

Agro-Economic Alerts

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For kind attention of:

The Hon'ble Prime Minister's Office,
the Ministry of Agriculture and Farmers Welfare,
and all others interested

Emerging Critical Situations and Threats in India's Agricultural Economy

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Alert 1: Bhagalpuri Zardalu Mango Faces Trouble Despite Geographical Indication Tag

Key highlights

- Zardalu mango, a variety of *Mangifera indica* L., is a commercial variety mainly grown in Bhagalpur, Banka and Munger districts of Bihar. It is a popular fruit with unique odour and taste.
 - The mango variant, which is popular and highly preferred for its thin peelings and aroma, Zardalu is an easily digestible variety of mango, having shelf life of 7.3 days.
 - Having accepted the unique merit and characteristics of the produce, the Geographical Indicator (GI) tag was granted to Bhagalpuri Zardalu by the Registrar of Geographical Indication, Chennai on 18th May, 2018.
 - Of late, mango merchants have been facing problems regarding the high prices and tested reliability of planting materials. They are also not sure of the quality of insecticides. This has adversely affected the fruiting proportion, quality, and shelf life of the produce.
 - At the same time, frequent attack of *Madhuwa* pests during flowering stage and lack of awareness about recommended doses of prescribed insecticides/fungicides is harming the crop.
 - Further, lack of an incentive and exploitation by traders has made farmers skeptical in bringing more area under the Bhagalpuri Zardalu.
 - These reasons have led to a shortfall in demand of Zardalu mango by nearly 50 percent, despite it having the GI tag.
- stretching from Pirpainti, Bhagalpur district to Banka, Munger and some parts of Lakhisarai districts. On the southern side of river Ganges, the length of coverage of mango plantation (including Zardalu) stretches to about 160 kms. Roughly, about 850 hectares of land is under Zardalu mango in this region.
- As per Bihar Agricultural University (BAU), 90 mango trees are grown per hectare of land with an average productivity of 135 quintals/hectare, i.e., 1.5 quintals/tree.
 - If the price of Zardalu prevailing in the year 2018 (Rs. 30 per kg) is considered for economic calculation, then having deducted the expenses (insecticides, washing, maintenance and harvesting along with the amount to compensate likely losses due to lower fruiting every alternate year estimated at Rs. 1,20,000 per hectare for two years), the net return is calculated at Rs. 2,85,000 (at a minimum) per hectare.
 - The occurrence of floods in the years 2013 and 2016 had caused irreparable losses (on the southern side of river Ganges) in large mango growing areas. In particular, those Zardalu growers were affected, who had planted saplings just two to three years back (first fruiting in Zardalu tree takes place after four years of its planting).
 - Some of the other reasons for low commercial demand of Zardalu mango, despite its unique fragrance and bona-fide taste are – a bit larger size of its seed, less flesh/pulp, lower proportion of juice, nearly three times more quantity of it needed to provide equal contentment like Malda (another variety of mango), and price being about 1.5 times more than Malda.

