IWMI International Water Management Institute

CGIAR RESEARCH PROGRAM ON Water, Land and Ecosystems

Disruptive technologies such as Smartstick for improved water measurements and financial viability of WCAs

IWMI's Research into Action – Examples of Impact from Uzbekistan

Oyture Anarbekov – Country Manager, IWMI-CA Office

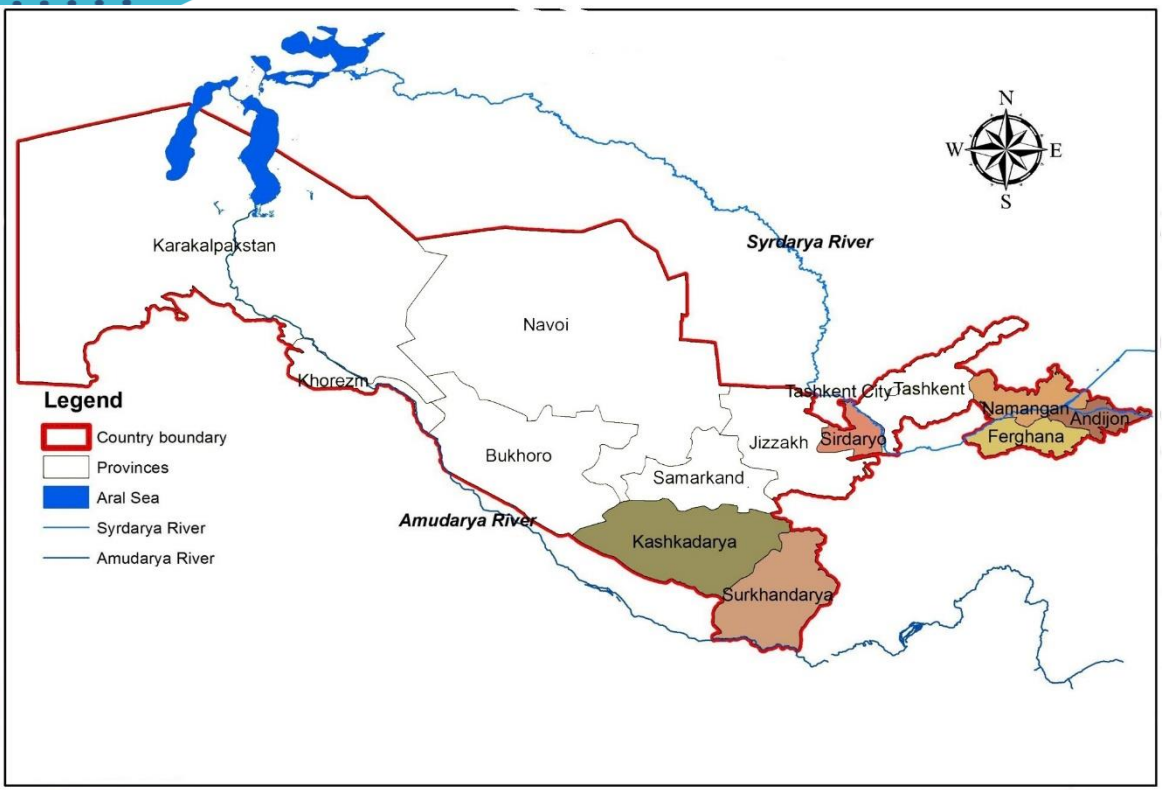
ADB-IWMI Water Webinar

Innovative water solutions for sustainable development

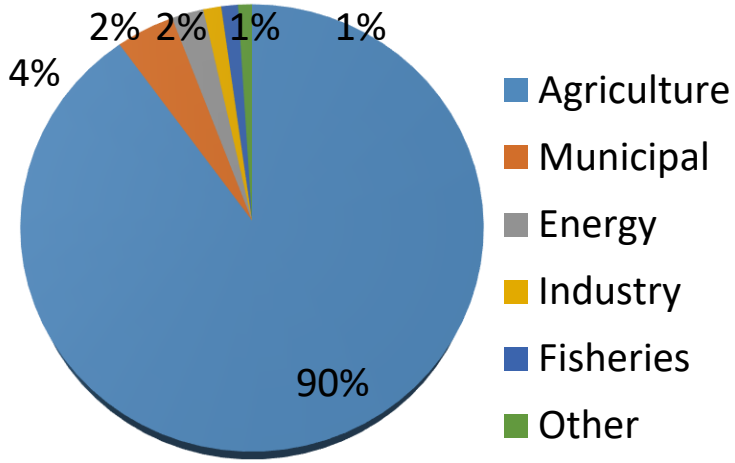
Food · Climate · Growth

March 02, 2021

Water Resources in Uzbekistan



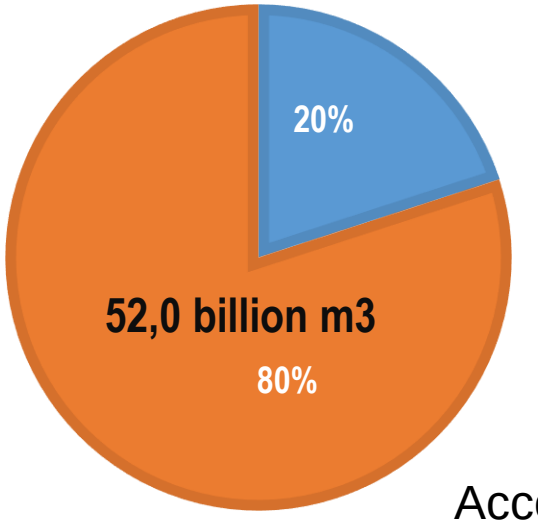
The territory is 44,892.4 ‘000 ha
Ag-e land is 25,614.0 ‘000 ha = 57.0%
Irrigated land is 4,311.5 ‘000 ha = 9.6%



Source: Ministry of Water Resources of Republic of Uzbekistan

USABLE VOLUME YEARLY AVERAGE

Formed on the territory of neighboring countries
41.0 billion m3



Formed on the territory of Uzbekistan
11,0 billion m3

Surface water - 97,2%
Groundwater - 0,9%
Return drainage water - 1,9%

According to the World Resources Institute, Uzbekistan is included in Top 25 countries exposed to water stress countries

IWMI International Water Management Institute

Challenges of on-farm O&M in Uzbekistan

- ***Outdated infrastructure***
- ***Low Coefficiency of efficiency of canals***
- ***Water losses***
- ***Absence of water control and metering facilities, eyes measurements***
- ***Accountability and Transparency***
- ***no incentives, ISF area based, questions of full cost recovery***
- ***Conflicts and disputes btw WCAs and water users***
- ***No linkages btw water use and water charge/Irrigation service fee***

as if 01.04.2019	**Electricity debt**	**Tax debts and other obligatory payments**	**Total**
Total Debt of 1503 WCAs, mln $	16.8	3.46	20.26
	1 USD = 8354 UZS (Source: Ex Rate Oanda.com)		

Pilot regions and questions 2016-2020

Programme funded by the EUROPEAN UNION

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by:
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

