Short Research Article

A STUDY ON PEOPLE'S PARTICIPATION IN THE CONSERVATION OF RURAL TANKS FOR SUSTAINABLE RURAL DEVELOPMENT IN CUDDALORE DISTRICT, TAMILNADU

Abstract

The participation of people in any task of the activity shows the perfect and fulfills the requirements of society in general and individual in specific. The sustainable development in rural area requires the natural resources conservation with the effective people's participation for the sustainable utilization without damage. At this juncture, rural tanks play a very crucial role in the process of sustainable development in its command area. Many numbers of tank institution are functioning for each tank system to resolve the issues related to maintenance of rural tanks and water sharing disputes between the head reach and tail-end users. Less people's participation and lack of attention of water users of the rural tanks shown that the rural tank systems have been reduced and retrenched, which resulted in decreasing the total crop land under cultivation and reduction in the benefits available[1]. Some of the rural tanks have been destroyed and urbanised due to intensity of population and enhancement of modern marketing[2]. All these endangered issues are due to lack of people's participation and prolonged misuse and severe encroachment. They are caused to push and create the problem of water scarcity and resources logging.

Based on the background stated above, an attempt has been made to analyse the conservation of rural tanks for sustainable rural development through effective people's participation.

Key Words: People's Participation- Rural tanks- Conservation- Sustainable Rural development- Local level management- Environment Sustainability

1. Introduction

People's participation is measured in terms of efficiency and/or cost-effectiveness, equity in distribution of benefits, sustainability and empowerment of the people. The participation of people in any task of the activity shows the perfect and fulfills the requirements of society in general and individual in specific. The sustainable development in rural area requires the natural resources conservation with the effective people's participation for the sustainable utilization without damage. At this juncture, rural tanks play a

[1] Shanmugam, T.R., (1997). Factors Influencing Extend of Tank Irrigation in Tamilnadu, Indian Economic Panorama, (July-Sep.).

[2] Sharma C.B.S.R (2020), Eco-graphy of Small Water Bodies. A Study of Five Irrigation Tanks, Pudhucherry University.

very crucial role in the process of sustainable development in its command area. Currently, due to various reasons viz., physical, social and economic situation threatening the water users and the farmers, the rural tanks have been reduced in size, brokened, damaged and decayed. It is resulted that the fruits of benefits from the rural tanks were not reaching the people. Hence, there is an urgent need to enhance the people's participation that promotes sustainable rural development through rural tank's conservation.

So that an urgent attention is required to improve the rural tank's system through their users' participation and equitable water-sharing, to ensure reliability and adequate maintenance of the systems. People's participation is viewed as a dynamic group process in which all members of a group contribute to the attainment of common objectives, share the benefits accruing from group activities, exchange information and experience of common interest, and follow the rules, regulations and other decisions made by the group. People's participation is an essential ingredient in the sustainable rural development. Through the effective participation of users of natural resources, almost all the people mainly depends up on water resources for their livelihood security, for the purpose of crops cultivation, ground water recharge for drinking water sources and water for animal's breeding's. In this connection rural tanks are the pioneer in the villages which determine the environmental sustainability. Rural tanks are complex human-made ecosystems involving many natural resources and providing a wide variety of functions. The geography of south India is characterized by the presence of a large number of rural tanks, for storing and distributing water resources systematically, the main function of tanks was to store and distribute water for irrigation purposes[3]. Many numbers of tank institution are functioning for each tank system to resolve the issues related to maintenance of rural tanks and water sharing disputes between the head reach and tail-end users. Less people's participation and lack of attention of water users of the rural tanks shown that the rural tank systems have been reduced and retrenched, which resulted in decreasing the total crop land under cultivation and reduction in the benefits available[4]. Some of the rural tanks have been destroyed and urbanised due to intensity of population and enhancement of modern marketing[5]. All these endangered issues are due to lack of people's participation and prolonged misuse and severe encroachment. They are caused to push and create the problem of water scarcity and resources logging.

[3] Sivasubramanian K (1998). Maintenance of Irrigation Networks under Major Tanks in Tamilnadu, Review of Development& Change, Vol (III) 2.

[4] Shanmugam, T.R., (1997). Factors Influencing Extend of Tank Irrigation in Tamilnadu, Indian Economic Panorama, (July-Sep.).

[5] Sharma C.B.S.R (2020), Eco-graphy of Small Water Bodies. A Study of Five Irrigation Tanks, Pudhucherry University.

Based on the background stated above, the researcher has chosen the topic entitled People's Participation and Sustainable Rural Development: A Case Study of Select Rural Tanks in Cuddalore District, Tamilnadu.

