



Identification of a cost recovery system for flood protection in Romania

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Project Manager

The Context

- ❑ EU Water Framework Directive (WFD) requires sustainable use of water by using economic instruments
- ❑ Article 9 of the WFD introduces the principle of **Cost Recovery** for water services in accordance with the polluter pays principle
- ❑ Water services according EU commission:
 - *abstraction, impoundment, storage, treatment and distribution of surface water or ground water for the purposes of hydroelectric power production, navigation and **flood protection***

Currently in Romania: no dedicated cost recovery system related to flood protection.

Cost recovery framework

The rate of cost recovery of water services

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V. Service Revenues

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I. Capital Costs +
II. O&M Costs +
III. Admin. Costs +
IV. Environmental & resource costs)

Supply cost

Full cost

The Project

“What kind of cost recovery system could be implemented to provide sufficient funding to finance the activities related to ensure flood protection and meet the EU Water Framework Directive (art. 9) & EU Flood Directive in Romania?”

Phases

- Phase 1:** Inventory of the current costs and key figures
- Phase 2:** Identify a blueprint for a financial system
- Phase 3:** Test the identified system in two RBA's

Phase 1: Inventory of the current costs and key figures

Survey data	– USED DATA -
Existing water works	Gross list of water infrastructure assets currently under administration of the RBA and reported in the RBA accountancy system, categorized into 5 categories: dikes, regulation works, dams and artificial lakes, other water works, non-water works); initial investment value and replacement value; implementation date and estimated economic lifetime.
New infrastructure	Overview of proposed (new) works and estimated investment value as per the (updated) River Basin Development Plan 2013-2016.
O & M	Coefficients applied for (normative) estimation of annual costs for maintenance and repair of the hydro-technical constructions under administration of the RBA's as approved in Romania by the Minister Order 819/2007.
Financing	Overview of sources of finance of investments in water works in Romania initiated under the Ministry of Environment and Climate Change in the period 2009-2013.
Revenues	Total value of revenues collected in the RBA's from raw water supply contribution and waste water discharge in the period 2008-2013. Yearly, revenues collected at the river basin level are transferred to ANAR and then redistributed to the RBA's based on prioritization of O&M expenses.

Phase 2

Identify a blueprint for a financial system

- Study of Romanian institutional set up
- Definition of scenario's
- Confrontation with Dutch model
(OECD: 8.5 score)
- SWOT analysis
- Blue print



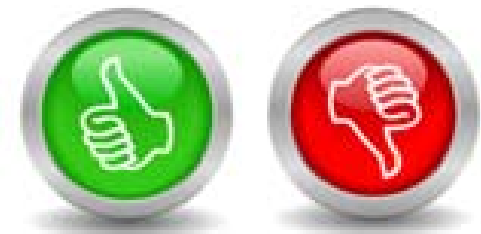
Definition of scenario's

No.	Description Scenario	Advantage	Disadvantage
0	Current situation: no change	No cost of change	Nothing will change: no sustainable system
1	Current situation +: covering O&M costs up to 100%	improvement of tasks execution of ANAR & RBA's	no solution on longer term, only short term
2	Centralized: state budget	simple and clear approach	step back from cost recovery
3	Mixed centralized (registered rivers) and decentralized (unregistered rivers): state budget + retributions	tasks are executed at most decentralized level, flood protection of national rivers has status of national importance	re allocation of budgets and costs, responsibility discussion, ...
4A	Mixed centralized and decentralized (all watercourses): local retributions	multi governmental approach, all kinds of floods included	complex administration/ responsibilities/ legal framework, responsibility discussion, ...
4B	Mixed centralized and decentralized (all watercourses): (<u>differentiated</u>) local retributions	multi governmental approach, all kinds of floods included	complex administration/ responsibilities/ legal framework, responsibility discussion,..

