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PERFORMANCES EVALUATION OF WATER USER ASSOCIATIONS IN WATER DISTRIBUTION SYSTEM

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ABSTRACT :*As far as concern with agriculture, India has maximum of agricultural land. For improvement of our nation it is very important that irrigation practices should also improved. The technological change brought importance of irrigation along with improved cultivation practices. Participatory management approach in irrigation sector water user association WUAs is the first form. Participation of members in all aspects like planning, operating and maintaining the irrigation works. But now the time has come to take feedback of the organization formed by irrigation department and to evaluate the performances of WUAs. The aim of this paper is to examine the functioning of water user associations WUAs formed by Sukhna section. Whether the water management is properly managing by WUAs or the farmers are facing some problems or not. Farmer's distribution practices were determined by using questionnaire performed by taking interview regarding the people's participation and their liveness, properly working of WUAs members, water management, control and its impact of such management on productivity among the members. This paper concludes that the water charges of water distribution are on equitable basis, that the performance has been weak and till yet not successful because WUAs members are not working properly because there may not having any unity in them and because of this farmers are facing the water problem.*

Keywords: Performances evaluation, Water User Association Distribution system, Irrigation department, Participatory management.

I. INTRODUCTION

The aim of establishing Water Users' Associations (WUA) is to develop the participatory Irrigation management concept for increasing water uses efficiency, through the involvement of all stake holders, as much as possible, in the various management activities. Water User's Association (WUA) is a group of farmers, all served by a common source of water, who join together to allocate, distribute, and manage water [1]. The National Water Policy, 1987, emphasized the participation of farmers in different aspects of the management of the irrigation system, principally in water distribution and collection of water rates. TheVaidyanathan Committee on Pricing of Irrigation Water suggested farmers' participation in the management of irrigation systems [2]. Participatory Irrigation Management (PIM) has been conceived as the thrust area in effective irrigation management by involving and associating farmers in planning, operation and maintenance of the irrigation system [3]. Water users' associations are legal entities governed by the Law 213 in 1994, as specialized associations performing functions related to water management on mesqa level. The ministerial decree No. 14900 in 1995, issued by the Minister of Water Resources and Irrigation, reflects their functions, rights and duties in water management activities [4].

II. LITERATURE SURVEY

This paper is based on the studies in the review have been conducted for evaluating and monitoring different aspects of WUAs, and no one of them paid attention to develop indicators for the assessment process of these associations. Current study, integrated assessment indicators for evaluating the performance of WUAs, as well as their effects on environmental, socio-economic, managerial, institutional and technical issues were developed. Intended for developing/selecting the assessment indicators, two questionnaires were designed. [4].

In South Africa, the 1998 National Water Act has created two user-driven water resource management organizations, namely the Water User Association at the local level and the Catchments Management Agency at a larger catchments level. They investigate some challenges concerning the participation of smallholders in water resource management organizations involving also large-scale users. Specifically, the paper analyses the possible discrepancies between the needs of smallholders with regard to water and the functions of these organizations [5].

The current paper dealt with an evaluation of water management through community participation and emergence of Pani Panchayat in a case study of Vir Bajrang Bali Pani Panchayat under Lift Irrigation Project of the Hirakud Command Area (HCA), Orissa state in Eastern India. The precise objectives are; i) To analytically review the Orissa Farmers

Management of Irrigation Systems Act and study the functioning of the Pani Panchayat, ii) To examine about the peoples participation and their liveliness, iii) The apparatus of water management and control, and its impact of such management on productivity among the members and iv) To recommend policy interventions to make the formal institutions more successful [6]. The Aim of this study was to assess the impact of the water user related to management-operation and maintenances services carried out by water user association WUAs in the great Menders basin irrigation scheme. They investigate the opinion of water user in scheme. A questionnaire carrying five different topics was used to analyze the management operations and maintenances performances of WUAs [7].

III. SYSTEM DEVELOPMENT

The study area is under SUKHANA MEDIUM Project Sukhana is actually a earthen Dam, which is constructed on the sukhana River in Chetegaon. Sukhana Dam is completed in 1966, located in Pimpree .and consist of earth flank from RD 0TO600 m, and waste weir in RD600 to 1026m and main earthen embankment from RD102 to 5100mm. Max. ht. of the Dam is 18.92m Catchment area is 301 sq.km and live storage and gross storage are 18.50 and 21.35Mcum respectively. Head regulator is located at RD 3261ha. Actual average yield received (last 39 year) is about 16.08Mcum. Actual average irrigation is 513 ha from canal and 320ha from wells in the command. The head regulator is located at ch.3231m and there are total fourteen distributory main and sub main in the sukhana medium project. Out of total 14 distributaries, dy.no. 3 and dy. no 6 are the largest dystributory. Average annual runoff is 1480 Mcft/ 41.915 mm³ and gross average annual utilization is 947.14Mcft/26.28M.cu.m and130Mcft (3.681M.c.m.t) are the evaporation losses. But due to no rainfall this year, there is not having water in the dam and due to this water is not left in the canal. All distributaries are empty and they are unlined.

