



INTERNATIONAL YEAR OF  
**MILLETS**  
2023



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# **BASAI WEEKLY NEWS UPDATES**

SEPTEMBER 01- 07, 2023



# HAR SHUKARVAAR DENGUE

# TE VAAR

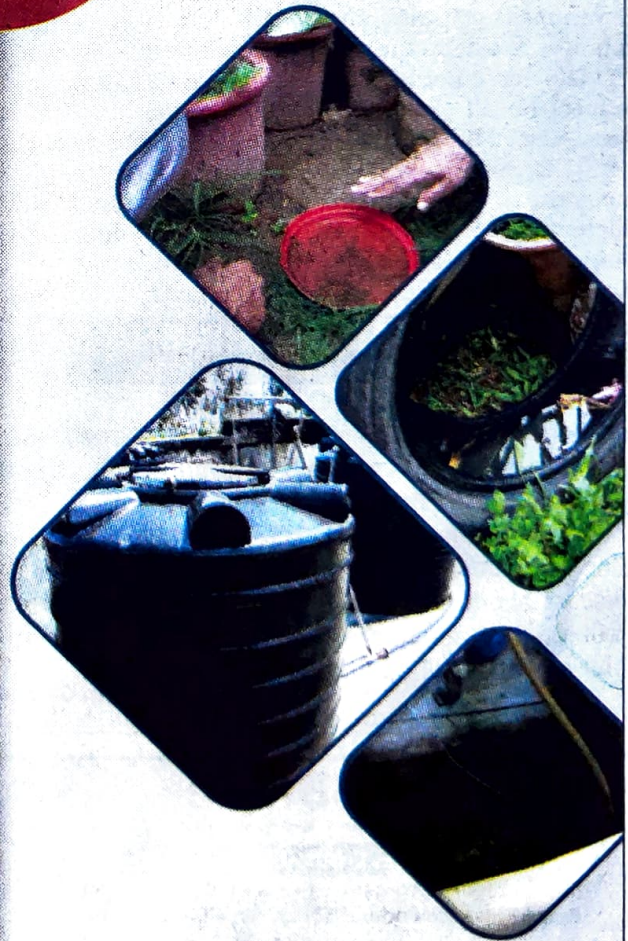


## PREVENTION BETTER THAN CURE

- Clean coolers, refrigerator trays, pots, old tyres, etc lying at houses and keep them dry
- Wear full sleeve clothes
- Use mosquito nets and mosquito repellent oil/cream
- Do not let water stagnation in and around the houses

## SYMPTOMS OF DENGUE

- High fever along with severe headache
- Pain behind the eyes
- Muscle, joint or bone pain and fatigue
- Loss of appetite and taste
- Pimples on chest and other parts of body
- Nausea or Vomiting



**In case of any symptoms, report to a nearby Government Hospital immediately for treatment**



# 30 yrs on, deadly virus back to haunt HP orchardists

**SUBHASH RAJTA**

TRIBUNE NEWS SERVICE

SHIMLA, SEPTEMBER 1

Almost three decades after phytoplasma destroyed the peach economy in the Rajgarh area of Sirmaur district, the virus has been detected again in the region. This time, the virus has appeared in plum trees, leaving fruit growers concerned. "The growers informed us about some disease affecting their plum trees. Our team went there and collected samples. On conducting exten-

## Phytoplasma hits plum trees; ruined peach in '90s



sive tests in our state-of-the-art laboratory, the disease turned out to be phyto-

### CRUCIAL MEETING ON SEPTEMBER 4

- Horticulture Department has called a meeting of fruit growers & scientists on Sept 4
- The strain of virus is the same that destroyed the peach economy in the mid-90s
- The hotspot is Siana, the same village where peach trees were attacked earlier

plasma," said Anil Handa, Professor (Virology), University of Horticulture and

Forestry (UHF), Nauni.

Following the detection of the disease, the Department of Horticulture has also swung into action and has called a meeting of fruit growers, scientists from Nauni University and its own officials on September 4 at Nauni University to chalk out a strategy to check the spread of the disease. The meeting will be chaired by the Director (Research), UHF, Nauni.

"The strain of the virus is the same that destroyed the

CONTINUED ON PAGE 14

# Deficient rains pose threat to paddy, cotton crops in Hisar

Situation no better in Jind, Fatehabad and Bhiwani districts

DEEPENDER DESWAL

TRIBUNE NEWS SERVICE

HISAR, SEPTEMBER 1

With around 50% deficient rain in Hisar, farmers are fearing crop failure in the kharif season. Adjoining Jind, Fatehabad and Bhiwani districts, too, have received deficient rains, posing a threat of withering of crops, mainly paddy and cotton.

Though some areas in Fatehabad district recently faced floods, which also damaged paddy crop in about 80,000 acres, deficient rains have again affected paddy in the district. According to information, Fatehabad has nearly 36% rain deficiency. The district has about 3 lakh acres under paddy, of which nearly 50% of the crop needs to be irrigated. "It is very costly to irrigate paddy through tube-wells. Paddy is in dire need of irrigation and we are dependent on rains," said Rajender, a



Hisar recorded 124.6 mm rain, which is much less than average rain during monsoon season

farmer of Nadhodi village in Fatehabad district.

Paddy in Fatehabad has suffered a double whammy as fields in Tohana and parts of Ratia were washed away due to the floodwaters from Punjab side. Now, paddy fields in the remaining areas are suf-

fering on account of rain deficiency, Agriculture Department officials admitted.

The situation is even worse in Hisar district, which has witnessed 50% scarcity than average rainfall this monsoon, as per data of the Indian Meteorological Depart-

ment. The officials said of about 80,000 hectares of paddy in Hisar, nearly 50% was facing threat of failure. Similarly, rain scarcity in Jind (35%), Bhiwani (21%) and Rohtak (25%) districts has impacted kharif crops.

Hisar has recorded 124.6 mm rainfall, which is much less than the average rainfall of 247.7 mm during the monsoon season. Similarly, Bhiwani recorded 194 mm, Jind 203.5 mm and Fatehabad 135.4 mm.

Kisan Sabha activist Dayanand Punia said besides paddy, other crops like cotton had also suffered and were unlikely to survive for long in the absence of rain. "The government must announce special girdawari for crop loss in the areas which are rain deficient. After girdawari, a compensation of Rs 50,000 per acre should be given to affected farmers," Punia said.



## **PUBLIC NOTICE**

(Under paragraph 21(2) of the Drugs Price Control Order, 2013)

### **MANKIND LIFESCIENCES PRIVATE LIMITED**

20B, Okhla Industrial Estate, Phase-III, New Delhi 110020

CIN No.: U24100DL2020PTC369904

Website: [www.mankindpharma.com](http://www.mankindpharma.com)

E-mail: [jitu.dutta@mankindpharma.com](mailto:jitu.dutta@mankindpharma.com)

Phone No.: 011-46846700

Attention of general public is drawn to the fact that M/s Mankind Life Sciences Pvt. Ltd. having registered office at aforesaid address is marketing scheduled formulations namely Pizofast-2.25 G Injection (Piperacillin (A) + Tazobactam (B) Powder for Injection 2000 mg (A) + 250 mg (B)), Pizofast-4.5 G Injection (Piperacillin (A) + Tazobactam (B) Powder for Injection 4000 mg (A) + 500 mg (B)) (hereinafter referred to as Medicines).

M/s Mankind Life Sciences Pvt. Ltd. wants to discontinue and stop the marketing of the above said products after a period of six months from the date of this notice.

After discontinuation of the above Medicines, the same may not be available in the market. Therefore, patients using the Medicines may consult their doctor for prescribing alternate medicines. All the Doctors / Medical Personals may also make note of this.

JITU DUTTA

DEPUTY MANAGER

Date : 03/09/2023

Place : NEW DELHI

MANKIND LIFESCIENCES PVT. LTD.

## **PUBLIC NOTICE**

(Under paragraph 21(2) of the Drugs Price Control Order, 2013)

### **MANKIND PHARMA LIMITED**

20B, Okhla Industrial Estate, Phase-III, New Delhi 110020

CIN No.: L74899DL1991PLC044843

Website: [www.mankindpharma.com](http://www.mankindpharma.com)

E-mail: [deepakgirdhar@mankindpharma.com](mailto:deepakgirdhar@mankindpharma.com)

Phone No.: 011-46846700

Attention of general public is drawn to the fact that M/s Mankind Pharma Ltd. having registered office at aforesaid address is marketing scheduled formulations namely Ceftiforce-500 Injection (Ceftriaxone 500 mg), Paragreat-250 Suspension (Paracetamol 250 mg / 5 ml), Paragreat-650 Tablets (Paracetamol 650 mg), Vermikind-6 Tablets (Ivermectin 6 mg), Vermikind-12 Tablets (Ivermectin 12 mg), Unwanted Tablet (Mifepristone 200 mg), Prestakind Tablets (Misoprostol 200 mcg), Iverkind-12 Tablets (Ivermectin 12mg), Iverkind-6 Tablets (Ivermectin 6mg) (hereinafter referred to as Medicines).

