

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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1. Locust Attacks in Gujarat and Rajasthan 2
2. Challenges of Ginger Cultivation and Trade in Kerala 4
3. Problems of Sugarcane Growers and Mills in Bihar 7

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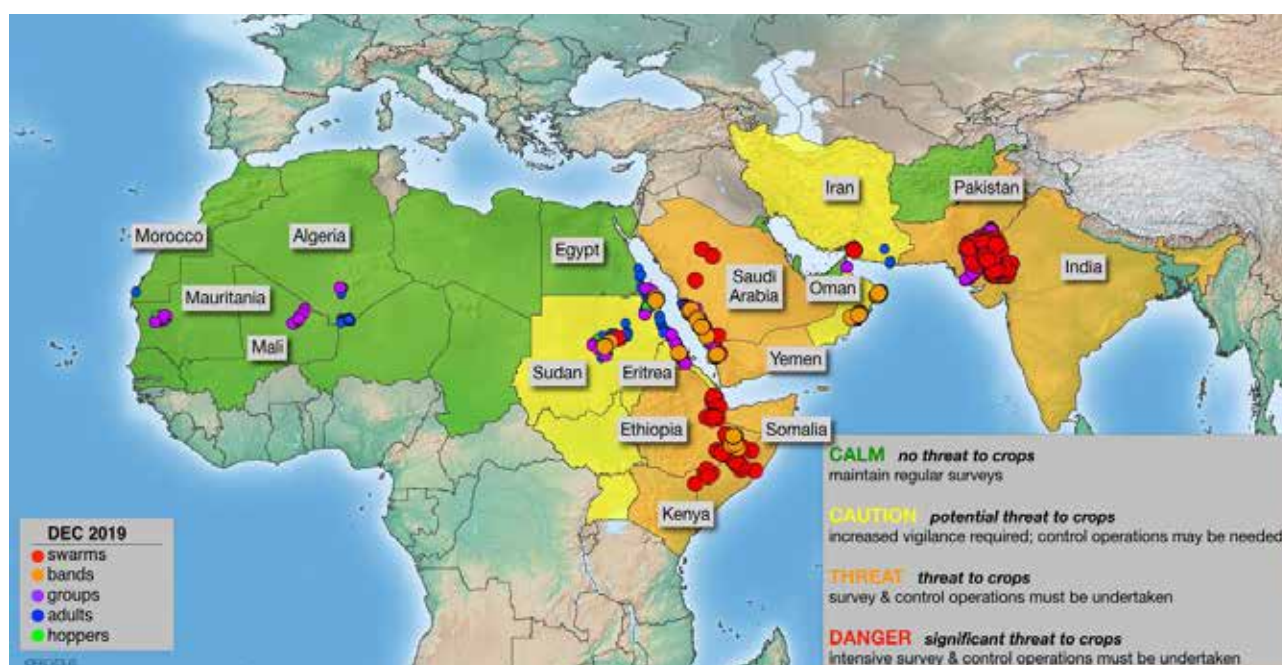
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Locust Attacks in Gujarat and Rajasthan

Key highlights

- Crops and vegetation in the states of Gujarat and Rajasthan have been attacked severely by locusts in the last three months.
- These locusts, commonly known as the desert locust (*Schistocerca gregaria*), move with the wind, which enables them to fly. They form swarms and can migrate over large distances. It has been observed that these locusts generally attack the crop fields in swarms during 7 a.m. to 11 a.m.
- Usually, locust attack takes place where there is a low pressure and presence of green vegetation.
- An area of 8.76 lakh hectares in Gujarat and Rajasthan is under the attack of swarm of locusts.

Figure 1: Situation and Threat of Desert Locusts (December 2019).



Source: Desert Locust Information Service (DLIS), FAO, 2020.

- In Rajasthan, while Jaisalmer district is the worst hit with 3.8 lakh hectares area affected, 1.3 lakh hectares area of Bikaner has also been affected. Other affected districts in Rajasthan are Barmer, Jodhpur, Jalore, Sri Ganganagar, Hanumangarh, Churu, Nagaur, Pali, and Sirohi, all in the decreasing order of area (District Agriculture Office, Banaskantha, DAO-B).
- The major districts affected in Gujarat are Kutch, Banaskantha, Mehsana, Sabarkantha, and Patan. 164 villages of 19 blocks in the above districts of Gujarat are affected by the locusts. Banaskantha is one of the worst-hit districts where 131 of 164 villages are affected.
- Amongst the crops, Mustard, Fennel, Wheat, Castor and Cumin are the worst hit.

