



Assessment of Agricultural Economy and Livelihood: A Case Study of Chandinagar Mouza, Hooghly District, West Bengal

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Article Info

Article History

Received on:

15 April, 2020

Accepted in Revised Form on:

17 August, 2020

Available Online on and from:

23 September, 2020

Keywords

Mouza,
Livelihood,
Agricultural Economy,
Land Tenure.

Abstract

Presently micro-level studies play a key role to measure the spatial differentiation as each space has its criterion that determines the differentiation. The study area is concentrated within mouza level. Chandinagar mouza is situated within Jangipara block in Hooghly district of West Bengal. Being a part of the rural area along with the vast agricultural field, agriculture is the livelihood of the people of the mouza. Most of the people are engaged in agricultural practices which is the driving force of the rural economy. The focus of the study is to find the interrelationship between the agrarian economy and the involvement of the people in it. Moreover, the feelings and mental attachment to agriculture are also taken into consideration.

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Introduction

India is predominantly known for its riverine civilization since the ancient period. Over 60% of India's land area is arable making it the second-largest country in terms of total arable land (Goyel, 2016). Agriculture plays a vital role in India's economy. About 54.6% of the total population is engaged in agriculture and allied activities (Census 2011). Gross Value Added (GVA) at current prices for agriculture, forestry and fishing contributed 17.02% of national GVA in 2017-18 (MSPI, GOI, 2018-19). Contribution of agriculture, forestry and fishing in Indian economy is much higher than the world average of 3.4% in 2017 (World Bank, 2020).

In the beginning of the 21st Century, Indian farming shows a significant shift from traditional farming to modern commercial farming due to the availability and growth of infrastructural facilities like HYV seeds, chemical fertilizers, irrigation, pesticides, marketing, transport and Govt. extension programmes. Small and marginal farmers constitute a major portion of rural agricultural sector. So transformation of agriculture through modernization is positively related to

sustainable livelihood of rural population (Mondal, Chakraborty and Mishra, 2017). The rural people in Indian scenario have traditionally accepted agriculture initially to fulfil the requirement of food for their families or to meet up the occupational demand, and thus, a bridge of affinity has been built between the farmer and soil. Agriculture in India is more a 'way of life' than a 'mode of business' (Goyel, 2016).

West Bengal is predominantly an agrarian State. Comprising of only 2.7% of India's geographical area, it supports nearly 8% of its population. There are 71.23 lakh farm families of whom 96% are small and marginal farmers. The average size of land holding is only 0.77 ha. However, the State is bestowed with diverse natural resources and varied agro-climatic conditions which support cultivation of a wide range of crops. The net cropped area is 52.05 lakh ha which comprises 68% of the geographical area and 92% of arable land. The cropping intensity is 184%. However, as the State is located in the humid tropic and the Bay of Bengal is close by, it has to often face vagaries of nature like flood, cyclone, hailstorm etc. Though the State has a surplus production of rice, vegetables and potato, a huge gap exists



between the requirement and production of pulses, oilseeds and maize. Deterioration of soil health due to imbalance in the use of chemical fertilizers, paucity of suitable improved varieties of seed, inadequate farm mechanization, unorganized marketing structure etc. are major challenges to agricultural growth. In 2017-18, West Bengal became the topper among the Indian states in the production of rice. It was almost 13.25% of the total production of India (MAFW, GOI, 2018). According to Census 2011, the total population of West Bengal was about 91.2 million. This huge population absolutely depend on agriculture for their livelihood and sustenance. As a matter of fact, a major portion of the food crops produced is consumed within the country. Our farmers work day and night to feed our population (Goyel, 2016). The farmlands are rigorously cultivated where it has a suitable environment.

Agriculture has been the way of life and continues to be the single most important livelihood of the rural masses in West Bengal. The Agriculture Department, GoWB is working in a mission mode for development of Agriculture and Allied sector in a holistic manner with the vision of "Doubling farmers' income by 2020 by ensuring farmers' access to Skills, Technologies, Markets and Financial inclusion".