M/s Mankind Pharma Ltd. wants to discontinue and stop the marketing of the above said products after a period of six months from the date of this notice.

After discontinuation of the above Medicines, the same may not be available in the market. Therefore, patients using the Medicines may consult their doctor for prescribing alternate medicines. All the Doctors / Medical Personals may also make note of this.

DEEPAK GIRDHAR

ASST. GENERAL MANAGER

MANKIND PHARMA LTD.

Date : 03/09/2023

Place : NEW DELHI



# Working to improve farmers' lot: Dy CM

**TRIBUNE NEWS SERVICE**

**HISAR, SEPTEMBER 3**

Deputy Chief Minister Dushyant Chautala said that the government has been working to ensure the economic upliftment of farmers and labours by implementing public welfare policies in a transparent manner.

He was addressing villagers of Talu, Rohnat and Rewari Khera villages in Bhiwani district on Sunday.

He claimed that farmers were being given full price for their crop. "City-like facilities are being provided by building parks, gymnasiums and e-libraries in villages. There is no constituency in the state where development work is not taking place," he added.

The Deputy CM inaugurated a cricket stadium in Rewari Khera village and listened to the grievances of the people.

On the issue of drinking water problems raised by villagers of Talu, Chautala said Rs 1.09 crore have been approved for drinking water supply in the village and claimed that their woes would be soon over. Rewari Khera sarpanch Priya Rani handed over a demand letter

## Inaugurates cricket stadium in Rewari Khera village



Deputy CM Dushyant Chautala during a function in Bhiwani.

to Chautala. The Deputy CM said the government was working for farmers through schemes like Bhavantar Bharpayee Yojana and Fasal Bima Yojana. He claimed that services were being provided to people with complete transparency.

Chautala said educated panchayats have been formed in villages and every third ration depot was being given to women. He said women were becoming self-reliant. Similarly, backward classes had been given an 8 per cent share in Panchayati Raj, he said.







# Crop production paying dwindling dividends

The income of agricultural households from crop production is decreasing and the dependence on wages and salaries is increasing, especially for marginal and small farmers. Unprofitable farming on small farms is compelling farmers to lease out land or become labourers themselves. Hence, there is a need to safeguard the ownership of small farms and legalise tenancy so that insurance, credit and other support can be availed by the actual cultivators.

SHER SINGH SANGWAN

**A**FTER 2000, there were notable structural changes in the principal sources of income of agricultural households (AHHs), as revealed by the Situation Assessment Surveys (SAS) of 2003, 2014 and 2019. These are termed SAS-2019, SAS-2014 and SAS-2003, even as the reference years for the collection of data were 2018-19 (July 2018 to June 2019), 2012-13 and 2002-03. The AHHs are those earning around Rs 3,000 (SAS-2014) and about Rs 4,000 (SAS-2019) from agricultural activities with or without owning land, whereas in SAS-2003, ownership of some land was a condition. The SAS-2019 estimates that about 93 million agricultural households were living in rural India in 2018-19; out of them, about 45,000 AHHs were surveyed in two visits from January to December 2019. The types of principal sources of income were almost the same, except that in SAS-2019 the earnings from leased-out land were shown separately.

Income from crop production and leased-out land is 38.48 per cent (all India), 42.52 per cent in Haryana and 57.11 per cent in Punjab. If we take out about 10 per cent of the income from leased-out land in Punjab (the highest in India), the income from production is just 47 per cent. As per SAS-2019, only a few states — Karnataka (51 per cent), Madhya Pradesh (52

**AVERAGE MONTHLY INCOME (₹) OF AGRICULTURAL HOUSEHOLDS (NET OF PAID-OUT EXPENSES)**

Source of Income	All India			Punjab			Haryana		
	2018-19	2012-13	2002-03	2018-19	2012-13	2002-03	2018-19	2012-13	2002-03
1. Crop production*	3,932	3,081	969	15,249	10,862	2,822	9,713	7,867	1,494
% to total	38.48	47.94	45.82	57.11	60.15	56.90	42.52	54.50	51.84
2. Livestock farming	1,582	763	91	4,457	1,658	236	4,020	2,645	236
% to total	15.48	11.87	4.30	16.69	9.18	4.76	17.60	18.32	8.19
Sub-total (1+2)	53.96	59.81	50.12	73.80	69.33	61.66	60.12	72.82	43.65
3. Non-farm activities	641	512	236	1,014	760	440	1,249	431	356
% to total	6.27	7.97	11.16	3.80	4.21	8.87	5.47	2.99	12.35
Wages and salaries	4,063	2,071	819	5,981	4,779	1,462	7,861	3,491	1,268
% to total	39.76	32.22	38.72	22.40	26.46	29.48	34.42	24.19	44
Total at current prices	10,218	6,427	2,115	26,701	18,059	4,960	22,841	14,434	2,882
Total at constant prices**	5,464	3,855	2,363	14,279	10,833	5,542	12,214	8,659	3,220

\*Share of income from leased-out land is 1.31% (all India), 9.93% in Punjab and 2.72% in Haryana in 2018-19. \*\*Deflated by wholesale price index base 2004-05  
SOURCE: RBI HANDBOOK OF STATISTICS OF INDIA, SAS-2019, SAS-2014 AND SAS-2003

per cent), Meghalaya (71 per cent) and Telangana (52 per cent) — have more than 50 per cent income from crop production in the total HH income. Besides, the income from the allied activity of livestock farming is about 15, 17 and 18 per cent (all India, Punjab and Haryana, respectively). The share of livestock income in SAS-2019 has jumped by about 4 percentage points (all India) and 7 percentage points (Punjab), but slipped by nearly 1 percentage point in Haryana compared to SAS-2014. Overall, the share of livestock income in Haryana has remained relatively high in both SAS-2014 and SAS-2019. The greater sale of Haryana's milk in cities such as New Delhi, Gurugram and Chandigarh is one of the reasons for its

higher income from livestock, especially dairy farming.

### Farm size matters

The combined income from crop farming and its allied activities of livestock was about 54 per cent in India, 74 per cent in Punjab and 57 per cent in Haryana in 2018-19. Most of the AHHs are still dependent on agriculture, though the dependence has decreased nationwide and in Haryana but increased in Punjab compared to 2012-13. The dependence on agriculture is positively associated with the farm size. Across farm sizes, the dependence on agriculture and livestock income is about 31 per cent for sizes up to 0.4 hectare, whereas it is 83 per cent and 92 per cent for farm sizes of 4-10 hectares and above 10 hectares, respectively.

Income from non-farm enterprises is just about 6, 4 and 5 per cent in India, Punjab and Haryana, respectively. Moreover, it has decreased compared to 2012-13.

At the all-India level, the largest source of income for AHHs is wages/salary, which accounts for about 40 per cent, though it is 22 per cent and 34 per cent in Punjab and Haryana, respectively. It is negatively associated with the farm size. This source gives income up to 50 per cent to AHHs owning up to 1 hectare, while it is around 10 per cent for farm sizes above 4 hectares. It may be mainly wage income for marginal farmers. It is to be noted that the dependence on wages and salaries has increased by 7.5 percentage points over 2012-13, mainly for marginal and

small farmers. Hence, it can be inferred that the average Indian farmer is becoming more of a labourer today.

During two periods — 2012-13 to 2018-19 and 2002-03 to 2012-13 — the annual growth rate in the income of AHHs was slightly higher at 6.31 per cent at the all-India level, but it decreased in Punjab and Haryana in the latter period. It means the productivity in these states may have reached a plateau, whereas it may have increased in other states due to higher procurement at the minimum support price (MSP) and a higher yield.

### Banking on wages & salaries

From this analysis, we can conclude that the income of AHHs from crop production is decreasing and the dependence on wages and salaries is increasing, especially for marginal and



small farmers. Unprofitable farming on small farms is compelling farmers to lease out land or become labourers. Hence, there is a need to safeguard the ownership of small farms and legalise tenancy so that insurance, credit and other support can be availed by the actual cultivators. The income of AHHs from non-farm enterprises has decreased from 2012-13 to 2018-19. Farmers owning 4 to 10 hectares are leasing in land to make use of their tractors and other machinery. It requires policy changes to incentivise farmers and farmer producer organisations (FPOs) as well as cooperatives for involving them in the processing of the surplus produce.

