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IMPACT OF NATIONAL WATERSHED DEVELOPMENT PROJECT ON LEVEL OF ADOPTION OF RECOMMENDED PRACTICES IN BLOCK PATHAPATNAM OF SRIKAKULAM DISTRICT OF ANDHRAPRADESH

***Temburu Kranthi Kumar; **Dr. Syed H. Mazhar; ***Prof. Jahanara**

*Researcher, M.SC. Agricultural Extension
**Associate Professor, Dept. of Ag. Extension and Communication, SHUATS, Prayagraj, 211007, (U.P.) India
***Head of the Department, Dept. of Ag. Extension and Communication, SHUATS, Prayagraj, 211007, (U.P.) India
Email: kranthitemburu24@gmail.com
Mobile: 9398307968

ABSTRACT: ***The study was conducted purposively selected in Pathapatnam block of Srikakulam district of Andhra Pradesh. Six villages were selected purposively and from each selected village 20 respondents were selected randomly thus 120 respondents constituted the sample size for present study. Ex-post Facto research design was followed and data was collected by using personal interview method. The collected data were tabulated, analyzed and interpreted with the appropriate statistical tools. Majority of respondents had medium level of knowledge and adoption towards paddy crop production by watershed project. Education, Family Type, Annual Income were found positive and significant correlation with their knowledge and adoption of paddy under Watershed project. Two types of Respondents were selected from these villages, beneficiaries and non-beneficiaries of Watershed Project. The major constraints faced by the respondents are Time consuming operation, Fragmentation of land into unconventional shape, Water stagnation near bunded area etc. The prominent suggestions given by the respondents were the provision of subsidy for the practices. Govt. should encourage co-operative farming, training should be provided for water conservation and input should be made available at proper time to overcome these constraints.***
Keywords: Socio economic profile, Level of Knowledge, Watershed.

INTRODUCTION

Watershed development Project aimed at conservation of natural resources and maintaining the ecology of the area by using the simple soil and water conservation techniques.

Watershed management is over all development of particular region including water conservation, maintaining soil fertility, pasture land, agriculture, horticulture, forestry and allied aspects. Watershed development projects have been taken up under different programmes launched by the government of India. The basic objective is land and water resource management for sustainable production. Watershed management planning is a process that results in a plan or a blueprint to improve the water quality and other natural resources in a watershed. The watershed project is proposed in Srikakulam district which is one of the drought

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prone districts in Andhrapradesh state and project is located in Nagavali and Vamsadhara river main basin which is a tributary of the former. It also supplies water to the urban settlements and also industry requirements. In India geographical area of 329 million ha, 143 million ha is under cultivation, 108 million ha area under rainfed and contributes about 44% of the total food grain production and supports 40% of the population. The major crops grown under watershed are rice, sugarcane, tomato, banana, brinjal, soyabean, oil seeds, Groundut; pulses are accounted by the rainfed agriculture. In Srikakulam district pathapatnam block integrated water management programme is going on. It is a centrally sponsored programme implemented by the department of rural development in the state. Its main objectives are restoring the ecological balance by harnessing, conserving and developing degraded natural resources. Increased agricultural production & productivity through scientific approach & sustainable agriculture practices**.** Integrated livestock management for increasing incomes. Livelihood security for the poorest of the rural poor. The government of Andhrapradesh finances some portion of the budget and the watershed communities contribute some portion.

The key development objectives is to improve the productive potential of selected watersheds and their associated natural resource base and strengthen community and institutional arrangements for natural resource management. This project primary objective is to increase household income, improve agricultural productivity, Improve vegetative cover, and Increase milk and horticulture production. Increase fodder and fuel availability, enhance quality of life of village communities, reducing soil erosion and runoff to improve water availability and to conserve the moisture status. The Watershed Development Programme is the basic need for integrated development and management of the land and water resources which provide life support for rural communities. The attention has been focused on this programme in order to provide Impetus to development in the country. Through the watershed development programme, we can achieve the following: The problem of drinking water can be solved, and to some extent the problem of water for Irrigation will also be solved. Increase agricultural production and create employment within the village and make food available to them. Migration to urban areas can be checked and reduce the problem of growing cities. By conserving soil and water ecological balance can be restored. Heavy situations in dams have given rise to many problems related to electricity supply, urban water supply. Industries depend upon this water are also facing problems. Soil and water conservation can arrest the flow of silt into the dams. Since, the inception of the project, there are very few study conducted in the area to know knowledge level, adoption level and constraints faced by beneficiaries and non- beneficiaries respondents of watershed development project. **(Kansana Vishwananath Singh. 2008).** Therefore, the objective for present study" impact of national watershed development project on level of

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adoption recommended practices in block Pathapatnam of Srikakulam district of Andhrapradesh were"

- To determine and compare between beneficiaries and non-beneficiaries regarding their socio economic characteristics.
- To ascertain and compare the beneficiaries and non-beneficiaries with regards to their knowledge about recommended practices of selected crop.

