Sustainable Water Integrated Management (SWIM)

Regional Training Event

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TRAINING ON EVALUATING AND STRUCTURING PPPs IN THE WATER SECTOR

Day 2 – Session 1: Making the Business Case for PPP in Water

by

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Introduction

- Many guides on the web give good overviews and cover all the areas. The purpose of this presentation is hence not to present long checklists (except in a few cases)
- The purpose of this presentation is not to give extended case studies
- The aim is to help you *think*, not to provide a set of rules that you can apply without thinking
- General principles and international practice will be covered

Efficiency

Efficiency = Results / Means

Efficacy

Efficacy = Results / Objectives

Effectiveness

In management, effectiveness relates to “getting the right things done (rightly)”

Contrary to the term efficiency, the focus of efficacy is the achievement as such, not the resources spent in achieving the desired effect. Therefore, what is effective is not necessarily efficacious, and what is efficacious is not necessarily efficient.

Simply stated, effectiveness means outcome and efficiency means output.

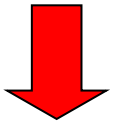
Strategic and Tactical Planning
Impact of Effectiveness and Efficiency on Organizations

Strategy (doing the right things			
		Ineffective	**Effective**
Tactics (doing the right things)	**Efficient**	**DIE (slowly)**	**THRIVE**
	Inefficient	**DIE (quickly)**	**SURVIVE**

Source: Wilson, R.M.S. and C. Gilligan (1998)

Framework of Assessment: Causality Chain

Enabling Environment
governance, regulation, policies, politics, incentives



Utility Performance
management, operations, asset management, NRW, finance, HR, customer accountability

Service Coverage and Quality

Often Core Challenges Water Sector

- Frequent **institutional** role unclarity that is contributing to lack of investment mobilization
- **Tariffs** are moving towards cost recovery for operations and maintenance, but no capital recovery and no capital maintenance.
- Limited financial standing of water service providers
  Proxy indicator: high **NRW levels**
- Workforces traditionally resist private sector participation
- Public resistance to increases in tariffs

Understanding each others' interests

Public Sector

- Minimize risks
- Reduced liabilities for the state.
- Tax, fee or sale revenues.
- Happy customers.
- Environmental cleanups.
- Happy public utility employees
- Jobs for domestic firms

Private Sector

- Steady, long-term returns.
- Market share, reputation, geographic presence.
- Mitigation of risks not under their control, or profits commensurate with risks.

Civil Society

- Dependable service
- Affordable tariffs
- Tailored service for the poor
- A voice in decision making

The Way Forward …

Consider the following questions:

1. Where are we now?

2. Where do we want to be?

3. How might we get there?

4. How can we ensure success?

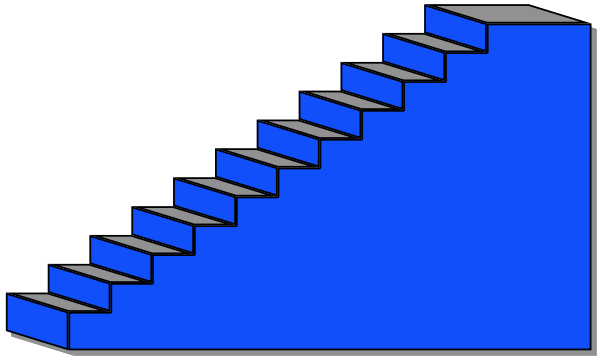
Two main types of Planning

- A ***Strategic Plan*** covers a period beyond the next fiscal year, usually the next three to five years. This is important as strategic planning ensures that a utility operates in the most effective way, maximising its chances of success and survival.
- A ***Tactical Plan*** is an in-depth operational plan that covers actions to be taken, by whom, during a short-term planning period of usually one year or less. It is important that managers distinguish strategic from tactical considerations.

Steps

- Build stakeholder consensus
- Get advice
- Consider industry structure first
- Sound the market early
- Define doable service targets, with specific approaches for the poor
- Assemble background information
- Pre-qualify few, credible firms
- Build regulatory capacity
- Prepare draft bid docs, get feedback
- Prepare the utility
- Tender and negotiate the contract
- Manage the transition
- Communicate at all times !

Effective PPP takes time to prepare and implement, especially in forms that involve private financing



PPP
… not a Panacea,
… nor a Substitute for Reform

- **Empowered operator**: no matter the PPP option, he can only succeed if given the control on the means to achieve performance targets

- Operator needs:
  - Freedom from political interference, and, micro management
  - Autonomy in decision making and on personnel issues
  - Financial security

Attributes of a sustainable framework - Public or Private

- **Roles**, **Responsibilities** and **Risks** must be clearly assessed and allocated, and **Incentives** and **Accountabilities** must be internally consistent.
- Risks should be allocated to the party that is most capable of managing such risks.
- Agreements should be Enforceable.
- There must be an appropriate **Balance of Power** – No One Party should have overwhelming authority.

