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Economic Impact of Watershed Management in Kanchipuram District of Tamil Nadu

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Abstract

Watershed management is the study of the relevant characteristic of a Watershed aimed at the distribution of its resources and the process of creating and implementing plans, programs, and projects to sustain and enhance watershed functions that affect the plant, animal and human communities with the watershed boundary. It is a term used to describe the process of implementing land use practices and water management practices to protect and improve the quality of the water and other natural resources with a watershed by managing the use of those land and water resources in a comprehensive manner. It emphasizes scientific soil and water conservation in order to increase the biomass production. The main aim is to develop primary resources of land and water and to produce secondary sources of plans and animals for use in a manner which will not cause ecological imbalances. The study illustrates that 58 percent of the respondents were female. The study illustrates that most of the respondents are not benefited with watershed management programme (70 percent).

Key Words: Watershed management, human communities, ecological imbalances, *education*

INTRODUCTION

Watershed management deals with the allocation of water resources in the process of creating and implementing plans, programs, and projects to sustain and enhance its functions that affect the plant, animal and human communities. It is used to describe the process of implementing land use practices to protect and improve the quality of the water in a comprehensive manner. The main objective is to develop primary resources of water for use in a manner which it will not cause ecological imbalances.

ECONOMIC ASPECT OF WATERSHED MANAGEMENT

Watershed development consists of conservation, regeneration and the astute use of the natural resources. Watershed management is primarily responsible for the degradation of environment, regeneration and conservation can only be possible by promoting, awakening and ensuring the participation of the people who inhabit the watersheds. Watershed management is defined as the integrated use, regulation and development of water and land resources in order to accomplish sustainable use of land, water and vegetation.

The assessment of the potentialities of available resources in a particular watershed is essential for evolving is meaningful economic process. This type of inventory must be prepared every year or biennial to monitor the resource imbalances. Requirement and availability of cereals, pulses, oil, and fats, milk, fuel, energy for human population and feed and fodder for livestock should be estimated through agro-economic investigations. Estimation of surplus and deficit provide sound footings for watershed area. To meet out this gap most appropriate technologies would be used for economic development of rural inhabitants of watershed. The watershed programme is composed of various projects and practices.

WATER INFRASTRUCTURE SYSTEM

Water resources system is a combination of water control facilities and or environmental elements and making and control that considers the integrated view point. A holistic view management water resources systems still beyond the grasp of technologies. The most important principle of water resources management is the use of the watershed or river basin as the framework for planning and organizing systems. Complex, multipurpose water resources systems include a watershed as a source of water and numerous features for water utilization. The watershed is a prominent feature of the system of two catchments, the larger one on the left with snowmelt feeding the reservoir, and the small tributary stream, protecting this watershed management is very important.

WATERSHED OF INDIA

The watershed is to cover a specific land surface from which the rainfall runoff flows to a defined drain, cannel, stream or river at any particular point. The size of a watershed is governed by the size of the stream occupied by it. The size of a watershed is of is practical importance in development programmes. In terrains with little initial drainage, it may be difficult to delineate small sized watershed whereas in surging and hilly terrains smaller sized watersheds could be easily done and hence the aerials extent of watershed attempts made earlier for demarcation of watersheds.

REVIEW OF LITERATURE:

Asit K. Biswas (1993) in his research paper examined water crisis in arid and semi-arid countries on issues of water conservation and efficient use of water. He paid attention to social and environmental reflections of water resource development and management. According to Asaitambi, S (2008) it is an increasingly important aspect of water management is waste

minimization, for toxic and hazardous materials this has the obvious effects of preventing this example into the environment waste minimization programmed has received a great impetus in recent years as a result of the increasing demand for water supply and its non-availability.

Ali Mirchi and David Watkins (2009) have opined that water is both a natural resource and a public good that plays a critical role in a host of environmental processes and economic, social, and political activities. Watershed management practices once commended for their broad benefits to society have become the focus of harsh criticisms for their adverse and sudden environmental or socioeconomic impacts. The early watershed modeling efforts were aimed mostly at representing hydrologic processes of environmental, social, and economic functions to facilitate a holistic understanding of watersheds and associated human activities.

METHODOLOGY

This study is purposively conducted in Kanchipuram district of Tamil Nadu using primary data for a sample population of 100 beneficiaries of the scheme. They are randomly chosen from the list available in the Government published report in the district. To understand the nature of the data, firstly, frequency tables were prepared, and subsequently the analysis and tabulation have been carried out using research techniques based on the requirement.

OBJECTIVES OF THE STUDY

- To study the socio-economic status of the sample respondents in the study area
- To assess the factors contributing to sustainability of Watershed management in the study area

ANALYSIS OF THE STUDY

Table 1
Distribution of the Respondents Gender Wise

Gender	No. of Respondents	Percentage
Male	21	42
Female	29	58
Total	50	100

Source: Computed from Primary Data

The above table 1 illustrates the gender-wise classification of the respondents in the study area. 42 percent of the sample population belonged to male s and 58 percent of the respondents were female respondent.

