

# Self-Help Groups and Renovation of Rural Tanks for Sustainable Rural Livelihoods: A Study in Cuddalore District, Tamil Nadu

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## ABSTRACT

The process of development of rural area is not consequently possible without proper conservation and utilization of natural resources. The resources viz., land, water, forest etc., are the main base for the development of a state. Among all the resources, tanks are the smallest water bodies established by our forefathers, in order to catch, store and distribute the water in a proper manner. The self-help group (SHG) is, thus, conceived as a sustainable people's institution, which provides the poor with the space and support necessary for them to take effective steps towards achieving greater control of their lives in society. Managerial skills of rural women in their SHGs are relevant to better management of the natural resources like rural tanks. At this juncture, there is an urgent need to motivate self-group members to take up the resources management at local level through skill development initiatives to look after the natural resources management for sustainable environment. The present investigation is conducted in eight select villages across Cuddalore district. The villages are purely tank based regions, where paddy and sugarcane are the major crops. It is therefore concluded that rural women SHGs through their skill development promote sustainable environment in the modernization of tanks is significantly useful to achieve sustainable development in villages.

**Keywords:** Rural area, self-help group, Cuddalore district, modernization, villages

## Conceptual Frame Work

According to former Union Finance Minister C. Subramanian, rural development is a process of systematic and scientific use of enabling every person to engage himself in a productive and socially useful occupation and earn an income that would meet at least the basic needs. It is emphasized that the proper utilization and conservation of natural resources, which leads to full employment and development to rural livelihoods (Sharma, 2004). Hence the process of development of rural area is not consequently possible without proper conservation and utilization of natural resources.

The resources viz., land, water, forest etc., are the main base for the development of a state. They are determining indicators of advantages of the development process for transformation of rural society. Among all the resources, tanks are the smallest water bodies established by our forefathers, in order to catch, store and distribute the water in a proper manner. Approximately one-third of the irrigated area of Tamil nadu is watered by these tanks and they have played several important roles in maintaining ecological harmony as flood control system, preventing soil erosion and wastage of runoff during periods of

heavy rainfall, and recharging the ground water in the surrounding areas (Vaidyanathan, 2003). The tanks provided an appropriate micro climate for the local areas. Without these tanks, paddy cultivation would have been impossible. Until the arrival of the British in 1600 AD, tanks maintained by local communities with local resources. Historical data from Chengalpattu district indicates that in the 18<sup>th</sup> century about 4-5 per cent of the grass produce of each village was allocated for the maintenance of tanks and other irrigation structures. Other allocations were made for village employees in charge of water distribution and management. Assignments of revenue-free lands known as *manyams*, were also made to support village functionaries responsible for eri maintenance and management. This allocation ensured the upkeep of tanks through regular desilting and maintenance of sluices, inlets and irrigation channels. The early British rule saw disasters experiments with the land tenure system in quest for large land revenues. The enormous expropriation of village resources by state led to the disintegration of the traditional society, its economy and polity. Allocation for maintenance of tanks could no longer the support by the village communities, and these extraordinary water harvesting systems began to decline.

The self-help group (SHG) is, thus, conceived as a sustainable people's institution, which provides the poor with the space and support necessary for them to take effective steps towards achieving greater control of their lives in society. The focus is on mobilizing the poor to pool their own funds, build their capacities and empower them to leverage external credit. Self-help groups, being dynamic, evolve and develop over time. The studies that have been conducted to study the groups, suggest that they move through stages, but these stages are not constant across not watertight compartments. The basis functioning profile of the SHGs includes the holding of meeting, deposit of saving amount, issuing of receipt or personal passbook of the deposit safety of deposit, maintenance of records, grading, linkage with banks, issuing of revolving fund, capacity building and training programmes. Although self-help group is a voluntary and informal group, the goals, objectives, and activities of the group need to be explained to the members. After this conceptual explanation, the next step of

training includes the functional and management modules, which acquaint the group leaders and/or the members with the operational skills of the group from organization and conducting of meetings to record keeping, team management, fund management. On-side and off-site training programmes may be conducted for all these objectives by the facilitator, SHPI and/or by the specialized persons/institutions.

