INTEGRATED WATER RESOURCES MANAGEMENT AND WATER INFORMATION SYSTEM IN LAO PDR

Study visit in France

July 2018

Agathe GUITTARD
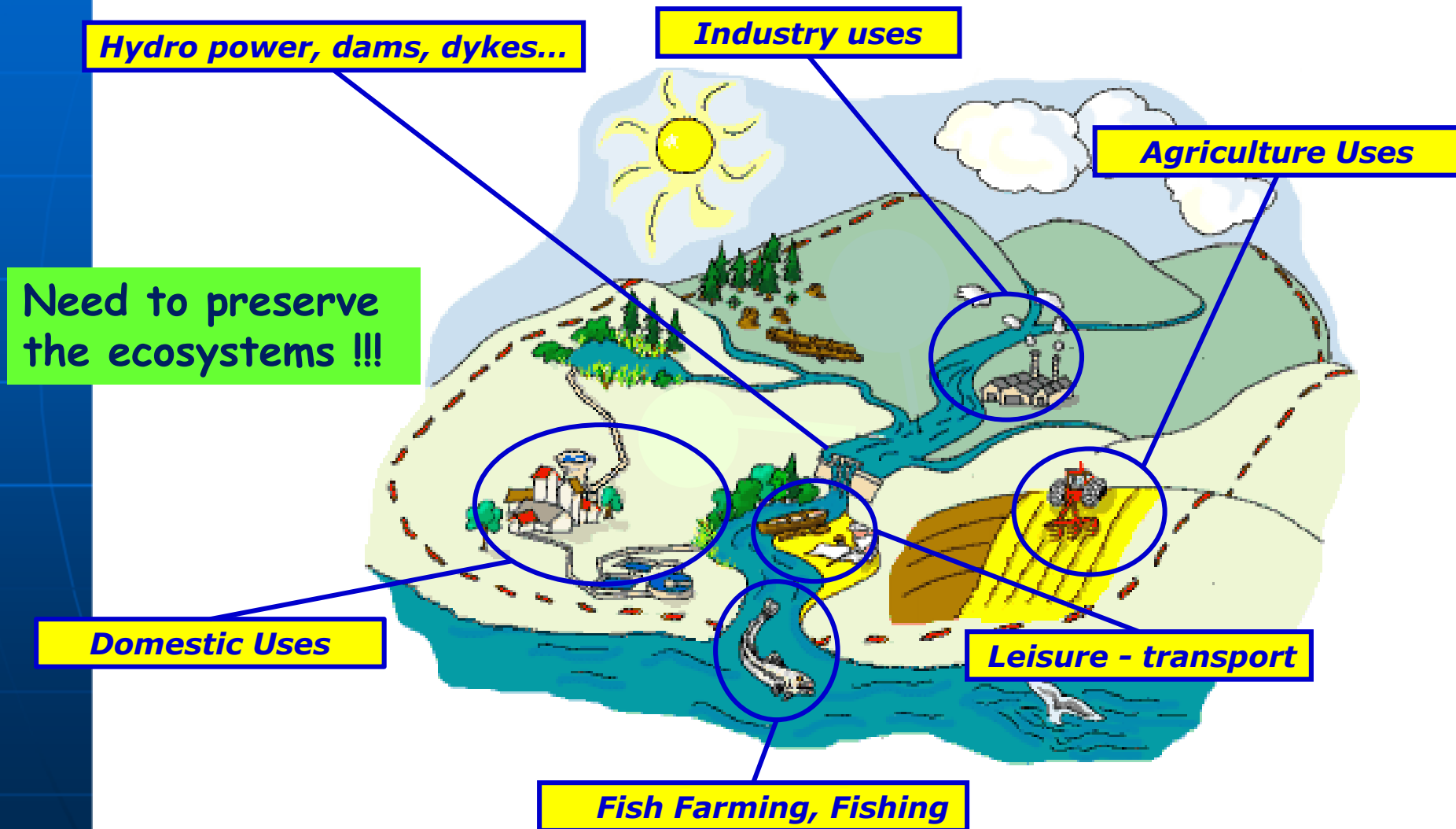**International Office for Water**
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Water Information System place in IWRM

