



## **DAILY CURRENT AFFAIRS 25-09-2024**

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## **Tuvalu**

**Syllabus: GS-1; Geography, GS-3; Climate Change**

### **Context**

- *Tuvalu and its 11,000 people, who live on nine atolls scattered across the Pacific, are running out of time.*
- *NASA scientists project that by 2050, daily tides will submerge half of the main atoll of Funafuti, home to 60% of Tuvalu's residents, where villages cling to a narrow strip of land.*

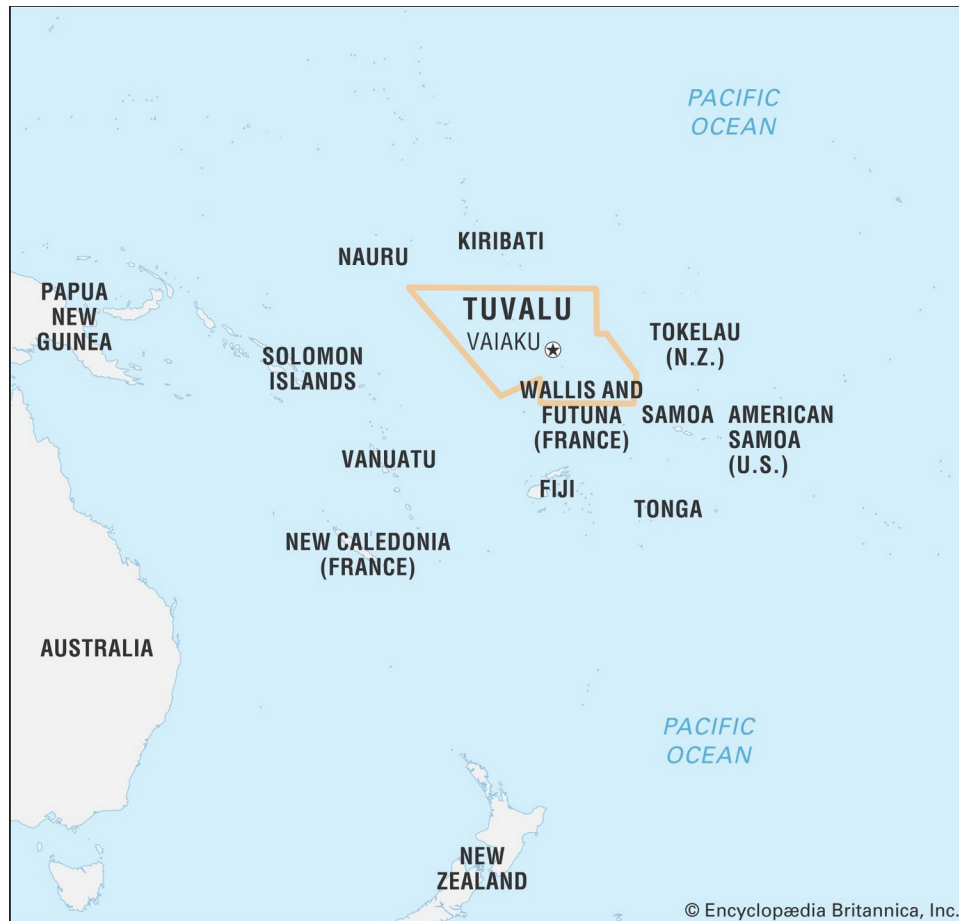


### **About**

#### **Geography**

- **Location:** *Tuvalu is situated in the west-central Pacific Ocean, south of the equator. It lies halfway between Australia and Hawaii.*

- **Islands:** *The country consists of nine coral atolls, with a total land area of about 26 square kilometers, making it one of the smallest nations in the world in terms of both population and land area.*
- **Capital:** *Funafuti is the capital and the largest city.*
- **Climate:** *Tuvalu has a tropical maritime climate, with hot, humid weather year-round.*