Observations

- Zardalu mango is grown in black loamy soil

Figure 1: Bhagalpuri Zardalu Mango and Malda Mango

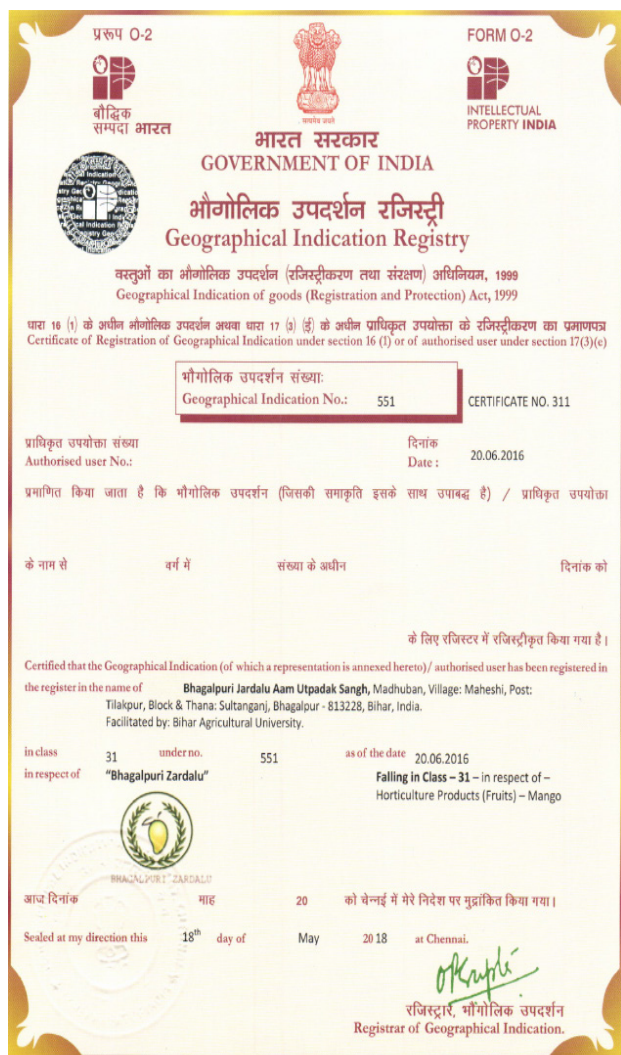


Source: www.jagranimages.com, www.aitcofficial.org

Actions suggested

- In order to expand the area under coverage of this variety, special initiatives should be undertaken by the Directorate of Horticulture, Government of Bihar.
- Further, Agricultural and Processed Food Products Export Development Authority (APEDA) should explore the possibilities of improvement in the marketing of this variety of mango.
- BAU should continue to undertake research related to the regulation of flowering, maintenance of colour, reduction in the size of seed and increase in the proportion of pulp and juice through hybridization.
- A distribution centre for mango should be established at Bhagalpur in the first phase, and later on, one centre each may be installed at Munger and Patna.
- Duly authorized and scientifically administered insecticides and planting materials sale shops/counters should be opened at each district headquarter of Bhagalpur, Munger, Banka and Lakhisarai.
- For extenuating the miseries of mango growers caused due to floods, embankments should be constructed at Champa Nala (Near Bhagalpur) and Kolgamma (near Sultanganj, district Bhagalpur).
- The particular characteristics, distinguished taste, and unique aroma of Bhagalpuri Zardalu need to be propagated at state, national and international levels. Further, farmers should be educated and made aware of the high net economic returns from Zardalu mango.

Figure 2: Certificate of Geographical Indication Tag for Bhagalpuri Zardalu Mango



Source: AERC Bhagalpur

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- Prof. M K Badhwani, Head of the Department-Cum-Senior Scientist, Department of Agricultural Economics, BAU, Sabour, Bhagalpur.
- Sri Ashok Kumar Choudhary, Mango Man, President of Bihar Mango Producers' Union, Maheshi, PO – Tilakpur, Sultanganj, Bhagalpur, Mob: 9934873873.
- Various news articles and data from the Ministry of Agriculture and Farmers' Welfare.

(Cover Photo: www.cdn.shopify.com)

Alert 2: Assam's Jagiroad Dry Fish Market Calls for Attention

Key highlights

- Jagiroad in Assam is a small industrial township in Morigaon District and is situated some 50 kilometers from the state capital, Guwahati, towards the eastern side.
- Jagiroad dry fish market is considered one of the largest dry fish markets in Asia, handling more than 900 metric tonnes of dry fish per

annum with transactions worth more than Rs. 100 crore.

- The demand for dry fish is very high in all the north eastern states except Sikkim. Some of the dry fish are even exported to Bhutan, Malaysia, Singapore and other South Asian countries.
- The products move through two channels,

i.e. dry fish market to fish processors and dry fish market to wholesalers, retailers and then to the consumers. No retail sale takes place in the market. At the minimum, one sack of dry fish has to be bought by a customer.

- The market generally operates for three days in a week, viz. Wednesday to Friday and more than 5000 people are directly or indirectly associated with the trade. The peak season of the market is from November to February and off-season trading is limited to nearly 30 percent of the total volume of transaction.
- However, during market days, the roads remain blocked for hours by the dry fish laden trucks/vehicles. The market has come up haphazardly with no proper planning, giving rise to a number of hygiene problems both for the inhabitants of the locality and the environment.
- As per personal interviews it was found that, major problems confronted by the dry fish market of Jagiroad include inadequate storage facilities, insufficient market infrastructure,

non-adoption of modern packaging technology and lack of government initiatives for improvement of the market conditions.