RESEARCH METHODOLOGY

The survey was conducted in purposively selected Watershed project of Srikakulam district in Andhrapradesh. The watershed project was started during the year 2007 in most of the cultivated land in the project area is under rainfed farming and this area is most backward. Hence, it requires more efforts to bring changes in the socio-economic conditions of the farmers of this area. Further, easy accessibility and convenience of the student researcher were also taken into account for selection of watershed. Two types of respondents were selected from these villages :(i) Beneficiaries of watershed (ii) Non-beneficiaries of watershed. The particular respondents who are participating in watershed activities and the particular respondents who are not participating in watershed activities. From each group, 60 farmers were randomly selected. The total sample, therefore, consisted 120 respondents' farmers in both the group for collection of data. Pre tested interview schedule was used for the collection of data. Appropriate tools were used to interpret the data. The present study was confined to Ex-post factorial research design. The Ex-post – facto research design is an inquiry in which the researcher does not have direct control of independent variable because their manifestations occurred and they cannot be manipulated.

RESULTS AND DISCUSSION

- **To determine and compare between beneficiaries and non-beneficiaries regarding their socio economic characteristics.**

1. AGE:

It refers to the chronological age of the respondent in year at the time of interview was considered. The age of respondents was considered as length of number of years in their present life. The table 4.1.1 indicated that beneficiaries of age category 51.66%, of the respondents were middle aged, 36.67% of the respondents were young aged and 11.67% of the respondents were old aged while in case of Non beneficiaries category of age category 48.34% of the respondents were middle aged, 50% of the respondents were young aged and 1.66% of the respondents were old aged.

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Table 1: Age wise distribution of the respondents:

SL.NO	AGE	BENEFICIARIES(n=60)		NON BENEFICIARIES(n=60)		Total
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	(n=120)
1	YOUNG AGE 20-35	22	36.67	30	50	52
2	MIDDLE AGE 36-50	31	51.66	29	48.34	60
3	OLD AGE > 50	7	11.67	1	1.66	8
	TOTAL	60	100	60	100	120

2. EDUCATION:

Education was considered as the number of years of formal education acquired by the respondent of socio-economic status. The table 4.1.2 indicated that beneficiaries of Education category 28.33%, of the respondents were illiterate, 15% of the respondents were primary school and 3.34% of the respondents were upper primary school, 13.34% were high school, 13.33% were intermediate, 21.66% were under graduate, 5% were post graduate, while in case of Non beneficiaries category of Education category 46.66% of the respondents were illiterate, 13.34% of the respondents were primary school, 5% of the respondents were upper primary school, 6.67% of the respondents were high school, 8.33% of the respondents were intermediate, 13.34% were under graduate, 6.66% were post graduate**.**

SL.NO	EDUCATION	BENEFICIARIES(N=60)		NON BENEFICIARIES(N=60)		Total
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	N=120
1	ILLITERATE	17	28.33	28	46.66	45
2	PRIMARY SCHOOL	9	15	8	13.34	17
3	UPPER PRIMARY SCHOOL	2	3.34	3	5	5
4	HIGH SCHOOL	8	13.34	4	6.67	12
5	INTERMEDIATE	8	13.33	5	8.33	13
6	UNDER GRADUATION	13	21.66	8	13.34	21
7	POST GRADUATION	3	5	4	6.66	7
	TOTAL	60	100	60	100	120

2. OCCUPATION:

Occupation refers to the family work force engaged in nature of works. The table 4.1.3 indicated that the beneficiaries of occupation category 78.34% of the respondents belong to agriculture category, while 21.66% of the respondents belong to subsidiary category. And in case of non-beneficiaries of occupation category, 56.67% of the respondents belong to agriculture category, where as 43.33% of the respondents belong to subsidiary category.

ISSN: 2348-1358
Impact Factor: 6.057
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SL.NO	OCCUPATION	BENEFICIARIES(N=60)		NON BENEFICIARIES(N==60)		Total
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	(n-120)
1	AGRICULTURE	47	78.34	34	56..67	81
2	SUBSIDIARY	13	21.66	26	43.33	39
		60	100	60	100	120

3. SIZE OF LANDHOLDING:

Size of land holding is directly co-related with the size of farm business and their production process. The table 4.1.4 indicated that beneficiaries of Land holding category 21.67% of the respondents belong to >2.5ha, whereas, 23.33% of the respondents belong to 2.6-5.0ha, while 45% of the respondents belong to 5.1-10ha and 10% of the respondents belong to above 10 ha. While in case of non-beneficiaries 61.67% of the respondents belong to >2.5ha, whereas 33.33% of the respondents belong to 2.6-5.0ha, while 5% of the respondents belong to 5.1-10ha.

