

## Prelim Bits 08-02-2023 | UPSC Daily Current Affairs

### Voice Deepfakes

*Several users of the social media platform 4chan, used 'speech synthesis' and 'voice cloning' service provider, to make voice deepfakes of celebrities.*

- A voice deepfake is one that closely mimics a real person's voice.
- The voice can accurately replicate tonality, accents, cadence, and other unique characteristics of the target person.
- Creating deepfakes needs high-end computers with powerful graphics cards, leveraging cloud computing power.
- AI can use this data to render an authentic-sounding voice, which can then be used to say anything.
- Attackers are using such technology to defraud users, steal their identity, and to engage in various other illegal activities like phone scams and posting fake videos on social media platforms.
- OpenAI's Vall-e, My Own Voice, Resemble, Descript, ReSpeecher, and iSpeech are some of the tools that can be used in voice cloning.
- Detecting voice deepfakes needs highly advanced technologies, software, and hardware to break down speech patterns, background noise, and other elements.
- Cybersecurity tools have yet to create foolproof ways to detect audio deepfakes.
- Multifactor authentication (MFA) and anti-fraud solutions can also reduce deepfake risks.

### References

1. [The Hindu - What are voice deepfakes and how are they used?](#)

### Google's Bard

*Google will be opening Bard, an AI Chatbot, to trusted testers ahead of making it more widely available to the public in the coming weeks.*

- Bard is Google's own conversational AI chatbot.
- Bard is based on Google's AI model, Language Model for Dialogue Application or Lambda.
- Google introduced [LaMDA](#) in 2021 as its generative language model for dialogue applications which can ensure that the Google Assistant would be able to converse on any topic.
- Bard is an experimental conversational AI service that draws on information from the web to provide fresh, high-quality responses.
- Bard will give in-depth, conversational and essay-style answers just like [ChatGPT](#) does right now.

- **Technology** - Bard is built on Transformer technology, which is also the backbone of ChatGPT and other AI bots.
- Transformer technology is a neural network architecture, which is capable of making predictions based on inputs.
- It is primarily used in natural language processing and computer vision technology.

*Transformer technology was pioneered by Google and made open-source in 2017.*

## ChatGPT vs Bard

Features	ChatGPT	Bard
<b>Data source</b>	Draws its information from the data it has been trained on	Draws its information right from the Internet
<b>Accessibility and Time</b>	ChatGPT's sources end with 2021 data, cannot access real-time information from the Internet	Bard will continually draw information from the internet, so it will have the latest information
<b>Language Model</b>	Uses GPT 3.5	Uses its LaMDA
<b>Content created</b>	Single text prompt	Chunks of information
<b>Limitations</b>	Biased based on fed data	Biased based on uncensored internet

## References

1. [The Hindu - What is Google's Bard?](#)
2. [Business Today - Google's Bard vs Microsoft's ChatGPT](#)

## Vermin

*The Wildlife Institute of India (WII) is working to develop immuno-contraceptive measures for population management of species that have become problematic for humans in many parts of the country.*

- **Issue** - Nilgai antelope and wild boar have become a menace in many areas of India, destroying crops and causing human-animal conflict.
- The Union Ministry of Environment (MoEF&CC) approved the 10-year research project for developing the immuno-contraception in 2016.
- **Measure** - Reduce reproduction in the species by making the female sterile.
- This will be done by injecting a vaccine made from a hormone derived from the ovary lining of pigs.
- **Vaccine project** - The MoEF&CC had approved a project of Rs 10.65 crore for Wildlife Institute of India (WII), Dehradun, for vermin control.
- The project deals with population management of species involved in human-wildlife conflict.
- It includes a study on immune-contraceptive measures for population management of 4 species namely elephant, wild pig, Rhesus macaque and Nilgai.
- **Vermin Status** - The wild animals listed in **Schedule V** of the Wildlife (Protection) Act, 1972 are called Vermin.
- The vermin can be hunted or culled such as common crows, fruit bats, rats and mice.

