

### WHAT ARE BIOMARKERS?



Screening for blood biomarkers has been proposed as a potential way to diagnose cancer at earlier stages of the disease.

- Biomarkers, short for '**Biological Markers**' are a physical, chemical or biological characteristic that is present in the human body and measurable too.
- The WHO defines a biomarker as “**any measurement** reflecting an interaction between a biological system and a potential hazard, which may be **chemical, physical or biological**. The measured response may be functional and physiological, biochemical at the cellular level or a molecular interaction”.

#### **Classification of Biomarkers:**

- **Based on their source or location:**
  - **Molecular**– have biophysical properties, which allow their measurements in biological samples such as blood plasma, serum, cerebrospinal fluid, bronchoalveolar lavage, biopsy, urinalysis, and faecal analysis
  - **Radiographic**– obtained from imaging studies, for example, bone mineral density
  - **Histologic**– reflect biochemical or molecular alteration in cells, tissues, or fluids; for example, the staging and grading of cancers
  - **Physiologic**– measures of body processes, for example, blood pressure, pulse rate, and heart rate

#### **Based on roles/functions:**

- **Susceptibility/Risk Biomarkers:** Indicate the person's likelihood of developing a particular disease or condition in the near or distant future.
- **Diagnostic Biomarkers:** These are used to detect or confirm a particular disease or condition.

- **Prognostic Biomarkers:** In people who already are confirmed to have a disease, prognostic biomarkers can predict the likelihood of disease progression or relapse.
  - **Monitoring Biomarkers:** These biomarkers are used for one or all of these reasons: to assess the stage or condition of the disease, to measure the exposure to a particular drug and to measure exposure to an environmental agent.
  - **Predictive Biomarkers:** These are used to identify individuals who have a higher likelihood of experiencing a strong outcome when exposed to a particular drug. This will help decide the treatment options.
  - **Pharmacodynamic/Response Biomarkers:** These reveal that a biological response has happened in patients exposed to a particular drug or environmental agent.
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## WHAT IS SURVEY OF INDIA (SOD)?



The Tamil Nadu State Government raised objections to the Survey of India (SoI) report filed in connection with the construction of a mega car park project by Kerala in the Mullaperiyar catchment area.

Survey of India (SoI) is the **National Survey and Mapping Organization** of the country, under the **Department of Science and Technology**. It is the oldest scientific department of the Government of India and was set up in 1767.

- Organized into only 5 Directorates in 1950, mainly to look after the mapping needs of Defence Forces in the North West and North East, the Department has now **grown into 18 Directorates** spread in all parts of the country to provide the **basic map coverage** required for the development of the country.
- Its **expert advice** is being **utilized by various ministries** and undertakings of the Govt. of India in **many sensitive areas**, including the settlement of international borders, state boundaries and in assisting planned development of hitherto under developed areas.

- It is also **assisting in many scientific programmes** of the nation related to the field of geo-physics, remote sensing, and digital data transfers.
  - It **acts as an adviser to the Government of India on all survey matters**, viz Geodesy, Photogrammetry, Mapping and Map Reproduction.

However, the **main duties and responsibilities** of the SoI are enumerated below:

- All Geodetic Control, and Geodetic and Geophysical surveys.
- All Topographical Control, Surveys, and Mapping within India.
- Mapping and Production of Geographical Maps and Aeronautical Charts.
- Surveys for developmental projects.
- Survey of forests, cantonments, large scale city surveys, guide maps, cadastral surveys, etc.
- Survey and Mapping of special maps.
- Demarcation of the External Boundaries of India, their depiction on maps published in the country, and also advice on the demarcation of inter-state boundaries.
- Research and Development in Cartography, Printing, Geodesy, Photogrammetry, Topographical Surveys, and Indigenisation.
- Prediction of tides at 44 ports, including 14 foreign ports and publication of Tide Tables one year in advance to support navigational activities.
- Scrutiny and certification of the external boundaries of India and the coastline on maps published by other agencies including private publishers.

## [RIGHTS OF PERSONS WITH DISABILITIES ACT, 2016 \(RPWD ACT\)](#)

The Supreme Court recently lamented that the implementation of the Rights of Persons with Disabilities Act, 2016 (RPWD Act) remains dismal across India.



