

Source: Vitaliknyc, 2009



Source: Streets of the world, 212



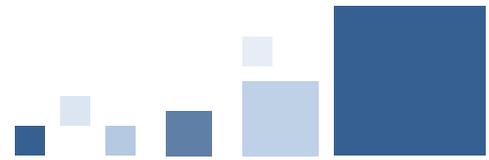
FACILITATING THE REFORM OF ECONOMIC INSTRUMENTS FOR WATER MANAGEMENT IN KYRGYZSTAN

Development and Assessment of the Proposed Options for Reform – Preliminary Results

Pedro Andrés Garzón D. / Alexandre Martoussevich

National Policy Dialogue Meeting – Bishkek, October 18th, 2013

Table of contents



1. Why this project?

2. Introduction of surface water abstraction charges (including non-consumptive uses) for enterprises

3. Reform of environmental pollution fees

→ *Discussion with participants*

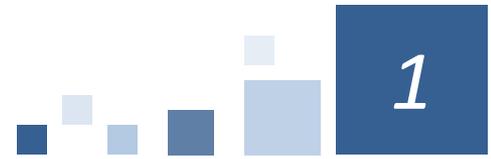
4. Reform of irrigation tariffs

→ *Discussion with participants*

5. The way forward

→ *Discussion with participants*

1. Why this project?



The OECD project:

- Support to further reform in the implementation of economic instruments for water management in Armenia and Kyrgyzstan

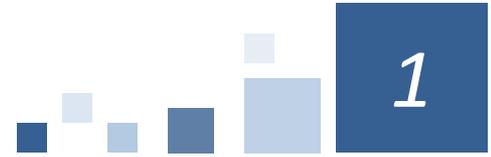
The context:

Ongoing EUWI National Policy Dialogues on integrated water management

Project objectives

- Clarification of **key water management objectives**;
- Development of a **set of options** for the reform of economic instruments;
- Assessment of the **environmental, fiscal and socio-economic impacts** of the proposed options;
- Identify the **requisites for reform** (in terms of regulatory and institutional frameworks, governance...).

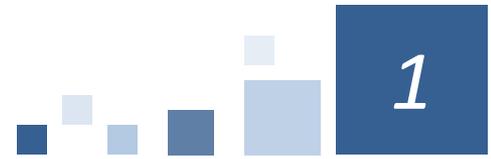
1. Why this project?



Recommended reform of economic instrument for water management in Kyrgyzstan:

- Introduction of surface water abstraction charges (including non-consumptive uses) for enterprises
- Reform of environmental pollution fees
- Reform of irrigation tariffs
- Reform of user charges for urban water supply and sanitation,
- Introduction of a special land tax for Issyk-Kul Biosphere reserve
- Product tax on selected water polluting products complemented by a deposit-refund system

1. Why this project?



This presentation summarizes the preliminary results for 3 of the instruments selected for the project, including:

- *The scenarios for reform*
- *The expected impacts of the proposed scenarios*

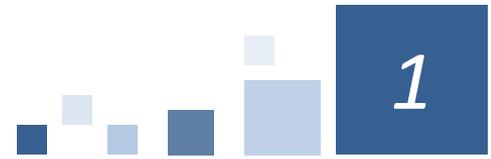
...and it introduces some open questions to stimulate discussion

Introduction of surface water abstraction charges (including non-consumptive uses) for enterprises

The objectives of the reform

- **Short-term:** Introduction of surface water abstraction charges for industries, to hydropower and fisheries (based on permits)
- **Medium & long-term objectives:** Increase of all charges related to sensitive water (including for irrigation) to cover i) all recurrent expenses involved in adequate water management activities and ii) all resource costs of water abstraction

