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Down To Earth - November 2018

News -

1. **Badarpur plant finally shuts down** - The Badarpur power station, identified as one of the biggest contributors to Delhi's air pollution by the Supreme Court-appointed Environment Pollution (Prevention and Control) Authority or EPCA, closed operations permanently on October 15. The plant was set up 48 years ago and was commissioned for only 25 years. It was also the last thermal power plant in the city that has now moved to cleaner gas-based plants.
2. **India needs two time zones** - Director of National Physical Laboratory (NPL), which is the official timekeeper of India has recently said it is technically feasible to have a separate time zone for eastern states and Andaman and Nicobar Islands and its impact on the Railways will be minimal. There are only two stations within the narrow border area, Alipurduar and Cooch Behar, between the two time zones which differ by an hour. As not many trains pass through them, the time difference can be manually synchronised without much problem. In the long run, all the clocks (in the Railways) will be automatically synchronised and NPL is in the process of automatic synchronisation.
3. **Urban explosion** - Between 2014 and 2050, India is projected to add 404 million city dwellers and the number of its rural residents is expected to decline by 52 million.
4. **Punjab bans glyphosate** - A day after a court in the US upheld glyphosate's role in causing cancer, Punjab on October 23 became the first state in India to ban the use of the herbicide. Central Insecticide Board and Registration Committee of India has approved the use of the chemical only in tea plantations and in non-crop areas.
5. **Alarm bells for India** - With 14 of the world's 20 most polluted cities in India, the country lost about 61,000 children under five years of age due to their exposure to fine particulate matter (PM2.5) in 2016, says a World Health Organisation (WHO) report, 'Air Pollution and Child Health: Prescribing Clean Air.' Some 93 percent of the world's children under 25 years of age are exposed to PM2.5 levels above WHO air quality guidelines, which include 630 million under-five children and 1.8 billion children under 15 years. In low- and middle-income countries.
6. **UNEP report on reducing carbon and methane** - UNEP released a report on 25 solutions that can substantially reduce carbon (20 per cent) and methane (45 per cent) emissions in Asia and the Pacific region. The measures would help 1 billion people breathe cleaner air by 2030. The solutions can be categorised into three types: one set looks at enhancing emission standards for vehicles, power plants and industries; another set looks at the reduction in burning of waste and management of livestock manure, while the third set looks at renewable energy.

A quick fix - Stubble burning

To combat air pollution in the National Capital Territory (NCT) due to stubble burning, the Centre, in this year's budget, rolled out the Promotion of Agricultural Mechanisation for in-situ Management of Crop Residue in the States of Punjab, Haryana and Uttar Pradesh and NCT of Delhi, a subsidy scheme to make straw management machines such as rotavators affordable.

Details of the scheme -

- The Rs 1,152-crore scheme provides 50 per cent subsidy to individuals and 80 per cent to farmer groups and cooperatives to purchase a variety of straw management machines.
- These include rotavator, Happy Seeder, super straw management system, chopper/mulchers, zero till drill, shrub cutter, slasher, RMB plough that help the farmer cut paddy and wheat stubs, mix them with soil and sow fresh seeds.

Issues -

- The government did not bother to sensitise the farmers on how and when to use these machines.
- These machines work best only if a farmer does monoculture (cultivation of a single crop in a given area). But the farmers generally grow paddy in their land and then replace it with vegetables and other crops.
- Using the machines will also increase the input cost of farmers, whereas stubble burning costs nothing to the farmer.
- Commonly used tractors that have 30-35 horsepower are underpowered to pull these heavy machines which require 60-80 horsepower to run. Such heavy horsepower tractors would cost around Rs 8-10 lakh and are not covered under the subsidy scheme.
- Days after the subsidy scheme was announced, the manufacturers of star management machines hiked the prices steeply, therefore, nullifying the effect of subsidy for a farmer.
- Till the first week of October, Punjab had distributed only 13,200 straw management machines against the scheme's target of 25,000. Even Haryana could meet just half of its target of distributing 13,000 machines.

What is the way out?

