



International
Office
for Water



United Nations
Educational, Scientific and
Cultural Organization



UNECE



The 7th World Water Forum

12-17 April 2015, Daegu-Gyeongbuk, KOREA

Thematic Process Session

Session T 4.3.4 - Building trust : Facilitating data and Information exchange between the riparian countries in transboundary basins

Thursday 16 April, 14h40-16h40 - Daegu EXCO, room DEC_304

Round table 1: Developing Innovative monitoring

**Innovative monitoring in the frame
of the IMoMo project in Central Asia
Pilot project on the Chu basin**

Mr. Bakyt MAKHMUTOV

Embassy of Switzerland in the Kyrgyz Republic



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Direktion für Entwicklung
und Zusammenarbeit DEZA



Innovative monitoring in the frame of the IMoMo project in Central Asia

Pilot project on the Chu basin



HE-Arc
Neuchatel, Switzerland



hydrosolutions ltd.
Zurich, Switzerland



Dept. of Water Res.
Bishkek, Kyrgyzstan



photrack AG
Zurich, Switzerland



Int. Office for Water
Paris, France



CDE
Uni. Bern,
Switzerland



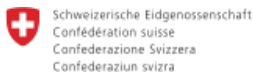
IfU, ETH Zurich
Zurich, Switzerland



University of the Arts
Zurich, Switzerland



BGW
St. Gallen, Switzerland



Direktion für Entwicklung
und Zusammenarbeit DEZA

SDC
Berne, Switzerland



Context (1/2)

- The land reform in the nineties in the Kyrgyz Republic has fragmented the agricultural economy and to-date there are about 200'000 farmers;
- This has fragmented the irrigation network in Kyrgyzstan since some WUA have more 1000 members;
- Traditional monitoring system is expensive to introduce and maintain in this new challenging context;
- In this context, crowdsourcing becomes a helpful instrument to ease the burden of murabs;
- Murabs and farmers equipped by phones can supply data to WUA databases;
- However, the integrated system with balance calculation at each level should allow to calculate the wrong inputs



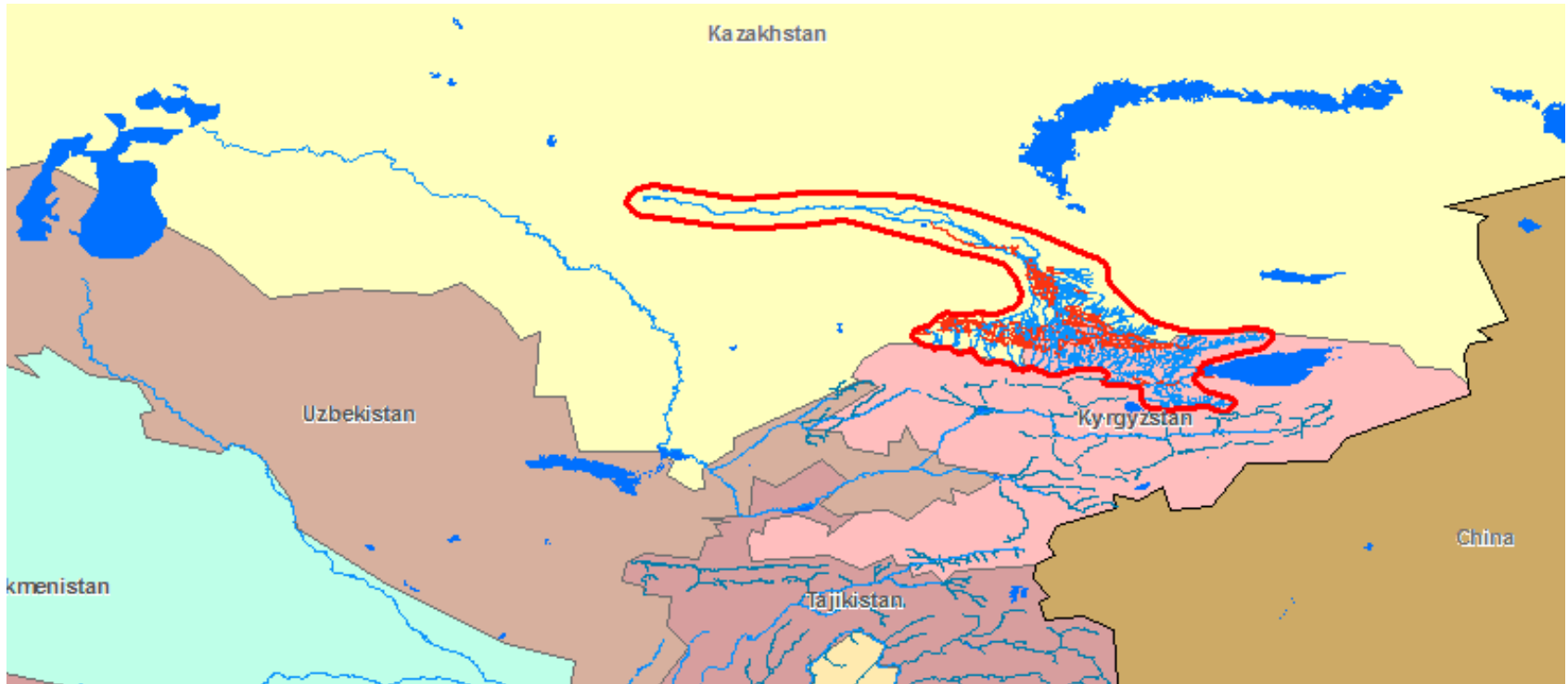
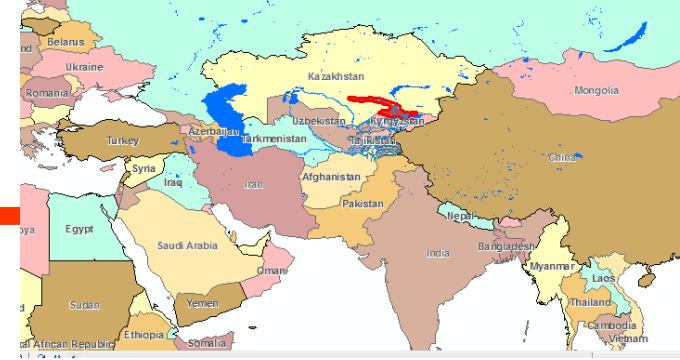
Context (2/2)