The author is former Professor, SBI Chair, CRRID, and ex-General Manager, NABARD



# A SWITCH TO MORE CLIMATE-RESILIENT CROPS FOR FUTURE

**Bharati Chaturvedi**

letters@hindustantimes.com

**NEW DELHI:** In two months from now, Punjab and Delhi will see if Punjab government has been able to reduce the cases of stubble burning in the state. I fear that whatever the result, it won't involve a systemic shift. At best, we will see an end-of-pipe tweak in the existing, broken system. We cannot expect to see climate-based decision making a switch away from an unsuitable crop like water-guzzling rice, to more climate resilient millets. We haven't even heard about the initial brainstorming sessions yet.

A new study from the University of Michigan underscores how shifting away from water guzzling crops is critical for India's adaptation to the climate crisis. Research by Dr Nishan Bhattarai, Meha Jain and others suggests that Indian farmers have so far adapted to the warmer temperatures by using more water. They predict that ground water could decline at a rate more than thrice its current depletion rate. In fact, looking at models for groundwater recharge, they believe deficient not surplus water is the likely scenario by this time.

As a largely rain-fed agricultural country, India has already seen adaptive innovation in agriculture. While this is not enough, naturally, it has created an ecosystem where bold ideas are welcomed. For this reason, instead of finding solutions to the residue of an ill-fitting crop to save hundreds of thousands from toxic air, the Punjab government should set up incentives ranging from minimum support prices for better crops to markets that can improve nutrition, in order to save millions in the near future. It will be the best gift to the people.

*(The writer is the founder and director of Chintan Environmental Research and Action Group)*



# Scant rainfall triggers low yield fears in crucial states

Zia Haq

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**NEW DELHI:** A weak and patchy southwest monsoon, vital for the world's fifth-largest economy, has triggered drought-like conditions in some major food-bowl states, wilting crops and stoking water and power crises as farmers fear lower farm output due to poor yields.

The worry among farmers comes at a time when consumer inflation has accelerated — it was at a 15-month high of 7.44% in July — with high food prices being among the primary drivers of the price rise. The monsoon has been 11% deficient so far and could further fan inflation if it impacts the summer crop season hard.

Soils have lost moisture and farmers are battling to save crops, but erratic power supply and depleted groundwater levels are proving to be hurdles, said cultivator and food aggregator Hitesh Chandak of Madhya Pradesh's Itarsi over phone.

"Our region of Hoshangabad is mainly served by the Tawa dam but since water levels have gone down, irrigation canals are going dry," Chandak said.

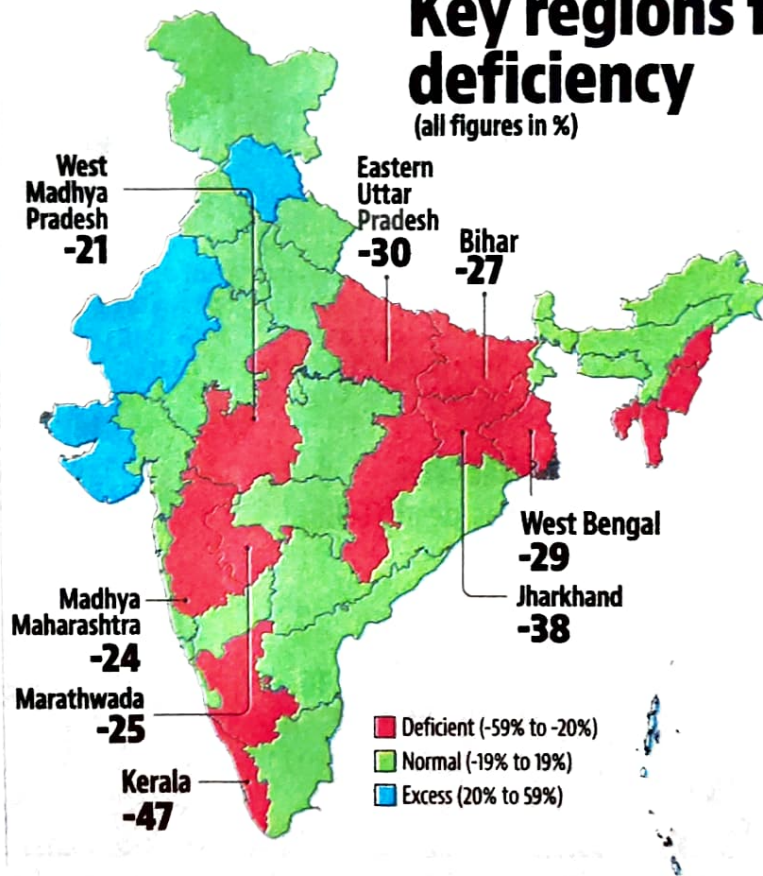
The Soyabean Processors' Association of India (SOPA), an industry body, last week said that soy crops in Madhya Pradesh, Maharashtra and Rajasthan were under threat. "There has been unprecedented deficiency in rainfall in August and though the crops have held so far, rains are needed immediately," said DN Pathak, executive director of the body.

Madhya Pradesh and Maha-

continued on → 6

## Key regions face rainfall deficiency

(all figures in %)



### Amid rising inflation

The drought-like situation has farmers worried at a time when consumer inflation has accelerated. The monsoon has been 11% deficient so far and could further fan inflation if it impacts the summer crop season hard.

### Crops under threat

The rainfall deficit could dent yields of a range of summer crops, including sugar, rice, pulses, maize, soyabean and vegetables, which make up half of India's annual food supply.

## Monsoon rains to return this week, but respite to be brief

Jayashree Nandi

letters@hindustantimes.com

**NEW DELHI:** After the driest August since record keeping began, the south-west monsoon is likely to revive briefly for 2-3 days this week, but weaken again after that, weather experts said.

There is an 11% deficiency in monsoon rainfall over the country, with 12% deficiency over cen-

tral India; 14% deficiency over the peninsula; and 18% deficiency over the east and north-east as on Sunday.

A cyclonic circulation is lying over northeast Bay of Bengal. Under its influence, a low-pressure area is likely to form over northwest and adjoining west-central Bay of Bengal in the next 48 hours, the weather bureau said on Sunday. The monsoon trough,

an elongated low-pressure area, at mean sea level continues to run along the Himalayan foothills. Its eastern end is likely to shift southwards to its normal position from Monday and to the south of its normal position after that.

This would result in active monsoon conditions over north peninsular India, Odisha and Chhattisgarh in next 2-3 days.

→ FULL REPORT ON P9



# Monsoon to revive briefly but rain deficiency to stay

Jayashree Nandi

letters@hindustantimes.com

**NEW DELHI:** After the driest August since record-keeping began, the southwest monsoon is likely to revive briefly for 2-3 days this week, but weaken again after that, weather experts said. There is an 11% deficiency in monsoon rainfall over the country, with 12% deficiency over central India; 14% deficiency over the peninsula; and 18% deficiency over the east and northeast as on Sunday.

The drought indicator of the India Meteorological Department showed large parts of India under mild to moderately dry conditions.

August was the driest and warmest for the entire country since weather records began in 1901, HT reported on August 31. There were 20 "break monsoon" days in the month compared to 16 such days in 2005, which was the previous record for highest break days, when the monsoon is extremely weak.

There is a gradual increase in break monsoon days in recent years, according to long-term data maintained by the Met department. In 2005, it accounted for 25% deficiency in August while this year, the figure is 36%.

"A cyclonic circulation is lying over northeast Bay of Bengal. Under its influence, a low-pressure area is likely to form over northwest and adjoining west-central Bay of Bengal in the next 48 hours," the weather bureau said on Sunday.

It added: "The monsoon trough, an elongated low-pressure area, at mean sea level continues to run along the Himalayan foothills. Its eastern end is likely to shift southwards to its normal position from Monday and to the south of its normal



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HT ARCHIVE

position after that. This would result in active monsoon conditions over north peninsular India, Odisha and Chhattisgarh in next 2-3 days. There is likely to be an increase in rain with isolated heavy rain over northeast India, Madhya Pradesh and Maharashtra as well from September 5."

Before 2016, the 11% deficiency in monsoon rainfall would have been called an all India drought, according to Roxy Mathew Koll, climate scientist at Indian Institute of Tropical Meteorology.

"District-wise maps show widespread deficit across India, except northwestern districts of Gujarat and Rajasthan," he posted on X (formerly Twitter) on September 1.

The nomenclature from drought to deficient was changed in 2016 by the weather office, which now considers monsoon rainfall between 96% and 104% of the long-period average as normal. Rainfall of 90% to 95% is considered below normal category, while less than 90% is con-

sidered deficient.

The weather office's cumulative standard precipitation for the period between June 1 and August 30 shows most districts are mildly to severely dry. Around 13% of the area is moderately dry; around 5% area is severely and extremely dry, and around 40% of country's area is mildly dry as per the index.