2. The Objectives

After framing these objectives more than 60 studies related to my research work have been reviewed

4.1. to assess the different processes of people's participation in the various activities of tanks' conservation

4.2. to portray the role of people's participation in the conservation of rural tanks for sustainable rural development.

4.3. to identify the constraints to rural tanks for their depletion as well as their misuse in the context of people's participation.

4.4 to explain the social, economic and demographical profile of the people, who live in and around the rural tanks for sustainable use.

4.5. To develop a model to promote the rural tanks' development through effective people's participation in order to make rural development in sustainable manner.

3. Literature Review & Research Gap

After framing the objectives of the present study, more than 60 studies pertaining to the research topic have been scrutinized. According to majority of studies, rural tanks are central to the sustainable rural development, with people's participation and it is also found that majority of rural tanks and their essentials have been deteriorated, due to lack of people's participation, severe encroachment, heavy silting and weeding, severe encroachment.

4. The Hypotheses

4.1. There is not a significant relationship between the locations, in respect of the role of people's participation in various usefulness of rural tanks.

4.2. The water user of the rural tanks in both the location does not influence the achievements of the people's participation, through the conservation of rural tanks.

4.3. There exists positive association between the locations of the people who participated in respect of various activities of rural tanks' conservation.

4.4. People's participation, conservation of rural tanks and the ways of the benefits occurred by the tank water users are closely associated, in respect of both locations.

4.5. The participatory role in the process of the rural tanks' conservation for sustainable rural development does not influence the location of the people.

5. Methodology

Both primary and secondary data were used for present research, which includes the data related to participation of the water users of the rural tanks towards sustainable rural development as detailed below.

5.1. Primary Data

The primary data related to participation of water users of rural tanks and the need for conservation, the profile of rural tanks and the importance of people's participation were collected (Table 1).

Table 1. Primary Data

Sl.No.	Variables	Data
1.	General data, which including the Social & Economic Profile	Age, Sex, Marital Status, Children, Community, Religion Educational Status Household Income, Employment, land use Crop rotation, Irrigation sources, Housing condition and Assets Status
2.	Rural Tanks and Their Use	Introductory Remarks of rural tanks, various Uses for Rural Development, Capacity, No. of Fillings and Water Duration
3.	Problems Related to Rural Tanks	Problems with in rural tanks: Encroachments, Unauthorized cultivation, heavy silting and Weeding Problems out of Rural tanks: water sharing issues, population density & urbanization.
4.	Conservation of Rural Tanks	Ways for Conservation, Removal of Encroachment, Period of the Conservation and Importance of Conservation
5	People's Participation in Tank Development	Levels of People's Participation, ways of participation and different kinds of participation
6	People's Participation for Sustainable Rural Development, in view of people's participation	Institutional role Collective approach decentralization of power role of rural community benefits occurred from rural tanks through people's participation

Source: Compiled.

benefits and various issues, which the have been collected through a well structured and pretested interview schedule. The data collection were made through the personal visit of a particular select common property resources and their stakeholder, as the respondents of the study. (Table 2)

5.2. Secondary Data

Table 2. Secondary Data

Sl. No.	Variables	Where collected
1.	Status of Rural Tanks in India &Tamilnadu	National Institute of Rural Development, Hyderabad
2.	Types, problems, Issues and Challenges in Rural tanks	National Institute of Rural Development and Council of Social Development, Hyderabad.
3.	Profile of Study Villages	Taluk office Taluk statistical office, Block Development office, Panruti
4.	Rural tanks in the Tamilnadu state, India and Villages of the Study area and the Detailed Profile of Area Population Agricultural and Infrastructural Resources	State Statistical Office Villages Administrative Offices concerned, BDO office, Taluk office, Annual Credit Plan Report of the NABARD 2008.

include status and recent scenario of rural tanks and their participative initiatives in the state and the country in general as well as in the study area in particular.

6. Study Area

Panruti block which belongs to Cuddalore District of Tamilnadu has been chosen as the study area for the present investigation, in which 30 villages have been chosen to enumerate about people's participation in the maintenance and the rural tanks. Almost all the people from select villages mainly depend up on the rural tanks for their survival and for the farming practices and livelihood security. Totally, 42 villages come under Pantruti block and the total geographical area is 384 sq.km, in where 1,66,273 population live. The occupation of the major population in the study area is agriculture and allied activities.