1. Why this project?



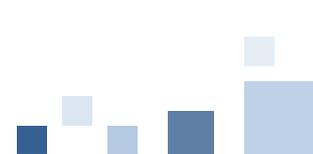
The priorities for the reforms proposed

- **Fairness:** all user groups must be charged in a fair and balanced way (charge rates closer to actual environmental and resource cost of abstracting water.);
- The full application of the **polluters pay and beneficiary pay principle.**
- Harness **source of revenue** for water management;
- Introduce a **more direct link** between revenues from water related instruments and water management expenditure

Questions and issues to be addressed for each scenario

- ✓ Is there a consensus on the need for reform?
- ✓ Are the levels of ambition in the scenario appropriate?
- ✓ Could some opposition be foreseen?
- ✓ What is the political acceptability
- ✓ Practical steps which could be made towards implementation
- ✓ An Action Plan as the way forward: what needs to be done in the short/ longer term?

Scenario I



- ✓ Abstraction fees are created and introduced as a revenue generating instrument and cover the industry, utilities and hydropower plants
- ✓ Introduction of licensing system for issuing permits to abstraction of surface water identified over a fixed volume threshold 0.1 KGS/m³ for all.
- ✓ Application of all fees at permit level, i.e. water users should pay for the limit volume indicated in their permits =“take it or leave it” formula
- ✓ All funds go to water management: 75% of all revenues return to water management bodies and 25% for research on water by the State

Expected additional revenues (in mln. KGS) Scenario 1

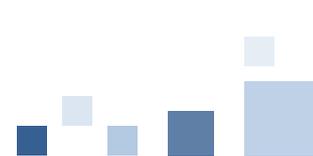
Source	Revenues in 2011	Expected revenues
Industry and fisheries	0	50
Water utilities	0	22
Hydropower	0	290
Total	0	372

Scenario IIa

- ✓ This scenario includes the abstraction charges of Scenario I and also accounts for the potential of irrigation in the scheme.
- ✓ In this case the charges per m³ are lifted to 1 KGS for consumptive uses and to 0.5KGS for non-consumptive uses
- ✓ The objective of this scenario is to cover more expenditures related to water management (ideally, all O&M and sector governance costs)
- ✓ All funds go to water management

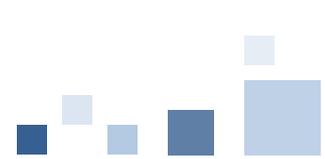
Expected additional revenues (in mln. KGS) Scenario 2a		
Source	Revenues in 2011	Expected revenues
Industry and fisheries	0	500
Water utilities	0	220
Hydropower	0	1450
Irrigation	0	7447
Total	0	9617

Scenario IIb - Description

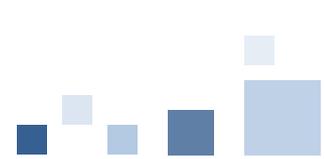


- ✓ This scenario includes the new abstraction charges introduced in Scenario IIa.
- ✓ Covers part of the projected expenditures for water management, while accounting for potential affordability and political acceptability issues which might arise (and which still needed to be assessed at the moment the scenario was developed)
- ✓ Rates are set at 1 KGS per m3 for consumptive uses
- ✓ For non-consumptive water use, the rate is set at 10% of the rate for other types of water uses to account.

Expected additional revenues (in mln. KGS) Scenario 2b		
Source	Revenues in 2011	Expected revenues
Industry and fisheries	0	500
Water utilities	0	220
Hydropower	0	290
Total	0	1010

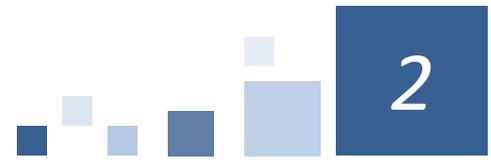


Scenario I	Scenario IIa	Scenario IIb
+	0/+	0/+
<ul style="list-style-type: none">✓ Generation of additional revenues that can be re-allocated to water management and research✓ Marginal economic impact is expected at general industry level	<ul style="list-style-type: none">✓ Promotion of innovation and increase of overall water efficiency levels. However, limited known effect on industry✓ Some limited negative economic impact can be expected for hydropower production (if additional costs cannot be passed onto customers), fisheries and some industrial sectors (linked both to the large volumes of water and electricity used).	<ul style="list-style-type: none">✓ Promotion of innovation and increase of overall water efficiency levels, although most of changes are expected to come from energy prices and pollution control measures.✓ Very limited negative economic impact can be expected for fisheries and some industrial sectors.