IWRM overall objective:

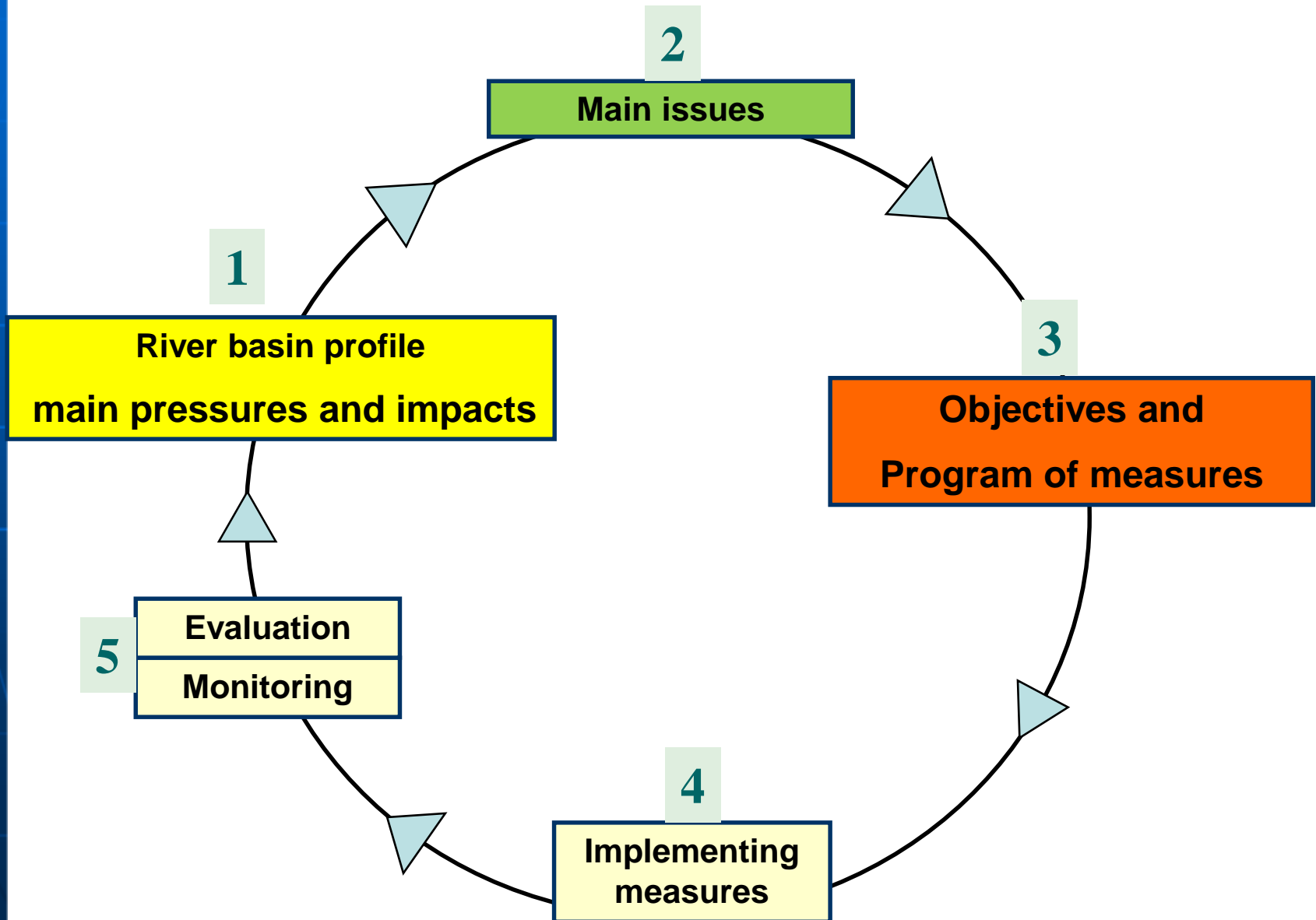**To ensure an equitable water use between the different sectors without compromising the quantity and quality of water resources**
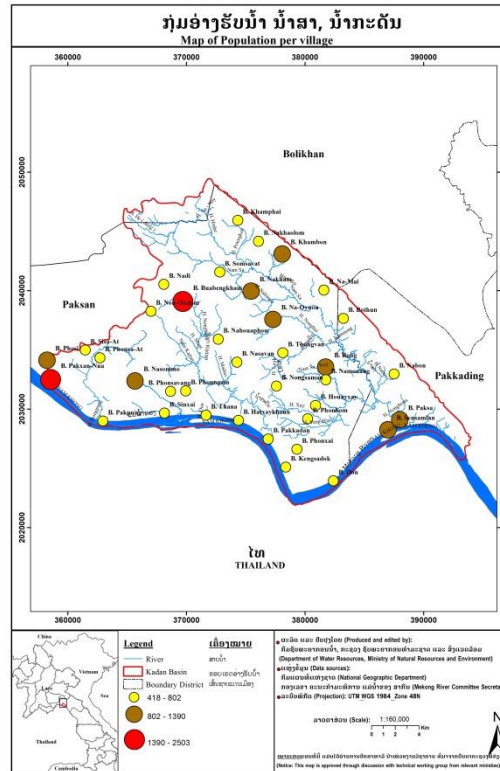