Hooghly is one of the central districts of West Bengal. It is one of the most industrialised districts with numerous factories flanking the Bhagirathi, but its basic rural characteristics still remains where not less than 70% of its total population depends on agriculture. It experiences alternate wet and dry tropical monsoon climate with an average annual rainfall of 120cm 170cm. May is the hottest month (35°C) and January is the coldest month (15°C). July to September constitutes the rainy period. Soils are of the Gangetic alluvium family and are mainly sandy loam and loam that together cover about 80% of the area. About 69.5% of the area is cultivated and about 62% of the cultivated area is covered by irrigation. The district has an ideal agro-climatic condition to culture the agricultural practice (Ghosh, 2016).

The Study Area

Chandinagar mouza (J.L. No.76) has been selected as the study area. It is within Jangipara block of Hooghly district of West Bengal (Fig.1). The total geographical area of the village is 1.2707 sq. km. The village is surrounded by Radhanagar village in the east, Kumarbazar village in the west, Taldaha and Dharampure village in north and Icchabati and Chandrahati village in the south. The village lies in the intersection of 22.7765°N latitude and 88.0620°E longitude.

Chandinagar is located about 43.6 km from the district headquarter, Chinsurah. The block headquarter, Jangipara, is just 3.3 km away but the people are more connected with Haripal, which has better amenities. As per 2011 Census, Chandinagar has a total population of 1242 living in a total of 273 households.

It is situated by the Kana River being enriched by deep alluvial soil with a predominantly flood plain topography. Due to availability of favourable agro-climatic environment cultivation is the main engagement of the inhabitants of the mouza. About 69% of the working population is engaged in agricultural activities (Field Survey, 2019). The landuse map prepared on the basis of plot-to-plot survey shows that it reflects an absolute

dominance of agrarian economy. Cultivated area covers about 69% of the total area while 14% is occupied by natural waterbodies, 7% is under greeneries, i.e., orchards or groves and another 7% is under human settlements (Fig.2).

As agriculture is the main source of income of the people of Chandinagar mouza, an initiative taken by the author to estimate the agricultural income for the year 2019 through primary field survey. The total value from cultivation is the sum of value from the sale of primary products and sale of by-products. The costs incurred in cultivation includes a variety of things like seed costs, fertilizer costs, manure costs, pesticide costs, interest, costs of irrigation, costs incurred in hiring machinery, minor repairs, hired labour, animal labour and so on. The total cost is subtracted from the total value is used to arrive at the total income from farming (Ranganathan, 2015).

Objectives of Study

The main objectives of the study are-

- 1) To quantify the parameters related to the agricultural economy at the village level.
- 2) To realise the interconnection between agriculture and the people of the soil.

Methodology and Database

Primary data have been collected from the field using questionnaire with both close-ended and open-ended questions, and through interviews. The respondents were appropriate, representative, open, honest, knowledgeable, have good memories, are not afraid to expose themselves, and do not feel a need to present themselves in any particular light" (O'Leary, 2017). More than 50% of households of the study area are intensively surveyed to get the required primary data. Secondary data have been collected from the Census Report of Hugli 2011, Statistical Handbook West Bengal 2011. Thus, narratives are gathered to collect information about livelihood. Both quantitative and qualitative methods have been used here for the observation, analysis, interpretation and drawing conclusion.

Results and Discussion

The demographic pattern of Chandinagar reflects that there are 51.3% male and 48.7% female population. So far their age is concerned, it is found that about 62.7% belongs to the working age group while 37.24% are within the dependent age group (Fig.3).

In the present scenario, 65% out of total population are literate and the remaining 35% are illiterate. More specifically, female illiteracy is quite high. The level of education shows that nearly 84% of the literate population is educated up to the secondary level while 8% upto higher secondary level and only 8% graduation level (Fig.4). Thus, the major portion of the working population age group has a basic level of education. This is certainly a reason for dependency on agriculture.

In the study area, the proportion of main worker is only 35%. Of these, about 70% are engaged in agriculture. Among the 250 samples taken, 81% of the main workers are male and the remaining females. The occupational structure shows that farmers are highest in proportion (53.2%) followed by agricultural labourer (16.4%), construction worker (9.2%), jewelry worker (4%) and others including petty business,



teaching, fishing, industry, professional service etc (17.2%) (Fig.5).