- Principal Secretary to Punjab CM called the subsidy scheme a flawed plan as Punjab has around 20 million tonnes paddy straw at the end of every cropping season. No machines can manage this amount of in-situ straw in the given stipulated window of 20-25 days.
- The government should plan to reduce acreage of paddy cultivation in the state and shift it to other parts of the country.
- Farmers in the northern states should be incentivised through assured prices for crops like maize to move away from paddy.
- As an immediate measure, the Centre should directly give money to farmers to manage the stubble rather pushing new machines.

Gujarat's pride fall - Decline of Gir Lion

Indian Council of Medical Research (ICMR) tests have shown that 21 of the 23 lions (in Dalkhania Range, one of the 16 forest ranges of the Gir National Park and Wildlife Sanctuary) were suffering from the canine distemper disease (CDD).

Cause of decline in lion population -

- This highly contagious and fatal airborne CDD which is caused by the canine distemper virus (CDV) spreads from dogs to bovines and waterbodies, before reaching the lions. It is a major reason for the downfall of number of lions in the region.
- Illegal tourism - Private tourist operators organise illegal lion shows in the revenue villages near Gir. This ease of availability of lion to illegal tourists exposes them to bovine and canine population who could carry CDV.
- The increase in the population of humans surrounding the villages near Gir National Park and Wildlife Sanctuary, which is a protected area exposes them to several life threatening diseases. As per Gujarat Government's Lion Population Estimation Report of 2015, the lion population in ALL has increased by 27 percent in 2010 and 523 in 2015, but the growth is lopsided. The increase in lion numbers inside the protected area has been just 6 percent, the increase outside has been a phenomenal 126 percent.
- On the one hand, the lion numbers have gone up, and on the other, the staff shortage in the forest department has increased, leading to laxity in vigilance, protection and management of forests. The field staff says that the working conditions are very difficult and the salary does not come on time.

A prestige issue -

- Wildlife activists have been asking Gujarat to translocate lions outside the state to ensure that the population is spread out and the danger of a species wipeout is averted. But Gujarat has always maintained that Gir is safe for the species.
- A Delhi-based non-profit Biodiversity Conservation Trust of India filed a petition with the Supreme Court asking translocation of Gir lions from Gujarat. In its judgement delivered on April

15, 2013, the Supreme Court agreed with the idea of shifting lions outside Gujarat to the Kuno Wildlife Sanctuary of Madhya Pradesh.

- Gujarat filed a review and a curative petition the same year but the court rejected both. However, neither Ministry of Environment and Forests nor the Gujarat government took steps to translocate lions.
- In 2014, Ajay Dubey, a Madhya Pradesh-based wildlife activist, filed a contempt petition in the Supreme Court charging the now Union Ministry of Environment, Forest and Climate Change (MOEF&CC) and the Gujarat state government with inaction.
- The petition was disposed off by the court in March this year after MOEF&CC said that an expert committee, formed as per the apex court's 2013 judgement, to oversee the translocation will hold meetings and send the minutes to the court to keep it updated about the process.

Conclusion -

The Asiatic lion has survived the recent epidemic scare. It might not be so fortunate the next time. To jeopardise the survival of a species because it's the "pride" of a state is simply irrational.

When milk turns sour

Farmers across the world are crying for help as global milk prices slump. In India, the biggest producer of milk in the world, aggrieved farmers took to the streets in June and August after the wholesale prices of cow milk collapsed to below the cost of bottled water in several states.

Global milk woes -

- 73 million small dairy farmers have helped India surpass the European Union (EU) to attain the superlative in milk production in 2017-18.
- According to the National Dairy Development Board, the country's milk production has grown at 6.3 per cent a year during 2014-18, surpassing demand for packaged milk.
- Usually dairy units procure the excess milk and convert it into skim milk powder (SMP) to be sold in the international market. But the global price of SMP too has fallen by almost half in 2018 - creating a glut and price drop in domestic market.
- Surprisingly, retail price of butter, chocolates and other dairy-based products has doubled since 2015. In EU and New Zealand (large producers of milk), it is alleged that supermarkets engaged in retail are creating pressure to keep milk prices low while rates of dairy products are managed to stay high. This is a system of unfair competition.
- To further compete with farmers who supply fresh milk, these multinationals have set up plants where they reconstitute SMP, at times by adding some herbs, and sell those as "quality" milk.
- Germany, EU has acted under pressure of WTO to remove all direct subsidies (since 2015) to farmers which used to help them sustain their dairy enterprise.