Selection of pilot RBA's & Pilots Preparation

ANAR Selection of pilot RBA's: Somes Tisa & Jiu

- Testing of 1 or more preferred scenarios
- Improvement of scenarios
- Dashboards with on/off yes/no and settings/levels
- Performance compared to multi level governance aspects
- Questionnaires
- Model cost recovery
- Discussions



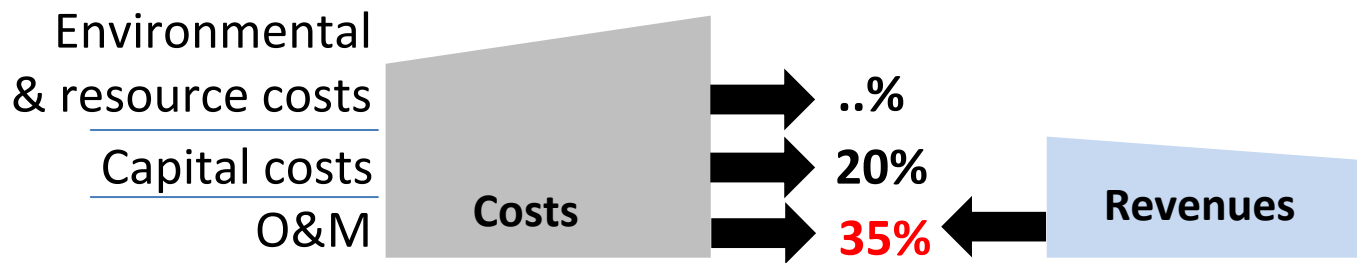
Questions- Information gaps

- Demographic information (population, surface area, income levels, changes)
- Cadastral information (land use and owners and users, value of properties)
- Target groups: population, agriculture, Industry, natural areas?
- Population development
- Economic development

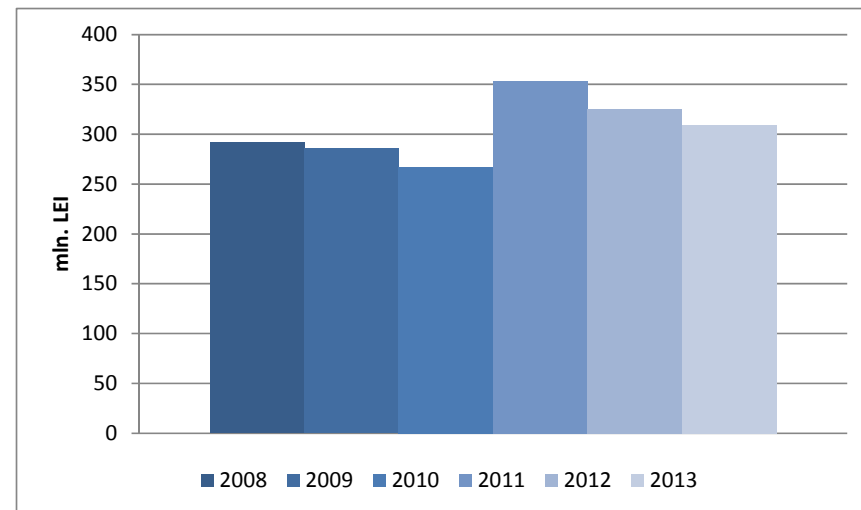
Results



Results



Annual revenues from raw water abstraction and effluent discharge contribution (2013, mln. LEI)



Important considerations:

- O&M costs based on Normative
- Allocation for flood task
- Capital costs covered by Nat. budget
- E&R cost disregarded

Conclusions

- problem analysis -

- ❑ Current O&M coverage: 65 %
 - Requirement (100%) based on normative
 - Revenues source: ANAR contributions
 - Redistribution of revenues by ANAR ?
 - Data allow indicative analysis
 - Investments due to FD still to be considered
- ❑ National water law allows cost recovery but implementation needs adjustments in legal framework (i.e. stakeholder participation)

Conclusions - scenarios -

- ❑ Outcome of scenario discussion:
preference for scenario's 3 & 4
- ❑ Mixed scenarios allow mixed financial instruments
- ❑ Scenario 4 requires decentralization



Results pilots



Cost recovery variants and tariffs

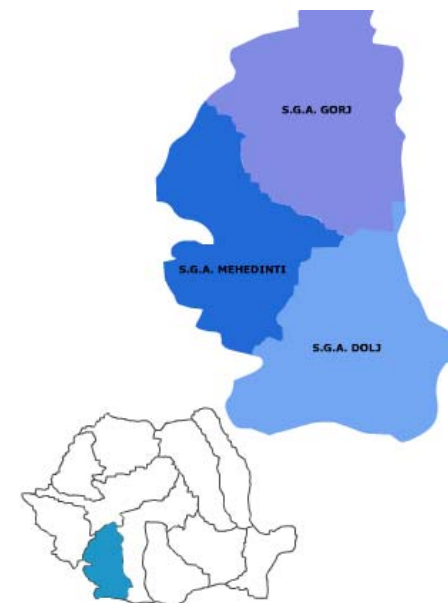
- 100 % O&M cost recovery
- Full cost recovery (gradual)
- 4 tariffs considered:
 - 1. single tariff / household
 - 2. single tariff / hectare
 - 3. differentiated economic benefit principle
 - 4. differentiated + solidarity
- More alternatives are possible!