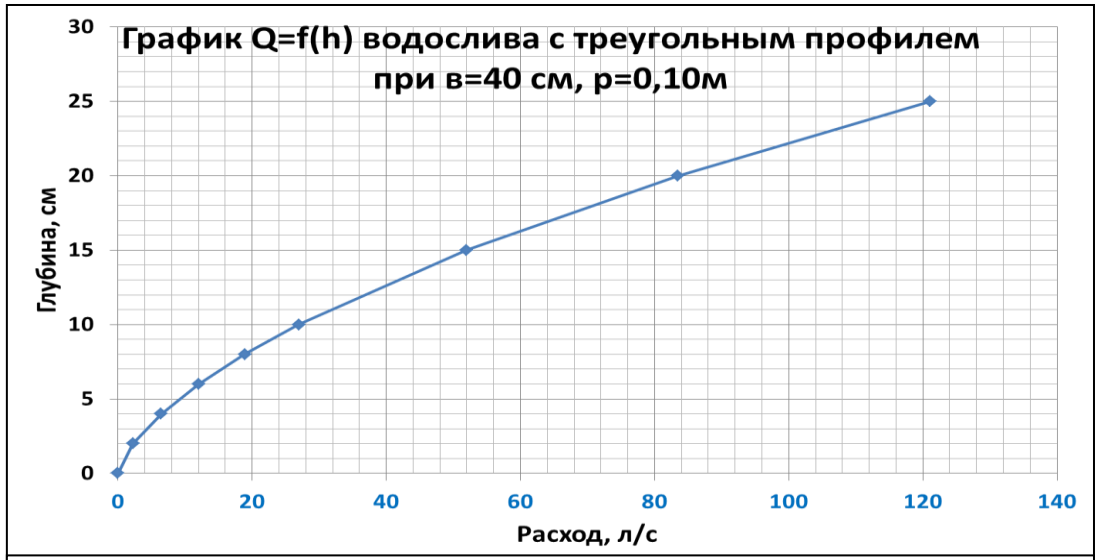
IWMI

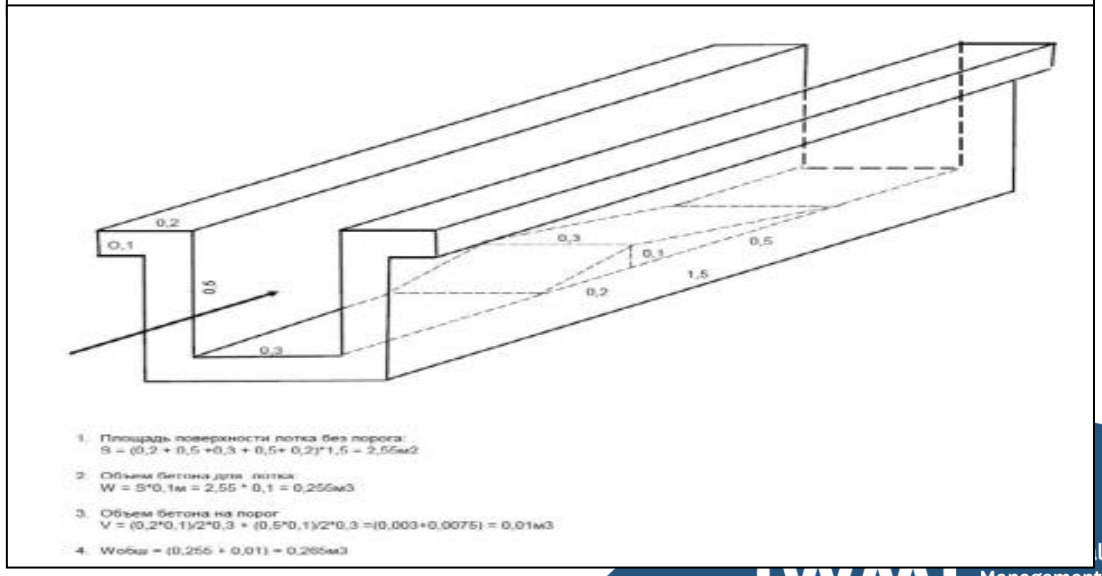
Task:

- Improving planning for efficient use of water resources and water measurement using modern technologies;
- Develop financial and economic incentives for water savings as well as improvement of ISF collections;
- Promotion of the water information system, as well as the operational data collection in the lower level of water hierarchy;
- The ultimate goal is to improve the transparency of on-farm water distribution, which should lead to better governance and increased financial sustainability of WCAs.

