

AI ANCHORS



Recently, DD Kisan deployed two Artificial Intelligence anchors as part of the initiative to present the television channel in a new avatar.

- The anchors have been named as ‘AI Krish’ and ‘AI Bhoomi’, and can speak in **50 Indian and foreign languages**.
- These news anchors are computers, which are exactly like a human, or rather, these can work like a human. They can read the news **24 hours and 365 days** without stopping or getting tired.
- The farmer viewers will be able to see these anchors in all the States of the country.
- These AI anchors will provide every necessary information about agricultural research happening in the country and at the global level, **trends in agriculture mandis, changes in the weather**, or any other information of government schemes.

Key facts about DD Kisan

- It is the only TV channel in the country, which has been established by the Government of India and is **dedicated to the farmers**. This channel was established on 26 May 2015.
 - The **objective** of establishing the DD Kisan Channel
 - To always keep the farmers informed about the **changes in weather**, global and local markets etc., so that farmers can make appropriate plans in advance and make the right decisions on time.
 - It is also working to bring forward the efforts of progressive farmers to all the people, to serve the agricultural and rural community in the country and to work towards creating an environment of holistic development by educating them.
 - DD Kisan channel is strengthening the three-dimensional concept of agriculture which includes balanced farming, animal husbandry and plantation.
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STATUS OF SPICE EXPORTS

Recent incidents of contamination

- In May 2024, some spice mixes from the Indian brands Everest and MDH were found to contain ethylene oxide, a cancer-causing chemical, and banned in Singapore and Hong Kong.
- The products were recalled and banned in these markets.
- **Source of contamination**
 - India does not use Ethylene Oxide (ETO) as a pesticide but as a sterilizing agent to reduce microbial load in finished spice products.
 - Spices and other agricultural products are often contaminated in mandies (auction yards) due to contact with humans, birds, reptiles, and insects.
 - Large factories receiving materials from these mandies are left with high microbial levels, necessitating the use of ETO sterilization.
 - However, contamination can be reduced early through value addition processes.
 - Consumers are encouraged to focus on the quality of products, not just their prices, to ensure safer and healthier food choices.

Impact of recall

- **Recall, Not a Ban**
 - An official from the Federation of Indian Spice Stakeholders clarified that Singapore and Hong Kong recalled, but did not ban, Indian spice products.
 - Exports to these countries have resumed, so a significant impact is not expected in the coming months.
- **India's share in spice production**
 - India contributes about 70% of global spice production.
 - Hence, such incidents of contamination will affect India's image as a spice producer.
- **Varied Standards**

- Countries have different standards for Ethylene Oxide (ETO) and maximum residue levels (MRL).
- The Indian spice industry is urging the government to negotiate with the EU to relax these stringent norms to enhance Indian spice exports to European markets.
- Also, the Indian government should lay down achievable guidelines and tell the buying countries about it.

Steps taken by the India

- **Issuance of Protocols**
 - Following the recalls by Hong Kong and Singapore, the Spices Board of India issued a detailed protocol to all manufacturing exporters to prevent ETO contamination.
- **Mandatory Testing**
 - The Board initiated mandatory testing of spice consignments destined for Singapore and Hong Kong specifically for ETO levels.
- **International Standards**
 - The Spices Board has engaged with the international food standards body to address the need for uniform ETO usage limits, as these standards vary across different countries.
- **Consumer Awareness**
 - There is an ongoing effort to educate consumers about the importance of quality over price.
 - By encouraging consumers to focus on the quality of products, there is a push towards higher standards in the spice industry.
- **Industry-Government Collaboration**
 - The spice industry and government are working together to ensure that Indian spices comply with the varying standards of different countries, addressing issues specific to each market to prevent future recalls.

PATENT PROCESS IN INDIA

What is a Patent?

