

●●● | **Iran Workshop on Integrated River Basin Management – Towards Sustainable Land & Water Development**

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**Irrigation Management -
Working with
Farmer Water User Associations**

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●●● | **Irrigation Development & Emerging Farmer Water User Associations (WUA) World-wide**

- 1970s → intensive capital expansion in irrigation; large systems built by governments
- 1980s → irrigation management became an issue - shift from construction to rehabilitation. Introduced irrigation service fees, & farmer participation in irrigation management (PIM)
- 1990s → institutional reforms to devolve some/or all management responsibilities for lower level irrigation systems to farmer organizations/ WUA / IA (IMT)
- 2000 - → gov. whole sale water to WUA; moving to volumetric charge

●●● | **Why Farmer Participation?**

Assumption:

Local users of a common resource have more incentives to manage the resource efficiently than public agencies

For Most countries driven by:

- (i) State inability to raise revenues from water charges and pay for O&M
- (ii) The needs for sustainable irrigation investment

●●● | **WUA – Line Agency: Interaction**

Joint management – Partnership
- an international trend

- Gov manages entire O&M, little farmer input
- Gov manages main & 2nd, farmers manage 3rd & lower levels
- Gov manages main, whole sale to WUA; farmers/WUAs manage 2nd & below.....
- WUA manage O&M of whole systems; Gov regulate, assist

●●● | **Promoting Farmer Participation**

- Organize WUA to promote PIM – participatory irrigation management
 - most countries
- IMT – irrigation management transfer
 - a few countries

Where does Iran stand?

Alborz project - PIM or IMT?

**WUA Development
in
The Philippines**

Pioneered PIM in early 1980s

- > Intended to transform large government bureaucracy (NIA) - introduced IA or WUA
- > In terms of area:
 - **NIS** (national irrigation system) - 50%
 - **CIS** (communal irrigation system) – 40%
 - **PIS** (pumping irrigation system) – 10%
- > **PIM - in all the above**

Since 1981

- > **2,000 WUA in NIS**
- > **3,000 WUA in CIS**

Registered WUA cover 80% of total irrigated area in the country

Government's role in irrigation management – Through NIA

GOCC: Gov. owned & controlled Corporation

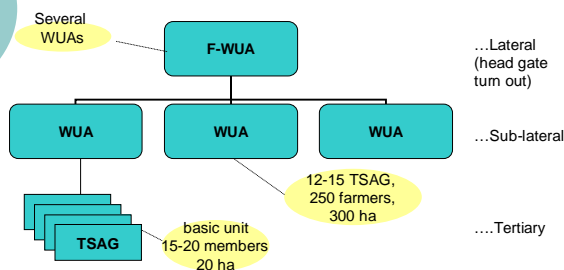
Goal:

**Self-financing,
whole sale of water,
TA to WUA**

GoV Role Through NIA – 2 mandates defined by its charter -

1. **Engineering** – plan, design, supervise construct, O&M
2. **Social Engineering** – organize WUA, IMT to WUA

Farmers' Role in Irrigation Management



Formation of WUA

Steps (around 12 months):

1. Organize TSAG – discuss & identify farmer leaders, draft by-laws, elect committee
2. Form WUA – elect from TSAG leaders
3. Register WUA as legal entity
4. Award with contracts
5. Training of WUA leaders (in 2-3 yr)

Government's Role through NIA

WUA Preparation Team
(**Institutional Development Team**):

- NIA's IDO Officers – Play leading Role (unv. level. 1 per 10,000 ha)
- NIA's WRFT – (high school level)
- Farmers' FIO – farmer irrigator organizer – head of farmers identified.