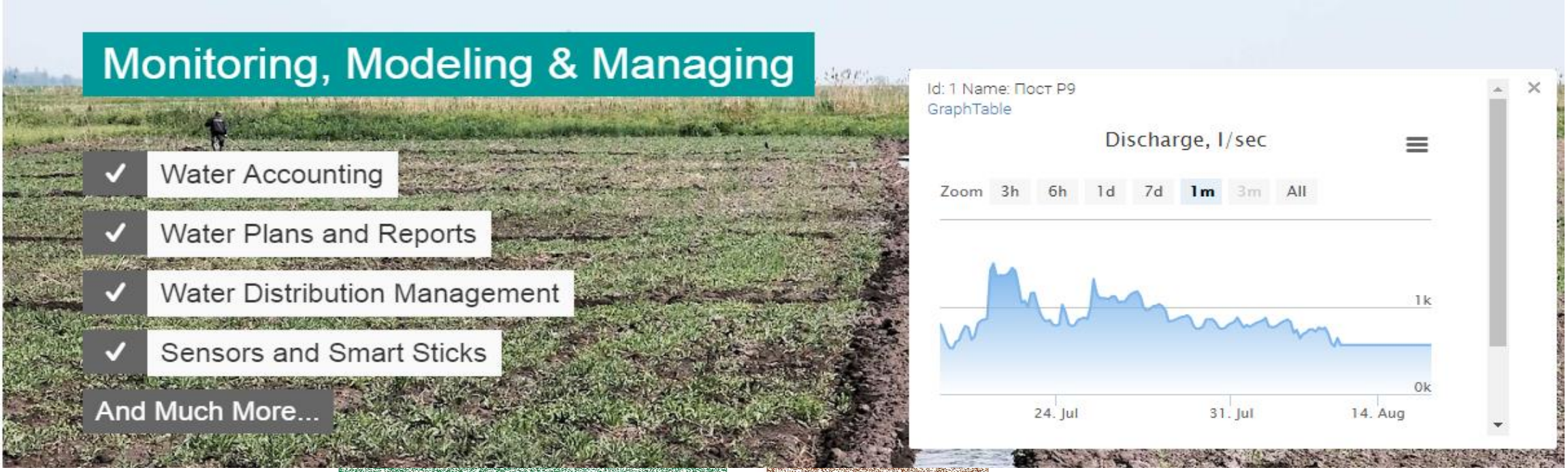
IWMI International Water Management Institute

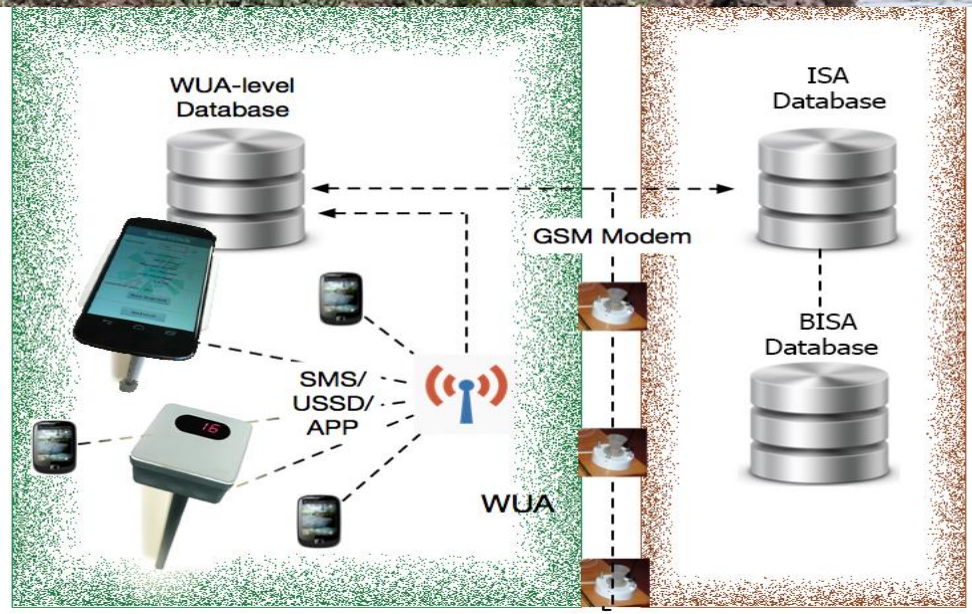
Water measurement and accounting in WCAs gauging stations





