

PARTICIPATORY IRRIGATION MANAGEMENT PRACTICE IN GUJARAT

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ABSTRACT

The irrigation facilities have led to increase in overall agricultural production, food security and employment generation in the command area. Country will need to double its current food production of 250 million tons to 500 million tons by 2050 according to the present population growth with same available water. In the light of reducing cultivable land and irrigation water the country and particularly farmers need to double the production even before 2050. To cope up with the situation the country needs to take path breaking steps to increase the area under irrigation from 80 million hectares to 146 million hectares. The additional 66 million hectares can be developed by adopting micro irrigation system and enhancing water application efficiency through Participatory Irrigation Management (PIM).

PIM is the irrigation management by participation of the beneficiary farmers. Major reasons for adopting PIM are tail end farmers not getting water timely and in sufficient quantity, wastage of irrigation water by head reach farmers, maintenance and repair works of canal and structures are not carried out timely and adequately, low recovery rate of water charges etc. PIM is beneficial mainly as sense of ownership is developed amongst the beneficiary farmers for canal, canal structures and water which leads to economical use of water, tail end area getting sufficient and timely water, less Government staff managing irrigation activity and improvement in water charge recovery.

Awareness regarding PIM is created through various means such as village level meetings (Gram Sabhas), video shows showing the working of successful Water User Associations (WUAs), one day awareness programs, four day exposure visits to successfully working WUAs, seven day exposure visits to the WUAs in the neighbouring States along with distribution of print material, Radio and TV talks and Advertisements.

Minimum 51% of the farmers with minimum 51% of the minor canal service area can form WUA. Members of Managing Committee (maximum 11) are elected in such a way that farmers from initial middle and tail reaches are equally represented. On constitution of Managing Committee its Chairperson is elected.

After the formation of WUA an agreement is entered into by the Association with the State Government for participation into irrigation management and a joint inspection is carried out of the minor canal & water courses by the designated person of WUA and the representative of the in-charge Engineer. As agreed in the joint inspection, the Association carryout one time repairs to the minor canal along with water courses. And the cost of repair to the minor canal and water courses are borne both by the State Government and the Association in the proportion of 90:10.

Government has made various provisions through Resolutions and Circulars and enacted Gujarat Water User's Participatory Irrigation Management Act, 2007 to facilitate PIM. State Government has also made resolution for Distributory / Branch canal Level Federations & Project Level Federation. Out of the 17,14,000 hectare irrigation potential created where PIM is to be implemented, up to March 2011, 1939 WUAs for an area of 5,23,030 hectare has been registered and 1436 WUAs for an area of 4,10,733 hectare has been handed over to the WUAs for irrigation management.

Association gets amount equal to 30% of water rates for normal repair and maintenance of canal. It also gets an amount equal to 20% of water rates for its administration if it recovers 100% of water rates within stipulated time limit.

Association has to deposit the water charges in the Government after deducting above concessions. As per CADWM norms Basic Fund of the Association is created where the canal has been handed over and its interest can be utilized by the Association for its developmental activities. Association has to supply water to non members on their demand, for that Association can fix separate water rates which shall not be more than 30% above the rates applicable to its members.

On implementation of PIM tail enders are now getting sufficient and timely water, area under irrigation has increased, Govt. is getting almost all water charges in time, irrigation management is possible with less number of Government staff, crop production has increased, irrigation water distribution related disputes are reduced and sufficient rebate on water charges has made WUAs financially sound, which leads to success of PIM in Gujarat.

PREAMBLE

- After independence the Central and State Governments have invested more than Rs. 102,000 crore for construction of irrigation projects across the country for creating irrigation potential of more than 90 million hectares. More than 50% of all public expenditures on agriculture have been spent on irrigation alone. The irrigation facilities have led to increase in overall agriculture production, food security and employment generation in the command area. While the incidence of poverty is as high as 69% in the districts with less than 10% of the cropped area under irrigation, it is about 26% in districts where irrigation covers more than 50% of the cropped area and 10% in Punjab and Haryana with over 70% of their cropped area under irrigation. Actual utilization of created potential is yet to be harnessed due to various reasons.
- Country will need to double its current food production of 250 million tons to 500 million tons by 2050 according to the present population growth with same available water. In the light of reducing cultivated land and irrigation water the country and particularly farmers need to double the production even before 2050. To cope up with the situation the country needs to take path breaking steps for increasing the area under irrigation from 80 million hectare to 146 million hectares. The additional 66 million hectares can be developed by adopting micro irrigation system and enhancing water application efficiency through Participatory Irrigation Management (PIM). Micro irrigation system has its own limitations. Due to implementation of PIM there will be an expected water saving of about 20%, an expected increase in crop production will be about 15% and an expected increase in crop production due to better crop practices and inputs of seeds and fertilizers will be about 15%.