The salient features of the agricultural system of the study area are as follows:

- 1) Absence of any individual land tenure above 0.669 ha.
- 2) Out of the total agricultural land, about 5% are monocropped, 15% double cropped, and 80% multi-cropped area.
- 3) The major crops include paddy, potato, sesame, jute and vegetables. Paddy is the staple food crop and potato is the principal cash crop.
- 4) About 98% of the cultivated lands are devoted to paddy (36.0%), potato (37.3) and sesame (24.7%). Jute, another cash crop is cultivated in only 1.4% of the total cultivated area.
- 5) Almost an identical percentage of cultivated land can access irrigation facility from subsurface (74%), rivers and canals (14%), and the remaining from both the sources.
- 6) Half of the cultivators are owners (50.4%) and the other half lease-cultivators.
- 7) About 11.5% of the owner-cultivators possess less than 10 cottah of land each, about 47.5% own 10 - 20 cottah, 27.9% 20 - 40 cottah, and 18.3% 40 - 100 cottah of land each.
- 8) About 10.0% of the lease-farmers cultivate in less than 10 cottah of land each, about 46.7% own 10 - 20 cottah, 25.0% 20 - 40 cottah, and 13.1% 40 - 100 cottah of land each.
- 9) About 45% of the farmers depend on purely chemical fertilizer while 55% use both chemical as well as bio-fertilizer.

Here farmers grow mainly food grains and vegetables. A very small amount of jute is also produced as a cash crop. Two important points arise in the harvesting period, one is the selling point of the crop and the other is the mode of transport used to carry the product as these two factors determine the price of the produce. Here 38% of farmers sell their produce directly from the field and 27% are compelled to sell to the money lenders. Only 35% of farmers can sell their produce in the open market and Kishan Mandi (Fig.6). Most of them use a bicycle or paddle van as the mode of transportation of the products.

Primary data as received from the direct interview gives a clear picture of investment in different heads for individual crop and market price for the said as in 2019 (Table -1). Compared to the other crops potato needs more investment for seed and manures. Jute, potato and paddy need much investment for labour. Only sesame does not require any irrigation, pesticide and manures so it is the crop of least investment. Use of machinery is also very low here. After comparing all parameters of investment it can be seen that 49% of total investment is carried out for labour, followed by seed, manures and water while no investment is incurred for transportation purpose (Fig. 7).

As per the input cost, the total cost is the highest in case of potato (Rs.18,200/ bigha) followed by jute (Rs.8380/ bigha), paddy (Rs.7450/ bigha), vegetables (Rs.4600/ bigha) and sesame (Rs.1750/ bigha) (Table - 1). The input components show that paddy is a labour-intensive, water-intensive and manure-intensive crop. Potato seeds are really costly, plus it is also a labour-intensive, manure-intensive and water-intensive crop. Sesame is only a labour-intensive crop while jute is both a labour-intensive and water-intensive crop. Vegetables are

grown all the year round and is both water-intensive, manure-intensive and labour-intensive crops. The market price of the same crops show that it is also the highest for potato (Rs.20,800/ bigha) followed by jute (Rs. 17,600/ bigha), vegetables (Rs.12,800/ bigha), paddy (Rs.9800/ bigha) and sesame (Rs.6500/ bigha). Therefore, the amount of net profit / bigha is the highest in the case of jute (Rs. 9220) followed by vegetables (Rs. 8220), sesame (Rs. 4750), potato (Rs. 2600) and paddy (Rs. 2350). Thus, paddy and potato give a very low profit-margin; however, these two are cultivated on a large scale. Potato market remains very volatile, unpredictable and show wide fluctuations seasonwise. So presently the farmers prefer sesame for secured return. These do not depict a healthy financial condition of the farmers. The net profit is lower than the total labour investment. Farmers themselves act as labour in their fields to increase their income and this become the indispensable part of their livelihood (Table - 2).

