

# CROSS & CLIMB ROHTAK

## School of Research Based Learning & Competition

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#### ANUSANDHAN NATIONAL RESEARCH FOUNDATION



Recently, the Union Minister of State (Independent Charge) for Science & Technology informed that the Anusandhan National Research Foundation (ANRF) is developing AI-based platform 'SARAL AI'.

- It was established through the **Anusandhan National Research Foundation Act, 2023**.
- It is functioning under the **Department of Science & Technology (DST)**.
- The **Science and Engineering Research Board (SERB)** has been merged into ANRF.

**Objective:** To seed, grow, and promote R&D, and foster a research and innovation culture across universities, colleges, research institutions, and R&D labs in India.

- It acts as an **apex body** to provide **high-level strategic direction of scientific research** in the country as per recommendations of the **National Education Policy**.

**Funding Target:** It aims to mobilise funds **amounting to ₹50,000 crore during 2023–28** through multiple streams including the ANRF Fund, Innovation Fund, Science and Engineering Research Fund, and Special Purpose Funds.

- ANRF **forges collaborations** among the industry, academia, research institutions and government departments.

#### What is SARAL AI?

- It is an **AI-based platform**.
- **Objective:** To convert **complex technology and research work** into **simple language social media content**, including podcasts and **short videos in 18 Indian languages**, enabling wider dissemination of scientific knowledge across the country.

### e-SafeHER INITIATIVE



- It is a **cyber-security awareness training programme** to enable one million women **across rural India**.
- It aims to **strengthen last mile cybersecurity awareness**, particularly among women in rural India, who are increasingly engaging with digital platforms for financial transactions, livelihoods and access to essential services.
- This initiative is anchored under **Ministry of Electronics & IT (MeitY's) Information Security Education and Awareness (ISEA) programme** through C-DAC Hyderabad.
- **Target and Duration:** To empower **one million Cyber Sakhis** in rural India over the **next three years**.
- **Implementation Strategy:**
  - **C-DAC will lead the development**, localization, and continuous enhancement of cybersecurity **training content under the ISEA Project**.
  - **Reliance Foundation** will leverage its extensive grassroots presence and women's empowerment platforms across rural India, for delivery through a peer-led, community-based model.
- The initiative will be started **first in Madhya Pradesh and Odisha** and expanded nationwide in a phased manner.

### What is Information Security Education and Awareness?

- It is an initiative of the **Ministry of Electronics and Information Technology (MeitY)**, Government of India.
- It was **started in 2005** and currently in its third phase since Oct. 2023 onwards.
- **Purpose:** **Generating human resources** in the area of **Information Security** and creating general awareness on cyber hygiene/cyber security among the masses.
- **Aim:** It is aimed at human resources development for **safe, trusted, and secure cyber space**.

### FILM PIRACY IN INDIA - LEGAL PROVISIONS AND ENFORCEMENT CHALLENGES

- Film piracy refers to the unauthorised copying, distribution or sharing of copyrighted audio-visual content such as movies and web series. It can occur through:
  - Illegal downloads and torrent platforms.
  - Sharing via messaging apps and cloud links.
  - Recording in theatres or leaking from production pipelines.
- The recent case is significant because the film was leaked in high quality even before its theatrical release, indicating internal access misuse.

#### **Legal Framework on Film Piracy in India**

- India has a multi-layered legal framework to address piracy.
- **Copyright Act, 1957**
  - The Copyright Act forms the primary legal basis for protecting creative works.
  - Section 63 provides for imprisonment up to 3 years.
  - It also allows fines up to Rs. 2 lakh.
  - Section 63A deals with repeat offenders, imposing similar penalties for each violation.
  - The Act covers films, books, music and other intellectual property.
- **Cinematograph Act, 1952 (Amended in 2023)**
  - The 2023 amendment strengthened anti-piracy provisions.
  - It introduces a penalty of up to 5% of the audited gross budget of the film.
  - This significantly increases financial deterrence for piracy.
  - In high-value productions, this can result in extremely large fines.

#### **Enforcement Challenges in India**

- Despite strong laws, enforcement remains weak.
  - India is often labelled a “notorious market” for piracy due to limited enforcement action.

