

# Community-led Water Management

## Part 7 - Participatory Irrigation Management in Canal Command Areas



## **What need does the playbook address?**

Large swaths of the country are facing severe water stress, largely due to over-exploitation of groundwater and surface water resources. Lower water availability leads to unequal distribution of water resources, lower crop yields during dry months, and issues of salinity and aridity of the soil. Addressing this issue requires community participation and behavioral change.

Rather than designing top-down schemes for agrarian water use, DSC emphasizes on community planning of water resources. The design of field assessments, community mobilisation, village-level water budgets, water recharge structures, monitoring and the participatory approach to water security planning best exemplify this.

## **Who can use this playbook?**

Practitioners, Trainers, Community Resource Persons,  
Progressive Farmers, Subject Matter Specialists,  
Local Governance Representatives

This playbook is designed using the expertise of **Development Support Centre (DSC)**, which works on participatory water management and judicious use of water in Gujarat, Madhya Pradesh, Rajasthan and Maharashtra.

These solutions by DSC have been designed and pioneered under the leadership of Anil Shah, founder chairman; Mohan Sharma, executive director; and Sachin Oza, former executive director. These community-empowering participatory technical and social processes in DSC's 30-year journey led to the evolution of the approach to promoting community-led water security.

*Today we have gathered to talk about the water situation in our village. Let's see how deep is the water.*

*Did any of you notice that the soil is getting arid because water is saline?*

*How many of you had lower crop yields in this dry season?*

*Did some of you feel you received less water than your neighbouring regions?*



*If we manage our water properly we can solve these problems of irregular water supply and quality*

### In this book you'll learn to

- Understand your village's water needs and resources
- Get involved in water management
- Prepare water budgets
- Plan for water security
- Replenish groundwater by building recharge shafts
- Monitor water resources
- Cooperatively manage irrigation

*\* This playbook is **Part7** of a 7-part playbook series on cooperative water management. Find the complete set here: [link](#)*

# 7.

## Participatory Irrigation Management in Canal Command Areas

We need to ensure equitable distribution of water  
across the village in canal command areas.



Why do we need to learn about participatory irrigation management? Let me explain.

Despite heavy investment in large-scale irrigation projects, **equitable water distribution** remains a challenge.

Farmers at the tail-end of minor canals rarely get their share of water, leading to lower agriculture yields. On the other hand, unscientific practises are leading to cultivation of water intensive crops or increasing salinity due to water logging.

Rather than design top-down schemes for equitable agrarian water use, DSC emphasises on community planning of water resources. Involving the community in solving irrigation issues ensures:

- Equal distribution of water resources through **a cooperative approach** between farmers
- Increased agrarian incomes through **better water use** planning and rotation
- Increased incomes through **better crop planning** based on available water
- Efficient use of water resources to **lower dependence on groundwater** and other depleting water sources
- Better maintenance and use of **public structures** such as canals and pumps



*PIM programmes have demonstrated that many problems related to water access and management in canal command areas can be reduced with the active participation of farmers. There are two important stakeholders in the PIM process*

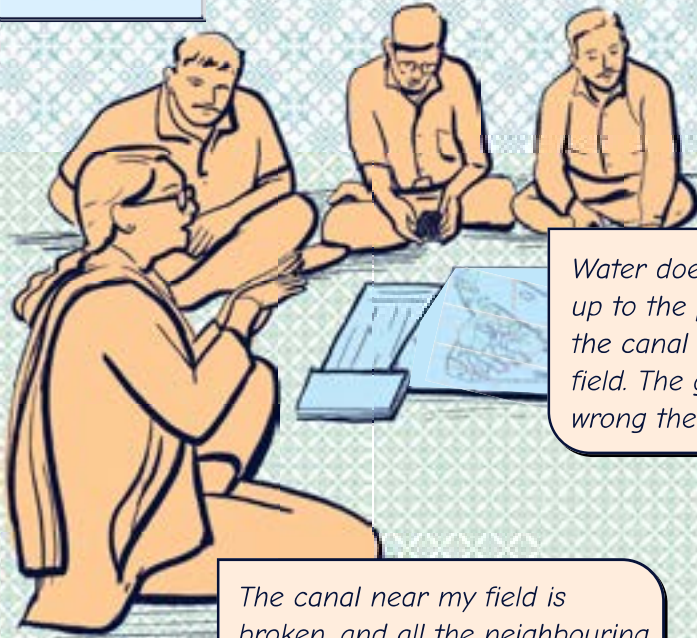
- 1. **The Government**, which has constructed the canal.*
- 2. **Farmers and citizens** of the village, for whom the canals have been constructed and whose responsibility it is to use it judiciously.*

