

SUMMARY OF DOWN TO EARTH

[16 – 31 July, 2024]

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SUBJECTIVE QUESTIONS

MCQS

RISE IN GLOBAL DRUG USE

Context

- According to the **UN Office on Drugs and Crime (UNODC)**, there has been a concerning rise in global drug use, impacting millions of lives and posing complex challenges.

Key Findings from the UNODC World Drug Report 2024

- **Expanding Drug Markets:** The emergence of new synthetic opioids and a record supply and demand for various drugs have compounded the impacts of the global drug problem. It has led to a rise in drug use disorders and environmental harm.
- **Staggering Numbers:** As of 2022, approximately **292 million people** worldwide use drugs — an alarming **20% increase over the past decade**.
 - **Cannabis:** Remains the most widely used drug globally, with 228 million users.
 - **Opioids:** Approximately 60 million users rely on opioids.
 - **Amphetamines:** 30 million users engage in amphetamine use.
 - **Cocaine:** 23 million users partake in cocaine consumption.
 - **Ecstasy:** Around 20 million users take ecstasy.
- **Gender Disparities:** While an estimated 64 million people suffer from drug use disorders, only one in 11 receives treatment.
 - Notably, **women face greater barriers to accessing treatment**, with only one in 18 women with drug use disorders receiving help compared to one in seven men.
- **Criminal Justice Response:** In 2022, approximately 7 million people had formal contact with the police due to drug offences (arrests, cautions, warnings).
 - Additionally, over 2.7 million people faced prosecution for drug-related offences, and

more than 1.6 million were convicted globally.

- However, responses to drug offences vary significantly across regions.

- **India's Situation:** According to UNODC studies, 1 to 3% of the population in most Indian states use drugs. It is notably **higher than Europe's rate** of 0.1 to 0.2%..

Beyond Drug Use: Environmental Impact and Organized Crime

- **Environmental Degradation:** Drug trafficking isn't just about substances; it's also linked to other illicit activities. Traffickers in the **Golden Triangle (a region spanning parts of Southeast Asia)** are diversifying into **wildlife trafficking, financial fraud, and illegal resource extraction**. These activities contribute to environmental degradation through deforestation, toxic waste dumping, and chemical contamination.
- **Communities in Crisis:** Displaced, poor, and migrant communities often bear the consequences of this instability. Some are forced into opium farming or illegal resource extraction to survive, leading to debt entrapment with criminal groups or even drug use themselves.
- **Empowering Organised Crime:** Drug trafficking empowers organised crime groups, perpetuating instability and inequality. These criminal networks exploit vulnerabilities, perpetuate violence, and undermine social fabric.

Way Forward

- **Evidence-Based Treatment:** There is a need to provide evidence-based treatment and support to all affected by drug use.
- **Prevention:** Investing in prevention is crucial to curb drug use.
- **Gender Equity:** Ensuring equal access to treatment for men and women.
- **Environmental Stewardship:** Combating drug-related environmental harms through targeted efforts.

PAYMENT FOR ECOSYSTEM SERVICES

Context

- The Narmada landscape restoration project shows some success, but sustaining it will require payment for ecosystem services.

About the Payment for Ecosystem Services (PES)

- PES is a **market-based instrument** that aims to **finance nature conservation** by translating the ecosystem services provided by natural ecosystems into financial incentives which are **directed toward local actors** — such as landowners, farmers, or resource managers — who play a crucial role in maintaining these ecosystems.

Ecosystem Services

- These ecosystem services may include the supply of food, water and timber (provisioning services); the regulation of air quality, climate and flood risk (regulating services); opportunities for tourism and education (cultural services); and essential underlying functions such as soil formation and nutrient cycling (supporting services).
 - **Clean Water:** Forests filter water, ensuring it's safe for us to drink.
 - **Climate Regulation:** Trees absorb carbon dioxide, mitigating climate change.
 - **Nutrient Cycling:** Soil organisms break down organic matter, enriching the soil.
 - **Biodiversity Support:** Ecosystems harbour diverse plant and animal species.
 - **Food Security:** Healthy ecosystems contribute indirectly to our well-being by supporting agriculture and fisheries.