Crops are often destroyed by pests, insects, virus, bacteria, animals, and natural disasters. Production is often hampered due to non-availability of irrigation water, and labour in time. They lack Govt. support, and loan facility from cooperative societies and banks, and had to depend on money lenders for timely capital input. Farmers rarely get fair price for their produce and farming proves not equally profitable every year. Poor quality seed, rising price of chemical fertilizers, and crop theft sometimes shatter the morale of the farmers. Govt. should take relevant measures immediately to mitigate the problems by arranging for quality seeds, fertilizers, and agro-machinery, timely supply of irrigation water, controlling the price of chemical fertilizer, fixing the minimum market price for each crop, easing the documentation and rules for agricultural loans from cooperatives and banks, and overall financial support.

Despite many constraints, farmers are still continuing agriculture. They have expressed their feelings that the agricultural fields are the indispensable part of their life; they cannot survive without cultivation; even the senior farmers were very emotional at the time of interview; they believe that they have inherited farming practices from their predecessors and this is their noble duty assigned by God. They will continue it until death. It is also very painful for them to see that the next generation is less interested in farming and agriculture sector but due to very poor profit- margin, they cannot force them as well.

Conclusion

Agriculture is an old profession of mankind from their primitive period. Different new profession emerged with the advancement of human civilisation but agriculture cannot be excluded due to its impact value towards mankind. We have to find out the lacunas of agriculture and the implication of required remedies. The farmers of the study area require institutional and financial support from the government. There should be the provisions of proper irrigation, warehouse and transportation. Proper modern agro-knowledge should be catered to them. In conclusion, it is the hope that shortly it will be ensured that the producer will get the desired remunerative price of the product so that they can continue the job without any hesitation.

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Table – 1: Investment / Bigha of Land

Crop	Paddy	Potato	Sesame	Jute	Vegetables	Total Cost
Seed (Rs)	250	6000	150	130	400	6930
Water (Rs)	1000	1400	0	1200	1500	5100
Pesticide (Rs)	200	500	0	0	700	1400
Manures (Rs)	900	4000	0	50	1000	5950
Machine (Rs)	600	800	0	0	0	1400
Transport (Rs)	0	0	0	0	0	0
Labour (Rs)	4500	5500	1600	7000	1000	19600
Total Investment (Rs)	7450	18200	1750	8380	4600	40730
Production (/ Bigha)	10 Packets (1000 kg)	80 Packets (400 kg)	130kg	400 kg	640 kg	-
Market Price (Rs)	980*10= 9800	260*80= 20800	500*130= 6500	4400* 4= 17600	20*640= 12800	56300

(Source: Field Survey by the author, 2019)

Table – 2: Investment and Profit in Cultivation

Crop	Cultivated Land (Bigha)	Total Production (Average)	Market Price (Rs)	Gross Investment (Rs)	Labour Cost (Rs)	Profit (Rs)
Paddy	134.1	1341 Packets of 100 kg each	13,14,180	9,99,045	6,03,450	3,15,135
Potato	138.85	11108 Packets of 50 kg each	28,88,080	25,27,070	7,63,675	3,61,010
Sesame	92	11960 kg	5,98,000	1,61,000	1,47,200	4,37,000
Jute	5.25	2100 kg	92,400	43,995	36,750	48,405
Vegetables	2.5	1600 kg	32,000	11,500	11,500	20,500
Total	372.7		49,24,660	37,42,610	15,62,575	11,82,050

(Source: Field Survey by the author, 2019)

