

**Impact
Factor
3.025**

ISSN 2349-638x

Refereed And Indexed Journal

**AAYUSHI
INTERNATIONAL
INTERDISCIPLINARY
RESEARCH JOURNAL
(AIIRJ)**

Monthly Publish Journal

VOL-IV

ISSUE-V

MAY

2017

Address

• Vikram Nagar, Boudhi Chouk, Latur.
• Tq. Latur, Dis. Latur 413512 (MS.)
• (+91) 9922455749, (+91) 9158387437

Email

• aiirjpramod@gmail.com
• aayushijournal@gmail.com

Website

• www.aiirjournal.com

CHIEF EDITOR – PRAMOD PRAKASHRAO TANDALE

**Impact of Integrated Watershed Management Programmer on Employment,
Migration and Drinking Water in Low Rainfall Semi-Arid Region of
Kandhar Thasil in Nanded District, (MS), India**

Dr. M. P. Mankari

Dept. of Geography

Maharashtra Udayagiri Mahavidhalaya,

Udgir Dist. Latur, Maharashtra, India

Abstract

Watershed programmer is an integrated one, addressing the problems in rain fed areas. It addresses the environmental and ecological problems like deforestation, over-utilization of water and most importantly it seeks to convert unsustainable agriculture to sustainable agriculture besides tackling unemployment and under-employment faced by the farmers as well as landless people. Of all the beneficence's, the most benefited under watershed programme are the farmers of all types, like large, small and marginal farmers. Watershed bring them many favors like improvement in the ground water levels, restoration of eroded soils, crop rotation, improved agricultural technology, increased and improved animal husbandry, more green fodder to their milch and draught cattle etc., Hence, the present study focuses on the Integrated Watershed Management Programmer (IWMP) by the (Maharashtra Agricultural office Government Organization year 2009 to 2015) claiming success and the impact on Socio- agriculture in Kandhar tahsil of Nanded district of Maharashtra, India.

Keywords: IWMP, Semi arid, Rain fed, Migration, Employment, Drinking Water

Introduction

Watershed is conceptualized as an area lying above a given drainage point. It may cover less than a hectare of thousands of hectares depending upon the point of reference. However, in simple terms "a watershed is the land area from which surface water drains to a single outlet."

Objectives of watershed are many like putting an end to environmental degradation, measures against soil erosion, rain water conservation, greening the country side, social forestry, improving the ground water level and agricultural development by initiating measures like bringing waste land under cultivation, providing water for irrigation, change in the cropping pattern and improvement in the crop yields etc., A successful watershed programmer in any area will have its impacts on the skill development of the people as well as on their social aspects besides economic impact in terms of increase in the incomes as well as on household expenditure.

