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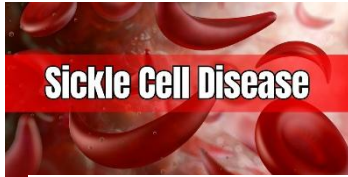
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Current Affairs - 15 November 2025



WHAT IS SICKLE CELL DISEASE (SCD)?

- It is a group of **inherited blood cell disorders** that affect **hemoglobin**, the **protein that carries oxygen** through the body.
- SCD can cause **episodes of severe pain** and lead to **life-threatening complications**.
- The **most common and severe type** of SCD is **sickle cell anemia**.
- **How Does it Affect Blood Flow?**
 - Normally, RBCs are **disc-shaped and flexible** enough to move easily through the blood vessels.
 - People with SCD have **atypical hemoglobin molecules** called **hemoglobin S**, which can **distort RBCs into a sickle, or crescent shape**.
 - When RBCs sickle, they **do not bend or move easily** and can **block blood flow** to the rest of the body.
 - SCD **interferes with the delivery of oxygen** to the tissues.
- **What causes it?**
 - The cause of SCD is a **defective gene**, called a **sickle cell gene**.
 - A person will be born with SCD only if **two genes are inherited**—one from the **mother and one from the father**.
- **Symptoms:**
 - **Early stage:** **Extreme tiredness or fussiness from anemia**, **painfully swollen hands and feet**, and **jaundice**.
 - **Later stage:** **Severe pain, anemia**, **organ damage**, and **infections**.
- **Treatments:**

A **bone marrow transplant** (stem cell transplant) can cure SCD. However, there are treatments that can help relieve symptoms, lessen complications, and prolong life.

- **Gene therapy** is also being explored as another potential cure.
- The **UK** recently became the **first country to approve gene therapy treatment** for SCD.



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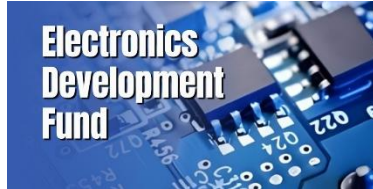
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ELECTRONICS DEVELOPMENT FUND



Electronics
Development
Fund

- It was launched by the **Government of India** on **15 February 2016**.
- It aims to **promote research, development, and entrepreneurship** in the fields of **electronics, nano-electronics, and information technology**.
- It functions as a **Fund of Funds**, designed to **invest in professionally managed Daughter Funds** such as early-stage angel and venture funds.
 - Each Daughter Fund is required to be **registered in India** and comply with all applicable laws and regulations, including the **SEBI (Alternative Investment Funds) Regulations, 2012**, as **Category I or Category II AIFs**.
- **Key objectives of Electronics Development Fund**
 - **Promote Innovation and R&D:** To foster research and development in **electronics, nano-electronics, and information technology** by supporting market-driven and industry-led innovation.
 - **Support Daughter Funds:** To invest in professionally managed Daughter Funds such as **early-stage angel and venture funds** that, in turn, provide capital to startups and technology ventures.
 - **Encourage Product and Technology Development:** To **nurture entrepreneurship** by supporting companies involved in the creation of new products, processes, and technologies within the country.
 - **Strengthen Domestic Design Capabilities:** To enhance India's capacity for **indigenous design and development** in the **Electronics System Design and Manufacturing (ESDM)** sector.



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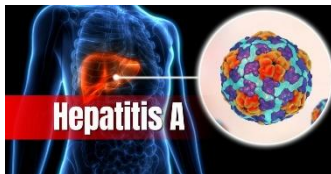


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- **Build a National IP Resource Pool:** To generate a **strong base of intellectual property** in key technology areas and encourage ownership of innovation within India.
 - **Facilitate Strategic Acquisitions:** To enable acquisition of **foreign technologies** and companies where such products are imported in large volumes, promoting self-reliance and reducing import dependence.
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HEPATITIS A



- Hepatitis A is an **inflammation of the liver** caused by the **hepatitis A virus (HAV)**.
 - It occurs **throughout the world**.
 - It is especially common in countries in Latin America, Africa, the Middle East, Asia, the Caribbean, and the Western Pacific.
 - Unlike hepatitis B and C, hepatitis A does not cause chronic liver disease but it can cause mild to **severe symptoms and rarely fulminant hepatitis** (acute liver failure).
 - **Transmission of Hepatitis A**
 - It is transmitted **primarily by the faecal-oral route**; that is when an uninfected person ingests food or water that has been contaminated with the faeces of an infected person.
 - The virus can also be transmitted through close **physical contact with an infectious person**.
 - **Symptoms:** It includes fever, malaise, loss of appetite, Nausea, diarrhoea, abdominal discomfort, Dark urine and jaundice.
 - **Treatment for Hepatitis A:**
 - There is **no specific antiviral treatment** for hepatitis A.
 - Its treatment mainly focuses on **supportive care** to relieve symptoms and ensure adequate hydration and nutrition.
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AMBAJI MARBLE