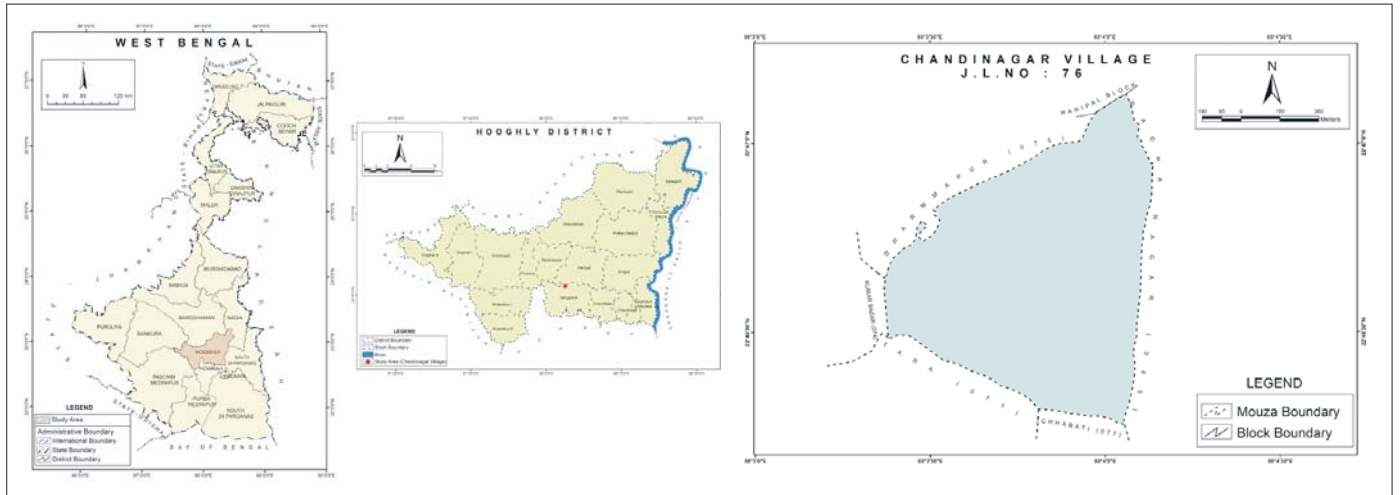


Fig.1: Location of the Study Area: Chandinagar Mouza, Hooghly