Scenario I	Scenario IIa	Scenario IIb
++	+	+
<ul style="list-style-type: none"> ✓ Some impact can be expected on households and, consequently, on potentially vulnerable social groups, however, the principal potential source of change is would cause the electricity tariff to increase by around 5% from 0.7 to 0.74 KGS per kWh, however this change, coupled with a marginal raise in water bills does not substantially change the affordability of both services. 	<ul style="list-style-type: none"> ✓ Electricity bills could increase by much as some 20%, meaning a non-negligible economic impact on household budget. ✓ Affordability levels of water supply services are not expected to change significantly, however, changes in the irrigation rates can have both direct and indirect impacts on rural households as food producers and water consumers. 	<ul style="list-style-type: none"> ✓ Households' electricity bills are expected to increase, on average, up to 5%. Thus there will be impact on households disposable income but this is considered manageable. ✓ Current affordability levels of water supply services are not expected to change

Environmental impacts



Scenario I	Scenario IIa	Scenario IIb
+	++	+

<ul style="list-style-type: none">✓ At this level of charge, only marginal reductions in water use are expected.	<ul style="list-style-type: none">✓ The improved water management is expected to have a strong positive environmental impact.✓ At the level of the single user, water use is expected to decrease. However, the application at permit level is likely to entail a re-allocation of water use, and the total abstracted quantity could increase beyond the permits (Jevons'paradox)	<ul style="list-style-type: none">✓ Revenues generated under this scenario would cover part of the projected expenditures for water management (O&M and capital)
--	--	--

Reform of Environmental Pollution fees

The objectives of the reform

- **Short-term objective:** Improve the implementation of the current fee system by i) revising the calculation methodology and ii) making industries discharging pollutants into drains and Vodokanals to pay.
- **Medium- and Long-term objectives:** Removal of all exemptions and implement the current fee system. Revenues from the fees should cover all service and resource costs of water pollution and provide a clear incentive for pollution reduction

Scenario I



- ✓ Fees levels are kept (+permits) but calculation system is simplified
- ✓ Utilities (Vodokanals) are included
- ✓ Funds keep feeding both local & Republican fund on environmental protection.
- ✓ Optimal budget for reference is the indexed version of 280 KGS as base fee in 2003 reform proposal to ensure water protection.

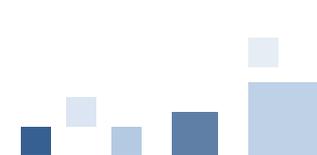
“Optimal” water management budget (in mln. KGS)

Function	Budget in 2011	Optimal budget
Water protection measures	4,41	2500
SAEPF on water quality	4,16	2500

Expected additional revenues (in mln. KGS)

Source	Revenues in 2011	Expected revenues
Industry	3.21	4,2
Water utilities	0	0,8
Total	3.21	5

Scenario IIa

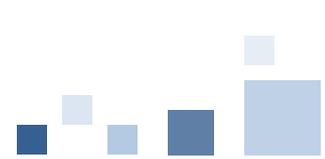


- ✓ Scenario I and no more exceptions.
- ✓ Base fee is not only raised to 611 KGS and is also calculated according the actual discharges (not based on the permits)
- ✓ Covers more expenditures related to water management
- ✓ All expected revenues go to water management and any social programme needed to take into account the potential effect of having the Vodokanals paying the fees

"Optimal" water management budget (in mln. KGS)		
Function	Budget in 2011	Optimal budget
Water protection measures	4,41	2500 ?
Total budget of SAEPF on water quality	4,16	2500 ?

