

**DAILY
CURRENT
AFFAIRS
ANALYSIS**



LAKSHYA ACADEMY®

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1 - Place in news: Mount Etna:

GS II

International Issues

- **Context:**

- One of the most active volcanoes in the world, Mount Etna in Italy, erupted lately.

- **About Mount Etna:**

- One of the biggest volcanoes in the world and the most active in Europe is Mount Etna.
- Volcanic activity there has been documented since 1500 B.C.
- It has erupted almost 200 times since then.
- Additional volcanoes that have sustained eruptions:

- **Volcano Kilauea:**

- Hawaii's Kilauea volcano had one of the most well-known extended outbursts.
- Its gushing began in 1983 and lasted nearly nonstop for 35 years until 2018, when it began anew in 2021.
- The eruption is still going strong.

- **Volcano Dukono:**

- In Indonesia, the Dukono eruptions began in 1933 and are still going strong now.

- **Volcano Santa Maria:**

- In Guatemala, the Santa Maria eruption started in 1922 and is still happening today.

- **Volcano Yasur:**

- Yasur, located in Vanuatu, erupted for the first time approximately 110 years ago and continues to do so now.

- **A volcano: what is it?**

- Volcanic vents are holes in the Earth's surface where steam, tephra (small rocks), and lava escape.
- There are both onshore and offshore volcanoes.
- They are caused by both their own eruptions and the overall movement of tectonic plates that formed our planet.
- **Volcanoes are classified into four primary types:**
 - cones made of cinder,
 - stratovolcanoes, composite volcanoes
 - protect volcanoes and
 - domes formed by lava.
- The way lava flows from an eruption impacts the volcano and, consequently, the surrounding environment, determining the kind of eruption.
- **What causes a volcano to erupt?**
 - In essence, it's a situation where molten rock, or magma, is boiling up, rising, and overflowing beneath the Earth's surface.
 - The magma enters the volcano's vents and is released into the atmosphere and over the ground.
 - We refer to the lava that comes out of a volcano as magma.
- **Current Pacific Ring of Fire volcanoes:**
 - The Pacific Ring of Fire, which encircles the western coast of the Americas, Southeast Asia, Japan, and New Zealand, is home to some of the world's most active volcanoes.
 - Approximately 90% of all earthquakes that occur globally occur in this region.
- **Can scientists forecast when a volcano will erupt?**
 - Volcanic eruptions can be predicted by scientists hours, or even days, in advance.
 - Earthquakes, on the other hand, are far more unpredictable.
 - Seismographic data from earthquakes and other tremors is used by scientists because it can indicate when a volcanic eruption will occur.
 - They keep an eye out for any indications of ground deformation, which might be brought on by magma flow.
 - They also record variations in magnetic and gravitational fields, as well as releases of volcanic gas.
- **Source → The Hindu**

2 - Functional foods:

GS II

Health related issues

- **Context:**

- Almonds and other functional foods are linked to a number of health advantages, according to a recent study.

- **Functional foods: what are they?**

- In general, functional foods are those that offer more than just basic nourishment.
- They offer the customer additional physiological benefits.
- In Japan, the phrase "functional food" was first used in the early 1980s.
- Additionally, Japan is the pioneer nation to have developed a unique regulatory approval procedure for functional foods.
- In 1991, the phrase "food for specified health use" (FOSHU) was first used.
- The Japanese functional food market is regarded as one of the most developed in the world. Japan is the only nation to recognise functional foods as a separate category.
- A clear and concise description of functional food would be: processed foods that, in addition to their nutritional content, have health-promoting and/or disease-preventing properties.
- They are usually not necessary for a healthy diet and are neither considered curative nor preventative in and of themselves.
- Foods that are enhanced, supplemented, or fortified are referred to as functional foods and encompass a broad range of food categories.
- One common characteristic found in large amounts in functional foods is bioactive substances.

- **In general, these consist of dishes enhanced with:**

- food fibre
- polyunsaturated fatty acids omega-3,
- antioxidants
- probiotics and prebiotics added as supplements,

- **Source → The Hindu**

3 - Krushi Sanjivani Prakalp scheme:

GS II

Government Policies and Interventions

- **Context:**

- The monies allocated by Maharashtra for climate-resilient agriculture have only reached a select few areas and types of operations.