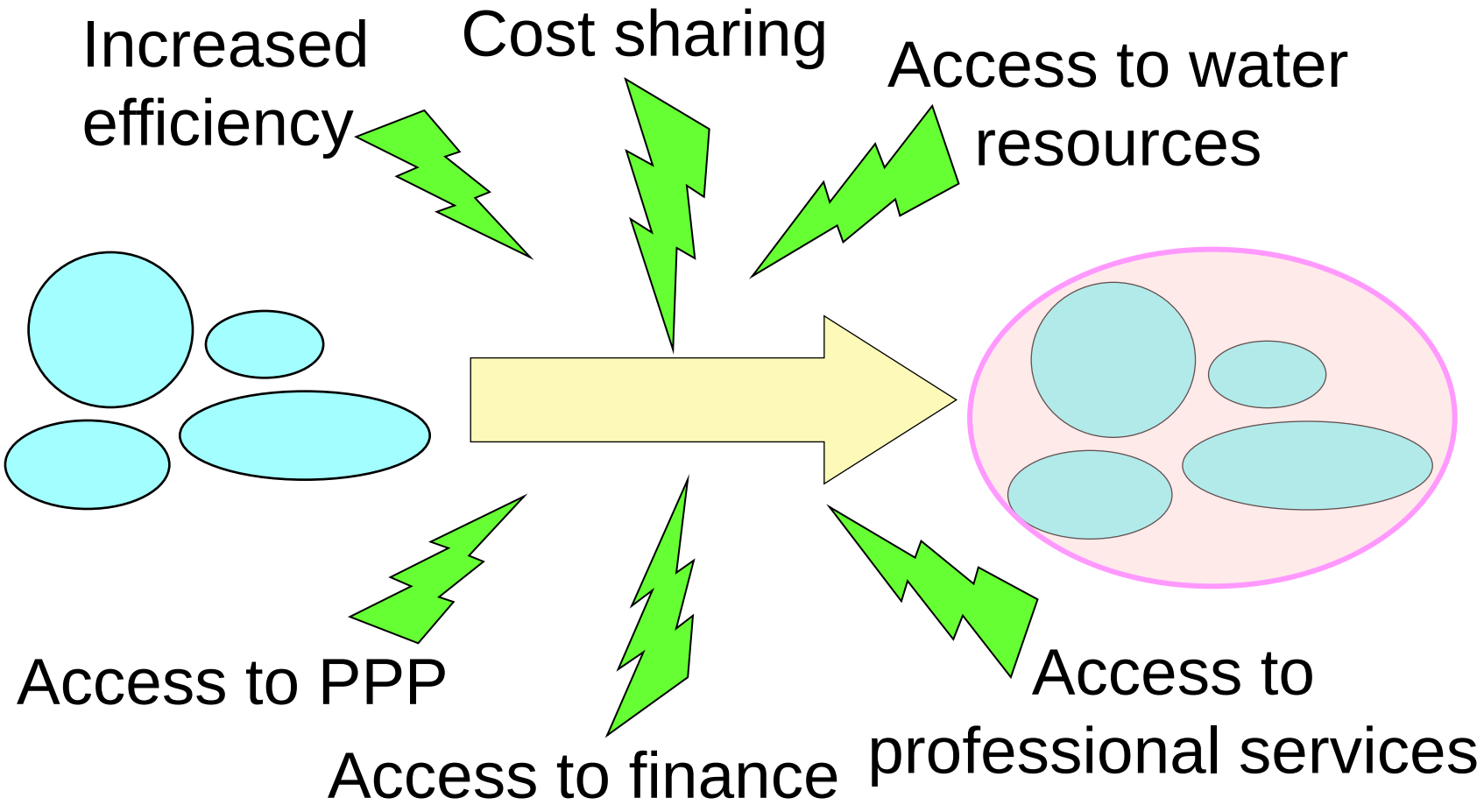
Features of Successful Contracts

- Progressive performance targets
- Incentives depend on performance
- Performance indicators focus on variables that are:
  - Critical to overall performance improvement
  - Cheap and easy to measure
- Tariffs are raised gradually
- Operator has a transition period to improve services
- Operator has full executive control over the business, including employees, equipment, network assets, and customer relationships.

Proposed possible scenarios, conducive to PPP/PFI

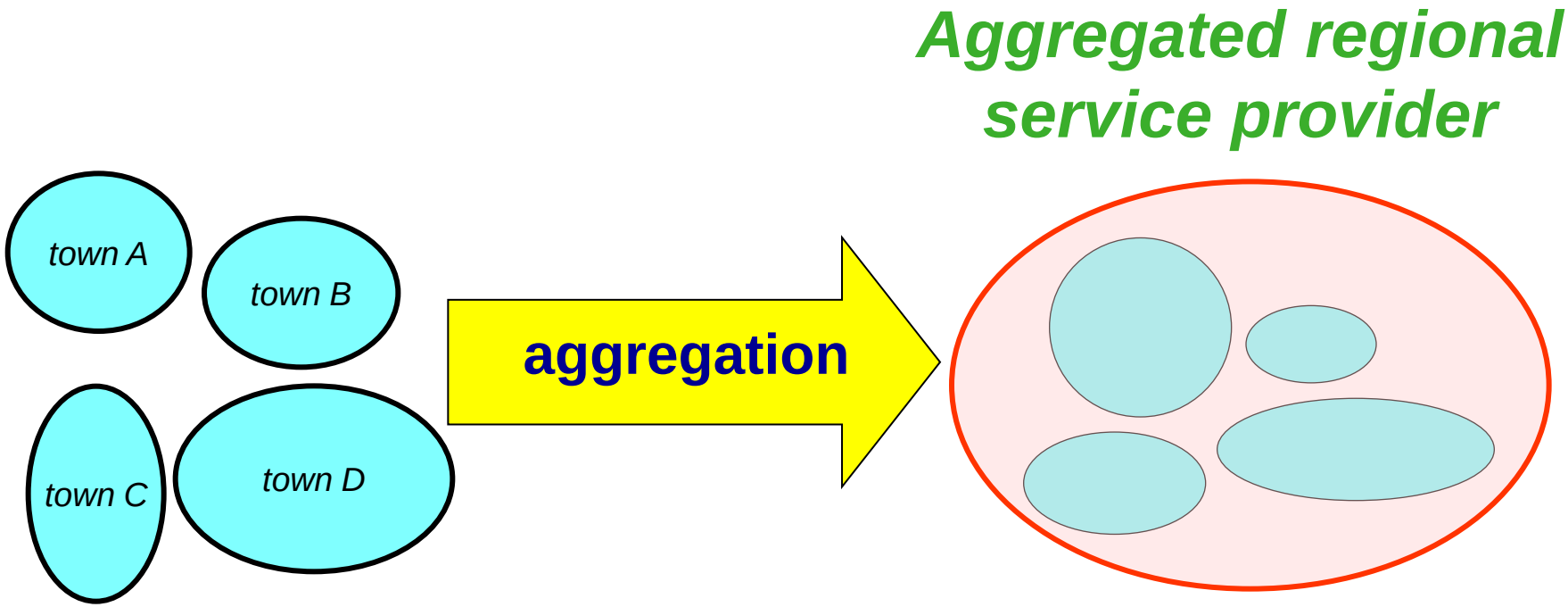
- ✓ Regional entities
- ✓ Unbundling catchment/production from distribution
- ✓ Integrated approach (IUWM)
- ✓ Accelerated targeted action towards improving operational efficiency, in terms of NRW
- ✓ Risk based asset management & development: priority investments based on risk analysis

Drivers for Aggregation

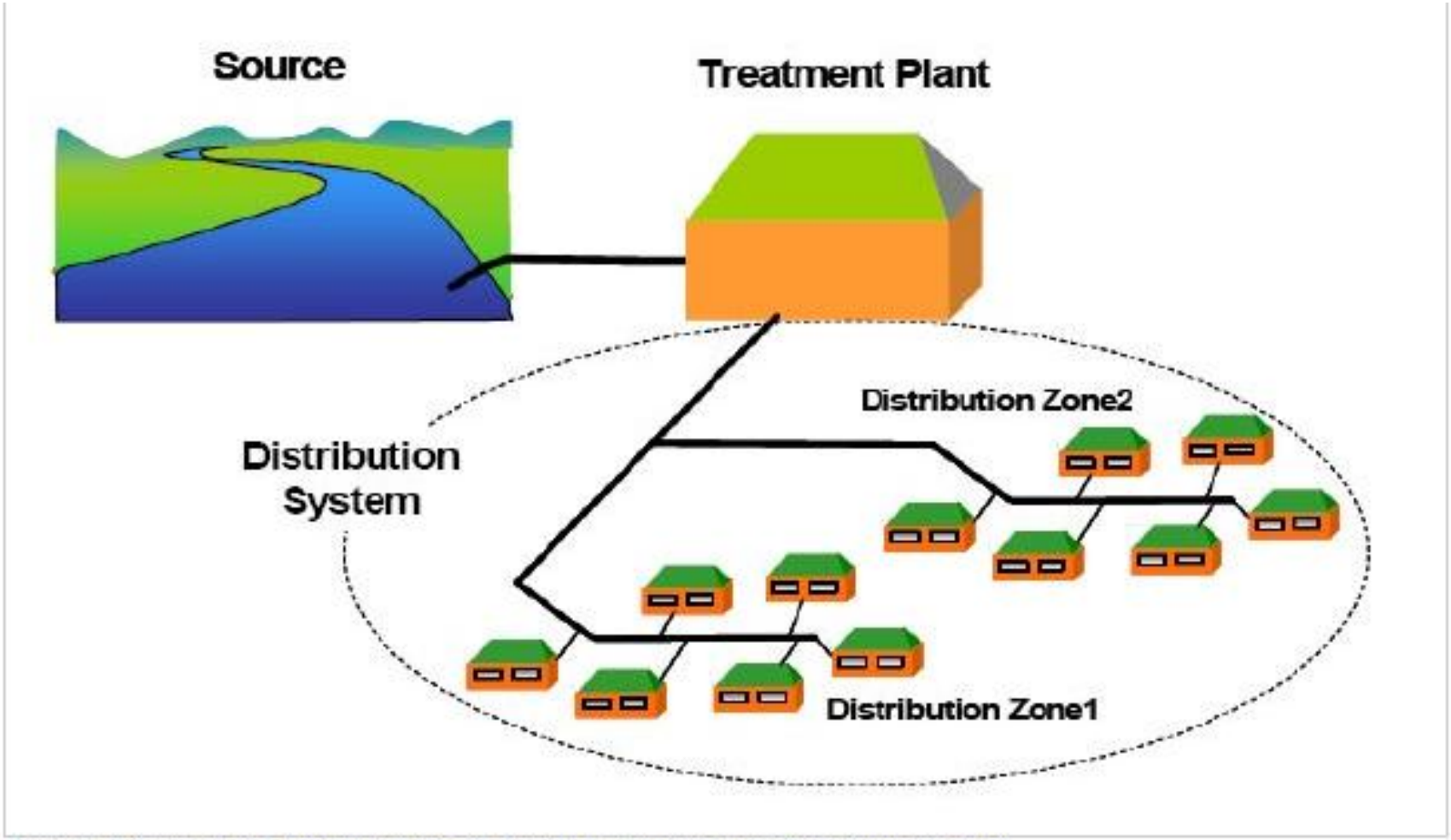


Managing Services through Clustering / Aggregation

Grouping of into a single, **regional structure** for the provision of a service, reflecting realities on the ground