- It is named after the town of **Ambaji in the state of Gujarat**, where it is predominantly quarried.
- It is a type of marble known for its **milky white colour, durability and natural beauty**.
- **Features of Ambaji Marble:**
 - **Appearance:** It is characterized by its **pristine white color**, which often features subtle gray or **beige veining**.
 - The veins can vary in intensity and they occur naturally due to the presence of minerals and impurities during the marble formation process.
 - **Durability:** It has very **long-lasting shine and durability**.
- **Applications of Ambaji Marble:** It has been used in the construction of Ambaji temple and many other **religious places, memorials and grand buildings**.

Key Facts about Marble:

- It is a **metamorphic rock** that forms when limestone is subjected to the heat and pressure of metamorphism. It is composed **primarily of the mineral calcite** (CaCO_3) and usually contains other minerals, such as clay minerals, micas, quartz, pyrite, iron oxides, and graphite.
- **Formation of Marble:**
 - Under the **conditions of metamorphism**, the calcite in the limestone recrystallizes to form a rock that is a mass of interlocking calcite crystals.
 - A related rock, dolomitic marble, is produced when dolostone is subjected to heat and pressure.
 - The transformation of limestone into marble **usually occurs at convergent plate boundaries**, where large areas of Earth's crust are exposed to the heat and pressure of regional metamorphism.
 - Some marble also **forms by contact metamorphism** when a **hot magma body** heats adjacent limestone or dolostone.



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RUTAG INITIATIVE



- The **Rural Technology Action Group (RuTAG)** is an initiative of the **Office of the Principal Scientific Adviser (OPSA)** which was launched in 2004.
- It was conceptualized as a mechanism to provide a **higher level of Science & Technology intervention** and support for rural areas.
- Under this initiative, the interventions are **designed to be primarily demand-driven**, focusing on **bridging technology gaps** at the grassroots level, upgrading technology, and providing training and demonstrations through innovative projects.
- **Objectives of RuTAG Initiative:**
 - **Connecting Stakeholders:** Collaborating with stakeholders Non-Government Organizations, Self Help Groups, Community Organizations, and Start-ups to identify **sector-specific technology needs**.
 - **Demand-driven technologies:** Developing technologies based on socio-economic data coherent with national/regional priorities.
 - **Prototype Validation:** Validating developed prototypes and explore commercialization with scalability aspects.
 - **Commercialization:** Commercializing the potentially validated technologies for national/global markets.

What is RuTAG 2.0?

- It was launched by the Office of the PSA **in April 2023**.
- **Focus:** With a focus on **commercialization and broader dissemination** of developed **technologies as products**, ensuring wider accessibility and socio-economic impact.
- It will emphasize **translating innovation into market-ready products** reflecting its commitment to driving transformative changes in rural areas and empowering communities for sustainable development.



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MAN-PORTABLE AUTONOMOUS UNDERWATER VEHICLES



- It is developed for **mine countermeasure missions**.
- It is developed by the Naval Science & Technological Laboratory (NSTL), Visakhapatnam of **Defence Research and Development Organisation (DRDO)**.
- **Key Features of Man-Portable Autonomous Underwater Vehicles:**
 - **Rapid Response:** It offers rapid response capability with **reduced operational risk and logistic footprint** for naval mine warfare applications.
 - **Autonomous Classification:** It has **deep learning based target recognition** algorithms enabling autonomous classification.
 - **Advanced equipment:** It comprises **multiple AUVs** equipped with **Side Scan Sonar and Under Water cameras** as primary payloads for real-time detection & classification of Mine-Like Objects.
 - **Enhanced situational awareness:** It has a robust **underwater acoustic communication network** which allows seamless data exchange between AUVs during missions and providing greater situational awareness.

Key Facts about Defence Research and Development Organisation

- It is the **R&D wing of the Ministry of Defence, Govt of India**, with a vision to empower India with cutting-edge defence technologies.
- **Formation:** It was **formed in 1958** by merging the then-existing Technical Development Establishment (TDEs) of the Indian Army and the **Directorate of Technical Development and Production (DTDP)** with the **Defence Science Organisation (DSO)**.
- It is responsible for the indigenous design, development and production of **state-of-the-art weapon systems** required by the Armed Forces.
- **Headquarters:** New Delhi.



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WHY GERMANY'S ECONOMY IS STRUGGLING — AND HOW IT CAN RECOVER?

