

A Systems-Based Generic Suite of Tools to Support Knowledge Sharing and Scenario Planning

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Outline

- City Water and CWIS (the Combined Water Information System)
- CWIS tools
- Using CWIS to support the activities of Learning Alliances (LAs)

CITY WATER

A knowledge and information sharing platform to support global and integrated urban water planning

offering

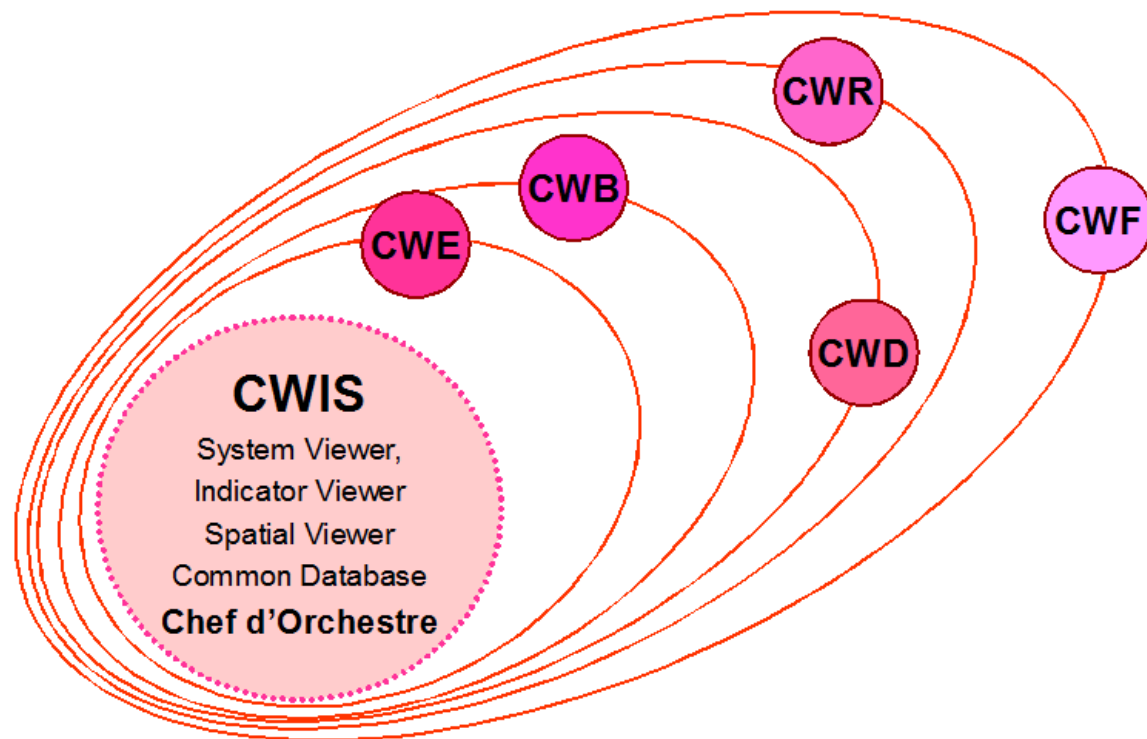
A Combined Information System,

- Generic Database
- Geographic Viewer
- Reporting tool
- Systemic Viewer
- And more...

Linked to a Set of Screening Models

- City Water Balance
- City Water Economics
- City Water Drain
- And more...