### Political System

- **Government Type:** *Tuvalu is a constitutional monarchy, and it is part of the Commonwealth of Nations. The British monarch is the ceremonial head of state, represented locally by a governor-general.*
- **Independence:** *Tuvalu gained independence from the United Kingdom on October 1, 1978.*
- **Political Structure:** *It follows a parliamentary system of government, with a Prime Minister who is the head of government.*

## Demographics

- **Population:** *Around 11,000 people, making it one of the least populous countries in the world.*
- **Ethnicity:** *The majority of the population is of Polynesian descent.*
- **Language:** *Tuvaluan and English are the official languages.*

## Economy

- **Challenges:** *The economy of Tuvalu is limited due to its small size, remote location, and lack of natural resources. The country depends heavily on foreign aid and remittances from Tuvaluans working abroad.*
- **Key Sectors:** *The economy is primarily based on subsistence farming and fishing. Tuvalu also earns revenue from selling its ".tv" internet domain and from licensing fishing rights to other nations.*
- **Currency:** *Tuvalu uses the Australian dollar (AUD).*

## Environmental Issues

- **Rising Sea Levels:** *Tuvalu is highly vulnerable to climate change, especially rising sea levels. Many of its islands are only a few meters above sea level, making them susceptible to flooding and storm surges.*
- **International Advocacy:** *Tuvalu has been an active voice in international forums on climate change, advocating for stronger action from global powers to combat rising sea levels, which threaten its very existence. It is often cited as one of the countries most likely to disappear due to climate change.*

## International Relations

- **United Nations Membership:** *Tuvalu became a member of the United Nations in 2000.*
- **Diplomatic Relations:** *Tuvalu maintains diplomatic relations with many countries and is part of regional organizations like the Pacific Islands Forum. It often receives aid from countries like Australia, New Zealand, and Japan.*
- **Climate Change Leadership:** *Tuvalu has taken a leading role in international climate negotiations, particularly at the UN Climate Change Conferences (COP), advocating for the interests of small island developing states.*

## Cultural Aspects

- **Religion:** *Christianity is the dominant religion in Tuvalu, with the Church of Tuvalu being the largest denomination.*

- **Traditional Lifestyle:** *Despite modernization, many Tuvaluans still practice traditional Polynesian customs, including communal living and subsistence agriculture.*

## **PM MITRA Park**

### **Syllabus: GS-2; Government policies and Interventions**

#### **Context**

- *PM Modi lays foundation stone for **PM Mega Integrated Textile Regions and Apparel Park in Maharashtra.***

#### **About**

- *The PM MITRA Park (Pradhan Mantri Mega Integrated Textile Region and Apparel Parks) scheme is an initiative launched by the Government of India to **enhance the global competitiveness of India's textile industry.***
- *The scheme aims to establish large integrated textile parks that house various facilities across the textile value chain, from spinning and weaving to processing and garment manufacturing, all within one location.*

#### **Key Objectives of PM MITRA Park**

- **Global Competitiveness:** *The parks are designed to enhance India's textile production by promoting an integrated, cost-efficient supply chain and by attracting both domestic and international investment.*
- **Boosting Employment:** *These parks aim to generate large-scale employment opportunities by promoting the growth of the textile industry.*
- **Sustainability and Innovation:** *The parks are expected to incorporate modern infrastructure, cutting-edge technology, and environmental sustainability practices.*

#### **Features of PM MITRA Park**

- **Integrated Facilities:** *These parks will include facilities for textile production, such as ginning, spinning, weaving, dyeing, and printing, as well as apparel manufacturing.*
- **Plug-and-Play Infrastructure:** *Ready-to-use infrastructure with uninterrupted utilities like electricity, water supply, and waste management systems.*
- **Shared Facilities:** *Common infrastructure facilities such as effluent treatment plants, worker housing, and logistics centers.*

- **Strategic Locations:** *The parks will be located in regions with existing textile industry bases to optimize logistics and reduce costs.*
- **PPP Model:** *The parks will be developed in a Public-Private Partnership (PPP) model, with the government providing financial support and incentives for private investment.*