Comply with
WFD's art. 9

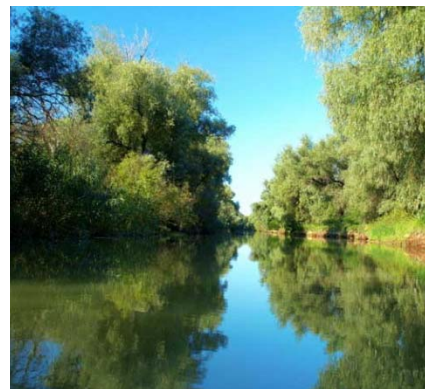


RBA Jiu

Surface: Jiu-Danube basin 16734 km²
out of which the River Basin Jiu 10080 km²
1.461.661 inh.= density 77/km²
56% inhabitants in urban area
54% Agricultural land use
29% forests



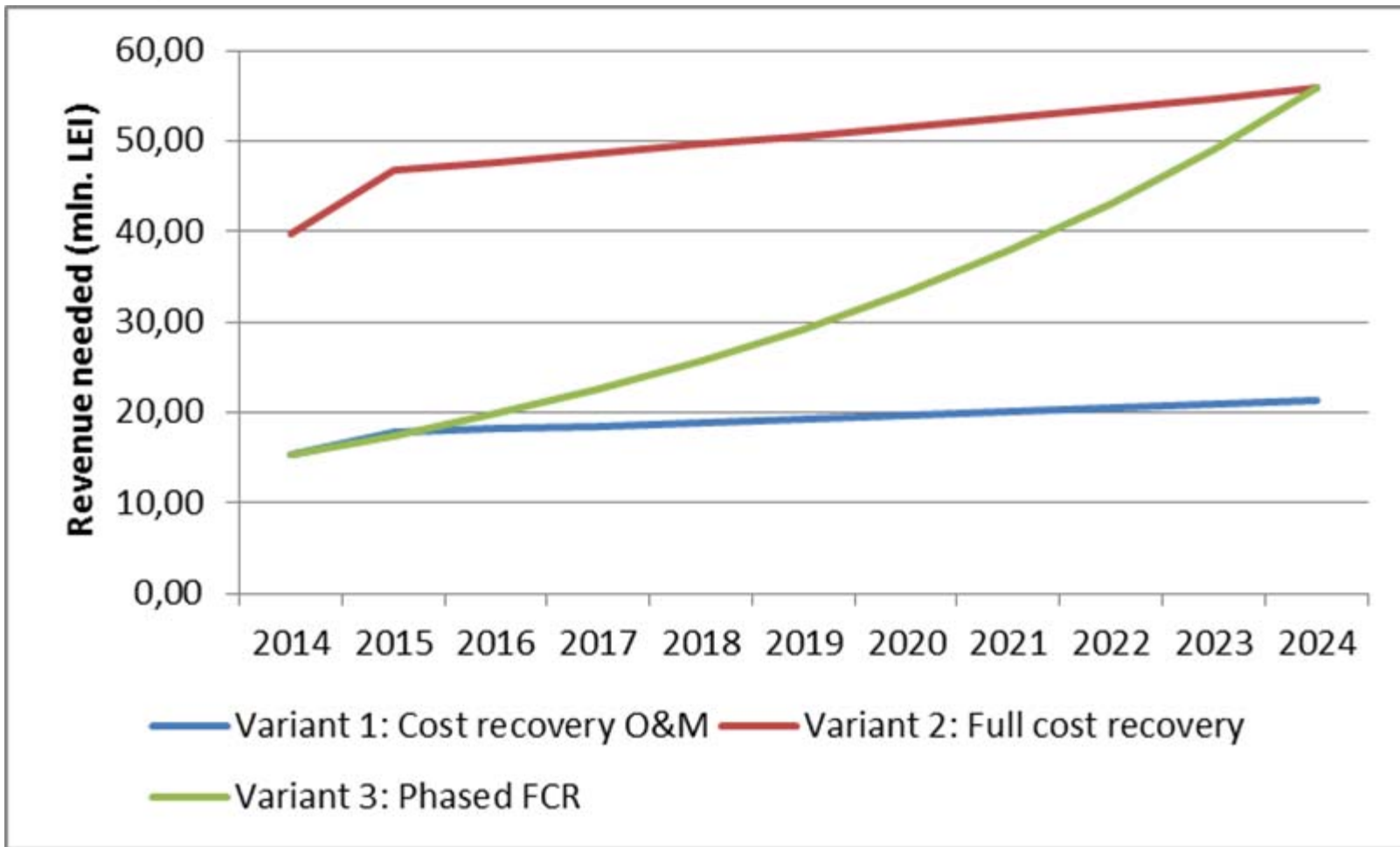
