

## SHORTNEWS

### 1. GLYPHOSATE

Unauthorized herbicide-tolerant cotton seed varieties, resistant to glyphosate, are being circulated and used in Dhar district of Madhya Pradesh, even though they are not approved for commercial cultivation in India.

1. A broad-spectrum herbicide used to kill weeds and grasses.
2. The sodium salt form of glyphosate is used to regulate plant growth and ripen specific crops.
3. Origin: Developed in 1970.
4. Chemical Name: N-(phosphonomethyl) glycine (IUPAC).
5. Mode of Action: Blocks an essential plant enzyme (EPSPS), stopping growth.
6. Use in India: It has been approved for use only in tea plantations and non-plantation areas accompanying the tea crop.

#### Applications

GM crops engineered as glyphosate-resistant (Roundup Ready) allow safe application without harming crops.

#### Non-Agricultural Settings

Applied in roadsides, industrial sites, lawns for vegetation control.

#### GM cotton Allowed in India

Bollgard I (BG I) and Bollgard II (BG II), developed by Monsanto, are resistant to pink bollworm.

#### Cotton Crop

##### Tropical Crop

Cotton is a tropical crop mainly grown during the kharif season in the semi-arid regions of India.

#### Temperature and Rainfall

It thrives in temperatures of 21°C to 30°C and requires 50–75 cm of annual rainfall.

#### Soil Types

Cotton adapts to different soils across regions

1. Well-drained, deep alluvial soils in northern India
2. Black clayey soils of varying depth in central India
3. Mixed black and red soils in southern India

#### Sensitivity

The crop shows some tolerance to salinity but is highly vulnerable to waterlogging, making well-drained soils essential. India ranks 2nd in cotton production with estimated production of 323.47 lakh bales (5.84 MMT) in 2023–24 i.e. 23.83% of world cotton production.

#### Major Cotton Producing Zones in India

1. Northern Zone – Punjab, Haryana and Rajasthan
2. Central Zone – Gujarat, Maharashtra and Madhya Pradesh
3. Southern Zone – Telangana, Andhra Pradesh and Karnataka.

### 2. SLINEX – 25

Indian Naval Ships arrived at Colombo to participate in the 12th edition of Sri Lanka India Naval Exercise (SLINEX-25)

### Sri Lanka India Naval Exercise (SLINEX-25)

1. Origin: Conceptualised in 2005 as a bilateral naval exercise between India and Sri Lanka.
2. Aim: Aims at enhancing interoperability, maritime cooperation and exchange of best practices while jointly undertaking multi-faceted maritime operations.
3. Exercise Structure: Conducted in 2 phases – Harbour Phase & Sea Phase.
4. Previous edition: Conducted at Visakhapatnam, India in December 2024.

### Fleets

1. Indian Navy: INS Rana (Guided Missile Destroyer) and INS Jyoti (Fleet Tanker).
2. Sri Lankan Navy: SLNS Gajabahu and Vijayabahu (both Advanced Offshore Patrol Vessels).
3. Special Forces of both navies also participated.

### India's other exercise with Sri Lanka – Exercise MITRA SHAKTI

Other Major Joint exercises with Neighbouring Countries

1. Bangladesh: Ex SAMPRITI
2. Nepal: Ex SURYA KIRAN
3. Myanmar: IMBEX
4. Thailand: Ex MAITREE
5. Maldives: Ex EKVVERIN

## 3. INDIA ACHIEVES RECORD DEEP-SEA DIVE: PRELUDE TO SAMUDRAYAN MISSION

Two Indian aquanauts, Raju Ramesh and Cdr. Jatinder Pal Singh (Retd), achieved a historic milestone by diving to depths of 4,025 meters and 5,002 meters in the Atlantic Ocean, marking India's deepest ocean expedition to date.

1. Significance: India joins fewer than six nations with deep-sea exploration capability.
2. Partnership: Dives conducted using the French submersible *Nautilus* in collaboration with IFREMER (France's marine research institute).
3. Indian Representation: A five-member National Institute of Ocean Technology (NIOT), Chennai.
4. Feasibility Step: This feat is seen as a prelude to India's Samudrayan Mission, which targets sending three aquanauts to 6,000 meters in the MATSYA-6000 by 2027.

### Samudrayan Mission

#### Mission Focus

Part of India's Deep Ocean Mission, aimed at sustainable use of marine resources. Exploration of polymetallic nodules (manganese, nickel, copper, cobalt).

#### Geostrategic Context

India's 11,098 km coastline and vast Exclusive Economic Zone (EEZ) provide major opportunities for the blue economy.

### Matsya 6000

#### Design

4th-generation submersible with 12-hour endurance and 96-hour emergency survival capacity.

## Features

1. High-density Li-Po battery.
2. Emergency escape systems.
3. Trials: Completed wet trials (2025, L&T Shipyard, Tamil Nadu).

## Deep Ocean Mission (DOM)

### Objective

Government of India initiative to explore deep oceans, develop technologies for sustainable use of marine resources, and address climate change and pollution

### Nodal Ministry

Ministry of Earth Sciences (MoES).

### Components of the Deep Ocean Mission

1. Development of Technologies for Deep-Sea Mining and Manned Submersible
2. Development of Ocean Climate Change Advisory Services
3. Technological Innovations for Exploration and Conservation of Deep-Sea Biodiversity
4. Deep Ocean Survey and Exploration
5. Energy and Freshwater from the Ocean
6. Advanced Marine Station for Ocean Biology

## 4. CAUVERY WILDLIFE SANCTUARY

Recently, two tiger cubs, barely 10 days old, were found dead inside the Cauvery Wildlife Sanctuary (CWS), Karnataka, while their mother has been missing for two days.

### Cauvery Wildlife Sanctuary (CWS)

1. Establishment: Declared a protected area in 1987 under the Wildlife Protection Act.
2. Location: Situated along the Cauvery River, it spans Mandya, Chamarajanagar, and Ramanagara districts of Karnataka.
3. Significance: Functions as a wildlife corridor connecting Bannerghatta NP, Biligiri Rangaswamy Temple (BRT) WLS, and Malai Mahadeshwara Wildlife Sanctuary.
4. Shares boundaries with Dharmapuri forests, Tamil Nadu (Cauvery South Wildlife Sanctuary)
5. Climate: Semi-arid, with rainfall from both southwest and northeast monsoons.
6. Vegetation: Dry deciduous and thorn forests, riverine patches, and evergreen sholas.

### Flora

*Terminalia arjuna*, *Syzygium cumini*, *Hardwickia binata*, *Albizia amara*, *Tamarindus indica*.

### Fauna

1. Flagship Species: Tiger, Asian elephant, leopard, dhole, sloth bear.
2. Other Species: Sambar, spotted deer, barking deer, wild boar, chevrotain, macaques, Grizzled giant squirrel, smooth-coated otter, hump-backed mahseer (fish).
3. Avifauna: Over 280 bird species, including white-rumped vulture, Nilgiri wood-pigeon, and yellow-throated bulbul.