### Financial Support

- *The Government of India provides financial incentives to states and developers for setting up these parks.*
- *Each park is expected to receive significant financial assistance in terms of capital support, technology upgrades, and capacity-building initiatives.*

### Target

- *The scheme aims to set up 7 PM MITRA Parks across various states in India, creating world-class infrastructure for the textile industry.*
- *This initiative aligns with the government's **Atmanirbhar Bharat** (Self-Reliant India) vision, promoting domestic production and reducing dependency on textile imports.*

### Expected Benefits

- *Strengthening the textile sector by improving its global standing.*
- *Creating lakhs of direct and indirect job opportunities.*
- *Encouraging innovation and sustainability in textile manufacturing.*
- *Enhancing India's textile exports by making the sector more competitive globally.*

## Unemployment

### Syllabus: GS-3; Economy

#### Context

- **The Periodic Labour Force Survey (PLFS)** for the period between July 2023 and June 2024, released by the **Labour Bureau**, reported no major change in the unemployment rate, and there is minor increase in the distribution of workers in agriculture and the manufacturing sector shows no growth in giving jobs compared to past years.

#### About

- *Unemployment refers to the condition where **individuals who are willing and able to work are unable to find suitable employment.***
- *It is a critical indicator of the health of an economy.*

### Types of Unemployment in India

- **Structural Unemployment:** *Occurs due to structural changes in the economy such as changes in technology or the mismatch between skills possessed by workers and the skills demanded by the market.*
- **Cyclical Unemployment:** *This type of unemployment happens during the downturns of the business cycle.  
During recessions, demand for goods and services decreases, leading to a reduction in production and thus a decrease in the workforce.*
- **Frictional Unemployment:** *Refers to temporary unemployment during the transition period from one job to another.  
It is considered part of the natural rate of unemployment.*
- **Seasonal Unemployment:** *Common in sectors like agriculture, tourism, or industries that are dependent on seasonal demand.  
For example, agricultural workers may be employed only during planting and harvesting seasons.*
- **Disguised Unemployment:** *Common in the agricultural sector in India, where more people are employed than actually needed for production.  
This means that some workers do not contribute significantly to output.*
- **Underemployment:** *People may have jobs that are below their skill level or work part-time even though they are capable of full-time work.*
- **Educated Unemployment:** *Refers to the scenario where individuals with educational qualifications are unable to find jobs that suit their skill level.  
This has been a growing concern in India with the rise in higher education and limited employment opportunities.*

### Measurement of Unemployment in India

- **Usual Status (Principal Status):** *Measures employment or unemployment over a reference period of one year.*
- **Current Weekly Status (CWS):** *Measures employment or unemployment over a reference period of one week.*
- **Current Daily Status (CDS):** *Measures employment or unemployment on each day of the reference week.*

### Unemployment Rate in India



- *The unemployment rate is calculated as the number of unemployed persons divided by the total labor force.*
- *The Periodic Labour Force Survey (PLFS), conducted by the **National Statistical Office (NSO)**, is the primary source of data on unemployment in India.*

### Government Initiatives to Tackle Unemployment

- **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA):** *Provides 100 days of guaranteed wage employment to every rural household, aiming to reduce rural unemployment.*
- **Skill India Mission:** *Aims to train over 40 crore people in India in different skills by 2022 to tackle structural unemployment.*
- **Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** *A flagship program aimed at enabling a large number of Indian youth to take up industry-relevant skill training.*
- **Start-up India:** *Encourages entrepreneurship and aims to provide jobs through the promotion of startups.*
- **Atmanirbhar Bharat Rozgar Yojana (ABRY):** *Aims at incentivizing job creation during the COVID-19 recovery phase by providing subsidies for new employment.*

### Challenges in Addressing Unemployment

- **Jobless Growth:** *Despite high economic growth, job creation has not been proportional, leading to an increase in unemployment, especially among the youth.*
- **Skill Mismatch:** *Educational qualifications do not always align with the skills required by the labor market.*
- **Agricultural Dependence:** *A significant portion of India's workforce is dependent on agriculture, where disguised unemployment is rampant.*
- **Informal Sector Dominance:** *A large portion of the Indian workforce is engaged in informal work, which offers no job security or benefits, contributing to underemployment.*