- **Regarding the plan:**

- Maharashtra has been conducting a ground-breaking initiative to assist farmers in adopting practises and structures that are adaptable to climate change since 2018.
- This Project on Climate Resilient Agriculture (pocra), also known as Nanaji Deshmukh Krushi Sanjivani Prakalp, is the largest of its kind in the nation and has been implemented in 16 of the state's 36 districts.
- Data, however, indicates that a small number of districts and intervention types have received the great majority of funding.
- Pocra's initial funding was Rs 4,000 crore.
- Thirty percent belongs to the state government and seventy percent is a loan from the World Bank.
- Such a climate-resilient agriculture project does not exist in any other state.
- The direct benefit transfer model underpins the initiative.
- To be eligible to receive funding for 25 different types of interventions, farmers, communities, farmer producer organizations/companies (FPOS/FPCS), and self-help groups (SHG) can register and submit an application.

- **Associated Issues:**

- **Inequitable allocation of resources:**

- A small number of districts have benefited greatly from the initiative.
- **Only three of the sixteen districts have received more than 60% of the funds:**
 - Aurangabad—a 25.1% share.
 - Jalna (18.8%), together with
 - Jalgaon accounts for 15.6%.

- **Districts left out:**
- Another thing to be concerned about is the exclusion of some districts.
- **Only three interventions include direct benefit transfer:**
- **Of the 25 actions available to individual farmers, just three have received 77% of the DBT:**
- 52% of irrigation is by drip.
- 15% of shade net houses and
- irrigation with sprinklers (11%).
- *Source → The Hindu*

4 - State of Food and Agriculture report:

GS III

Agriculture related issues

- **Context:**
- According to the Food and Agriculture Organisation (FAO) of the United Nations, India has the third-largest overall hidden costs of agrifood systems in the world, after the United States (US) and China, at almost \$1.1 trillion. This information was reported in the State of Food and Agriculture report.
- **Important information:**
- In order to reform agrifood systems, it is imperative that these costs be taken into account in decision-making. The report provided a first attempt at a national-level assessment for 154 nations.
- **Agrifood systems include unstated costs that include:**
- environmental costs associated with changing land use, water use, and emissions of nitrogen and greenhouse gases.
- health hidden costs from lost productivity as a result of unhealthful eating habits and

- The hidden costs to society of poverty and undernourishment-related productivity losses.
- **Worldwide situation:**
 - The measured hidden costs resulting from food patterns that cause diseases and lower labour productivity were the most prevalent worldwide.
 - Upper-middle-income countries accounted for 39% of all measured hidden costs, while high-income countries accounted for 36% of all costs. These nations also created the majority of hidden costs.
 - Low-income countries make up 3% of the total, and lower-middle-income countries make up 22%.
- **Indian context:**
 - Out of the estimated \$12.7 trillion in hidden costs related to agrifood systems worldwide, India accounted for 8.8%, followed by China (20%) and the US (12.3%).
 - The burden of sickness (productivity losses due to dietary patterns) accounted for the greatest portion of hidden costs in India (60%) and was followed by the environmental cost of nitrogen emissions (13%) and the social cost of poverty among agrifood workers (14%).
- **Hidden costs related to the environment, society, and health: Top 10 countries:**
 - China
 - USA
 - India
 - Russia
 - Brazil
 - Germany
 - Indonesia
 - Japan
 - United Kingdom
 - Mexico
- **Source** → *The Hindu*

5 - Strategies to reduce crop residue burning for air pollution mitigation:

GS III

Environmental Conservation related issues

- **Context:**

- In 2017, the Centre for Science and Environment, a think tank based in Delhi, offered ways to cut back on crop residue burning in order to mitigate air pollution.

- **For what reason do farmers burn crop residues?**

- **Reduced cropping cycles:**

- A relatively little window of 10 to 15 days is provided by multiple cropping and shorter time intervals between crops for the field to be ready for the following crop.
- Farmers are not given enough time to adopt other disposal techniques or to let the straw break down into the soil.
- The regulations in Punjab limit this period even more by delaying the planting of paddy until after the start of the rainy season in order to reduce reliance on groundwater for irrigation.