District, West Bengal

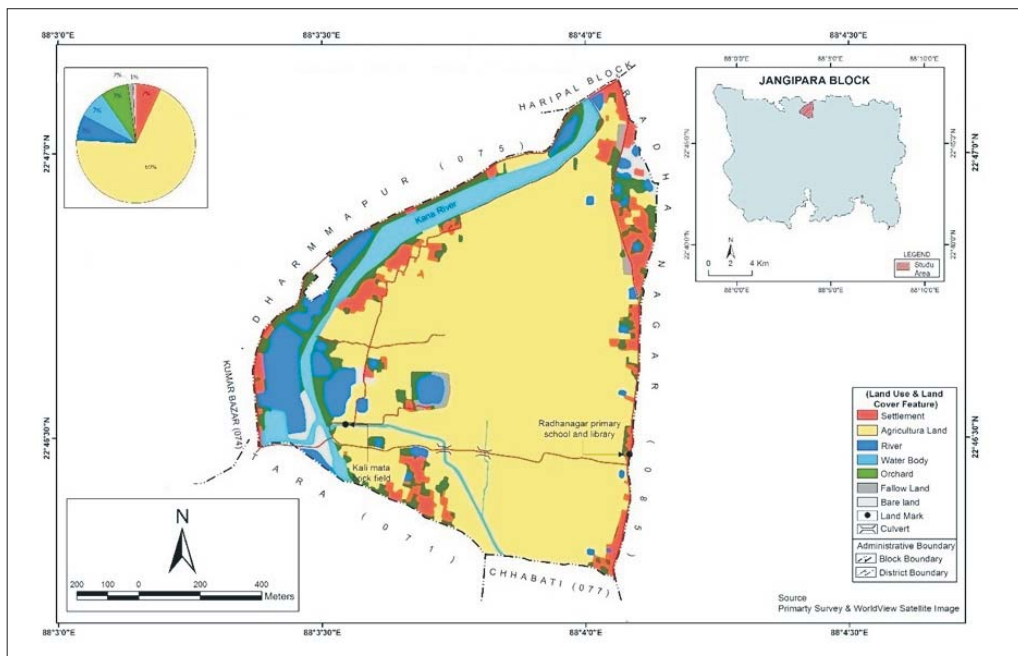
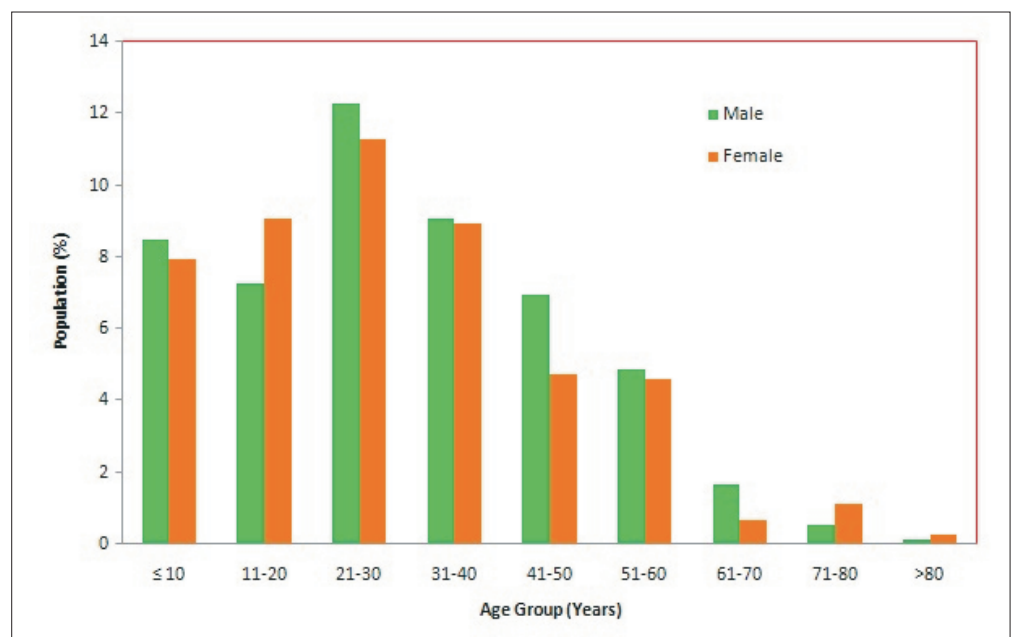