STATUS OF PIM IN GUJARAT

- Gujarat has total Geographical area of 196 lakh hectares. Out of which 125 lakh hectares is suitable for agriculture and net sown area is 101 lakh hectares. Ultimate Irrigation Potential from surface water source is about 46 lakh hectares which includes about 18 lakh hectares of Sardar Sarovar Narmada Project. Ultimate Irrigation Potential for Water Resources Department's Major and Medium Irrigation Schemes is 17.19 lakh ha. and for Minor Irrigation Schemes and Minor Irrigation Tanks is 3.23 lakh ha. Irrigation Potential created up to June-2011 for Major and Medium Irrigation Schemes is 16.02 lakh ha. (including Sujlam Suflam Spreading Canal, Kutch Bandharas and Salinity Works) and for Minor Irrigation Schemes and Minor Irrigation Tanks is 2.78 lakh ha. Irrigation potential created is 11.61 lakh ha. with 18 Major Irrigation Schemes, 2.75 lakh ha. with 92 Medium Irrigation Schemes and 2.78 lakh ha. with about 1000 Minor Irrigation Schemes and Minor Irrigation Tanks. Hence Irrigation potential created for Major, Medium and Minor Irrigation Schemes where PIM is to be implemented is 17.14 lakh ha.
- Water Resources Department of Government of Gujarat has brought out a format for Memorandum of Understanding between Department and WUA for implementation of irrigation management and format for the agreement between Department and WUA for the implementation of the work of rehabilitation. Government has made various provisions through Resolutions and Circulars and enacted Gujarat Water User's Participatory Irrigation Management Act, 2007 to

facilitate Participatory Irrigation Management in various irrigation projects of the State. State Government has made provisions for Distributory / Branch Level and Project Level Federations and some federations are formed on pilot basis. Up to March-2011 1939 WUAs for an area of 523030 ha. has been registered and 1436 WUAs for an area of 410733 ha. has been handed over to the WUAs for irrigation management out of total 17.14 lakh ha. of irrigation potential created.

Zone wise position of Participatory Irrigation Management in Gujarat as on 31-03-2011 is as under

Zone	Irrigation Potential Created in Lakh Ha.	No. of WUA's registered	Corresponding area in ha.	No. of WUA's handed over	Corresponding area in ha.
Central Gujarat	5.21	603	129833	344	87062
Saurashtra	3.55	192	69793	134	49872
South Gujarat	3.86	500	186315	455	174163
North Gujarat	1.91	476	97484	370	71179
Kutch & Panchayat	2.61	168	39605	133	28457
Total	17.14	1939	523030	1436	410733

PARTICIPATORY IRRIGATION MANAGEMENT (PIM)

1. Meaning

Participatory Irrigation Management is the irrigation management by participation of the beneficiary farmers. Right from planning of irrigation in the command area to canal maintenance and repairs, actual irrigation of water to the fields, collection of water tax, maintaining water and financial accounts etc. farmers are involved with the formation of Water User's Association (WUA).

2. Call for Participatory Irrigation Management (PIM) in Gujarat

Following situations have demanded implementation of Participatory Irrigation Management in Gujarat

- Scarcity of Irrigation water availability.
- Tail end farmers are not getting irrigation water timely and in sufficient quantity.
- Maintenance and repair works of canals and structures are not carried out timely and adequately.
- Inadequacy of Government staff and lack of feeling of ownership for the project in beneficiary farmers and Government officials.
- Low water application efficiency.

