WATERSHED PROGRAMME IN DROUHT PRONE AREA: A STUDY FOCUSING FROM FARMERS' PERSPECTIVE IN RAYALASEEMA REGION OF ANDHRA PRADESH

Dr. B. Venkatappa

Assistant Professor, Department of Economics, Dr. Abdul Haq Urdu University, Kurnool, Andhra Pradesh, India.

ABSTRACT

The watershed development programmes influence quantity and quality of natural resources and thereby bring changes in the socio-economic conditions of rural communities. This paper examines the ex-post socio-economic impact of watershed based developmental interventions in Rayalaseema region of Andhra Pradesh. Data were collected from 360 selected farmers who were benefited by watershed development programmes in the study area. The results showed significant higher gross returns from crop cultivation on watershed beneficiary farmers. This paper also established that watershed management programme had a positive and significant impact in creation of both casual and regular employment opportunities, an increase in terms of income and saving level among the farmers. On the whole, it can be inferred that the watershed programme had a tangible impact on the socio-economic development of the select farmers in the Rayalaseema region of Andhra Pradesh, and farmers perceived that the said programme is a boon in lifting their agricultural productivity Vis-a-Vis socio–economic transformation. This paper is an attempt focusing on these vital aspects.

Key words: Agriculture, Farmers, Water Shed programme,

Productivity, Social and Economic.

Introduction

Water is one of the most important natural resources that play's a vital role for holistic and sustainable development of a nation. With regard to India, majority of its population lives in rural areas and agriculture is their main occupation for survival. Therefore, development of agriculture vis-à-vis socio-economic and sustainable development depends on a well-planned conservation of rain water and effective use of ground water. Watershed program is one of the such programmes aimed at achieve integrated and management of the land and water sources. These programmes provide life support for rural communities in terms of providing gainful employment, earn and enhance income levels, development of cultivable land and a solution for a host of problems being faced by the rural communities and poorer sections of the society at large.

Sustainable development is a process of development and social transformation that lasts for a long time. A specific concern is that those who enjoy the fruits of economic development today may be making future generations, worse off by excessively degrading the earth's resource and polluting the earth's environment. In more specific terms, sustainable development aims at reducing the absolute poverty of the world's poor by providing lasting and secure livelihoods that minimize resource depletion, environmental degradation, cultural disruption and social instability. And above, all environmental degradation causing perils to attain sustainable development. The aim of watershed development programme is also partly aimed to achieve economic development of farmers in rural areas.

Watershed development relates to the conservation, regeneration, and the judious use of human and natural resources like land, water, plants, animals within a particular watershed. Watershed development attempts to bring about the best possible balance in the environment between natural resources on one side and man and grazing animals on the other. It requires people's participation because conservation is possible only through the whole-hearted involvement of the entire community.

In essence, watershed development involves not only regeneration of the environment, but also meets needs of human community in such a way that their demands match the resources available like land, water and vegetation within that particular watershed. This equilibrium between the needs the availability of resources that will lead to a better and increased resistance to drought and increased agricultural production, augment food supply, fodder, fuel and timber. Thus, the standard of living of the communities can be improved resulting to reduction of poverty and reduce migration of farmers to urban areas.

Statement of the problem

Watershed programme is conceived and recognized as a strategy for preservation of rain water, raising soil conservation, improve and diversity land use pattern, development of forests and pasture land and thereby achieve socio-economic upliftment of farmers on one hand and sustainable development of the economy on the other. Besides, watershed programmes ensure supply of water to every field, remove hunger and poverty among poor communities, provide green cover over denuded areas, preserve the rain water, bring ecological balance and also protect the environment.

Watershed programme has been in implementation in the drought-prone areas like Rayalaseema region since 1980. This programme was transferred to the State Government for its effective implementation in 1980. Ever since then, the programme has gained much importance especially in drought-prone areas. A very few attempts were made on watershed programmes and their implementation. But so far no in-depth and micro-level study has been made touching and focusing more upon the impact of watershed programmes on the economic development of marginal, small and large farmers especially in drought-prone Comprising four district Viz.,Anantapuramu, Chittoor, YSR Kadapa and Kurnool Rayalaseema region of Andhra Pradesh. The present paper is an attempt in this direction.