### Impact of Unemployment

- **Economic Impact:** *High unemployment leads to decreased consumer spending, reduced productivity, and slow economic growth.*
- **Social Impact:** *Long-term unemployment can lead to social unrest, increased poverty, and higher crime rates.*
- **Psychological Impact:** *Prolonged periods of unemployment can affect mental health, leading to depression and stress.*

### Global Context and Unemployment Trends



- *The COVID-19 pandemic has led to significant increases in unemployment globally, affecting both developed and developing economies.*
- *The recovery from this shock has been slow, with sectors like travel, hospitality, and retail particularly affected.*

### Way Forward

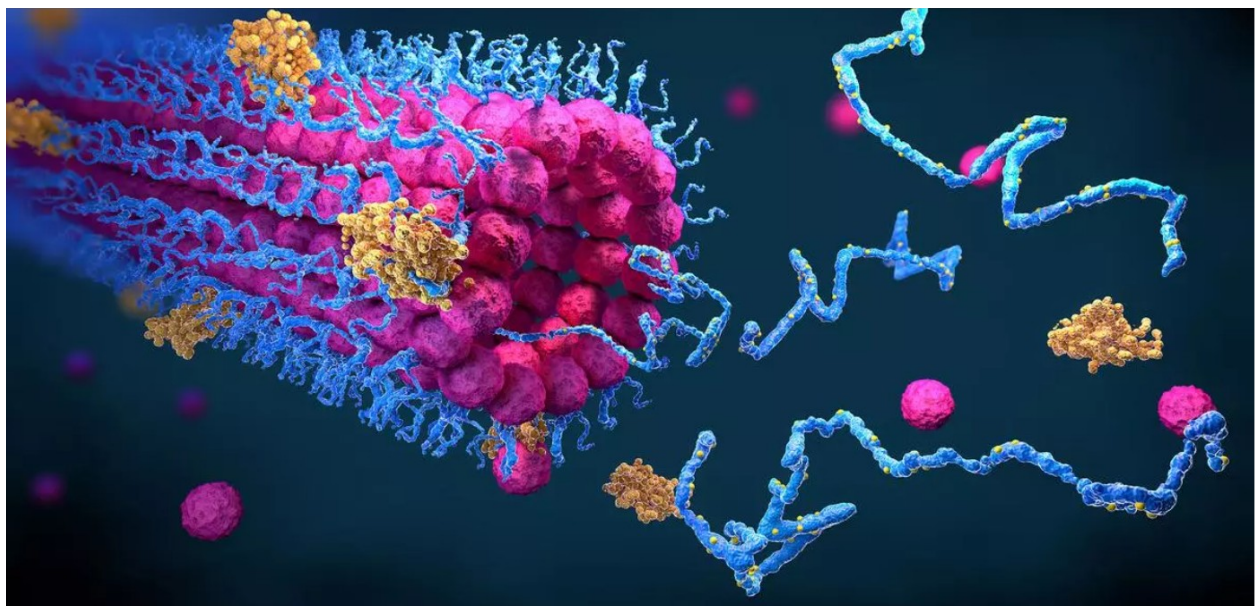
- **Job Creation:** *Policies aimed at creating more jobs, especially in manufacturing and service sectors, are essential.*
- **Boosting Entrepreneurship:** *Encouraging start-ups and small enterprises can provide new employment opportunities.*
- **Improving Education and Training:** *Bridging the gap between education and employment by offering vocational and technical training.*
- **Encouraging Formalization:** *Shifting more workers from the informal to the formal sector to ensure better job security and benefits.*

## Nanozymes

### Syllabus: GS-3; Science & Technology

#### Context

- *A CSIR-CLRI study has showed that nanozymes can ensure collagen's integrity and enhance resistance to enzymatic degradation.*



