

Agriculture Potential Crops Under Red-Lateritic Zone of Jhargram District of West Bengal: A Case Analysis

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Jhargram is a district in the state of West Bengal, India. It was formed on 4 April 2017, after splitting from the Paschim Medinipur district as the 22nd district of West Bengal. Jhargram is a district situated at red and lateritic belt with an average altitude of 81 m above from mean sea level under humid and tropical region of West Bengal state of India. This district is located between 21°52' N and 22°48' N latitudes and between 86°34' E and 87°20' E longitudes and covers an area of 3,037.64 km² out of which 2,68,249 ha is agricultural land. It consists of eight blocks, viz. Nayagram, Jhargram, Sankrail, Jambani, Binpur- 2 and Binpur- 1. The district has its headquarters at Jhargram. Jhargram is famous for its wooded beauty and topography culminating in the hill ranges of Belpahari, Kankrajhor to the north and Subarnarekha to the south. It is a favorite destination for people who love forests. The ancient temples, royal palaces, and folk tunes and rhythms make this area attractive (<https://jhargram.gov.in/about-district>).

Soil in Jhargram is mainly sandy loam in nature. Different Forest regions of Jhargram district is covered with red and lateritic soil, which are rich in iron and aluminum oxides, which gives them their distinctive reddish color. They are less fertile than alluvial soils, but can be used to grow crops like groundnuts, pulses, and certain types of millet (Mukherjee, 2024). The soils were transported to the western districts of West Bengal by rivers from the Chhotanagpur plateaus. The analysis reveals that the sand content ranges from 46 to 76% where the site Kankrajhor forest range has the lowest value and the Belpahari Forest Range has the highest value. The soil has the following characteristics:

- ❖ Fertility status: The soil has low levels of nitrogen, phosphorus, potassium, and organic content (poor fertility).
- ❖ Texture: The soil has a coarse texture.
- ❖ Low water retention: The soil has a poor water retention capacity due to sandy in nature.
- ❖ pH: The pH of the soil varies from 4.6 to 6.7

- ❖ Erosion prone: The soil is prone to erosion due to the undulating terrain and dry situation.

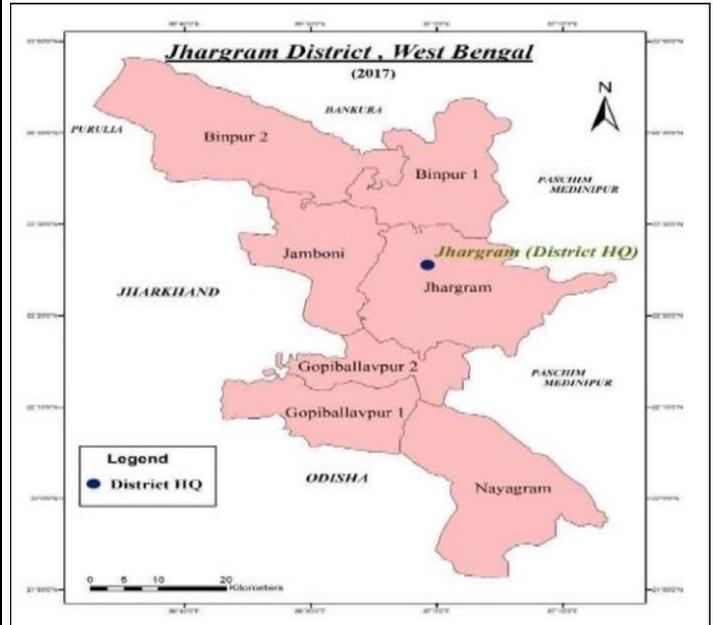


Fig 1 Map of Jhargram District

(Source: Paul and Dey, 2022)