- What was a normal monitoring system in the soviet times is considered an innovative tool nowadays in irrigation sector of Kyrgyzstan and other countries of CA;
- SCADA systems integrated in management information online tools;
- Web-based systems save costs related to IT infrastructure and staffing;
- However, water accounting should ideally mean money accounting. In other words this means introduction of business logic in the sector so that innovative instruments become sustainable means to achieve efficiency and effectiveness.



Elements of context

■ Location of the Chu basin

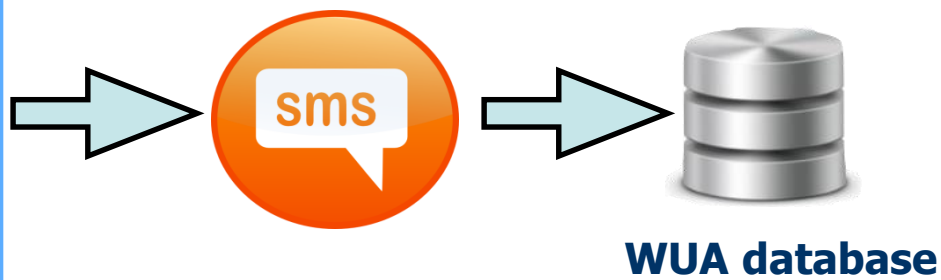


⇒ A basin with a great need to improve efficiency in water uses and water management