Water



Source: *A Guide to the Ministry of Health Drinking-water Standards for New Zealand.*

Typical scenario for a BOT for water production capacity augmentation

- ✓ Bulk water supply can not meet demand, new capacity is needed
- ✓ Distribution system is functioning well, low Non-Revenue Water (NRW) (ILI below 10)
- ✓ Tariffs allow full cost recovery or can be raised to do so

Conditions for a successful BOT-type transaction

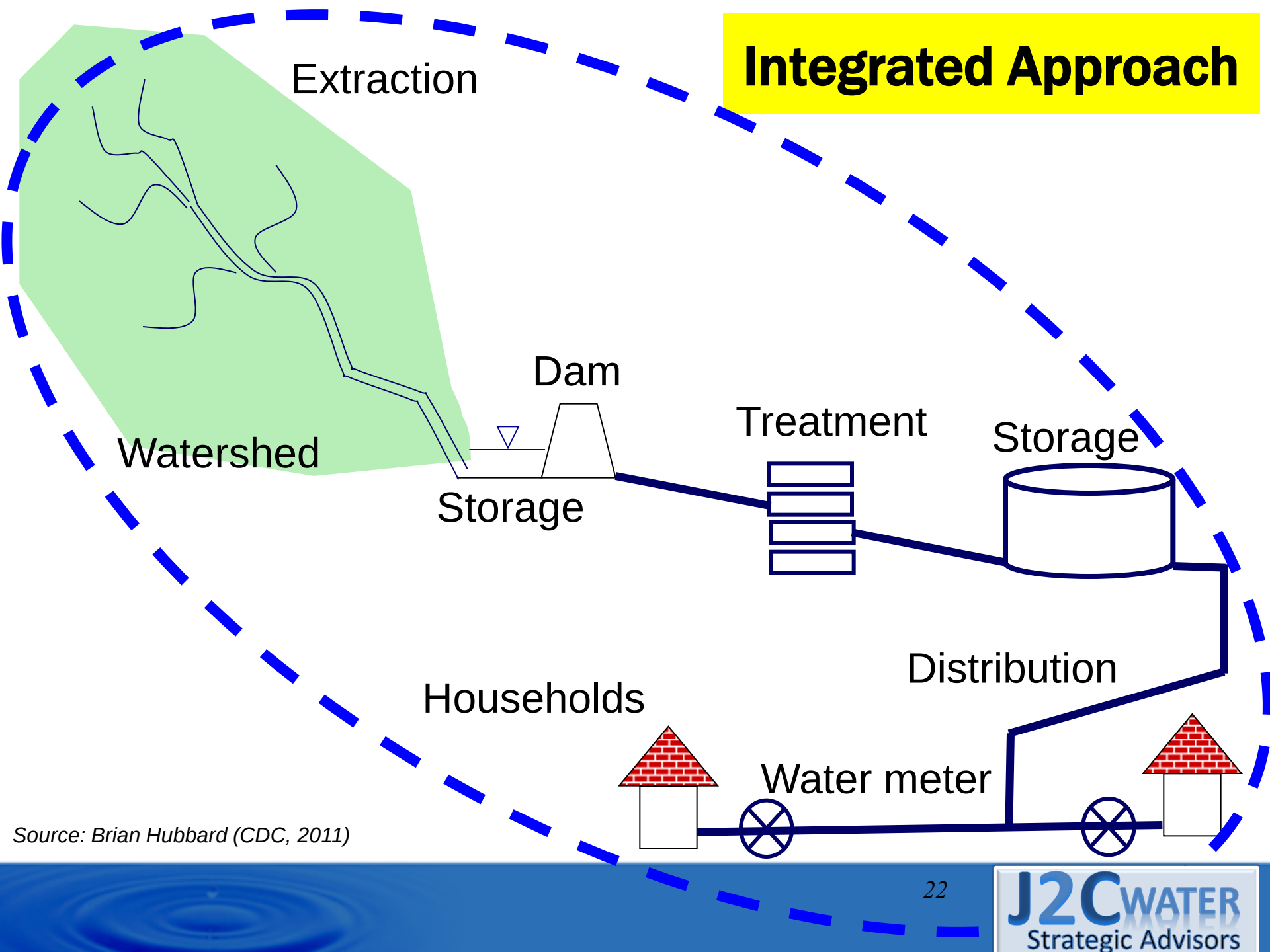
1. Robust « Cash Flows », i.e. a viable project
   - *Strong base case*
   - *Efficient and clear risk allocation between the parties*

2. Strong commitment of the sponsors (investor vs operator & contractor) and, experienced sponsors

3. A good client respectful of its obligations on the long term: *Commitment to and respect of take or pay, etc.*

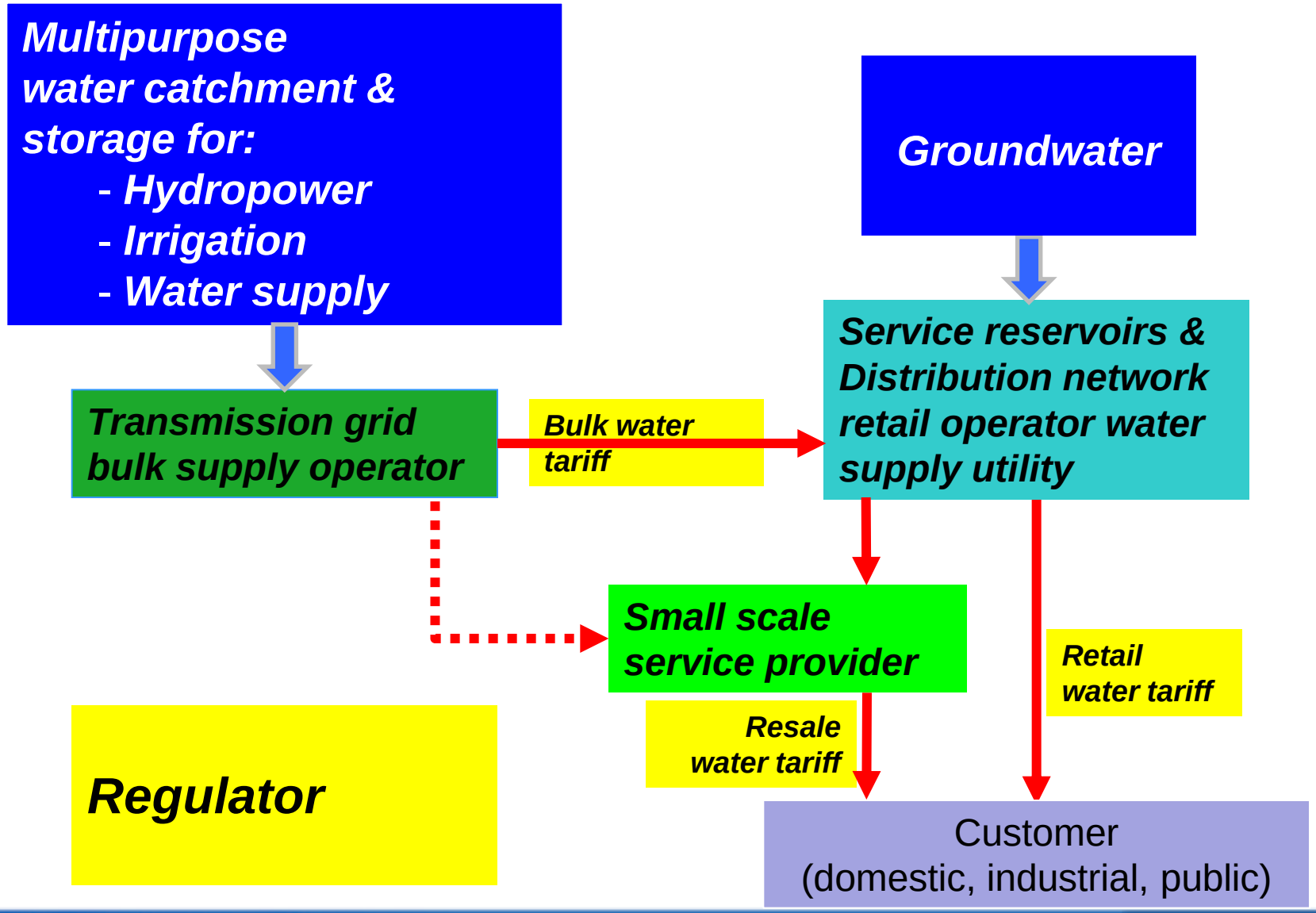
4. Clear legal environment
   - *Enforceable security package*
   - *International arbitration*

