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Experiences of Participatory Irrigation Management in the APWELL Project

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The PIM journey (1997-2016)

- The rich experience in PIM through:
  - APWELL project
  - APFAMGS Project
  - AP TS CBTMP
  - Telangana State : Mission Kakatiya
- Objective analysis of responses/results
- Share the results
- Generate discussion

Our experiences and Key messages

- **PIM is possible**
- Very well illustrated in APWELL
- About 5 farm families were provided with a well
- Clear water sharing agreements
- Underground pipeline with outlets for each family
- Organized into water user group (WUG)
- Bore-well User Association (BUA), at the village level, for Conflict resolution
- Groundwater Management Committee (GMC) for real-time tracking of HU groundwater balance

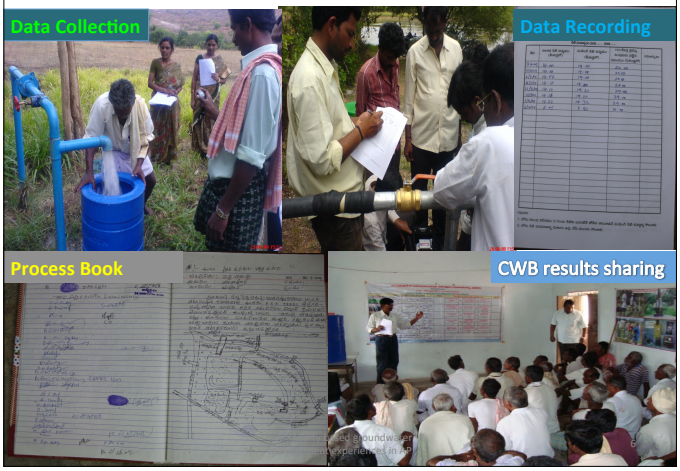
Hydrology can be demystified

- Evident from APWELL as well as APFAMGS
- Rural folk theatre (Kalajatha)
- Newsletter (local dialect)
- Audio-visuals
- Demonstration and practice sessions in training
- Participatory (PRA) tools for planning
- Non Formal Education methods and tools
- Farmer Field Schools (FFS)
- Farmer Water Schools (FWS)
- Crop Water Budgeting (CWB) – main platform

Multi-disciplinary teams are crucial

- The approach calls for inter-disciplinary action
- Farmer is no specialist but knows all
- Approach has to be holistic
- Multidisciplinary teams essentially consisting of:
  - Hydro-geologist
  - Agriculture Scientist
  - Sociologist
- Team building exercise is essential for mutual trust and cooperation

PGM Processes: Farmers in Action



Farmers are efficient data gatherers

- Proven beyond doubt (APWELL and APFAMGS)
- Data continuity is ensured through very local and innovative arrangements

- Data collection seen as philanthropic act
- Data collector feels empowered and obliged
- Unimaginable data dissemination methods evolved locally

- Unintended benefits are perceived as a result of access to data
- Lot to learn from farmers….

Better response in non-command areas

- PGM need is felt most in non-command areas
- Droughts and seasonal wells further increase the participation

- Safety of well is perceived as the highest priority
- APFAMGS experience in Nalgonda command area:
  - Tail-end area under the NS left canal
  - Good initial response to PGM
  - Water released in canals (second year)
  - Lost interest in PGM
  - People certain about well sustainability

Could stabilize the aquifer and benefit farmer

- Post-facto evaluation:
  - 55% of wells showed "up-ward" trend of SWL
  - 29% of wells showed "stable" trend of SWL
  - Area under well irrigation increased by 62%
  - Fewer wells to irrigate more area
  - Possible clearly through crop diversification
- Critical controlling factors:
  - Size of the HU (larger the better)
  - Areal extent of more favourable aquifer
  - Subsidy on precision irrigation devices
  - **Could result in crop diversification**

Impact of APWELL

- Land values tripled
- Increase in yields and income
- Increase in income
- Poverty reduction, less indebtedness
- Diversification of crops – more ID crops
- Efficient water use – micro irrigation practices
- Migration stopped or reduced
- Reverse migration started
- Creation of employment for landless and others
- Reduction in felling of trees in forests
- Improved social status

Andhra Pradesh Community Based Tank Management Project (2007-2016)

Project Development Objective:

- Selected tank based producers improve agricultural productivity and water user associations manage tank system effectively.

- Rehabilitated 2157 minor irrigation tanks in 21 districts, with an ayacut of 2.55 lakh ha.

- Benefitted about 6.05 lakh farmers.

Farmers measuring quantum of water thru cut throat flumes

- Objective: Empower water users to understand surface water productivity

- Methodology: Involve water users in data collection and recording, and analysis

- Assist farmers in crop water budgeting based on crop water requirement and water availability

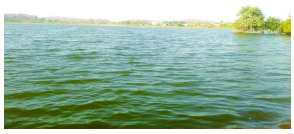
- Crop diversification based on land and water productivity and market demand

SHARING GROUNDWATER

- The biggest gain from the PGM component under APCBTMP
- Farmers with water willing to share groundwater with adjacent, contiguous farmer without resource
- Project provided for conveyance cost
- provided pipe lines to a total of
- 655 Farmers covering
- 61 Tank villages in
- 7 districts

Telangana State, India initiatives

MISSION KAKATIYA



The objective of Mission Kakatiya

is to enhance the development of agriculture based income for small and marginal farmers, by accelerating the development of minor irrigation infrastructure, strengthening community based irrigation management and adopting a comprehensive programme for rest

The major benefits of the Restoration of Tanks

- irrigated area expansion by covering gap
- technology impacts through adoption of resource conservation-cum-production technologies when the project is fully implemented.
- diversification to cover irrigated area under high-value and low water intensified crops such as chillies, maize and vegetables.
- development of fisheries.
- improvement of livestock.
- reduction in waterlogged area.
- increase in groundwater levels and water quality there by getting the lands beyond command area under bore well irrigation.
- power savings due to the reduced need for well irrigation that is currently used to supplement the insufficient tank water.

A study by ICRISAT

- Moisture retention capacity has increased in farms.
- When local farmers used silt lifted from the water bodies, moisture went up by 4 to 7 days according to a pilot study by ICRISAT recently.
- addition of tank silt by 50 to 375 tractors loads per/ha. Improved available water content by 0.002 to 0.032 g. in the soil.
- An increase in clay was noticed from 20 to 40 per cent in the route zone. Decrease in course and fine sand was also noticed while there was no change in Ph., Ec and organic carbon.
- change was observed in available nitrogen, potassium, phosperous and a moderate reduction in sulpher.
- The silt addition also expected to reduce the chemicals by 30%, reduce in no. of wettings.
- Higher plant population, higher plant height resulted increase in net income of the farmer.
- Saving on fertilizers and pesticides from Rs. 2005 to 3750 per/ha. In cotton

Towards Wise Water Use

- Sharing by all water users (surface and ground water) should be encouraged which will lead to social regulation
  - Provide pipes for proper water conveyance, avoiding wastage and encouraging sharing and equity
  - Build into the project cost of pipes and other micro-irrigation devices/equipment
  - Community consensus on any new groundwater extraction for drinking water or sharing only
  - Promote wise water use
  - Promote energy efficient pumping systems and practices

Thank you for the time and opportunity