CWIS and City Water



CWIS and City Water

1. Information and knowledge sharing

Accessing information, viewing data, process documentation

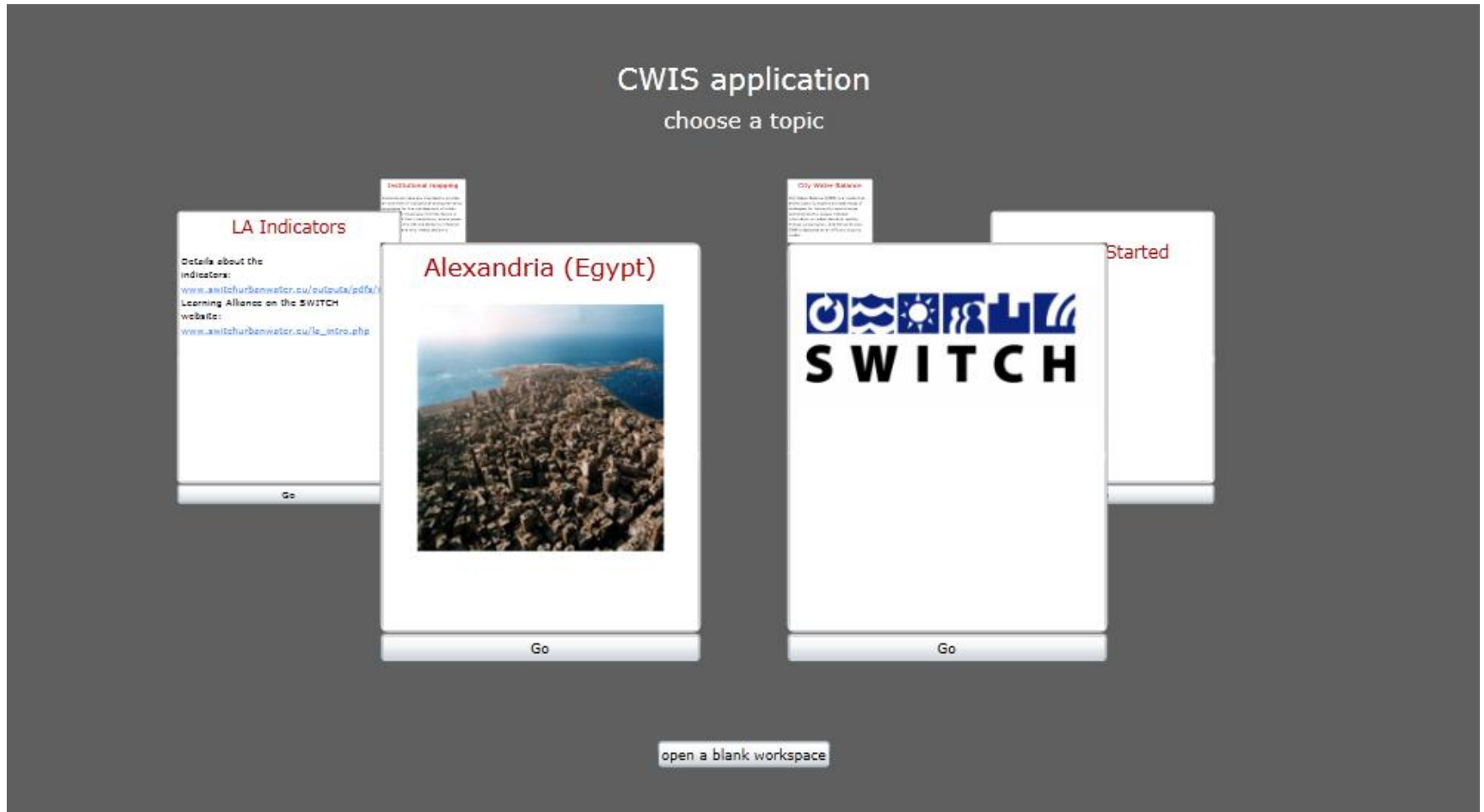
2. Scenario analysis

Tackling complexity, including non technical elements such as regulation, legal framework, institutional layout, financial dimension, stakeholders, etc.

3. Evaluation of strategies

Indicators, link to City Water models

CWIS (*the dashboard*)



CWIS tools: Overview

Layout Manager

- Single Window
- One big one small
- Two Windows
- Four Windows
- Six Windows
- Eight Windows

Data source data

Projects

Infos & docs

Alexandria

Name: Alexandria

Description:

Workspaces

Name: Alexandria Workspace

Description:

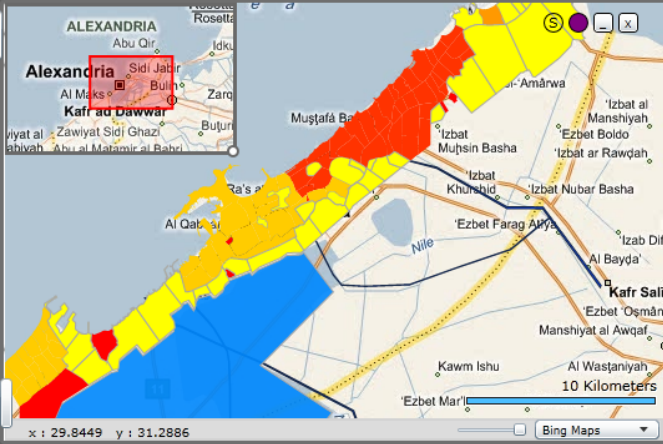
Name: Scenario planning workspace

Description:

Views

Create a new view

- Alexandria start
- LA Stakeholders
- LA Indicators
- Visioning and planning
- Marriout Lake Report
- Alexandria_Gis
- Marriout Lake Flows



A map of Alexandria, Egypt, showing the Nile River and surrounding areas. A red box highlights the location of Marriout Lake. The map includes labels for various districts and landmarks, such as Kafr ad Dawwar, Kafr Salih, and the Nile River. A scale bar indicates 10 Kilometers.