Hydro power, dams, dykes...

Industry uses

Agriculture Uses

Need to preserve the ecosystems !!!

Domestic Uses

Leisure - transport

Fish Farming, Fishing

Steps for planning process

2 Main issues

1 River basin profile
main pressures and impacts

3 Objectives and
Program of measures

4 Implementing
measures

5 Evaluation
Monitoring

Step 1 : River basin profile

Map of Population per village

Inventory:
To understand the
hydro-ecological characteristics
of the basin
-> Description of the watershed

Diagnosis:
Analysis of the pressures
and their impact

- To understand the uses and the needs
- To define the pressures : sources of pollution, water withdrawals, etc.

Main components of water data management

Governance of water related data management

Data production → Shared and integrated data management → Data processing and valorization → Information/ knowledge dissemination

Needs for data/information/knowledge

- Each sector needs and produces particular types of data

- Data is scattered

- LaoWIS enables to centralise water related data, in order to improve access to it
  - ➢ Better information, better management!

Existing situation related to data management

- Many topic to deal with in a basin (hydropower, irrigation, mining, water supply and sanitation, flood management, …)

- The necessary data to elaborate the requested information is produced/managed by various organisations

- Information is **fragmented, incomplete dispersed and heterogeneous** way

  => need efforts to make this information readable, easily accessible and available in order to produce useful information

Consequences of lack of easy access to data

Developping networks of data exchange between actors

Public

Decidor

Vision for the Water Information System for Lao PDR

Long term vision for a global organisation of water related data management in LAO PDR

LAOWIS communication network organisation

Datasets classification

Acronym	Topics	Corresponding symbol
AD	Administrative context	
ENV	Environmental context	
SW	Surface wáter entities	
GW	Groundwater entities	
MO	Monitoring aspects	
UP	Water users/polluters	
INFR	Hydraulic infrastructures	
IUD	Intake/uses/discharge	
RISK	Risks	
IND	Indicators	