Rational of the paper

Rayalaseema is a hot arid region comprising of four districts viz Anantapur, and Chittoor, YSR Kadapa and Kurnool falling under rain-shadow zone. The region is covered under the Drought-Prone Area Programme for three decades from 1975-2005. The geographical position of the peninsula renders it, the driest part of the state and hence agricultural conditions are more often precarious in the Region. Monsoons also evade the region due to its disadvantageous location. Being far from East Coast, it does not enjoy the full benefits of North East Monsoon and being cut off by the high Western Ghats, the South West Monsoons are also prevented from penetrating and quenching the thirst of these parched soils. It is also, observed that the region is deprived of both the monsoons and subjected to droughts due to bad seasons.

Therefore, there is a dire need to take-up studies focusing on farmers' perspectives on Watershed Development Programmes and the problem expressed by them. No specific study is found covering farmers' perspectives watershed programme in drought–prone area like Rayalaseema region. The present paper is an attempt to fill this research gap.

Objectives

1. To assess how far the watershed programme had an impact and implication on the socio-economic conditions in the area of select farmers.
2. To identify and analyse the perception of farmers on watershed programme in the drought prone areas in mitigating the problems of te farmers.
3. To offer suggestions for effective implementation of watershed programme from the farmers perspective.

Hypothesis

H_0 : There is significant impact on agricultural farmers through Watershed Programme.

H_0 : There is no satisfaction of agricultural farmers on governmental programme through watershed programme.

Sample Design

A three stage sampling method was adopted in selecting the sample farmers and the mandals. All the mandals in the Four district (Anantapur, Chittoor, YSR Kadapa and Kurnool) of Rayalaseema were classified into three categories, (a) Developed (b) Medium Developed and (c) Less Developed. From each category, one Mandal was finally chosen.

In the first stage, from each category, one Mandal was selected. In the second stage, three watershed villages from each mandal were selected where watershed is contributing to agriculture, minor irrigation, animal husbandry and industry, service and business. In the third stage, 10 farmers from each village who were benefited from watershed and engaged in the above activities were selected. Further, for the purpose of arriving at the effectiveness of the watershed programme, information regarding the income and employment generated with the watershed programme are collected and compared to find out whether the farmers could improve their income and employment at the each district

level. Thus, the scope of the paper is confined to the household -farmers, watershed Villages and selected Mandals in the Rayalaseema region.

Analysis and Findings

The main objective of regional rural banks to provide financial assistance to the rural agricultural farmers to generate income, increasing employment opportunities, getting social mobility, social awareness and also social and economic development of the farmers.

Table 1
Details of irrigated area of different crops before implementation of Watershed Development Programme

S.No	Name of the crop	Irrigated area	Percentage to total
1	Ground nut	736	33.11
2	Red Gram	240	10.79
3	Paddy	587	24.40
4	Sunflower	210	9.45
5	Mango	115	5.17
6	Tomato	345	17.08
	Total	2223	100

Source: Field survey

Table 1 furnishes the details of net irrigated area of different crops before cultivating under the watershed development programme in the study area. It is apparently found that the total irrigated area of sample respondents is 2223 acres. Out of this, 33 per cent represent 736 acres are irrigated the ground nut, 24.40 per cent area is under Paddy crops followed by Tomato (17.08 per cent) Red gram (10.79 per cent), Sunflower (9.45 per cent) and 5.17 per cent area irrigated under Mango cultivation.

