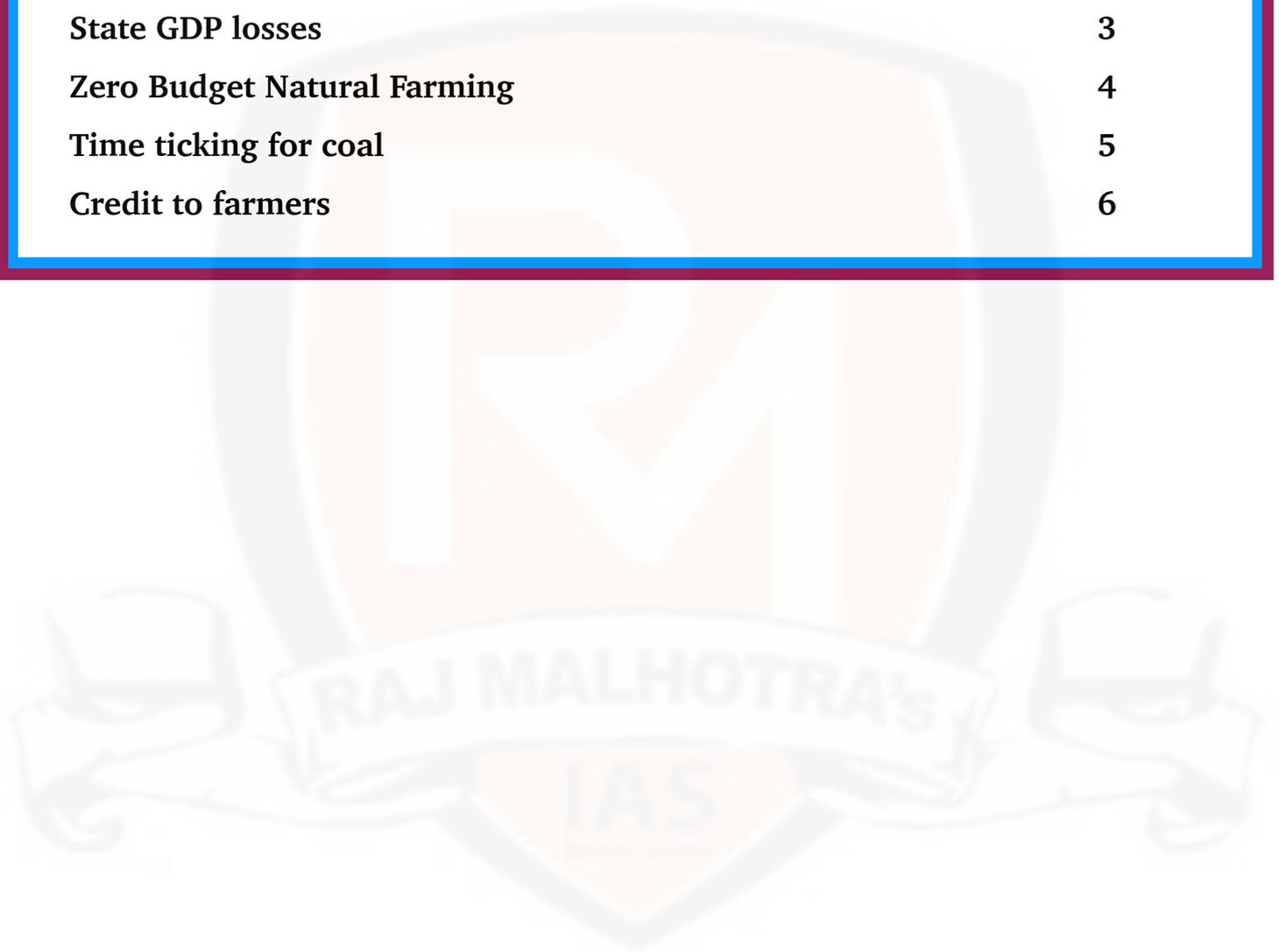


**RAJ MALHOTRA'S IAS ACADEMY, CHANDIGARH**

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## Delay in monsoon withdrawal

There is over 50 per cent chance of a La Niña condition in the equatorial Pacific Ocean during the autumn of 2020, suggests the latest update by the United States National Oceanic and Atmospheric Administration. It adds that once formed, **the La Niña condition might continue into the winter season.**

### What is the current status?

- Currently, El Niño Southern Oscillation (ENSO), an irregularly periodic variation in winds and sea surface temperatures over the **tropical eastern Pacific Ocean, is in neutral condition.** The warming phase of ENSO cycle is known as **El Niño** and its cooling phase as **La Niña**. It is characterised by the unusual cooling of the central and east-central equatorial Pacific Ocean.
- During the past four weeks, equatorial sea surface temperatures were below average from the International Date Line to the eastern Pacific and were above average in the western Pacific. The International Date Line is an imaginary line on the Earth's surface, defining the boundary between one day and the next.