- Investigations are rarely pursued rigorously.
- Legal action often targets distributors rather than individual infringers.
- However, in the current case, strong political and industry support may lead to stricter enforcement.

### Scope of Liability in Piracy Cases

- Liability in piracy is not limited to the original leaker.
  - Individuals who forward links can also face penalties.
  - Cloud sharing and digital dissemination expand the chain of liability.
  - Early recipients of leaked content may face harsher punishment.
- This reflects the evolving nature of digital piracy, where distribution networks are decentralised.

### Mechanisms Used by Studios to Prevent Piracy

- **Restricted Access and Encryption**
  - Films are distributed to theatres in encrypted formats.
  - Access is limited to authorised personnel only.
- **Digital Rights Management (DRM)**
  - OTT platforms use DRM technologies to prevent copying.
  - However, advanced piracy tools can bypass DRM protections.
- **Watermarking Techniques**
  - Invisible and visible watermarks are embedded in film prints.
  - These help identify the source of a leak.
  - This acts as a strong deterrent for insiders.

### Post-Leak Response Measures

- Once a film is leaked, complete removal is nearly impossible.
- **Key challenges include:**
  - Constantly changing piracy websites.
  - Distribution through torrents and encrypted messaging platforms.
  - Rapid replication across multiple platforms.

### DELIMITATION AND WOMEN'S RESERVATION BILLS - A STRUCTURAL RESET OF INDIA'S ELECTORAL FRAMEWORK

- The Union government has introduced three key Bills, including the Constitution (131st Amendment) Bill, 2026, to operationalise **33% reservation** for women in the Lok Sabha and State Assemblies. These Bills also propose a major overhaul of the **delimitation process**, which has remained frozen since the 1970s.

#### **The Legislative Package:**

- The Constitution (131st Amendment) Bill, 2026 — proposes expansion of Lok Sabha and amends Articles 81 and 82.
- The Delimitation Bill, 2026 — establishes a new Delimitation Commission framework.
- A third Bill facilitating women's reservation in State Assemblies and Union Territory (UT) legislatures.

#### **Key Provisions:**

- **Expanding the Lok Sabha:**
  - From the current strength from the current 543 seats to up to 850, by revising the cap to 815 MPs from States and 35 from UTs.
  - This represents a 50% increase over existing strength — and aligns with the seating capacity of 888 members in the new Parliament building (expandable to 1,272 for joint sittings). Larger membership would technically mean **smaller constituency** sizes geographically.
- **Women's reservation (The 2029 target):**
  - Although the Constitution (106th Amendment) Act, 2023 had already legislated 33% reservation for women, its implementation was tied to a post-Census delimitation.
  - Since the 2021 Census remains ongoing with no clear completion timeline, the government now proposes conducting delimitation on the basis of the **2011 Census** (the "latest Census").

- Hence, the central government is targeting implementation from the 2029 Lok Sabha elections onwards.
- **Redefining "Population" under Article 81:**
  - Shifting from "the last preceding Census" to "population as ascertained at such Census as Parliament may by law determine".
  - This grants Parliament the discretion to choose which Census data underpins any given delimitation exercise, introducing **political flexibility** into a previously constitutional-mechanical process.

### Challenges:

- **Constitutional tension:** The "one person, one vote, one value" principle under **Article 81** is difficult to reconcile with the promise of maintaining existing seat proportions for southern states.
- **Lowered constitutional safeguards:** Moving delimitation from a constitutionally-triggered to a legislatively-triggered process reduces institutional protection against political misuse.
- **Census delay:** The ongoing 2021 Census has already derailed one implementation cycle; relying on the 2011 Census is a workaround, not a structural fix.
- **Women's reservation timeline:** The 2029 target remains contingent on the delimitation process running smoothly and on time.

### Way Forward:

- Parliament must **debate and define** a clear seat-allocation formula that satisfies both the constitutional requirement of equitable representation and the political commitment to regional fairness.
- A **transparent** and **independent** Delimitation Commission with defined terms of reference — rather than broad legislative discretion — would strengthen public trust in the process.
- The 2021 Census must be **expedited**, as continued delays will perpetuate uncertainty around future delimitations and reservation implementation.