Integrated Approach



Source: Brian Hubbard (CDC, 2011)

Unbundling Production from Distribution



Bulk Water Supply: Suitability for PPP option?

- Bulk water supply should be simple to do as a PPP, *in principle with:*
  - ✓ Clear outputs: specification of quantity, quality, pressure …
  - ✓ Specify inflow, specify outflow. Black box in middle

- Helpful to use a "suitability" checklist to suggest whether there is likely to be "Value for Money" by doing a PPP

BOT/DBFO - Role of Economic Regulator

- If there is an economic regulator for the sector, what should be its role in a water supply DBFO?
  Often, the PPP company will not be considered to be a "regulated utility company" because it does not sell to consumers – the bulk water is an intermediate good

- Since the regulator's job is to scrutinize the costs of the utility company, arguably regulator should have approval power over DBFO contract before signing
  - Level of prices (as will be adjusted by contract)
  - Incentives for efficiency?

- Should regulator have *direct* control over price of bulk water (on a continuing basis)?
  But even if it does, the argument could be made that genuine competition for the contract is the best way to "regulate" prices

BOT/DBFO - Integrated Water Resource Planning

- The major weakness of water supply DBFO projects is often the *lack* of integrated water resource planning
- There should be a rigorous least-cost analysis of demand-side and supply-side options for increasing available water
- Convenient to look at some measure of marginal cost of water (per cubic meter) obtained by different means
- Reduce leakage to economic level – very often less expensive way to increase water supply
  (Level where marginal benefit of reducing by one more cubic meter is equal to marginal cost of doing so)

Payment mechanisms

- **Simple Take-or-Pay**

  Pay for specified minimum quantity regardless of whether off-taker takes it or not

- **Hybrid Take-or-Pay** / two-part charge
  - Availability or capacity charge: This could be broken down into capital charge and fixed-O&M charge
  - Variable or volumetric charge: Per cubic meter (electricity for pumping and chemicals for treatment)

Important impact either way if offtaker does not take the available water – increases the effective unit price (then who pays?)

Problem of overestimation of demand

Case: the Izmit (Turkey) water supply BOT (build-operate-transfer)

Izmit (Turkey) water supply BOT

- Largest bulk water BOT in the world at that time, and first in Turkey: Greater Izmit Municipality
  - Rapid pop. growth; hence need for water
    1990: 583,000; 2000: 723,000
  - Also, ecological degradation of natural lake being overdrawn for industrial water supply

- Started out as public sector project; but not enough financing available

- Originally planned largely for City of Istanbul
  Istanbul decided against this; cost of water would be too high

Izmit (Turkey) water supply BOT

- Negotiated deal
- Three-year construction period
- Thames Water was promoter with majority stake
- 15 year duration after commissioning
- Contract signed 1995; effective in April 1996
  - SPV (i.e. PPP company): Izmit Water Company
  - Investments costs: about US$900 million
  - Operation and purchase contract
  - Take-or-pay minimum payment; guaranteed by Treasury

Izmit (Turkey) water supply BOT: *problems*

- ✓ High leakage of water in some areas, up to about 70% NRW (leaks and illegal connections)
- ✓ Water price high
- ✓ Couldn't sell the water to Istanbul water company
- ✓ Treasury had to pay US$390m to company in 1999 and 2000. Payments have continued (at some level)
- ✓ In 2002, Turkish Court of Accounts said plant cost too much, BOT model unsuitable, and **expected offtakers failed to materialise since the water was too expensive**
- ✓ Reported that former and present Turkish Treasury officials were investigated for possible misconduct in approving the government guarantee

DBFO: Conclusions / Lessons - 1

- DBFOs in bulk water supply have many of the advantages of the PPP approach
  Can be good way for water utility company to outsource some functions, and then focus on its main job: *distribution and retail supply to end consumers*

- Make sure demand is not overestimated, and take into account effect of tariff increase (price elasticity of demand)

- Careful integrated water resource planning should be done ahead of time
  - Least cost analysis
  - A DBFO in bulk water supply can be maleficent by allowing a utility to pay less attention to demand-management measures and to leakage reduction