The Standardized Precipitation Index (SPI) is the most commonly used indicator worldwide for detecting and characterizing meteorological droughts. The SPI is used for estimating wet or dry conditions based on precipitation variable. It reflects soil moisture and rainfall conditions for a particular location.

"Rainfall deficit pattern of 2023 is similar to the long-term declining trend of the monsoon, both denoting a weak monsoon circulation in response to El Niño/Indian Ocean warming," Koll said, referring to findings of a 2015 paper led by IIT-M, which found that there is a significant

weakening trend in summer rain during 1901-2012 over the central-east and northern regions of India, along the Ganges-Brahmaputra-Meghna basin and the Himalayan foothills, where agriculture is still largely rain-fed.

"With the formation of the low-pressure area over Bay of Bengal, there is likely to be rainfall over Bihar, Jharkhand, West Bengal, Odisha, east Uttar Pradesh, Chhattisgarh for next 2-3 days. There may be some rainfall over Telangana, Vidarbha and Marathwada also, but thereafter monsoon conditions will weaken again," said Mahesh Palawat, vice-president of climate and meteorology at Skymet Weather Services, a private forecaster. "There will also be no rainfall over western parts of the country during next 2-3 days. Rains will be limited to east-central parts. After this spell, monsoon will gradually move towards the withdrawal phase so we are not expecting any major rain activity thereafter." The favourable phase of Madden Julian oscillation may help monsoon during the first half of September but not after that, said M Rajeevan, former secretary, ministry of earth sciences.

"At present things are not good. They are close to drought conditions at many places, even though we cannot liberally use the term drought. Almost 40% of districts are under the deficient category. It's not a good sign," he said.

"But with the ensuing active phase things will improve substantially, especially over central and northern parts. There is a possibility of active spell over central India during next 10 days or so. But a weak spell may be expected during the second half of September," Rajeevan added.



{ IN MADHYA PRADESH }

# 12 distts drought-prone, govt to provide supplies

Shruti Tomar

letters@hindustantimes.com

**BHOPAL:** The Madhya Pradesh government will ration water supply as 12 districts face near droughts after the state received 46% less rainfall than average this August, officials said on Monday, even as chief minister Shivraj Singh Chouhan offered prayers at Mahakaleshwar temple in Ujjain for rains.

"The month of August has almost been dry, so a drought situation is arising in Madhya Pradesh now. Crops are in danger. I have prayed to Mahakal that it rains well and the crops be saved," Chouhan was quoted as saying by news agency PTI.

The state government will leave no stone unturned to work for the welfare of farmers, he added. "I held a meeting yesterday to deal with the situation arising out of scanty rains. Instructions have been given to release water from dams where crops can be saved."

The extended dry spell comes ahead of assembly polls in November and has damaged the major soybean crop on the verge of ripening in several districts, farmers said.

As against the typical demand of 10,700 MW in September, average power demand rose to 14,500 MW in the first three days of September as farmers used pumped groundwater to irrigate fields. The demand will likely rise further if the rain plays truant, officials said. Electricity demand across India has risen to 249 GW, 20 GW more than the demand in June last year,



Shivraj Singh Chouhan

an energy department official said.

To avoid widespread power cuts in the state, supply to farmers has been slashed from 10 to seven hours a day, said Sanjay Dubey, principal secretary, energy department.

For irrigation, the state agriculture department instructed district administrations on Monday to review the requirement of water and ensure supply as per availability through canals.

Ashok Barnwal, principal secretary at agriculture and farmers' welfare department, blamed the IMD for failing to inform the state in advance about the significantly lower rain. "The IMD had predicted negative deviation up to 6%, but the actual was 46% less. So, it was impossible to assess the situation," Barnwal said. "However, we are expecting rain from next week. If it doesn't happen, we will continue to supply water to farmers through different irrigation projects." The state weather office contested the claim. "MP received 46% less rainfall in August. We had predicted the same and informed the state government accordingly," said Ved Prakash Singh, scientists at the state's weather bureau.

## 62 K'TAKA TALUKS FACE DROUGHT SCARE, SAYS MIN

**BENGALURU:** At least 62 taluks in Karnataka are facing drought as per norms set by the central government, the state's revenue minister Krishna Byre Gowda said on Monday.

The subdistricts were identified after a survey was conducted in 113 taluks, which are facing severe crop losses due to deficient rain. Since a drought-like situation was reported in the remaining 51 taluks after the survey, the government will conduct one more survey before submitting a final list, Gowda said at a media briefing in the Vidhan Soudha. Gowda was accompanied by rural development minister Priyank Kharge and farm minister N Cheluvaryaswamy. "We conducted the survey at these 113 taluks based on the central government's guidelines, which say the taluks should have experienced at least 60% rain deficiency and no rain for three weeks. In the joint survey, 62 taluks were identified," he said.

"This survey was started on August 22. After completion, several people's representatives and ministers reported severe crop loss in the remaining 51 taluks," Gowda said. "We have decided to conduct another survey in the remaining taluks." Gowda expressed concern over the situation, attributing it to erratic monsoon this year. **HTC**



# Can't tolerate retinol? Try skin-sational plan B options

**R**etinol, a derivative of vitamin A, is considered to be the holy grail of anti-ageing skincare. It can help reduce fine lines, open pores, hyperpigmentation and wrinkles. However, those with sensitive skin may experience irritation when using retinol. Experts recommend milder alternatives that bring you benefits that are similar to retinol, minus the dryness, flaking and redness that are experienced in certain cases. Take your pick:

- **Bakuchiol:** Obtained from the seeds of the plant *Psoralea corylifolia* or the babchi plant, it acts like retinol but does not cause irritation. Bakuchiol helps reduce the appearance of fine lines and improve skin elasticity.
- **Rosehip Oil:** Rich in vitamins A and C, the oil is highly nourishing. It helps reduce hyperpigmentation and also promotes collagen production.
- **Gotu Kola:** Also known as *Centella Asiatica*, the herb has anti-inflammatory and antioxidant properties. It can enhance skin texture and firmness.
- **Niacinamide:** A form of vitamin B3, it is a beauty powerhouse. It can help shrink pores, reduce moisture loss, and give a natural glow.
- **Licorice Extract:** The extract has been traditionally used to brighten dull complexions. Its anti-inflammatory properties soothe and calm sensitive skin.
- **Green Tea Extract:** Rich in antioxidants, it helps reduce inflammation and protects you against environmental aggressors.
- **Sea Buckthorn Oil:** It has linoleic acid, found naturally in sebum. It helps fight premature ageing and discoloration.
- **Hyaluronic Acid:** An amazing hydrant, it helps keep your skin plump. It is a great alternative to retinol for those with dry, sensitive skin.



▲ Bakuchiol has been used in traditional beauty recipes

(Inputs by Richa Agarwal)

HTC



*fssai*



FOOD SAFETY AND STANDARDS  
AUTHORITY OF INDIA

*Inspiring Trust, Assuring Safe & Nutritious Food*  
Ministry of Health and Family Welfare, Government of India

# Notice

FSSAI has invited bids for “Procurement of Pesticide Screening Kits to be used in Mobile Food Testing Labs (MFTL's) (PAN India Basis) through CPP Portal. The last date for submission of bids is 29.09.2023 (1600 hrs). For details, please visit CPP Portal or FSSAI website (<https://fssai.gov.in/tenders.php>).

CBC 17163/12/0011/2324

Advisor (QA)



September 2023

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Azadi Ka  
Amrit Mahotsav



# Kurukshetra

A JOURNAL ON RURAL DEVELOPMENT

Special Issue



# Make in India



# Fostering Skills for Environmentally Conscious Sustainable Future



According to United Nation Industrial Development Organization, green skills are the knowledge, abilities, values, and attitudes needed to live in, develop, and support a sustainable and resource-efficient society. To achieve the target of net zero carbon emissions by 2070, developing green skills is a pre-requisite. Further the principles of circular economy need to be adopted, which will enable Indian industry foster sustainable industrial growth. Resource Efficiency and Circular Economy envisions a future with environmentally-sustainable and equitable economic growth.



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\* Kanchan Puri  
\* Ritesh Joshi  
\*\* Tanuja Puri

here is a correlation between environmental knowledge and environmental attitudes that has been widely recognised. Concerns for the environment in India have led to increasing calls to sensitise youth through environmental education and strengthen their skills, which focus on an environmentally conscious and sustainable future. Literature reveals that students learn more effectively by 'doing' than by 'listening' and this is a major strength of learning in the field where students are involved in environmental projects. In addition to the direct educational benefits, fieldwork has been reported to increase confidence and motivation. Environmental Science is a rapidly emerging area that requires a new vision of empowering youth about their nature and their role in conservation initiatives. This will help solve the environmental crisis through acquired green skills and targeted intervention for green jobs.