Stages of WUA Involvement

- **Type-I** Contract (maintenance)
- **Type-II** Contract (operations & fee collection)
- **Type-III** Contract (turn-over) in small pumping systems
- **IMT Contract** in NIS - since 1999....(AFMA law of 1997)

Irrigation Management - Working with Farmer Water User Associations

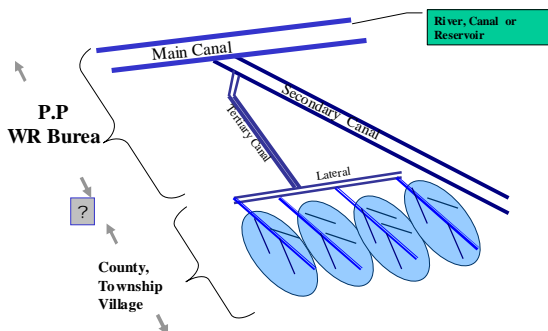
Chinese Experience

Recent Development of WUA

Country Setting:

- **Main Systems (canals, structures):** Provincial Water Resources Bureau (WRB)
- **Branch /Secondary canals of big systems:** PWRB's Prefecture Offices
- **Tertiary & Below of big systems & small systems:** Irrigation Mgt Stations – county, town, village administration

Rural Water Facilities Management Structure



Irrigation Management Issues

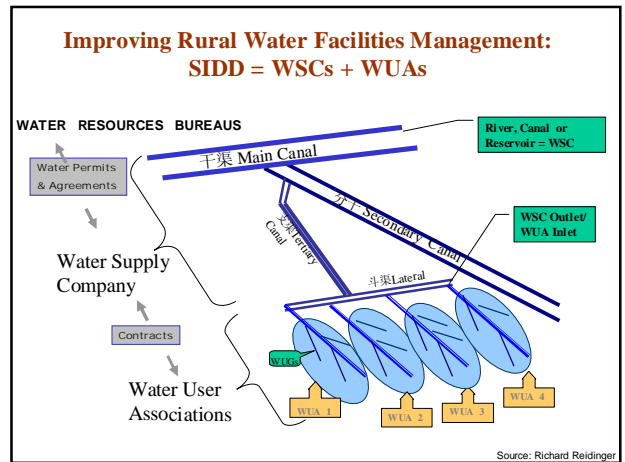
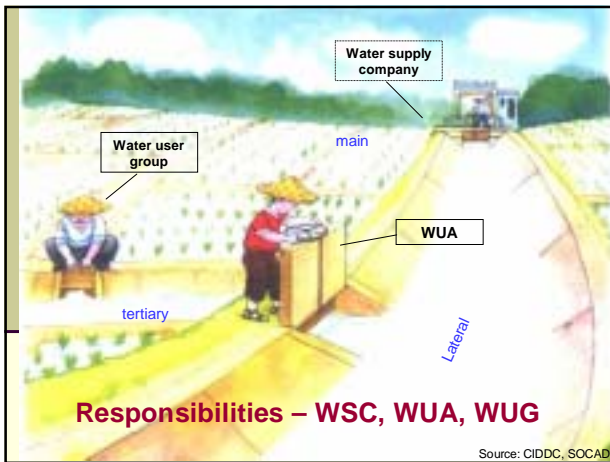
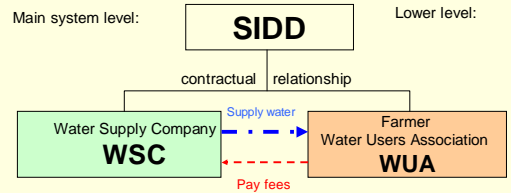
- Often too many staff, "installed" by local administration
- Budget - a constraint, water fees inadequate to pay for O&M
- Water fees often collected together with other fees – "water carriage"- farmers unclear what fees were for what
- System maintenance kept at minimal. Non delivery of water was usual

Farmers unhappy...systems deteriorating.. staff no incentives with delayed saltat

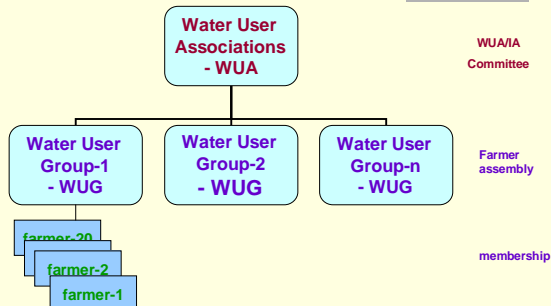
Searching for a New Approach?