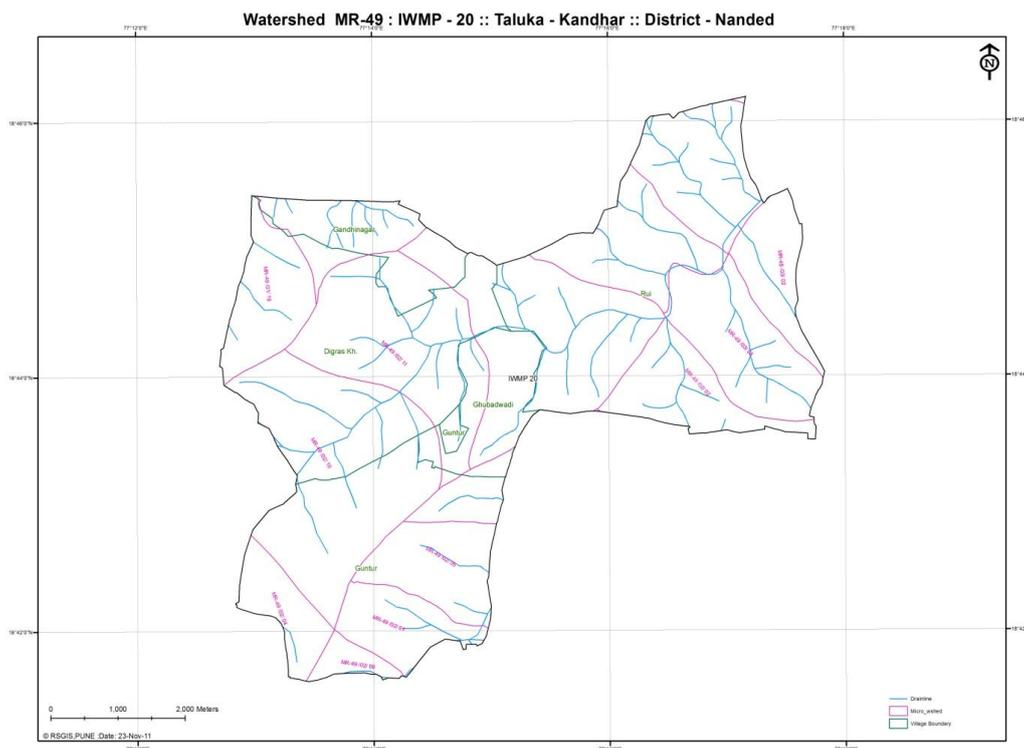
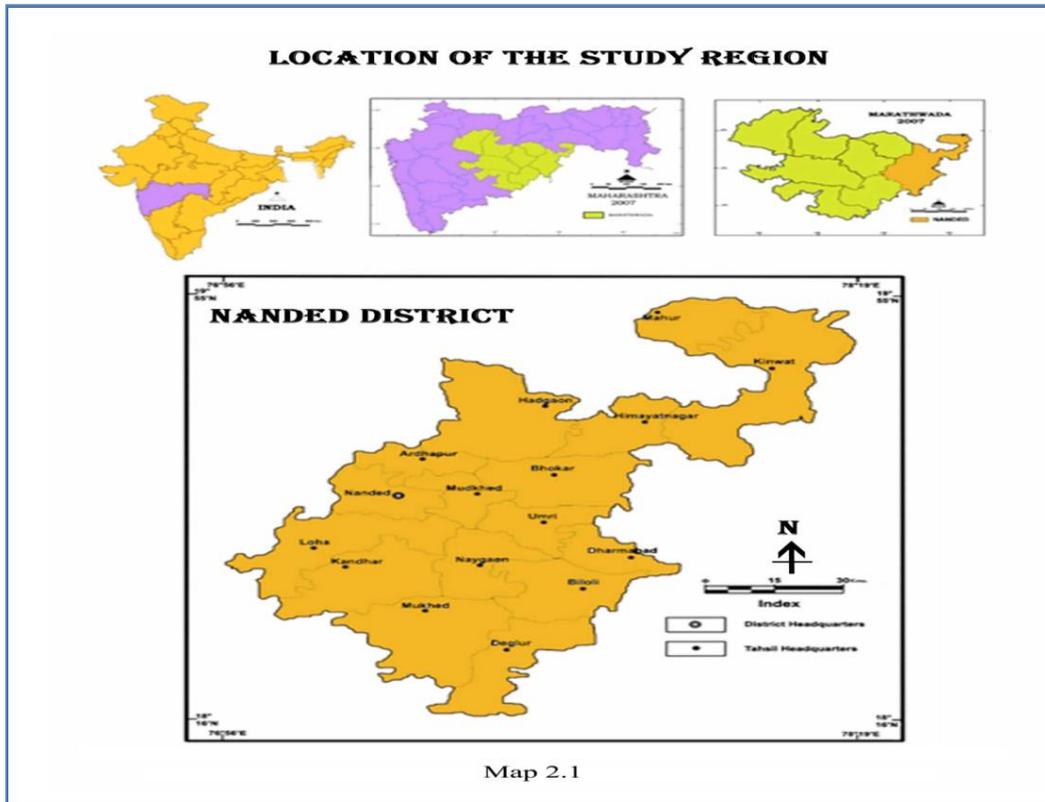
Hence, the present paper is an attempt to understand the impact of the Integrated Watershed Management programmer by the Maharashtra Government Agricultural office Organization on employment, migration and drinking water in five villages of Kandhar tahsil (IWMP 20) in Nanded district of Maharashtra.