DBFO: Conclusions / Lessons - 2

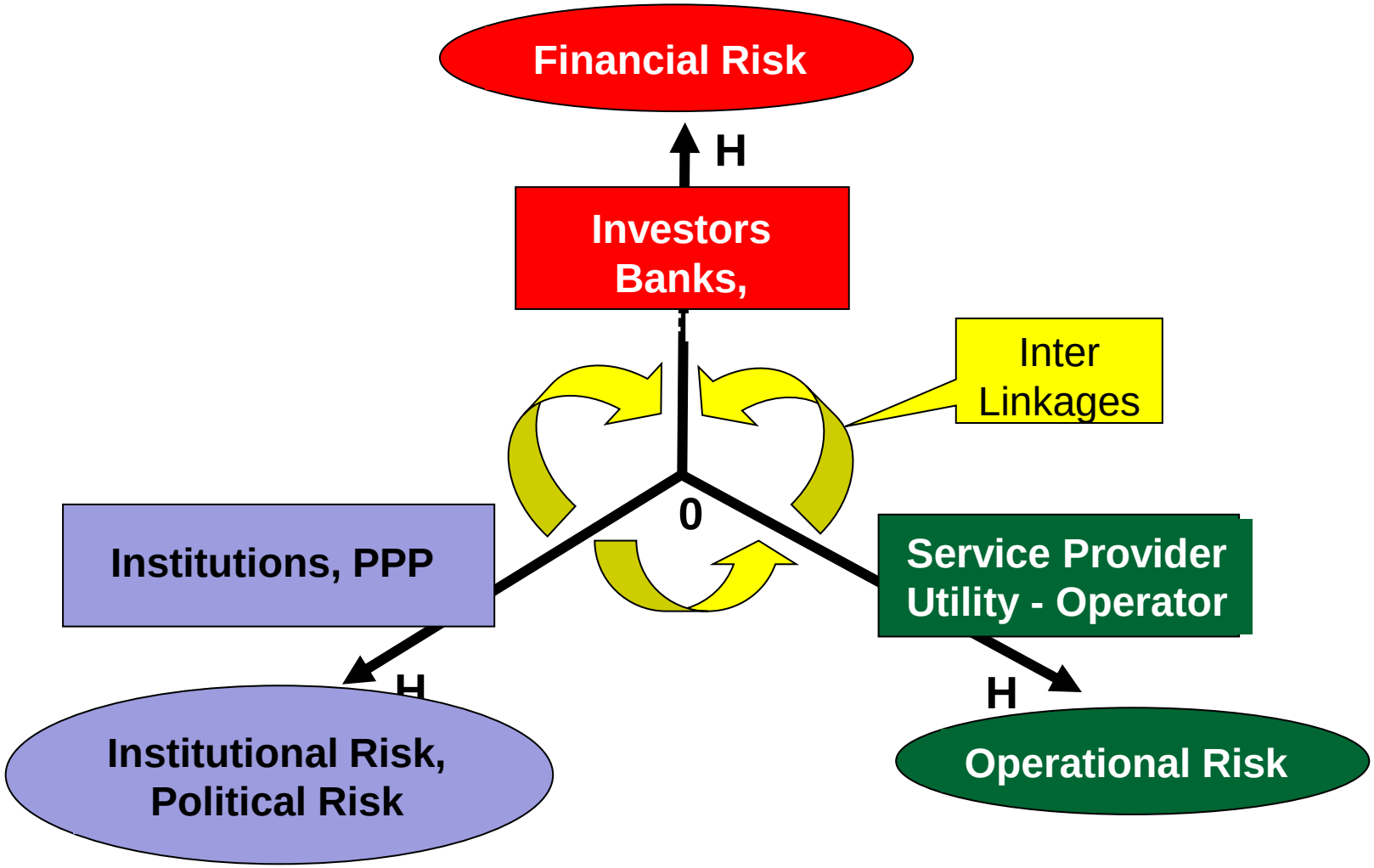
- Likely that ***Partial Risk Guarantee*** from government (local or national) will be needed

- Impact on retail water tariff needs to be examined: **carefully – and early on**

Risk Approach

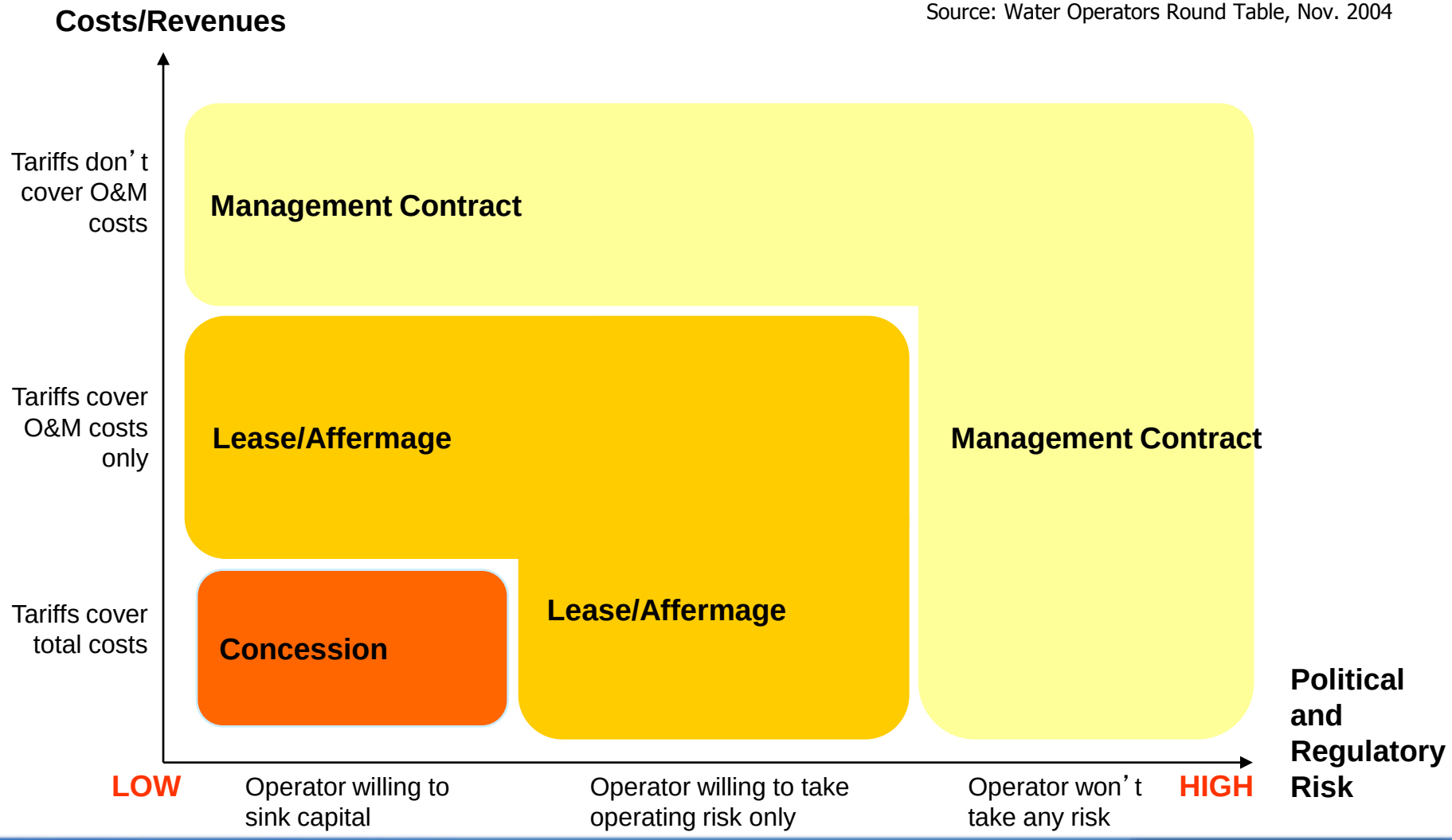
- ✓ Understand the nature of risk
  - The probability of the risk materialising
  - The impact if it materialises
- ✓ The allocation of risk responsibility
- ✓ Do not push risk transfer too far – Needs to be fair and equitable
- ✓ Risk mitigation and migration
- ✓ Impact of remaining risk

Risk Management - a 3-Dimensional View



Choosing the 'best' model according to risk and tariff conditions

Source: Water Operators Round Table, Nov. 2004



Risk Identification Process - 1

Risk identification is a process started in the preparation of the business case as is the heart of a PPP project

Fundamental for every action/area ask

- **WHAT CAN GO WRONG ?**
- **WHAT IS CHANCE THAT IT WILL ? HOW LIKELY IS IT ?**
- **WHAT HAPPENS WHEN IT DOES ? WHAT ARE THE CONSEQUENCES ?**
- **WHO IS RESPONSIBLE ?**
- **WHAT CAN I DO NOW ABOUT IT ?**

Risk Identification Process - 2

Every Project will be different, so as long as it is systematic, it is a personal choice, but the process is the same:

- ✓ **Identify the risk**
- ✓ **Allocate the risk to the party best able to manage it Public /Private/Mixed**
- ✓ **Check acceptability of risk by the allocated party**
- ✓ **Assess the probability**
- ✓ **Assess the impact and quantify**
- ✓ **Consider interrelationships**
- ✓ **Consider mitigation and migration**

