

THE ROLE OF YOUTH IN IRRIGATION DEVELOPMENT AND INCOME: A CASE STUDY OF DAVANAGERE DISTRICT, KARNATAKA

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Abstract: India is the agriculture based country in the world and most of the people were depend on agriculture mode of life. The major livelihoods in this area of the study are related to irrigation based agricultural practices. How far irrigation has influence on income of youth cultivators? What is the other non-water related factors influencing income level of youth cultivators? The paper addresses these questions. Irrigation plays an important role in improving production and productivity of agriculture.

The present research study try to highlight the involvement of youth in agricultural activities and income impact of irrigation study has been done in Nalluru village of Davanagere district, Karnataka. Consisting of 150 households, having different livelihoods, a set of 55 respondents have been found out whose main occupation is cultivation and annual income comes under below poverty line (BPL). Among these 55 cultivators a sample of 20 youth cultivators has been selected by using simple random sampling without replacement (SRSWOR) method and further required data have been collected for this sample group using a pre-tested questionnaire consisting of both quantitative and qualitative variables. Finally, conclude the findings of study.

Keywords: Rural Youth, Agricultural activities, Irrigation, Income, Cultivation.

1. INTRODUCTION

India is an agricultural major and has a workforce of more than 50% and a GDP of 18% and it is the second most populous nation in the world, having more youth (34.33%), and facing problems such as unemployment (7.8%), poverty (68.8%), youth unrest and farmers 'suicides (11.2%). In the meantime, young people migrating to urban areas and abroad for employment are turning to agriculture and embarking on another organic green revolution. This study is a sociological case study of the role of rural youth in irrigation development and in particularly income of the irrigated paddy crop cultivators.

Youth who have migrated from cities to villages for fear of COVID-19 have dreamed of getting involved in agricultural activities, but this is not an easy way, as they face new challenges as the day passes. The use of modern technological tools in agricultural farming, the traditional cultivation system is disappearing and the development of agricultural technology is costly and has led to unemployment. Indian farmers facing irrigation problems have dreamed of seeing a

permanent solution. It is believed that the people who are watching the pro-farmer's proposals of the Honorable Prime Minister will not be misled.

2. REVIEW OF LITERATURE

In this study review of research has been compiled to enable better understanding of the socio-economic challenges concerned with the study.

- Research related to human wellbeing, poverty alleviation and agriculture involves basic approaches like equal access to inputs and outputs. Economic policy in favor of poor, developing institutions etc. (John & Kolavalli.1999).
- The development of agricultural sector in the state thus began with the seemingly formidable constraints in the form of large rain fed areas, low irrigation, low value, low yield dominant cropping pattern and large share of dependent population (Deshpande R.S, 2004).
- Availability and access to irrigation is considered as essential for crop production. Asset creation and expansion of development (Narayanamurthy, 2007).

Research questions and Objectives:

Questions:

- 1) How far irrigation has influence on income of cultivators?
- 2) What is the other non-water related factors influencing income level of cultivators?
- 3) What are the agriculture related challenges of paddy growers?

Objectives:

- 1) To explain impact of irrigation on the income incurred from agricultural livelihood.
- 2) To examine the socio-economic and educational factors of youth cultivators.
- 3) To identify the non-water related issues influencing income incurred from agricultural livelihood.

Hypothesis:

It has been hypothesized that amount of irrigated land and number of livestock has significant impact on income of cultivators.

3. METHODOLOGY OF THE STUDY

Study area:

Study has been done in Nalluru village of Davanagere district, Karnataka consisting of 150 households. The major livelihoods in this area are related to irrigation based agricultural practices. Nalluru is a Village in Channagiri Taluk in Davanagere District of Karnataka State, India. It belongs to Bangalore Division. It is located 51 KM towards South from District headquarters Davanagere.

In Kannada, Nalluru means Batta/ paddy; Nalluru is the village where the paddy growing communities reside. Now the farmers are growing more Areca nut, Banana and Maize along with Paddy.

Davanagere district lies in the plain region on the Deccan Plateau locally known as Bayalu Seeme. The district is bounded by Haveri district in the northwest, Shimoga district in the southwest, Chikmagalur district in the south, Chitradurga district in the southeast and Vijayanagara district in the north. The district lies in the center of Karnataka between the latitudes 13°5' and 14°50' N and between the longitudes 75°30' and 76°30' E. There are many windy places within the district favouring the recent growth of wind energy industry across the district. The district has an area of 5,926 km² (2,288 sq mi).

The district lies in the central plains of the state with its unique features of having dual cultures of the north and the south of the state. The prominent towns in this district are Harihara, Jagalur, Honnali and **Channagiri** and Nyamati, these also happen to be its five other taluks. It is bound by Shimoga District and Haveri District on the west, Chitradurga District on

the east, Vijayanaga District on the north and Chikmagalur district on the south. The Davanagere district has 6 taluks, 20 hoblies, 197 gram panchayats, 652 villages, 904 habitations, and 2 city municipal councils and one City Corporation.

