



Alternative Vision for Addressing Water Issues

**an India experience based on FAO funded
Andhra Pradesh Farmer Managed Groundwater Systems (APFAMGS)
Strategic Pilot on Adaptation to Climate Change (SPACC--FAO-GEF)
projects**

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Background



- Common man's perception of natural resources (water, land, forest, biomass, etc.) are
 - an everyday requirement that interlinks the entire community (local and global)
 - needs to be drawn from a common pool (to be shared)
 - critical input for improved health, nutrition, economy (right of use).
- Specialists (technologists, planners, politicians) perception is a lot more complex depending upon their specialisation/project
- Most times these varying perceptions lead to severe delays in policy formulation, project design and disagreements between key stakeholders
- The need is to make things simple for equitable, environmentally sustainable, and ethically appropriate natural resources management.
- The India experience (APFAMGS/SPACC projects) engages the user to emerge as decision maker through improved knowledge and skills, while technologists/ planners act as enablers.

India's water Predicament

- Planners see surface irrigation projects as the only solution to meet India's water demand however these take decades to get completed
- Individual water users see Groundwater as dependable source and keep on drilling more and more wells.
- Today Groundwater development is determined by behaviour of nearly 30 million individual well owners all of whom are driven by need as well greed to keep pumping more and more from the ground.
- Participatory Ground Water Management (PGWM) concept empowers these individual well owners with improved knowledge of groundwater dynamics. Thus enabling them to address groundwater crisis at individual farm level as well as collectively at the Drainage basin level.

Tracking Local Water System Behaviour & Climate Change Impact

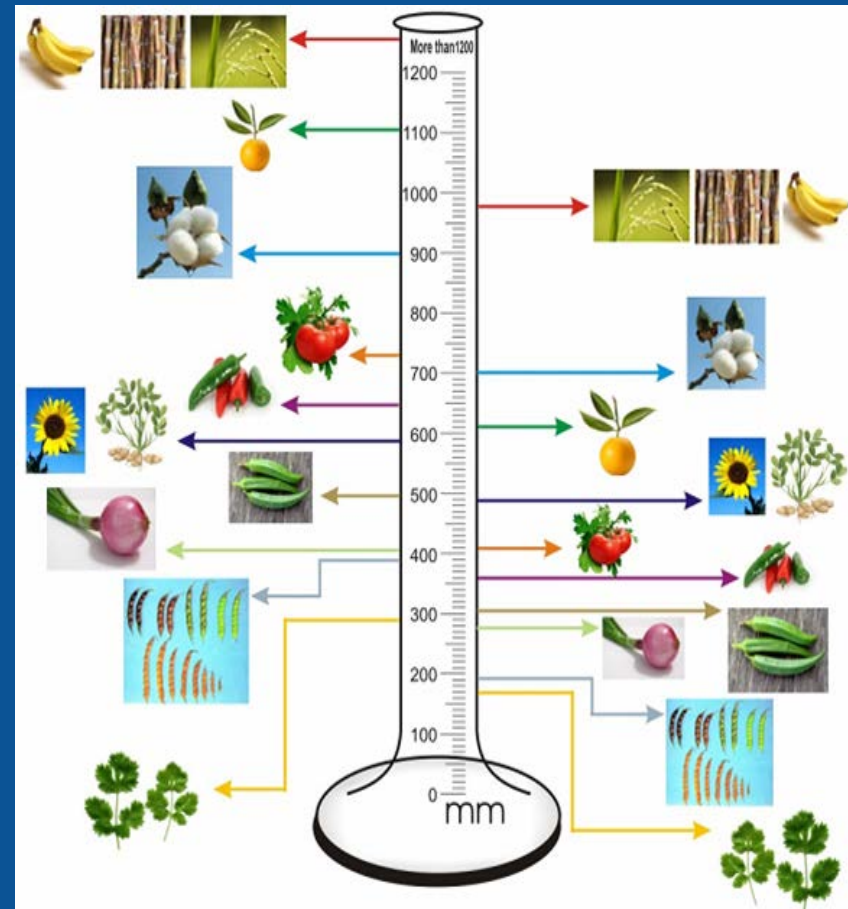
- Community led tracking of variation in rainfall, runoff, groundwater use, water quality
- Data collected by trained volunteers who follow established global standards.
- Data is shared real time using display boards
- Data analyzed annually as part of crop water budget estimation
- Results of the analysis are used in making decisions on crop-plans and water -use
- Data is computerized and made available as priced data to professional agencies