Table 2

Details of crops and irrigated area brought after implementation of Watershed Programme

S.No	Name of the crop	Irrigated area	Percentage to total
1	Ground nut	964	37.23
2	Red Gram	285	11.00
3	Paddy	618	23.87
4	Sunflower	222	8.57
5	Mango	124	4.79
6	Tomato	376	14.52
	Total	2589	100

Source: Field Survey

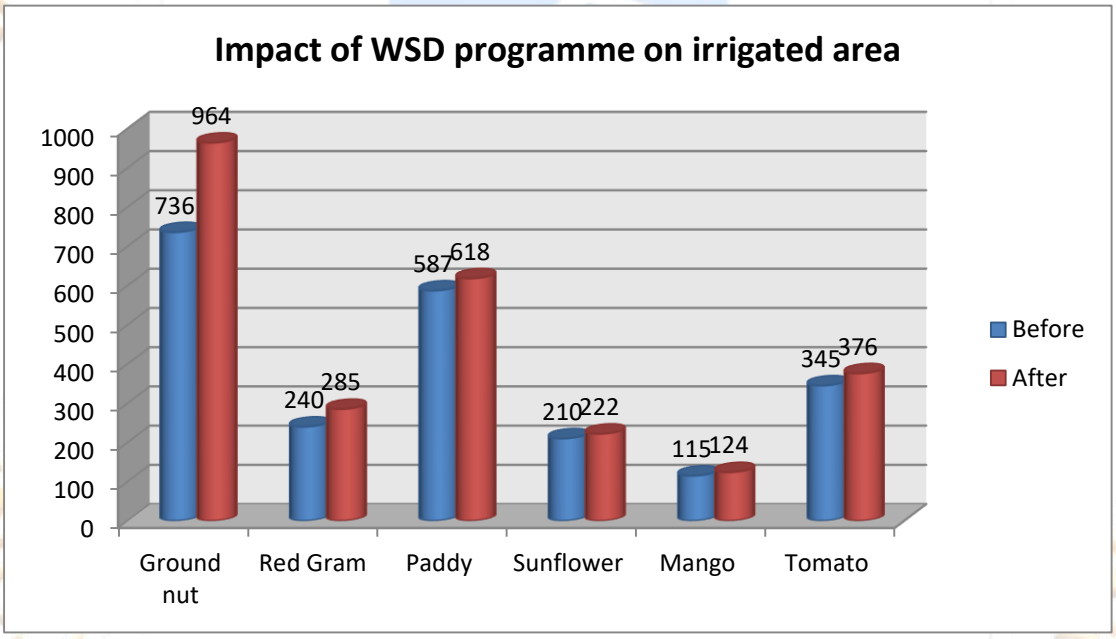
After implementation of watershed development programme in the select study area, the farmers concentrated on the development of land, preserve water & water management and expanded their irrigated area. The data collected and the interpretation is based on the responses given by the selected farmers and the same are shown table 2. The table clearly shows that the total irrigated area has been found increased. It further shows that the crop -wise irrigated area. It is found that 37 per cent of the area is covered under ground nut, followed by 23 per cent area with Paddy, Tomato (14 per cent), Red gram (11 per cent), Sunflower (8.51 per cent) and Mango (4.79 per cent). From this, it can be understood that the select farmers have an awareness about commercial crops. This might probably be because of watershed programme that is being implemented in the area.

Table 3

Impact of Watershed Development Programme on irrigated area of various crops in the study area

S.No	Name of the crop	Increased Irrigated area	Percentage of increased
1	Ground nut	228	30.97
2	Red Gram	45	18.75
3	Paddy	31	5.28
4	Sunflower	12	5.71
5	Mango	9	7.82
6	Tomato	31	8.98

Source: Field Survey



It is clearly observed from the study that the watershed development programme was a significant impact on all the crops cultivated by the farmers in the study area. Table further shows that 30.97 per cent of Ground Nut crop is found increased, there is an increase of irrigated area of Red Gram crops by 18.75 per cent, 5.28 per cent of area was under Paddy, 5.71 per cent of area cultivated the Sunflower crop, 7.82 per cent of area could be increased Mango crop, and 8.98 per cent of Tamoto crop also found increased. Based on the above analysis, it can be concluded that there has been an increase in terms of crops irrigated area through watershed development programme and this reflects that

the programme made a positive impact on rural farmers' socio-economic development in the study area.