Location

The study area Integrated Watershed Management Programme Number - 20 is located in Kandhar tahsil of Nanded district of Maharashtra State. The study area lies between 18° 42' 00" to 18° 46' 00" north latitude and 77° 12' 00" to 77° 18' 00" east longitude.

Sample Selection

The study area consists of 5 villages and 23 micro watersheds. Villages namely Rui, Gandhinagar, Ghubadwadi, Digras (Khu) and Guntur are connected with village roads. The total Geographical area of the study area Integrated Watershed Management Programme Number-20 in Kandhar tahsil is 3981.68 hectare



Data collection and Analysis

During the study, primary as well as secondary data were collected from the various sources. During 2009-2010 and 2014-2015 the primary data were collected following focus group discussion as well as through stratified detailed household survey. I have visited watershed villages and conducted meetings with farmers followed by field visits to collect primary information on general employment, migration and drinking water. The secondary data were collected from various sources like reports prepared by the implementing agencies and various Government office. The data were analyzed using statistical techniques.

Impacts

Socio-economic Impacts

The watershed development programmers influence bio-physical and environmental aspects and thereby bring changes in the socio-economic conditions of the people. The socio-economic indicators like changes in employment, migration were considered for the impact assessment.

Creation of employment opportunities and migration of population

The watershed program increased the employment opportunities for all categories of farmers due to various activities related to agriculture, horticulture, floriculture, a forestation, animal husbandry and small enterprises. The soil and water conservation measures like water storage structures, structures, mini percolation pits, gully control, gabion structures and others were constructed in the fields, which provided additional job opportunities to the small and marginal farmers.

Employment

National Resource Management (NRM) activates proposed under the project (IWMP-20) in Kandhar tahsil will generate total 112560 working day's employment in the project villages and self employment through livelihood activities for landless and production system. The details of employment generated for SC, ST, Other, women are furnished in table 1 A and B.

Table 1 (A) - Employment Generations (Wage Employment) of Study Area (IWMP-20 in Kandhar tahsil) 2014-15

Sr. No	Name of the villages	Wage employment									
		Numbers of working days					No. of beneficiaries				
		SC	ST	Other	Women	Total	SC	ST	Other	Women	Total
1	Rui	12900	600	30900	21227	65627	215	190	709	418	1532
2	Gandhinagar	5940	0	7680	6420	20040	20	0	197	104	321
3	Ghubadwadi	22800	1200	14700	17275	55975	15	0	101	41	157
4	Digras (Khu.)	0	0	14400	6300	20700	70	48	602	290	1010
5	Guntur	0	0	1548	668	2216	80	64	662	395	1201
	Total	41640	1800	69896	51890	164558	400	302	2271	1248	4221

Source: Socio-economic survey conducted by under DPR preparation, Agriculture office Kandhar Dist. Nanded.

**Table 1 (B) - Employment Generation (Self Employment) of Study Area
(IWMP-20 in Kandhar tahsil) 2014-15**

Sr. No.	Name of the village	Self employment				
		No. of beneficiaries				
		SC	ST	Other	Women	Total
1	Rui	8	3	31	4	48
2	Gandhinagar	2	0	5	0	7
3	Ghubadwadi	2	0	5	0	7
4	Digras (Khu.)	5	2	17	2	26
5	Guntur	6	2	18	2	28
	Total	23	7	76	8	116

Source: Socio-economic survey conducted by under DPR preparation, Agriculture office Kandhar Dist. Nanded.

Out migration

There is considerable reduction in out migration due to employment generation through the project from National Resources Management (NRM) treatment in watershed employment generated for farmers and wage labors. From livelihood activates self employment also generated in village levels. Hence there is reduction in out migrating of people for the employment at IWMP-20 in Kandhar tahsil during per-project 1625 number of persons out migrating for employment of 90-150day's period and earning Rs. 150-175 per day. In post project situation the number of migrating persons reduced to 811. The details of pre and post project migration status are furnished in table 2 A and B.