Scrutiny of natural resource degradation from a commoner's perspective



- Community-led monitoring places data in the public domain
- Availability of data and information also helps understand seriousness of the problem
- New knowledge enables behavioural change
- Community is able to anticipate risks,
- Adopt steps to protect their investments in farming at the same time get best economic returns.
- Most importantly such a community led monitoring system helps bring discipline and efficiency in the use of natural resources (water, land, soil, biomass, etc).
- Supplements government monitoring system with community gathered data



Establishing Participatory Climate Monitoring



- Mass Awareness Campaigns
- Construction of Weather Station
- Identification of volunteers
- Training and handholding
- Data collection and storage
- Data dissemination
- Farmer Water Schools (FWS) and Farmers Climate Schools (FCS)
- CCAC meetings discuss data and collective decisions
- SLWM Pilots in farmer fields.



Project Outputs

- 638 GMCs and 63 HUNs functioning actively
- 4333 farmer volunteers (men and women) involved in collecting technical data
- Daily rainfall collected from 190 rain gauge stations
- Fortnightly groundwater levels monitored from 2019 monitoring wells
- Implemented through farmer facilitators who are already trained and have adequate experience
- 19,277 Farmer Facilitators graduated over the 4 years, whose services are used by project, government and other programmes



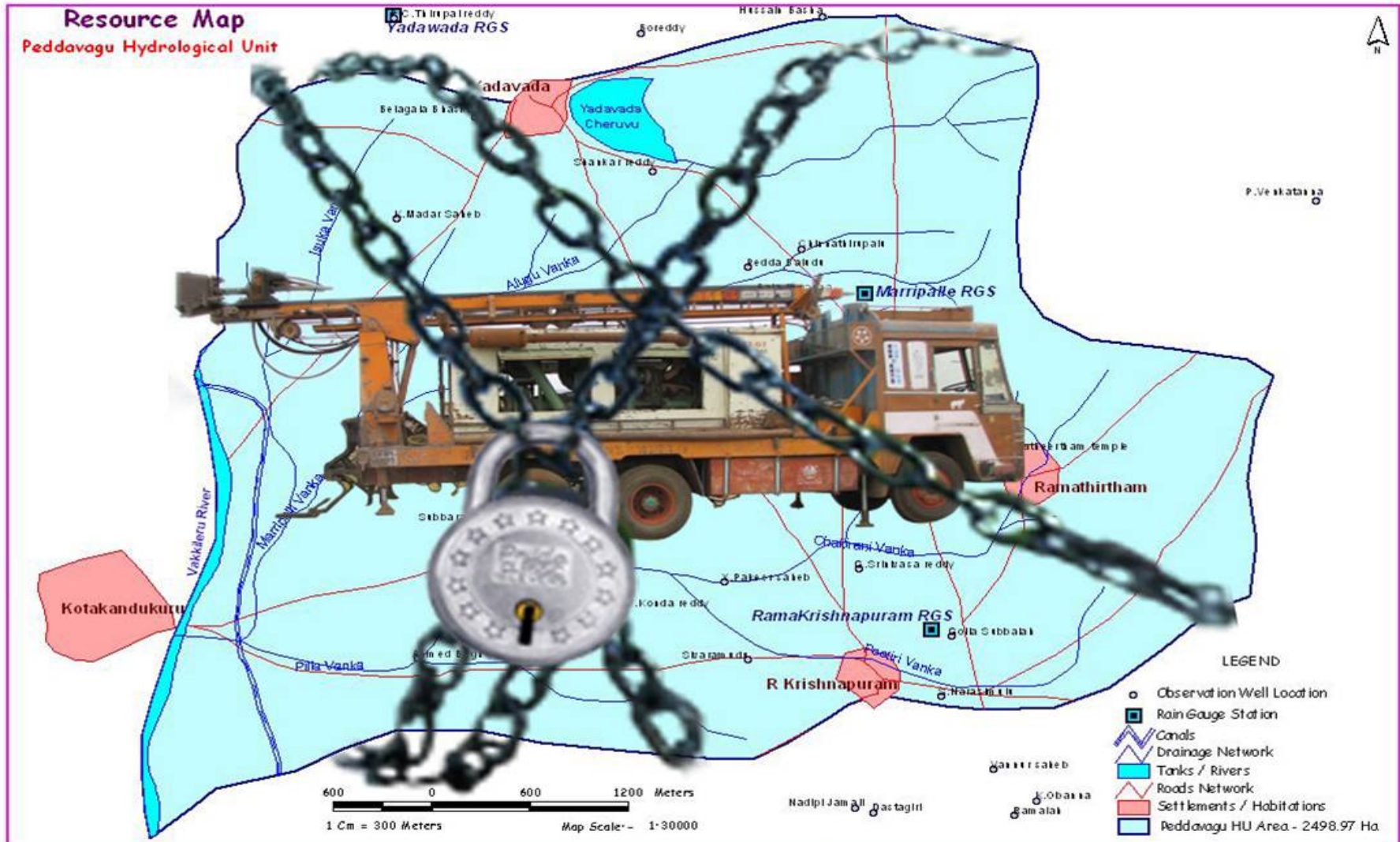
Integration of Science with Socio-Economic Realities