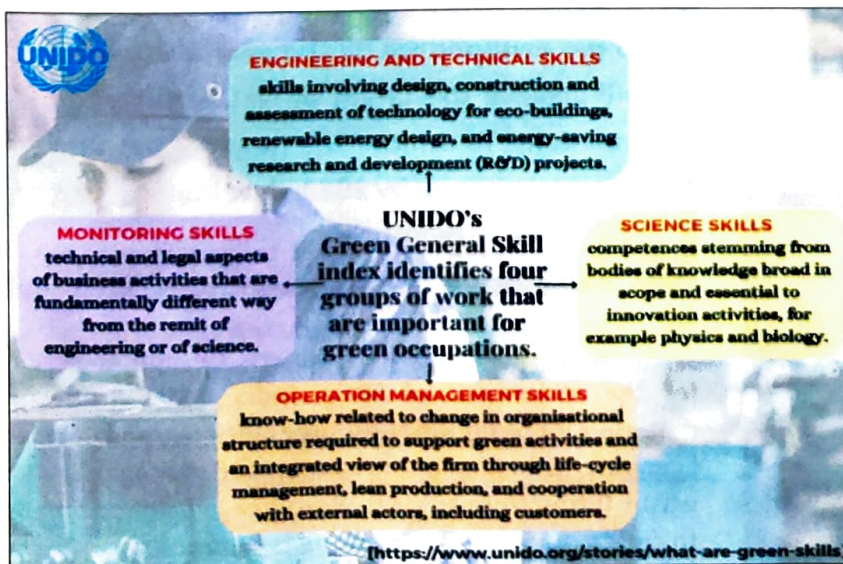
The International Labour Organisation (ILO) defines green jobs as decent jobs that contribute to preserving or restoring the environment, be they in traditional sectors such as manufacturing and construction or in new, emerging green sectors such as renewable energy and energy efficiency [<https://www.ilo.org>]. Green jobs help improve energy and raw materials efficiency; limit greenhouse gas emissions; minimise waste and pollution; protect and restore ecosystems; and support adaptation to the effects of climate change (ILO,



2016). According to the UN Industrial Development Organization (UNIDO), green skills are the knowledge, abilities, values, and attitudes needed to live in, develop, and support a sustainable and resource-efficient society.

Green skills contribute to securing a sustainable future and include jobs that protect ecosystems and biodiversity, minimise waste and pollution. The Ministry of Environment, Forest & Climate Change (MoEF&CC) is utilising the vast network and expertise of ENVIS Hubs for skill development in the environment and forest sectors to enable India's youth to get employment through the Green Skill Development Programme (GSDP). GSDP was launched in June 2017, and the programme endeavours to develop green skilled workers with technical knowledge and commitment to sustainable development, which will help in the attainment of the Nationally Determined Contributions [<http://www.gsdp-envis.gov.in/index.aspx>]. The first GSDP course was formulated to skill Biodiversity Conservationists and Para-taxonomists on a pilot basis

in ten select districts of the country. The GSDP covers a diverse spectrum of beneficiaries, ranging from school and college dropouts, and other students in the environmental sector to budding entrepreneurs, working professionals, including those in industrial sectors, scientific, and technical institutions. The Ministry of Skill Development and Entrepreneurship (MSDE) is the nodal Ministry responsible for co-ordination of all Skill Development efforts across the country. The National Council for Vocational Education and Training (NCVET) was notified by the MSDE on 5 December 2018. The GSDP is aligned with the norms and guidelines issued by NCVET from time to time. All the courses in the GSDP are approved by the NCVET.



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Logo of GSDP

GSDP facilitates placement in the autonomous bodies/other institutions of MoEF&CC like Biodiversity Management Committees for preparation of People's Biodiversity Registers, state Biodiversity Boards, Botanical Survey of India, Zoological Survey of India and their respective Regional Centres, Wildlife Crime Control Bureau and its Regional Offices, as well as in various National Parks, Plantations, Eco-Resorts, Wildlife Tourism sectors (as Green Guides), CPCB and its Regional Directorates. The list of courses includes water budgeting, propagation and management of bamboo, greenbelt development for industries, cleaner production assessment, Wildlife Management using Geospatial Techniques, Emission inventory, Forest Fire Management, etc. We need to mainstream such skills to develop responsible behaviour in society, leading to an improved environment. It shall imbibe the culture of green skills among the youth by promoting innovations and sustainable technologies.

Given the importance of the National Action Plan on Climate Change (NAPCC), which is a national strategy to adapt to climate change and enhance the ecological sustainability of India's development path. NAPCC has eight missions as a long-term and integrated approach to address the issue of climate change:

- National Solar Mission
- National Mission for Enhanced Energy Efficiency
- National Mission on Sustainable Habitat



- National Water Mission
- National Mission for Sustaining the Himalayan Eco-system
- National Mission for a Green India
- National Mission for Sustainable Agriculture,
- National Mission on Strategic Knowledge for Climate Change.

Subsequently, the states also prepare their respective State Action Plans on Climate Change that focus on adaptation interventions. The Long-Term Low-Carbon Development Strategy submitted by India under the United Nations Framework Convention on Climate Change (UNFCCC) focuses on the rational utilisation of national resources with due regard to energy security ([www.moef.nic.in](http://www.moef.nic.in)).

**India at the 26<sup>th</sup> session of the Conference of the Parties (COP 26) to the UNFCCC held in Glasgow, presented 'Panchamrit' of India's climate action. These were: (1) India will get its non-fossil energy capacity to 500 gigawatt by 2030, (2) India will meet 50 per cent of its energy requirements from renewable energy by 2030, (3) India will reduce the total projected carbon emissions by one billion tonnes from now onwards till 2030, (4) By 2030, India will reduce the carbon intensity of its economy by less than 45 per cent and (5) By the year 2070, India will achieve the target of Net Zero carbon emissions. To achieve the target of net zero carbon emissions by 2070, developing green skills is a pre-requisite.**

As part of the United Nations Decade of Action for the attainment of SDGs, India initiated several measures for promoting Resource Efficiency and Circular Economy, including for prevention and management of waste [<https://pib.gov.in/>]. Resource efficiency means to create more output as products/services using fewer inputs. Concepts of Extended Producer Responsibility



and Circular Economy are based on principles of reduce-reuse-recycle and are relevant for promoting sustainable consumption and production. NITI Aayog has constituted Committees for development of circular economy action plans for different categories of wastes. MoEFCC is the Nodal Ministry for Circular Economy Action Plan for Tyre and Rubber, and has notified 'Guidelines on the Extended Producer Responsibility for Plastic Packaging' under Plastic Waste Management Rules, 2016.

Further, MoEF&CC in the draft 'National Resource Efficiency Policy, 2019 envisions a future with environmentally-sustainable and equitable economic growth, resource security, healthy environment, and restored ecosystems. NREP, 2019 is guided by the principles of (i) reduction in primary resource consumption to 'sustainable' levels, in keeping with achieving the Sustainable Development Goals and staying within the planetary boundaries, (ii) creation of higher value with less material through resource efficient and circular approaches, (iii) waste minimization, (iv) material security, and (v) creation of employment opportunities and business models beneficial to the cause of environment protection and restoration. [<https://moef.gov.in/wp-content/uploads/2019/07/Draft-National-Resourc.pdf>]. Most importantly, it aims to foster a circular economy approach and move away from a linear economy. If adopted, these principles will enable Indian industry to reduce costs, increase productivity, and foster sustainable industrial growth. The Circular economy keeps resources in use for as long as possible, extracting the maximum value, and recovering and regenerating products and materials at the end of each service life, so as to limit the extraction of natural resources to the maximum possible extent.

Off-farm technologies like 'bio-briquetting', which is a sustainable technology, can be promoted to generate energy at a local scale (<http://gbpihedensis.nic.in>). Biomass energy from pine needles can be generated by using the simple technology of biomass briquetting. Under the niche of G.B. Pant National Institute of Himalayan Environment, Almora, which is an autonomous body of MoEFCC, lower and marginalised groups of villagers are manufacturing Bio-briquettes and Bio-globules, practising resource utilisation, and furthermore generating livelihood.



Source: Mission LiFE-Lifestyle for Environment, <http://missionlife-moefcc.nic.in/>


The 'Make in India' campaign aims to transform India into a global design and manufacturing hub using indigenous knowledge and resources however, to maintain the balance between environment and development, it is essential that there is promotion of cleaner technologies. The Department of Science and Technology has made significant contributions to 'Make in India' initiative through various programmes. This has led to affordable technologies to help companies manufacture their products in India. DST has joined hands with the Ministry of Education to implement Impacting Research, Innovation and Technology projects, which address developmental needs such as healthcare, information, and communication technology, energy, sustainable habitat, water resources and river systems, and environment and climate [<https://dst.gov.in>].