3. Benefits of Participatory Irrigation Management (PIM)

- Sense of ownership is developed amongst the beneficiary farmers for canal, canal structures and water.
- Tail end farmers now getting assured water.
- It has lead to equitable, sufficient and timely water availability to the beneficiary farmers.
- Due to timely and proper repairs of canal by farmer's WUA, irrigation management has become easy.
- Due to economical use of water tail end area has been brought under irrigation successfully.
- Disputes related to water distribution are being resolved through discussion and understanding.
- Less Government staff manages irrigation activity.
- Recovery of irrigation charges has improved a lot.

STEPS TAKEN FOR PROMOTION OF PIM

1. Creating Awareness at Village Level

- Village level meetings (Gram Sabha) are conducted either by the Irrigation Department staff or the NGOs. To promote PIM Government of Gujarat (GoG) has created policy of engaging the NGOs (with financial aid to NGOs) for creating awareness among farmers, preparing them for forming and successful running of WUAs. In addition GoG has also appointed Community Organizers (appointed on contract basis for three years) specifically for creating awareness and preparing farmers for the formation of WUA and successfully running the same. In such meetings it is explained what is PIM, its purpose, benefits of PIM is also explained and information is also given to farmers to adopt PIM.
- Video shows are arranged showing the working of successful Water User Associations.
- One day awareness programs are arranged for farmers by Water and Land Management Institute (WALMI) explaining the benefits of PIM and good practices in agriculture for water saving and enhancing the crop production.
- Four days exposure visits to successfully working WUAs are arranged by WALMI Gujarat for the officials of newly formed WUAs.
- One week exposure visits to the WUAs in the neighboring States are also arranged by WALMI.
- Distribution of print material explaining the PIM, purpose of PIM, benefits of PIM and steps to adopt PIM.
- Personal meeting by irrigation staff ranging from Work Assistant to Chief Engineer to motivate farmers.
- Radio and TV talks for PIM motivation are arranged by Officers.
- Radio and TV advertisement for promotion of PIM by short plays are broadcasted in agriculture related programs.

2. Formation of Water User's Association

- As per PIM Act-2007, if not less than 51% of the farmers in numbers and not less than 51% of the land holders (not less than 51% of land of declared minor canal service area and its area is expected between 150ha. and 400 ha.) applies for registration as Water Users Association (WUA) to the Superintending Engineer of the Project. Concerned SE being a Registering Authority grants sanction to the application to be registered as WUA.
- Irrigation department determine the irrigable command area of all outlets of a minor and declare the same in Official Gazette as a minor canal service area.
- Share capital depending upon the area is collected and members of WUA are made by collection of membership fee.
- In first general meeting President and members of the Managing Committee (maximum 11) are elected in such away that farmers from initial, middle and tail reaches are equally represented.
- In addition max. 4 nos. of members can be co-opted in the Managing Committee who are not land holders but have interest to promote and strengthen WUA & PIM. Also Assistant Engineer / Additional Assistant Engineer as a head of that section is a permanent member to the WUA. Co-opted members as well as AE/AEE does not have Voting Rights.
- Members of the managing committee shall be elected by the members of WUA. Area of operation of WUA is divided into three exclusive areas as head, middle and tail reach territorial constituency. Members of the managing committee shall be elected from these territorial constituency. On constitution of managing committee its first general meeting is called within stipulated time period for the election of chairperson. The chair person shall be elected by the simple majority from amongst the elected members of managing committee.

3. Joint Inspection, Repairs and Handing over of Canal

- When an Association expresses its willingness to participate into irrigation shall enter into an agreement as prescribed for such participation with the State Government.
- As soon as an agreement is entered into by the Association with the State Government, a joint inspection is carried out of the minor canal & sub minor canal / water courses (which is to be handed over to the Association by the Competent Authority) by the designated person of WUA and the representative of the in-charge Engineer.

