

# Agro-Economic Alerts

*Aiding the future of India's farmers and agriculture*



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**

**Issue 9, January 2019**

**Alert 1** – Onion Price Increase and Volatility Likely Due to Shortage

**Alert 2** – Problems of Palk Bay Fishermen in Tamil Nadu

**Alert 3** – Problem of Non-Germination of Certified Seeds in Bihar

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# Alert 1: Onion Price Increase and Volatility Likely Due to Shortage

## Key highlights

- The state of Maharashtra has declared drought in 151 talukas this year (2018-19), including eight talukas in the Nashik district itself.
- Inadequate rain and water scarcity have led to a decline in the summer onion cultivation to 84 thousand hectares. The area under cultivation for summer onions has halved this year.
- Maharashtra, the largest producer of onion in the country accounts for about 30 percent share in total production of the nation (2016-17). Markets in Nashik district are the major suppliers of onion to Mumbai, Gujarat, Delhi and other northern parts of the country and any scarcity or shortage of summer crop from Nashik usually sends onion prices spiralling in *mandis* across the country.
- Maharashtra state agricultural department data shows that onion production is likely to dip to a five-year low in the coming months. Production of onions in the last Rabi season of 2017-18 in the state was 61 lakh metric tonnes, which is likely to decline to 32.9 lakh metric tonnes in Rabi 2018-19.

## Observations

- According to many farmers in Maharashtra, the area under onion cultivation in this Rabi season has dipped not only due to the drought but also because they were hesitant in sowing onions after seeing the present crash in prices. Hence, the farmers in the area have resorted to grow other vegetables in the little quantity of water that was available.
- Onion farmers of Nashik district, who are struggling to even recover production costs

now, had been eyeing a bumper crop earlier as the area under onion cultivation had almost doubled in four years due to an upswing in prices.

- The cultivation had picked up pace after the average wholesale price of the cash crop had hit an all-time high of Rs. 5,700 per quintal in August 2015. The crop area in Nashik increased from 1.24 lakh hectares in 2013-14 to 2.28 lakh hectares in 2017-18. Correspondingly, production doubled from 21.42 lakh tonnes to 46 lakh tonnes. Almost 80 percent of the rise in the area under onion crop took place in the past two years, after which the farmers quickly expanded the area under onion cultivation.
- Even after the announcement of a special scheme by the government in the budget to check the price volatility of tomatoes, onions and potatoes, farmers experienced very high volatility in onion prices due to its perishable nature. The average price of onion in Lasalgaon market during September 2018 was Rs. 1300 per quintal.
- The prevailing onion prices range from Rs. 500-700 per quintal in Mahuva, Rs. 400-550 per quintal in Ahmedabad and Rs. 300-400 per quintal in Nashik market.
- To forecast the prices of onion for the harvesting and market arrival in the months of February and March 15, 2019, an econometric analysis of modal prices of onion in Mahuva, Ahmedabad and Nashik Market for a period of last 14 years was carried out by AERC, Vallabh Vidyanagar, Anand.
- On the basis of analysis, market price and weather condition, it was observed that the price of good quality onion is expected to remain in the range of Rs. 700-850 per quintal

in Mahuva, Rs. 550-750 per quintal in Nashik and Rs. 750-950 per quintal in Ahmedabad during February and March 15, 2019, if current market sentiments continued.

- Thus, the farmers are advised to consider these facts while deciding the sale and store of onion crop in Rabi 2019. Centre has also premeditated the relationship between those selected markets. Based on the Johansen

multiple cointegration procedure, the integration between the markets was analyzed (Table 1). Unrestricted co-integration rank tests (Trace and Maximum Eigen value) indicated the presence of all selected three co-integrating equation at 5 percent level of significance, which in layman terms means that these markets were having long run equilibrium relationship.

**Table 1: Results of Multiple Cointegration Analysis for Onion**

Hypothesized No. of CE (s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Probability**
None*	0.154793	66.95601	42.91525	0.0000
At most 1*	0.108259	37.52555	25.87211	0.0011
At most 2*	0.095029	17.47415	12.51798	0.0068

Trace test indicates 3 cointegrating equations at the 0.05 level

\*denotes rejection of the hypothesis at the 0.05 level

\*\* MacKinnon-Haug-Michelis (1999) p-values

**Source:** Calculated by the authors, AERC VVNagar, Anand.

- The coefficients show how quickly variables return back to equilibrium. It was found that all onion markets came to short run equilibrium as indicated by the level of significance and the rapid speed of adjustment. In the long run, Ahmedabad onion market prices were influenced by one month lagged price of own market as well as Nashik market. Nashik market prices were influenced by one month lagged prices of Ahmedabad. Mahuva market prices were being influenced by one month

lagged own price and Ahmedabad market prices.

- In order to know the direction of causation between the markets, Granger Causality Test was employed (Table 2). It was observed that there was a bidirectional influence on onion prices of Nashik and Ahmedabad. Hence, Ahmedabad Market and Nashik Market influenced each other in terms of onion. Mahuva onion price showed unidirectional causality with Nashik.

