Impact of Watershed Development Programmes in Karnataka: Filed Observations on Employment, Income and Standard of Living

S V Ujjainimath[1]

[1] Professor, Department of Economics, Byadgi Education Society's Merchants' Arts and Commerce (BESM) College, Byadgi, Karnataka

Introduction:

Realizing the vital role and importance of rain fed farming in Indian economy and restoration of ecological and socio-economic balance. The Government of India has resolved that that, "Ending neglect of vast rain fed and dry land areas" is a major policy issue and has adopted the watershed approach for integrated and comprehensive development of rain fed areas The approach aims at scientific land use through development of integrated rain fed farming systems on the principles of watershed management in each development block where more than 70 percent of the arable area is under rain fed condition. Watershed management aims at minimizing risks associated with rainfed farming by following steps.

1) Conserving soil and water resources through mechanical and or cultural methods.
2) Draining out excess water at a safe velocity and directing it for safe storage for its utilization in dry season.
3) Preventing gully formation through mechanical and vegetative means and storage of water for recharging ground water.
4) Utilizing land according to its capability and putting marginal land unsuitable for arable crop production to alternate land use.
5) Developing a sustainable eco-system in harmony with the man- land water-plant animal complex of the watershed.
6) Optimizing agricultural productivity per unit area, time and available water and
7) Improving the quality of life of the watershed inhabitants through
8) Infrastructure development.

There are plethora of studies on watershed development programmes and its impact on various socio-economic indicators see among others Chandregowda and Jayaramaiah (1990), Deshpande and Thimmaiah (1999), Government of India, (1997), Hazell, Fan Shenggen and

Peter Hazell, (1999),Khanka and Bhuyar Anjan (2006), Lokes (2004), Natarag (1989), Samra (1997) and so on.

However, studies related to Employment, Income and Standard of Living of watershed programmes in Karnataka and its impact analysis at gross-root level are a few. Hence, an attempt has been made in this study to fulfill this research gap.

Objectives of the Study:

- To find the impact of Watershed Development Programmes on employment generation in the study area
- To analyse the effect of Watershed Development Programmes on Income generation in the study area
- To study the changes in standard of living, land value, assets holding after the implementation of Watershed Development Programmes in the study area

Methodology

The watershed development programme in Haveri district (Kalledevaru sub Watershed Project of Byadgi taluk) of Karnataka was purposely selected for the study. Haveri district is a newly formed district comprising of 7 taluka The district has the total geographical area of 4,85,058 ha, with a cultivable area of 3,47,540 ha.. The basic objective was to evaluate the benefits in terms of increased crop yields and farm incomes due to continued adoption of improved dry land practices. Seven villages of Haveri district have been selection of the field work viz., 1. Kalledevaru 2.kalldevaru II (thanda) 3. Arabagunda. 4. Kengonda 5. Alagaere-I 6. Allagere-II and Motebennur. Random Sampling Design was employed to select the sample farmers for collecting primary data for the study. The primary data would be collected from 255 farmers over the watershed area.

Employment Generation:

Watershed project creates employment generation. Two kinds of employment opportunities, i.e., casual and regular were generated through implementation of various soil conservation and related works/activities under watershed project. Casual labor employment was created during the implementation of works such as bunding, leveling, check dams, ponds/tanks, crop demonstration, plantations, etc. Due to diversified land use system, regular employment from horticulture, plantations, crops, etc., is also generated. During the time of field survey the households revealed that migration to other places such as Ratnagiri, Goa, and Karwar, in search of livelihood has come down. 28.00 per cent of households reported decline in migration

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Table 1: Employment opportunities (Man days)

Nature of employment	Before		After		Total	
	Male	Female	Male	Female	Male	Female
Own	92.21	69.42	137.50	127.00	229.71	196.42
Hired	29.32	23.46	45.87	48.95	75.19	98.65

Source: Field Work

Table 1 reveals that watershed project generate male employment opportunities for both male and female laborers due to increase in agriculture activities and non-farm activities. Employment generation takes place.

Own male employment increased from 92.21 man days to 137.50 man days. So 46.16 per cent increase in employment; hired male laborer increased from 29.32 man days to 45.87 man days, i.e., 82.97 per cent increase in employment. Female employment (own) increased from 69.42 man days to 127.00 man days, 82.97 per cent increase in employment, hired female employment increased by 108.55 per cent.Watershed project created a considerable amount of employment opportunities as expressed by a number of beneficiaries.