Fig.2: Landuse Pattern of the Study Area

Fig.3: Age Composition of the Villagers



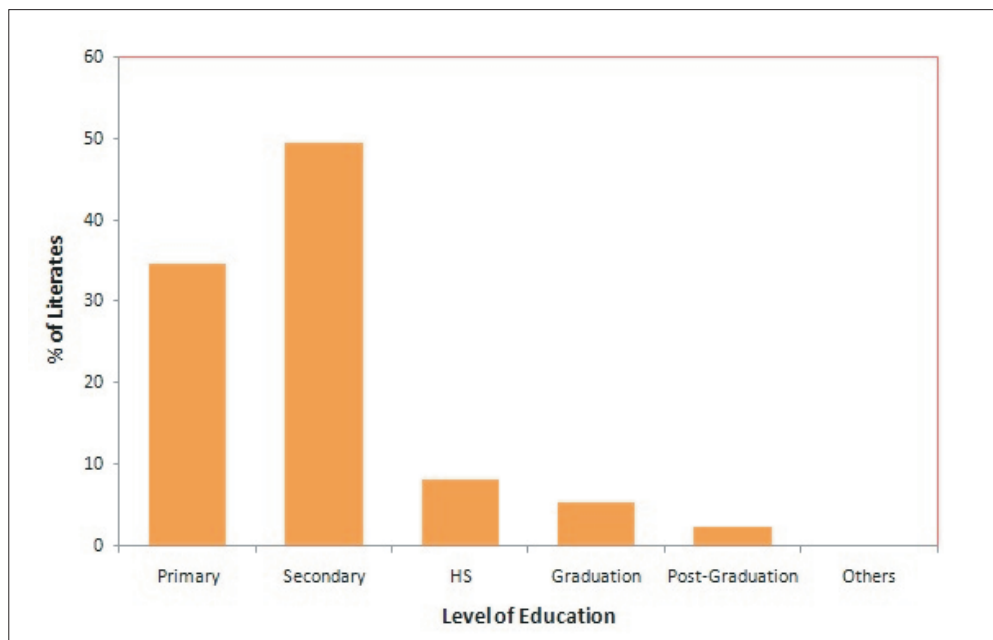


Fig.4: Education Status of the Villagers

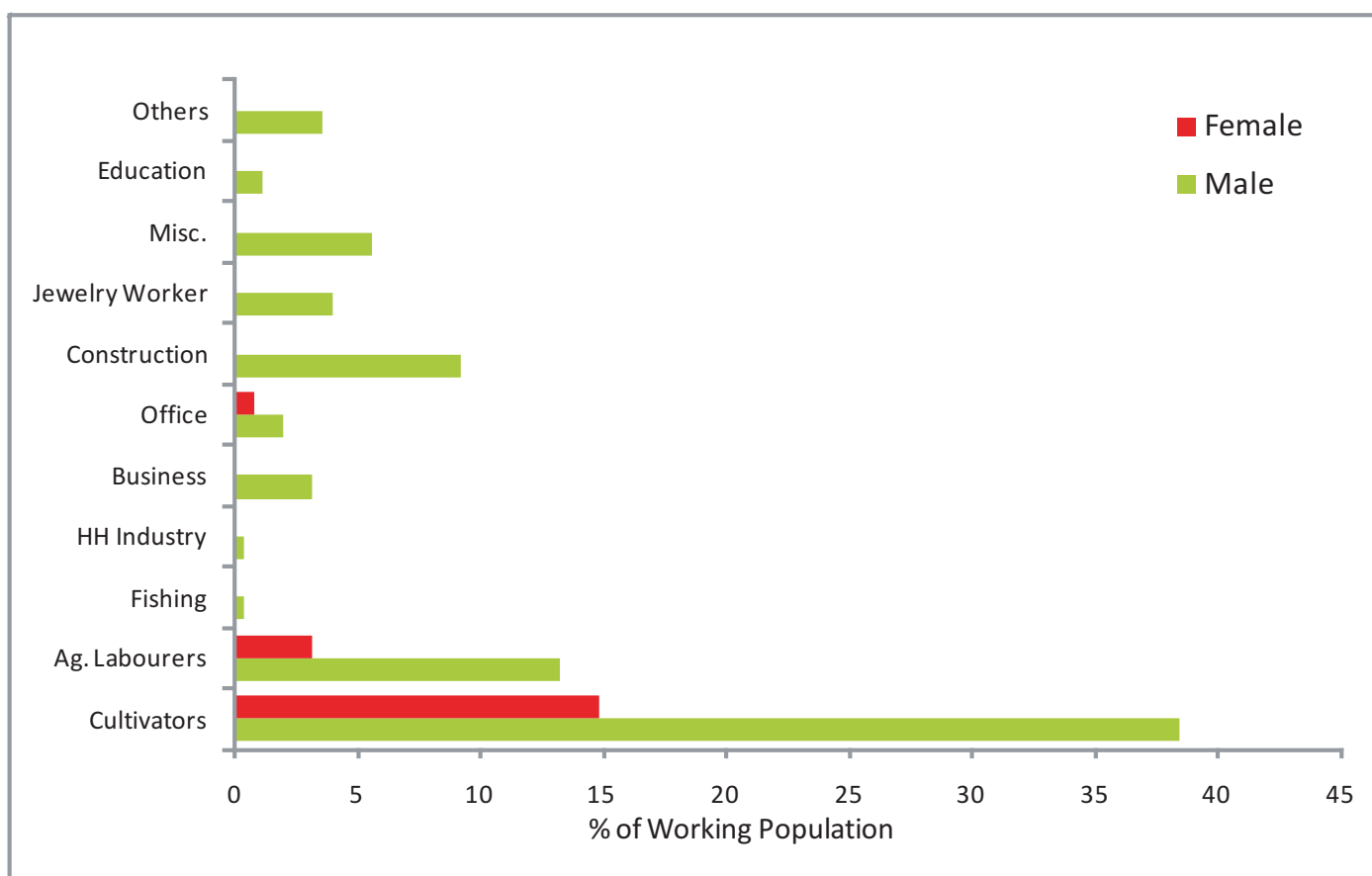


Fig.5: Occupational Structure of the Villagers