According to the 2011 census Davanagere district has a population of 1,945,497 roughly equal to the nation of Lesotho^[4] or the US state of West Virginia. This gives it a ranking of 241 amongst a total of 640 districts in India. The district has a population density of 329 inhabitants per square kilometre (850/sq mi) . Its population growth rate over the decade 2001-2011 was 8.71%. Davanagere has a sex ratio of 967 females for every 1000 males, and a literacy rate of 76.3%.

Data:

Primary data has been collected from all 150 respondents from Nalluru village of Davanagere district by using a pre-tested questionnaire consisting of both quantitative and qualitative variables.

Sampling:

Among 150 respondents, having different livelihoods, a set of 55 respondents have been found out whose main occupation is cultivation and annual income comes under below poverty line (BPL). Among these 55 cultivators a sample of 20 cultivators has been selected by using simple random sampling without replacement method and further required data have been collected for this sample group using a pre-tested questionnaire consisting of both quantitative and qualitative variables.

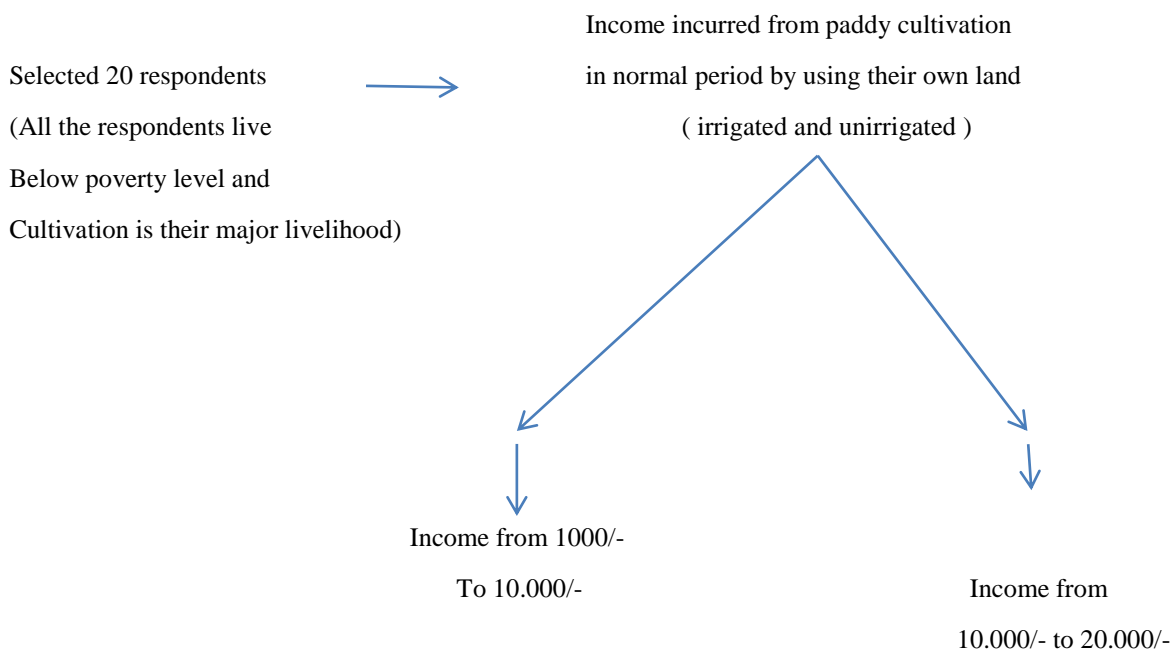
Computation method:

Descriptive statistical methods have been used in this present study. Sampling has been done by using SRSWOR. Impacts of irrigation and number of livestock on income have been analyzed using regression method. Significance of irrigation and number of livestock on income have been analyzed using 't' test and status of education has been interpreted by using frequency distribution of education level among the respondents.

Selection of Crop and Cultivators:

Paddy has been selected for the present study as this the major irrigation based cultivated crop in this area.

Empirical Framework:



How far amount of irrigated and irrigated land (normal period) number of livestock (normal period) have impact on the respondents income? What are the non-water related issues which can affect income?

Major Findings of the Study:

Socio-Economical factors: The rural youth in this study who were involved in cultivating were originally from agricultural family women and men were working together, and the study was based on data collection from the 18 to 35 age group. The caste has been subjected to the study of General, OBC, SC and ST agricultural families.

Impact of irrigation and number of

Livestock on the cultivators income.

Ranges from 1,000/- to 10,000/-

nirr – amount of irrigated land

Unirr – amount of land unirrigated

nlstk – number of livestock

Correlation between income and other
Explanatory variables.