WUA – Recent Concept Since 1994

SIDD – Self-managed Irrigation & Drainage District - an emerging form of PIM



Farmer Water Users → WUG → WUA

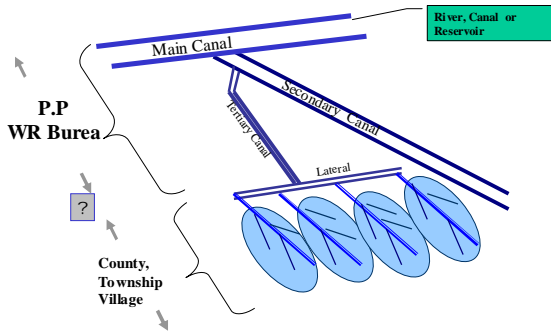


Set Up WUA: Five Basic Principles to Follow

Principle # 1

WUA
by
hydraulic boundary

Rural Water Facilities Management Structure



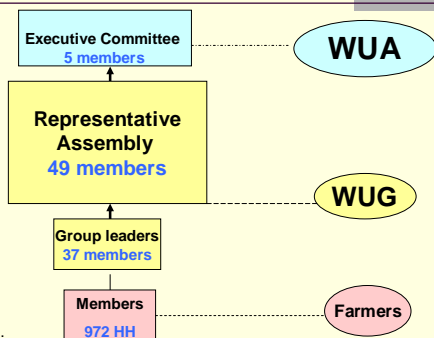
Set Up WUA: Five Basic Principles to Follow

Principle # 2

WUA – farmers’ own organization - independent from government influences, with **democratically** elected committee, own managed accounts



Jing-tang WUA: Structure



370 ha; 972 hh.
4 villages

WUA Executive Committee

■ WUA covers –

< 500 ha	3-person
500 ha – 1,000 ha	5-person
over 1,000 ha	7-person

Five Principles of Establishing WUA

....

Principle # 3

WUA shall be **registered** with Civil Affairs Agencies. It has a legal personality, and its **charter & regulations**



Five Principles of Establishing WUA

....

Principle # 4

WUA shall have a water **measurement** facility at the intake to its service area



Five Principles of Establishing WUA

....

.... shall enter into **contract** with a Water Supplier and are charged per the **volume of water** supplied.

It collects water charges members, pays the Water Supplier, and keeps sufficient amount for its own O&M

Contract Negotiation



China: Yangtze Basin Water Resources Project

Five Basic Principles of Establishing a WUA

Principle # 5

The irrigation system to be operated by WUA has **adequate water supply** & a reasonably **functional** distribution system



Opening for Changtang WUA (1995). Leaders from province, municipality, county, township and Tieshan WSC all came

Yangtze Water Resources Project, WB

Example to illustrate: Jing-tang WUA, Hunan



WUA established in 1998 - Tieshan WSC manages main system, organizes WUA, sells bulk water to WUA & a city

Photo: Yangtze Water Project, WB

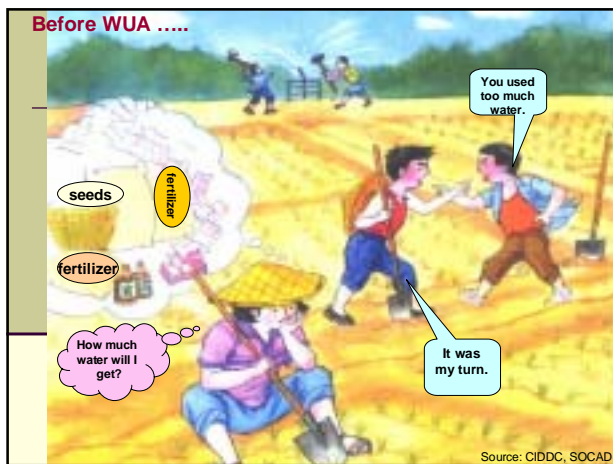


Jing-Tang WUA chairman in Tieshan: explaining WUA layout map. WUA is required to display map, charter/regulations for all to see.

