Use of Antibiotics on Livestock

Why in News?

Recently, a team of Researchers in the **Indian Institute of Science (IISc),** has found that grazing by livestock leads to **lower carbon storage in soil** compared to grazing by wild herbivores.

- Livestock are the most abundant large mammals on earth. If the carbon stored in soil under livestock can be increased by even a small amount, then it can have a big impact on climate mitigation.

What are the Highlights of the Study?

- In a previous study, it was observed that **herbivores play a key role in stabilizing the pool of soil carbon** and the recent study showcases the difference as to how they affect the soil carbon stocks between livestock such as sheep and cattle compared to their wild herbivores such as the yak and ibex.
- **Impact of Antibiotics:** The use of veterinary **antibiotics** such as tetracycline on livestock is making carbon storage lower in soil as compared to other grazing herbivores.
  - These **antibiotics**, when released into the soil through dung and urine, alter the **microbial communities** in soil in ways that are detrimental for **sequestering carbon.**
  - Antibiotics such as **tetracycline are long-lived** and can **linger in the soil for decades resulting in ecological imbalance.**
- **Difference in CUE:** Although soils from the wild and livestock areas had many similarities, they differed in one key parameter called carbon use efficiency (CUE), which determines the ability of microbes to store carbon in the soil.
  - CUE is defined as the ratio of net carbon gain to gross carbon assimilation during a period.
  - The soil in the **livestock areas had 19% lower CUE.**

What are Antibiotics?

- Antibiotics are **remarkable drugs capable of killing biological organisms** in one's body without harming the body.
- These are used for everything **from preventing infections during surgeries to protecting cancer patients** undergoing chemotherapy.
  - India is the world's largest consumer of antibiotics. India's excessive antibiotic usage is **leading to a powerful never before seen mutation** within bacteria.

Source: TH

IBSA and Digital Governance Reform

Why in News?

According to the **Geneva-based DiploFoundation, India, Brazil, and South Africa,** which have together formed the tripartite IBSA Forum, may play a prominent role in the **process of reforming digital governance.**

What is IBSA?

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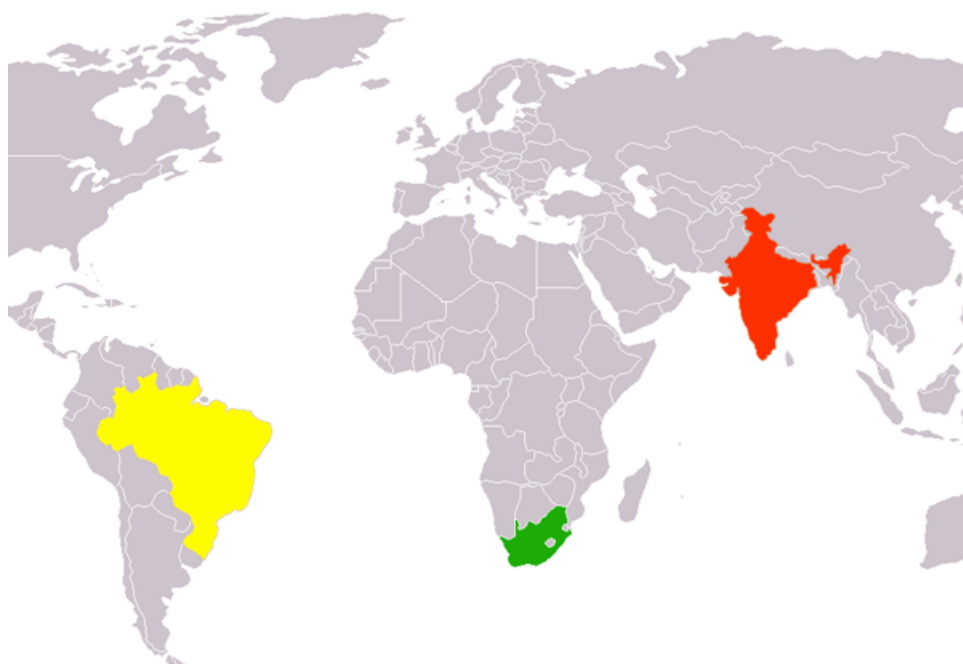
- **About:**
  - The IBSA is a trilateral, developmental initiative between **India, Brazil and South Africa** to promote South-South cooperation **and exchange.**
- **Formation:**
  - The grouping was formalised and named the **IBSA Dialogue Forum** when the Foreign Ministers of the three countries met in **Brasilia (Brazil) on 6th June 2003** and issued the **Brasilia Declaration.**
- **Collaboration:**
  - **Joint Naval Exercise:**
    - IBSAMAR (IBSA Maritime Exercise) is an important part of IBSA trilateral defence cooperation.
  - **IBSA Fund:**
    - Established in 2004, **IBSA Fund (India, Brazil and South Africa Facility for Poverty and Hunger Alleviation)** is a unique Fund through which development projects are executed with IBSA funding in fellow developing countries.
    - The fund is managed by the **United Nations (UN) Office for South-South Cooperation (UNOSSC).**