Recently the skill development initiatives (SDI) are central and essential for promotion of human resources development in rural area. NABARD has introduced number schemes for SDI to the matured SHGs members for the purpose of employment generation and livelihood opportunities by reducing poverty, enhancing productivity and promoting eco-environmental system for sustainable development in villages. Managerial skills of rural women in their SHGs are relevant to better management of the natural resources like rural tanks, in terms of:

- ◆ Local Water Resource Management
- ◆ Water Storage Techniques
- ◆ Foreshore Area Maintenance including Soil Resources Management
- ◆ Removal Silts and Weeds
- ◆ Avoiding Encroachments
- ◆ On-farm Development
- ◆ Water Distribution Management

Due to which there is an urgent need to impart the skills to the SHG members about the modernisation of rural tank system, in order to sustain development in an important four different functions of the tanks such as, soil and water conservation, flood control, drought mitigation and protection of environment of surrounding area. Likewise, development of tank irrigation has to undergo the four phases, namely, water acquisition or harvesting, storage, disposal of surplus water, distribution and management of water in the command area by an institution.

At this juncture, there is an urgent need to motivate rural youth to take up the resources management at local level as the skill development initiative to look after the nature for sustainable environment.

### **Objectives of the Study**

Based on this background, the present research has

been conducted to analyze the skill development for rural SHGs and modernisation of rural tanks for sustainable development in rural area. This paper focuses on the skill development initiatives gained by rural women through rural institutions like SHGs, in order to promote the livelihood security of the poor people live around the tanks. It also lights on the policy development on the encouragement of women SHGs in promotion of their capacity of skill development in various activities of modernisation of rural tanks.

### Hypothesis

Managerial skill development of SHGs members, modernisation of rural tanks and sustainable rural development are closely associated, in respect of the both two locations of the rural tanks.

### Methodology, the Sample Frame & Study Area

The present study has been conducted on the basis of both primary and secondary sources of data, which have been collected in the study area of Cuddalore district of Tamil nadu. A Multi stage sampling method has been employed by using simple random sampling techniques as detailed below.

**Table 1: Sampling Frame**

District	01	Cuddalore
Blocks Selected for Present Investigation	04	Kattumannarkoil, Nallur, Annagram, Kurinchipadi
Total Samples from Each Block	20	2 Villages from each block
Tanks' Location & Total Samples Covered	Tank Head Reach Area (NTV): 40 Tank Tail End Area (ATV): 40	10 Samples consist from each location
Sample Size	80	08 Tanks

Source: Compiled from Various Sources.

### ANALYSIS AND DISCUSSION

The resources of rural tanks consist the tank bunds, water standing area, foreshore area, the feeder channel; water spread area, sluice outlets, comm. and area, field distributaries (water courses) and surplus weir. While the South and East Indian

tanks are known for their antiquity and are created essentially as a source for providing supplementary irrigation during monsoon season, innumerable small water holding structures called ponds have been in existence in many North Indian states and some were constructed even after Independence for multiple uses including irrigated agriculture. Although many of these ponds are primarily meant for inland fresh water aquaculture, they have also been livestock and other domestic uses. Tank irrigation has thus a rich heritage on account of long historical antecedents in various regions of India. Over centuries, tanks and ponds constituted an important supplementary source of water to the distressed poor.

Governments and international agencies are encouraging the rural youth for effective institutional frameworks to manage and assist agricultural and rural development to address the challenges of increasing integration of farmers in water management at local level. In agriculture and growing concerns for global food security, rural poverty, regional inequality, and the resilience and climate compatibility of agricultural land use a tank based institutions running by rural youth farmers play a very vital role. The overall challenge is to strengthen the governance of rural development processes so as to guarantee positive impacts and new opportunities for small farmers, rural communities, local economies, and societies and nation as a whole.

### Sustainable Environment and Local Water Resource Management through Managerial Skill Development of SHGs

Self help groups (SHGs) are looking forward to concentrate the natural resource management in their respective villages. Rural tanks are the most diverse and productive ecosystems on Earth and they are important from conservation and sustainable management because of their rich diversity of flora and fauna. Tangible and intangible diverse resources and products of tanks' functions such as fodder, fishing, fuel wood, non timber forest products, ecotourism, and flood control have historically provided a source of income and livelihood for human beings. However, population growth and associated anthropogenic interferences have depleted these resources and reduced the rates

of flow of the ecosystem services. The irregular maintenance of tanks is due to damages health and well-being of individuals and local communities and diminishes their development prospects. It is widely recognized that tanks provide several ecosystem services that contribute to human well-being. Rural youth based institutions either youth club or water users' associations play a crucial role in protection of the tanks by renovation activities. In Ariyalur, the major ecosystem services that tanks provide include fish, fiber, water supply, water purification, climate regulation, flood regulation, coastal protection, recreational opportunities, and tourism.