### FOOD WORTH ₹1.55 LAKH CR. WASTED ANNUALLY

- The International Day of Zero Waste, observed on March 30, highlights the urgent issue of food waste.
- This year's focus underscores the stark contradiction of massive food wastage alongside widespread hunger and malnutrition.

#### **Global Food Waste Crisis: A Moral and Systemic Failure**

- According to the United Nations Environment Programme **Food Waste Index Report 2024**, the world wastes 1.05 billion tonnes of food annually, with households contributing 60%, food services 28%, and retail 12%.

#### **India's Paradox: Waste Amid Hunger**

- India ranks **second** globally in food waste, losing 78–80 million tonnes annually worth ₹1.55 lakh crore, behind China (108 million tonnes).
- Despite lower per capita waste (55 kg annually compared to 73 kg in the U.S. and 75 kg in Germany), India ranks **111th in the Global Hunger Index**, with about 194 million people undernourished.
- This highlights a stark contradiction between food surplus and widespread hunger.

#### **Environmental Consequences**

- Food waste contributes **8–10% of global greenhouse gas emissions**.
- If it were a country, it would be the third-largest emitter after China and the U.S.
- Decomposing food releases methane, a highly potent greenhouse gas. Additionally, wasted food implies loss of critical resources—water, land, energy, and labour.
- For instance, producing 1 kg of rice requires ~5,000 litres of water, intensifying concerns like groundwater depletion in Punjab.

#### **Structural Causes of Food Loss**

- Food waste is driven by:
  - Post-harvest inefficiencies at the farm level

- Inadequate storage and cold-chain infrastructure
- Fragmented logistics and supply chains
- Cultural normalisation of waste in consumption patterns

### Pathways to Reduce Food Waste

- **Strengthen Cold-Chain Infrastructure** - India processes only 8% of its produce, compared to 65% in the U.S. A national cold-chain mission, especially in key agricultural states, is essential for reducing losses.
- **Legal Framework for Food Redistribution** - Inspired by European models, India should enact laws to prevent destruction of surplus food and promote donation through tax incentives and food banks.
- **Empower Farmers at the Source** - Post-harvest losses begin at the farm gate. Solutions include:
  - Mechanised drying and storage systems
  - Hermetic storage bags and mobile cold units
  - Reforming laws like the Jute Packaging Materials Act to allow modern storage solutions
- **Improve Data and Accountability** - India lacks a national database on food waste. Mandatory measurement and public reporting for businesses, caterers, and institutions can improve accountability and efficiency.
- **Cultural and Behavioural Change** - Reviving the traditional ethos of “Anna (food) as sacred” can drive responsible consumption. Awareness must translate into collective civic responsibility through education and community initiatives.

### Conclusion: From Awareness to Action

- Food waste is not just inefficiency—it is a **moral, economic, and environmental crisis**.
- Addressing it requires systemic reforms, infrastructure investment, policy intervention, and a cultural shift towards valuing food as a precious resource.

### WHAT IS CHAGAS DISEASE?

#### Chagas Disease



- Chagas disease, also known as **American trypanosomiasis**, is an **inflammatory, infectious disease** caused by the **protozoan parasite, Trypanosoma cruzi**.
  - It can cause **serious heart and stomach problems**.
- **World Chagas Disease Day** is observed every year on **April 14** to raise awareness around the disease.
- **Transmission:**
  - The most common way people are infected with Chagas is through the **blood-sucking triatomine bugs**. This **parasite** is found in the **feces of triatomine bug**.
  - These **bugs** also are called **reduviid**. They may also be known as “**kissing bugs**” because they **tend to bite people’s faces**.
  - The parasite can also be **transmitted from mother to child during pregnancy or childbirth**, through **contaminated food and beverages, blood transfusions, organ transplants**, or laboratory accidents.
  - **Once a person has the infection, they remain infected for decades**, often with no signs or symptoms of illness.
  - Chagas disease is **common in South America, Central America, and Mexico**, the primary home of the triatomine bug.
- **Prevention:**
  - There is **no vaccine** to prevent Chagas disease.
  - **Vector control, reducing interaction** between humans and vector insects, has been the most effective method of prevention.
- **Treatment:**
  - During the **first phase** of infection, **treatment** of Chagas disease **aims to kill the parasite**. Later, it’s **no longer possible to kill the parasite**. Treatment in this later phase is **about managing symptoms**.