Table 4

Impact of watershed programme on social development of farmers in the study area.

N=360

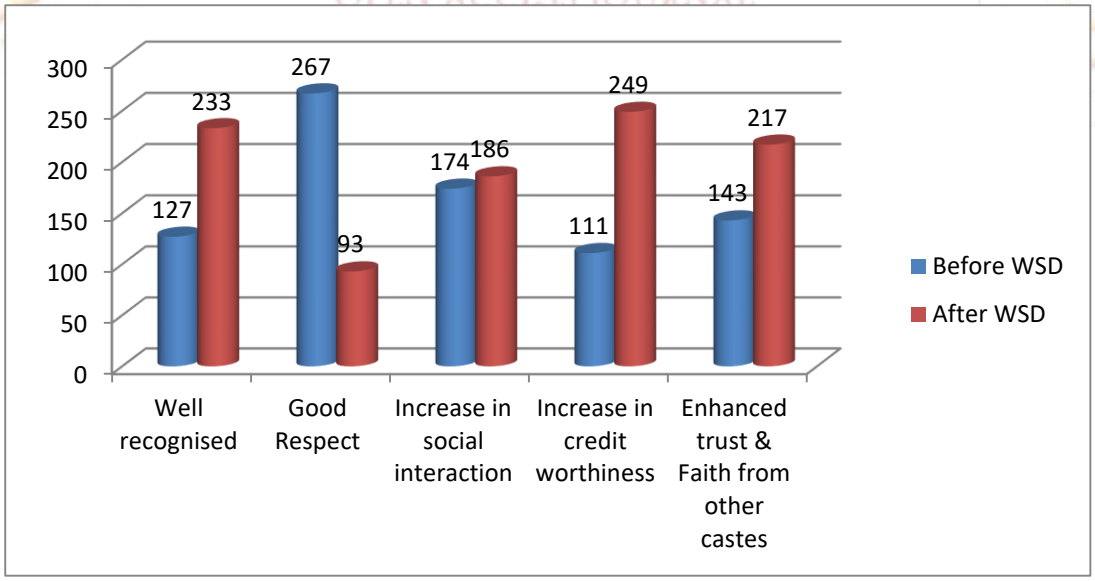
S.No	Statement	Before implementation of Watershed	After implementation of Watershed
1	Well recognised	127 (25.00)	233 (65.00)
2	Enjoyed good respect and status	267 (74.00)	93 (26.00)
3	Could develop and increase social interaction and also mixing with the community	174 (48.00)	186 (52.00)
4	improved credit worthiness	111 (31.00)	249 (67.00)
5	Enhanced trust and faith from other castes	143 (40.00)	217 (60.00)

Source: Field Survey

Chi-square Value: 171.5911

P-Value : <0.00001

Significant : P<0.05 significant level



Because of the economic soundness of the farmers, they stated that they are well recognised in the society, being well respected improved in social interaction and mixing with the community, increased in credit worthiness, and enhanced trust and faith from the other communities. Table also portrait that 65 per cent of the respondents are well recognised after getting more income through agriculture, 26 per cent of the farmers got good respect from the others, 52 per cent of select farmers have more social interaction and mixing with community, 69 per cent have stated that their credit worthiness is increased, rural farmers to be extent of 60 percent have gained trust and faith from the other castes after earning more income from the agriculture. This obviously endorses the fact that the watershed programme and its implementation has benefited the farmers in enhancing their social image in the society.

The researcher has formulated Null hypothesis like "There is significant impact on agricultural farmers through Watershed Programme". According to the present data, the calculated chi-square value is 171.5911 at 0.05 significant level. The results were shown that there is positive impact of Watershed Programme on farmers. Hence, the null hypotheses were rejected.