### ***Employment Generation***

Development of agriculture is critically important for ensuring food and nutritional security for the hundreds of millions of people that still live below the poverty line, for raising rural incomes and generating employment opportunities, and for stimulating industrialization and overall economic development of the life. The inland Mahatma Gandhi National Rural Employment Guarantee Programme (MGNREGP) gives opportunity for all to work at least for 100 days in a year. Employment for fishermen and landless agricultural labourers, Duck Rearing, Cow Farming and milk production, and currently the main government rural employment generation scheme is the Sampoorna Grameen Rozgar Yojana (SGRY). Earlier incarnations of employment guarantee schemes like the Jawahar Rozgar Yojana (JRY), Employment Assurance Scheme (EAS) and the Food for Work Programme were merged into the SGRY in 2011.

### ***Soil and Water Resources Development***

Soil is one of the most important natural resources that perform many functions essential for maintenance of ecosystem. Enhancement of soil, water, and related natural resources support the production of food, fiber, fuel and provide essential ecological services such as water filtration/purification and the recycling of atmospheric gases. It focuses on the management and conservation of soil and water resources by rural youth through rural institutions, suggesting sustainable practices that will protect these vital resources now and in the future.

### ***Agricultural Development***

Agricultural development needs to be on a sustainable basis of water supply. Rural tanks bring water to crop land and entire duration of the crop processing and support farm community for development of land water resources in including augmenting ground water resources.

### ***Animal Husbandry***

The animal husbandry for improving livestock population advocate on the basis of the tanks' performance which provides water support to farm animals, poultry birds and so on. Rural tanks promotes sustainable animal breedings through the efforts of rural youth by tank institutions

### ***Women Empowerment and Rural Energy Management***

Involvement of women in all the development programmes right from the stage of project planning is essential. Although women represent 50 per cent of the population, they also have the major responsibility of grooming children and procuring the basic needs required for food fuel and fodder securities

### ***Rural Institutional Development***

Rural livelihoods and wetland system water users' groups, agricultural producer and rural workers associations, rural credit unions, women and youth associations and other self- help groups are all examples of institutions.

Through the effective participation of SHG members, a number of managerial skill development for modernisation of rural tanks presented in table 2. The managerial skills of SHGs for rural tanks' modernisation includes the regular maintenance of water storage area of the tank, protection of tank bunds and planting of various saplings, proper maintenance of water controllers and regulators, regulation of water channels and sustainable employment generation. These ways are the determinants of the sustainable development in villages, which promote sustainable livelihood security for rural people. In order to understand the situation related to people's participation and its need for the conservation of rural tanks, the benefits and the ways to promote sustainable development

in villages, a hypothesis has been formulated. The hypothesis is “managerial skill development of SHGs members, modernisation of rural tanks and sustainable rural development are closely associated, in respect of the both two locations of the rural tanks”. To test the hypothesis, a Chi-square test has been calculated and the result shows that the calculated value is much less than the table value.

**Table 2:** Managerial Skill Development for SHGs for Modernisation of Rural Tanks Sustainable Rural Development

Sl. No.	Ways and Means	Respondents		Total
		NTV	ATV	
1	Regular Maintenance of Water storage area of the Tank	36	38	074
2	Protection of Tank bunds and planting of various saplings	33	35	68
3	Proper maintenance of water controllers and regulators	29	27	056
4	Regulation of Water Channels	28	26	054
5	Conservation of flora and fauna	32	33	065
6	Removal of Encroachments	23	24	047
7	Properly channelizing the water supply channels	18	19	037
8	Organizing tank users associations and discuss the water Issues	21	20	41
9	Natural vegetation & On-farm development works	19	21	40
10	Sustainable Employment Generation	28	30	058
<b>Value of Chi-Square Test</b>				
Calculated Value		3.49		
Degrees of Freedom		9		
Level of Significance		0.05 %		
Table Value		16.97		

Source: Computed from Field Data.