Observations

- The Jagiroad dry fish market was set up in 1958 and whole of its trade is controlled by the Dry Fish Merchant's Association (DFMA). In the beginning, the market was created to meet the local needs, but gradually the neighboring states like Manipur, Meghalaya, Nagaland and Tripura entered the market and Jagiroad became an important dry fish trading centre for the entire northeast. Presently, more than 150 shops are operating under the DFMA.
- Different varieties of fish enter into this market from different states of India viz., Gujarat, Andhra Pradesh, Kerala, Tamil Nadu, West Bengal, Maharashtra, Uttar Pradesh and Odisha. Within the State, fish comes from the districts of Morigaon, Barpeta, Dhemaji, Sivasagar, Jorhat and Nalbari.

Figure 3: Office of Dry Fish Merchant's Association and a Truck Laden with Dry Fish



Source: AERC Jorhat, Assam.

- One of the main reasons for the development of the market could be the good rail and

road connectivity with Jagiroad town. The demand for dry fish is also increasing due to

its nutritive value and taste and it constitutes a special item of food dishes in many parts of the region. Further, dry fish is also used extensively as poultry feed for its rapid growth and the farm owners even believe that it can protect the birds from the attack of some common viruses.

- The market has witnessed marked improvement during the last 20 years as pointed out by the DFMA. With the exemption from GST in recent time, the market has further expanded, thereby covering large residential areas in the vicinity of the township.
- However, the development of this market has also resulted in some of the side-effects, majorly the inconvenience caused to the local residents.
- Further, inadequate infrastructure and improper planning has added to the woes of fish merchants.

Actions suggested

- At the behest of government patronage, the Jagiroad DFMA may take initiatives to manage the market activities in a more

scientific manner, with a greater focus on the creation of necessary infrastructural support including provision for good drainage system.

- Adequate storage facilities, adoption of modern packaging technology and creation of facilities for the processing of dry fish would further prove to be conducive for Asia's biggest dry fish market.
- Training programmes should be organized on the handling of dry fish meant for the traders, which in turn would increase the efficiency of the entire marketing system.

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Information sources:

Field visits and personal interviews of members of Dry Fish Merchant's Association.

Alert 3: Challenges and Opportunities of the System of Rice Intensification (SRI) in Madhya Pradesh

Key Highlights

- The traditional rice cultivation practices have undergone many changes with time. For instance, the cumbersome labour-oriented practices were replaced by mechanical interventions.
- Hence, in order to identify the bottlenecks in adoption of a modern practice – the System of Rice Intensification (SRI) - a study was conducted in Mandla and Balaghat

districts of Madhya Pradesh and a sample of 120 respondents (60 beneficiaries and 60 non-beneficiaries) was selected. The study pertains to the primary data collected for the agriculture year 2018-19.

- SRI practices result in a sharp decrease in inputs such as seeds, chemical fertilizers and water supply which directly affect profitability (Ram 2018). It is a different way of cultivating rice though the fundamental practices remain more or less the same as adopted in

the conventional method. It just emphasizes altering of certain agronomic practices of the conventional way of rice cultivation.

- However, it was found that along with the advantages of SRI, there were a few major constraints faced by the beneficiary households related to labour and the supply of inputs.