Table 2 (A) - Seasonal Migrations from Study Area: (IWMP-20 in Kandhar tahsil) Pre-project Status 2009-10

Sr. No.	Name of the villages	No. of preson migrated	No. of days pre year of migration	Distanc e of destinat ion from the village (Km.)	Occupation during migration	Income from such occupation (Rs. Lakhs)	Major reason (s) for migrating
1	Rui	468	120-150	20 to 70	Labour	0.24	After kharif season there is no work hence there is such migration
2	Gandhinagar	180	120	20 to 70	Labour	0.10	
3	Ghubadwadi	39	120	20 to 70	Labour	0.03	
4	Digras (Khu.)	396	120	20 to 70	Labour	0.22	
5	Guntur	542	120	20 to 70	Labour	0.27	
	Total	1625					

Source: Socio-economic survey conducted by under DPR preparation, Agriculture office Kandhar Dist. Nanded.

Table 2 (B) Seasonal Migration from Study Area: (IWMP-20 in Kandhar tahsil) Post-project Status 2014-15

Sr. No	Name of the villages	No. of persons migrated	No. of days pre year of migration	Major reasons for migration	Distance of destination from the village (Km)	Occupation during migration	Income from such occupation (Rs. Lakhs)	For reduced migration major activities of IWMP	
								Structure	Livelihood
1	Rui	234	60-80	For getting good livelihood, opportunities, meetings, daily needs etc.	20 to 70	Labour	0.12	NRM Activities Have Engaged Population Year Round	Dairy, Poultry, Tailoring.
2	Gandhinagar	90	60-80		20 to 70	Labour	0.06		
3	Ghubadwadi	18	60-80		20 to 70	Labour	0.01		
4	Digras (Khu.)	198	60-80		20 to 70	Labour	0.11		
5	Guntur	271	60-80		20 to 70	Labour	0.12		
	Total	811							

Source: Socio-economic survey conducted by under DPR preparation, Agriculture office

Environmental impacts

The watershed development activities generate significant positive externalities which have a bearing on improving the environmental indicators include water level in the wells, duration of water availability, water table of wells, surface water storage capacity, and differences in the number of wells, number of wells recharged / defunct, difference in irrigation intensity.

Groundwater recharge and its availability

One of the major impacts of the Integrated Watershed Management Programmer improving groundwater recharge and its availability. The groundwater level in wells in treated areas of watershed was higher compared to that in untreated areas.

The water level has increased as a result of treatment in most projects. The present groundwater status is SUB CRITICAL which means groundwater to word expiation. After completion of project water table will rise up to 8 meter (which is 11 meter per project) which turn the SAFE status of groundwater in the study area.

The mean dept of water level in the wells before the watershed programmer was 8 meter compared to 10 meter after the watershed intervention. There is a substantial increase in the mean groundwater level during all the season, vis. rainy, and post rainy and summer after the watershed interventions.

Drinking water availability

The search for potable water especially in summer, breaks the backs of women who have to trudge long distances and spent several hours each day to get water which is often unfit for consumption. In drought prone areas, tankers with dirking water come once in two days during the months of February to August, depending on the rains.

However, from the second year itself, in treated areas which have experienced a reasonable monsoon there is an appreciable increase in the groundwater table which as reflected in an increased water level in the village wells. The details of pre and post project drinking water status are furnished in table 3.