[a] [r] [d] [r] [d] [3]

Reports

Marriout Lake

Marriout Lake

Marriout Lake is a shallow lake covers a huge area to the south of Alexandria city. In 1801, Mariout Lake had an area exceeded 700 km². However, land reclamation and road construction decreased the area of the lake and it is currently less than 65 km² (Shaalan, et al. , 2009). The lake has an average water depth of 1.3 m with the water level around (-4) meter above mean sea level. There are no connection between Mariout Lake and the Mediterranean Sea but the water level is kept below (-3) meter above sea level by pumping the water to the sea from El-Mex pumping station. The lake receives water form several drains and canals, it also receives most of the drainage effluents from Alexandria city. The majority of these effluents primary-treated wastewater and that causes deterioration in quality of water within the lake. The main drains that discharge in the lake are : - El-Qalaa drain that supplies the Lake with primarily treated wastewater from the wastewater treatment plants within Alexandria city. - El-Omoum drain which hold a huge amount of wastewater in the Delta - Al-Nubaria canal supplies the west of Nile Delta by irrigation water (Fisher, 2008)

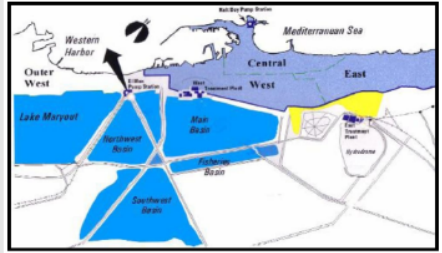


Figure 1 The main basins in Mariout Lake (Shaalan et al, 2009)

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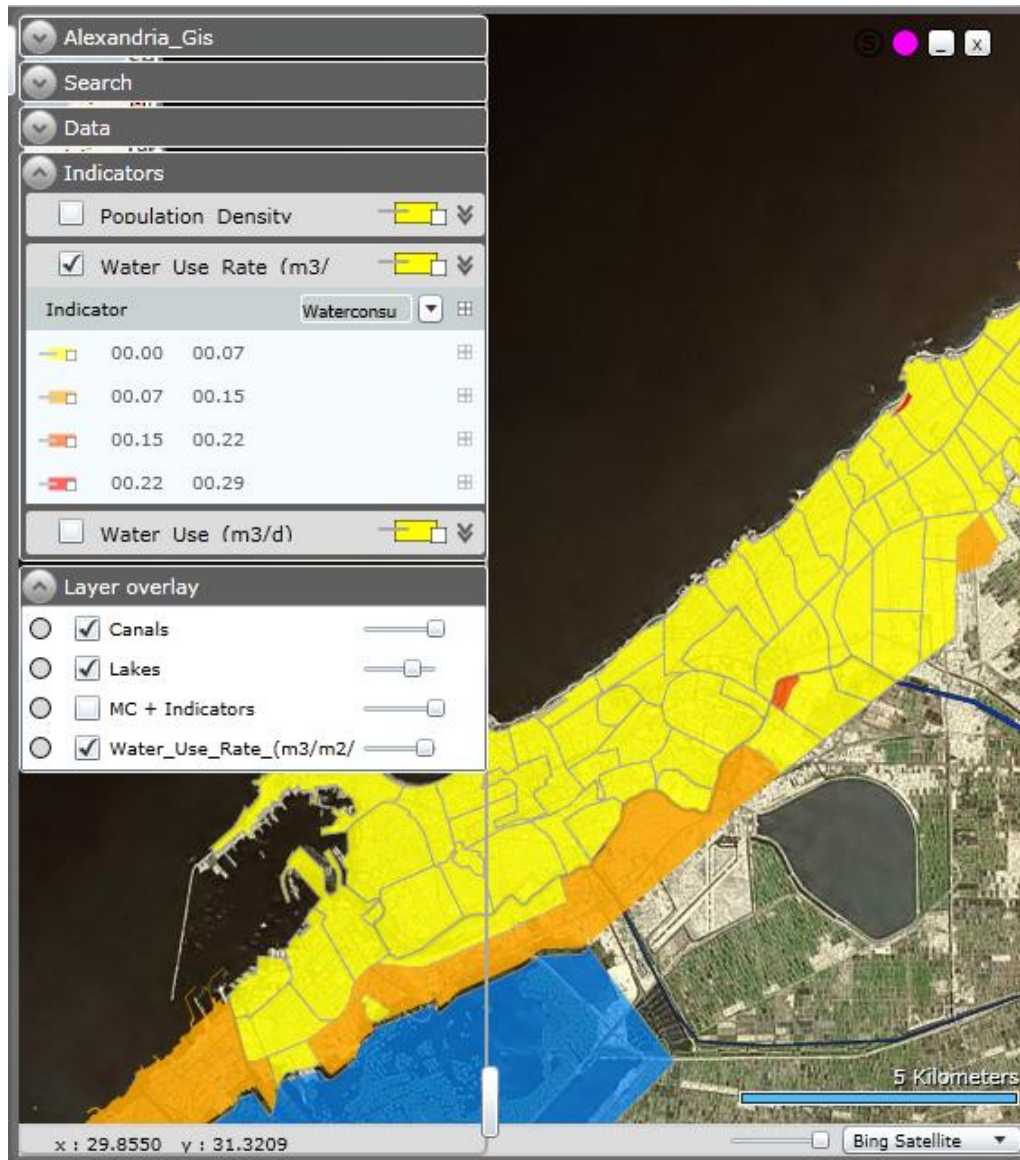
Jawesh M. (2010). City Water Balance: A new scoping model for Alexandria, Master Thesis of the School of Earth Sciences University of Birmingham