SL.NO	LAND HOLDING	BENEFICIARIES(N=60)		NON BENEFICIARIES(N=60)		TOTAL
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	N=120
1	>2.5ha	13	21.67	37	61.67	50
2	2.6-5.0ha	14	23.33	20	33.33	34
3	5.1-10 ha	27	45	3	5	30
4	Above 10 ha	6	10	0	0	6
		60	100	60	100	120

4. Mass media:

The table 4.1.5 indicated that beneficiaries of mass media category 46.66% of the respondents belong to low category, while 40% of the respondents belong to medium category, where as 13.34% of the respondents belong to high category. While in case of Non-beneficiaries of mass media category 36.66% of the respondents belong to low category, while 46.67% of the respondents belong to medium category, whereas 16.67% of the respondents belong to high category.

SL.NO	MASS MEDIA EXPOSURE	BENEFICIARIES(N=60)		NON BENEFICIARIES(N=60)		TOTAL
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	N=120
1	Low	28	46.66	22	36.66	50
2	Medium	24	40	28	46.67	52
3	High	8	13.34	10	16.67	18
		60	100	60	100	120

5. Extension contact:

The table 4.1.6 indicated that beneficiaries of extension contact category 45% of the respondents belong to low category, while 28.34% of the respondents belong to medium category, whereas 26.66% of the respondents

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NAAS Rating: 3.77

belong to high category, while in case of non-beneficiaries of extension contact category 23.34% of the respondents belong to low category, while 31.66% of the respondents belong to medium category, where as 45% of the respondents belong to high category.

SL.NO	EXTENSION CONTACT	BENEFICIARIES(N=60)		NON BENEFICIARIES(N=60)		TOTAL
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE	N=120
1	Low	27	45	14	23.34	41
2	Medium	17	28.34	19	31.66	36
3	High	16	26.66	27	45	43
		60	100	60	100	120

- **To ascertain and compare the beneficiaries and non-beneficiaries with regards to their knowledge about recommended practices of selected crop.**

The knowledge of respondent is divided into three categories fully correct, partially correct, and not correct The table 4.1.7 indicated that the beneficiaries of knowledge category part1 53.34% of the respondents belong to Low category (11-13.66), whereas 36.66% of the respondents belong to medium category (13.67-16.32), while 10% of the respondents belong to high category (16.33-18.99) and in case of beneficiaries part 2 of knowledge category 28.33% of the respondents belong to low category (12-16), whereas 53.33% of the respondents belong to medium category (16-20), while 16.66% of the respondents belong to high category(20-24).

SL.NO	KNOWLEDGE	BENEFICIARIES(N=60)		NON BENEFICIARIES(N=60)	
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
1	Low(11-13.66)	32	53.34	24	40
2	Medium(13.67-16.32)	22	36.66	24	40
3	High(16.33-18.99)	6	10	12	20
		60	100	60	100

The table 4.1.8 indicated that the Non-beneficiaries Knowledge category of part 1 40% of the respondents belong to low category(11-13.66), whereas 40% of the respondents belong to medium category(13.66-16.32), while 20% of the respondents belong to high category(16.33-18.99),and in case of non-beneficiaries part2 of knowledge category 51.67% of the respondents belong to low category(12-16),whereas 36.67% of the respondents belong to medium category(16-20), while 11.66% of the respondents belong to high category (20-24).

SL.NO	KNOWLEDGE	BENEFICIARIES(N=60)		NON BENEFICIARIES(N=60)	
		FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
1	Low (12-16)	17	28.33	31	51.67
2	Medium(16-20)	32	53.33	22	36.67
3	High(20-24)	10	16.66	8	13.33
		60	100	60	100

ISSN: 2348-1358
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Table 4.1.9 Relationship between socio-economic Characteristics and knowledge level of beneficiaries and non-beneficiaries of watershed.