Expected additional revenues (in mln. KGS)		
Source	Revenues in 2011	Expected revenues
Industry	3.21	1961,74
Water utilities	0	444,19
Other polluters	0	?
Total	3.21	Approx. 2500

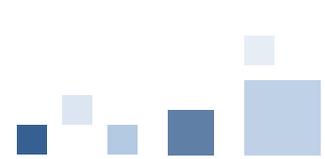
Scenario IIb - Description



- ✓ This scenario includes the new abstraction charges introduced in Scenario I.
- ✓ Covers part of the projected expenditures for water management,
- ✓ Rates are set at 60 KGS per tonne of pollutant as the basic rate (a 10th of the optimal budget calculated needs)
- ✓ All expected revenues are dedicated to water management and any social programme needed to take into account the potential effect of having the Vodokanals paying the fee

Expected additional revenues (in mln. KGS)		
Scenario 2b		
Source	Revenues in 2011	Expected revenues
Industry	3,21	252
Water utilities	0	40
Others	0	?
Total	3,21	Approx. 392

Economic impacts

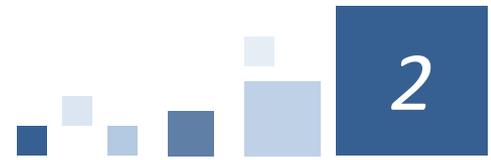


Scenario I	Scenario IIa	Scenario IIb
+ / 0	0	+ / 0
<ul style="list-style-type: none"> ✓ Application of fees at permit level with improved calculation of fee: (i) Reduction of average reporting costs for businesses and transaction costs for public administration; ✓ Generation of additional revenues through improved collection ✓ Marginal economic impact is expected at general industry level by the minimum reform. 	<ul style="list-style-type: none"> ✓ Clear promotion of innovation 	<ul style="list-style-type: none"> ✓ Application of fees at permit level with improved calculation of fee: (i) Reduction of average reporting costs for businesses and transaction costs for public administration; ✓ Generation of additional revenues ✓ Marginal economic impact is expected at general industry level by the minimum reform.

Social impacts

Scenario I	Scenario IIa	Scenario IIb
+	+	+
<ul style="list-style-type: none">✓ Some impact can be expected on households and, consequently, on potentially vulnerable social groups through vodokanals.✓ More impact can be expected in Bishkek and the Issy-Kul Oblast.	<ul style="list-style-type: none">✓ More impact can be expected in Bishkek and the Issy-Kul Oblast.✓ Affordability levels of water supply services are not expected to change significantly, however they need to be properly estimated (possibly within this project).	<ul style="list-style-type: none">✓ Some impact can be expected on households and, consequently, on potentially vulnerable social groups through the transfer of cost from Vodokanals.✓ The fee is expected to start creating an incentive for less untreated discharges with potential lower pollution levels, clearly beneficial for health

