

# Agriculture and Food Economy Paddy Related Agro-Based Industries, Enhancing Livelyhood of Farmers

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**Abstract**—Almost three-fourths of Indian population live in rural areas, where agriculture is backbone of the Indian economy through providing employment opportunities to more than 60% population & livelihood to majority of the people. Because of lesser employment opportunities in villages people either migrate or travel to cities for work. The inception of naturally beneficial linkages between agriculture and industry is one of the central themes of the development process. Argo-based industries plays a key role in strengthening agricultural and industrial linkages.

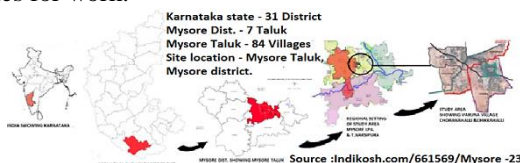
Paddy cultivation is the major cultivation in agriculture sector in Varuna village. This paper is going to study about the status of agricultural farmers, and economic condition of the farmer. And how Varuna village has seen drastic changes in cultivation leading to the conversion of agricultural land to nonagricultural land and resulting in loss of food production. The paper is going to study how paddy based agro-industry can be source of income to farmers (food economy), that enhance farmers livelihood.

The paper attempts to elaborate on the benefits of agro-based industries which have great predominance in the rural areas since they could be significant in strengthening strong linkages between the agricultural and industrial sectors; while empowering rural folk by generating employment opportunities. The research methodology follows both qualitative and quantitative methods. The paper concludes with the tangible and intangible benefits of agro-based industry as a source of income for the farmers.

**Index Terms**—Agriculture, Argo-based industry, Food economy and Livelihood of farmer

## I. INTRODUCTION

India has always been an agricultural based economy. The primary sector in India confer to 16.95% of our GDP. India is world leader in production of milk and is the second largest grower of wheat, sugar, paddy, ragi, freshwater fishes and groundnuts etc. The Indian agricultural sector achieved this remarkable feat because of several concurrent revolutions that were pioneered by the government of India [1]. Ancient Indian scriptures contains vivid narration of the post-harvest and processing practices for preservation and processing of agricultural produce for food and medicinal uses, where agriculture is backbone of the Indian economy more than 60% population & livelihood to majority of the people. Because of lesser income opportunities in villages and peripheral areas of cities, people either migrate or travel to cities for work.



**Fig. 1** Location map

Hence there is a need of rural development for recognizing overall economic development. Rural development can be possible through venture of agro-based industries in rural area which help for the development of agriculture & rural income.

The study area is located in Mysore And Mysore, is a city in

the southern part of the state of Karnataka, India.

Study area consists of 3 villages i.e. Chikkahalli, Chorannahalli which fall under administrative boundary of Mysore Nanjangud LPA. And Varuna village which fall under Mysore Taluk, Mysore District. The total area of study area is 2891 acres with population of 6721.

Varuna village is located at the circumference of Mysore Nanjangud LPA.

Area of Varuna village is 1371 acres, with population of 2350. Varuna village is located at a distance of 13.3 km from Mysore and 21km. from T Narsipura.

## II. OBJECTIVES AND METHODOLOGY

The prime aim of this research is to investigate the source of income related to agro-based industries that can enhance lively hood of farmers. And prevent farmers from giving up agriculture in study area.

To analyze the impact of agro-based industries on income of farmers, to evaluate the influence of agro-based industries on cropping pattern and income. To study the outcome of the agro-based industry on rural development.

The research also investigates the literacy rate, occupation patterns and types of cultivation in study area from past one decade. and to achieve the outlined objective of this paper a qualitative and quantitative research method is used where its best fits in the research approach. Which becomes a base for suggesting methods of intervention to achieve the goal.

### III. REVIEW OF LITERATURE

**Industry** means ‘an art / craft’ or group of the machines which converts original objects in to the form. The process of the using the raw materials by using the machines to convert in to the readymade products is called ‘manufacturing industry’ [2].

The Industry plays a crucial part in the economy.

#### **Agro-based industries:**

As per National Council of Applied Economic Research the definition of ago-industries is use either agricultural raw materials or make things that farmers need for agricultural purposes.