Administrația Bazinală de Apă Jiu



Results RBA Jiu

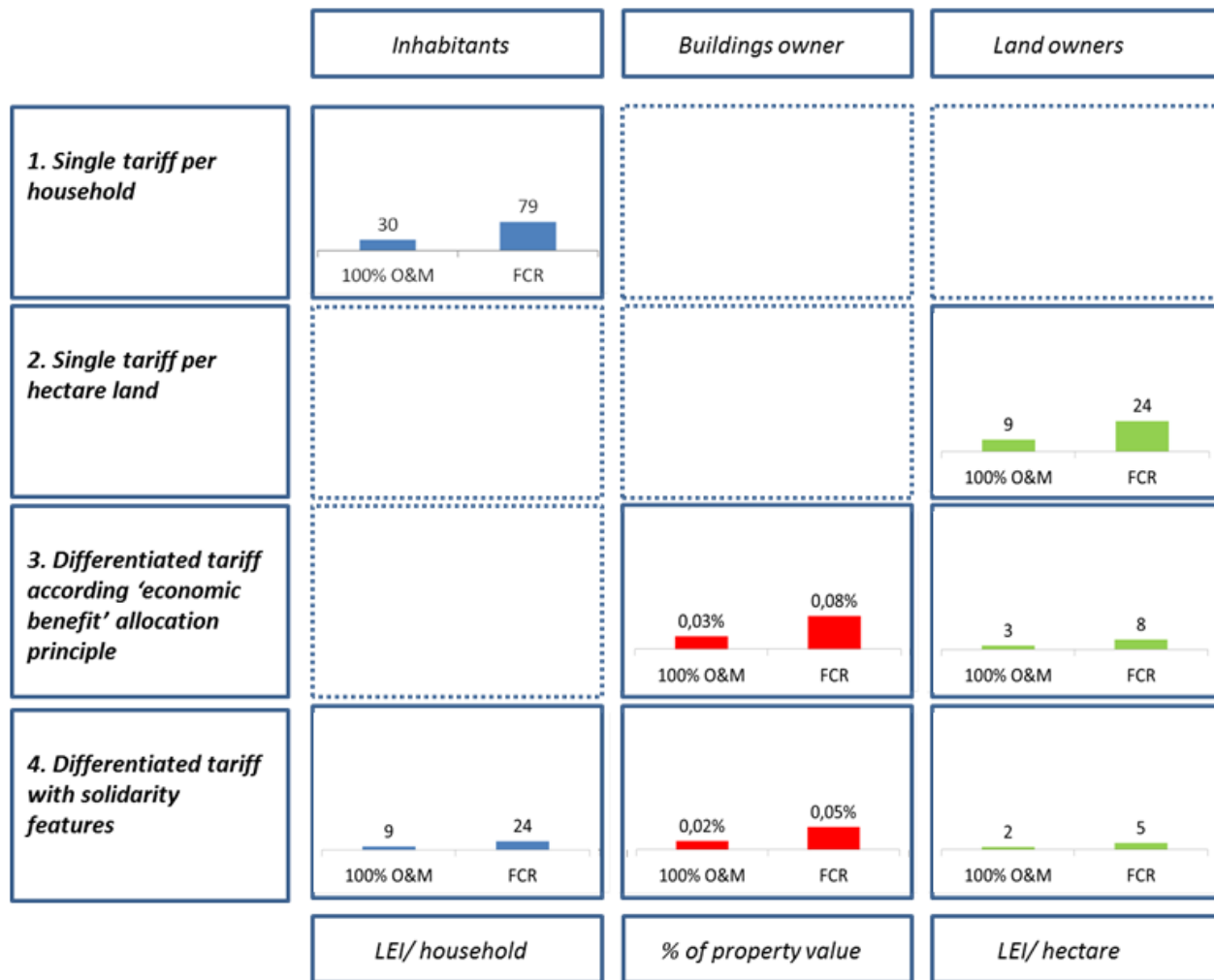
- Investment 1960-2013: 425 mln. LEI
- O&M costs 2013: 15 mln. LEI (cf. Normative)
- O&M coverage \approx 65% (?, communication ANAR)
- Revenue requirement (figure)