Farmer need a sense of income security in view of ever-growing input costs and the rising family expenses on health and education. Choosing right kind of crop under suitable agro-climate become challenging due to shifting rainfall and other weather pattern (Mukherjee, 2016). The district produces surplus cereals, vegetables and plantation crops. The production of pulses and oilseeds meets only 14% and 25% of the district requirement respectively. The net sown area is 168448 ha (55.45 % of total geographical area) with cropping intensity of just 136 % and irrigation penetration of 36.34 %. The district being moisture stress innovation practices need to be adopted. The irrigation schemes like sprinkler and drip maintenance should be given larger emphasis for improving the efficacy of the system. Moreover, few crops which still become part of farmer agriculture practice in different block of jhargram district are:

- ❖ **Rice:** Become prominent in most of the block during kharif season. And farmer's mostly keep fallow after kharif rice. However, mustard and

sesame cultivate in few areas of Jhargrame, Binpur I and II. Rice-rice system follow in few areas, where assure irrigation available.

- ❖ **Pulses:** Mung, red gram, lentil, and green gram are grown as per availability; however, this needs proper intercultural operation.
- ❖ **Oil-seeds:** Mustard, sesamum, and groundnut become very prominent crop and farmers become very much familiar with this during rabi season.
- ❖ **Vegetables:** Bitter gourd, cabbage and cauliflower, kharif onion and spinach play important role in winter as well as in pre-kharif period.

In addition to these, the agro-climatic conditions of Jhargram district offer excellent scope for development of plantation (Citrus, mango, Cashew nut etc.) and horticulture crops.' Sericulture, bee keeping and promotion and production of medicinal plants offers good potential for development. Jhargram is also known for its forests, which produce Sal, Jhaw, Akashmoni, Eucalyptus, Mahua, Haritaki, Bayra, and other products. The forests also produce minor forest products like Sal seeds, Mahua, and medicinal plants. Further, agroforestry helps in creating additional source of income to the farmers and help in carbon sequestration. Multipurpose tree species with short-, medium- and long-term returns are encouraged, so that farmers may get additional income at regular intervals. These would include fruits, fodder, medicinal, timber species.

Area based approach for development and conservation of natural resources through promoting Integrated Farming Systems (IFS). IFS focuses on multi cropping, rotational cropping, inter-cropping and mixed cropping practices with allied activities like horticulture, livestock, fishery, apiculture etc. To enable farmers not only in maximizing farm returns for sustaining livelihood, but also to mitigate the impact of drought, flood or other extreme weather events. The benefits of IFS are as under: (a) Increasing agricultural productivity in a sustainable manner by adopting an appropriate farming system-based approach (b) To minimize the adverse impact of possible crop failure due to drought, flood or un-even rainfall distribution through diversified and composite farming systems (c) Enhancement of farmer's income and livelihood support for reduction of poverty in jhargram blocks.

Various observation and study revealed that, the income generated from I acre fruit and vegetables cultivation is 03 times that of paddy from same unit of land area, while the income generated due to floriculture is 4 times with much less water consumption. Hence motivation of farmers to diversify is the key in this newly form district. There is a huge scope for bamboo cultivation in the wasteland of Jamboni, Binpur II, Binpur-I, Sankrail, Nayagram and GOPI-I. Suitable planting materials and extension services for exploiting private wasteland are not easily available. Hence Forest Department / Development Department should ensure the availability of all these materials including distribution of seedling in all 8 blocks.

With the above observation, we can achieve the objective of sustainable farm income to the resource poor farmer's, via following measures, which should be sort out at the utmost level with necessary interference from Government, agriculture and it's allied sector:

- ❖ Increase in crop and livestock productivity.
- ❖ Resource use efficiency - reduction in cost of production by optimization and mobilization of limited farm resources.
- ❖ More area under irrigation - Current irrigated area appox.268677 ha and percentage of irrigated area just 37 - 40 % area only.
- ❖ Increase crop diversification and enhancing cropping intensity from 136 % to at least 200 %.
- ❖ Diversification to high value plantation and forest species.
- ❖ Lucrative prices on farmers' produce.

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