Datasets in LaoWIS

Already input

- Provinces/districts/villages boundaries…

- Hydrological basins/sub-basins…

- Hydro/meteo/quality stations…

- Dams and pumps…

- Dams/pumps intakes…

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Missing

- DEM, soil occupation…

- Aquifers…

- Population, industrial activities…

- Flood/drought risks…

- Performance indicators…

LaoWIS development

- Setting-up of the server configuration

- Inventory of the DWR data
  - Excel files
  - 7 divisions
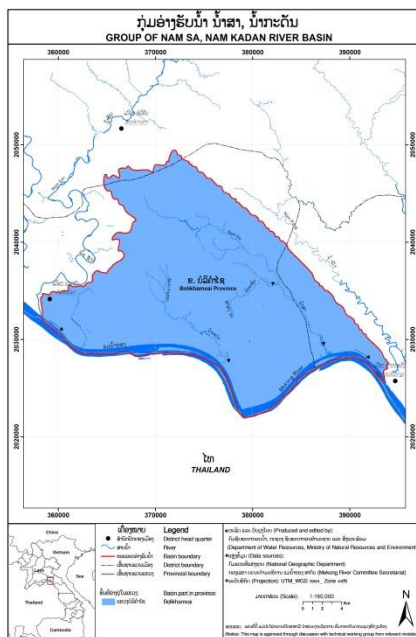
- Capacity-building
  - Database management
  - Website

Data valorisation and sharing

How to have a map on 1 of the 62 basins

- ## On the LAOWIS website **http://laowis.monre.gov.la/**

  1. Select menu "Atlas of river basins in Lao PDR"
  2. Select 1 basin
  3. Download and vizualise the map

How to visualise location of dam projects in Laos

On the LAOWIS website
http://laowis.monre.gov.la/

1. Click on Web mapping Lao PDR
2. Add layer on "Dam"
3. Zoom as you want
4. Click on 1 point to have its characteristics

How to get monthly water surface status in Lao PDR

- On the LAOWIS website **http://laowis.monre.gov.la/**

  1. On the main page click on "Information about surface water in Lao PDR → View"

  2. A window open, you can visualize the file

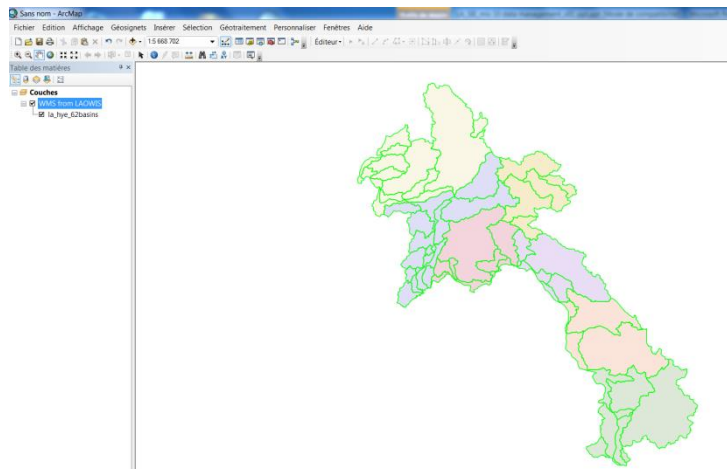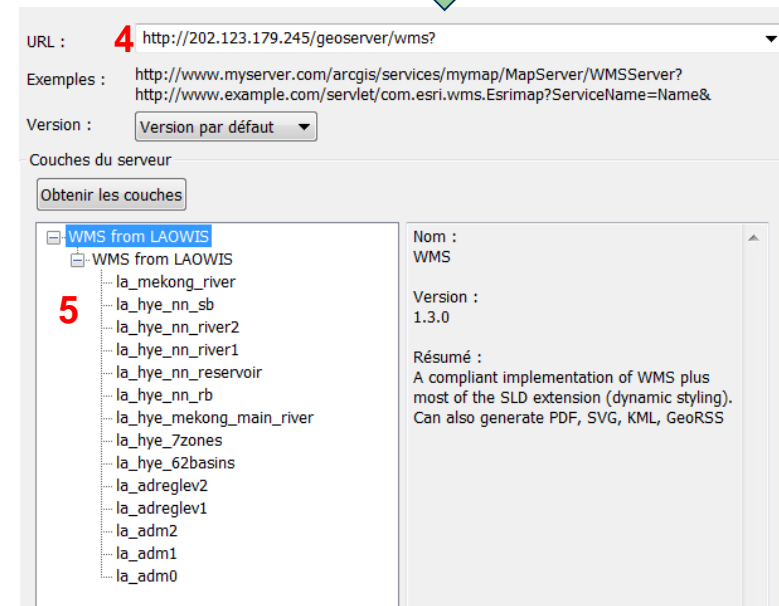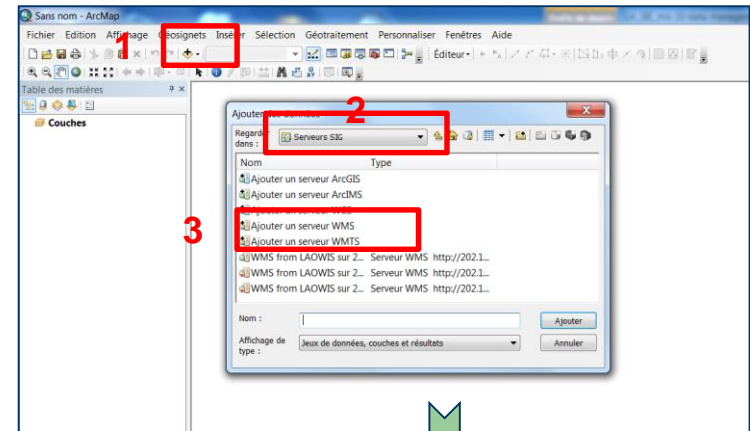 3. Or click on "Download" to download but <u>login first</u>