- **Increasing harvesting mechanisation**

- Depending on the crop, the use of mechanised harvesters leaves stubble in the field ranging from 10 to 30 cm, whereas hand harvesting did not do so in the past.
- Hiring workers to shave this stubble would be too costly.

- **Lack of labour:**

- It is not practical to remove stubble using costly labour.
- In Punjab and Haryana, where farm sizes are huge and mechanised harvesters are frequently used, costs are particularly high.
- Burning residues is a simpler and less expensive solution.

- **Crop residue has no market:**

- Straw was once readily absorbed by the local economy for roofing, etc., but not anymore.

- Crop residue's low economic and commercial worth, along with its high processing costs, make it less valuable to farmers.
- This entire volume of residue has little to no economic worth, even though the amounts produced are equal to the overall crop yield.

- **Resolutions:**

- Encourage agri-implements with financial aid:
- The agri-implements required to lower burning are expensive.
- In order to increase soil fertility, the state government has launched programmes to subsidise the purchase of mechanical tools that combine crop debris with soil.
- Despite subsidies, very few farmers are able to use them.
- The amount of the subsidy may be increased.

- **Encourage co-ownership schemes for agricultural implements:**

- Subsidies for the purchase of agricultural implements are available for cooperative and privately operated Agricultural Machinery Service Centres (AMSC).
- Farmers can get these implements from these agencies.
- It is crucial that farmers employ these tools for extraction and packaging and recognise the value of crop wastes.

- **Utilise fuel made from crop wastes in biomass-powered power plants:**

- Biomass-based power plants can produce electricity by burning crop residue as fuel.
- These plants combine crop residue combustion.
- It is considerably simpler to regulate and reduce the emissions from them.
- State governments must use budgetary interventions and prioritisation to encourage the construction of biomass-based power facilities.
- In conjunction with long-term power purchase agreements, this will successfully encourage the growth of a crop residue market and create a business supply chain around it.

- **Utilising agricultural waste to produce fertiliser and biofuels:**

- High quantities of organic nutrients found in crop residue should be added back to the soil to maintain its fertility and production potential.
- These can be used to produce fertilisers in an organised manner through commercialization, or in a decentralised small-scale ex-situ unit.
- They can also be utilised to create biofuels.
- The use of biofuels needs to be encouraged by state governments and the federal government through suitable policy measures.

- Higher concentrations of biodiesel, for instance, might be allowed to be blended with ordinary diesel and sold commercially.
- **Use as a starting point for biomass pellet production:**
 - In place of coal, biomass pellets can be sold commercially and used as the primary fuel for industrial boilers.
 - Promoting local usage and offering incentives for micro-pelletization are important.
 - Straw can also be used in other small-scale industries, like the making of cardboard and mattresses.
 - Additionally, straw can be utilised as a substratum for growing mushrooms.
 - Paper is made using bagasse, or sugar cane residue, as the basic ingredient.
 - State governments must promote biomass-based paper and other similar goods derived from crop residue, in conjunction with the Central government's relevant policy interventions.
- **Crop diversification and R&D:**
 - Significant time and resource commitments are necessary for R&D projects.
 - The results won't become apparent for a while, and achieving them will take a lot of work.
- **Mechanism for collecting crop residue:**
 - To support all the activities and businesses that are feasible around the reuse and recycling of agricultural residues, there is no centralised or uniformly decentralised method for the collection, storage, and commercial sale of crop wastes.
 - This makes obtaining raw materials exceedingly challenging.
 - For example, the supply of biomass fuel to power producing firms is reliant on some farmers.
 - Due to its seasonal nature and lack of infrastructure, agricultural residue availability is likewise variable throughout the year.
 - A standardised, decentralised system must be established for the gathering, storing, and sale of crop residue for profit.
 - This will make obtaining biomass fuel for electricity generating and other purposes easier.
 - In general, the plan is to give the agricultural residue a true economic and commercial value and make burning it cost the farmer money.
- **Source → *The Hindu***