Table 5

Overall opinion of the sample respondents on the impact of Watershed Development Programme

N=360

S.No	Impact	No. of Respondents	Percentage
1	Enhanced Agricultural Productivity	360	100
2	Scope for Child Education	198	55.00
3	Could take-up Children's Marriages	115	32.00
4	Able to buy Tractor and other agricultural equipment	65	18.00
5	Able to purchase agricultural Land	137	38.00

Source: Field Survey

Note: * multiple responses

The study indicates that all the farmers main objective is to yield high productivity and thereby earn more income and to hence wish to lead high standard of living. Out of 360, 55 per cent of the farmers concentrated on te development of agriculture, able to get more income for their children's education, 32 per cent of farmers could celebrate their children's marriages, 18 per cent of the Large Farmers could buy agricultural machines like, purchase of tractors and agriculture equipments, and 38 per cent of the Farmers could procure additional land by means of purchase of land after earning more income from watershed programme. The analysis above brought us to establish that the watershed programmes and its implementation could made a tangible impact in increasing their agricultural productivity sending their childhood to hgiehr studies, undertake their children's marriages, procure agricultural land and modern agricultural implements like tractor and equipments.

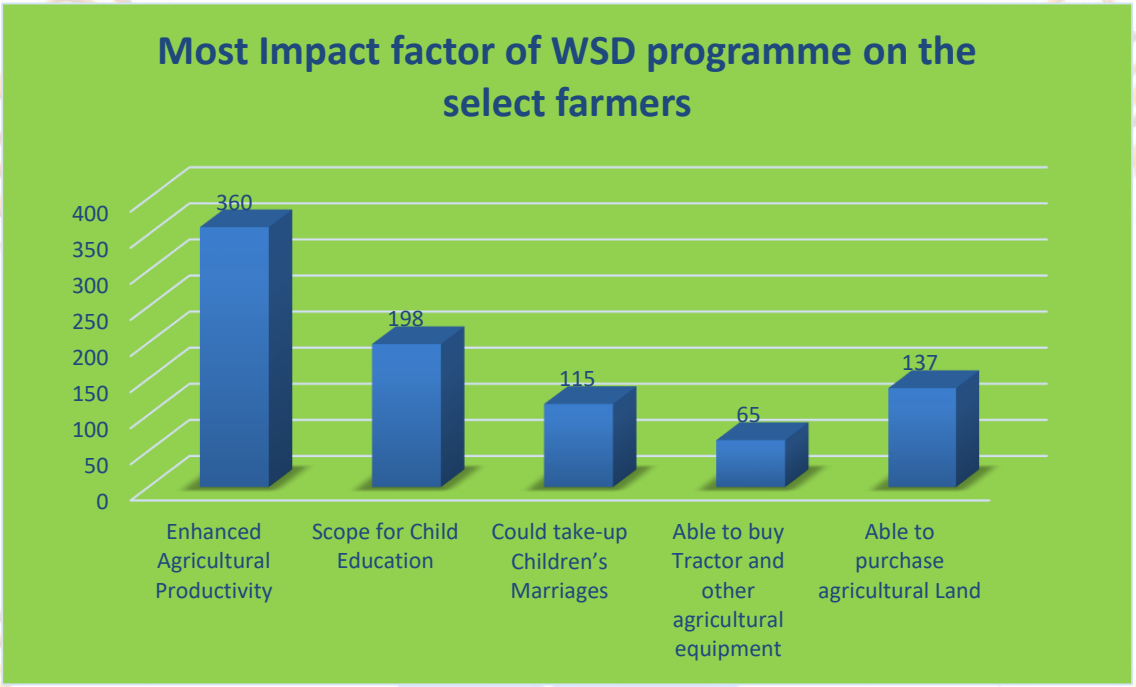


Table shows that majority of the farmers are benefited and got more income after successful implementation of Watershed Development Programme in the study.