Results RBA Jiu – Revenue requirement



Results RBA Jiu

Tariff categories



Rating unit

Tariffs

Impact: example 4:

Households: 0.04-0.11% of annual hh income

Building owners: 0.01-0.04% of property value

Land owners: 1-4 LEI/ha

Current property tax: 0.25-1%

Current land tax: 1-10 LEI/ha

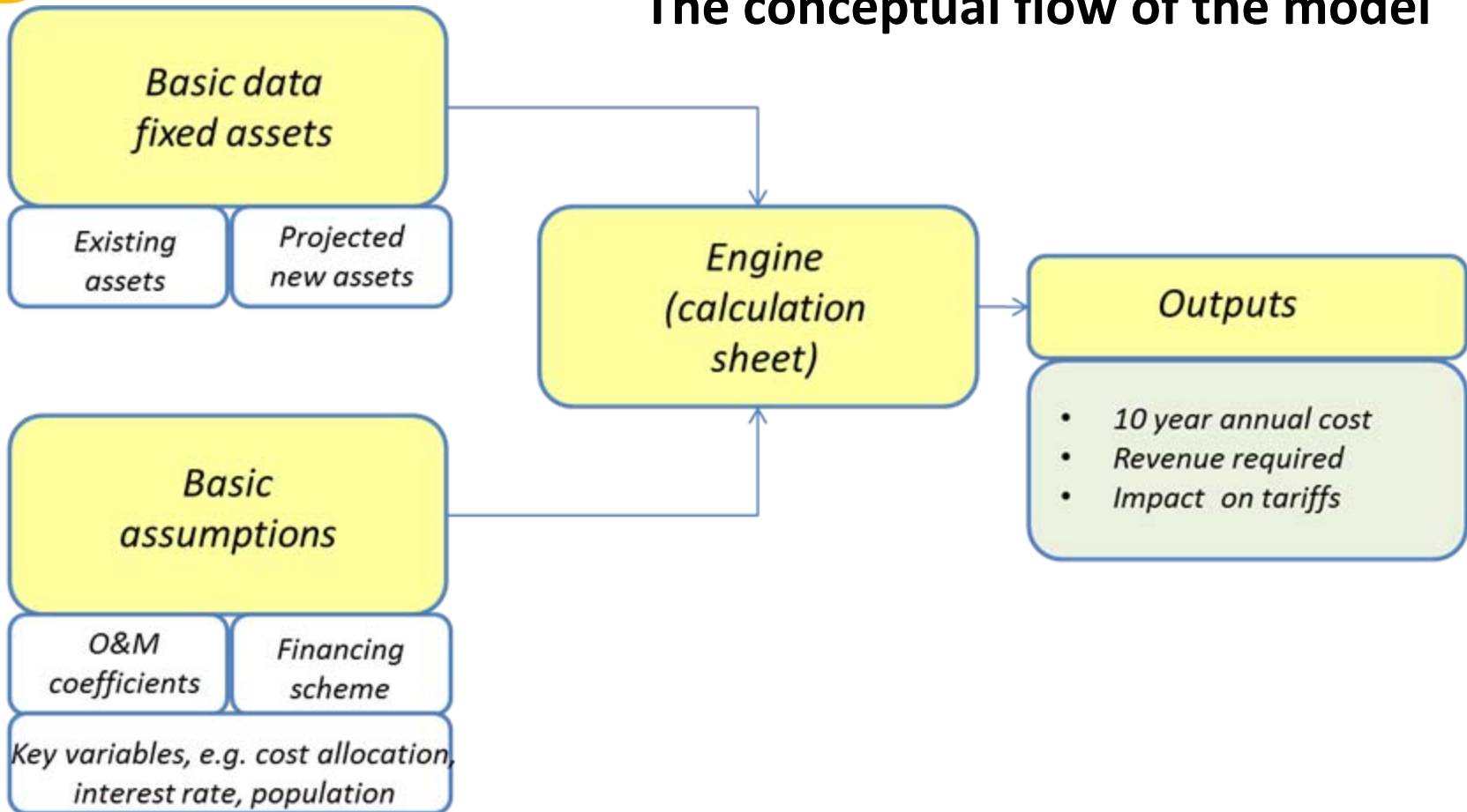
The Financial Model

- Was developed to conceptually link the following elements:
 - **Infrastructure** to provide high water protection service
 - **Capital and operating costs** required for this existing and new infrastructure
 - **Sources of operational financing** for capital repayment and **operational costs**, including tariff schemes.

- Is an **excel workbook** subject to change based on changes in input variables and assumptions.

- Was designed to be able to **estimate service prices on a (preferred) scenario** based approach.

The conceptual flow of the model



The Financial Model

- Excel workbook -

Somes_cost recovery model.xlsx - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View

Normal Page Layout Page Break Preview Custom Views Full Screen Workbook Views

Ruler Formula Bar Gridlines Headings Show

Zoom 100% Zoom to Selection Zoom

New Window Arrange All Freeze Panes

Split Hide Unhide Window

View Side by Side Synchronous Scrolling Reset Window Position

Save Switch Workspace Windows

Macros

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G17 =Basic data fixed assets!G17

A Summary table #assets and value			
RESULT			
Assets	Nr. of asse	Current value of historical costs (value in mln. LEI)	
DIKES	114	644	
REG	437	3.241	
DAMS	42	2.470	
Total	593	6.355	

B Source data													Computat
Status	Assets*	Asset cate,	Asset cate,	Historical i	Current va	Depreciati	Implemen	Economic	Correspon	Cost alloca	Cost alloca	Assets import	Specified i