**According to Gupta**, the main idea of agro-industries is restrained only to those industries that are engrossed in the processing of agricultural produce either for consumption or for the use of industry. and This agro -based industries are related to the domain, the products will be made by the agricultural products such as rice flour mills industry, silk products, etc. are come under the agro- based industries

#### **Agro-industries can be of two types under Small Scale Industry:**

##### **(1) Processing industries**

##### **(2) Supply industries**

Processing Industries are those which process agricultural produce for their further use while supply industries are those which produce inputs for agriculture.

Hence, the scope of the agro-processing industry embraces all operations from the stage of harvest till the material reaches the end users in the desired form, packaging, Quality, Quantity and value [3].

#### **Agro-processing activities contains two major categories; primary and secondary operations.**

**Primary processing operations** involves activities such as crop drying, shelling/threshing, cleaning, grading, and packaging.

**Secondary processing** operations requires increasing nutritional or market value of the commodity and the physical form or appearance of the product is often totally changed from the original. some of examples of secondary processing are milling rice, ragi into flour, ragi biscuits, bread and bakery items etc.

#### **Research Related to Agro-Processing Industries in India**

The review of studies made in India

#### **Joshi, Wadkar, Malaw and Talathi's (1999), study "Income and Employment**

Generation in paddy and coconut by-products Processing Industry" conducted for Tamilnadu, Madhya Pradesh and Punjab have analyzed the cost of processing of various and profit margin and their effect on source of income and employment [4]. The study has revealed that processing activity provides employment

#### **Attributes of the agro-industrial sector in India.**

Statistics from the annual survey of industries-1 reveal that 46% of all factories in India are agro-industries and they contribute 22% of the manufacturing value added and nearly

43% of manufacturing industry employment (India Ministry of Planning, 1996). And proclaim that 37% of the agro - industrial firms produce food and 63% generate nonfood products.

#### **Successful implementation of agro-based industry in Punjab: an invention by Kriya lab**

Rice straw is a vegetative component of the rice crop which is left over to burn or used as fodder after the produce is harvested. Setting fire to agricultural residue is known to emit harmful gases such as nitrogen oxide, methane, carbon dioxide, and a huge amount of particulate matter, which in turn directly affects public health as well as the environment. Govt. of India penalizes for burning of Rs.2500 per acre. since these gases can cause ailments like asthma, bronchitis, retarded nervous system, and cognitive impairment [5]

Kriya Labs has designed an apparatus that can perform a series of processes to turn rice straw into pulp goal was to set up processing units – that can establish agricultural waste as an asset and contribute to a pollution-free and sustainable economy,”

5 tonnes of rice pulp per day using this process, which is sufficient to tackle the Residue from 800 acre of cultivated land. Yield of machinery – 70% - translates - 0.7

tonnes of pulp from 1tonne of rice straw; 0.7 tonne – 70 pieces of table ware, so 1kg pulp – 200 pieces; Cost of making is - 25 paise per plate. Further followed by primary processing: paddy; shelling/threshing, cleaning, grading, and packaging, marketing or further secondary processing.

**Secondary processing;** milling rice, broken rice, rice flour, bread, biscuits, rice bran. etc.

Hence this has resulted in following:

- Reduce the instances of burning rice straw, thereby contributing to a decline in pollution levels in the region.
- The process of converting rice straw into tableware gives a leeway for empowering rural folk by generating employment opportunities.
- Farmers too can earn an additional source of income through the sale and disposal of agro-waste.
- Recognized its potential for creating substantial employment opportunities.

### IV. RESEARCH SURVEY

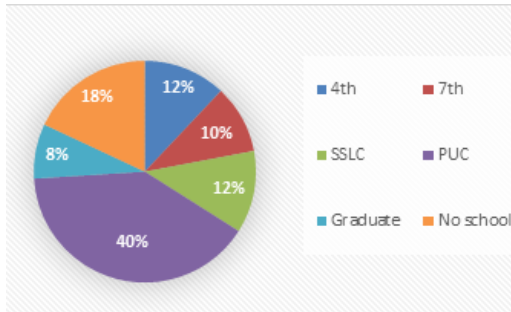
The survey took place in 2019, through direct interview of the village residents. and data from Gram panchayat office Varuna.

house hold survey, of 4.15 % (22 no. of sample) out of total no of households (529) of Varuna village; The following question listed here are only related education, occupation and crops.