References

Fishar, M. R. (2008). Current status of Lake Maryut zone. Alexandria.

Shaalan, I. M.; Fakhry, A. K.; Khalifa, A.; El-Akrat, M.; Aboul-Magd, A. (2009). Alexandria Integrated Coastal Zone Management, Environmental and Social Impact Assessment. Ministry of

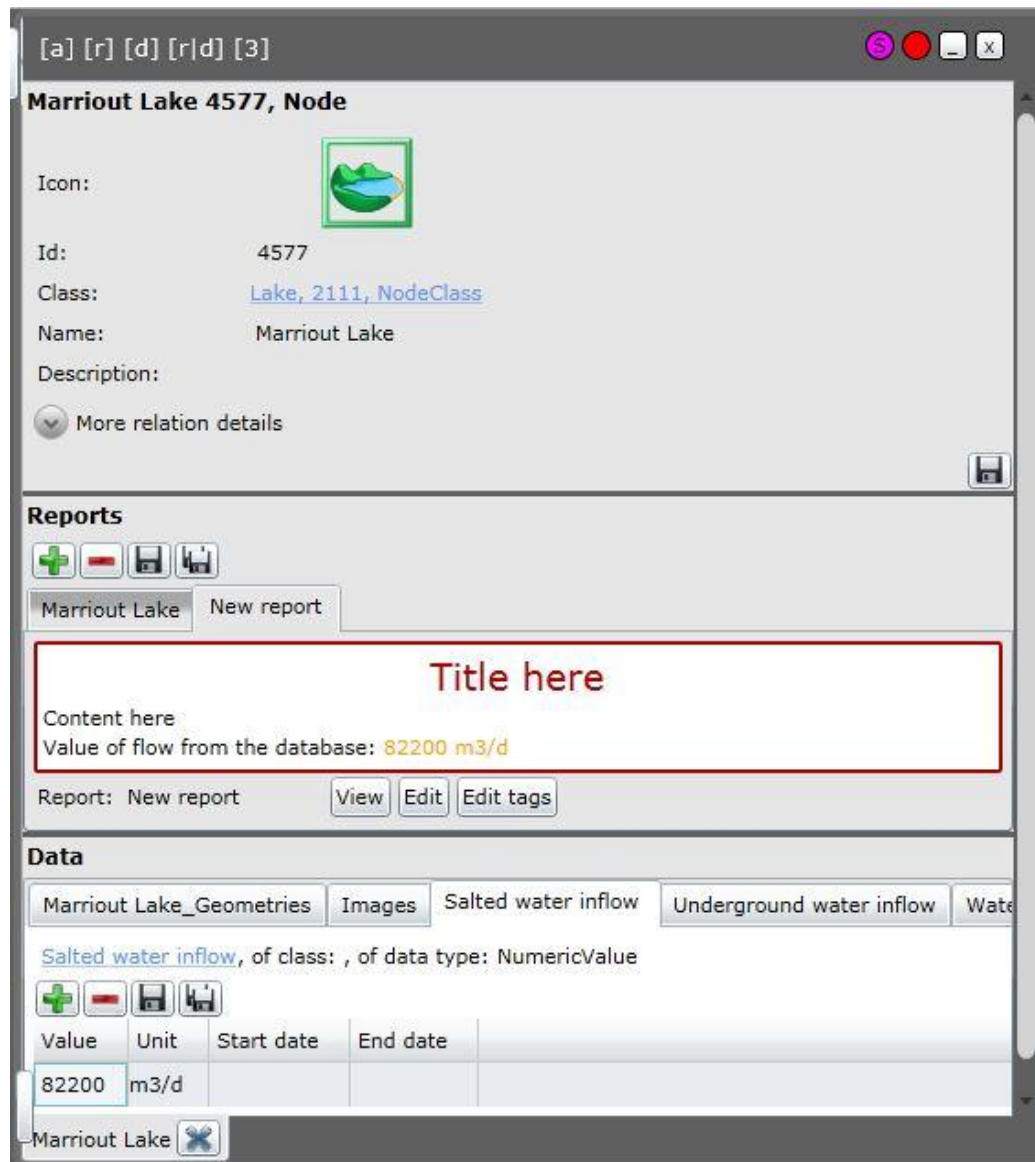
CWIS tools (1/3)