Working of PES

- **Incentivising Conservation:** PES programs pay landowners or resource managers for maintaining or enhancing ecosystem services. For instance, a farmer might receive compensation for adopting practices that improve water quality in nearby rivers.

- **Negotiation and Intermediaries:** Implementing PES involves negotiation. The payment isn't based on a simple monetary evaluation of ecosystem services; instead, it considers the opportunity costs of conservation. Intermediaries—like NGOs or government agencies—play a key role in facilitating these negotiations.
- **Flexibility:** PES schemes can be tailored to specific contexts. They can focus on different ecosystem services (e.g., water purification, carbon sequestration) and operate at various scales (local, regional, or global).
- However, PES isn't a one-size-fits-all solution. **Challenges include** defining resource tenure, overcoming informational barriers, and ensuring equity. It's not a substitute for regulation but complements other conservation efforts.

Real-World Examples

- **Costa Rica:** One of the pioneers in PES, Costa Rica pays landowners for forest conservation, leading to increased forest cover and improved water quality.
- **China:** The Sloping Land Conversion Program pays farmers to reforest steep slopes, preventing soil erosion and landslides.
- **Mexico:** The Payment for Hydrological Services program compensates landowners for maintaining forests that protect watersheds and recharge aquifers³.
- A number of countries, such as Germany and the UK, use the **PES model for watershed protection and climate change mitigation**. But in India, PES is an evolving concept.

POVERTY NO LONGER JUST BY BIRTH

Context

- India's poor population is increasingly made up of individuals affected by unforeseen circumstances, such as the climate emergency.

Key Findings of National Sample Survey Office (NSSO) Consumer Survey

- **Poverty Levels Dramatically Reduced:** According to NITI Aayog CEO, the latest NSSO consumer expenditure survey indicates that poverty has plummeted to just five percent in the country. It signifies a significant improvement in India's economic landscape.
- **Prosperity in Both Rural and Urban Areas:** The survey data reveals that people across rural and urban India are becoming more prosperous.
 - Per capita monthly household expenditure has more than doubled in 2022-23 compared to 2011-12.
 - In rural areas, the average per capita monthly expenditure stands at Rs 3,773, while in urban areas, it's Rs 6,459. This surge in consumption reflects progress on both fronts.
 - Economists, however, have analysed the data and suggest that poverty levels have decreased significantly. In 2023, less than 10% of Indians were considered poor, compared to around 21% in 2011-12.

New Face of Poverty (0-5% Group)

- Poverty is now primarily concentrated in the 0-5 percent income group. These are the lowest fractional earners.
- If we adjust the poverty line using the Consumer Price Index (CPI) to today's rates, we find that this group still struggles with basic needs. However, the broader population has moved beyond this threshold.

Rural-Urban Gap Narrows

- Consumption growth in rural areas is outpacing that in urban areas, narrowing the gap. This trend signifies a more equitable distribution of prosperity.
- The idea that poverty is an accident of birth is being challenged. Instead, it appears that economic mobility is on the rise.

Persistent Challenges

- **Geography of Poverty:** The poorest districts (now called aspirational districts) haven't changed much.
- **Social and Economic Backgrounds:** Most poor individuals come from socially marginalised groups or economically disadvantaged regions (like forested areas).
- **Accident of Birth vs. Accidents of Life:** While historically, being born into poverty ('accident of birth') played a significant role, the 21st century emphasises 'accidents of life'.
- **Vulnerable Population:** About 37.4% of India's population is vulnerable—meaning they're at risk of slipping below the poverty line due to various life events (e.g., health emergencies, natural disasters, economic shocks).
 - According to the **National Council of Applied Economic Research (NCAER)**, approximately 8.5% of Indians are poor; 3.2% are poor by birth, while 5.3% face poverty due to life's accidents.
 - Rural areas have seen faster poverty reduction compared to urban areas.
- **Challenge of Vulnerability:** The vulnerable population includes those who escaped poverty due to anti-poverty programs but lack the capacity to stay above the poverty line.
 - Declining poverty rates are coupled with an increase in vulnerability.
- **Climate Change and Poverty:** Climate change-induced erratic weather events disproportionately affect agriculture-dependent communities, a significant portion of the poor.
 - Public development programs must create safety nets to lift people out of poverty sustainably.