Sl.No.	Characteristics	"r" value(beneficiaries)	"r" value(non-beneficiaries)
1.	Age	0.199*	0.183*
2.	Education	0.165*	0.151*
3	Family type	0.264*	0.164*
4	Family size	0.189*	0.173*
5	Land holding	0.018NS	0.017NS
6	Annual income	0.015NS	0.008NS
7	Livestock	0.169*	0.153*
8	Mass media	0.193*	0.173*

* = Significant at p = 0.005

The table 4.1.9 indicates above portrays the correlation coefficient between age, family type, family size, education, occupation, land holding, annual income, and Livestock possession, Mass media exposure, with the dependent variable 'Knowledge. The correlation coefficient 'r' between the variable age and knowledge level of respondents towards the watershed is revealed to be 0.199* for the beneficiaries. For the non-beneficiaries, the correlation coefficient 'r' between age and the Knowledge level of respondents is revealed to be r = 0.183*. It can be concluded that the variable age is significant in affecting the Knowledge of the respondents towards Watershed for both beneficiaries and non-beneficiaries. The correlation coefficient 'r' between the variable education type and the Knowledge level of beneficiaries respondents towards Watershed is revealed to be r = 0.165*. The correlation coefficient 'r' for the variable Education type and Knowledge level of non beneficiaries is r = 0.151*. The values of the variables for both the beneficiaries and non- beneficiaries are positive, and it is significant. It can be concluded that education type does have affect on the Knowledge of the respondents towards Watershed for both beneficiaries and non-beneficiaries. The correlation coefficient 'r' between the variable family type and the Knowledge level of beneficiaries respondents towards watershed management is revealed to be r = 0.264*. The correlation coefficient 'r' for the variable family type and Knowledge level of non beneficiaries is r = 0.164*. The values of the variables for both the beneficiaries and non-non-beneficiaries are positive and it is significant. It can be concluded that family type does not affect the knowledge of the respondents towards watershed for both beneficiaries and non-beneficiaries. The correlation coefficient 'r' between the variable family size and the Knowledge level of beneficiaries respondents towards watershed is revealed to be r = 0.189*. The correlation coefficient 'r' for the variable family size and Knowledge level of non beneficiaries is r = 0.173*. The values of the variables for both the beneficiaries and non-non-beneficiaries are positive and it is significant. It can be concluded that family size does not affect the knowledge of the respondents towards watershed for both beneficiaries and non-beneficiaries. The

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correlation coefficient 'r' between the variable land holding and the Knowledge level of beneficiaries respondents towards watershed management is revealed to be r =0.018NS . For non-beneficiaries, the correlation coefficient 'r' between the variable land holding and knowledge level of non-beneficiaries is revealed as r = 0.017NS. The values of the variable for both the beneficiaries and non-beneficiaries are positive, but are non-significant. Hence, it can be concluded that land holding does not affect the knowledge level of the respondents towards watershed for both beneficiaries and non-beneficiaries. The correlation coefficient 'r' between the variable annual income and the Knowledge level of beneficiaries is revealed to be r = 0.015NS. For non-beneficiaries, the correlation coefficient 'r' between annual income and knowledge level is r =0.008NS. The values of the variable for both the participants and non-participants are positive, but are non-significant. Hence, it can be concluded that annual income does not affect the Knowledge level of the respondents towards watershed for both beneficiaries and non-beneficiaries. The correlation coefficient 'r' between the variable Livestock type and the Knowledge level of beneficiaries respondents towards watershed is revealed to be r = 0.169*. The correlation coefficient 'r' for the variable Livestock type and Knowledge level of non beneficiaries is r = 0.153*. The values of the variables for both the beneficiaries and non-non-beneficiaries are positive and it is significant. It can be concluded that Livestock type does not affect the Knowledge level of the respondents towards watershed for both beneficiaries and non-beneficiaries. The correlation coefficient 'r' between the variable mass media exposure and the Knowledge level of the beneficiaries toward watershed management is revealed to be r = 0.193* . For the non-beneficiaries, the correlation coefficient 'r'between the variable mass media exposure and Knowledge level towards watershed is revealed to be r = 0.173*. The values are positive and significant. It can be concluded that media exposure does have affect on the Knowledge level of the respondents towards watershed for both beneficiaries and non-beneficiaries.

CONCLUSION:

Based on the results of the present study it is suggested that the watershed development which is benefited for the farmers and should encourage farmers regarding these practices and so that create awareness and conviction among the farmers and ultimately there is increase in the level of learning among the farmers of both beneficiaries and non-beneficiaries farmers groups regarding watershed development. Since the present study indicates that the watershed development had remarkable influence on the farmers regarding use of improved practices of Rice cultivation. Hence, it is suggested that watershed development project are to be used as a transfer of technology tool for adoption of improved Rice cultivation technology. There was highly significant difference in the level of knowledge between Beneficiaries farmers and non-Beneficiaries farmers in relation to improved practices of Rice cultivation. It May be concluded that in case of beneficiaries farmers, majority of the farmers possessed Fully knowledge about Rice production technology followed by medium and low knowledge and in case of non-beneficiaries farmers, majority of the farmers possessed partial knowledge about Rice production technology followed by low and fully knowledge.

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