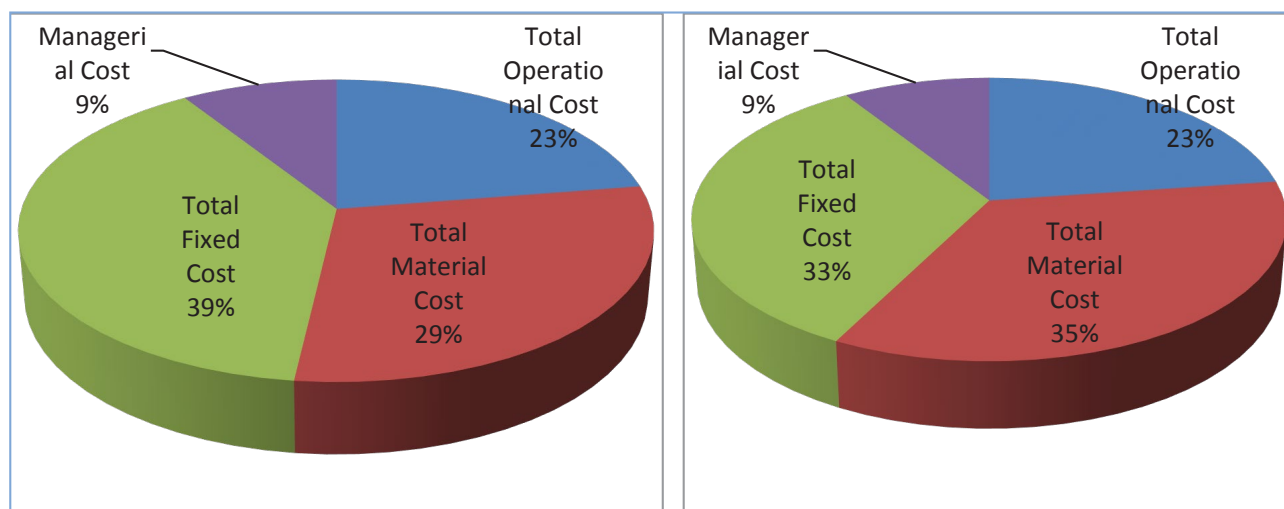
Observations

- SRI method of sowing is labour intensive because only one plant is to be planted on each hill with proper plant to plant and row

to row distance which requires more number of skilled labourers. This resulted in huge demand for human labourers at the time of transplanting. This has direct effects on the cost of cultivation. The cost incurred on human labour for an average beneficiary was found to be 21.85 percent higher than the non-beneficiary.

- The cost of cultivation was found to be marginally higher in SRI (1.4 percent) as compared to the traditional method of sowing. This was mainly due to higher proportion of fixed costs incurred on the farms.

Figure 4: Contribution of Different Costs in the Calculation of Cost of Cultivation in SRI (1) Beneficiary Farmers and (2) Non-Beneficiary Farmers



Source: AERC Jabalpur

- In total variable cost, the share of total operational cost was lower as compared to the material cost which revealed that the beneficiary households as well as non-beneficiary households were adopting recommended technologies partially (Figure 4).
- Major proportion of operational costs in SRI accounted for the mechanical cost, while among the material cost items, the cost of fertilizers was the major cost.
- The drastic reduction in expenditure on seed

in SRI intervention was observed, which directly reduced the cost by 8.65 percent as compared to traditional method of sowing.

- This clearly revealed that due to the adoption of SRI system of rice cultivation there was a reduction in cost of production, enhancement in productivity, and due to early harvesting, farmers fetched higher price for their produce.
- The marginally higher price (1.31 percent) of produce in the market due to early harvest in SRI method of sowing, resulted into increase

in gross income (20.97 percent) as compared to traditional method of sowing.

- Marginal gap was observed when SRI method (farmer practices) was compared with recommended package of practices of SRI of rice cultivation. Cost-benefit ratio was found to be identical under both the levels of adoption due to unavailability of labours at the time of performing various farm operations, high labour charges, lack of skilled labour, lack of irrigation facility, inadequate supply of electricity and lack of skill oriented training regarding SRI method of rice cultivation.
- The major constraints as expressed by the majority of beneficiary rice cultivators were unavailability of labourers at the time of requirement of performing farm operations, high labour charges, high cost of input materials, lack of capital, high price of seed, lack of irrigation facility, lack of skilled labour, inadequate supply of electricity and lack of training.
- The comparative cost and profitability of SRI method on beneficiary farms as per recommended package of practices revealed that the cost benefit ratio is more or less identical in both the systems. This leads to the conclusion that the present level of adoption of SRI method is quite profitable. But there is still a scope to reduce the cost of cultivation by reduction in cost of seed used.

Actions suggested

- Training on nursery management and planting method should be given to the farmers. An extra emphasis should be given for optimal use of the seeds.

- Better management of rainwater and in-situ moisture conservation techniques should be provided at farm level through demonstration. Further, supply of quality bio-fertilizers should be ensured.
- To improve the efficiency of various farm operations and up-scaling the production as well as profitability, the rice-transplanter should be introduced through custom hiring system. It would improve the accuracy and ensure timely operations at higher scale. Through this, the expenditure on human labour would be curtailed, which is a major cost in cultivation of rice through SRI.

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