Survey goals and content:

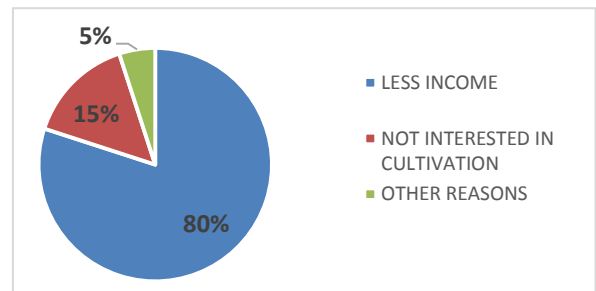
The survey consisted of following questions serving required goals.

**Q no. 1. Educational level**



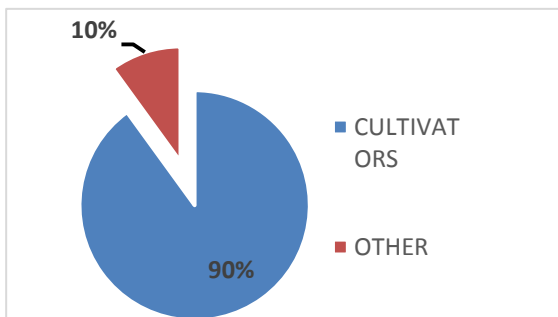
**Fig. 2** Percentage distribution of educational level in Varuna. (Source: Author) Maximum people (40%) have studied PUC. Sources of income are very less in Varuna.

**Q no. 4: What is reason for shift in occupation?**



**Fig. 5** percentage of shift in occupation & its reason in Varuna (Source: Author)

**Q no. 2: what is family occupation?**

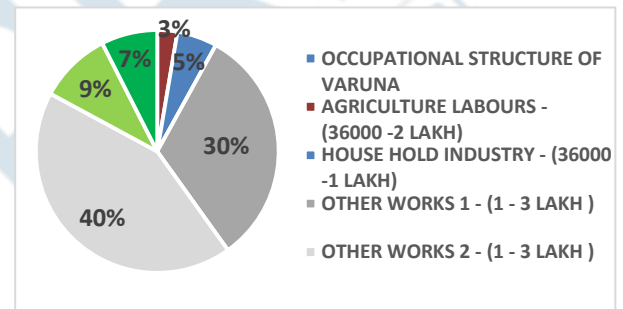


**Fig. 3** Percentage distribution of family occupation in Varuna. (Source: Author)

Maximum people's (90%) family occupation is cultivation in Varuna village.

Majority of people reply was less income (80%)

**Q NO. 5: What is annual house hold income?**

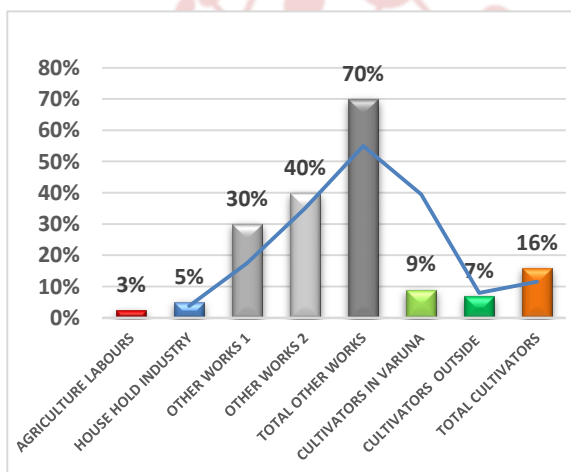


**Fig. 6** Percentage distribution of source of income and annual income in Varuna.

(Source: Author)

Maximum people's annual income is 1 – 3lakh. - Economically weaker section.

**Q no. 3: what is present Occupation?**



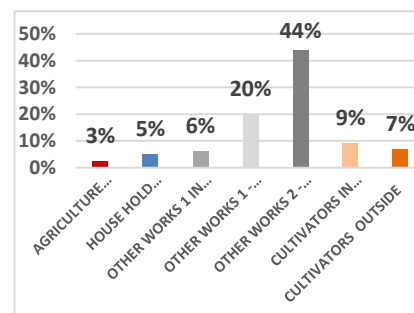
**Fig. 4** Percentage distribution of present occupation in Varuna. (Source: Author)

There is major shift in occupation from agriculture to non-agriculture.