Rights of Persons with Disabilities Act, 2016 (RPwD Act) replaced the

**Persons with Disabilities (Equal Opportunities, Protection of Rights, and Full Participation) Act, 1995.**

- Its objective is to ensure that all persons with disabilities can lead their lives with dignity, without discrimination and with equal opportunities.
- It incorporates the rights of persons with disabilities covered under the **United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)**, to which India is a signatory.
- Under the Act, **disability** has been defined as an evolving and dynamic concept. The types of disabilities have been increased from existing 7 to 21, and the Central Government will have the power to add more types of disabilities.
  - The types of disabilities **include Leprosy Cured Person, Cerebral Palsy, Acid Attack Victims, Blindness, Deaf, Specific Learning Disabilities, Autism Spectrum Disorder, Parkinson's Disease, Haemophilia, etc.**
- Persons with "**benchmark disabilities**" are defined as those certified to have at least 40 percent of the disabilities specified.

#### **Rights and entitlements:**

- Responsibility has been cast upon the appropriate governments to take effective measures to ensure that persons with disabilities (PwDs) enjoy their rights equally with others.
- **Additional benefits** have been provided for **persons with benchmark disabilities** and those with high support needs.
- **Every child with a benchmark disability** between the age group of 6 and 18 years shall have the right to free education.
- **5% reservation** in seats in Government and Government aided higher educational institutions for persons with benchmark disabilities.
- Stress has been given to ensure **accessibility in public buildings** (both Government and private) in a prescribed time-frame.

- **4% reservation in Government jobs** for certain persons or class of persons with **benchmark disability**.
- **Guardianship**: The Act provides for the grant of guardianship by the District Court or any authority designated by the State Government under which there will be joint decision-making between the guardian and the PwDs.
- Broad-based **Central and State Advisory Boards** on Disability to be set up as policy-making bodies.
- It provides for the **strengthening of the Office of Chief Commissioner of Persons with Disabilities** and the State Commissioners of Disabilities, which will act as regulatory bodies and Grievance Redressal agencies and also monitor the implementation of the Act.
  - These Offices will be assisted by an Advisory Committee comprising of experts in various disabilities.
- Creation of **National and State Fund** to provide **financial support to the PwDs**.

#### **Penalties for offences:**

- It provides for penalties for **offences committed against PwDs** and also for violations of the provisions of the new law.
- Any person who violates provisions of the Act, or any rule or regulation made under it, shall be punishable with imprisonment up to six months and/ or a fine of Rs 10,000, or both.
- For any subsequent violation, imprisonment of up to two years and/or a fine of Rs 50,000 to Rs five lakh can be awarded.
- **Whoever intentionally insults or intimidates a PwD or sexually exploits a woman or child with a disability, shall be punishable with imprisonment** between six months to five years and fine.
- **Special Courts** will be designated **in each district** to handle cases concerning violations of the rights of PwDs.

## RASHTRIYA AROGYA NIDHI SCHEME

Recently, the Delhi High Court said that the threshold income to claim benefit under the Rashtriya Arogya Nidhi (RAN) scheme was prima facie “extremely low”.



Rashtriya Arogya Nidhi scheme was set up in 1997 and it is a central sector scheme. It provides **one-time financial assistance** to poor patients living below State/UT wise **threshold poverty line** and suffering from life threatening diseases relating to heart, kidney, liver, cancer, etc. for treatment at any of Super Specialty Government hospitals/institutes.

- The Umbrella Scheme of RAN has three components as under:
  - **Rashtriya Arogya Nidhi (RAN)** - Financial assistance for treatment of life-threatening diseases relating to heart, kidney, liver, etc. at Government hospitals/institutes having Super Specialty facilities; (Maximum financial assistance is **15 lakhs**)
  - **Health Minister’s Cancer Patient Fund (HMCPF)** - Financial assistance for treatment of cancer at Regional Cancer Centres (RCCs)/ Tertiary Care Cancer Centres (TCCCs) and State Cancer Institutes (SCIs); (Maximum financial assistance is Rs. 15 lakhs)
  - Financial assistance for poor patients **suffering from rare diseases** - for specified rare diseases for treatment at Government hospitals/institutes having Super Specialty facilities; (Maximum financial assistance is Rs. 20 lakhs)

## NATIONAL SERVICE SCHEME



Trained National Service Scheme (NSS) volunteers from 153 NSS units will offer their services to differently abled people and senior citizens in Kozhikode district on the day of polls.