### What is 'El Nino' and 'La Nina'?

- Both El Niño and La Niña are **deviations from normal surface temperatures** that occur due to the anomalous behaviour of trade winds. In the case of El Niño, the trade winds weaken, leading to **warming**.
- In La Niña, the opposite happens and the trade winds strengthen, leading to **cooling**. Both these events can have large-scale impacts not only on ocean processes, but also on global weather and climate.
- During El Niño, the central and equatorial Pacific Ocean becomes unusually warm. This disrupts global wind patterns, affecting climatic conditions in tropical areas like Africa, sub-tropical areas like India and extra-tropical areas like North America.
- El Niño and La Niña episodes typically last nine to 12 months, but some may last for years. While their frequency can be quite irregular, on an average El Niño and La Niña occur every two to seven years. Typically, El Niño occurs more frequently than La Niña.

## Segregation of waste at source

The government recently released the **Swachh Survekshan 2020 report**,. The report, however, highlights a peculiar problem: **only 35 per cent cities are segregating waste at source in at least 50 per cent of its wards.**

### Observations - a cause of worry -

- This percentage is substantially lower than what the government has so far maintained. The **Output Outcome Framework 2020-21**, released in February by the Union Ministry of Finance to suggest expenditure reforms, **observes 74 per cent wards in the country were on track to follow 100 per cent source segregation by March 2020.** It says that under Swachh Bharat Mission-Urban, the country has achieved **100 per cent source segregation in 63,000 of the 82,000 wards in the country.**
- In contrast, the **Survekshan report**, which has covered 4,242 cities that have a combined ward strength of 64,315, **claims only 1,476 cities are segregating at least 50 per cent waste at source.** The survey was conducted in January 2020 and the finance ministry report takes data till March 31, 2020. So for both the reports to be correct, the country must have added nearly 40,000 more wards to the segregation at source list in just three months. The Survekshan report does not divulge city-wise details on source segregation.
- Similarly, it claims that **2,606 cities practise door-to-door garbage collection** in more than 50 per cent of the wards, whereas the Swachh Bharat Mission–Urban dashboard, accessed on August 21, claims 4,372 cities (that cover 81,875 wards) are practising 100 per cent door-to-door garbage collection. This also seems extremely ambitious and unlikely.

### More details -

- The Survekshan report has once again declared **Indore as the cleanest city**, followed by Surat and Navi Mumbai among cities with more than a million population. Maharashtra's Karad, Saswad and Lonavala bagged the first three positions for cities with population less than 100,000.
- Among the cities with population between 100,000 and 1 million, **Chhattisgarh's Ambikapur was declared the cleanest**, followed by Mysore in Karnataka. **Chhattisgarh is the first and the only state where every city has achieved open defecation free++ status.**

## Undernourished children in India

As per the the *Journal of Global Health Science*, in Jharkhand alone, 0.35 million children can become severely malnourished and another 0.36 million underweight, warns the paper. Another 0.5 million children in Jharkhand can become wasted, and 0.4 million severe wasted. A child is wasted when s/he has low weight for height. It is triggered either by poor diet or infectious diseases like diarrhoea.

Underweight is defined as low weight-for-age. A child who is underweight may be stunted, wasted or both.

### More shocking studies -

- The study has a similar prediction for the rest of the country. It warns the **food shock**, defined as the disruption in nutritious food due to the lockdown, would be worst felt in **Bihar, Uttar Pradesh and Madhya Pradesh**.
- These states have the highest child population base along with high levels of poverty head count ratio, maternal mortality, infant mortality and low coverage of public health and nutrition services. The three states can record over 5 million new malnourished children due to the lockdown, as per the studies.
- **Every second child in India is already malnourished**, suggests the latest National Family Health Survey (NFHS) of 2015-16, which is the basis for the study. It means roughly 77 million children—which is the combined population of Jharkhand, Telangana and Kerala—are undernourished in the country.

### Way forward -

Given the challenge in the current scenario, the paper says it is “critical to ensure an uninterrupted supply of nutritious meals and food supplements to the poor children while arresting the infection spread”.

