Users Associations
Farmer participation	Off taker	Asset manager and off taker	Off taker	Via WUAs & KPIs
Financing	Public private	Donor/commercial	Public private	Public via IDA credit

Risk matrix

	Guerdane Morocco	Chanyana Zambia	West Delta Egypt	Megech-Seraba Ethiopia
Demand	Developer	Developer	Developer	Public
Financing - Debt service - Foreign Exchange	- Developer - Shared	- Developer - Developer	- Developer - Shared	- Public - Public
Construction	Developer	Developer	Developer	Public
Operational - Design - Handover - O&M	- Developer - Public - Developer	- Developer - Public - Developer	- Developer - Public - Developer	- Public - Shared - Operator
Commercial - Service coverage - Land - Power	- Developer - Farmers - Developer	- Developer - Farmers - Developer	- Developer - Farmers - Developer	- Operator (KPIs) - Farmers - Public
Force Majeure Nature (Drought)	Shared	Shared	Shared	Public
Public obligations - Govt payments - Tariff adjustments	-Yes - Developer (bidding criteria)	-Yes from donors to SPV - Developer	-Yes - Developer (bidding criteria)	-Yes - Public

Key risks in irrigation

- ▶ Demand and collection risks
 - ▶ Off take
- ▶ Financing risk
 - ▶ Debt service, F/X as revenues are in local currency
- ▶ Construction risk
 - ▶ On time completion: take or pay can be structured?
- ▶ Operational risk
 - ▶ Inefficiencies in service standards
 - ▶ For design and construction
 - ▶ For Operation and Maintenance
 - ▶ For handover after one contract has ended
 - ▶ Linkage to agri-business?
 - ▶ Agri-business to also act as developer/operator?



Key risks in irrigation contd.

- ▶ **Commercial risk**
 - ▶ Unsustainable service coverage requirements
 - ▶ Land usage/allocation
 - ▶ Encroaching suburban development
 - ▶ Power supply

- ▶ **Force Majeure risk (natural)**
 - ▶ Floods and droughts
 - ▶ Water resource upstream issues such as water sharing and development
 - ▶ If Hydro power plant, then bigger safeguards issues
 - ▶ Open canal system
 - ▶ Repatriation risk
 - ▶ Trans-boundary issues e.g. Nile Basin, Voltas river etc.

- ▶ **Government payments/ Regulatory risk**
 - ▶ Government payments
 - ▶ Tariff adjustments



Off taker risk has several aspects

▶ Who?

- ▶ Agribusiness
- ▶ Mid tier farmers
- ▶ Subsistence farmers

▶ From where?

- ▶ New demand
- ▶ Shift in demand
- ▶ Change in technology and production

▶ How to manage off-taker risk?

- ▶ Different approaches required for major agri-businesses vs. subsistence farming



Key concern: government payments

- ▶ **Subsidy**
 - ▶ For upfront Capital
 - ▶ For lifetime O&M
 - ▶ Use of availability payment
 - ▶ OBA linked to crop yield
- ▶ **How to backstop government obligations?**
 - ▶ Letter of credit
 - ▶ Guarantee
 - ▶ Etc.
- ▶ **Policy implications e.g. dropping/reduction in subsidies**



Agenda item 3

Bringing sustainability into the equation.