Concerns for India -

- India has so far remained immune from the onslaught of foreign dairy giants.
- The investments by multinational companies to establish their procurement networks in Karnataka, Andhra Pradesh and Tamil Nadu was seen as a groundwork for a future when India might open its market for European dairy products. When that did not happen, they started competing with India in the global market. They started exporting cheap dairy products to those Asian and African countries where India had a stronghold.
- Since 2015, India lost its largest export market of Bangladesh, Egypt, Algeria, the UAE, Yemen, Saudi Arab and Pakistan to the EU.
- In 2013-14, India exported 31,000 tonnes of dairy products, worth `637 crore, to Bangladesh and 9,500 tonnes of dairy products, worth `200 crore, to Pakistan. In 2017-18, it reduced by 90 per cent and 84 per cent. By all probabilities, the trend would continue.
- The Food and Agriculture Organisation (FAO) warns that milk price will remain depressed for more than a decade.

Way forward -

- It's time governments raised welfare standards of cattle. This will stop over-production of milk, create scarcity and reverse the demand-supply trend.
- There is also an urgent need to re-establish local market where farmers can directly sell to consumers.

- India's traditional practice of directly supplying milk to consumers has made its dairy sector sustainable. Some 75 percent of dairy farmers in the country work in unorganised sector and are thriving. Only those who supply to organised sectors are facing the crisis. This practice is inspiring several farmers elsewhere in the world.
- Small milk producers need to organise themselves into non-centralised and localised collectives that link directly to consumers. This will help them to stay away from an extremely volatile and vulnerable global system of commodity production.

Killer move

The process of tiger translocation is governed by the “**Protocol for Tiger Re-introduction**”, framed by the National Tiger Conservation Authority (NTCA), a body to manage and conserve tigers, under the Union Ministry of Environment, Forest and Climate Change (MoEF&CC).

About the protocol -

- NTCA adopted the protocol from the International Union for Conservation of Nature (IUCN) guidelines for the same.
- The protocol emphasises on the acceptance of the translocation by the local community.
- It states that a team of experts from the Wildlife Institute of India (WII), forest department of the state, a qualified veterinarian and a qualified wildlife biologist should evaluate the socio-economic impact of the translocation on the people in the area.
- A thorough assessment of attitudes of local people to the proposed project is necessary to ensure long term protection of the re-introduced population, especially if the cause of species' decline was due to human factors (e.g. overhunting, over- collection, loss or alteration of habitat).
- The programme should be fully understood, accepted and supported by local communities, the protocol states.

When translocation is necessary?

“Translocation of tigers is justified only if -

- One, there is sufficient data to show that adequate prey density exists;
- Two, tigers are either absent or well below carrying capacity densities as shown by data;
- Three, there is no chance of wild tigers colonising the area naturally with adequate protection;
- Four, the introduced tiger is not captive bred but is caught in the wild and is capable of hunting prey; and
- Five, the introduced animals are radio-collared and tracked so that they can be shot or recaptured the moment there is problem.

Is India food surplus?

Record-breaking food-grain production was registered in seven years in the past decade. From 217 million tonnes in 2006-07, the country's production jumped to 275.11 million tonnes in 2016-17. India also proudly claims to be a net exporting country i.e. it exports more than it imports.

A fault line -

- It is disturbing that the country had recorded a very high number of farmer suicides and an equally high number of farmer protests in the past two decades. Between 1991 and 2011, over 14 million financially stressed farmers quit farming.
- There was price crash in the food-grain market which forced them to sell food at throwaway prices, or just let them rot.