### Conclusion -

It concludes that it is still a conservative estimate and these minor shocks can lead to large and devastating effects on nutritional health of India.

## State GDP losses

As the cases of COVID-19 in India increase, the poor infrastructure to deal with the outbreak and unplanned entries and exits into and from lockdowns may end up prolonging the pain.

### The economic pain -

- According to a report released by the State Bank of India, states, on an average, will see a 16.8 per cent drop in their gross domestic product (GDP) in 2020-21 (FY21).
- It adds that even a 10 per cent reduction is enough to push the mortality rate in the states by 0.6-3.6 per cent.
- In Uttar Pradesh, for instance, COVID-19 deaths alone will increase the state's overall mortality rate by 0.16 per cent, whereas the state GDP contraction will push the mortality rate by a further 3.4 per cent, which is more than half of the state's current mortality rate.
- Similarly, Delhi will add 2.42 per cent to the existing mortality rate. Of this, 2.14 per cent will be added due to GDP contraction.
- The country's GDP loss will be to the tune of Rs 38 lakh crore in the current financial year. The top 10 states will be responsible for some 73.8 per cent of the total GDP loss. They currently

account for nearly 81 per cent of total confirmed COVID-19 cases. This will translate to a **per capita annual income** loss of Rs 27,000.

- While Maharashtra will contribute 14 per cent of the country's total gdp loss, Goa will witness the maximum per capita loss of over `1,00,000. In Delhi, the per capita loss will be close to `90,000.

### **Unsystematic lockdowns -**

- The states have resorted to “**unplanned and unsystematic lockdowns**” that are adversely impacting the economic activity. Of the 18 states analysed in the SBI report, Karnataka has the highest number of isolation beds per 100,000 population at 298. The average of the states is just 80 beds. This is alarming on two counts: one, India is nowhere near flattening the curve, and two, the disease has spread significantly to rural India.
- While only five states in the country have witnessed the peak (Tamil Nadu, Delhi, Gujarat, Jammu and Kashmir, and Tripura), 22 are yet to go downhill on the curve. Global experiences suggest that a region can have multiple peaks.
- According to the World Health Organization, before a region can relax restrictions or begin reopening, the test positivity rate from a comprehensive testing programme should be at or below 5 per cent for at least 14 days. While 18 states, including Uttar Pradesh, fall in this category, the testing rate remains far from satisfactory in most of them.

### **Rural areas - the new hotspots -**

- Rural districts, defined as **areas where rural population is more than 60 per cent as per Census 2011**, contributed 54 per cent of new cases in the first half of August.
- In July the contribution was 51 per cent. In June, the rural share was 24 per cent. Of the 50 districts that contributed most new cases in August, Andhra Pradesh comes at the top with 13 districts, of which 11 are rural.
- Maharashtra has 12 of the 50 districts, of which six are rural. Also, the number of rural districts with less than 10 cases has reduced significantly. In April, India had 415 rural districts with less than 10 confirmed cases. By the first half of August, only 14 such districts remain.

## **Zero Budget Natural Farming**

In the recent past, there has been a global demand to shift to sustainable farming systems, such as Zero Budget Natural Farming (ZBNF). India, too, introduced ZBNF in its Union Budget 2019-20.

### **What is Zero Budget Natural Farming?**

- As the name suggests, it is the adaptation of an ancient practice which reduces farmers' direct cost and encourages them to use natural inputs, such as cow dung and cow urine.
- The inputs help manage **soil nutrition, fertility, pests and seeds**. The technology requires **less tilling** and completely **rejects the use of inorganic fertilisers, pesticides and herbicides**. It is also **water-efficient**.

### **Benefits -**

- A study by the Renter for Study of Science, Technology and Policy (CSTEP), found the maximum benefits of ZBNF in paddy farming, with a saving of 1,400 to 3,500 cubic metre of water per acre per paddy cropping period (one acre equals 0.4 hectare).
- This was accomplished by increasing the time interval of irrigation cycles—every eight to 10 days— unlike the conventional method which requires watering every five to six days.
- The **water saving** was attributed to multiple aeration practice. This water management method involves periodic aeration of the soil between watering periods.
- In just one crop season, **electricity consumption** of farms relying on groundwater reduced by 1,500-3,900 units per acre, and saved `6,000-16,000.
- Further, multiple aeration hinders microbial activity and **cuts methane emissions by 88 per cent**, compared to the conventional flooding practice. This leads to an additional saving of fossil fuels used for electricity generation and emissions reduction.
- If all of India's paddy area—43-44 million ha—is brought under ZBNF, 150-400 billion cubic metre of water can be potentially saved. The volume is equivalent to storage potential of 40 to 100 Tehri dams, one of India's biggest dams located in Uttarakhand.