*The role of both these parties is equally important. It has been observed that water usage has become 6-7% cheaper than private water extraction sources through farmers' organisations promoted under the PIM process. Collective action is the key to make the best use of canal water possible.*

*Some of the best examples and practices of farmer-managed canal irrigation systems can be seen in the Dharoi, Guhai, and Majham water user associations in Gujarat. These associations can serve as valuable references for learning more about this process.*

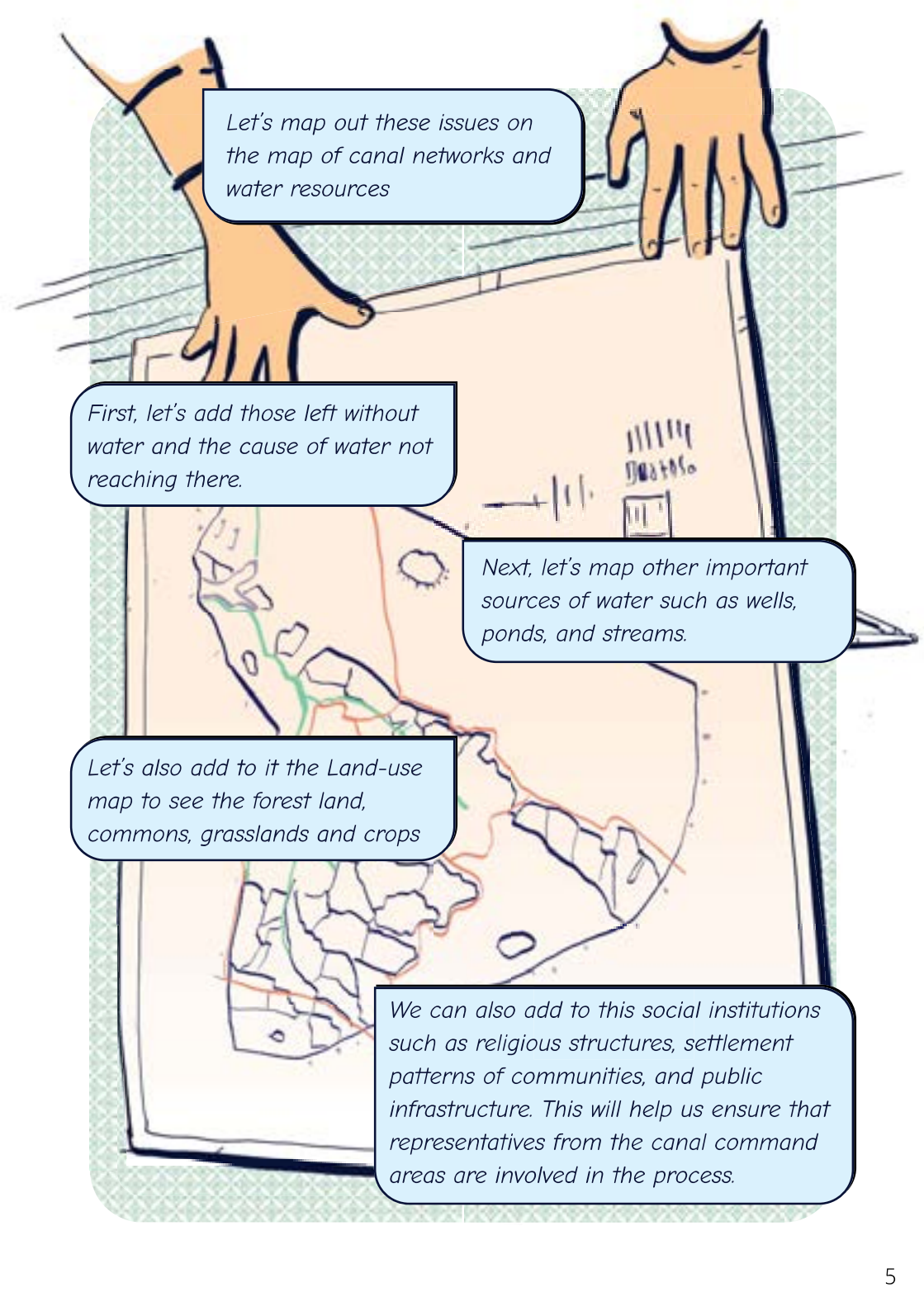
*Today, we have gathered here to listen to your problems. Please share if you're facing any issues with water supply*