⇒ With more than 90% of water uses in agriculture

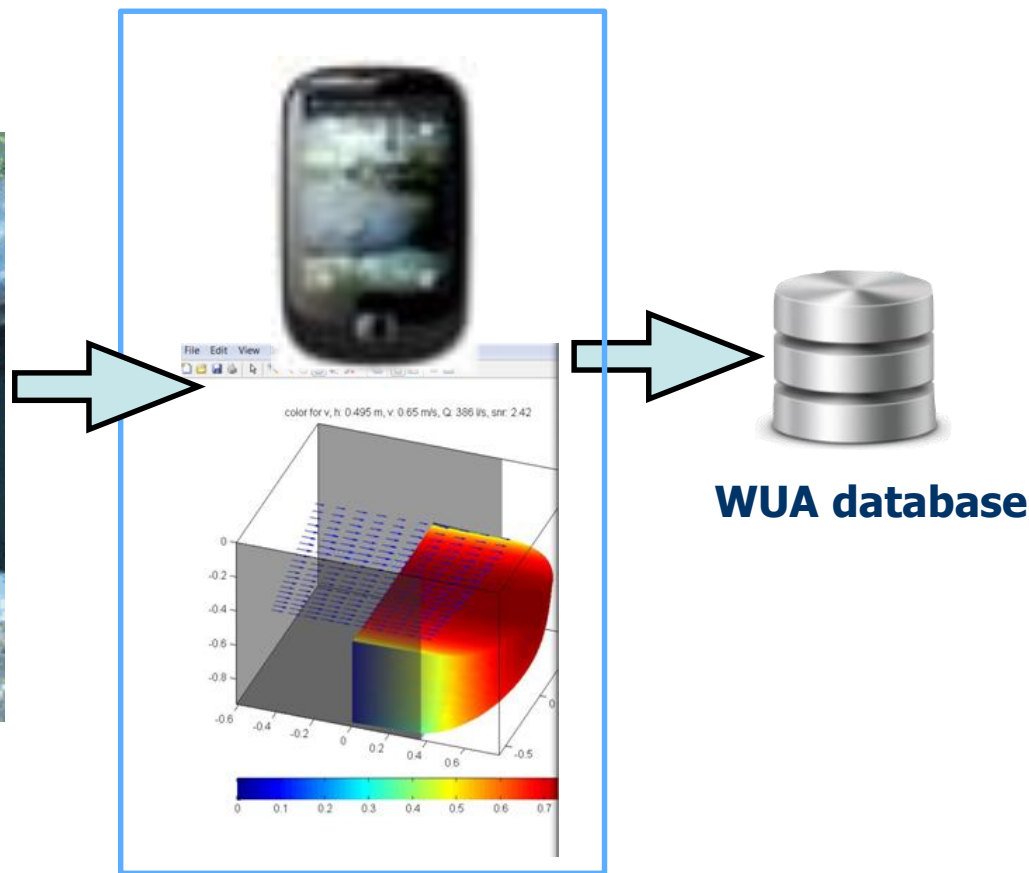
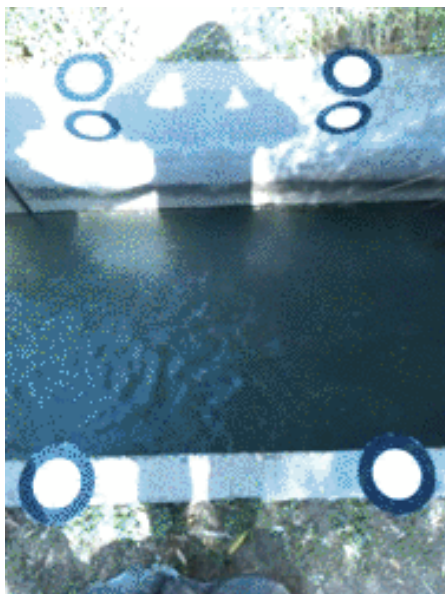
Supporting Water User Association (WUA) in data production with innovative solutions

- **Solution 1: Water Level Measurements through Smart Sticks** with data sending via SMS to WUA database



Supporting Water User Association (WUA) in data production with innovative solutions

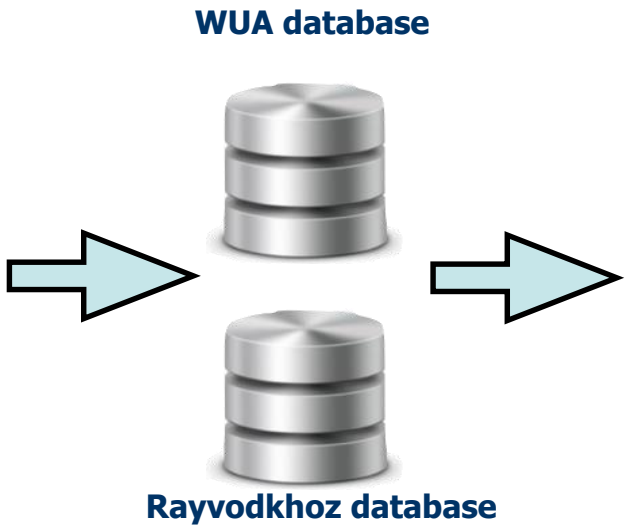
- Solution 2: Flow measurements of an irrigation canal via smartphone video with direct data sending via SMS to WUA database



Integrated application with traditional monitoring at the WUA level for water accounting combined



- Online easy, secure and fully integrated web-based water accounting system for
 - Water flow data archiving
 - WUA-level accounting
 - Rayvodkhoz-level accounting



Home Prices **Members** Contracts Tickets Water-Account Settings

Чуйская обл. → Иссык-Атинский → Узын-Кыргый → Узын-Кырг

WUA members list by irrigation systems

Year: 2014 System: Хоорус

Number: 2 Total: 10.6 ha

#	Owner	Land Share, ha	Note
1	Пернебаев Максат	5	
2	Аулашев М	5.6	

Home Sowing **Water-Account** Sensor Admin Reports Settings

Чуйская обл. → Иссык-Атинский

Water-Account

Year: 2014 Month: November Decade: 1

Rural Area: Choose Farm: Hydro Unit:

Please choose rural area.