Observations

- According to an estimate of Food and Agriculture Organization (FAO), during a plague, the locusts can potentially damage

the livelihoods of one-tenth of the world's population. It can easily affect 20 percent of Earth's land and more than 65 of the world's poorest countries. A single locust adult can eat up to their weight. It is estimated that an entire swarm of locusts can consume 100 tonnes of vegetation.

- FAO, in early December 2019 had warned of breeding of swarms along both the sides of Indo-Pakistan border.
- Even though control operations were carried out, hopper bands (huge aggregations of young locusts) and swarms were found along the Indo-Pak border. Heavy breeding was found in the nearby border areas.
- Post the attack of locusts, a total of 1.8 lakh hectares has been treated so far in both the states.
- News reports mentioned that the government had formed 45 teams at central and state level to control the locust attacks and are mainly spraying insecticides in the affected regions. Remedial measures are being undertaken during morning hours when the attack is most frequent.
- Around 18,207 hectares of land surveyed in Gujarat around 70 percent of the affected area lies in Banaskantha alone (DAO-B).
- Around 7,143 hectares of land has been treated so far with Malathion and Chlorpyrifos in Gujarat.
- As an immediate physical control measure, farmers are being suggested to play loud music, by beating steel plates with sticks and blowing the whistle.
- Farmers feel that spraying has a negative spillover effect on animal husbandry and cattle rearing. Chemicals such as malathion and chlorpyrifos have rendered grazing areas of the cattle poisonous. These chemicals have affected milk production, and a few farmers have also faced the issue of cattle poisoning.

Figure 2: A Picture Representing Attack of Locusts on the Fields.



Source: *The Hindu*, 25 December 2019.

Actions suggested

- In a joint proceeding of the 5th Indo-Pak locust officers' border meeting 2019, an action was suggested to conduct strict surveillance and control operation of the locust activities.
- Some of the immediate measures undertaken by farmers to break the swarm and disrupting them should be creating a loud noise, creating smoke or using cloth flags.
- For large scale area, spraying pesticides becomes necessary. Aerial sprays which are found to be more effective must be used rather than ground-based sprays.
- Careful analysis and treatment of affected regions using technology such as Geographic Information System (GIS) mapping should be done before next year.
- Measures to compensate the crop losses are being carried out. Additional support should be given to the cattle grazers who have also been affected by the loss.
- While estimating the damage done by locusts, a separate assessment for subsistence farming and cash crops can be done. This is important because those farmers who have lost their subsistence crops, may not be able to repurchase the produce from the market due to which there might be a reduction in consumption leading to nutrition loss. Cost-

benefit analysis of cash crops can be done by estimating the loss in the total yield.

- An early alert can be given to farmers through social media and newspapers. With the help of the extension departments like Krishi Vigyan Kendra (KVK) and local authorities, farmers can be trained for such attacks.

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Challenges of Ginger Cultivation and Trade in Kerala

Key Highlights

- Kerala is one of the major ginger-producing states in the country.
- Certain exclusive Kerala varieties of ginger such as Ellackal variety from central and south Kerala, and Wayanad and Vadakkencherry varieties of ginger from north Kerala have high demand in the market which gives the

state a supremacy in the trade market of ginger/spices.

- Even with the given high density of population in the state and popularity of perennial crops in the recent times, the area under cultivation of such crops is decreasing. Annual average yield of ginger has also declined drastically since 2011-12.

- High cost of cultivation, threat of bacterial wilt for years and the recent floods in the state are the major reasons for the sharp decline in ginger cultivation.