In pursuant to the spirit of 'Digital India' initiation and capturing the essence of Minimum Government and Maximum Governance, PARIVESH (Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single window Hub) has been developed by the Ministry of Environment, Forest and Climate Change. It has automated entire process, starting with the submission of applications, minutes, as well as grant of environment/forest/wildlife clearances for developmental projects. Such initiatives and others like GSDP will augment 'Make in India' campaign in the ensuing years. □



# Food Processing

## Advancing Make in India



The Indian food processing industry provides ample opportunities for not only domestic but also foreign entities to come and establish industries here for the simple reason that this market offers them plenty of raw materials at reasonable prices, a fairly large consumer base in each segment, and favourable government policies.

**Bhuwan Bhaskar**

**T**he success of Make in India requires policy support, facilitation, and adaptation. The intensity and efforts needed to bring the plan to fruition depend on the gap in the available and needed resources for bringing the development of any particular industry to its zenith. To understand the hypothesis, one may take the example of Make in India in the defence sector, where India has traditionally had almost total dependence on foreign countries for its defence needs. But when the same vision dawns in a sector like food processing, it offers one of the most compatible business propositions for the industry and for the Central and State Governments. Food processing has been a centuries-old household industry across India. There is hardly any household in rural India that doesn't process agricultural produce in

some way. Making pickles, papads, chutneys, etc. are the simplest forms of food processing; they are done at small levels. But this bright picture of food processing in India has another dimension too.

The Food and Agriculture Organization (FAO) roughly estimates food waste at around 40% of the total annual production in India. The stated reasons are an inefficient supply chain and a fragmented food system. To strengthen the supply chain and rectify the food system, India needs mammoth investment and a number of policy interventions. Still, there are some anomalies that can't be cured to the fullest. The most prominent of them is price volatility, as agricultural products are invariably cyclical in nature. So, the foolproof solution to food wastage, along with

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taming price volatility and securing food security, is supplementing the supply chain strengthening with creating a strong food processing industry with deep penetration in the hinterlands. With reference to the hypothesis discussed at the beginning of this article, it could easily be inferred how easily it may happen with some policy focus and political willpower.

Food processing is a process through which agricultural produce is turned into food, or one form of

### ON THE BASIS OF COMPLEXITY, FOOD PROCESSING IS CATEGORISED INTO THREE BROAD CATEGORIES

#### PRIMARY FOOD PROCESSING

It is the process through which agricultural products, such as raw wheat kernels or livestock, are turned into something that can eventually be eaten. This is the simplest form of food processing, which almost all households in rural areas do in one form or another. This category includes ingredients that are produced by ancient processes such as drying, threshing, winnowing, and milling grain, shelling nuts, and butchering animals for meat.

#### SECONDARY FOOD PROCESSING

It is the everyday process of creating food from ingredients that are ready to use, like baking bread. Fermenting fish and making wine, beer, and other alcoholic products are traditional forms of secondary food processing. Such processing needs an elementary level of mechanisation and could be established in micro- and small-scale industries.

#### TERTIARY FOOD PROCESSING

It is the commercial production of what is commonly called processed food. These are ready-to-eat or heat-and-serve foods, such as TV dinners and re-heated airline meals. This level of food processing needs a higher level of technological know-how and more investments. Moreover, packaging, marketing, and the establishment of a strong supply chain incur costs that only well-established companies can afford.

food is turned into another. This includes many forms of processing foods, from grinding grain to make raw flour to home cooking to complex industrial methods used to make convenience foods.

Agriculture in India is not only a livelihood but also a way of life. Therefore, primary food processing is just a natural next step to agriculture and one of the most feasible progressions into the 'Make in India' movement. To take this process further, secondary and tertiary food processing also need to be added as next steps. Here, the need for industrialisation as well as investment, both domestic and FDI (foreign direct investment), comes up. Food processing is an area that has the potential to take 'Make in India' to a new height. The government of India also recognises the potential of this emerging sector and has launched some far-fetched schemes to promote Make in India in food processing. Some of the major schemes are:

#### **Pradhan Mantri Kisan Sampada Yojana (PMKSY):**

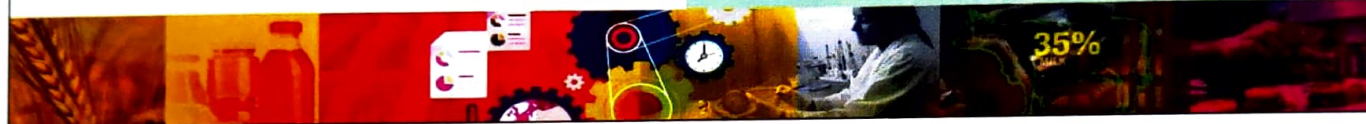
It aims to develop a modern food processing infrastructure. PMKSY has been envisaged as a comprehensive package that will result in the creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet. Under this scheme, 41 Mega Food Parks, 376 Cold Chain projects, 79 Agro-Processing Clusters, 489 proposals under the Creation/Expansion of Food Processing and Preservation Capacities (CEFPPC), 61 Backward and Forward Linkages Projects, 52 Operation Green projects, and 183 Food Testing laboratory projects have been approved across the country.

With an objective to stimulate the country's food processing sector, the Central Government launched SAMPADA (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) with an allocation of Rs 6,000 crore. The scheme was renamed PMKSY in August 2017. The funds were to be used for the creation of modern infrastructure and efficient supply chain management from the farm gate to the retail outlet in the period 2016–20. Later, the 'Pradhan Mantri Kisan Sampada Yojana (PMKSY)' was extended till March 2026 with an allocation of Rs 4,600 crore. It is supposed to help deliver greater returns to the farmers' income, creating huge employment opportunities, particularly in rural regions, reducing agricultural waste, raising processing levels, and enhancing the export of processed foods.



## THE FOLLOWING SCHEMES HAVE TO BE IMPLEMENTED UNDER THE **PM KISAN SAMPADA YOJANA**

- Mega Food Parks
- Integrated Cold Chain and Value Addition Infrastructure
- Creation or Expansion of Food Processing or Preservation Capacities (Unit Scheme)
- Infrastructure for Agro-processing Clusters
- Creation of Backward and Forward Linkages
- Food Safety and Quality Assurance Infrastructure
- Human Resources and Institutions



**Pradhan Mantri Formalisation of the Micro Food Processing Enterprises Scheme (PMFME):** This centrally sponsored scheme was launched on 29 June 2020, under the Aatma Nirbhar Bharat Abhiyaan. The goal of the scheme is to improve the existing microenterprises in the unorganised segment of the food processing industry and formalise the sector. This scheme is currently being implemented in 35 states and union territories. It also includes US \$ 487.61 (Rs. 40,000) in financial assistance for working capital and the purchase of small tools for each member of the Self Help Group (SHG) involved in food processing operations. Over

1 lakh SHG members have been identified, and a total of US \$ 24.74 million (Rs. 203 crore) has been granted.

**Production Linked Incentive Scheme for Food Processing Industry (PLISFPI):** It aims to boost domestic manufacturing, increase exports, while supporting food manufacturing entities with stipulated Sales and willing to make investment for expansion of processing capacity and branding abroad to incentivise the emergence of strong Indian brands. PLISFPI, a central sector scheme, has been allocated a financial outlay of US \$ 1.32 billion (Rs. 10,900 crore) for the period of 2021–22 to 2026–27. It aims to assist in the emergence of global food manufacturing champions commensurate with India's natural resource endowment and to encourage Indian brands of food products in foreign markets. By 2026–2027, the scheme's implementation would enable an increase in processing capacity, resulting in a processed food output of US \$ 4.07 billion (Rs. 33,494 crore) and the creation of roughly 2.5 lakh jobs. The products covered in this scheme include ready-to-eat and ready-to-cook (RTE and RTC), marine products, fruits and vegetables, honey, desi ghee, mozzarella cheese, organic eggs, and poultry meat. The component for millet-based products was added to the scheme in 2022–23 with an outlay of Rs. 800 crore.







The sector already has a mark on the overall development of the Indian economy, with an 18.8% share of GVA (gross value added) in agriculture and allied sectors of the total economy. It generates 12.32% of the total employment while contributing 10.4% to India's exports. The total FDI received in the food processing sector from April 2000 until December 2022 was \$ 11.79 bn, while the FDI equity inflow during April 2021–March 2022 was \$ 709.72 mn. According to an estimate published on the official website of the National Investment Promotion and Facilitation Agency, the Indian Food Processing market is growing at a compound annual growth rate of 15.2% and is estimated to reach \$ 535 billion by 2025. Tier-II and Tier-III cities could mirror the trend visible in metropolitan areas, by consuming more processed food in the coming years.