**Q No. 6: what is land price in Varuna village?**

It's one crore per acre of land. This has resulted in sale of land, leading to conversion of agricultural land to non-agricultural land.

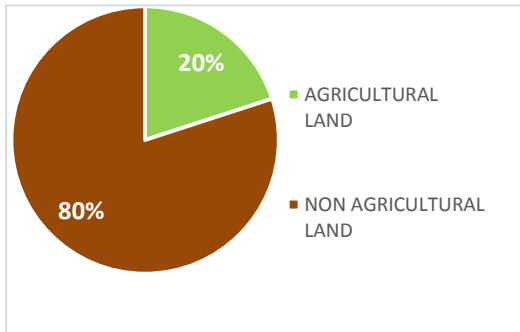
**Q NO. 7: Work place of people in Varuna?**



**Fig. 7** Percentage distribution work place in Varuna. (Source: Author)

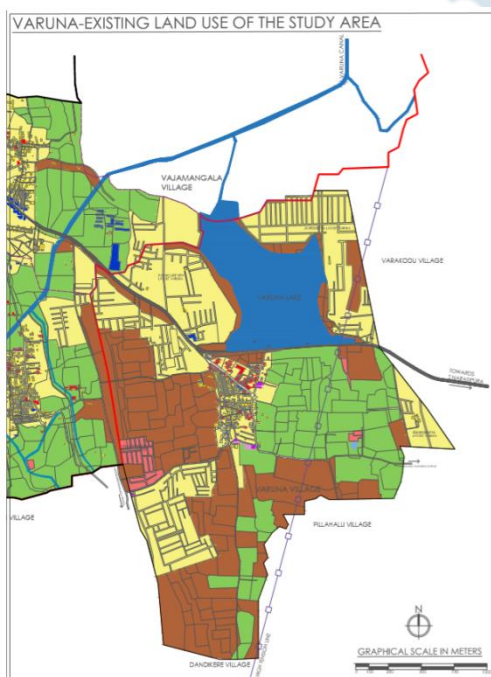
- 64% of people travel outside to work place. to Mysore – 13.3km. to 15km.
- Nanjangud – 31.3km.
- Bannur – 18km.

**Q NO. 8: Agricultural land conversion to nonagricultural land?**



**Fig. 8** Map showing agricultural and non – agricultural land in Varuna (Source: Author)

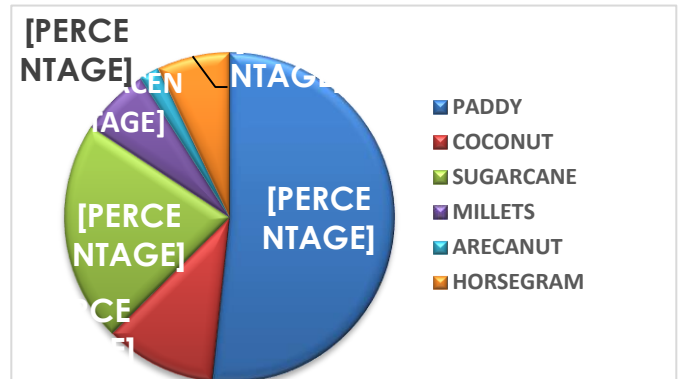
Existing land use of Varuna village shows 80% of agricultural land is converted into nonagricultural land.



**Q No. 9: What kind of crops are grown now?**

**Fig. 9** Map showing kind of crops are grown now According to participants reply and visual survey major crop is paddy (52%) and the second crop is sugarcane of 21%, the rest is grown from 5% to 11%