*My land is in the tail end and I do not get enough water for irrigating my land.*



*Water does not flow up to the portion of the canal near my field. The gradient is wrong there.*

*The canal near my field is broken, and all the neighbouring fields are getting flooded.*

An illustration showing two hands holding a map. The map is a hand-drawn sketch of a region with various features. A speech bubble at the top contains the text 'Let's map out these issues on the map of canal networks and water resources'. Below it, another speech bubble says 'First, let's add those left without water and the cause of water not reaching there.' To the right, a third speech bubble says 'Next, let's map other important sources of water such as wells, ponds, and streams.' Below that, a fourth speech bubble says 'Let's also add to it the Land-use map to see the forest land, commons, grasslands and crops'. At the bottom, a fifth speech bubble says 'We can also add to this social institutions such as religious structures, settlement patterns of communities, and public infrastructure. This will help us ensure that representatives from the canal command areas are involved in the process.' The map shows a network of lines representing canals, irregular shapes for land use, and symbols for wells and ponds. The background is a light green grid pattern.

*Let's map out these issues on the map of canal networks and water resources*

*First, let's add those left without water and the cause of water not reaching there.*

*Next, let's map other important sources of water such as wells, ponds, and streams.*

*Let's also add to it the Land-use map to see the forest land, commons, grasslands and crops*

*We can also add to this social institutions such as religious structures, settlement patterns of communities, and public infrastructure. This will help us ensure that representatives from the canal command areas are involved in the process.*



*After spending months on understanding the canal irrigation problems, we are in a good place to start thinking of solutions. We all need to work together towards these solutions. This is called **Participatory Irrigation Management**.*

*We need to start a **Water User Association (WUA)** of command area farmers to cooperatively work towards solutions around the minor canal areas in the village.*

*The WUA will also deal with government departments such as irrigation and water resource departments, facilitate legal processes, and manage the canal water distribution and management in the village.*

*There are 3 stages every WUA has to undergo in its evolution:*

- 1. **Formation:** understanding the PIM act and rules, objectives and functions of the WUA and its resources*
- 2. **Planning & Execution of Canal rehabilitation:** Understanding the canal system, Resource mobilisation, construction management*
- 3. **Regular irrigation management:** Rotational Water supply, crop water relation, water charge collection*

*\* Note: All these provisions are based on the Gujarat PIM Act and Rules. These provisions vary from state to state.*

## 1. FORMATION

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*We need people to be part of a WUA committee and oversee issues of irrigation.*

*We are ready to start a WUA and find more members to look after these issues.*



### Forming the Water User Associations (WUA)

Water User Association is formed under the rules of the Irrigation Department for the state. Often, it is registered as an irrigation cooperative. These rules defer from state to state and need to be thoroughly understood

- A general meeting is held to decide on the rate per acre as well as membership rate for the WUA. The rate has to be agreeable to most farmers present.
- Many states insist that the Water User Association should have 51% of farmers in the command areas as members. Community leaders are engaged to expedite this process by talking to farmers and getting a nominal membership fee from them.
- Rules insist that farmers should own land in the command area to become a member. This may see women being excluded from the committee. It is advisable to appoint women farmers as “nominee members” and accord them equal rights.
- WUA consists of sub-committees for various tasks: conflict resolution, construction, acc and audits, and water distribution.

