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Analysis of Water User Associations in Krishna Delta of Andhra Pradesh

Key words: *Challenges, Krishna delta., Opportunities, Strengths, Water Users Associations, Weaknesses.*

Participatory Irrigation Management generally implies participation of irrigators in the management of the irrigation system and is generally interpreted 'All aspects' includes planning, design, construction, operation and maintenance, financing, decision rules and the monitoring and evaluation of the irrigation system. 'All levels' means the primary, secondary and tertiary (and subsidiary) levels of water distribution network in the irrigation systems. The empowering of Water User Associations as an institution is necessary to promote Participatory Irrigation Management and devolution of irrigation management authority. Assumption of irrigation management responsibilities can be handled only by effective WUAs which results in realization of Participatory Irrigation Management. The act provided the basis for the introduction of Participatory Irrigation Management and constitution of different Farmers' Organisations including Water Users Associations in Andhra Pradesh. Hence it is important to find out the strengths, weaknesses, opportunities and challenges of Water Users Associations.

The present study was carried out in Krishna delta region of Andhra Pradesh which includes four districts namely Krishna, Guntur and few parts in West Godavari and Prakasam. The Krishna delta region was mainly separated into Krishna Eastern Delta (Krishna and West Godavari) and Krishna Western Delta (Guntur and Prakasam). From Krishna Eastern Delta a total of 138 respondents who were members of 23 Water User Associations comprising of four Distributory Committees were selected and from Krishna Western Delta a total of 102 respondents who were members of 17 Water User Associations comprising of three Distributory Committees were selected for the study. Finally 240 respondents were selected and ex-post-facto research design was adopted for the study. Thus on the basis of proportionate sampling, the selected respondents were personally interviewed with the help of specially designed interview schedule and the Garrett ranking was followed for the analysis. In this technique the percentage position is calculated by using the following formula:

$$\text{Percentage Position} = 100(Rij - 0.5)/Nj$$

Where,

Rij = Rank given for i^{th} factor by j^{th} respondent

Nj = Total number of factors ranked

The results of the study revealed the strengths, weaknesses, opportunities and challenges of Water Users Associations as follows

Strengths

Involvement of water users associations, good support from the irrigation department officials, sufficient water is available during crop season, increased crop yields, equity in the distribution of irrigation water among head reach, middle and tail end areas, freedom of cropping pattern within the limits of allocated water, increased water use efficiency by implementation of warabandhi schedule, number of irrigations to the crop have been increased, reduced water disputes, increase in social relations among farmers and improved the efficiency and performance of irrigation systems.

The probable reasons might be there should be some system of management of water at the grass root level. So the farmers have come forward to take the responsibility of water management. The irrigation department officials have provided information water availability during crop season and tried to their maximum extent for equal distribution of water which enhanced increase in yields. Through the implementation of warabandhi schedule by water users associations the number of irrigations has been increased and disputes among the farmers have been reduced by developing social relations among farmers. The efficiency and performance of irrigation systems also has been improved through water users associations.

Weaknesses

Allocation of insufficient funds, inadequate training facilities, inadequate maintenance of drains, poor quality of works, inadequate infrastructure facilities, low educational qualifications of members of WUAs, lack of cooperation among water users associations, non involvement of members of WUA in management of water users associations, lack of trust between WUAs and irrigation engineers and short duration of tenure of elected members of WUAs.

The probable reasons might be due to deficit funds in the government there was insufficient allocation of funds to the water users association for its operation and maintenance works. There are inadequate training facilities for the farmers and maintenance of drains due to shortage of irrigation officials and labours. Majority of the members of WUAs were educated up to high school level of education and lack of cooperation among WUAs was due to disputes regarding water availability to their jurisdiction. Maximum the president and vice-presidents were only involved and take responsibility of the water management might be due to their interest, more knowledge than the members or they belonged to high class people of the society. There is a lack of trust on irrigation engineers due to their poor quality of works in canals construction.

Opportunities

Empowerment of farmers to manage irrigation system, WUAs facilitates the effective implementation of warabandhi schedule, resolution of disputes among farmers, enhancement of productivity of crops growing in Krishna delta region, improved decision making based on local knowledge, active involvement of all classes of farmers and development of good linkages between farmers and irrigation department officials.

The probable reasons might be to provide sufficient irrigation water to their crops the farmers were empowered to manage the irrigation system. Through water users associations the warabandhi was implemented to supply water to till tail-end areas so that water disputes can be resolved to some extent. Due to sufficient water availability the productivity of crops has been increased. Farmers have improved their decision making ability with good coordination among WUAs and irrigation and agriculture departments. The higher designations in the organizational structure of water users associations were headed by the high class people of the society.

Challenges

Management of aquatic weeds, equal distribution of water among head middle and tail-end areas, improving the drainage networks, enhancement of knowledge about irrigation schemes and programmes to farmers, weak institutional setup, involvement of political leaders in day to day activities of WUAs, eliminate the members engaged in corruption, development of friendly relationship among water users associations, involvement of women participation in decision making, increase in production of water intense crops and reduce water logging and salinity.

The probable reasons might be the aquatic weeds are the main problem which obstructs the free flow of water into water courses so the drainage networks have to be managed properly. The irrigation and agriculture departments should plan and conduct the training programmes related to irrigation schemes so that users can make effective use of them. The involvement of political leaders in activities of WUAs helps to solve the problems when the situation is out of the hands of WUAs and irrigation officials. The friendly relationship among WUAs reduces the disputes among them. The women should also be included in the decision making activities in order to encourage their participation. To reduce the logging and salinity problem, the irrigation and agriculture departments should provide alternate solutions to overcome the problem. The findings were in line with findings of Agenzia Regionale Per La Protezione Dell'Ambiente (2011), Arun *et al*. (2012), Rai *et al.* (2012)

CONCLUSION

From the above results it can be concluded that the involvement of functionaries of water users associations in maintaining the irrigation system have led to have proper irrigation management to their fields, reduced disputes regarding water through effective implementation of warabandhi schedule and good support from the irrigation department officials helped them to take any initiation regarding irrigation management thereby increasing their yields. However inadequate funds, training facilities, management of aquatic weeds and equal distribution of water to all the areas need to be taken care by the functionaries for the effective functioning of water users associations in irrigation management.

LITERATURE CITED

Agenzia Regionale Per La Protezione Dell' Ambiente 2011 SWOT Analysis and Strategic Water Management Plan for Irminio River Basin. *Project cofinanced by European Regional Development Fund.* Pp-1-47.

Arun G, Singh D R, Shiv Kumar and Anil Kumar 2012 Canal irrigation management through

water users associations and its impact on efficiency, equity and reliability in water use in Tamil Nadu. *Agricultural Economics Research Review.* 25 (Conference Number): 409-419

Rai S K, Pandya R D and Salunkhe S R 2012 Constraints and suggestions perceived by the beneficiaries of Participatory Irrigation Managemet (PIM) programme. *Agriculture Update*. 7 (3&4): 222-224.

Department of Agricultural Extension, Agricultural College, Bapatla, A.P.

D Meena,
B Mukunda Rao,
V R K Murthy and
V Srinivasa Rao

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