Trashing government claims -

- The country is home to 270 million hungry people, the highest in the world. India stands 97th in Oxfam's Food Availability Index, and 103rd in the 2018 Global Hunger Index.
- Government's own data shows that the country is not self-sufficient. Ramesh Chand, a member of NITI Aayog, predicted a demand of 257.70 million tonnes in 2016-17 which means that the

government can claim surplus production if it produced more than that. But the country produced 275.11 million tonnes that year. This was barely a few million tonnes more than the assessed demand, not enough to meet the demand during drought.

Export in times of hunger -

- The country exported 20.4 million tonnes of agricultural produce in 2015-16, and 22.3 million tonnes in 2017-18.
- It imported 8.1 million tonnes in 2015-16 and 9.4 million tonnes in 2017-18, shows the agriculture ministry data.
- Food-grain imports indicate how insufficient the country is in staple food production.
- In 2015-16, food-grains accounted for 79 per cent of the imported agricultural produce; the figure was 78 per cent the following year.
- In 1991, the per capita food-grain availability per annum was 186.2 kg and 177.7 kg in 2016. Between 1903 and 1908, the net availability of food-grains was 177.3 kg. These historically low figures are reminders of the times of British rule in India that witnessed similar food availability.

Nutritionally starved -

- In 2011-12, there was 30 per cent gap in the actual and the recommended dietary energy intake of people living in rural India. That year, the gap was 20 per cent in urban areas.
- The gap exists despite the country's per capita income having increased almost 1,400 times— from Rs 6,270 in 1991 to Rs 93,293 in 2016.
- In the last two decades, only 10 per cent of the country's investment was in the agriculture sector despite 50 per cent of the rural workforce engaged in agriculture.
- Three-fourths of the nutrition comes from cereals and pulses. The decline in cereal consumption did not adequately compensate the increase in consumption of horticultural and livestock products.

Conclusion -

In the face of nutritional deficiency and hunger, it is worrisome that the country's focus has shifted from farming to imports.

The lament continues

On October, 25, 120 UN countries signed the Astana declaration, vowing to strengthen primary healthcare and achieve universal health coverage by 2030.

Background - Alma-Ata Declaration -

- This is the second time the world took this pledge.
- In 1978, 134 nations signed the Alma-Ata Declaration with the same pledge.
- The reason behind the need for reaffirmation is clear —the world has failed to meet the targets set 40 years ago.
- Though Alma-Ata was signed to ensure health for all, its progress was uneven, with several countries missing out on several indicators set under the declaration.

Why Alma-Ata declaration failed?

- The reason, as the 2006 World Health Report indicates, was the needs-based shortages in primary healthcare, which was the highest in sub-Saharan Africa (SSA).
- Due to the shortages, 80 per cent of basic maternal and child health services could not be provided and the world failed to meet one of the main thrusts of Alma-Ata, which was reproductive health.
- Shortage of funds also affected the progress of this indicator.
- A poll conducted among the participants at Astana revealed that 59 per cent of the countries spend only 19 per cent of their national health budget on sexual, reproductive, maternal, newborn, child and adolescent healthcare.
- The new economic order lacks the political will to address inequities, which determine access to nutrition, safe drinking water and sanitation.

Pitfalls in Astana Declaration -

- Though the Astana Declaration recognises the risk factors for premature deaths and non-communicable diseases and attributes them to both human-made and natural causes, nowhere does it recognise the economic and political reasons responsible for these.
- Therefore, leadership after the Astana pledge is essential to rejuvenate all the aspects of primary healthcare.

The trick is in the treaty text

There are many ways in which the canny developed nations have sought to use intellectual property (IP) laws to impose huge burdens on poor nations over and above what is mandated by the World Trade Organisation requirements known as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

Concern -

- Developed countries try to impose higher standards of IP protection, or trips plus, in bilateral and regional trade agreements and their impact is primarily felt in the health sector.
- Such requirements are intended to protect the profits of multinational pharmaceutical firms by preventing the entry of generic versions of a patented product that are infinitely less expensive.