Geo Viewer

- Geographic navigation
- Spatial attributes of objects
- Thematic maps (indicators)

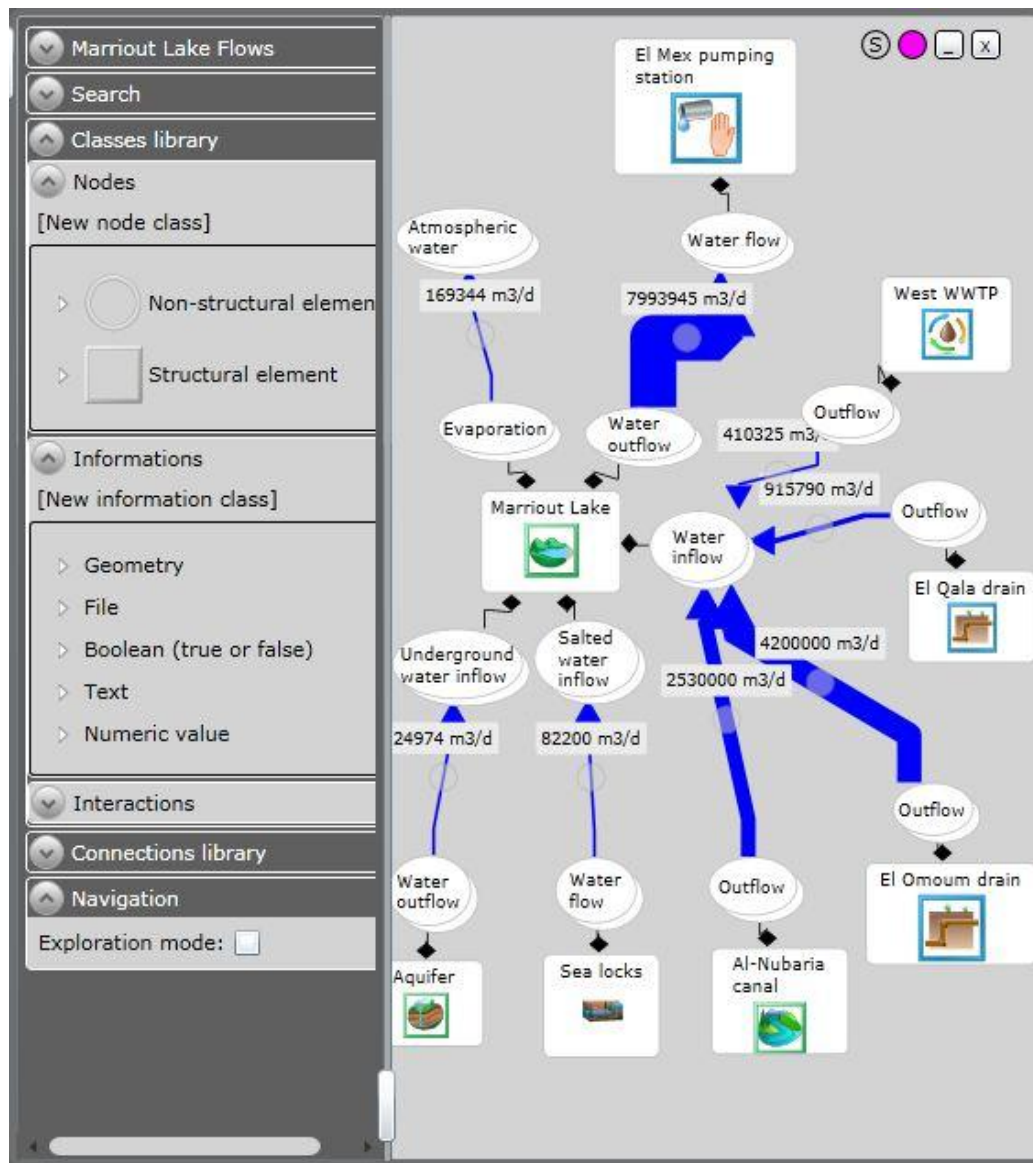
CWIS tools (2/3)