## 2. PLANNING & EXECUTION OF CANAL REHABILITATION

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*Getting the cooperative registered can be difficult. The file will be sent back and forth between government departments, and some new rule or missing document will be pointed out.*



*Hmm, farmers can get easily dissuaded and lose interest in the process. It will be important to keep farmers motivated.*



*Right, the process to complete the registration of the cooperative can take up to 9 months. In that time, the process of rehabilitation and repair of canals can take place.*

### Process of Canal Rehabilitation Work

- Signing of MoU between farmers, the non-profit organisation and government signalling handover of canals after maintenance is completed
- Joint survey between farmers and irrigation department officials to resolve issues relating to the canal
- Approval of estimates by irrigation department and collection of contributory costs from farmers



*Cooperative laws of some states require that farmers contribute a share of the amount to repair the canal: which is usually around 10% of the cost.*

*This may confuse farmers who think that they have already paid a membership fee and share capital.*



*Yes, we will need to organise more trainings, meetings and exposure visits to clear these misconceptions. Farmers can be shown that they will benefit more than the amount they give as a contribution*

### Receiving Government Grants for Repair Work

If the cooperative is not registered even at the start of construction, the organisation can receive the grant from the irrigation department. Farmers need to be included in every decision and to oversee work.

In many states, Water User Associations are given the option of receiving government money to conduct the repair work, instead of work being done through the irrigation department. This is a better option as work can be supervised directly by association and farmers.

## Working of The WUA and role of the organisation

### MEETINGS

- Executive Committee meets once a month
  - AGM (Annual General Meeting) happens once a year to decide on a budget
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### SALARIES

- Secretary: fixed rate work for 3-4 months of the year
  - Canal Operator: Rs. 300-400 per day, during the irrigation season
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### IRRIGATION PLANNING BY THE COOPERATIVE

- Chairman is called to a meeting with irrigation department on amount of water to be released during a season. Government also fixes a rate for the water
- Chairman discusses the irrigation plan within committee to ensure water is accessible to all members. This meeting will decide on area of land that can be irrigation for each farmer, suggest crop to be cultivated depending on water availability
- AGM decides on expenses for water distribution, cleaning the canal, the secretary's salary, salary of canal operator and payment of water taxes.
- Water rates charged by cooperative will be above the government rates (around 20-25% more). This will help in meeting expenses of cooperative

### 3. REGULAR IRRIGATION MANAGEMENT

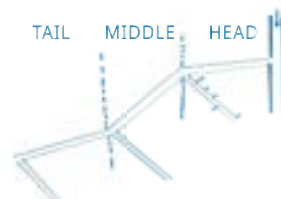


Organisations can play a role in continuous handholding of WUA for the first 2-3 years. This includes:

1. Training of Chairman and cooperative members in water distribution and financial matters;
2. Training of cooperative on involvement of women in decision-making; and,
3. Training for canal operator on calculation of time to irrigate agriculture fields, crops and soil types.

#### Training of canal operators for equitable distribution of water

This shows a rough schematic of the minor canal passing through the village. The canal is divided into Head, Middle and Tail sections. Subsidiary canals go outwards from the minor canal and outlets here lead to fields of farmers.



- Water is released first to the Head section and only after irrigation is done here, is water released to the middle and then tail sections.
- Water is always released to each section through the last subsidiary canal of each section. And once, it is released through the subsidiary canal, the last outlet is always irrigated first (in the illustration, the timing of the outlet is shown as 1,2,3,4 and final)
- Canal operator has to be in touch with farmers and coordinate based on their needs. When irrigation of the field is nearly finished, the next farmer in line can be contacted over phone to be ready.

This system prevents wastage, damage to the canal system due to strong flow, and flooding of middle fields. It also saves time for farmers who need not wait for hours until their turn

### Water sharing rules within the WUA

1. Membership is open to those who have land in the command.
2. Farmers are eligible for getting water for irrigation only if they fill up the membership form.
3. Women farmers who are single will receive water during the day time.
4. Farmers can receive water only after receiving the gate pass from the operator.
5. During the rotation of water, if the farmer is caught taking water two times then s/he will be penalised a sum of Rs.400. The penal amount will be doubled if the farmer is also a committee member.
6. Cost of damage to the canal infrastructure will be recovered from the farmer who does the damage.
7. Farmers who are caught wasting water will have to thereafter abide by the decision of the justice committee on this matter.
8. Before the initiation of irrigation, an Annual General Meeting (AGM) of the members of the irrigation cooperative will be organised.
9. The secretary will draw a salary based on the repairing work undertaken by the society

### Efforts for Institutional health

- Annual Self-appraisal of the WUA is essential. This is based on the criteria of equity, financial viability and review of conflict resolution.
- The WUA can also review water access in the canal command annually.

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### Supported by



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