It is obvious that the food processing industry is leading the way by linking Indian farmers to consumers in domestic and international markets. To promote the industry and attract domestic as well as global entrepreneurs, the Union Cabinet gave its approval to introduce the Production Linked Incentive (PLI) Scheme in Food Products with an outlay of Rs. 10,900 crore for Enhancing India's Manufacturing Capabilities and Enhancing Exports—Aatmanirbhar Bharat. Under the PLI Scheme for the Food Processing Industry, a total of 182 applications have been approved under different categories, including 30 applications (8 large entities and 22 SMEs) under the PLI Scheme for millet-based products. The implementation of the PLI scheme is likely to facilitate the expansion of food processing capacity by nearly INR 30,000 crore and create additional direct and indirect employment opportunities for about 2.5 lakh people by the years 2026–27. As per the data being reported by the PLIS beneficiaries, investments of about Rs. 4,900 crore have already been made under the scheme.

The Indian food processing industry provides ample opportunities for not only domestic but also foreign entities to come and establish industries here for the simple reason that this market offers them plenty of raw materials at reasonable prices, a fairly large consumer base in each segment, and favourable government policies. The retail segment contributes 70% of the total sales in the Indian food and grocery market, which is the world's sixth largest. The Indian food processing industry accounts for 32% of the country's total food market, is one of the largest industries in India, and is ranked fifth in terms of production, consumption, exports, and expected growth. The Indian gourmet food market is currently valued at US \$ 1.3 billion and is growing at a Compound Annual Growth Rate (CAGR) of 20 per cent.

Taking into account the different segments of the processed food market, dairy and vegetables provide us with a unique perspective on indigenous production potential. In dairy production, India enjoys the first spot globally. But when it comes to exports, it ranks 46<sup>th</sup>. Similarly, India is the second-largest veggie producer but 15<sup>th</sup> in exports. The production of cereals, fruits, and nuts in India too stands at number two in the world, but in exports, the country's rank is 5<sup>th</sup> and 25<sup>th</sup>, respectively. Overall, exports of the processed food category are increasing far faster than the unprocessed food category; secondary and higher processed foods are growing at a 5-6% CAGR, while unprocessed and primary foods are growing at a 1-3% CAGR. This is







interesting data that clearly shows India as an emerging production hub for processed food.

The Government of India has taken many steps to facilitate FDI in food processing. In the 2016 budget, 100% FDI was allowed in trading food products, including through e-commerce, in respect of food products manufactured or produced in India. Later, 100% FDI was permitted under the automatic route in the Food and Processing industry. Due to continuous efforts made by the government in this direction, the cumulative FDI equity inflow in the Food Processing industry reached USD 11.97 billion during the period April 2000 to March 2023.

The Ministry of Food Processing Industries (MoFPI) has launched a Centrally Sponsored scheme, the PM Formalisation of Micro Food Processing Enterprises Scheme (PMFME), to set up or upgrade 2 lakh micro food processing enterprises by providing financial, technical, and business support through credit-linked subsidies over a five-year period from 2020-21 to 2024-25. To fulfill its goal, this scheme will require an investment of Rs 10,000 crore. Along with this programme, the Central Government's One District, One Product (ODOP) initiative is in full swing in 713 districts across 35 states and UTs as part of the PMFME initiative. A total of 12 brands have been launched to promote various ODOPs under this scheme's branding and marketing vertical.

So far, 27,003 loans have been approved under the PMFME Scheme's credit-linked subsidy component. Food Processing has also been designated as a Special Focus Sector by the government in the National Manufacturing Policy. To capitalise on the unique organic character of agriculture in the North East states, one Mission Organic Value Chain Development in the North East Region (MOVCDNER) has been launched, under which farmers receive a subsidy of Rs. 31000/ha for three years under PKVY and Rs. 32500/ha for three years under MOVCDNER for various organic inputs, including organic fertilisers. Around 1150 agri startups have received financial assistance of Rs. 70.30 crore under the Innovation and Agri Entrepreneurship Development programme to stimulate innovation and start-ups in the agro sector.

There are powerful growth factors ensuring that the success story of food processing in driving the 'Make in India' campaign continues. Operation Greens approved 46 new projects during fiscal year 2022. In response to the Indian government's request to designate 2023 as the International Year of Millets, the FAO and the United Nations have designated the current calendar year as the International Year of Millets. A number of projects have been created as part of the Government of India's efforts to capitalise on the potential. A thriving food processing business might propel millets' marketing to new heights. Green shoots may already be seen all throughout. For example, per person, at-home consumption of millets has climbed to 14 kg from 3 kg, representing a nearly 30% increase in sales. Sugar's unit value increased by 15% in 2022, resulting in an increase in overall exports, and this favourable trend is likely to continue in 2023. Andrew Yule & Co. Ltd. (AYCL), the Government of India's sole public-sector firm in the tea industry, reached its highest-ever growth trajectory in 2022, with tea exports increasing by 431% over the previous year's exports. Because most rice types are high in GI and most Indians consume rice, popularising low-GI rice varieties will help to lessen or even reverse India's rising diabetes rate. Within the next five years, India hopes to quadruple its marine product exports to Rs. 1 lakh crore from Rs. 50,000 crore. The Government intends to build 10,000 new FPOs, which could act as a huge accelerator for farm-gate food processing and ultimately give 'Make in India' a big boost in food processing. □





# Boosting Innovation Transforming Manufacturing

**In the contemporary landscape, technology serves as a foundation for revolutionary changes spanning across various sectors; acknowledging the potency of innovation, it has become imperative to force initiatives that promote innovative practices and facilitate domestic production of goods. India occupies a prominent position as one of the world's largest market. There is a significant responsibility in propelling its sectors towards heightened production of goods and services within its borders. This strategic approach not only contributes to self-sufficiency but also entails developing and enhancing robust capacities and capabilities within the country.**

# T

**Irtif Lone**

he 'Make in India' initiative introduced by the Government of India in 2014 is a visionary programme that seeks to transform India into a prominent manufacturing hub. This ambitious endeavour is multifaceted, with the primary objectives being the promotion of domestic manufacturing, the attraction of foreign investments, the encouragement of innovation, and the generation of opportunities.

One of the critical components of the initiative is the emphasis on easing the process of doing business in India, for which the Government has taken various measures to streamline regulations, simplify licensing procedures, and create a more investor-friendly environment. This has helped boost the confidence of both domestic and foreign businesses, encouraging them to set up manufacturing facilities in the country.

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As such, 'Make in India' is a transformative initiative launched by the Government of India. The programme focuses on promoting domestic manufacturing across various industries by encouraging local and foreign investments, encouraging innovation, and streamlining regulatory processes. 'Make in India' creates a conducive environment for businesses to establish and expand their manufacturing operations within the country. The initiative plays a crucial role in advancing India's economic development and self-reliance, ultimately contributing to the nation's progress on the global stage.

Furthermore, the programme focuses on fostering innovation and entrepreneurship. Special initiatives and incentives have been introduced to promote research and development activities across various sectors. By encouraging innovation, the government aims to enhance the competitiveness of Indian industries in the global market.

The initiative has shown some remarkable achievements over the years. It has attracted significant foreign direct investment (FDI) in the manufacturing sector, leading to the establishment of new industries and the expansion of existing ones. Additionally, several international companies have chosen India as a preferred destination for manufacturing, contributing to the country's economic growth and industrial development.

#### Make in India: Innovators Dream Come True!

The programme has been a dream come true for innovators for several compelling reasons. It places a high value on innovation as a driving force behind economic growth and competitiveness. The programme strives to foster an environment that nurtures innovation and offers unwavering support to entrepreneurs across

**The manufacturing sector holds substantial importance in the Indian economy. India has become an appealing destination for foreign investments, particularly in manufacturing. Diverse industries like mobile phones, luxury goods, and automobiles, among others, have already established or are considering setting up manufacturing facilities in the country.**



diverse sectors. Moreover, with India being one of the world's largest and rapidly expanding consumer markets, innovators can tap into this vast opportunity and reach millions of potential customers.

For innovators seeking to establish manufacturing facilities or research and development centres in India, the government's provisions of financial incentives, tax benefits, and subsidies have proven to be a significant advantage. The generous support further enhances their prospects in the country.

A key feature of the initiative is its encouragement of technology transfer and collaboration between Indian companies and global firms. This opens doors for innovators to access cutting-edge technologies and expand their capabilities, driving growth and progress in the process. As a result of the efforts of the programme,



Indian products and innovation have gained heightened recognition on the global stage, positioning India as a stronger contender in the international market.

Overall, the Make in India programme has created an enabling ecosystem for innovators and entrepreneurs to turn their aspirations of contributing to India's growth and development into reality. By focusing on innovation, streamlining business processes, providing market access, offering financial incentives, and fostering collaboration, the programme has paved the way for new ventures and propelled India's manufacturing landscape to unprecedented heights.