**Table 3 - Status of Drinking Water in the Study Area (IWMP-20 in Kandhar tahsil)
pre and Post Project (2009-10 and 2014-15)**

Sr. No.	Names of the villages	Availability of drinking water (No. of months in a year)		Quality of drinking water	
		Pre-project 2009-10	Post-project 2014-15	Pre-project 2009-10	Post-project 2014-15
1	Rui	7 Month	8 Month	No Satisfied	Semi Satisfied
2	Gandhinagar	8 Month	9 Month	No Satisfied	Semi Satisfied
3	Ghubadwadi	7 Month	8 Month	No Satisfied	Semi Satisfied
4	Digras (Khu.)	8 Month	9 Month	No Satisfied	Semi Satisfied
5	Guntur	9 Month	10 Month	No Satisfied	Semi Satisfied

Source: Socio-economic survey conducted by under DPR preparation, Agriculture office Kandhar Dist.Nanded

Conclusions

The integrated watershed management program at the Kandhar (IWMP-20) tahsil made significant positive impact on employment, migration, water resources, rural livelihoods and environment and ecology. The major impact of watershed program was on improved surface and groundwater availability even during the critical periods of post-rainy and summer seasons. Increased surface and groundwater availability resulted in increased cropping intensity and diversification to more remunerative land use systems involving livestock, horticultural and vegetable production. It also significantly decreased the adverse impact of drought and provided more food, water and fodder security to the community. The socio-economic status of population significantly improved due to the impact of watershed program. The watershed program also increased the income and reduced poverty of people in the watershed. The small and marginal farmers got relatively greater benefits from the watershed activities. It increased the working days of all categories of farmer; and achieved good success in reducing the seasonal as well as long-term migration from rural to urban areas by providing better employment opportunities to farmers within the village itself. In summary the watershed program improved employment opportunities, mitigation of migration and improve in surface and groundwater resources..

Suggestion

Based on the analyses, discussions and observation on the impact of the watershed development programme in the sample watershed areas, the following suggestion could improve in the working of the programme for long term sustainability.

- a) The animal programme has to be intensified in the watershed areas.
- b) The forest department should be involved in the pasture development, forestation activities.
- c) Need for more thrust on community participation in the watershed programme.
- d) Identifying the need based rural non-farm activities for equitability and sustainability of the watershed programmes.

The fund generated under the watershed development fund has to be utilized only for operation and maintenance of the assets created under the project. It is seen that this is not being utilized due to the political situations prevailing. There is need of good coordination between the NGOs, Government Officers and implementing agencies.

References

1. **Chouhan, T.S (1987):** Agricultural Geography- a Case Study of Rajasthan State”, Academic Publisher, Jaipur.
2. **CRIDA, (1995):** Field Manual on Watershed Development, Central Research Institute for Dryland Agriculture, Pune.
3. **Dastane, N.G. (1972):** A Practical Manual for Water Use Research in Agriculture, Navbharat Prakashan, Pune.
4. **G. B. Pant Institute (1992):** Integrated Watershed Management, Sikkim Himalaya.
5. **GOI, (1995, 2001, 2003):** Guidelines for Watershed Development, Ministry of Rural Development, Government of India.
6. **Hand book of Hydrology (1972):** Ministry of Agriculture Govt. of India, New Delhi.
7. **Hedge, (1998):** Handbook of Watershed Development, BAIF Development Research Foundation, Pune.
8. **Kakade, B.K. (1997):** Soil and Water Conservation Structures in Watershed Development Programme, BAIF Development Research Foundation, Pune.
9. **Kakade, B.K., Kulkarni H., et.al. (2001):** Integration of Water Supply and Sanitation and Watershed Development, Unpublished Research Report, BAIF Development Research Foundation, Pune.
10. **Katar Singh (1989):** Dry land Watershed Development and Management through a Case Study in Karnataka, Unpublished Research Report.
11. **Rajora, R. (1998):** Integrated Watershed Management: Field manual of Equitable, Productive and Sustainable Development.
12. **Shah, S.L. ed., (1996):** Agricultural Development in Hilly Areas: Constraints and Potential.
13. **Singh Rajvir, (2000):** Watershed Planning and Management, S. Publishing House, 1E14, Pavanpuri, Bikaner,
14. **Vidas S. Kulkarni, et. al. (1989):** “Impact of Watershed Management on dry Land Farming in Dharwad district of Karnataka”, Unpublished Research Report.
15. **Waman, S.V (1993):** Water Balance Studies in a Micro Watershed, M. Tech Dissertation, IIT Mumbai, Unpublished Report.

ISSN 2349-638X

www.aiirjournal.com