Hence, the hypothesis is accepted. It is therefore concluded that people’s participation in the process of the conservation of rural tanks determines the managerial skill development of SHGs for modernisation of rural tanks and it is strongly attributed that SHGs skill development is the only measure in the process of rural tanks’ modernisation which supports the sustainable development in the tank based villages. It is also concluded that the SHG members who are the water users of the rural

tanks and their effective participation for managerial skill development contributed much for achieving sustainable rural development.

**Table 3:** Beneficial Index on the SHG’S Participation in the Modernisation of Rural Tanks and Promotion

Sl. No.	Index	Impacts	Respondents		Total
			NTV	ATV	
1	TAD	Total Agricultural Development in the village	98.67	100.0	99.85
2	AHW	Animal Husbandry & Welfare	88.0	86.0	87.0
3	SNV	Sustainable Natural Vegetation	70.65	62.60	66.65
4	SFP	Sustainable Food Production	80.65	89.30	85.00
5	SEED	Sustainable Eco-Environment Development	66.0	67.65	66.80
6	SGWR	Sustainable Ground water Recharge	66.30	67.0	66.70
7	SFM	Sustainable Flood Management	79.30	67.65	73.47
8	SDM	Sustainable Drought Mitigation	66.0	59.30	62.65
9	SEG	Sustainable Employment Generation	67.30	71.0	69.20

Source: Computed from Field Data.

Note: Figures Represents Percentage.

The water users of the rural tanks have gained many benefits from the rural tanks through their various active participatory roles in the process of conservation of rural tanks, with a view of sustainable rural development. In this connection the table 4.40 has clearly shows that the benefits obtained in the form of the index have been record by the respondents in both locations of the rural tanks. The beneficial index like total agricultural development in the tank villages through the effective participation of the people in the process of the conservation of rural tanks is recorded by the almost all the respondents, which represents 99.85 per cent. Next to this, 86 per cent of the respondents mentioned animal husbandry and welfare, through the process of the rural tanks’ conservation by effective role of the people’ participation. Followed by it, sustainable food production, as the beneficial

index through the effective participation of the people is recorded by 85 per cent of the respondents and 69.20 per cent of the respondents is aimed at sustainable employment generation, through the rural tanks on the basis of people's participation in an effective manner. Subsequently, the sustainable eco-environment is the index of benefits as indicated by 66.80 per cent of respondents and the sustainable ground water resources development and sustainable natural vegetation through the rural tanks as recorded by 66.70 respondents and 66.65 per cent respondents respectively. Mostly, rural development in a sustainable manner needs an imperative participatory role of the people through involvement in the various processes of the sustainable conservation of rural tanks. According to the respondents location wise, total agricultural development is the main beneficial index as mentioned by 99.67 per cent of respondents in NTV, and 100 per cent respondents recorded that the total agricultural development is the most important beneficial index in ATV location. Besides, the beneficial index of the animal husbandry is the next important activity in the tank villages as revealed by 88 per cent of respondents in the NTV, which is much higher than the respondents (86%) in ATV. It is also mentioned by the certain per cent of the respondents (79.30%) in the NTV location, but there are more number of the respondents who indicated the same opinion in ATV, representing 67.65 per cent. Hence, the majority of the respondents stated that the total agricultural development is the main beneficial index, followed by animal husbandry, sustainable food production and employment generation.

## SUMMARY, CONCLUSION AND SUGGESTIONS

Rural tanks are pioneer in local level water resources management that would help to augmenting water supply in villages in terms of mainly for irrigation for crop cultivation, drinking water purpose, animals breeding and local sanitation. The water users of the rural tanks are including women in rural area played a prominent role in protection and managing rural tanks. At this juncture, the present

study was a micro level exercise which conducted in Cuddalore district, on the basis of modernization works concentrated with help of managerial skill development of rural women through SHGs. The present study has proved that people's participation in the process of the conservation of rural tanks determines the managerial skill development of SHGs for modernisation of rural tanks and it is strongly attributed that SHGs skill development is the only measure in the process of rural tanks' modernisation which supports the sustainable development in the tank based villages. It is noted from the above analysis that majority of the respondents stated that the total agricultural development is the main beneficial index, followed by animal husbandry, sustainable food production and employment generation. The present study has also disclosed that the usefulness of this managerial skill development of SHGs has also brought out the development of rural tanks in both types of villages that support rural society and ensures sustainable rural development. It is therefore concluded that rural women SHGs through their skill development promote sustainable environment in the modernization of tanks is significantly useful to achieve sustainable development in villages.

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