Reporting tool

- Object metadata
- Reports (look-alike web pages)
- Data management (texts, values, files etc.)

CWIS tools (3/3)



System viewer

- Navigating the logic of the data structure
- Objects = systems (with inputs, outputs, descriptions...)
- **Examples of use:** problem trees, institutional maps, flow diagrams

Using CWIS for...

sharing information (texts, files...)

The central diagram illustrates the CWIS structure with a central 'Alexandria Learning Alliance' node connected to 'Posters', 'Vision', 'Websites', 'Monitoring Indicators', 'IUWM Plan', 'Scenarios', and 'Strategies'. 'Scenarios' branches into 'Business as usual', 'Worst case scenario', and 'Best case scenario'. 'Strategies' branches into 'Wastewater reuse', 'Leakage reduction', and 'Desalination'.

Top Right Window: Business as usual scenario (Alexandria 2007-2037)

In 2037, Alexandria city has the following situation and conditions:

- Population of a reasonable growth rate (population is 7000000 cap in the served areas and increases in summer to 9500000 cap)
- National allocation of Nile water is the same as in 2009 (The whole allocation of the Nile water for Egypt is currently 55.5 billion cubic meter per year)
- Economy is growing in normal rates
- Sea level rising is beginning to threaten some parts of the city
- Energy cost is reasonably increased due to minimizing energy consumption and usage of clean sources of generating electricity

Bottom Left Window: Alexandria Learning Alliance

Website: <http://switchalex.wordpress.com/>

An effective partnership for knowledge sharing in urban water management in Alexandria and Egypt.

To support the development of the IUWM plan and demonstration activities, a learning alliance involving key city