Photo: Yangtze Water Project, WB

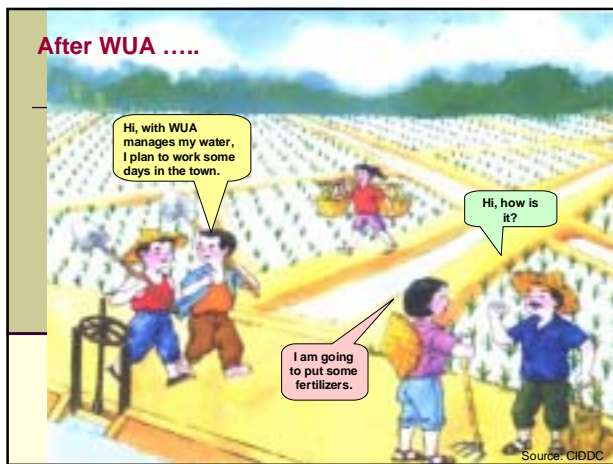
Jing-Tang WUA: What had happened - Before WUA

- Irrigation Mgt Station (9 staff): 55% collected fees went to salary (1998)
- No PIM; farmer had no incentives to contribute, thinking it was governments' responsibility, government's facilities....government funds ...gov
- Carry-fee: 30% above the water fees was for items other than irrigation. Still no guarantee of water
- Farmers unhappy, refused to pay,...
- No money to pay electricity, delayed salary payment to staff.. Irrigation Station kept begging for funds from local government....
- System deteriorated.. more farmers complains....



Jing-Tang WUA: What had happened since - After WUA

- Now (2005) 5 persons-WUA, 37 group leaders care for sub-laterals
- Water saving by 17%, reduced input cost
- Saved \$2,500 on water charges, to each hh \$10/ha/yr
- Since 1998, WUA put own labor to develop 50ha more. Local government put funds...
- Yield increased; income increased.
- Reduced labor input during irrigation season by 2/3, saved labor earned income outside agriculture



Farmer Reaction to Volumetric Charge

- Farmers **demanded** for water measurement since water charge was volumetric - they saved money by using less water.
- Many WUAs have reduced water charges to their members comparing to the charges at the initial stage of WUA establishment **DUE TO water saving.**
Despite \$/ha is slight higher than before because of WUA costs
- Initially water measurement was between WUA – supplier. Now many farmers are asking their WUAs to install water measurement down to lower levels.
Due to low costs, this becomes possible.

From 1995 - 2004

- WUA concept and PIM have now been institutionalized in China
- Under government projects nationwide – set up over **4,600 WUA**. Registered only < 10%.
- Members over 3 million hh (**700 hh/WUA**)
- WUA officials 29,000 (women 7%).
- Under 5 WB projects – set up about **1,500**.

Some reports shown **23,000** now....

Incentives ?

Farmers Incentives to Join WUA? To use volumetric charge?

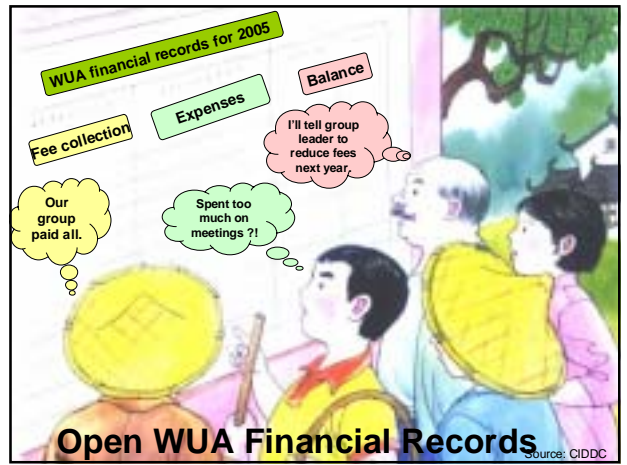
- Reduced water fees per hh; transparency
- Better service, reduced labor input in season
- More harmony among farmers

Suppliers' Incentives to organize WUA? To use volumetric charge?

- Have organized farmers
- Better fee collections – from 60% to >95%
- Use saved water elsewhere – water stress
- Less headache fighting with local units

Survey Results Show:

WUA Management Transparency - key



Thank You for Your Attention