Existing	AMENAJ R	REG	2	0	5089840	0	2003	20	0	0	0	0	River basin 2003
Existing	REGULARI	REG	2	0	1616419	0	2003	20	0	0	0	0	River basin 2003
Existing	CONSOL.M	REG	2	0	3642699	0	2003	30	0	0	0	0	River basin 2003
Existing	CONSOL.M	REG	2	0	4685912	0	2003	30	0	0	0	0	River basin 2003
Existing	CONSOL.M	REG	2	0	2397955	0	2003	30	0	0	0	0	River basin 2003
Existing	CONSOL.M	REG	2	0	1701075	0	2003	30	0	0	0	0	River basin 2003
Existing	REGUL.R.R	REG	2	0	15274694	0	2004	20	0	0	0	0	River basin 2004
Existing	INDIG.+CO	DIKES	1	0	1455558	0	2004	30	0	0	0	0	River basin 2004
Existing	REGULAR	REG	2	0	747234	0	2004	30	0	0	0	0	River basin 2004

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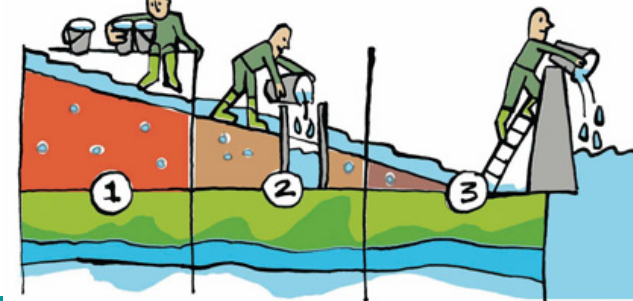
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Conclusions

- Flood protection task under pressure** because of significant financial gap! (get insight in costs and revenues)
- Choice is to be made **between 100 %O&M CR & Full CR**
- Many tariff alternatives** are possible, applicable for scenarios 3 & 4, affordability is feasible
- Assessment** of the **other RBA's** is relevant
- Flood protection need to get connected with **spatial planning** and included in the **local development strategies**
- Awareness** raising about (the costs of) the flood protection

Recommendations

- **Multilevel governance** development and awareness raising among stakeholders: (ANAR, RBA's, counties, municipalities, ANIF, emergency inspectorate, PAID)
- Coming political/decision process and/or implementation needs facilitation
- Small steps need to be taken





 DUTCH WATER
AUTHORITIES



Thank you for your attention!

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On behalf of the project team

Questions?

