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Watershed project (Jal Bhagirathi foundation) for farmers in Rajasthan's Jodhpur district

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Abstract
In the years 2021–2022, this study was conducted in Rajasthan's Luni Block of the Jodhpur district. 120 respondents were chosen using the random sample approach, and data were gathered through in-person interviews using a pre-tested interview schedule. Appropriate statistical analysis was then carried out to determine the meaningful outcome. The study method used is descriptive research design. The study's findings revealed that the majority of the beneficiary farmers were middle-aged (71.67%), that the majority of them had completed junior higher secondary school (30.84%), that the majority of them had small families (65%), that the majority of them held large land (more than 5 acres; 43.33% of them had shallow soil); that the majority of them had medium-level annual incomes (65.83%), that the majority of them had medium levels of mass media exposure (74.17%), and that the majority of them were not very innovative (50.83%). The majority of the beneficiaries (64.17%) used canals as their primary source of irrigation. A medium level of risk tolerance was exhibited by 40.83 percent of the recipients.

Keywords: Socio-economic condition, watershed, arid zone

Introduction
A watershed is defined as a land surface area from which the runoff drain to common point in canal, stream, river or lake. A watershed refers in physical terms to the area lying above a given drainage point. Watershed development aims at conservation, regeneration and judicious use of all natural resources (soil, water and vegetation) animals and human beings within watershed. Watershed management attempt to bring out the possible balance in environment between natural resources and living being, as both are interdependent. Thus, socio-economic condition of people in rainfed eco-region can be improved on sustainable basis through watershed programme. Watershed development is a way of developing management natural resources to make most of the element particularly to get the most out of the land based portion to the water cycle, in sustainable manner. While both these dimension of livelihood should not be given less importance. One of the objectives of watershed development programme should be to maximum present and future wellbeing of the poor people, who depend on these resources.

Land and water are the resources gifted by nature. The way in which we use these valuable resources determine the measure of progress. The problems of conserving these resources are being tackled by the government, since several decades and the efforts are getting accelerated year after year. Land and water are major natural resources essential to produce food and fiber to the world ever increasing population. While land resources remain constant, the average annual precipitation in splits of regional variations, also remain nearly constant. Water is often the limiting factor to achieve the production potential of a region. Limited availability of water is the most serious constraint for crop production in rainfed farming system. This problem can be addressed through conservation of the potential rain water as possible in situ and by harvesting and storage of excess runoff. This can be best achieved by using the watershed approach and management of land and water resources. The concept of watershed development has gained much importance in the recent past due to realization of need for conservation of most valuable natural resources like soil, water, forest and so on. Watershed development approach itself is a prerequisite for sustainable agricultural development of farmers. This approach concentrates not only on agriculture and allied activities but also the homestead vocations and situation specific economic activities. The goal of watershed development is to create an irrigated area where each activity is interconnected with the others and plays a specific function in influencing overall productivity. By employing basic soil and water conservation methods, watershed development seeks to preserve the region's ecology

and conserve its natural resources. Stated differently, watershed management refers to the comprehensive growth of a certain area, encompassing the preservation of water resources, preservation of soil fertility, pasture land, agriculture, horticulture, forestry, and related fields. (2013, Anonymous).

Watershed development project why?

Man and his environment are independent. The changes in the environment directly affects the lives of the people depending on it. A degraded environment means degraded quality of life of the people. Environment degradation can be tackled effectively through the holistic development of the watershed. A watershed provides a natural Geo-Hydrological unit for planning any development initiative.

The goal of watershed development is to fortify and enhance the fundamental resources within a watershed in order to facilitate the creation of long-term, sustainable life supports. This is a natural hydrologic unit using an integrated approach. Within these bounds, a watershed is a naturally occurring hydrological unit that encompasses a particular expanse of land surface. In the end, a particular stream receives all of the rainfall runoff. Thus, it is a section of land that provides runoff to a common point and is divided from neighboring areas by a naturally occurring elevation ridgeline. All water that falls on this unit of land collects by gravity and flows via a common outlet (Oswal 1999) [9].

About Jal Bhagirathi Foundation (Ngo)

In order to preserve and oversee natural resources in reaction to the growing water crisis in Rajasthan, Western India, and the enormous potential for participatory water management as a route to water security, the Jal Bhagirathi Foundation was founded as a nonprofit organization on January 15, 2002. Mostly carried out the following tasks, including land shape, graded bunding, forestry, dry land development based on watershed, and contouring. Better farm tools, fertilizer application, enhanced agronomical procedures, and the usage of improved seeds are further component groups. (Singh)

Research Methodology

Purposively chosen Watershed Development Project in Luni Block, Jodhpur district, Rajasthan was the site of the survey. The watershed project began in 2002, and the majority of the project's arid land is used for rain-fed cultivation in this most backward location. Therefore, more work is needed to improve the socioeconomic circumstances of the local farmers. Additionally, the student researcher's convenience and ease of access were considered when choosing the watershed. For the purpose of gathering data, 120 farmers made up the entire sample. Data was gathered using an interview schedule that had been pretested. The data were interpreted using the proper instruments. The Ex-post factorial research design was the only one used in this investigation. Because the independent variables in a descriptive research design are real and cannot be controlled, the researcher does not have direct control over them.