- Practitioners of science when provided with full access to scientific knowledge respond positively
- Farmer Water Schools (FWS) and Farmers Climate Schools (FCS) have been designed to demystify the science without diluting it.
- The entire schooling adopts the Non formal Education (NFE) process supported by short term and long term experiments.
- Ensures schooling acts as an empowerment process leading to behavioural change



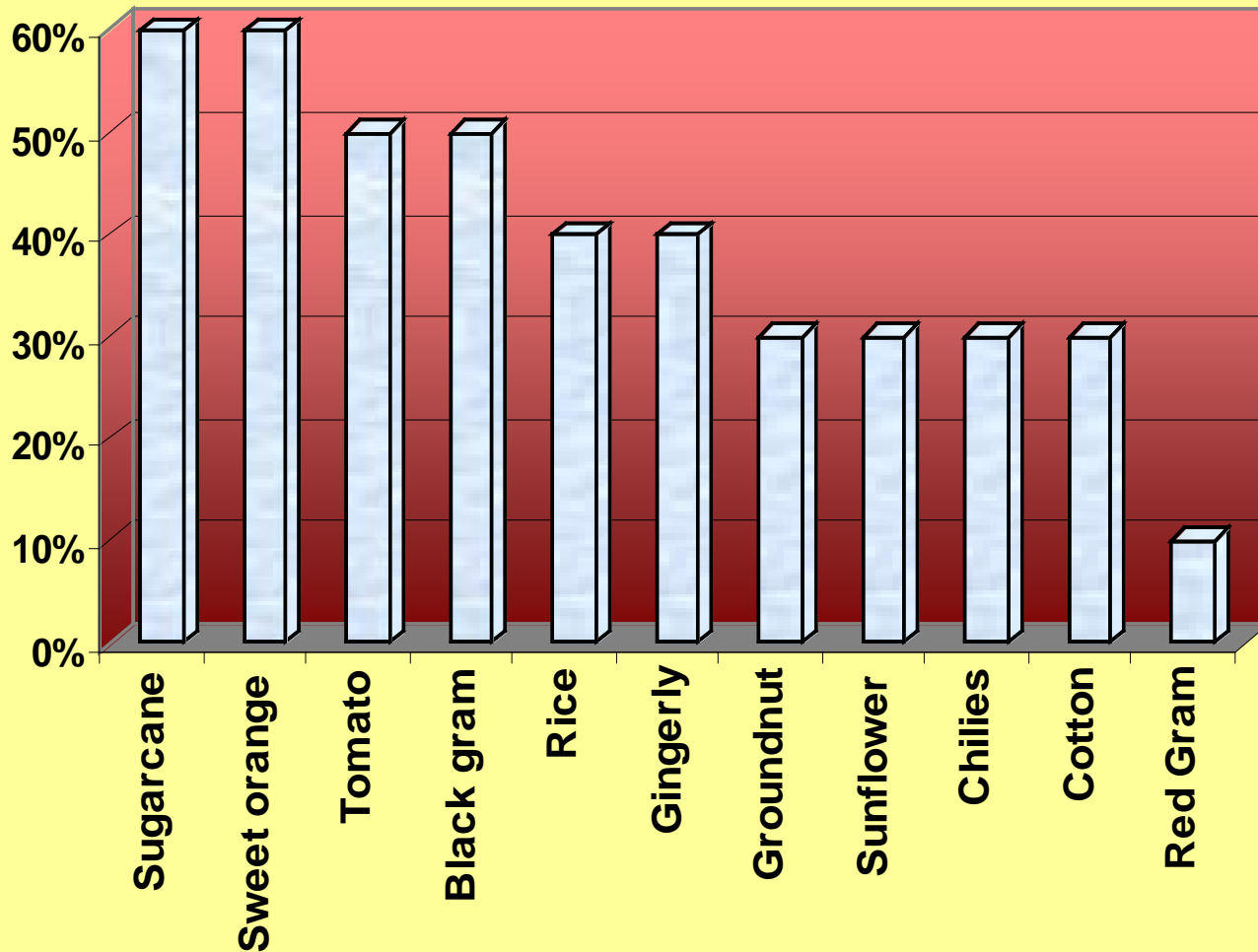
Tapping Richness of Local Institutions for Improved Governance



Impact of Participatory natural Resource Management Approaches



Savings achieved in diferent crops through water saving practices



Relevance of Participatory Natural Resource Management Approach beyond the Project area

- Planning Commission of India has recommended this approach for large scale replication

National Groundwater Management Programme

5.51. The challenge of groundwater management arises from the fact that a fugitive, common-pool resource is currently being extracted by individuals, millions of farmers in particular, with no effective mechanism to ensure that the rate of extraction is sustainable. The good news is that over the last few years innovative approaches have been tried out across countries, which have blazed a trail in how this paradox might be resolved. Please refer to Box 5.2.

5.52. The Twelfth Plan will launch a National Groundwater Management Programme building upon these diverse experiences and carrying them to scale. The exercise of aquifer mapping will provide a foundation to this effort by enabling local planners to gain an understanding of the following aspects and make plans accordingly:

DRAFT Twelfth Five Year Plan 2012-17 Planning Commission Government of India

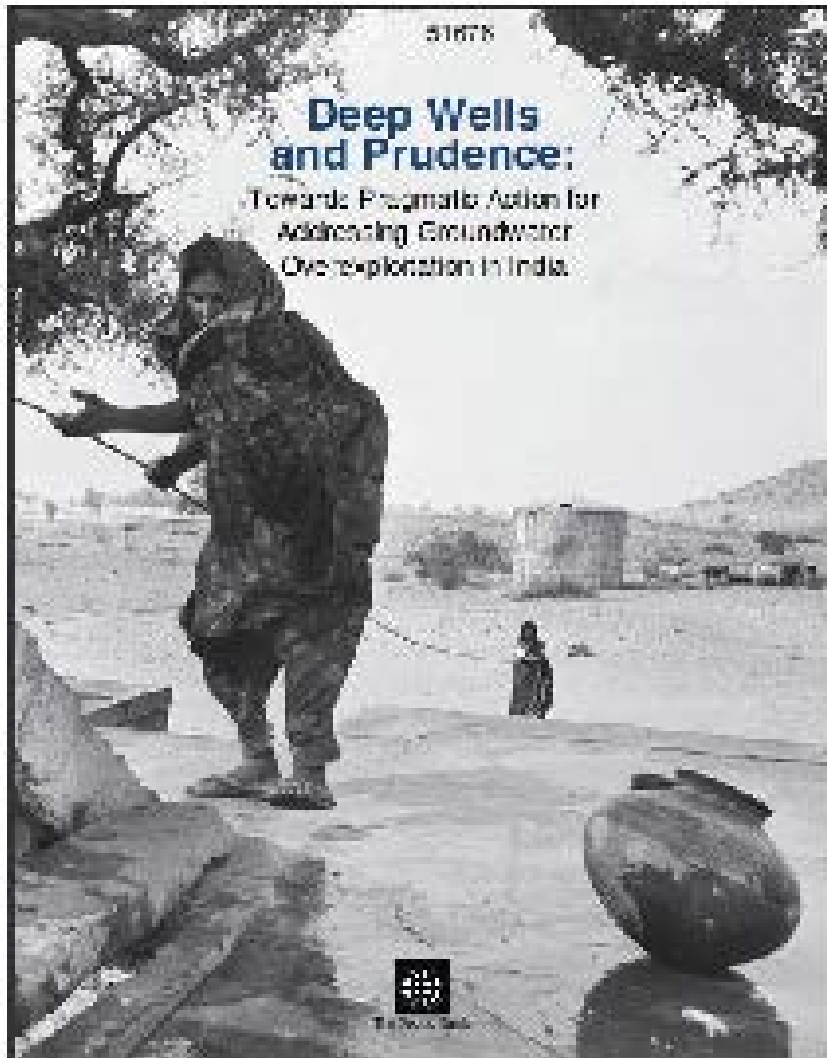
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Box 5.2

Participatory Groundwater Management in India

- The FAO-supported APFAMGS programme in Andhra Pradesh aimed at involving farmers in hydrologic data generation, analysis and decision-making, particularly around crop-water budgeting.
- Social regulation in groundwater sharing under the AP Drought Adaptation Initiative (APDAI) involving Watershed Support Services and Activities Network (WASSAN), in parts of AP.
- Experiences from Barefoot College, Tilonia, with a water budgeting tool known as Jal Chitra.
- Foundation for Ecological Security (FES) taking a micro-watershed unit for water balance and planning groundwater use along with communities in Rajasthan, MP and AP.
- Experiences of Advanced Centre for Water Resources Development and Management (ACWADAM) with Samaj Pragati Sahayog in MP and with the Pani Panchayats in Maharashtra on knowledge-based, typology-driven aquifer-management strategies.
- Training programmes and drinking water initiatives by ACT in Kutch training local youth as para-professionals in their quest for improved groundwater management.
- Research on documenting local groundwater knowledge in Saurashtra and Bihar by INREM Foundation.
- The Hivre Bazar model of watershed development and social regulation to manage water resources in Maharashtra.

World Bank Report



A world Bank Publication
“Deep Well and Prudence” saw merits adopting such methodologies where legislative approaches have failed in moderating over exploitation of natural resources

Support Stakeholders in Problem Solving



- Given the range of natural resource management issues globally it is pertinent to examine the opportunity of directly involving the stakeholder community in problem solving process.
- Stakeholder participation ensure full access to data, information and new knowledge for better understanding of all the linked issues
- Interaction with Stakeholder need to be through appropriate forum/institution for understanding the various concerns and facilitating with the resources in problem solving on their own.

Thank You

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