TRIPS Plus -

- Trips plus can consist of various measures and one such is patent linkage (PL).
- This is the practice of linking marketing approval for a drug to the patent status of the originator drug in order to prevent marketing approval of generic drugs until after the expiry of patents covering the drug.
- India does not allow PL.
- Major trade partners of India are trying to sneak in PL demands in the free trade agreements which are being negotiated with India, to which India refuses steadfastly.

Way out of problem -

India's Commerce Ministry officials should keep the text of the trade agreements ambiguous. This would allow low and middle income countries (LMICS) to exploit the "constructive ambiguities" in the text of the trade treaty to mitigate the impact of PL mechanisms and keep the generic drugs flowing.

Double-edged sword

The global production of plastics has increased exponentially from 2.3 million tonnes in 1950 to 335 million tonnes in 2016. It is expected to triple by 2050.

Concern for India -

As per the 2013 estimate of the Central Pollution Control Board (CPCB), Indians throw out 15,342 tonnes of plastic waste every day, of which about 60 per cent is recycled, mostly by the informal sector. But single-use plastics like cups, plates and polybags, also referred to as disposable plastics, cannot be recycled.

Good practices -

- A fascinating initiative developed by Rajagopalan Vasudevan, a chemistry professor at the Thiagarajar College of Engineering in **Madurai**, Tamil Nadu shows single-use plastics can be used for road construction.
- Discarded pet bottles are lighting up the lives of slum dwellers in **Bengaluru** through an initiative called Liter of Light.
- Another inspiring story is that of the **Pune Municipal Corporation's SWACH model**. The SWACH door-to-door collection model is based on the recovery of fees from users and provision of infrastructure and management support by the municipality.
- An initiative in **Gurugram** named Alag Karo, Har Din Teen Bin (segregate in three bins every day) has witnessed the coming together of the municipal corporation, private partners and the civil society, with the aim to establish segregation at source and develop capacities of waste collectors to ensure high recycling rate.

Drive the extra mile

India has drawn accolade for skipping the stage V emission standards to leapfrog from Bharat Stage IV (BSIV) to Bharat Stage VI (BSVI) in 2020 - advancing by five years from the original proposal.

New developments -

1. One, BSVI fuel has been introduced in Delhi in advance to battle its deadly smog, and,
2. Two, the automobile industry has not been allowed extra time to phase-in or to sell unsold older BSVI vehicles after BSVI kicks in on April 1, 2020.

India, a rapidly motorising economy, facing a big technology lag, has finally chosen disruptive strategies.

Impact of leapfrogging -

- Even though the maximum emissions benefits are expected from combined introduction of BSVI fuels and vehicles, the on-road vehicles will also gain from clean fuels.
- Drastic reduction in fuel sulphur to 10 ppm can reduce particulate emissions from the on-road fleet.
- Clean fuel improves the performance of the emissions control system and cuts emissions from on-road vehicles.
- Clean fuel will also reduce engine wear and corrosion.
- The gap between emission limits for petrol and diesel cars will narrow substantially.
- Particulate limit for different segments of diesel cars will be 82-93 per cent lower than the BSVI level. NOx emissions limit will be 68 per cent lower.
- Particulate limits for heavy duty vehicles will be 50-67 per cent lower than BSVI level.
- To make technologies work during the life of the vehicle, India has adopted real world driving emissions testing using portable emissions measurement system (PEMS) for vehicle certification.
- Specifications for on-board diagnostic system that records details of vehicle performance for monitoring are more stringent.. This will strengthen the durability of emission control systems.

Lessons from Beijing in controlling air quality -

- First, a regional action plan and regional coordination mechanism involving Delhi and its adjoining states must be put in place.
- Second, the region needs time-bound targets to reduce pollution levels; without targets, action plans are meaningless.
- Third, the action plan should be an integrated one involving all pollutants and all key polluting sources.
- Fourth, concerted action rather than incremental change is the key to reduce pollution levels quickly.
- Lastly, without strict enforcement, all these measures will fail.