**Table 2: Pair-Wise Granger Causality Test Results for Onion Wholesale Prices**

Null Hypothesis	Observations	F- Statistics	Probability
MH does not Granger Cause ADI	178	1.41298	0.4262
ADI does not Granger Cause MH		1.95637	0.1445
NS does not Granger Cause ADI	178	8.77015	0.0044
ADI does not Granger Cause NS		9.52849	0.0001
NS does not Granger Cause MH	178	1.50027	0.226
MH does not Granger Cause NS		8.41098	0.0036

**Source:** Calculated by the authors, AERC VVNagar, Anand.

- To assess the presence of price fluctuations in the different markets for Onion ARCH-GARCH analysis was carried out for the wholesale price series of Ahmedabad, Mahuva and Nashik onion markets, and the presence of persistent fluctuation was found. The results confirmed that there was high volatility in onion prices in these markets.
- Hence, high onion price volatility was observed in all selected markets. Uncertainty in weather conditions, heavy/low and untimely rains, rising temperatures were found to be the major reasons affecting crop production. Besides, low stocks facility and delayed shipments added to problem of volatile prices.
- A consistency in export policy of onion should be maintained by keeping in view the excess production/supply.
- Proper storage facilities for onion should be developed at regional hubs and adequate number of processing/dehydration units should be installed to increase onion demand in the market.
- Awareness about the use of dried/dehydrated onion among the consumers should be raised through consumer awareness programmes.

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### Actions suggested

- There is a need to establish Market Information Cells (MIC) to generate market information and market intelligence which would provide information to farmers in advance, in order to help them in marketing of their produce.

### Information sources:

Various news articles and data from the Ministry of Agriculture and Farmers' Welfare.

(Cover Photo: Daily News, November 3, 2016)

## Alert 2: Problems of Palk Bay Fishermen in Tamil Nadu

### Key highlights

- Palk Bay is the hub of much demanded rare marine resources such as Cephalopod and Crustacean and about 85 – 87 percent of Palk Bay average fish catches were of these varieties (CMFRI, 2016-17).
- Since 1965, mechanized trawling has been initiated in the Palk Bay with government loans and subsidies. The fish catch was huge compared to the catch by the usage of gillnets. Hence, the trawling brought in high profits and became very popular.
- Trawling in the bay is a critical problem for the fragile ecosystem of the bay as trawlers employ large nets that sweep the ocean floor, trapping not only non-target organisms but also a lot of young fish and corals, affecting the breeding cycle and leading to the depletion of marine resources. The trawlers and motor boats used also have an effect on marine food chain by damaging planktons and other ecological organisms on sea surface.
- After about five decades of trawling, the deserted Palk Bay has now forced the fishermen to cross the borders to catch the marine resources from Sri Lanka side. Sri Lanka has a rich marine resource backed by a ban on trawling.
- This situation may also create political and diplomatic ripples between India and Sri Lanka.

**Figure 1: Map Depicting Palk Bay and Indian and Sri Lankan Border**



Source: [www.casmbenvis.nic.in](http://www.casmbenvis.nic.in)

### Observations

- Palk Bay fishermen in Tamil Nadu have usually been in news, mostly because of crossing over the International Maritime Boundary Line (IMBL) between India and Sri Lanka.
- However, the socioeconomic pressures and struggle for survival driving Palk Bay fishermen to overstep boundaries have not been looked at closely.

**Table 3: Number of Mechanized Trawlers at Different Centers of Tamil Nadu and Approximate Number of Boats Involved in Cross Border Fishing**

Sl. No.	Mechanized Centre	No. of Trawlers			Total	No. of Cross Border Boats
		Big (48-60 ft)	Medium (40-48 ft)	Small (35-40 ft)		
1	Kallivayalhattom	0	50	75	125	0
2	Mallipattinam	0	20	55	75	0
3	Sethubavachathiram	0	40	60	100	0
4	Kottaipattinam	0	107	210	317	60
5	Jagadhappattinam	0	120	230	350	65
6	Thondi	0	1	6	7	0
7	Launchadi	0	43	18	61	0
8	M. V. Pattinam	0	47	20	67	0
9	Mandapam	0	100	270	370	110
10	Pamban	45	60	15	120	35
11	Rameswaram	200	350	120	670	250
	Total	245	938	1079	2262	520

Source: Kasim, Central Marine Fisheries Research Institute (CMFRI), 2015

- Maximum of cross border fishing is by the boats from Rameswaram because of the geographical peculiarity. Their only option is to move towards north and because of their proximity to IMBL, there is a very high likelihood of crossing it.
- Supporting this fact, a Central Marine Fisheries Research Institute (CMFRI) study (Kasim 2015) affirms that maximum number of mechanized trawlers (670) are from

Rameswaram and only Rameswaram and Pamban fishing centers in Tamil Nadu have big (48-60 ft) trawlers (245) (Table 3).

- The Palk Bay fishermen often risk their lives and cross the IMBL rather than returning empty-handed. However, the Sri Lankan Navy is always on alert, and have either arrested or destroyed fishing nets and vessels of those who have crossed the line.