7. Sampling Procedures

The present investigation concentrates on the status of people's participation and their role in rural tanks' development. In order to understand the present status as well as the participation of the people for the role of such type of protection of the resources in rural area like the proper maintenance of the conservation of rural tanks a 600 samples have been selected from 30 select villages of the study area that represents 70 percent of the total villages of the block. The sample villages have been classified in to two types, such as the villages, where the people use the tank water in the head reach area is called the tank head reach area users (THU) and the users of the

Table 3.Distribution of Sample Villages of Tank Head Users (THU)

Sl.No.	Sample Villages	Total Samples
01	Anguchettipalayam	20
02	Sirukiramam	20
03	Natham	20
04	Rayaplayam	20
05	Manapakkam	20
06	Kolapakkam	20
07	Elanthapmpattu	20
08	Karukkai	20
09	Thiruvamur	20
10	Semmedu	20
11	Visur	20
12	Meliruppu	20
13	Periyakattupalayam	20
14	Siruvathur	20
15	Talampattu	20
Total Samples		**300**

Source: Compiled from various sources of the Panruti Block -2013

tanks live in the tail- end point of rural tanks are called as the tank end users (TEU). From each type, 15 villages have been selected and 20 samples from each village have been chosen for data collection (Table 3 and 4). of the rural tanks for their crop cultivation and all other purposes of drinking water, animal breeding,

rural sanitation, horticultural crop production, fishing and for silts for their crop land and so on. The two beneficiary villages from each tank has been taken to understand the level of participation and their role in the maintenance of rural tanks. Further, in order to clustering the sample villages, a three group of villages have been sorted on the basis of the number of water users and the utility of the water and other benefits of rural tanks.

Table 4. Distribution of Sample Villages of Tank End Users

Sl. No.	Sample Villages	Total Samples
01	Poongunam	20
02	Vadakailasam	20
03	Maligampattu	20
04	Panikuppam	20
05	Kilkangeyankuppam	20
06	Meliruppu	20
07	Kattugudalur	20
08	Periyankuppam	20
09	Sorathur	20
10	Marugur	20
11	Kadampuliyur	20
12	Alappasamudram	20
13	Vegakottai	20
14	Leelmampattu	20
15	Purangani	20
Total Samples		**300**

Source: Compiled from various sources of the Panruti Block -2013.

Each cluster comprises the five villages which covers the command area of the particular tank and the availability of tank water. rural tanks' conservation and command area of rural tanks. In addition to this, the sample villages have been chosen throughout the study area, because the block is purely rural block. The main reason for selection of this area for the investigation is that among the total rural tanks of the Cuddalore district, 22 percent located in the study area and 79 percent of the people of the block is the main users.

8. Tools of the Study

The present study is mainly based on both primary data and secondary data. A well-structured interview schedule has been constructed and the pilot study has been conducted. After the slight modification of the schedule, the primary sources of data have been collected for the present analysis. Besides it, the observational visit has also been conducted to rank the rural tanks and the level of participation. The statistical tools like, percentage analysis and Chi-square test have been employed for data processing and drawing up of inferences.

9. Analysis and Discussion

The tabulated data have been anlaysed with the help of percentage analysis and chi-square test (x^2) to understand the relationship between function of people's participation of the people and the rural tanks' development that leads to sustainable rural development focusing on water

sharing and the unavoidable social and communal problems individual influences between the water users of the head reach and tail-end area, followed by the social and economic dominations etc.

10. Major Findings

10.3. The majority of the respondents in both the two type of villages have used rural tanks for irrigation purpose followed by tube well irrigation.

10.4. The sugarcane farmers represents majority which is the next prime crop to paddy, followed by the respondents who cultivate the vegetables.

10.5. Majority of the respondents recorded the water available from the rural tanks is three to five months duration.

10.6. The majority of the respondents who has recorded that the total capacity of rural tanks is below 30 acres.

10.7. 95.50 percent of the respondents recorded that the rural tanks are having one time filling throughout the year.

10.8. Besides the irrigation is the main use of the rural tanks recorded by 85 percent of the respondents followed by the sustainable crop cultivation and production is the main use of rural tanks as mentioned by the 77.65 percent of the respondents.

10.9. Heavy siltation is the major problem with in rural tanks as indicated by the almost all the respondents that represents 80.17 percent.

10.10. Less participation of officials concerned is the main reason for incapability of rural tanks as mentioned by 99.67 percent, respondents.

10.11. Almost all the respondents stated that they have less awareness on the conservation of rural tanks, that represents 56 percent.

10.12. Village leaders are the main sources of information for the conduct of conservation rural tanks as indicated by the majority of the respondents which represents 33 percent and 21.34 respondents opined that the NGOs are the main source of information for the conservation of rural tanks.