1

2

3

22

How to use the layer of 62 basins updated by the DWR

In ArcMAP/Esri

1. Add layer
2. Select From GIS server
3. Select "Add WMS server"
4. Indicate server LAOWIS : http://202.123.179.245/geoserver/wms?
5. Select the layer you want to see

Metadata catalogue

Search data by topic, by localisation, by keyword
Detailed information for each data and contact

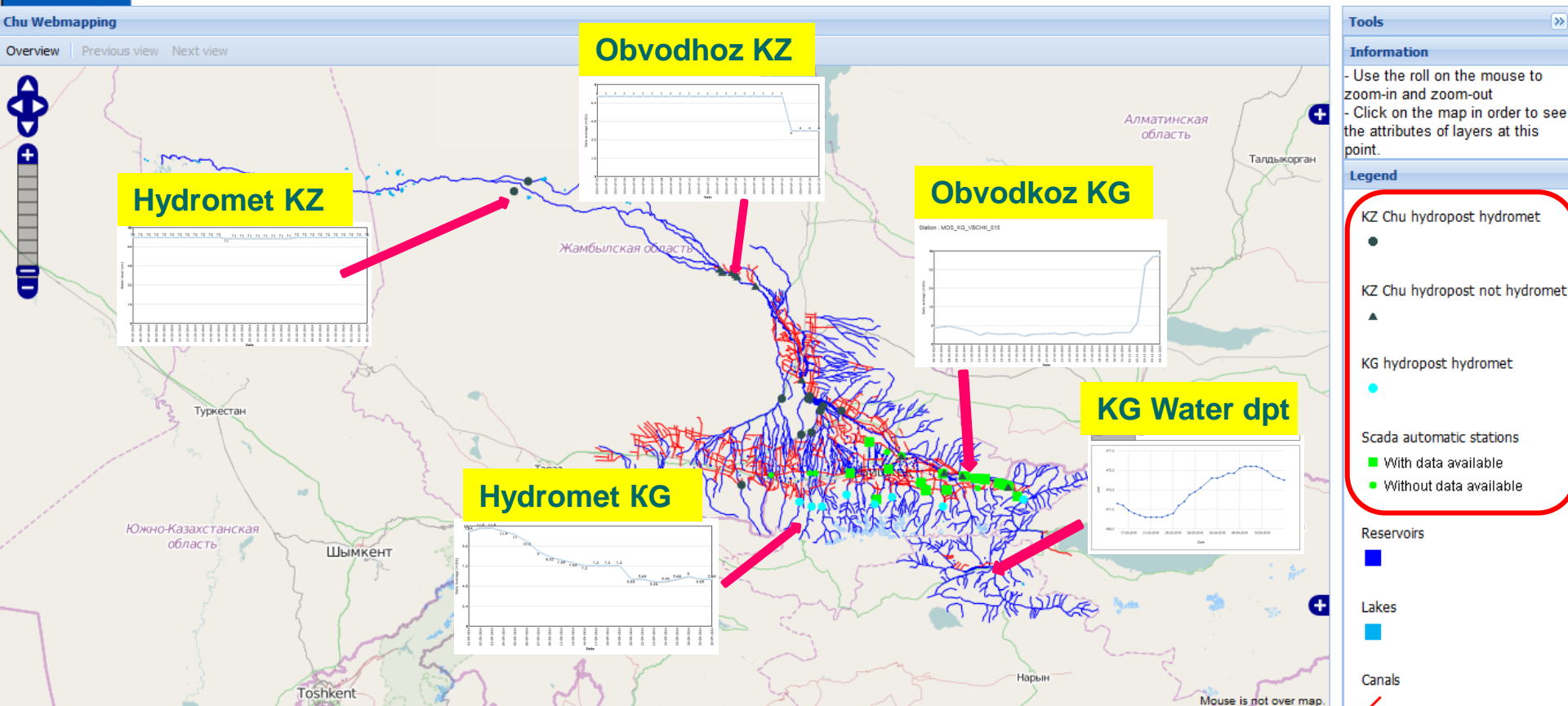# Example of use in other countries