### Social benefits -

ZBNF farming can also solve disputes between farming communities where upstream farmers employ canal irrigation and end up guzzling more water, leaving downstream farms with insufficient volume.

### Conclusion -

As they say, Rome was not built in a day, similarly, ZBNF requires time and policy support so that the government provides monetary help for it to be adopted in all the states.

## Time ticking for coal

The world has been stuck with coal for years. The carbon-spewing fossil is still the biggest source of energy. The transport, manufacturing, construction and power industries are driven majorly by coal. But with 72 per cent of the world's greenhouse gas emissions arising from the energy sector, it's now time to kick this dirty habit.

### What is the threat?

- The average atmospheric CO<sub>2</sub> level has crossed the permissible 350 parts per million (ppm) to as much as 415 ppm.
- If the world does not abandon its business-as-usual approach, global warming will rise to 1.5°C above pre-industrial levels within just 10 years.
- This will have serious implications on natural and human systems. Global warming has already hit the 1.2°C mark.

### Coal - the villain -

- In its special report on global warming in 2018, the Intergovernmental Panel on Climate Change (IPCC) had stated that staying within 1.5°C would require all coal-powered electricity to zero out by 2050.
- To achieve this, the more polluting older coal plants should be shut down first, says Climate Analytics, a European think-tank.
- This means developed countries, who are the worst polluters, would have to make the initial transition. The think-tank prescribes that coal must be phased out globally by 2040. It has set 2031 as the deadline for 37 OECD countries (Organisation for Economic Cooperation and Development).
- These countries are responsible for one-third of global emissions and their per capita emissions are twice the global average. Eastern Europe and Latin America should phase it out by 2031 and 2032, and non-OECD Asian countries have 2037 as their deadline.

### How is the world performing?

- **Japan**, the sixth most polluting country, **plans to install new coal-fired plants of 18-GW capacity** instead of shutting down the old ones. This would increase its existing coal capacity by 40 per cent. Japan's energy minister Kajiyama Hiroshi says since they do not have the potential to develop renewable energy, they will provide technological and financial support.
- **Norway** has adopted a similar route. It has lowered its emissions but given billions of dollars to coal mining firms.
- **Germany**, the biggest contributor to carbon emissions in the European Union, **aims to phase out coal by 2038**. An equitable schedule would require the country to phase it out by 2030. So Germany's 55 per cent emissions reduction target for 2030 is highly insufficient.
- Big polluters like Australia, Indonesia, Mexico and South Korea have not even considered phasing out coal. **Australia and Indonesia are the biggest coal exporters in the world.**
- **China** has an installed coal capacity of 973 GW (much of this underutilised) and plans to add another 199 GW. It is also the biggest international coal funder.

### What about India?

- India may have started focusing on renewable energy but **coal still provides over three-fourths of its electricity.**

- It is constructing **new 60-GW capacity coal-based plants** and plans to build even more. So by 2030, coal will still have a major share in India's power generation.

## Credit to farmers

About 69 percent of India's population resides in rural areas, with agriculture being the primary income source. In 2017, **the Committee on Doubling Farmers' Income** observed that rural income levels have either remained stagnant or worsened.

### What are the trends?

- On an average, the difference between the rural inflation rate—as measured by consumer price index—and the growth rate of agricultural wages was **merely 2 per cent since 2000**.
- **Between 2012 and 2017, the monthly income of an average agricultural household was less than Rs 8,000**, increasing annually by 9.5 per cent as against the inflation rate of 7.5 per cent, implying that **almost 80 per cent of growth in incomes was consumed by increasing farm expenditures**.
- Moreover, the agricultural sector, in aggregate, witnessed a **drastic decline in its contribution to India's Gross Domestic Product**—51 per cent in 1950-51 to 15 per cent in 2016-17—while the **percentage agricultural labour force participation only reduced from 70 per cent in 1950-51 to 54 per cent in 2016-17**.

### Policy interventions -

- The three main policy instruments to manage farm risks are - **farm loans or agricultural credit, crop insurance, and the Minimum Support Prices (MSP)**.
- While credit and insurance are meant to mitigate production risks—where they serve as safety nets for household consumption and on-farm investment in the event of crop losses—MSP serves to sustain farm revenue against fall in crop prices.