Risk Assessment – The Likelihood Index (Probability Factor)

Need to identify the likelihood or probability of the risk occurring. (Cf. also classification of Risk in PPPs below)

- High – Very frequent occurrence
- Medium to high – 50 to 70% chance
- Medium to low – 15 to 50% chance
- Low – 1 to 15% chance

Risk Assessment – The Severity Index (Vulnerability Factor)

Once the risk is identified, need to establish the **severity** of the risk. Severity is defined as the impact of the risk. Need to assess the impact on:

- Public health
- Environment
- Compliance
- Commercial
- Financial
- Reputation

Classification of Risks

Probability

- High : highly likely to occur
- Medium: likely to occur
- Low : unlikely To occur
- Nil

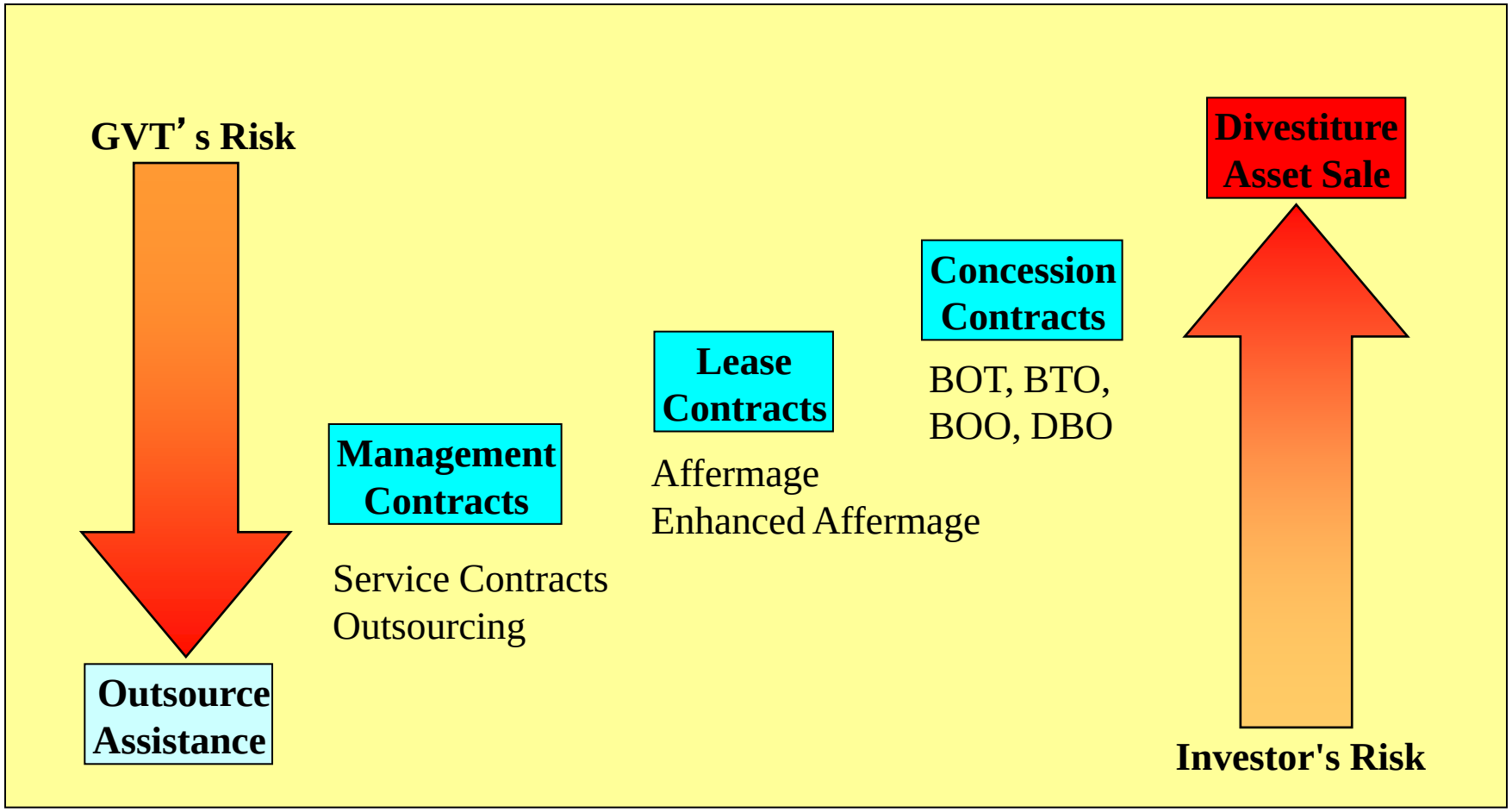
Impact

- High: significant Impact
- Medium : will have an effect
- Low : will have a insignificant effect
- None No impact

Quantification of Risks

- ✓ Assign a Monetary value to the impact for each classification (What will it cost to correct replace)
- ✓ Value at risk = Sum of (monetary value of impact X the probability percentage)
- ✓ Value at risk can be reduced by mitigation measures but costs to be incorporated
- ✓ Mitigation only justified if value at risk is reduced with more than the costs

Choice of Contract for a Balanced Risk Allocation



PPPs in Irrigation: some unique risks for investors

- **Demand risk**: projection for water demand in irrigation are dependent on the evolution of agricultural markets
- **Commercial / political risks**: farmers vs. households
- **Raw water supply risk**: usually priority to municipal/hydro over Irrigation in case of drought

The Political Economy of PPPs

- ✓ The long-term nature of a PPP is the key: if it goes wrong, the negative impact can be great and last a long time
- ✓ Most politicians and officials who are taking decisions about PPPs will not be in office by the time a particular PPP ends
- ✓ There is the tendency to aim for early benefits and put off the painful aspects until much later
- ✓ This is an important reason for “PPP laws” and mandated rigorous appraisal procedures

Mapping PPP options to prerequisites

Requirement Option	Political Commitment	Cost Recovering Tariffs	Developed Regulatory Framework	Operations Baseline Information
Service Contract	Low	Low	Low	High
Management Contract	Moderate	Moderate	Moderate	High
Affermage	High	High	Moderate	High
Lease	High	High	Moderate to High	High
Concession	High	High	High	High
BOT	Moderate to High	High	High	Moderate

Basic principles of good PPP design - 1

- ✓ **Competition for a PPP is a substitute** for competition in the market. But the benefits of competition can be negated by early and frequent renegotiations
- ✓ **Think about whether you need to bundle together**: (i) construction & (ii) operation & maintenance
- ✓ **Need for a tightly specified contract** – as much as possible; If you cannot design a specific contract (if need for flexibility is key), think about whether a PPP is the best way; it may not be …
- ✓ **Focus on outputs not inputs**. Otherwise, the benefits of using the private sector may be reduced

Basic principles of good PPP design - 2

- ✓ **Control, rewards, incentives, risks**
  - Most of the value from PPP comes from transferring *decision rights* and associated *gains or losses* (rewards/penalties)
  - Careful risk allocation is important in a PPP: Generally not beneficial to transfer to the PPP company major risks beyond its control
  - Defining key performance indicators (KPIs) and good measurement of performance are critical (Particularly in case of a fixed price contract (therefore with strong incentives to reduce costs)

- ✓ Ensure that there will be **adequate institutional capacity** for contract oversight and monitoring

PPP Project Preparation

- Taking the time to actually plan a PPP project pipeline with adequate stakeholder engagement at all levels
- Careful and adequate project preparation is a major key success factor for a PPP project.
- A **business case** that establishes the economic and financially viability of the project, risks and reward is necessary

Financing of PPPs

- ✓ Often done using “special purpose company, SPC” or “special purpose vehicle, SPV”, and on “project finance” basis
- ✓ I**n that case, estimated future cash flows of PPP company are of critical importance - A good financial model is a crucial instrument**
- ✓ Characteristics of the financing can have an impact on the public sector – so public sector cannot leave this entirely to the private company

The "Value for Money" debate

- ✓ Often analysed like this: do savings linked to higher private sector efficiency exceed the sum of:
  - incremental transaction costs in the case of the PPP; and
  - difference between the PPP company's cost of capital and government's borrowing rate ?