Bottom Right Window: Data

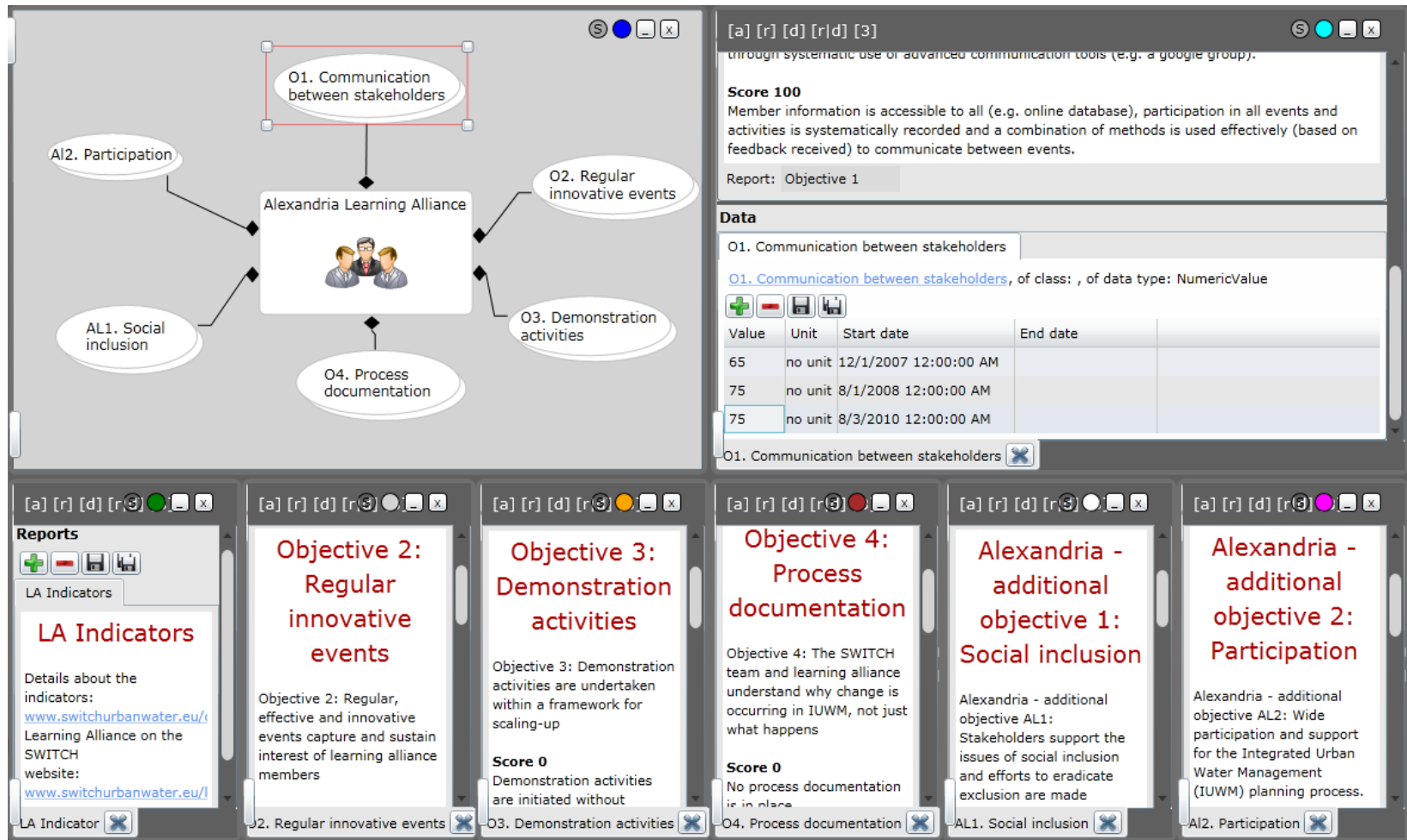
Posters

Posters, of class: PDF, of data type: File

Thumbnail	Name	Extension	Start date	End date
no preview	Alexandria poster	.pdf		
no preview	Alexandria IUWM plan	.pdf		

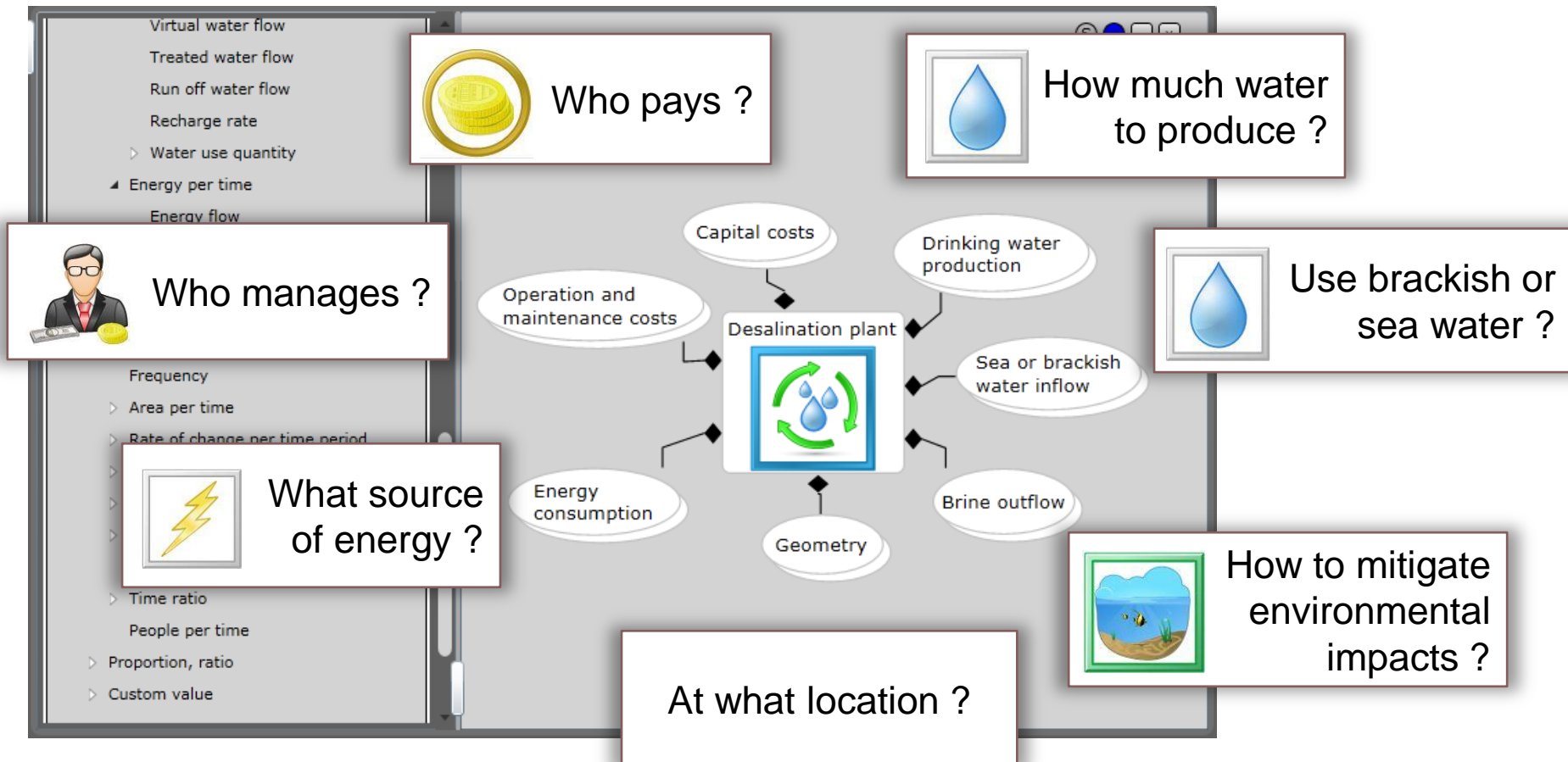
Using CWIS for...