- Germany is again being labelled the “sick man of Europe,” with chronic stagnation requiring long-term structural reforms.
- The economy has grown only **0.1% since 2019**, far below the US and euro area. Forecasts remain bleak, with potential growth expected at just **0.4% per year**.
- **New Economic Challenges: From Worker Shortages to Rising Labor Costs**
 - Unlike the early 2000s, Germany now faces **worker shortages**, not job scarcity.
 - **20 million workers** will retire in the next decade, while only **12.5 million** will enter the labor force.
 - Aging populations mean fewer hours worked and higher labor costs.
 - Unit labor costs have risen due to **sluggish productivity** and higher wages.
 - Employment stability measures like **short-time work** hinder structural change by discouraging worker mobility into more productive sectors.
- **Manufacturing Decline and High Energy Costs**
 - Germany's manufacturing sector—once the engine of growth—has been declining since 2018.
 - Key factors:
 - Loss of competitiveness, Weak foreign demand, Rising trade fragmentation, Threat of US tariffs, Competition from China
- **Dependence on Legacy Industries and Weak Capital Markets**
 - Germany's strength in automotive, chemicals, and mechanical engineering has created over-reliance on legacy “mid-tech” sectors.
 - This limits diversification into high-tech fields like IT and biotechnology.
 - Capital markets remain shallow:
 - Heavy dependence on banks
 - Insufficient venture capital, especially for scale-ups



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Germany's Economy Falling Behind Europe and the World

- Germany is no longer leading the euro area; instead, it is lagging behind both European and global growth averages.
- The German Council of Economic Experts attributes the slowdown to a combination of **cyclical weaknesses, structural challenges, and major geopolitical shifts** that have disrupted the traditional German export-driven model.
- **Geopolitical Shifts Undermining Germany's Economic Model**
 - A key disruption has been the change in US leadership and America's reduced willingness to provide economic and security guarantees to allies like Germany.
 - This has forced Berlin and other European countries to reconsider their security frameworks and allocate more resources to defence and trade resilience.
 - **Fragmentation within the European Single Market** has also prevented EU nations from crafting strong collective responses to global challenges, weakening competitiveness.
- **Domestic Challenges Intensifying the Slowdown**
 - Germany faces internal pressures as well:
 - Declining industrial competitiveness
 - Rapid demographic ageing

Policy Recommendations to Boost Growth

- The German Council of Experts suggests four key steps:
 - **Better targeted fiscal spending** to increase productive investment.
 - **Stronger European economic integration**, removing barriers to a true single market for goods and services.
 - **Corporate tax cuts** to incentivise business investment.
 - **Reducing wealth inequality**, including a state-subsidised long-term investment account to improve financial security, especially for older citizens.
 - If Germany fails to revive growth soon, India — with a GDP nearing **\$4 trillion** — may surpass it to become the **world's third-largest economy**.
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THE GREAT NICOBAR PROJECT AND A MINISTRY IN KNOTS

- Recently, the Union Environment Ministry informed the National Green Tribunal that the ₹92,000-crore **Great Nicobar mega infrastructure project** will significantly affect the island's rich forests and biodiversity.
- The project — which includes a transshipment port, airport, power plant, and tourism township — has faced intense legal scrutiny.
- Defending the 2022 environmental clearance, the government acknowledged that Galathea Bay, the proposed port site, contains over 20,000 live coral colonies, more than 50 nesting mounds of the endemic Nicobar Megapode (a Schedule I species), and is an active nesting ground for the Giant Leatherback turtle.
- The Ministry stated it was aware of these impacts and has committed to mitigation and conservation measures extending until 2052.
- This article highlights the serious environmental, legal, and procedural contradictions surrounding the ₹92,000-crore Great Nicobar infrastructure project.
- It reveals how the Environment Ministry's own admissions, CRZ reclassification disputes, and overlooked ecological data undermine the integrity of its clearance process.

Environment Ministry's Contradiction on Great Nicobar Conservation

- The Ministry's justification of mitigation measures for the Great Nicobar project raises deeper concerns about why such measures are needed in the first place.
- By treating the project as inevitable and offering mitigation as a remedy, the Ministry obscures its own role in permitting it and neglecting its core mandate of conservation.
- A major contradiction lies in the 2021 decision of the National Board for Wildlife to **denotify the Galathea Bay Wildlife Sanctuary** — an area proposed since 1997 to protect leatherback turtles, corals, megapodes, mangroves and saltwater crocodiles.
- The same institution responsible for safeguarding this critical habitat removed its protection, only to later propose conservation plans, highlighting a clear conflict between statutory duty and actual decision-making.