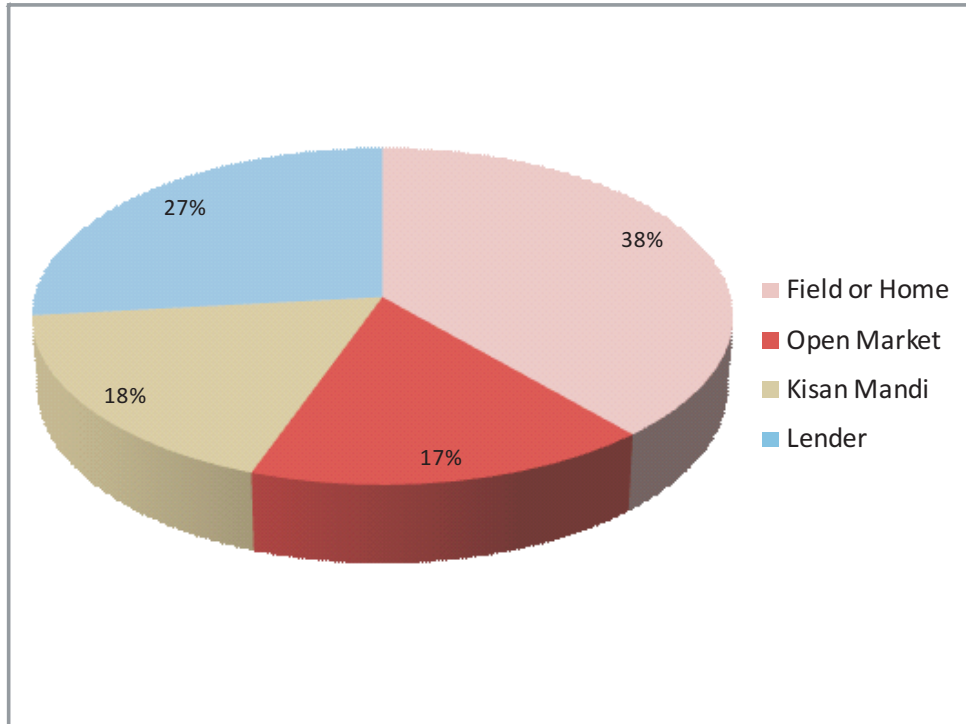


Fig.6: Sell-Points of the Agricultural Produce in the Village

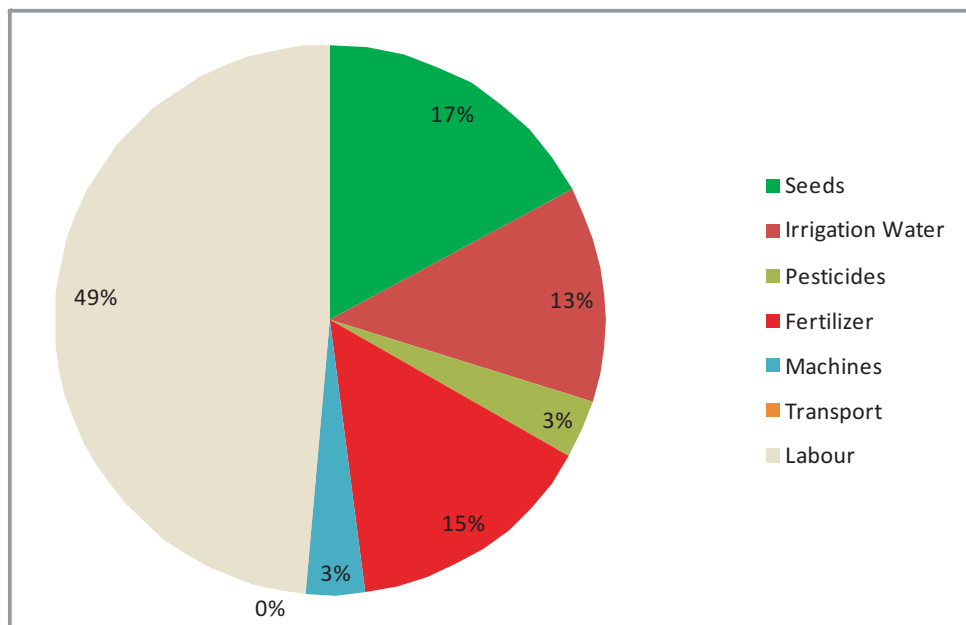


Fig.7: Pattern of Input Cost towards Cultivation



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