The Researcher collected the information about the Government implementing mechanism in the process of Watershed Development Programme and their level of satisfaction. The details are presented in table -6. In this context, it is found that 76 per cent represents 276 sample respondent-farmers are highly satisfied, 13 per cent of the sample farmers reporting that 49 are just satisfied, 7 per cent of the farmers are dissatisfied, and rest of the selected rural farmer have stated that they are highly dissatisfied and representing 4 per cent respectively.

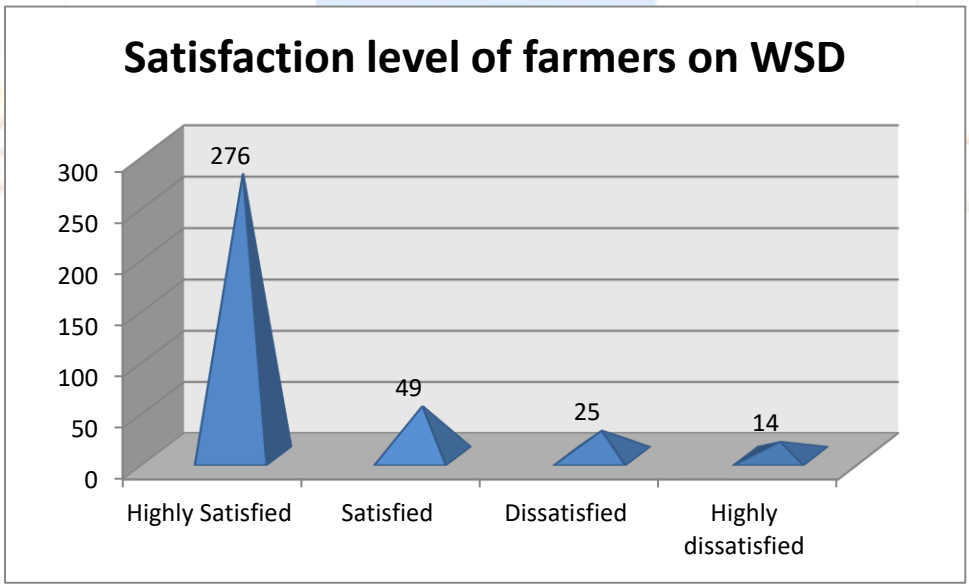
Table 6
Overall satisfaction level of farmers on government mechanism in the development of Watershed Development programmes

S.No	Satisfaction level	No. of Respondents	% to total	Weighted Average
1	Highly Satisfied	276	76.00	
2	Satisfied	49	13.00	
3	Dissatisfied	25	07.00	**0.90**
4	Highly dissatisfied	14	04.00	
	Total	360	100	

Source: Field Survey

Table 6 incorporates the opinion of the small farmers on the implementation of watershed programme. It could be seen that majority of the farmers have held that they have satisfied highly while only 4 per cent opined that they have highly dissatisfied. This, on the whole, the programme has yielded benefits socially, physically and more importantly on their economic well being.

The researcher has formulated second Null hypothesis- i.e., "There is no satisfaction of agricultural farmers on governmental programme through watershed programme". According to this question, the weighted average value is near to one. Hence, there is highly satisfied by the farmer on governmental policies programme through Watershed programme for development of farmers in the study area. Hence, the above Null hypothesis were rejected.



Conclusions

Watershed programme is aimed to improve resource conservation, enhance agricultural productivity and create additional employment among small and marginal farmers especially in drought –prone areas and thereby bring socio- economic development among the farmers. The present an attempt to answers the impact of watershed programme from the farmers view point .It is explicitly observed found this programme brought a tremendous impact and influence on the socio – economic status of the farmers in Rayalaseema region of Andhra Pradesh. Thus ,it can be decided that the true spirit of the watershed programme yielded good results in the socio- economic transformation of the small and marginalised farmers and proved that the programmes is boon in addressing the agricultural problems of the farmers especially in drought – prone areas like Rayalaseema region .

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