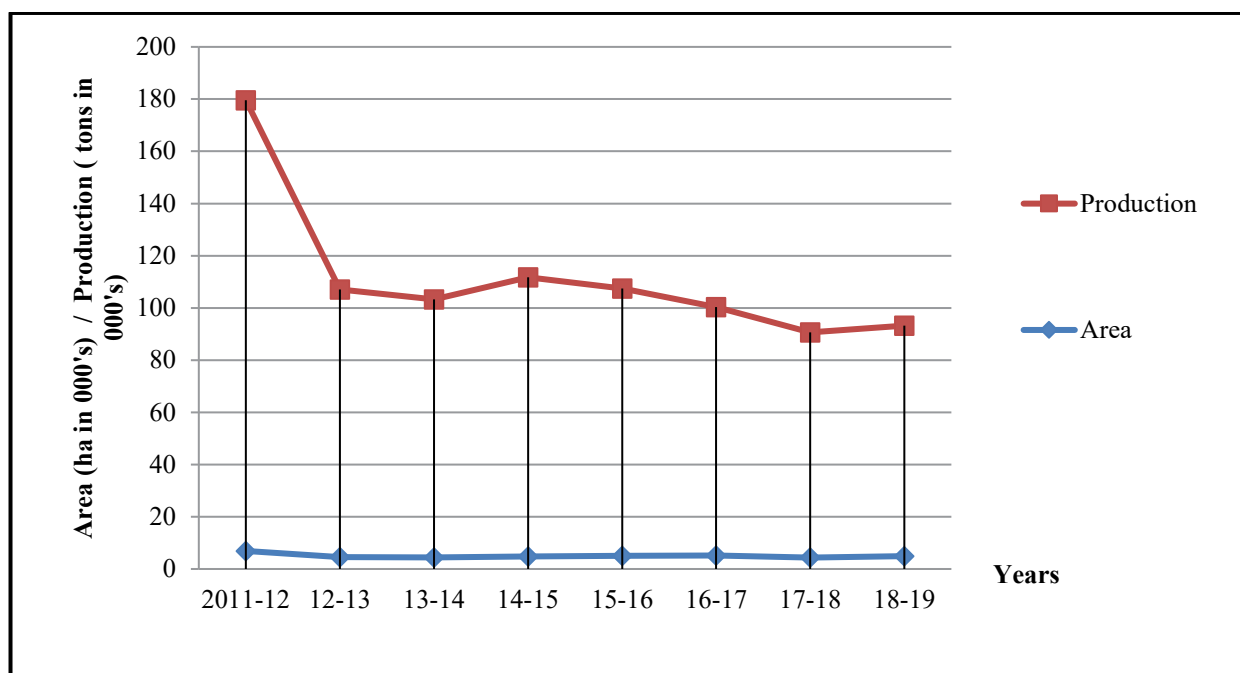
Figure 1: Ginger after Harvesting (left) and Ginger Affected by Bacterial Wilt.



Source: www.bit.ly/38Yu2fZ; www.bit.ly/2VjeAXH

- Loss of soil fertility is yet another reason for reduced ginger cultivation in Kerala. This phenomenon of fertility loss is largely expected in ginger and hence land rotation is a necessity for the crop. However, there is no sufficient alternate land available for cultivating ginger in the state.
 - Thus, farmers found that the commercial scale cultivation of ginger in Kerala is almost impossible, and have started migrating to Karnataka, Chhattisgarh and Jharkhand for ginger farming.
- Observations**
- Ginger production in Kerala both in terms of area and yield shows a declining trend across recent years (Figure 2).
 - As a result, now, ginger cultivation and trading have shifted from Kerala to Karnataka almost completely. Gudalur in Karnataka has become the ginger hub, while Wayanad in Kerala has lost its fame. Ginger from Wayanad is now either been sold to the Karnataka market or within local vegetable markets subject to the volume of trade.
 - Further, ginger for processing (to any form) is being taken from Kothamangalam market (Ernakulam District) and ginger to this market is mainly sourced from Karnataka now.
 - Unlike the rest of India, dry ginger was the traditional form of ginger trade in Kerala. This was yet another reason for the high demand for Kerala ginger in the spices market. However, dry ginger is also not fetching a price equivalent to the time and effort for drying the yield. Hence, most of the farmers and traders deal it in the form of raw (wet) ginger only.
 - Ginger price in the state has not been so attractive in the recent years (current average reported price is Rs. 50 per kg for wet ginger), except for the year 2018 when it went up to Rs. 166 per kg as a result of crop loss owing to floods in Kerala in 2018.

Figure 2: Area and Production of Ginger in Kerala.



Source: Author Calculation from Spices Board India Data. *

* Compiled data from State Agriculture/Horticulture Departments, Government of Kerala & Directorate of Arecanut & Spices Development (DASD) Calicut.