Possibility to combine data coming from various organization Example of output of the SDC/IMoMo project

- The Chu basin web mapping application prototype: a common tool for visualization of water resource situation, regularly actualized by 5 partners at transboundary level

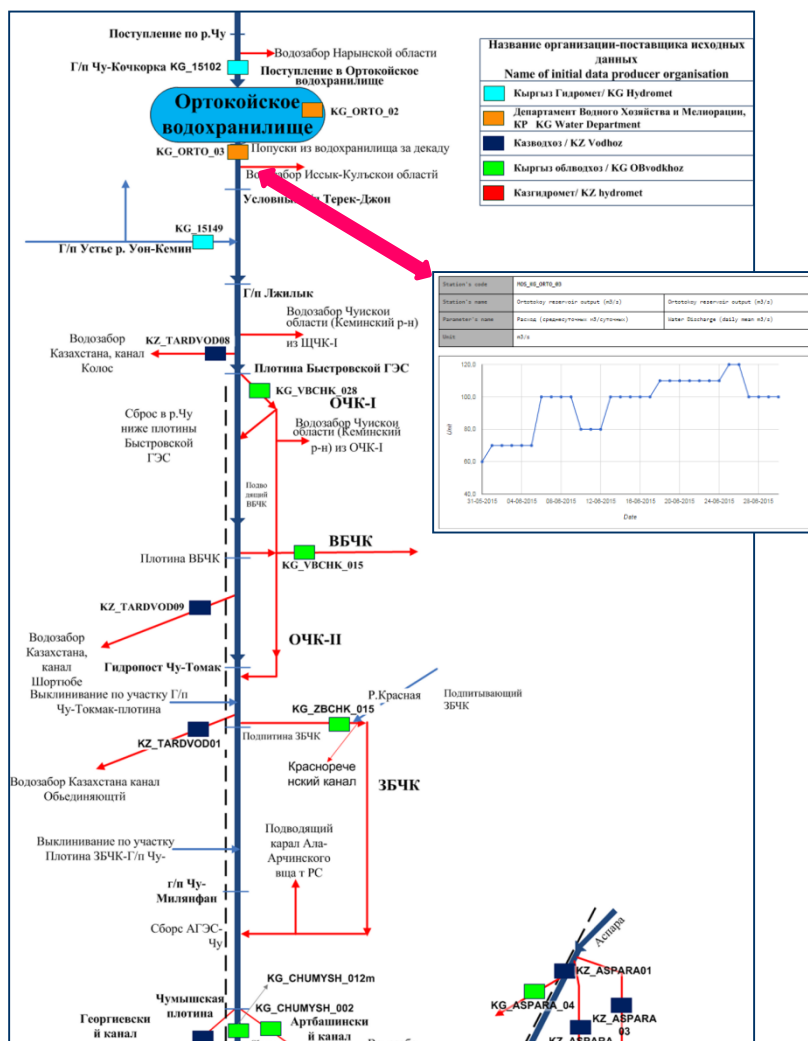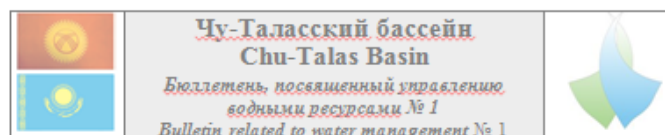http://37.187.128.205/webmapping/ca/chu/