Figure1: Command area map of Sukhna

Figure 2: Distributory

Cut-throat flume The cut-throat flume is similar to the Parshall flume, but has no throat section, only converging and diverging sections (see Fig.). Unlike the Parshall flume, the cut-throat flume has a flat bottom. Because it is easier to construct and install, the cut-throat flume is often preferred to the Parshall flume. Cut throat flume is installed on the all sukhna distributaries for measuring the flow of water. The size of CTF is 30width and length of 90incm is installed on all distributaries.

Fig.no.3Acut-throat flume

IV. PERFORMANCES ANALYSIS

There is Rotation of leaving water in the canal. At morning 8.am water in the canal is left for whole day for about nine days .Like these rotation of eighteen days goes on .Than also farmers are not getting the water they cannot do the irrigation.. Those who are near the head they are getting water more and the farmers those who are near the tail of the dystributory they are facing the problem more.

1. WUAs interviews, question

Interviews with farmers at each sampled watercourse were interviewed. Question asked were on

i) Mode of water distribution
ii) Day of irrigation turn
iii) WUAs
iv) Size of land holding
v) Water charges
vi) Proper working of Engineers which is allotted on the sukhna section
vii) Regarding crop rotation

The collected data and information from farmers and WUAs members were analyzed to provide more

insight about the reliability of the developed/selected WUAs that are working in properly manner or not.

- Present status of Water Users Associations

Majority of the farmers showed enthusiasm and willingness to involve themselves in the community activities like rehabilitation, water

Distribution activities. 50% of the farmers are holders of EC membership after every five year since WUA formed. Those who worked as EC members alone informed that they are involved in the decision making with regards to water distribution. Nearly half of the respondents mentioned that they are involved in water distribution within their land limits. The farmers said that they are using the services of *WUAs.* to distribute water even to their own fields. Nearly80% of the farmers in the well functioning WUA sector mentioned that they are not at all involved in the O&M activities. However they regularly pay the charges. The rest of the farmers mentioned that they are involved by way of contributing water charges and supervision activities, than also they are suffering from water problem. Water distribution was mainly carried out by the WUAs members**,** with the direction from WUA members. Individual farmers distribute water, but as per the instruction from the WUA**.** The rotational system is being adopted regularly in all association. but the farmer those who are having their field at tail side they are not getting the water even after paying the water charges.

V. Conclusion and Recommendations

i Users numbering between 100 to 250 .

ii. Evaluation of WUAs brought that the after transfer of management to WUAs, it has shown that there is improvement in irrigation efficiency is 76 %.

iii.unsucessful WUAs were found in the irrigated area.

iii.In many cases some or all of the required skills will be lacking, and therefore training is required in order to empower members to manage their institution.

Recommendations

i. Farmers should be advised to cooperate with the WUAs members then only the water can be reached till the tail.

ii. Fit some digital indicators on the watercourses structures , so that the other people or the farmers cannot break the canal.

iv. Keep flying scaud to keep watch on the people who are taking illegal water from the canal. Keep more heavy penalty on them. Strictly rotation of water schedule should be followed.

v. Provide technical training for water user association's and community or institutional organizers.

VI. References

[1] Sallem M., Naguib M., Saber A., El Masry A., El Attar A., Ezz El-din E., Abdul AlomarF. , Hassanein F., Dweeb H., and Youssef S., 1984, "Experience With Water Users' Associations," EWUP Technical Report No. 65, Water Use and ManagementProject, Ministry of Water Resources and Irrigation, Egypt.

[2] Government of India, Planning Commission, Report of the Committee on Pricing of Irrigation Water (Vaidyanathan Committee) (1992).

[3] FUNCTIONING OF WATER USERS ASSOCIATIONS OR PANI PANCHAYAT IN ORISSA: PRINCIPLE, PROCEDURE, PERFORMANCE AND PROSPECTS Sushanta Kumar Mahapatra, Law, Environment and Development Journal, LEAD, 2007

[4] Assessment Indicators for Water Users' Associations in Egypt Abdul Hakim M. Hassabou and Inas K. El-Gafy, E-Water Official Publication of the European Water Association (EWA) © EWA 2007

[5] Challenges For Fruitful Participation Of Smallholders In Large-Scale Water Resource Management Organisations: Selected Case Studies In South Africa, N Faysse, *Agrekon, Vol 43, No 1 (March 2004)*

[6] Functioning of Water Users Associations or Pani Panchayat in Orissa: Principle, Procedure, Performance and Prospects, Sushanta Kumar Mahapatra, Research Scholar, Madras Institute of Development Studies (MIDS), 2006

[7] Performance of Water user association in the Management-operation and Maintenances of great Mendires Basin irrigation schemes, C.Kock.ozdemir and A.K.Erdem, Department of regional state Hydraulic works (DSI) XXI, 09020-Aydin, Turkey, Journal of Applied science.