5.6.4. Increase in Income

It is clear from Table 2 that an analysis was carried out to know the change in income and source of income of the respondents in project area. The findings in Table revealed that before initiation of the project the income level was due to the fact that some part of the lands were kept fallow. After implementation of the project a considerable in income level was noticed

The percentage share of income from different sources is a good indicator of structural change. Before the project intervention, out of total household income was of Rs.17, 751. Farming constitutes 73.90 per cent, sale of milk 2.00 per cent, horticulture crop 0.70 per cent.

Table 2: Change in income (Rs. per annum)

Source	Before	After	Percentage change
Farming	13121 (73.90)	20974 (58.40)	59.85
Casual labour	1926 (10.80)	4034 (11.20)	109.45
Sale of milk	352 (02.00)	2288 (06.40)	550.00
Horticulture crop	132 (00.70)	4300 (12.00)	3158.00
Services	2223 (12.50)	4338 (12.00)	95.14
Total	17751	35934	102.43

Note : Figures in parentheses indicate percentage to its total.
Source: Field work.

After the project intervention total household income increased to Rs.35, 934 of which farming constitutes 58.40 per cent, horticulture crops 12.00 per cent, services 12.00 per cent, casual labor 11.20 per cent, sale of milk 6.40 per cent. The highest source of income noticed from horticulture crops by 3158.00 per cent, followed by sale of milk, casual labor by 109.40 per cent. Increase in income level partly could be attributed to the positive impact of project activities and from other external and internal factors.

5.6.5. Value of Land

Table 3 gives the details about increase in land value.Due to the positive change observed above there has been notable appreciation in the land value in the study area. The table shows that different categories of land have reported different extent of increase in land value

Table 3: Increases in Land Value

Type of land	Before (Rs.)	After (Rs.)	Percentage change
Dry land per acre	7580	22624	198.47
Irrigated land per acre	14173	56984	302.06
Waste land per acre	2650	6040	127.92
Residential site per sq. feet	06.45	11.32	75.50

Source: Field work.

The Table reveals that the increase in land value was maximum for irrigated land (302.06 per cent), followed by dry land (198.46 per cent), waste land (127.92 per cent) and residential site (75.50 per cent). Land value appreciated due to project intervention which resulted in agriculture production.

Possession of household asset is direct function of economic standing of the households. Due to improvement in income level, the nature and number of assets has increased. Table shows the possession of household assets by sample households.

Table 4 reveals that majority of sample respondents report increase in consumer durables such as radio, watch, bicycle, chair, table, TV and sewing machine. It is clearly shows that after the project there have been phenomenon increase in all type of consumer durable assets. This clearly indicates positive effect of project on consumer durables. Similarly, we expect the assets relating to agriculture also to increase. Table shows the assets – agricultural implements created by households

Table 4: Possessions of Household Assets by Sample Households

Assets	Before	After
TV	15 (12.00)	50 (40.00)
Radio	35 (28.00)	100 (80.00)
Tape recorder	19 (15.20)	54 (43.20)
CD player	06 (04.80)	22 (17.66)
Watch	65 (52.00)	74 (59.20)
Bicycle	30 (24.00)	85 (68.00)
Moped	06 (04.80)	24 (19.20)
Sewing machine	08 (06.50)	28 (22.50)
LPG stove	08 (06.50)	24 (19.30)
Table	19 (15.20)	84 (67.20)
Chair	30 (02.40)	85 (68.00)

Source: Field work.

Possession of Agricultural implements

Table 5: Assets – Agricultural Implements Created by Households

Assets	Before	After
Bullock carts	25 (20.00)	67 (54.00)
Plough	26 (21.00)	68 (54.40)
Sprayers	05 (04.00)	23 (18.40)
Tractors	01] (00.80)	15 (12.00)
Pump sets	05 (04.00)	27 (22.00)

Source: Field work.

Table 5 clearly indicates that after the project, there has been change in agricultural implements, pump sets, sprayers, tractors, bullock carts and ploughs. Watershed programme has positive impact on the farmers' possession of agricultural implements.

Conclusion:

Cropped area, yield rates, employment opportunities, cropping pattern, income, credit utilization pattern and people's participation have improved through Watershed development programme The project has benefited the farmers in many ways. Further, the state and central governments have to give more importance and emphasis through various policies and

programmes to improve the watershed development. Role of NGOs and SHGs have to be increased. Through this overall the rural development can be achieved.

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