monitoring indicators



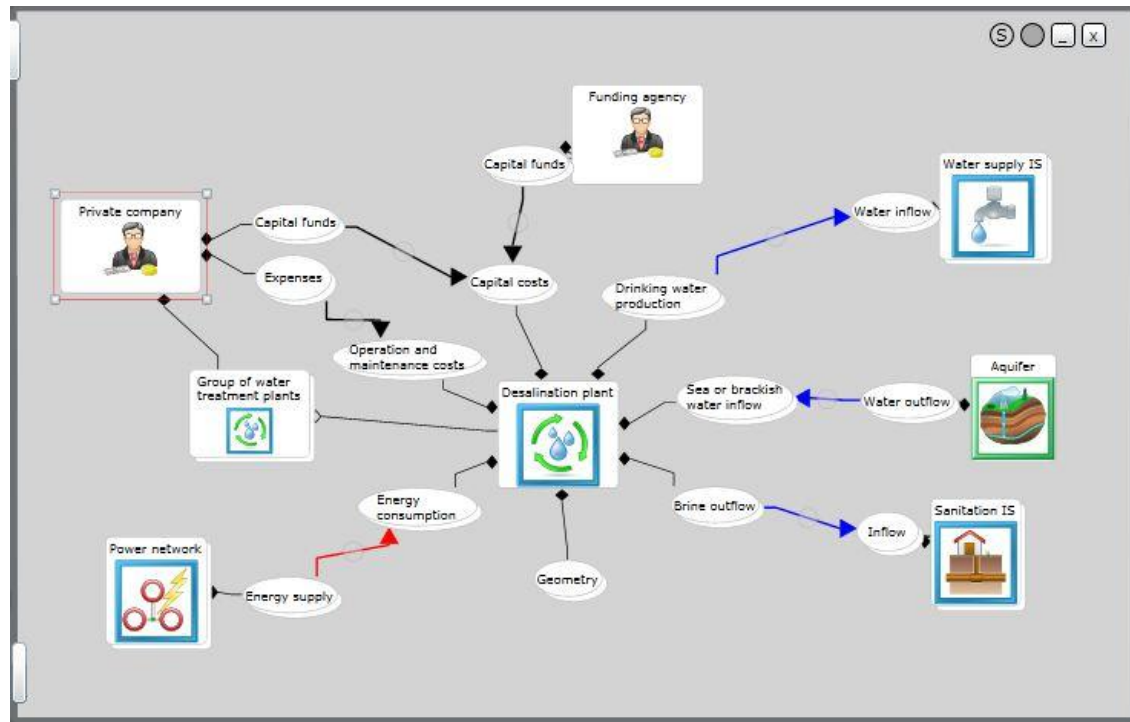
Using CWIS for...

building strategies



Using CWIS for...

building strategies



Development of a strategy by connecting the properties of the new strategic elements to the existing components of the water system .

Thank you

CWIS can be tested at:

<http://home.ipogee.ch/DemoBmap/Bmap.aspx>