Conclusion

- India's fight against poverty is far from over, but the changing narrative offers hope. Poverty is no longer an immutable destiny; it's a challenge we can collectively overcome.

WATER SUPPLY CRISIS ACROSS INDIA

Context

- The increasing dominance of private tankers in India's cities and towns highlights the inherent challenges in the water supply system. It's time India reimaged its centralised piped network to make it more localised, inclusive and efficient.

About

- India, despite being home to **18% of the world's population**, the country possesses **only about 4% of its water resources** that makes India one of the most water-stressed nations globally.
- The **latest NSSO report**, released in 2023, states that over **38% people in urban India do not have access to piped water supply**.
- According to a report by **NITI Aayog**, nearly **600 million Indians** face high to extreme water stress. Tragically, inadequate access to safe water results in **approximately 200,000 deaths annually**.
- Twenty-one major cities, including Delhi, Bengaluru, Chennai, and Hyderabad, are projected to run out of groundwater by 2020, affecting around 100 million people.
- **33 districts** across the country reported **protests related to shortage of water**, particularly potable drinking water, as well as water cuts and pause in government supply schemes.
- **5 districts** reported **conflicts or disputes** related to water sharing, sometimes resulting in fatalities.
- 20 districts reported **water rationing with unsteady supplies**. For several of these districts, water shortage during the summer is an annual problem that has persisted for many years
- According to the World Bank:
 - 163 Million Indians lack access to safe drinking water;

- 210 Million Indians lack access to improved sanitation;
- 21% of communicable diseases are linked to unsafe water;
- 500 children under the age of five die from diarrhoea each day in India

Global Concerns

- The UNESCO United Nations World Water Development Report highlights the global rise in freshwater withdrawal, impending water stress, and scarcity.
- India's water crisis is part of this larger concern, driven by factors like climate change, population growth, and inefficient water management..

Groundwater Depletion and Community-Led Solutions

- Groundwater serves as a crucial source for irrigation and domestic water supply. However, overexploitation has led to its depletion.
- The **World Bank** supports India's national groundwater program called the **Atal Bhujal Yojana**. Implemented across 8,220 gram panchayats in seven states, this program is the **world's largest community-led groundwater management initiative**.
- Villagers are empowered to understand their water availability and usage patterns, allowing them to budget their water use effectively.
- For instance, in **Punjab**, where rampant tube well irrigation has caused drastic declines in the water table, an innovative scheme called **"Paani Bachao, Paisa Kamao"** incentivizes farmers to reduce groundwater usage. By saving electricity used for irrigation, farmers have achieved water savings of 6 to 25% without compromising crop yields.

Reaching Underserved Rural Communities

- Over the past decade, the **World Bank** has supported the Indian government's efforts to **provide clean drinking water to rural areas**. Through various projects, over 20 million

people have benefited from improved water access.

- These initiatives aim **to bridge the gap between urban and rural water supply**, ensuring that even remote communities receive safe and reliable water services.

CORAL BLEACHING

Context

- According to US-based National Oceanic and Atmospheric Administration (NOAA), **Lakshadweep** has been severely impacted by the ongoing global coral bleaching event, with 84.6% bleaching recorded in Kavaratti atoll.