Actions suggested

- As the cost of cultivation is very high in Kerala and the price is not up to the expectations, the government should step in for better price realization in this sector.
- Processed ginger has a good demand and price in the market. Hence, encouraging value addition of ginger in the state would boost the sector in the state.
- Since there is no Agricultural Produce Marketing Committee (APMC) system in Kerala, viability of a regulated market system such as the eNAM can be checked for a consistent price and market.
- Integrating Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme with ginger cultivation could help farmers in reducing cost of cultivation. But

the scheme needs a complete revamp, particularly the wage rates which are far below the original rural wage rates.

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Problems of Sugarcane Growers and Mills in Bihar

Key highlights

- Out of the three agro-climatic zones in Bihar, Zone – I, i.e., the North-West alluvial plain is suitable for major crops, such as rice, wheat, maize, potato, sugarcane, mango and litchi.
- Area under sugarcane is spread over four districts, namely; Begusarai, Samastipur, Khagaria and Darbhanga and is about 46,000 acres. About 45 percent of this area falls under Begusarai district. Sugarcane is being grown in this region for the last 50 years.
- However, it has been observed that during the last five-year period, there has been a 0.13 percent decline in the area under sugarcane in Bihar.
- Even though the productivity of sugarcane in the state has risen by 3.80 percent, a gentle decline in production by 1.82 percent has also been observed in the last five years.
- One of the major reasons for the decline in production can be attributed to the lack of required and assured irrigation facilities in the region.

Observations

- Hasanpur Sugar Mill, a unit of Magadh Sugar & Energy Ltd., located in Samastipur district, got its capacity extended from 3,500 Tons of Cane per Day (TCD) to 5,000 TCD in the year 2013-14. With its enhanced capacity, it requires 60 lakh quintals of sugarcane. But, during the crushing seasons of 2015-16 and 2016-17, there were short supplies of sugarcane to the extent of about 48.11 percent and 51.67 percent respectively, causing heavy economic losses to the Mill.
- Some of the significant reasons responsible for the unavailability of required quantum of sugarcane were; (i) this sugar mill is situated between two rivers, Kareh and Gandak, (ii) the occurrence of frequent floods in these rivers, (iii) about 37,495 acres of area under sugarcane cultivation being lowland with no water outflow devices' and no proper drainage system.
- Out of the total 688 state tube-wells installed in three districts; Samastipur, Begusarai and Khagaria, 149 are under the command area of Hasanpur Sugar Mills. Out of these 149 tube-wells, only 15 were found to be functional.

Figure 1: Trucks being Loaded with Sugarcane at Hasanpur Sugar Mill.



Source: AERC Bhagalpur.

- During the field survey, it was reported that prices paid to the sugarcane growers for premium, normal and rejected qualities were Rs. 310 per quintal, Rs. 290 per quintal and Rs. 265 per quintal respectively.
- Farmers of this region prefer to grow COP-2061 (PUSA) variety of sugarcane because it is multi-cutting variety, but sugar mills prefer to procure Co-0238 variety. Co-0238 variety is harvested when the temperature is relatively higher. But by the time, temperature of the environment becomes high, a good quantum of the crop is destroyed by blue horses, boars, monkeys, and jackals.
- Maximum yield of sugarcane in this region was reported at 500 quintals/acre by some of the surveyed farmers.
- Under sugarcane development initiatives undertaken by the government and sugar mills, the cultivation of crop was done in 12,000 acres by using trench method, and in 11,000 acres, intercropping was followed. Despite these, due to the problem of water logging, production of high yielding variety of sugarcane is not increasing.
- Sugarcane mills emphasize and endue seeds of those varieties of sugarcane to farmers the recovery percentage of which is higher, and which are more profitable for them.
- Delay in payment to the farmers also led to despair among the sugarcane growers.

Actions suggested

- Steps should be taken to repair and make the entire non-functional state tube-wells operative.
- Area-specific measures should be undertaken by the Sugarcane Department, Government of Bihar for the drainage of water by linking all the regional and dead Bagmati lowlands with drains.
- Steps need to be taken for desilting beds of Gandak and Kareh rivers.
- Farmers should not be stressed to make frequent changes in the varieties of sugarcane.

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