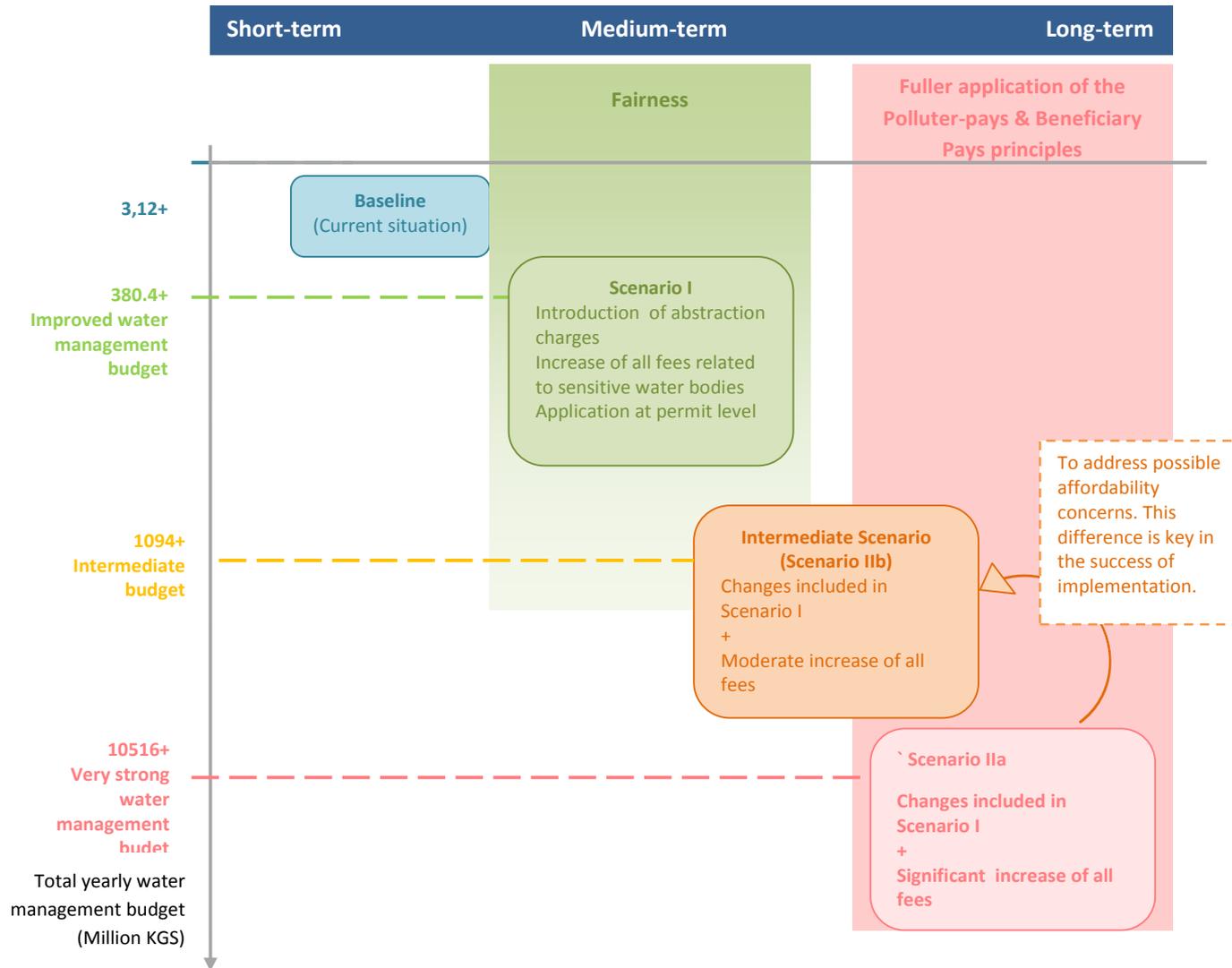
Environmental impacts



Scenario I	Scenario IIa	Scenario IIb
+ / 0	++	+

<ul style="list-style-type: none">✓ At this level of charge, only marginal reductions in water pollution are expected.	<ul style="list-style-type: none">✓ The improved water management is expected to have a very strong positive environmental impact.✓ At the level of the polluters untreated quantities of water are expected to decrease.	<ul style="list-style-type: none">✓ Revenues generated under this scenario would cover part of the projected expenditures for water management (O&M and capital)
--	--	--

The proposed scenarios for the reformed fees and introduced charges in a nutshell



Questions and issues to be addressed for each scenario

- ✓ Is there a consensus on the need for reform?
- ✓ Are the levels of ambition in the scenario appropriate?
- ✓ Could some opposition be foreseen?
- ✓ What is the political acceptability
- ✓ Practical steps which could be made towards implementation
- ✓ An Action Plan as the way forward: what needs to be done in the short/ longer term?

The objectives of the reform;

- **Short-term objective:** Raising financing earmarked revenues for strengthening water management bodies.
- **Medium- to Long-term objective:** Ensuring the full recovery of the costs of irrigation services. In this respect several reform scenarios were considered. In addition to gradual increases in the tariff, a shift to a two-part tariff system.