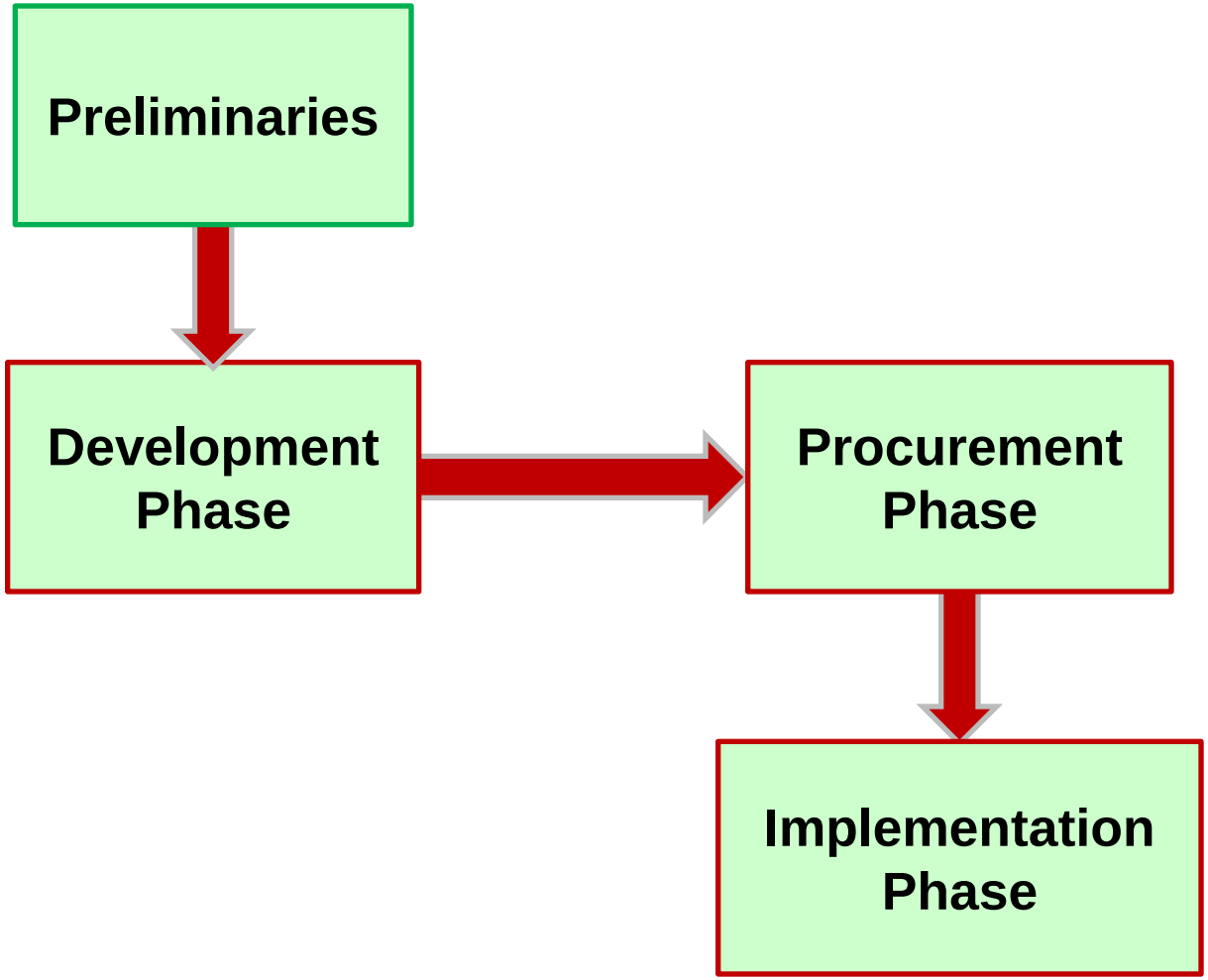
- ✓ Idea that a hypothetical "public sector comparator" should be compared *quantitatively* with the PPP for every PPP project is losing support – a ***qualitative*** assessment may often be more useful

- ✓ No clear universal conclusion as to whether PPPs usually result in value for money. Probably highly dependent on circumstances

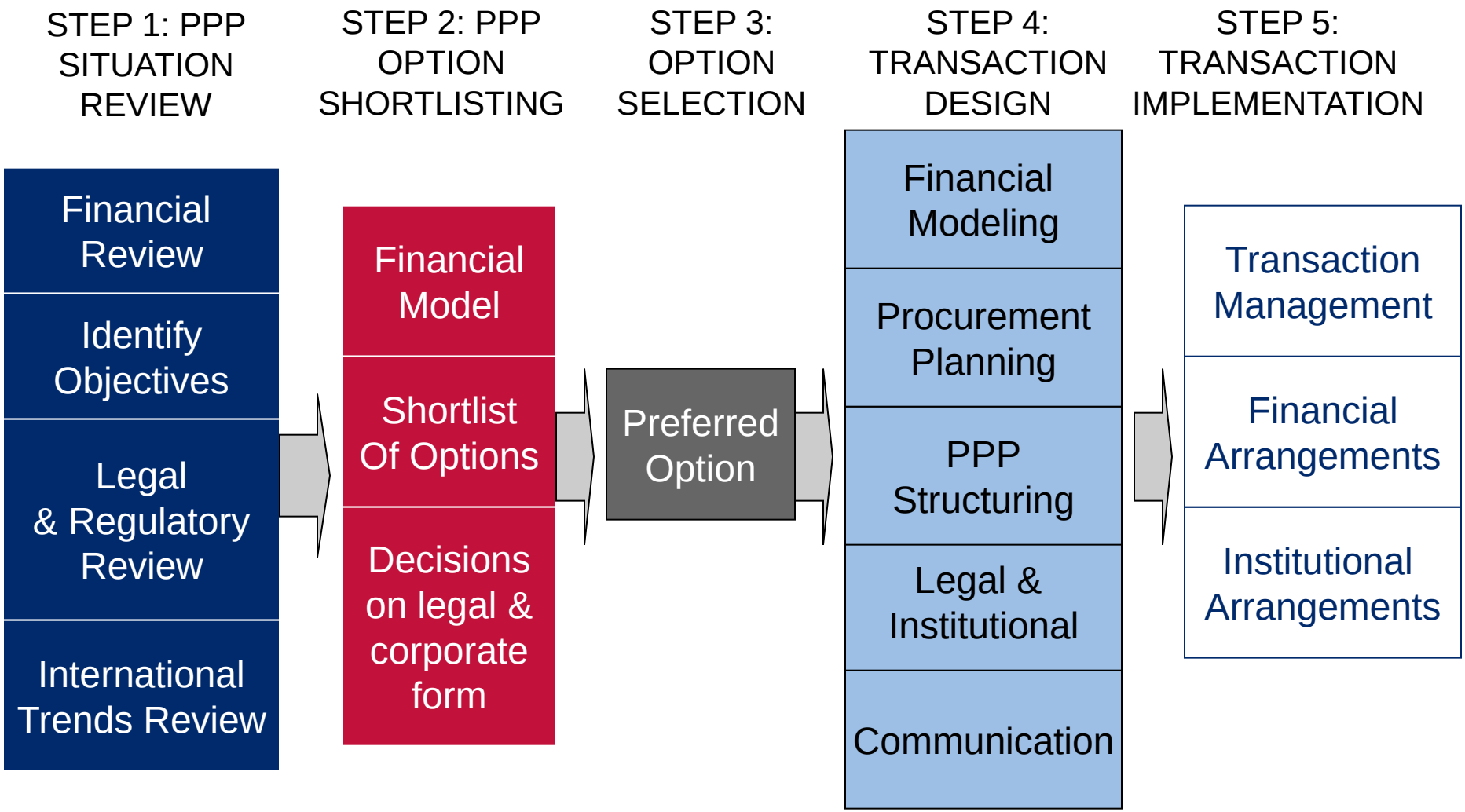
Key Success Factors

1. Favorable Legal, Institutional and Regulatory Framework
2. Project Viability (Economic – Financial – Commercial)
3. Capacity of Public Officials
4. Stable Political Environment
5. Stable Macro-economic Environment
6. Appropriate Risk Allocation & Mitigation
7. Transparent and Efficient Procurement Process