- A patent is the **granting of a property right by a sovereign authority to an inventor.**
- This grant provides the inventor exclusive rights to the patented process, design, or invention for a designated period in exchange for a comprehensive disclosure of the invention.
- Government agencies typically handle and approve applications for patents.
- The Office of the Controller General of Patents, Designs and Trade Marks (CGPDTM), also known as **India Patent Office**, grants patent so that any invention can be freely commercialised or utilised without any fear of infringement.
 - The head patent office is located in Kolkata, West Bengal.
- The Indian Patent Office grants patents which are governed by the **Indian Patents Act, 1970.**

Indian Patents Act, 1970:

- The Patents Act 1970, along with the Patents Rules, 1972, came into force in April 1972, replacing the **Indian Patents and Designs Act, 1911.**
- The Patents Act was largely based on the recommendations of the **Ayyangar Committee Report** headed by Justice N. Rajagopala Ayyangar.
- Later, India became signatory to many international arrangements with an objective of strengthening its patent law and coming in league with the modern world.
- One of the significant steps towards achieving this objective was becoming the member of the **Trade Related Intellectual Property Rights (TRIPS) system.**

Draft Patents (Amendment) Rules, 2023:

- In August 2023, the Ministry of Commerce and Industry proposed and published Draft Patent (Amendment) Rules, 2023 (the “draft rules”) invited objections and suggestions from all stakeholders within a timeline of 30 days from the date of the publication of the draft Rules.

- **Key Highlights of the Draft Rules:**
 - **Pre-Grant Opposition**
 - Controller can decide a maintainability of the representation and dismiss a pre-grant opposition if found to be frivolous.
 - At present, Controller cannot dismiss the representation without offering a chance of hearing to Opponent.
 - Time period for applicant to reply to notice has been reduced from 3 months to 2 months.
 - **Reduced timeline for filing Request for Examination**
 - As per the draft Rules, the timeline for filing the RFE is now proposed to be **reduced to 31 months**, which currently is 48 months from the priority date or filing date, whichever is earlier.
 - **Statement and undertaking regarding foreign applications**
 - Applicant shall keep the Controller informed of the details in respect of applications filed in any country **within two months** from the date of issuance of first statement of objections.
 - Earlier the duration was six months.
 - **Annual Working Report**
 - The draft Rules propose that the Annual Working Report is to be filed in respect of every period of **three financial years** (currently this is to be filed for every financial year).



WHAT ARE COLOURS?

As the human understanding of colour has improved and its knowledge has also broadened our sense of our place in this world.

- It is a **type of information** our eyes receive and process based on electromagnetic radiation.
- An object is said to have a colour based on frequencies of **visible-light radiation** it **absorbs**, reflects, and/or scatters, we can perceive the object to have a particular colour.

- **How human eyes identify colours?**
 - In the human eye, **the rod and the cone cells receive information** in the light that strikes the eye: the rod cells record brightness while the cone cells record the wavelengths, which the human brain interprets as colour.
 - Human beings have **three types of cone cells**. Each type is sensitive to light of a different wavelength and they work together to input colour information to the brain.
 - The possession of three types of cone cells is why humans are called **Trichromats**.
 - Similarly, while human vision is restricted to wavelengths **from 400 nm to 700 nm** (visible light), honeybees can also ‘see’ ultraviolet light and mosquitoes and some beetles can access information in some wavelengths of infrared radiation.

How are colours rendered?

- There are two broad ways to render colours:
 - **Additive colouring:** In this, light of **different wavelengths is ‘mixed’** to yield light of one combined colour. The colours on your smartphone screens and television sets are produced in this way.
 - **Subtractive colouring:** In subtractive colouring, a **colour is rendered by passing white light** through a medium that absorbs, or takes away, specific wavelengths of light, leaving the rest to render a particular colour.
 - The typical examples include dyes, pigments and inks.

WHAT IS THE ZERO DEBRIS CHARTER?



Twelve nations have signed the Zero Debris Charter at the ESA/EU Space Council recently, solidifying their commitment to the long-term sustainability of human activities in Earth orbit.

- It is an initiative of the **European Space Agency (ESA)** unveiled at the ESA Space Summit in Seville meeting in November 2023.

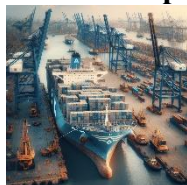
- The Charter comes after ESA Member States encouraged the agency to implement “a **Zero Debris approach** for its missions and to encourage partners and other actors to pursue similar paths”.
- It is the first initiative of its kind to bring together the largest array and variety of space actors around the world with the joint goal of creating **no more debris by 2030** and making possible the **long-term sustainability of space activities**.
- It aims to combine far-reaching guiding principles and highly ambitious yet realistic technical targets on which to build an ambitious Zero Debris roadmap, **driving global space debris mitigation and remediation efforts**.
- The charter is a **non-legally binding agreement**, but it fosters a community of proactive actors working collectively towards jointly defined targets for 2030.