Explanatory Variables	Income
Nirr	0.805
Nuirr	0.588
Nlstk	0.449

linear relation between income and other
Explanatory variables

Model	Coefficients	T	Sig
Constant	2207.08	0.698	0.523
Nirr	0.63	2.44	0.071
Nuirr	0.31	1.242	0.282
Nlstk	0.23	0.943	0.399

$$\text{Income} = 2207.08 + 0.63 \text{ nirr} - 0.31 \text{ nuirr} + 0.23 \text{ nlstk}.$$

Impact of irrigation and number of Livestock on the cultivators income, ranges from 10,000/- to 20,000/-

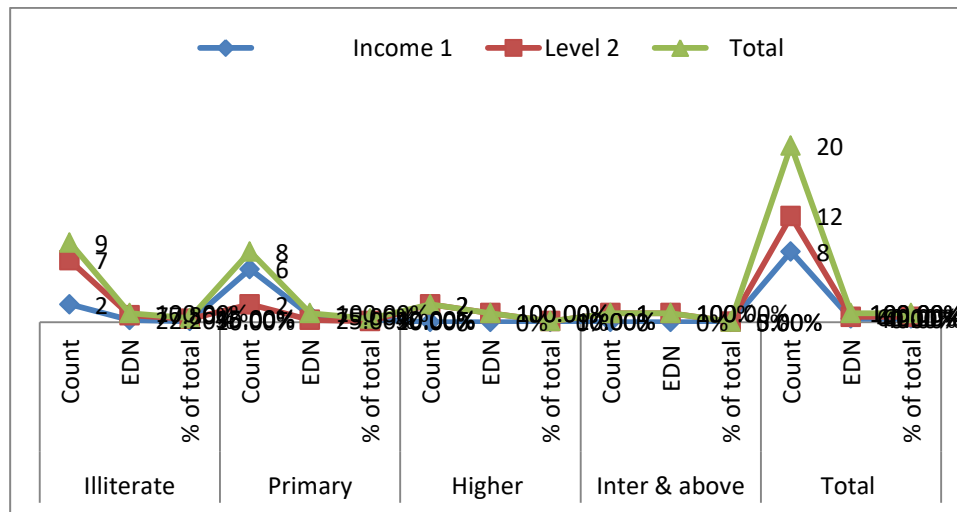
Correlation between income and other
Explanatory variables.

Explanatory Variables	Income
Nirr	0.453
Nuirr	0.175
Nlstk	0.429

Linear relation between income and other
Explanatory variables.

Model	Coefficients	T	Sig
Constant	10819.575	4.501	0.002
Nirr	0.4	1.427	0.191
Nuirr	0.16	0.55	0.597
nlstk	0.46	1.485	0.176

$$\text{Income} = 10819.575 + 0.4 \text{ nirr} - 0.16 \text{ nuirr} + 0.46 \text{ nlstk}.$$

Educational Status:**4. DISCUSSION**

- Study says, amount of unirrigated land and number of livestock have negative and positive impact respectively on income of both the groups but impact is not significant. But for income group 1.000/- to 10.000/- cultivators are more dependent on amount of irrigated land compare to the income group grow 10.000/- to 20.000/- and impact is also significant for first group. Which means there are some other factors which has positive impact on higher income group to incur more income.
- Education level of the cultivators can be one of them as most of the cultivators of higher income group are literate or have higher education compare to lower income group and expenditure is more than income and socio-economic problems are causing unrest.
- When income is low, costs are high, debt is not paid, crops are overturned, or farmers are forced to commit suicide without the right price in the market.
- If today's agriculture seeks to destroy the earth chemically, with the pressure of technology and profit prospects, there is a fear that the human race will end.
- As the rain-fed farmers, gambling with the monsoons, their gaze always ends.
- The role of modern technology with social wisdom can help in checking migration of youth from rural to urban areas, but old age farmers do not believe new technology and only believe in their past experience.

Limitation of the study:

- Present study has been done only for the respondents having cultivation has major livelihood.
- Study is based on the respondents whose annual income is below poverty level.
- The study concerns the respondents of rural youth with paddy growers.

Future scope of the study:

Further study can be done for the other agriculture related livelihoods and a comparative analysis can be done on impact of irrigation and other factors among different agriculture related livelihoods and risk factor indications.

5. CONCLUSION

Rural youth are participating in most of the agriculture activities like ploughing, harrowing, sowing, transplanting, weeding, harvesting, post-harvest and so on. In spite of the enormous dedications of youth to household agriculture, empirical data is lacking on their involvement. The price of rice which is not available for paddy is a loss to the farmers as well as to the businessmen and traders who produce the most profitable rice.

APPENDIX

Average income for the group from 1000/- to 10.000/- is 14.083/- and that of income group from 10.000/- to 20.000/- is 9.000/-

2-tail one sample 't' test has been used for mean income and it has been seen that sample mean is highly significant to population mean.

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