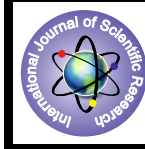


Impact of Watershed Development Programme on Employment Generation and Migration: A Case Study in Pakala Mandal of Chittoor District



Economics

KEYWORDS : Watershed Technology, Qualitative Improvement, Employment Generation, Migratory labour period , Migratory expenses.

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ABSTRACT

This research paper exclusively depending upon primary data collected by conducting a filed survey in the villages which come under the command of Irramgari palle watershed project constructed in Pakala revenue mandal of Chittoor district. The field work was conducted with the objectives of analyzing the effect of watershed project on employment generation in general and with particular reference to the size of land holdings. A modest attempt was also made to estimate the average no. of person days of employment for the sample farmer households, comprising 135 beneficiary farmers in the command of the watershed project and 100 farmers selected from the villages of non-watershed area having the similar socio-economic features. An attempt was also made to estimate the migratory status of the sample farmers in terms of migratory labor period and the expenses incurred for reaching the migratory point visited in search of employment, which was not estimated by the previous studies. A comparison is made between the farmers selected from watershed villages (135) and outside of the watershed area, treating as "control group" (non-watershed area=100) to analyze the benefits received by the watershed technology. It was identified that qualitative improvement has taken place for the sample farmers in watershed area, compared to non-watershed area. As the survey year happens to be 2014-15, which is the second year after completion of the project, the sample farmers are yet reap the fruits of watershed technology as it was noted that migration has not completely arrested. It is hoped that qualitative shifts in cropping pattern, employment generation certainly exerts a positive influence on reducing the poverty of the beneficiary farmers in the coming years.

Introduction:

The Integrated Watershed Management Programme is one the flagship programmes of the Government of India implemented since 2009-10 in all the states. Watershed development has emerged as a new paradigm for planning, development and management of land, water and biomass resources following a participatory bottom-up approach for the development of rain fed areas and efficient management of natural resources. One of the major objectives of this programme is to generate employment opportunities particularly for SC/STs and marginal and small farmers and lift them above the poverty line. In India, 8214 projects were sanctioned through State Level Nodal Agencies covering an area of 39.1 million hectares of land by releasing Rs. 10847.02 crores from 2009-10 to 2014-15. (Government of India, 2015). By these efforts employment was generated through the physical construction and implementation of watershed development programme. It is a development process which provides both market and non-market benefits and employment generation was include as of potential market benefits (WRI and WOTR, 2013).

Review of Literature:

Much literature on the impact of watershed technology on employment generation is not available. The available literature has touched the aspects of employment generation by constructing the watershed project and the labour cost per hectare of project area. (Biswajit Mondal and N. Loganathan, 2013). Biswajit and Loganathan observed that watershed development programmes have helped to create employment opportunities on temporary as well as permanent basis and they have estimated that on an average 181 additional person days of employment was generated in the watershed area

A compendium on "Impact Assessment Study of the Watershed Development Programme prepared for the Dept. of Land Resources, Government of India observed that watershed development programme has increased the agriculture-related employment opportunities among the beneficiaries and in other sectors for non-beneficiaries. (Khalid, M.A. et. al. 2004). No quantitative estimation was not provided in the report about the additional person days of employment generated.

World Resource Institute and Watershed Organisation Trust have conducted a survey on Kumbharwadi watershed project in Ahmednagar district of Maharashtra. Their report observed that the ground water levels have improved, health and overall human welfare has improved after the construction of the project. Though they have classified improved income due to increase in employment generated and employment opportunities for women under the category of potential market benefits, they did not provide the estimations on employment generated due to the implementation of the project. (WRI and WOTR, 2013).

A case study was conducted by Rathore et.al (2012) in tribal area of southern Rajasthan with reference to employment generation through watershed projects. They have estimated that more regular employment opportunities were provided to the 50.0 per cent of the beneficiary farmers and particularly to the small and marginal farmers. MPS scores was used an indicator without defining the concept of MPS.

Methodology and Sample Watershed:

Keeping in view the deficiencies, it was thought to conduct a field survey in the Irramgari palle watershed to assess the employment opportunities generated for the beneficiary farmers and to find out the correlation between the size of the land holdings and the employment generated. This watershed was constructed in Pakala Mandal, covering three panchayats namely Irramgari palli, Panta palli and Pedda Gorpadu and 11 habitations in these three panchayats. The authorities have identified 413 hectares of geographical area for treatment under this watershed with a total amount of Rs. 25.6 lakhs received from the Government of India.

