

Contribution of tank irrigation system in supporting the livelihood of rural people

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ABSTRACT

The study was conducted in Periyakulam, Andipatti and Bodinayakanur blocks of Theni district in Tamil Nadu. From each block two self-help groups (SHGs) were selected based on the contribution of tank to livelihood security. From the six SHGs all the 102 members were considered as the respondents for the study. The respondents were interviewed through a well structured interview schedule. Data were collected through focus group discussion method and were analyzed using rank-based quotient. Among the ten major contributions tank an indispensable part of rural livelihood was ranked first whereas tanks increased agricultural production was in second position. The aspect use of tank beds for cultivation was given the lowest value by the respondents.

Keywords: Tank contribution; rural women; self-help groups

INTRODUCTION

Tank irrigation system of India is century old. Tanks have been the main source of irrigation in many parts of India from time immemorial (Palanisami and Easter 1983). Rainfall pattern is neither predictable nor uniform over space and the incidence of rainfall is also seasonal occurring mainly during the southwest monsoon in most of the country except the rain shadow areas of the Western Ghats (steep mountainous range) notably Tamil Nadu being confined to a few monsoon months where rainfall

behavior is highly erratic. This hydrological characteristic of the Indian monsoon necessitated the creation of storage facilities to hold the rainwater of the monsoon and utilize the same at a later stage. South India has more tanks because of its geography, climate and terrain situations (Von Oppen and Subba Roa 1980). Tanks in the Indian context are inextricably linked to the socio-cultural aspects of rural life and have historically been an indispensable part of the village habitat sustaining its socio-ecological balance. Tank systems developed

ingeniously and maintained over the centuries have provided insulation from recurring droughts, floods, vagaries of the monsoon and offered the much needed livelihood security to the poor living in fragile semi-arid regions (Mahendrarajah et al 1999). Conserving the tank ecosystems for multiple uses such as irrigation, domestic and livestock use and groundwater recharge is a way to provide a safety net to protect the livelihood of millions in semi-arid India (Sakthivadivel et al 2004).

METHODOLOGY

The study was conducted in the area where tanks served as one of the major sources of livelihood for rural SHG members. Accordingly the Theni district was purposively selected for the investigation as it harbored diverse SHG activities that depended on tanks for their livelihood. Theni district comprised of seven blocks. Among the seven blocks three blocks viz Periyakulam, Andipatti and Bodinayakanur were selected through simple random sampling method. Considering the successful functioning of tanks and their supporting nature for rural people in terms of both water availability as well as facilitating the livelihood security of SHG women in villages the villages viz Silvarpatti, Vadipatti, Andipatti, Koilpatti, Ammapatti and Silmalai were purposively selected drawing two villages from each block. These villages had tanks that were functioning to the extent of supporting the livelihood of SHG women considerably.

The total sample size constituted 102 self-help group women. As the study demanded an in-depth analysis of livelihood security of self-help group women a thorough knowledge of the social, financial and environmental conditions prevailing in the local area was inevitable. Hence focus group discussion method was also carried out with 80 SHG members drawn randomly to know about the contributions of tank irrigation system.

Statements were prepared to understand the contribution of tank irrigation system in supporting the livelihood of rural people. Preferential ranking technique was used to rank the role/function/contribution of tank irrigation system which were considered as most important factors among the respondents. The quantification of data was done by first ranking the contributions and then calculating the rank based quotient (RBQ) as given by Sabarathnam (2002).

$$RBQ = \frac{\sum(F_i) (n+1-I)}{Nn} \times 100$$

where RBQ= Rank based quotient
 F_i = Frequency of SHG women for the i^{th} rank of the attribute
 N = Number of respondents contacted
 n = Maximum number of ranks given to the attribute
 I = Rank for the attribute given by the consumer

The factor with higher RBQ score was considered the most important attribute

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that favoured use of tank irrigation system as an important livelihood option.

RESULTS and DISCUSSION

As perceived by importance ranking of contribution of tank by SHG women was done through rank based

quotient method for each statement. Table 1 reveals that among the ten major contributions tank an indispensable part of rural livelihood with RBQ value 8862.74 was ranked first whereas agricultural production was in second position (RBQ value 7911.76). Tank irrigation contributed significantly to agricultural production. Tank

Table 1. Contribution of tank irrigation system in the rural life (n= 102)

Statement	Rank										Sum	RBQ value	Overall rank
	I	II	III	IV	V	VI	VII	VIII	IX	X			
Tanks serving as a source of livelihood	580	153	64	21	72	5	8	0	0	1	904	8862.74	1
Tanks increased agricultural production	100	432	120	63	42	20	12	18	0	0	807	7911.76	2
Tanks are source of irrigation	80	99	360	56	60	45	28	9	2	0	739	7245.09	3
Tanks helped in employment generation	30	36	80	308	78	30	44	18	6	2	632	6196.07	4
Tanks lead to crop diversification	30	9	48	63	282	75	28	30	8	0	573	5617.64	5
Tanks used for rain water harvesting	60	36	48	56	12	240	36	24	14	4	530	5196.07	6
Tanks acted as flood moderators	50	36	56	56	6	45	164	39	18	5	475	4656.86	7
Tanks helped in water recharging	10	36	56	42	54	5	36	132	38	2	411	4029.41	8
Tanks enhanced flora & fauna	30	9	64	49	24	45	24	36	78	13	372	3647.06	9
Use of tank beds for cultivation	0	0	16	49	30	45	40	27	22	49	278	2725.49	10

irrigation has a long history and most of the tanks were constructed in the past years in the study area. Third ranking was given to the aspect of tanks as source of irrigation (RBQ value 7245.09). Indirectly the tanks lead to income generation to the landless farmers due to increase in farming hence it was ranked fourth (RBQ value 6196.07). As a result of availability of irrigation facility the SHGs were able to diversify the crops and they switched over to more paying crops hence the crop diversification was ranked fifth (RBQ value 5617.64) followed by tanks as source of rain water harvesting structures, flood moderators, water rechargers and contributing to more flora and fauna (RBQ values 5196.07, 4656.86, 4029.41 and 3647.06 respectively). Use of tank beds for cultivation was given the last ranking (RBQ value 2275.09) as the farmers did not utilize the tank beds.

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Received: 3.1.2015

Accepted: 17.3.2015