Results and Discussion

Table 1: Socio-economic profile characteristics of the respondents

Sl. No.	Independent variable	Category	Frequency	Percentage
1	Age	Young	21	17.50
		Middle	86	71.67
		Old	13	10.83
2	Education Level	Illiterate	21	17.50
		Primary	18	15.00
		Junior Higher Secondary	37	30.84
		Higher Secondary	19	15.83
		Inter School	21	17.50
		Graduation & Above	4	3.33
4	Land Holding	Small (<2.5 acres)	26	21.67
		Medium (2.5 – 5 acres)	42	35.00
		Large (>5 acres)	52	43.33
5	Soil Type	Very Deep	21	17.50
		Deep	28	23.33
		Moderately Deep	32	26.67
		Shallow	52	43.33
		Very Shallow	38	31.67
6	Annual Income	Around 1 Lakh	20	16.66
		Between 1-2 Lakh	79	65.83
		Above 2 Lakh	21	17.5
7	Mass Media Exposure	Low	14	11.67
		Medium	89	74.17
		High	17	14.16
8	Innovativeness	Low	29	24.17
		Medium	61	50.83
		High	30	25.00
9	Source of Irrigation	No Souce	0	0.00
		River	25	20.83
		Well/Tube Well	12	10.00
		Canal	77	64.17
		Lake/Farm Pound	6	5.00

Socio-Economic Profile of the Respondents

1. Majority of the beneficiary farmers belonged to middle age (71.67%), followed by young (17.50%) and old age (10.83%) group.
2. Majority of the beneficiaries had junior higher secondary school status (30.84%), followed by inter school (17.50%), illiterate (17.50%), higher secondary (15.83%), primary (15%) and only 3.33 per cent of the respondents were graduate and above.
3. Majority of the beneficiaries possess small size of family (65%), followed by medium (28.33%) and large (6.67%) size of family.
4. Majorityhad large land holding i.e. more than 5 acres (43.33%) land holding, followed by medium land holding i.e. 2.5-5 acres of land holding (35%) and small land holding i.e. less than 2.5 acres of land holding (21.67%) respectively.
5. Most of the farmers had shallow soil type (43.33%), followed by very shallow (31.67%), moderately deep (26.67%), deep (23.33%) and very deep (17.50%) type of soil respectively.
6. Majority of the beneficiaries earns medium level of annual income (65.83%), followed by low (30%) and high (4.17%) level of annual income respectively.
7. Nearly three-fourth of the beneficiaries had medium level of mass media exposure (74.17%), followed by high (14.16%) and low (11.67%) level of mass media exposure respectively.
8. Almost Half beneficiaries had medium level of innovativeness (50.83%), followed by high (25%) and low (24.17%) level of innovativeness respectively.
9. Majority of the beneficiaries had canal as their major irrigation source (64.17%), followed by river (20.83%), well or tube well (10%) and lake or farm pond (5%).

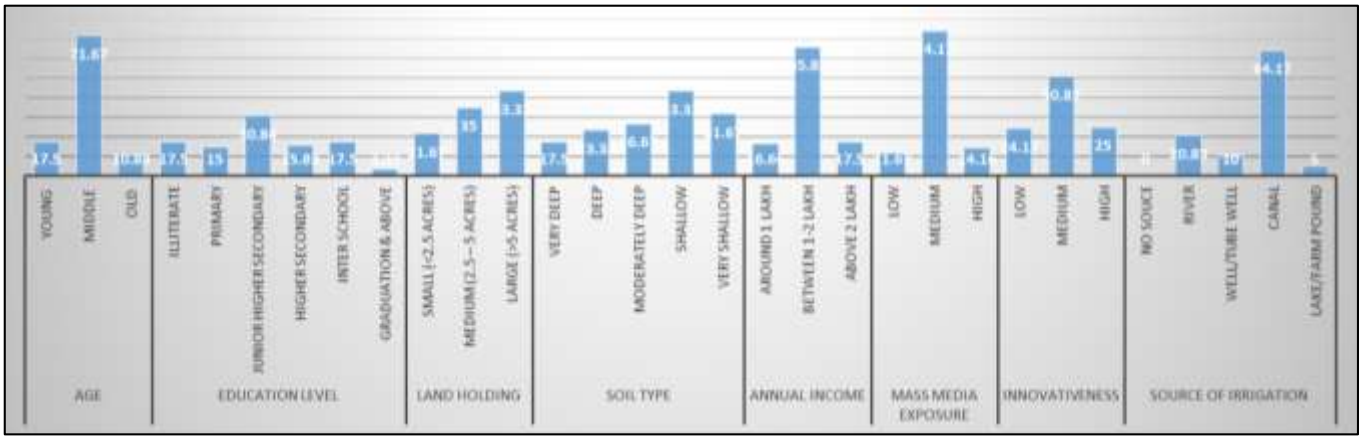

Fig 1: Socio-economic profile characteristics of the respondents

Conclusion

According to the study, the majority of the benefit farmers were middle-aged, had completed junior higher secondary education, had small families, and owned more than five acres of land with shallow soil that they primarily irrigated with canals. They receive a moderate annual revenue from this, along with a moderate degree of innovativeness and mass media exposure. Jal bhagirathi foundation. Showed a favorable effect on the farmers who benefited from the Jal Bhagirathi foundation's watershed development initiative. In a similar vein, the dependent variables showed no significant association with the variables of age, family size, land holding, or soil type, but the variables of education, information sources, annual income, exposure to the media, and innovativeness did.

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