This paper is based on the primary data collected from the beneficiary farmers under this Irramgari Palli watershed. Both the beneficiary and non-beneficiary farmers were selected for the collection of primary data on the effect of watershed project on employment generation and the status of their migration. The District Water Management Agency authorities were consulted to obtain the list of beneficiary farmers. There were 225 farmers benefited operating in an area of 280.0 hectares according the records. Of these 225 farmers, 135 farmers comprising 68 marginal farmers, 54 small farmers and 13 other farmers were selected at random to collect the data. Similarly, 100 farmers with

owned dry land holdings from the non-watershed villages were also selected as the “control group”. A comparison was made between these two groups of farmers to assess the impact of watershed project on employment generation and migration status in the study area.

As per the official records, this sample watershed was completed successfully in the year 2013 (DWMA, 2013.) and necessary arrangements were made for its sustainable management. Hence, the field survey was conducted during the months of March and April of 2015, the second year after the completion of the project. Two separate schedules were prepared to collect data from beneficiary and non-beneficiary sample farmers. Personal interview method was used to collect the primary data.

Objectives:

Specifically the present paper deals with the following objectives:

1. To estimate the effect of watershed development project on generation of employment for the sample farmers.
2. To analyze the correlation between the size of the landholdings and employment generation and
3. To examine the status of migration with specific reference to beneficiary sample farmers and to estimate the expenses incurred for performing migratory labor.

Discussion and Results:

During the periods of construction and maintenance phase of the watershed project, the farmers get the facility of more no. of person days of employment and irrigation water for their land holdings. Access to irrigation, as it is observed, works like an intervention strategy to reduce poverty as water decides the state of poverty. Access to water for productive uses enables the poor people fulfilling their basic income needs and escaping unemployment and income poverty (International Water Management Institute, 2001). Access to irrigation water brings about qualitative changes in the cropping pattern of the farmers, diversifies the economic activities to allied activities and non-farm activities. All these qualitative improvements automatically results into more no. of employment opportunities and leads to the improvement of household incomes of the beneficiary farmers.

Keeping these qualitative effect of watershed project in view an assessment is made in Table.1 to present the increase in employment generated for the beneficiary farmers, as compared to the sample farmers of non-watershed villages.

The data presented in Table. 1 indicate that on an average the beneficiary farmers worked for 263 person days during 2014-15 as against 189 person days for a household in non-watershed villages. This improvement was happened due to the qualitative improvements in cropping pattern of the beneficiary farmers. This was not happened in the case of the sample farmers belonging to the non-watershed villages, as they were found raising traditional rain fed crops. Being influenced by the watershed technology, 18 households of the beneficiary farmers

Table. 1. Effect of Watershed Project on Generation of Employment Opportunities
(in Person days per household)

S. No.	Impact factors	Average no. of person days of Employment Generated		Increase in Employment Generation
1	Due to the qualitative improvements in cropping pattern	94 (n=135)	48 (n=100)	46
2.	Raising Horticultural crops	126 (n=18)	--	126

3	Soil and Water Conservation	110 (n=68)	--	110
4	Rearing the Milch cows purchased	298 (n=64)	201 (n=42)	97
5.	Participation in MGNREGS during the construction of the watershed	89 (n=120)	52 (n=97)	37
6	Participation in Self-Help Groups as members	41 (n=41)	--	41
Average per household for all impact factors		283 (n=135)	189 (n=100)	94

Source: Field Study.

have raised mango orchards in their fields. The benefits of the projects have also influenced the sample farmers to purchase milch cows and were found raising hybrid grass to raise the cows purchased. Though there was dairy activity in non-watershed villages, the sample farmers were found feeding them with dry paddy grass and sugarcane leaves. The beneficiary farmers had the chance of participating in soil and water conservation activities and the physical construction of the watershed under MGNREGS and could get employment opportunities. Additionally, it was reported that 41 female members of the beneficiary farmer households have registered as the members in Self-Help Groups and could improve their saving behavior and got assistance from the banks. As a result, these agro-economic benefits, each beneficiary household could get 283 person days of employment during the reference year, compared to the sample farmers (189 person days) in non-watershed villages.