10.13. The rural tanks and their usefulness are not significantly varied between the respondents in both the locations of the rural tanks.

10.14. The majority of the respondents recorded that they are purposively involved in various activities of rural tanks' development in both the locations of THU and TEU.

10.15. The majority of the respondents have recorded that the self help groups (SHGs) are the main participatory initiative in the process of rural tanks' conservation, in both the location, followed by the statement of the respondents as non- governmental organisations (NGOs) are the participatory initiative for the same.

10.16 The achievements of the people's participation are not influenced

with the impact of the conservation of rural tanks from both location. The achievements of the people's participation have brought out to the development of rural tanks in both the locations.

10.17. 52.50 percent of the respondents have contributed their participation through their labour force, followed by the respondents with the category of goods donated to the development of rural tanks.

10.18 Almost all the people participated in the process of the conservation of rural tanks has brought out the various supports to promote the sustainability in villages.

10.19. The majority of the respondents stated that their participation has been institutionalized for the purpose of the development of rural tanks.

10.20 58.80 percent respondents are having a regular membership status in the rural tank institutions, followed by 22.60 percent respondents, who are occasionally becoming as members in the

10.21. rural tanks' institutions.
18.60 percent of the respondents are not having the membership in the tank institutions and they involved in the process of conservation of rural tanks.

10.22. The majority of the respondents stated that they are having the membership of 12 to 15 years in the tank institutions, followed by the respondents who are having the membership in below of three years.

10.23. Majority of the respondents mentioned that the total membership capacity of their tank institutions between 21 and 40.

10.24. People's participation in the process of the conservation of rural tanks determine the ways in which the benefits occurred by the tank water users and it is strongly attributed that the people's participation is only measures in the process of rural tanks' conservation, that promote the sustainable developments in the tank villages. It is also noted that the water users of the rural tanks and their effective participation play a pivotal role in achieving the sustainable benefits from the rural tanks.

10.25. The participatory role in the process of conservation of rural tanks for sustainable rural development is equally concentrated in both the locations of the rural tanks, in which the benefits and their support to the sustainable development in the villages are not having any differences between the locations of rural tanks. In other words, the processes of the rural tanks' conservation are mainly depending up on the participatory role of the water users of the rural tanks, which promote sustainability in rural development.

11. Suggestions

The present study suggests on the basis of the findings and discussions of the present research work, as detailed below.

11.1. The educational institutions should conduct the survey on rural tanks, which is located nearby, in order to understand the status of rural tanks for their sustainability

11.2. The organisations and institutions related to rural tanks should come forward to identify the problems of rural tanks and make arrangement for solving problems, through active involvement of their water users.

11.3. Local level panchayats should identify the local level tanks and ponds and make arrangements for the periodical maintenance.

11.4. All the local level NGOs should motivate rural people to participate regularly in various maintenance activities of rural tanks.

11.5. The residents residing in and around the rural tanks should jointly organize a tank level organization with other line departments for the maintenance and saving of rural tanks.

11.6. Government should create a Rural Irrigation Tanks Authority (RITS) in order to restore the tanks irrigation system in our country, through effective people's participation.

11.7. Local NGOs and Government organizations (or) any other voluntary bodies should come forward to protect such system of rural tanks for environment sustainability.

12. Further Studies

The present study is opening the suitable avenues and opportunities to future generations to conduct right studies on

- Desilting of Rural Tanks through People's Participation
- Managing Rural Tanks and rural water management for rural livelihood security through People's Participation.
- Conservation of Rural Tanks and People's Participation Sustainable growth of rural economy and
- Role of People's Participation and Policies and programmes for Sustainable Management of Rural Tanks.
- People's Participation and Local Administration through Various Measures for the Promotion of Rural Tanks

13. Conclusion

Based on the present investigation and very simple approach adopted for data analysis, there are existing a close relationship between the people's participation and sustainable development in rural area , through proper conservation of local resources like, rural tanks. Because, they have become reduction and retrenchment, due to various socio-economic and physical reasons, which resulted in reduction in area under cultivation, irrigated by

rural tanks and affected the whole eco-environmental system. But the many benefits and various opportunities from rural tanks are laid down and undertaken by their users, farmers and neighborhoods and their participation in the process of tanks' development that promote sustainable rural development. It is therefore concluded that the participatory role in the process of conservation of rural tanks for sustainable rural development is equally concentrated in various villages of both the locations of the rural tanks, in which the benefits and their support to the sustainable development in the villages are not differed between the users of rural tanks. In other words, the processes of the rural tanks' conservation are mainly depending up on the participatory role of the water users of the rural tanks, which promote sustainability in rural development.

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