The charter sets out a number of targets, including that a mission’s probability of generating space debris should remain below 1 in 1,000 per object.

- It also sets a **target of 99% success for post-mission disposal**, including through external means when necessary. It encourages transparent information sharing and space traffic coordination.
- To implement the Charter, the ESA will focus on developing ground-breaking technologies for satellite end-of-life disposal, in-orbit servicing and active debris removal.
- In addition, ESA will work hand-in-hand with institutions in charge of regulatory aspects.

KEY FACTS ABOUT MUNDRA PORT

Adani Group’s Mundra Port recently saw the largest ever container ship to dock at an Indian port when the almost 400-metre-long MSC Anna came visiting.



- It is the **largest private port and the largest container port in India**.
- **Location:** It is located on the north shores of the **Gulf of Kutch**, near Mundra, Kutch district, **Gujarat**.
- It is a deep-draft, all-weather port.

- It is also a special economic zone (SEZ).
- As much as 33 per cent of India's container traffic flows through the port.
- **Ownership:** It is run by **Adani Ports and Special Economic Zone Limited (APSEZ)**, which is India's largest commercial port operator and accounts for nearly one-fourth of the country's cargo movement.
- **Handling Capacity:**
 - With a capacity of 260 MMT, the port handles over 155 MMT (FY 2022-23), which constitutes nearly **11% of India's maritime cargo**.
 - The port has **26 berths** and **two single-point moorings**, which allow it to accommodate a wide range of vessels.
 - The port handles a **wide variety of cargo**, including containers, dry bulk, break bulk, liquid cargo and automobiles.
- It also has the **country's largest coal import terminal**, which facilitates faster cargo evacuation with minimal turnaround time.
- Mundra Port's rail is connected to the national rail network and cargo can be handled for any location in India.

What is MSC Anna?

- It is the **largest container ship** ever to call at an **Indian port**.
- The docked vessel, MSC Anna, has a **length of 399.98 metres** - roughly the length of four football fields - and is among the largest container ships, with a capacity to carry 19,200 TEUs (20-foot equivalent units).
- Its arrival draft is 16.3 metres, which can be accommodated only at Adani Ports, Mundra, as no other port in India is capable of berthing a deep-draft vessel.



WHAT IS THE NATIONAL GREEN HYDROGEN MISSION?

- It was approved by the Union Cabinet on January 4,
- **Aim:** To make **India a Global Hub** for the production, utilization, and export of **Green Hydrogen** and its derivatives.

- **Components:**
 - Under the Strategic Interventions for Green Hydrogen Transition Programme (SIGHT), two distinct financial incentive mechanisms
 - Incentive for **manufacturing of electrolysers**
 - Incentive for **production of green hydrogen.**
- The **mission outcomes** projected by 2030 are:
 - Development of **green hydrogen production** capacity of at least **5 MMT**(Million Metric Tonnes) **per annum** with an associated renewable energy capacity addition of about 125 GW in the country;
 - Over Rs. Eight lakh crores in total investments;
 - Creation of over Six lakh jobs;
 - Cumulative reduction in fossil fuel imports over Rs. One lakh crore;
 - Abatement of **nearly 50 MMT of annual greenhouse gas emissions;**
- **The Ministry of New and Renewable Energy** will be responsible for the overall coordination and implementation of the Mission.

What is Green Hydrogen?

- **Hydrogen** is the simplest chemical element, the first in the periodic table with **atomic number 1.**
- It is light, can be stored and does not generate pollutant emissions by itself.
- Green hydrogen is made by using clean electricity from surplus renewable energy sources, such as solar or wind power to electrolyse water.
- Electrolysers use an electrochemical reaction to split water into its components of hydrogen and oxygen, emitting zero-carbon dioxide in the process.
- Green hydrogen has numerous applications and can be used in **fuel cells** to power vehicles and provide electricity.
- It can also be **used in heating systems** and in the **production of chemicals and fertilizers.**