#### About

- *Nanozymes are nanomaterials with enzyme-like catalytic properties, an emerging field that merges nanotechnology and biology.*
- *They are artificial enzymes, mimicking the function of natural enzymes, but with advantages like enhanced stability, lower cost, and easy modification.*

### Definition and Mechanism

- *Nanozymes are nanoparticles that behave like natural enzymes.*
- *They catalyze biological reactions, similar to natural enzymes, but use nanomaterial's surface to enhance reaction rates.*

### Types of Nanozymes

- **Oxidoreductase-like nanozymes:** *Mimic enzymes like peroxidase and catalase, catalyzing oxidation-reduction reactions.*
- **Hydrolase-like nanozymes:** *These mimic enzymes that perform hydrolysis reactions.*
- *Other nanozymes mimic enzymes such as superoxide dismutase.*

### Advantages over Natural Enzymes:

- **Stability:** *Nanozymes are more stable under extreme conditions (like temperature, pH).*
- **Cost-effective:** *Cheaper to produce than natural enzymes.*
- **Tunable Properties:** *Their catalytic properties can be modified by changing the composition, size, and surface coating of the nanoparticles.*

### Multifunctionality: They can perform multiple catalytic reactions.

#### Applications:

- **Medical diagnostics:** *Used in biosensors for detecting glucose, hydrogen peroxide, and other biomarkers.*
- **Therapeutics:** *Have potential in treating diseases like cancer, through targeted drug delivery and reactive oxygen species generation for killing cancer cells.*
- **Environmental Protection:** *Employed in pollution control by breaking down toxic substances.*
- **Biotechnology:** *They are used in DNA detection, and protein analysis.*

#### Challenges:

- **Toxicity:** *Some nanozymes, especially metal-based ones, might pose toxicity concerns in medical applications.*
- **Regulation and Safety:** *There are challenges in regulating the use of nanozymes, particularly in human therapies.*

### Recent Research and Advancements:

- *There are continuous efforts to design nanozymes with higher specificity and efficiency for therapeutic and diagnostic purposes.*
- *Development of "smart nanozymes" that can mimic multiple enzyme activities in a single platform for enhanced applications.*

### Relevance to India:

- *Nanozyme research is growing in India, with various institutes working on their applications in healthcare, environmental protection, and industrial catalysis.*
- *The development of cost-effective nanozyme-based diagnostic kits could play a crucial role in India's healthcare sector.*

## **Vinetra**

### Syllabus: GS-3; Defence and Security

#### Context

- *VINETRA Commissioned at INS Satavahana, Visakhapatnam*

#### About

- *The Vinetra Submarine is an advanced underwater surveillance and detection system developed by India.*
- *It is part of the Indian Navy's efforts to enhance its **underwater domain awareness (UDA)**.*
- *While not a traditional submarine, Vinetra is a sophisticated network of sensors and systems designed to monitor and track activities in the underwater environment, particularly focusing on submarine warfare.*



### Purpose and Role

- The Vinetra system is primarily designed for **underwater surveillance and detection**.
- It is used to monitor and track submarines and other underwater objects, thus enhancing India's maritime security.
- It is part of India's broader strategy to secure its maritime interests and protect its vast coastline, especially given the rising geopolitical importance of the Indian Ocean.

### Technology and Features

- Vinetra employs a combination of sonar systems, underwater sensors, and data fusion technologies to create a comprehensive underwater detection grid.
- This network improves the capability of detecting enemy submarines and **underwater threats**.
- It helps in better submarine detection and is critical for **anti-submarine warfare (ASW)** operations.

### Strategic Importance

- As India seeks to counter the growing influence of rival naval forces, particularly those of China and Pakistan, having a robust underwater surveillance system is vital.
- The **Indian Ocean Region (IOR)** is critical for international shipping and energy supplies, making it essential to monitor and secure.

### Applications

- *It is used in conjunction with other naval assets such as surface ships, aircraft, and unmanned vehicles to ensure a multi-layered defense.*
- *The Vinetra system enhances the Navy's submarine hunting capabilities and improves coastal security.*