### 1. CREDIT -

- While **short-term loans** are generally used for timely purchase of farm inputs such as fertilisers and pesticides that enable higher crop yields; **medium-term and long-term credit** can facilitate the creation of farm assets by funding infrastructural investments.
- The Committee on Doubling Farmers' Income observed that **nearly 86 per cent of all farm investment** is undertaken **using borrowed funds**.

### Background -

- The **critical role of credit** was first recognised by the colonial government who disbursed short-term loans during the drought years of mid-1870s. In 1904, **the Cooperative Societies Act** formalised the role of cooperatives, followed by the legal recognition of credit societies in 1912, in disbursing agricultural credit.
- However, low repayment levels—about 70 per cent overdues in 1927—warranted additional intervention. In 1935, with the establishment of the **Reserve Bank of India (RBI)**, a dedicated division was set up to govern matters of rural financing, and efforts were made to enhance institutional credit penetration via banks in rural areas. However, only 7.2 per cent farmers had access to some form of institutional credit until 1951, says RBI.
- The institutional inadequacy in terms of access and size of loans continued to be a challenge throughout the 1950s and 1960s, which came into sharp focus during the Bihar drought of 1965-67, leading to **the first wave of bank nationalisation in 1969, when agriculture was designated as a priority-sector** and a fixed proportion of total bank lending was mandated towards the agricultural sector.
- Yet, the agricultural credit flow did not show much improvement because commercial banks were not in tune with the needs of small farmers who offered little in terms of collateral.
- Eventually, the regional rural banks (RRBs) were established in 1980 as an alternative banking structure that combined the strength of cooperatives and those of commercial banks, which was followed by a second wave of bank nationalisation and the creation of the National Bank for Agriculture and Rural Development (NABARD) in 1982. NABARD played a crucial role to promote institutional rural credit via self-help groups (SHGs). Cumulatively, these efforts led to a

significant improvement in the expansion of formal credit in the agricultural sector. But this plateaued out post-1981.

- The reforms of 1991 introduced the deregulation of interest rates, recapitalisation of select RRBs, and higher refinancing support from the rbi. Over the years, the government launched many farm credit programmes, including the Kisan Credit Cards (or KCC in 1998–1999), Interest Subvention Scheme in 2006-07 and the Pradhan Mantri Kisan Samman Nidhi Yojana in 2018, that attempted to provide zero interest loans via direct benefit transfers to farmers who owned up to 0.8 hectares of land.

#### **Impediments to formal credit mechanisms -**

- In India, **the formal rural credit is compulsorily tied to insurance**—the loanee farmer must also buy crop insurance for the growing-season in which the loan is sanctioned. This property of formal credit should have ideally enhanced its value-proposition relative to informal sources.
- However, multiple impediments exist in the formal credit system pertaining to **weak institutions** that lead to, what economists call, **high transactions costs**. These transaction costs manifest as **delays in credit delivery and institutional bias in loan approvals**—skewed in favour of the wealthier farmers or larger land holders—which induce farmers' reliance on the informal credit sector, especially during immediate cash need in times of farm distress.
- Small, marginal and landless (SML) farmer households who account for about 86 per cent of the total rural households and own less than 48 per cent of agricultural land in India's semi-arid heartlands lose out in terms of attaining both formal and informal credit. In fact, a 2019 report by rbi showed that only 40 per cent of SML households had access to some form of institutional credit.
- There is an enduring role of social hierarchies as predictors of credit access by the **means of caste, education, age and wealth**. Households of the forward castes are 1.3 times more likely to get farm credit from formal and informal sources when compared to their counterparts from the backward castes. The agricultural census of 2012 also showed that scheduled caste and scheduled tribe households account for more than 20 per cent of landholdings in the country, yet received less than 12 per cent loans under the KCC scheme.
- Wealthier households, and households having older and more educated heads, are more likely to get credit, possibly due to access to better social and economic networks. There is also evidence of significant differential access across states. On average, wealthier southern states exhibited higher credit access as compared to the western states.

#### **Way forward -**

- In May 2020 the Union Cabinet decided to scrap the compulsory linkage between insurance and institutional credit.
- Unless such policy interventions account for measures to improve crop insurance access for non-loanee farmers, the systemic inequality in credit access will only reflect in insurance adoption in the coming years.
- Developing affordable and effective risk management systems that are accessible to all farmers, irrespective of social and economic status, is the need of the hour.