Online water & financial accounting





- two part-tariff
- Water monitoring
- Lowest hierarchy of WIS

Estimated Two-Part Water tariff

Fixed costs	Variable costs
➢ Salary	➢ Acquisition of equipment
➢ Taxes	➢ Repair of vehicles and land reclamation equipment
➢ Deductions for social insurance	➢ Repair of hydraulic structures
➢ Office expenses	➢ Cleaning of canals and collector-drains
➢ Costs of fuels and lubricants	➢ Construction of water-regulating and water-measuring constructions
➢ Payment of debts for the past year	

Name of WCA	Location	Serviced area, ha	Annual water use, m^3	Fixed cost, USD	Variable cost, USD	Fixed rate, USD/ha	Variable rate, USD for 1000m^3
Lufulla Bahromov	Andiajn Province, Uzb	200.2	1,779.000	3,843.14	628.06	19.20	0.35
Kuva Urta Buz Anori	Ferghana Province ,Uzb	1,495.3	6,827,600	4,853.19	812.87	3.25	0.12
Guldarasoy	Kashkadarya Province,Uzb	1,302	643,300	14,996.94	801.34	11.52	1.25

Impact

Decreased conflicts of water allocations btw Water users & WCAs

Stimulated gradually shift to charge ISF based on volume

Equity of water distribution in WCA Kuva Buz Anori, 2019

Name of canal	Average water availability along the canal,%	Water availabilty in the tail of canal, %	Equity of water distribution, %
May	60.8	62.8	103
Anor	106,7	86,8	81
Tolipov	77,4	73,2	95
Xasanov	100,1	77,5	77
Shodi	80,5	72,0	89

Improved water allocation among farmers: equity and reliability

Improved ISF collection rate & accordingly O&M

By the end of 2019 = 720 pcs mini-gauging stations

By the end of 2020 = 2100 pcs mini-gauging stations

Policy Uptake

- ***IWMI jointly with Partners contributed to President's Order (ID-7865) on Approval of the Agriculture Development Strategy for 2020-2030 of the Republic of Uzbekistan (regulation.gov.uz/ru/document/7865).***

- Work contributes directly to the **Water sector development concept of Uzbekistan 2020-2030: Smart Water, ICT in water sector plus market mechanisms.**

- Published blogpost on "**How tech and modern market mechanisms can solve water scarcity in post-Soviet states**" @ Smart Water Magazine https://smartwatermagazine.com/blogs/oyture-anarbekov/how-tech-and-modern-market-mechanisms-can-solve-water-scarcity-post-soviet

Key messages on foresight and future directions:

- Possibilities to add in situ measurements data
- low-cost, crowd-sensed technologies which are used for in situ measurement can directly contribute to SAMS4i database
- Gauging stations as well as its measurements data can be incorporated into SAMS4i
- Data on equitable water allocations as well as
- Data on ISF collections as well as financial performances of WCAs and Water Agencies could be quickly stored

The ultimate goal is to improve the transparency of water distribution, which should lead to better governance and increased financial sustainability of Water service providers.

IWMI International Water Management Institute

International Water Management Institute

Thank you

- Email: O.Anarbekov@cgiar.org
- iwmi-ca@cgiar.org

Innovative water solutions for sustainable development

Food · Climate · Growth

http://www.iwmi.cgiar.org/resources/apps/