## Manufacturing

The manufacturing sector is becoming a vital cornerstone in the country's economic expansion owing to the impressive performance of critical industries such as automotive, engineering, chemicals, pharmaceuticals, and consumer durables. Prior to the pandemic, the Indian manufacturing industry contributed around 16-17% to India's GDP, and it is anticipated to be one of the most rapidly growing sectors in the future.

The manufacturing sector holds substantial importance in the Indian economy, contributing 17% of the nation's GDP and providing employment to over 27.3 million workers. Recognising its significance, the Indian government has been actively introducing various programmes and policies aimed at boosting manufacturing growth. Their objective is to achieve a target of 25% of the economy's output from the manufacturing sector by 2025.

India has become an appealing destination for foreign investments, particularly in manufacturing. Diverse industries like mobile phones, luxury goods, and automobiles, among others, have already established or are considering setting up manufacturing facilities

in the country. The potential of India's manufacturing sector is significant, with projections indicating it could reach a remarkable one trillion dollar by 2025.

The introduction of Goods and Services Tax (GST) has further enhanced India's attractiveness, creating a unified market with a GDP of \$ 2.5 trillion and a massive population of 1.32 billion people, which is a major attraction for investors.

According to the Indian cellular and electronics association (ICEA), the country can expand its cumulative manufacturing capabilities for laptops and tablets to an impressive \$ 100 billion by 2025, primarily through strategic policy interventions. These factors combined make India a compelling and promising hub for investment in the manufacturing sector.

In 2022, the Indian tech industry experiences a remarkable surge, leading to an impressive total revenue of \$ 227 billion. The nation proudly boasts a staggering 108 unicorns, signifying the strength and growth of its startup ecosystem as a testament to its commitment to fostering entrepreneurship.

Additionally, the Indian startup ecosystem reached new heights, witnessing a record-breaking 240 mergers and acquisition deals before September, amounting to a staggering \$ 148 billion. This impressive performance underscores the vibrant and dynamic nature of a country's entrepreneurial landscape, making India a prominent player in the global startup and tech arena.

## India assumes the chair for global partnership on AI

Today, India has taken on the prestigious role of chair of the Global Partnership on Artificial Intelligence (GPAI), an esteemed international initiative dedicated to promoting responsible and human-centric





development and utilisation of artificial intelligence. This significant achievement comes shortly after India assumed the presidency of the G20, a prominent forum comprising the world's major economies held in Bali, Indonesia. India's leadership in both the GPAI and G20 demonstrates the country's growing influence in shaping global policies related to AI and fostering collaboration among nations to ensure AI's ethical and inclusive development for the betterment of humanity.

The global partnership on artificial intelligence comprises 25 countries, including prominent nations such as, the US, the UK, the EU, Australia, Canada, France, Germany, Italy, Japan, Mexico, New Zealand, the Republic of Korea, and Singapore. India became a part of this esteemed group in 2020, joining as one of the founding members.

GPAI represents a pioneering initiative aimed at providing a deeper understanding of the challenges and opportunities associated with artificial intelligence. The alliance operates in close cooperation with various partners and international organisations, leveraging the expertise of industry leaders, civil society representatives, government officials, and academic scholars. Their collective efforts are dedicated to promoting the responsible advancement of AI while ensuring it remains grounded in principles such as innovation and economic growth.

## **Sectors Pushing Make in India Programme**

### **Automotive Sector**

The automotive sector has been a pivotal force in driving the success of the Government's 'Make in India' initiative. Renowned global car manufacturers, such as Renault, Suzuki, Honda, and Volkswagen have already established their manufacturing bases in the country, with more big names like Tesla planning to do so in the near future.

To propel further growth, the industry has set an ambitious target of becoming a \$ 300 billion industry within the next five years, four times its current value of \$ 74 billion. This expansion plan aims to create up to 65 million job opportunities, contributing significantly to employment generation in the country. Meeting these ambitious objectives will enhance the sector's manufacturing competitiveness and contribute to a cleaner and greener future, aligning with India's

commitment to sustainability and environmental conservation.

Through these strategic initiatives and aligned objectives, India aspires to emerge as a global leader in the automotive industry, forging a robust and sustainable growth trajectory while paving the way for a cleaner and greener tomorrow.

### **Renewable Energy**

India has indeed recognised the transformative potential of renewable energy, with a particular focus on solar energy. The rise of the renewable energy industry in India has been nothing short of remarkable. The country has made significant strides in embracing renewable energy sources as a key component of its energy mix, aiming to reduce carbon emissions, combat climate change, and enhance energy security.

Solar energy, in particular, has played a central role in this transformation. India's vast geographical expanse and favourable climatic conditions make it an ideal location for solar power generation. The government has introduced various policies, incentives, and subsidies to promote solar energy adoption and attract investments in the sector.

As a result, India has witnessed substantial growth in its solar energy capacity over the years. The country has become one of the world's leading solar energy producers, contributing significantly to the global effort to transition towards cleaner and more sustainable energy sources.

### **Electronics Hardware Manufacturing**

Electronics hardware manufacturing is vital to India's flagship initiatives, 'Make in India' and 'Digital India'. These programmes aim to strengthen domestic manufacturing capabilities and propel India into a digitally empowered society and knowledge economy.

As a critical pillar of these initiatives, the electronics hardware manufacturing sector contributes significantly to India's economic growth and technological advancement. The country aims to achieve greater self-sufficiency, generate employment opportunities, and attract foreign investments by encouraging local production.

This strategic focus on electronics system design and manufacturing reinforces India's position as a



preferred destination for electronics production and enhances its standing in the global electronics market. Embracing this sector's potential, India is well on its way to becoming a technologically advanced and digitally empowered nation.

The policy initiative taken for promotion of the sector expects to reach a turnover of \$ 400 billion and create employment for 28 million people as well as to increase exports from \$ 8 billion to \$ 80 billion.

### **Food Processing**

Food processing is a burgeoning sector in India, emerging as a critical component in the nation's progress by bridging the realms of agriculture and industry. This sector embodies the synergy of two vital pillars of development. Operating within the framework of the Make in India initiative, the Ministry of Food Processing is actively engaged in supporting 135 integrated cold chain projects alongside the successful operationalisation of 7 Mega Food Parks.

Each of these food parks holds the potential to generate 5,000 employment opportunities while imparting benefits to around 25,000 farmers. This process exemplifies the sector's remarkable role in job creation and farmer empowerment.

In essence, food processing is on a trajectory to become a sunrise sector in India, strategically weaving together agriculture and industry to propel the country's development trajectory forward. It is a prime example of how economic growth, job creation, and agricultural advancement can harmoniously converge to shape a more prosperous future.

### **AI & Robotics**

AI and Robotics are paramount sunrise sectors on a global scale. This technological duo is orchestrating a revolution across diverse industries, gaining substantial traction over the past few years. The Government of India has displayed a determined commitment to advancing this sector through a multitude of strategic initiatives.

In March, a momentous stride was taken with the inauguration of India's inaugural artificial intelligence and robotics park in Bengaluru. This visionary endeavour is backed by a seed capital of Rs 230 crore. The ARTPARK and AI Foundry notably unveiled a \$ 100 million venture fund. This fund is designed to propel innovation in the

fields of AI and robotics originating in India.

This orchestrated effort underlines the Government's proactive stance towards nurturing the growth of these transformative technologies. By cultivating a supportive ecosystem, India aims to harness the potential of AI and robotics, fostering innovation, economic progress, and global competitiveness. This initiative positions India at the forefront of the AI and robotics revolution, contributing significantly to the nation's technological advancement and global impact.

### **Launch of ONDC**

The Open Network for Digital Commerce (ONDC) is aligned with the Make in India initiative, synergising efforts to boost domestic manufacturing. ONDC serves as a catalyst for enhancing India's self-reliance within the digital commerce sector.

ONDC's role within the framework of Make in India is pivotal, aiming to establish a collaborative and all-encompassing digital commerce ecosystem. By advocating for local innovation and production, ONDC empowers Indian enterprises and entrepreneurs, ultimately contributing to overall economic advancement.

The harmonisation of ONDC and Make in India positions India strategically to harness its digital potential, stimulate economic progress, and fortify its position in global digital commerce. This amalgamation underscores India's dedication to self-sufficiency, innovation, and forward momentum in digital commerce.

### **Conclusion**

In conclusion, initiatives like 'Make in India' underscore India's resolute dedication to nurturing economic progress, fostering innovation, and achieving self-reliance. By strategically encouraging domestic manufacturing, attracting investments, and facilitating business expansion, India positions itself for heightened global prominence across diverse sectors. The amalgamation of technology, innovation, and localised production propels India towards a future characterised by increased capabilities, economic well-being, and self-sufficiency. These initiatives pave the way for India to emerge as a significant global player, spearheading innovation, job generation, and sustainable advancement. □