**Figure 2: Fishing Through Trawlers in Deep Sea**



Source: [www.ecozine.com](http://www.ecozine.com)

### **Actions suggested**

- Oneway of preventing boundary transgression could be equipping the fishermen for deep sea fishing.
- Number of trawlers should be regulated. Further, the number of Indian trawlers that are allowed to operate beyond the median line specifying the maritime boundary should be restricted.
- The number of fishing craft and their technical capacity must be limited.
- Special provisions could be made to protect the interests of traditional fishermen. The focus should be on the enrichment of marine

resources and a qualitative improvement in the lives of coastal people.

- Dr. APJ Abdul Kalam had once opined that an apparent modus vivendi for Indian fishermen and their Sri Lankan counterparts could be to fish in the Palk Bay and Straits on alternate days. This idea could be worked upon.

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### Information sources:

Hussain Mohammad Kasim (2015), Resources and

livelihoods of the Palk Bay: Information from India & Sri Lanka, Central Marine Fisheries Research Institute, Chennai, August 2015.

## Alert 3: Problem of Non-Germination of Certified Seeds in Bihar

### Key Highlights

- During the current year (2018-19), non-germination of seeds (up to 60 percent) was found in the germination tests held at some of the government seed farms.
- In the Zonal Seed Review Meeting for Rabi 2017-18, the Ministry of Agriculture & Farmers Welfare issued certain guidelines for the assessment of crop variety and availability of certified/quality seeds.
- Accordingly, excess seed was advised to be tied up/supplied to the deficit states and all the states were advised to prepare proper Seed Rolling Plan (SRP) to produce the required crop varieties' seeds.
- While preparing the SRP based on the crop area, seed rate per hectare and desired Seed Replacement Rate (SRR), the required certified seed quantities were worked out.
- All the states were instructed that pulses seed produced under Seed Hub Programme (SHP) by different Krishi Vigyan Kendras (KVK) and Indian Council of Agricultural Research (ICAR) or State Agricultural Universities (SAUs) should be certified by seed certification agencies. State Seed Corporations (SSCs) would then procure and supply the seeds to the farmers.
- However, the lifting percentage of breeder seeds allotted to Bihar had remained at 86.37 percent during Kharif 2017.

### Observations

- Initiatives taken by the Bihar government not

only include promotion of special quality seeds for new crop varieties, but also the provision of training to farmers for quality seed production. Seed storage and processing related infrastructure facilities have also been created by the Bihar State Seed Corporation (BSSC) in order to facilitate higher production and minimize dependency on seed imports.

- During 2013-14 to 2017-18, there was hardly any case of non-germination of certified seeds in Bihar, particularly in the districts of three divisions, namely Bhagalpur, Munger and Purnea.
- However, the data (for 2016-17) showing distribution of certified seeds, had revealed deficits in the availability, supply of seeds meant for Kharif crops (paddy, maize, *arhar*, *moong*) and seeds of Rabi crops (wheat, maize, gram, pea, *masoor*, rapeseed/mustard). The gaps in supplies ranged from about 26 percent to 86 percent for Kharif crops, and about 45 percent to 97 percent for Rabi crops.
- As per existing provisions, seeds are given to BSSC by the government seed production centres only after meeting the pre-requisite of germination tests (based on random sampling). It means, the State Agriculture Department and its agencies are not responsible for non-germination of certified seeds.
- One of the identified reasons has been the excess of moisture content in seeds of paddy and wheat. In case of paddy, generally the level of moisture content in the seed made available to BSSC is 14 percent, whereas the

standard level is 13 percent. In case of wheat, the desired standard level of moisture content (during March-April) is 9 percent, whereas the seeds made available to BSSC contain quite higher percentages of moisture.

- To check the adverse effects of high moisture content, dehumidifier has been installed in some of the seed godowns of the state very recently. There are six godowns in Bhagalpur division, five in Begusarai, 22 in Kudra under Kaimur district and one in Hajipur.
- It was found that there was lack of desired and *pucca* threshing floors and the required storage facility. It was also found that there was late sowing and on certain occasions, seeds provided to the Government Seed Parikshetras (Farms) were not adaptive to the soil textures of the region concerned.

### **Actions suggested**

- There should be provisions of appropriate storage (of at least 1,000 quintal capacity) at government seed farms and also during transit of seeds to BSSC godowns along with *pucca* threshing floors for reducing the high moisture contents.

- Demand based production of certified seeds in the ratio of 60:40 (New : Old varieties) should be ensured.
- Production of minor crops (viz., sawa, ragi, lobiya) should be linked with the government's programme. Moisture-free godowns (equipped with dehumidifier) need to be constructed at BSSC levels.
- Care should be taken that the seeds that are being grown in government seed farms are adaptive to the soil-texture of the concerned areas/agro-climatic regions.

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### **Information sources:**

Various newspapers, Minutes of 'Zonal Seed Review Meeting for Rabi 2017-18,' 21st & 24th August 2017, Economic Survey (2017-18), Vol. I, Finance Dept. Govt. of Bihar, p, 86-87, and personal interviews.



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