Hydrological bulletin developed with/by the members by the Chu/Talas transboundary Commission

Online scheme regularly actualized

Quarterly pdf bulletin

http://37.187.128.205/cawis/index.php/en/chu-scheme

Visualizing water resources status on tablet

Presentation of the first transboundary bulletin related to the Chu basin – Bulletin n°1

Next steps for the Lao Water Information System

About future actions

- ## What priorities?

    – Agreement for data sharing between departments of MONRE (and other Ministries) → Regulation on Water and Water Resources Data and Information Management
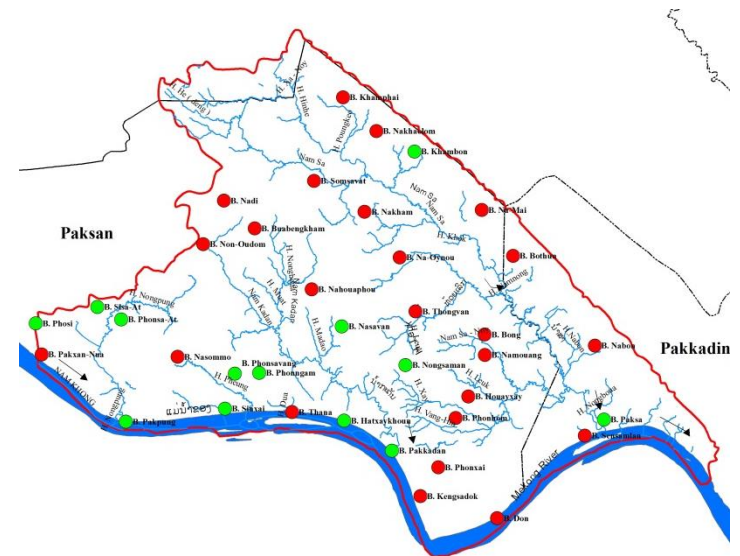
    – Water quality monitoring
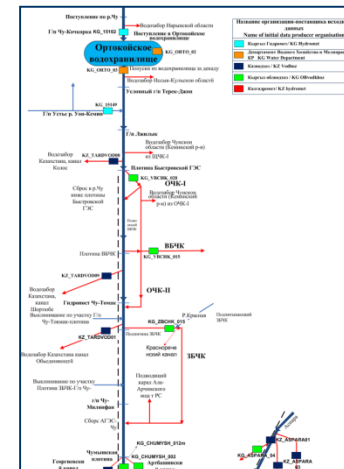   - Visualisation tool

About future actions

- ## What priorities?

  - Assessment of water available
    - Hydrological data (from DMH)
    - Dams discharges data (from EDL/MEM)

  - Evaluation of water uses per sector
    - Water intake
      - Domestic
      - Industries

  → Water balance

THANK YOU FOR YOUR ATTENTION

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