How can IBSA Contribute to Global Digital Governance?

- **Potential of IBSA:**
  - **Digital inclusion:**
    - [Digitalisation](#) **is driving growth in the IBSA economies.**
    - **The three countries have spearheaded digital inclusion by prioritising affordable access to citizens,** supporting training for digital skills, and creating a legal framework for the growth of small digital enterprises. India leads the way, with a vibrant digital economy.
  - **Data Governance:**
    - [India's G-20 presidency](#) aims to take strategic leadership with practical initiatives, such as a **self-evaluation of nations' data governance architecture,** modernisation of national data systems to regularly incorporate citizen voices and preferences, and transparency principles for governing data.
    - With a big population, **IBSA countries** also see data as a **national resource.**
- **Issues:**
  - **Geopolitical Rivalry:**
    - **Satellite collisions,** [cyber-resilience](#) **and security of space services, exploration of** [space resources](#) has increased competition between countries with a potential of [weaponization of outer space.](#)
      - **Also,** [semiconductors](#) are at the centre of the geopolitical battle between the US and China.
  - **Sovereignty vs Integration:**
    - The Foundation observes that **many countries will have to balance data sovereignty and integration** in the global economy.
    - Free flow of data will **be essential for small and export-oriented economies.**

What is India's Progress in Digital Governance?

- **Aadhar:** [India's Aadhaar biometric ID system](#) is seen by many as a leading digital identity initiative, inspiring similar systems in other countries.
- **MyGov Platform:** It has laid the **robust** [foundation for citizen engagement and participatory governance](#) **in the country** by providing a **common digital platform,** where citizens can share their views on government programmes and schemes.
- **Unified Payments Interface (UPI):** Launched in 2016, [UPI](#) **is a real-time payment system** that enables instant money transfers between bank accounts using a mobile device.
  - UPI has **transformed the way payments are made in India,** making it faster, more convenient, and more secure. **UPI's success has inspired other countries** to tie up with India and adopt similar payment systems.
- **Digital India Act:** Government of India has proposed to come up with **Digital India Act 2023** that envisages to act as **catalysts for Indian economy by enabling more innovation, more startups,** and at the same time protecting the citizens of India in terms of safety, trust, and accountability.

Way Forward

- **Collaborate with Other Countries & Organizations:** IBSA countries should work together and with other nations and **international organizations** to develop **global standards for digital governance,** data protection, and cybersecurity.
- **Develop a Common Strategy:** IBSA countries should develop a common strategy on digital governance and work towards a **shared vision of a global digital economy that prioritizes digital inclusion, data privacy, and security.**
  - This strategy should be based on their shared values and principles, such as **respect for human rights, democracy, and the rule of law.**

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