National Service Scheme was launched during 1969, the birth centenary year of Mahatma Gandhi. It is a **Central Sector Scheme** of the Government of India.





# CROSS & CLIMB ROHTAK



- It provides an opportunity to the student youth of the 11th & 12th Class of schools at +2 Board level and student youth of Technical Institution, Graduate & Post Graduate at colleges and University level of India to take part in various Government led community service activities & programmes.
- **The NSS symbol:**
  - It is based on the "Rath" wheel of **the Konark Sun Temple** situated in Odisha.
  - The **navy blue colour** indicates the **cosmos** of which the NSS is a tiny part, ready to contribute its share for the welfare of the mankind.
  - The Red colour in the badge indicates that the NSS volunteers are full of blood i.e. lively, active, energetic and full of high spirit.
  - The giant wheels of the Sun Temple portray the cycle of creation, preservation and release and signify the movement in life across time and space.
- **Activities undertaken by NSS:** National Integration Camp, Shramdaan. Blood donation, Immunisation, Plantation, Disaster Management and Adventure programs etc.
- **Motto:** The motto of National Service Scheme is NOT ME BUT YOU
- **Nodal Ministry:** Ministry of Youth Affairs & Sports.

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## WHY DOES SEA LEVEL RISE MATTER?

### **How Fast is the Global Sea Level Rising?**

It has risen by about 8–9 inches since 1880, according to a report by the National Oceanic and Atmospheric Administration (NOAA) and the rate has been accelerating since 1993 (almost doubled). A huge jump of about 0.3 inches was seen between 2022-2023 mainly due to the development of El Niño (a weather pattern associated with warmer oceans). Now that El Niño is weakening, the rate of sea level rise is expected to slow down. The current rates of acceleration could double by 2050 compared to previous 100 years and increase the frequency of floods.

### **Impact of Climate Change on Sea Level Rise**

Glaciers and Ice-sheets are melting at an accelerated rate due to global warming and adding water to the ocean. Global warming is also making oceans warmer leading to thermal expansion

and contributing to sea level rise. A 2023 study found that glaciers in Greenland were melting five times faster than in 20 years.

## Why Does Sea Level Rise Matter?

Because sea level rise results in-

- Submersion of coastal areas. For example, as per a 2022 analysis by a global risk management firm some parts of Mumbai, Kochi, Mangalore, Chennai, Visakhapatnam, and Thiruvananthapuram will be submerged by 2050.
- More intense storm surges (seawater level rises due to a storm), flooding, and damage to coastal areas.
- Saltwater contamination of freshwater aquifers, many of which are used by communities for agricultural and drinking purposes.

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## INTERNATIONAL LABOUR ORGANISATION (ILO)

- The ILO was created in 1919, as part of the **Treaty of Versailles** that ended World War I, to reflect the belief that universal and lasting peace can be accomplished only if it's based on social justice.
- In 1946, the ILO became a **specialized agency of the United Nations**.
- The ILO is devoted to promoting social justice and internationally recognized human and labour rights, pursuing its founding mission that labour peace is essential to prosperity.
- **Headquarters:** Geneva, Switzerland

### Objectives of ILO:

- The ILO has **four strategic objectives**:
  - Promote and realize standards and fundamental principles and rights at work,
  - Create greater opportunities for women and men to decent employment and income,
  - Enhance the coverage and effectiveness of social protection for all, and
  - Strengthen tripartism and social dialogue.



## Membership of ILO:

- The ILO has **187** state members.
- India is a **founding member of the ILO** and it has been a permanent member of the ILO Governing Body since 1922.
- The ILO constitution permits any member of the UN to become a member of the ILO.
- To gain membership, a nation must inform the director-general that it accepts all the obligations of the ILO constitution.

## Ensuring Safety and Health at Work in a Changing Climate Report:

- The ILO published this report to bring attention to the global health threat workers are currently facing.
- A scoping exercise was conducted to identify the most recent trends and priorities for climate change and worker safety and health.
- Based on the available evidence, the report addresses the following key issues:
  - Excessive heat
  - Ultraviolet (UV) radiation
  - Extreme weather events
  - Workplace air pollution
  - Vector-borne diseases
  - Agrochemicals