**Q No. 10: Where do you sell crops yield?**

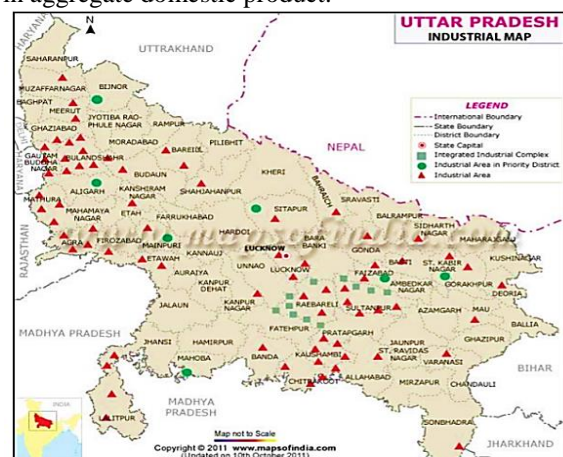


**Fig. 10** percentage distribution of crops growth in Varuna (Source: Author)

Paddy and other crops yield to APMC. at Bandipalya, Hosahundi at Mysore. Located at distance of 15km. from Varuna village. No market for selling paddy husk and straw. Sugarcane to Bannariamma sugar factory at Nanjangud located at 31.2 km. and other one at Kollegal sugar factory located at distance of 20km. from Varuna village.

**V. RECENT REFERENCES**

Agro based Industries in Uttar Pradesh. Located in the Northern part of India, population of Uttar Pradesh is 166 million, which makes it India’s most populous state. with 16% of total population of India. Area of Uttar Pradesh is 240, 928 sq. km that’s 9% of total area of India and fourth largest state of the country. Uttar Pradesh is the second biggest state economy in the country. with a share of 10.7 per cent in aggregate domestic product.



**Fig. 11** Industrial Map of Uttar Pradesh (Source: [www.maps of india.com](http://www.maps of india.com))

Major crops grown are Food Grains, Sugarcane and Oilseeds. It is the largest producer of wheat, pulses, sugarcane, tobacco, potato and milk in the country. Uttar Pradesh has a well-developed agro-based and food processing industry with

one of the leading producers of dairy and horticulture. And is the second largest economy in India after Maharashtra, contributing 8.17% to India's total GDP. Gross State Domestic Product (GSDP) at current prices in 2004-2005 was US\$ 55 billion. large number of people are employed in agro based industry in Uttar Pradesh.

Uttar Pradesh provides various advantages for setting up agro-based industries as follows.

- Policy and fiscal incentives
- Rich labour pool
- Facilitating infrastructure
- High infrastructural growth
- Stable political environment
- Institutional Strengthening and Effective Use of Existing Institutions
- Setting Up Alternative Marketing Structures
- Setting up Development Zones
- Optimum Utilization of Human Resources

#### **Important role of Agro based Industries in Uttar Pradesh**

- ✓ The Agro based industries provides livelihood, checks rural-urban migration, generates export earnings, and touches upon the lives of the remotest and most marginalized people.
- ✓ Provided Better returns to the farmers for his produce. Promote value addition and consciousness.
- ✓ Motivate investment in the agro based industry and employment generation
- ✓ Minimize wastage of agriculture and its produce.
- ✓ Provide a 'market' focus to the entire range of activities involved in food processing.
- ✓ Provision of appropriate linkages between the agricultural and industrial sectors.

#### **VI. CONCLUSIONS**

Research investigated data from both quantitative and qualitative approaches shows interesting and indicating results that serve for the main objectives of this research. results showed that 80% of Varuna village's agricultural land is converted into nonagricultural land, there is major shift in occupation because of less income in cultivation, which is a threat and There is lack of employment opportunities in Varuna village resulting in people's dependency on Mysore, Nanjangud and Bannur.

The research finds that the agro-industrial sector in India provides a large share of overall employment opportunities in industry as well as value addition and income generation for the cultivators.

It establishes a naturally instrumental relationship between agriculture and industry. Hence agro-based industries play a predominant role in strengthening agricultural and industrial linkages; promoting integrated development of agricultural

and industry.

Finally, paper concludes that the initiation of agro-based industries in Varuna village is contemplate to result in the creation of in farm sector income opportunities and tertiary sector direct and indirect employment opportunities. That will have both tangible and intangible benefits; like for example cost savings on travel to work place and time saving on travel resulting in reduction of stress. And farmer saves cost of transportation to APMC. And sale of paddy and its waste like husk and straw within vicinity of village.

Since paddy is major crop in Varuna and surrounding villages setting up a paddy based agro-based industry is more feasible for successful implementation of proposed agro-based industry in Varuna village.

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