Scenario Ia



- ✓ Reducing and eventually removing the subsidy to irrigation service provision;
- ✓ Gradually increase tariffs over a period of perhaps 10 years= from 0.03 to 0.3 KGS/m³.
- ✓ This approach allows to partially cover current O&M costs but falls short of optimal management.

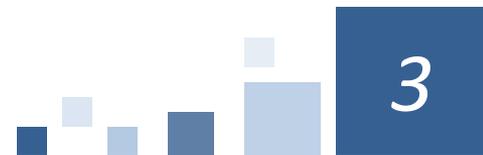
“Optimal” water management budget (in mln. KGS)

Function	Budget in 2010	Optimal budget
Routine repairs	59.1	
Other operating costs	67.7	
Total budget of DWM&M	681.6	1064

Expected additional revenues (in mln. KGS)

Source	Revenues in 2010	Expected revenues in 10 years
Irrigation tariffs	68.4	684

Scenario Ib



- ✓ This scenario represents a deeper reform than Scenario I: Introduction of two-part tariff system
- ✓ Covers more expenditures related to water management (ideally, all current O&M and sector governance costs) without state subsidies
- ✓ All expected revenues go to water management and any social programme needed to take into account the potential effect of having the Vodokanals paying the fees.

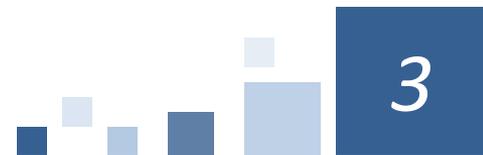
“Optimal” water management budget (in mln. KGS)

Function	Budget in 2010	Optimal budget
Routine repairs	59.1	
Other operating costs	67.7	
Total budget of DWM&M	681.6	1064

Expected additional revenues (in mln. KGS)

Source	Revenue s in 2010	Expected revenues
Fixed costs of tariff		164
Variable costs of tariff		206
Irrigation tariffs	68.4	
Total	68.4	370

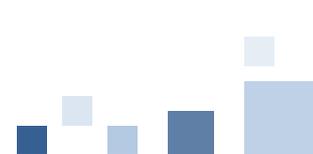
Scenario IIa



- ✓ This scenario includes the new two part tariff introduced in Scenario Ib.
- ✓ Covers ALL O&M costs (estimated at 200USD/ha)
- ✓ Increase of tariff rates

Expected additional revenues (in mln. KGS)		
Source	Revenues in 2010	Expected revenues
Fixed costs of tariff		2162
Variable costs of tariff		2060
Irrigation tariffs	68.4	
Total	68.4	4222

Scenario IIb - Description



- ✓ This scenario includes the new two part tariff introduced in Scenario Ib.
- ✓ The objective of this scenario is to cover all O&M costs (estimates at 36 USD/ha)
- ✓ Increase of tariff rates:

"Optimal" water management budget (in mln. KGS)		
Function	Budget in 2010	Optimal budget
Routine repairs	59.1	
Other operating costs	67.7	
Total budget of DWM&M	681.6	1064
Expected additional revenues (in mln. KGS)		
Source	Revenues in 2010	Expected revenues
Fixed costs of tariff		822
Variable costs of tariff		824
Irrigation tariffs	68.4	
Total	68.4	1646

Economic impacts

Scenario Ia	Scenario Ib	Scenario IIa	Scenario IIb
0	0	+/0	+/0
<ul style="list-style-type: none"> ✓ Fee changes can be implemented at low transaction costs for public administration; ✓ Generation of additional revenues in the long run to partially cover O&M costs; 	<ul style="list-style-type: none"> ✓ Increase in the promotion of innovation towards more water efficiency use 	<ul style="list-style-type: none"> ✓ Increase in the promotion of innovation towards more water efficiency use ✓ Revenue levels ensure high levels of O&M 	<ul style="list-style-type: none"> ✓ There is an incentive toward innovation towards more efficient use of water ✓ Revenue levels ensure high levels of O&M