The PPP Lifecycle



Steps in PPP Development



Overview of typical stages in PPP preparation - 1

1. **Project identification**
   What are the features of good pilot projects – to start a PPP program with?

2. **Exploration and preparation of basic PPP concept**
   Be clear about objectives (including pro-poor objectives)
   Perhaps ending with short "Concept Paper"

3. **Initial development of PPP design**, (pre-) feasibility studies
   Ending up with formal document: "Feasibility Report" or "(Outline) Business Case"

Overview of typical stages in PPP preparation - 2

4. **Appraisal** (by someone other than the preparation team
5. **Detailed development of PPP project**, including further studies if needed
6. **Preparation of bidding documents**, including draft PPP contract
7. **Bidding process**
8. **Final negotiations**
9. **Signature of PPP contract**
10. **Financial close** - Financing documents signed and effective

Importance of initial "concept" stage

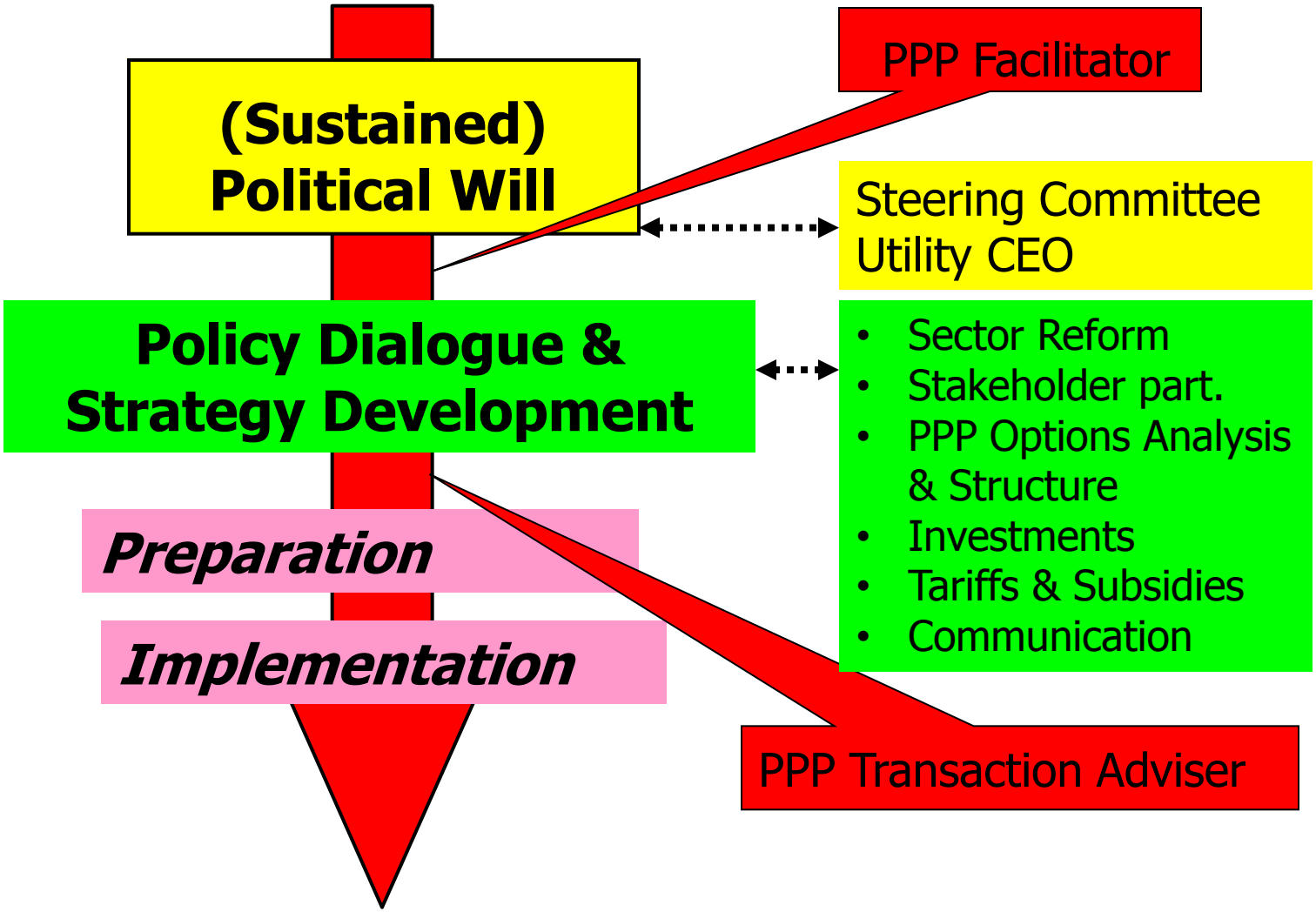
- ✓ **Need to emphasize importance of this early stage**
  - Be very clear about objectives of the PPP (including any pro-poor aspects)
  - Encourage iteration, interaction, stakeholder discussions, retracing steps – don't rush

- ✓ **Goal for this stage: scope out the PPP concept just enough** so that:
  - Major stakeholders can have informed opinions about PPP
  - Critical risks and potential obstacles (and ways to deal with them) can be identified
  - Rough estimate of level of tariffs and payments from budget can be obtained – and initial judgment about whether these will be feasible
  - A tailored scope of work for the consultants to carry on with project preparation can be prepared (feasibility & transaction work)

Market sounding exercise

- Prepare information brief and then invite potential bidders, lenders and investors to a meeting
- Useful to do *before* final stages of preparation of feasibility report (or business case)
- Objectives
  - Communicate context, objectives, requirements, risk allocation, etc., to interested parties
  - Provide opportunity to express views about the project
  - Confirm whether basic scope and design of PPP scheme is sound and achievable
  - Explore new, innovative, and alternative solutions
  - Seek opinions of participants about potential problems, obstacles, risks

PPP Implementation Steps



Selected lessons learnt from experience so far - 1

- Be sceptical. Understand when PPPs can be useful, and when they should NOT be used
- Bring out all important information during PPP preparation
- Don't rush through the early stages of concept development, discussions with important stakeholders, etc. Allow for many iterations, if needed
- Make sure there is high-level political support for the PPP idea
- If the PPP will not be fully supported by user charges, some type of cost-benefit analysis (even quick-and-dirty) should be carried out on the underlying investment project first

Selected lessons learnt from experience so far - 2

- Public authorities need to have the in-house capacity to manage third-party advisors effectively
- Transparency of the process, the resulting deal, and subsequent performance is essential
- There must be adequate capacity for contract monitoring and oversight
- Build in good mechanisms to learn from course of performance (reporting, analysis)

Thank you

J2C WATER
Strategic Advisors