Table 2
Distributions of the Respondents in terms of age (in years)

Classification of Age	No. of Respondents	Percentage
18 to 35	12	24
36 to 45	24	48
46 to 60	10	20
60 Above	4	8
Total	50	100

Source: Computed from Primary Data

The above table 2 shows that 24 percent of the respondents are in the age group of 18-35, 48 percent of the respondents are in the age group of 36-45 years, 20 percent are fall in the age group of 46-60 years of the age and 8 percent of the respondents are in the age group of above 60. Therefore, it is observed that most of the respondents are in the age group of 36-45.

Table 3
Distribution of the Respondents According to Educational Status

Particulars	No. of Respondents	Percentage
Illiterate	14	28
Primary	16	32
High school/ secondary	9	18
Higher secondary	5	10
UG degree	6	12
Total	50	100

Source: Computed from Primary Data

The table 3 despite to the details about educational level of the respondents in the sample research area. Among the respondents 28 percent are illiterates, 32 percent of the respondents have studied primary education only. 18 percent of the respondents studied secondary education and 10 percent of the respondents are higher secondary level. 12 percent of the respondents are studied under graduates.

Table 4
Distribution of type of house by the Respondents

House ownership	No. of Respondents	Percentage
Own	37	74
Rental	13	26
Total	50	100

Source: Computed from Primary Data

The above table 4 illustrates the type of houses of the sample respondents. 74 percent of the respondents are living in own houses and26 percent of the respondents in rental house. The table shows that most of the sample respondents are dwelling in their own houses.

Table 5
Distribution of Employment among the Respondents

Type of the employment	No. of Respondents	Percentage
Business/ self employed	42	84
Govt. Employee	4	8
Skilled worker	3	6
Semi-skilled worker	1	2
Total	50	100

Source: Computed from Primary Data

The above table shows the distribution of respondents according to the type of employment. Among the respondents, 84 percent belong to business/ self-employed. 8 percent of the respondents are government employee. 6 percent are skilled workers and nearly 2 percent of the respondents are semi-skilled worker. The table clearly illustrate that the most of the sample respondents are doing their business/self-employed.

Table 6
Distribution of per day water use by the respondents (in Litters)

Water use per day	No. of Respondents	Percentage
30-50 litter	3	6
50-90 litter	12	24
Above 90 litter	35	70
Total	50	100

Source: Computed from Primary Data

The table 6 shows the distribution of per day water consumption of the responses in the study area. The sample respondents consumes more than 90 liters of water per day for their daily activities with percentage of 70, 24 percent of the respondents consume from 50 to 90 liters per day and 6 percent of the respondents consume less than 50 liters per day.

Table 7
Sources of Irrigation details of Respondents

Irrigation	No. of Respondents	Percentage
Rain barrel	3	6
Purchasing water	2	4
Nearby surface water (stream, pond, river, lake.)	45	90
Total	50	100

Source: Computed from Primary Data

Table 7 shows the other source of water for irrigation purpose in which 6 percent of the respondents are collecting water from rain barrel, 4 percent of the respondents are purchasing from outside and 90 percent of the respondents are utilizing surface water sources.

Table 8
Micro watershed activities of the respondents

Watershed activities	No. of Respondents	Percentage
Yes	22	44
No	28	56
Total	50	100

Source: Computed from Primary Data

Table 8 portrays the detail about distribution of respondents according to micro watershed activities in the research area. 44 percent of the respondents said yes and 56 percent of the respondents replied as No.

Table 9
Watershed related activities of the respondents

Watershed related activities	No. of Respondents	Percentage
Yes	10	20
No	40	80
Total	50	100

Source: Computed from Primary Data

Table 9 shows the participation of respondents on watershed related activities. The table clearly illustrated that 80 percent of the respondents are not participating in the activities pertain to watershed management and 20 percent of the respondents involved actively.

Table 10
Beneficiaries' details of watershed management

Beneficiaries during the watershed management	No. of Respondents	Percentage
Yes	15	30
No	35	70
Total	50	100

Source: Computed from Primary Data

Table 10 portrays the respondents benefited with watershed management. Of which 70 percent of them have said that they are not benefited by the watershed programmes and only 30 percent of the respondents said yes as the beneficiary of the programmed. This indicated that the scheme has not benefitted the most of the farmers in the study area.

Summary of the Study:

The study illustrates that 42 percent of the respondents were male and 58 percent of the respondents were female. The most of the respondents consumes more than 90 litter of water per day for their daily activities with a percentage of 70, 24 percent of the respondents consume from 50 to 90 liters per day and any 6 percent of the respondents consume less than 50 litters per day. Of the study 6 percent of the respondents collecting water from rain barrel. 4 percent of the respondents are purchasing from outside and 90 percent of the respondents are analyzing surface water sources. The study shows that most of the respondents (80 percent) were not actively participating in watershed management. And only 20 percent of the respondents are involved actively. The most of the respondents are not benefited with watershed management programme (70 percent) and nearly 30 percent of the respondents said that they are benefited through watershed management programme.

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