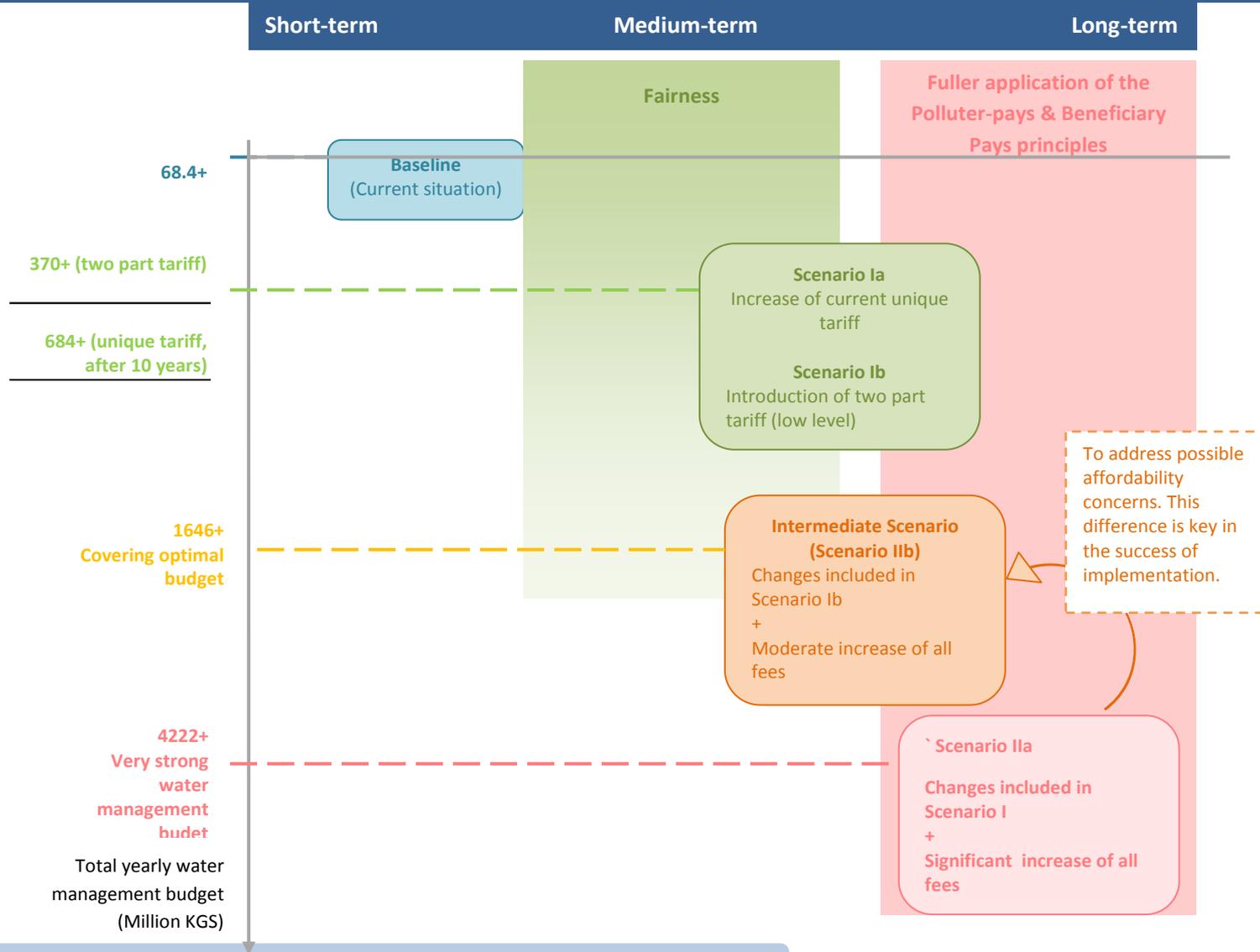
Scenario Ia	Scenario Ib	Scenario IIa	Scenario IIb
+	+	+	+
<ul style="list-style-type: none"> ✓ Given the known willingness to pay for irrigation water, only marginal effects are expected in terms of affordability 	<ul style="list-style-type: none"> ✓ Affordability levels of water supply services are not expected to change significantly, however less dependence from operational subsidies offer more space to social programmes if needed. 	<ul style="list-style-type: none"> ✓ Affordability levels of water irrigation services could change significantly, however less dependence from operational subsidies offer more space to social programmes if needed. ✓ Indirect effect on food prices need to be investigated 	<ul style="list-style-type: none"> ✓ Affordability levels of water could change. ✓ Indirect effect on food prices need to be investigated