*The WLPA, 1972 currently has 6 schedules that assign varying degrees of protection to animals and plants.*

- **WLPA, 1972** - The central government has the power to declare any wild animal, other than those specified in Schedule I and Schedule II as 'vermin' for any area and a specified period.
- **Criteria to be Vermin** - The wild animal **should not** be those specified in **Schedule I** and **Part II of Schedule II** of Wildlife (Protection) Act, 1972.
- The Wild Life (Protection) Amendment Bill, 2021 brings in a major change by reducing the number of schedules from six to four.
- Recent activity

Time	State	Animal
May 2022	Kerala	Wild boar
August 2022	Bihar	Nilgai and wild boar

## References

1. [Down to Earth - A vaccine to reduce 'vermin' populations](#)

## Milk Production

*India is the highest milk producer in the world for the year 2021-22.*

- The data of Food and Agriculture Organization Corporate Statistical Database (FAOSTAT) revealed that India is the highest milk producer in the world.
- India ranked first position in the world contributing 24% of global milk production in the year 2021-22.
- The milk production of India has registered 51% increase during the last 8 years (2014-15 to 2021-22).
- The milk production of India has increased to 21 crore tonne in the year 2021-22.

## Schemes for Dairy Development

- National Programme for Dairy Development (NPDD) was launched in February 2014 by merging 3 existing schemes
  1. Intensive Dairy Development Programme,
  2. Strengthening Infrastructure for Quality &
  3. Clean Milk Production and Assistance to Cooperatives.
- In July 2021, NPDD has been restructured for implementation from 2021-22 to 2025-26.
- NPDD aims to enhance quality of milk and milk products and increase the share of organised procurement, processing, value addition and marketing;
- **Fodder** - [National Livestock Mission](#), Sub-Mission on Feed and Fodder Development is a separate scheme aiming to increase availability of fodder and feed.
- Supplementing the efforts of the State Government, Department of Animal Husbandry and Dairying has been implementing the following dairy development schemes:-
  1. National Programme for Dairy Development

2. Dairy Processing and Infrastructure Development Fund
  3. Supporting Dairy Cooperatives and Farmer Producer Organisations engaged in dairy activities.
- The above schemes benefit farmer-members, including financially weaker farmers in the dairy sector.

## References

1. [PIB - Milk Production in India](#)

## Primary Agricultural Credit Societies

*The Union Budget 2023 has announced Rs 2,516 crore for computerisation of 63,000 Primary Agricultural Credit Societies (PACS) over the next 5 years.*

- Primary Agricultural Credit Societies (PACS) are village level cooperative credit societies.
- **3-Tier** - They serve as the last link in a three-tier cooperative credit structure headed by the State Cooperative Banks (SCB) at the state level.
- Credit from the SCBs is transferred to the district central cooperative banks (DCCBs) that operate at the district level.
- The DCCBs work with PACS, which deal directly with farmers.
- **Structure** - Since these are cooperative bodies, individual farmers are members of the PACS, and office-bearers are elected from within them.
- A village can have multiple PACS.
- **Credit** - PACS are involved in short term lending, known as crop loan.
- At the start of the cropping cycle, farmers avail credit to finance their requirement of seeds, fertilisers etc.
- **Interest** - Banks extend this credit at 7% interest, of which 3% is subsidised by the Centre, and 2% by the state government.
- Effectively, farmers avail the crop loans at 2% interest only.

A report published by the Reserve Bank of India on December 27, 2022 put the number of PACS at 1.02 lakh with the lending worth was Rs 1,43,044 crore.

- The PACS is attractive for the last mile connectivity they offer.
- PACS have the capacity to extend credit with minimal paperwork within a short time.
- **Computerization** - PACS are not connected to the Core Banking Software (CBS) but some PACS use their own software.
- Computerisation of PACS has already been taken up by a few states, including Maharashtra.
- A compatible platform will bring uniformity in the system.

## References

1. [IE - what are primary agricultural credit societies?](#)



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