Size of the Land Holdings and Employment Generated:

In order to prioritize the selection of the watershed projects areas, the most important principle followed by the Government is the percentage of marginal and small farmers. The intention of the Government is to benefit, to the maximum extent, weaker farmers in the project area. Keeping this principle in view, an attempt is made in Table.2. to observe the benefits received in terms of employment generation. The data also explains the correlation between the size of the land holdings and the employment generated.

Table. 2. Correlation between Land Holdings and Employment Generation
(in person days per household)

S. No.	Category of the Sample Farmers	Average no. of Person days of Employment Generated		Increase in Employment Generation
1	Marginal Farmers	356	234	122
2	Small Farmers	248	186	62
3	Other Farmers	194	143	51
All Farmers		283	189	94

Source: Field Study

It is evident from the table. 2 that on an average each beneficiary farmer household got 283 person days of employment during the reference year as against 189 person days by non-beneficiary farmers, which indicates that 94 additional person days of employment was generated by the projects for beneficiary households. The data also reveals that marginal farmers could get the highest no. of person days of employment compared to other categories of the farmers, followed by the small farmers. It was least in the case of other farmers. The data vindicates that there exists a negative correlation between the size of the land holdings and the employment generated in the study area.

Status of Migration:

Information on migration status of the sample farmers was collected so as to assess the incidence of migration and the effect of watershed technology on migration behavior of the sample farmers. Table. 3 presents the details of the migratory households among the total sample households

Table. 3: Migratory Labor Period of Sample Farmers

Category of Sample Farmers	Migratory Labour Period (in months)								
	Beneficiary Farmers					Non-beneficiary Farmers			
	< 1 M	1 to 2 M	2 to 3 M	To-tal	< 1 M	1 to 2 M	2 to 3 M	3 to 4 M	To-tal
1.Marginal Farmers	24	19	11	54	12	16	13	8	49
2.Small Farmers	18	16	--	34	17	12	3	--	32
3.Other Farmers	06	--	--	06	06	04	--	--	10
All Farmers	48	35	11	94	35	32	16	8	91

Source: Field Study

The data presented in Table.3 reveals that though migration of sample farmers has been taking place in the study area, the proportion of migrating farmers has declined in watershed area, compared to the non-watershed area. It is seen that 91.0 per cent of the sample farmers in non-watershed area are migrating in search of employment, this proportion was 69.6 per cent in watershed areas. It was reported that 8 households in non-watershed area are migrating for 3 to 4 months in a year and they have reported that they were working as contract laborers during the sugarcane harvesting season. However, it is clear that compared to non-watershed area, the no. of households migrating is low and it can be attributed to the construction of watershed project in the study area.

Migratory Employment and Expenses:

An attempt is also made to estimate the no. of person days of migratory labor and the expenses incurred for moving to migratory point, which includes the expenses of travel, accommodation and lunch during the reference year. Table.4 summarizes the average no. of employed days due to migration and the expenses incurred during the migratory labor.

Table. 4. Average Migratory Employment and the Expense Incurred

S. No.	Category of Farmers	Average no. of Person days of Employment per Household		Average Amount of Expenditure incurred during Migration Period (in Rs.)	
		Water-shed Area	Non-Watershed Area	Water-shed Area	Non-Watershed Area
1	Marginal Farmers	94	143	1698.46	2941.22
2	Small Farmers	80	85	1446.37	1920.11
3	Other Farmers	26	38	468.06	798.08
	All Farmers	78	117	1528.85	2346.59

Source: Field Study

It is evident from the data presented in Table. 4 that the average no. of person days of migratory employment worked out to 78 for the beneficiary farmer households, it was comparatively high at 117 days in non-watershed area. The construction of watershed could effect the migratory employment by reducing it to the extent of 39 person days on an average per household in the watershed area. Likewise the expenses incurred were also found low at Rs. 1528.85 per sample beneficiary household, whereas it worked out to Rs.2346.59 for farmers on an average per household in non-watershed area. Thus, it is evident that the no. of migratory person days of employment and the expenses was lower for the beneficiary farmers and it was high for sample farmers in non-watershed area.

Conclusion:

It is very clear from the foregoing discussion that the sample beneficiary farmers could diversify their farming activities to allied activities and could adopt qualitative changes in their cropping pattern after construction of the watershed. The average employment has also undergone significant improvement and they could work for more no. of person days in their own field. Similarly, the watershed project was also effected the migratory employment and related expenses. However, it is to be noted that the migration of sample farmers in watershed area was not completely arrested. It may be made possible in the coming years with an efficient management of watershed project and economic use of resources made available.

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