Environmental impacts

Scenario Ia	Scenario Ib	Scenario IIa	Scenario IIb
+/0	+	++/+	+

<ul style="list-style-type: none"> ✓ At this level of fees, no significant changes in water level usage are expected. 	<ul style="list-style-type: none"> ✓ Water availability is more stable across the system 	<ul style="list-style-type: none"> ✓ Water availability is ensured and is less vulnerable to climate change ✓ Energy efficiency ✓ At the level of the single user, water use is expected to decrease. However, total quantity used may not decrease ✓ Potential development of private boreholes if cheaper 	<ul style="list-style-type: none"> ✓ Water availability is ensured and is less vulnerable to climate change ✓ At the level of the single user, water use is expected to decrease. However, total quantity used may not decrease
--	---	---	---

The proposed scenarios for the reformed irrigation tariffs



Questions and issues to be addressed for each scenario

- ✓ Is there a consensus on the need for reform?
- ✓ Are the levels of ambition in the scenario appropriate?
- ✓ Could some opposition be foreseen?
- ✓ What is the political acceptability
- ✓ Practical steps which could be made towards implementation
- ✓ An Action Plan as the way forward: what needs to be done in the short/ longer term?

...the way forward

→ the reform of both instruments can deliver positive (environmental and social outcomes, with manageable negative economic impacts (or potentially slightly positive)

Reform of level and structure of water abstraction and environmental fees

→ A progressive implementation could be envisaged

Scenario I

raise basic revenues base for optimal water management

Scenario IIb

Improve water management budget and ensuring fairness

Scenario IIa

Fuller implementation of Polluter and Beneficiary's pay principles

Short term

Medium term

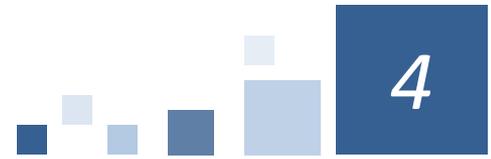
Long term

- The results of the impact assessment will be refined, particularly to improve the range and calibration of quantitative indicators
- The feasibility of the proposed scenarios for reform will be further investigated
- Presentation of Action Plan is to be developed for each preferred scenario
- Based on the project outcomes a short policy document will be prepared to support future implementation of the reform

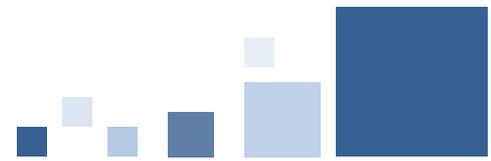
Elements for developing the Action Plan

Instrument	Action Proposed	Responsible institutions	Time frame	Resource implications (Revenues/Costs)	Success Criteria	M&E	Completion date
Abstraction Charge	Prepare draft of supportive law to the Water Code	DWM&M	6 months	Mobilise legal team ?need of external assistance?	Based on previous successes and failures	Green paper presented to government for future proposal to parliament	June 2014

Summary of discussions



To be completed during NPD session



For additional information or clarification, please contact :

Pedro Andrés Garzón Delvaux
ACTeon
5, Place Sainte Catherine
68 000 Colmar – France
Tél. +33 3 89 47 39 41
Email a.garzon@acteon-environment.eu

**Благодарю вас за
внимание!**