- On account of joint inspection of the minor canal and water courses as mutually agreed upon before the entrustment of irrigation management of the minor canal along with the water courses, the Association shall carry out one time repairs to the minor canal along with water courses to bring the canal to the performing level of irrigation.
- The cost of repair to the minor canal and water courses carried out above are borne both by the State Government and the Association in the proportion of 90:10. An agreement as prescribed shall be done between the Association and the state Government to take up the repair work.
- Association shall be given 1/3 rd of the estimated cost of the work as advance to start the work and at the expense of 75% of the advance Association is entitled to get next advance as above. When the third installment of advance is given then 10% of the amount of sanctioned estimate is kept with the State Government. In the final bill actual expenditure shall be considered.
- In case the Association is not ready to take up the work then it shall be given to N.G.O. as per prevailing rule if it is ready. In case of N.G.O. they have to pay 5% of the cost of the work as their contribution in work. In case N.G.O. is not ready, the work shall be carried out departmentally. If it is not possible to take up the work departmentally then it shall be carried out through Agency. Also in case the work is carried out by N.G.O., Departmentally or by Agency 10% of the cost of work shall be borne by the Association.
- Where repair to the minor canal and water courses are carried out, the Competent Authority shall by an order in writing entrust the irrigation management of the minor canal and water course to the Association.

4. Incentives by the State Government

- Association has to carry out normal repair and maintenance of canal. For this Government returns 30% of the water rates to the Association.
- If the Association recovers 100% water rates within stipulated time limit, Government returns 20% of the water rates to the Association as a rebate to carry out its administrative expenditures.
- These concessions are given to the Association at the time of deposition of water rates to the Government hence Association has to deposit the water rates to the Government after deducting above concessions.
- To create basic fund for the development of Association where the canal has been handed over as per CADWM norms Central Government provides Rs. 450/- per hectare, State Government provides Rs. 450/- per hectare and against it Association collects Rs. 100/- per hectare from its members and thus an amount of Rs. 1000/- per hectare is kept as fix deposit in Government Treasury as development fund and its interest can be utilized by the Association for its developmental activities.
- Association has to supply water to non members on their demand, for that Association can fix separate water rates which shall not be more than 30% above the rates applicable to its members.
- Planning of irrigation water is done with the association in advance and as per planning State Government is bound to supply water in agreed amount and at agreed time. If the Government is unable to supply water (except the circumstances beyond the control of the Government) and due to this if there is a loss in the crop production to farmers more than 25% than the planned production then Government shall make good the loss beyond 25%.
- To simplify implementation of rehabilitation work State Government has introduced simple working procedures. In this mainly preparation of plans and estimate, its administrative and technical sanction, selection of material, local testing procedure of material, supervision & measurement of the work done and financial provisions are simplified so that the work entrusted to Association can be implemented speedily and satisfactorily.
- After finishing the first step of formation of WUAs the second step is formation of Federations at Distributory Level (DLFs). These Federations get additional 20% of water charges collected by WUAs of each minor in the distributory.
- After completing all the Distributory Level Federations in the Project a Project Level Federation is to be created which gets further 20% of water charges of all WUAs in the Project. Thus 90% (50%+20%+20%) of water charges are used by farmers for the betterment of the Project. This is the real decentralization of the powers of the Government.
- These Project Level Federation and Distributory Level Federations take all the decisions regarding irrigation planning and implementation. The Government gives water to PLF at main Head Regulator at dam site and rest of the irrigation management is done by PLF, DLFs and WUAs.

CONCLUSION

- Various irrigation schemes (Major, Medium and Minor) under Water Resources Department jointly have Irrigation Potential of about 17.14 lakh hectares (Except Sardar Sarovar Narmada Project). On account of marathon initiatives taken by the State Government, awareness campaign and training programs by WALMI, efforts of NGOs, up to March 2011 under Water Resource Department out of 17.14 lakh hectares presently there are 1939 WUAs with an area of 523030 hectares are registered and 1436 WUAs with an area of 410733 hectares to whom irrigation management is handed over.
- In majority of cases tail enders are now getting sufficient and timely water supply, previously which was a dream for them. The results of PIM is that farmers are very happy, government gets almost all dues (water charges) in time, irrigation management is done with less no. of Govt. staff involvement and crop production has improved.

BRIEF PROFILE OF THE AUTHORS

1. Shri Jekishan C. Chaudhari, B.E.(Civil), Director & C. E., WALMI, Gujarat. Worked in the field of Water Sector such as Construction of Dam & Canal System and Operation & Maintenance of Canal System.
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