Fourth Global Coral Bleaching Event (2023-2024)

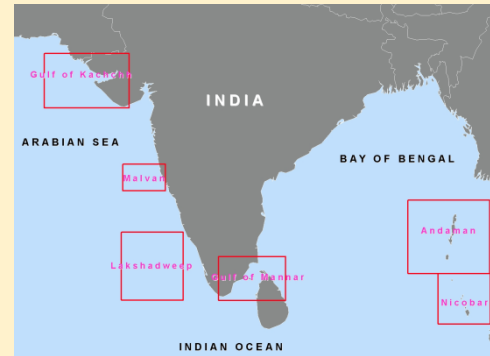
- NOAA’s **Coral Reef Watch (CRW)** and the **International Coral Reef Initiative (ICRI)** have confirmed the **fourth global mass coral bleaching event**, affecting at least 67 countries and territories across five different ocean basins: the Atlantic, Pacific, and Indian Oceans, as well as the Red Sea and the Persian Gulf due to severe heat stress since early 2023.
- Notably, this is the second such event in the last decade. The previous one occurred from 2014 to 2017.

CORAL REEFS

- These are underwater ecosystems characterised by reef-building corals. Reefs are formed of colonies of **coral polyps held together by calcium carbonate**.
- Corals share a **symbiotic relationship with single-celled algae called zooxanthellae**. The zooxanthellae also give corals their bright colour.
- The algae provides the coral with food and nutrients, which they make through photosynthesis, using the sun’s light. **Algae provides up to 90% of the coral’s energy**. In turn, the corals give the algae a home and key nutrients.
- They provide habitat for sharks, swordfish, sea stars, octopus, shrimp and many other kinds of

fish.

- **Hard corals** — marine animals with a tough shell — form the backbone of coral reefs. These reefs provide habitat for millions of marine species and play a crucial role in ecosystems and food systems.



- These reefs are often referred to as the **‘rainforests of the sea’** due to their incredible biodiversity. They provide essential ecological, economic, and societal benefits, valued globally at approximately USD\$9.8 trillion annually.

Coral Reefs in India

- Coral reefs are present in the areas of **Gulf of Kutch, Gulf of Mannar, Andaman & Nicobar, Lakshadweep Islands and Malvan**.

Conditions favourable to Corals

- **Temperature:** The temperature of the water should not be below 20°C. The most favourable temperature for the growth of the coral reefs is between 23°C to 25°C.
 - The temperature should not exceed 35°C.
- **Salinity:** Corals can survive only under saline conditions with an average salinity between 27% to 40%.
- **Shallow Water:** Coral reefs grow better in shallow water having a depth less than 50 m. The depth of the water should not exceed 200m.

Coral Bleaching

- When water temperatures rise, **corals expel the symbiotic algae (zooxanthellae) living within their tissues**. As a result, the corals turn completely white—a phenomenon known as coral bleaching.

- **Bleached corals are not dead.** They can survive a bleaching event, but they become **more stressed and vulnerable to disease and mortality.**
- Rising ocean temperatures due to climate change exacerbate coral bleaching. As oceans warm, these events become more frequent and severe.

Role of Algae

- The colourful appearance of healthy corals is due to the presence of these algae. They provide essential nutrients through photosynthesis, which sustains the coral polyps.
- When stressed (due to factors like warm water), corals expel these algae, leading to bleaching. Without the algae, corals lose their vibrant colours and become more susceptible to harm.

Threat of Coral Bleaching

- First observed in the early 1980s, mass coral bleaching has become one of the most visible and damaging marine ecological impacts of persistently rising ocean temperatures.
- Bleaching is the process by which corals lose the symbiotic algae (zooxanthellae) that give them their distinctive colours and main energy sources.
 - If a coral is severely bleached, disease and death become likely.

PRELIMS

ARTIFICIAL CORAL REEFS

Context

- Artificial Coral Reefs can revive populations of aquatic organisms in water bodies, potentially boosting biodiversity and livelihoods

About the Artificial Reefs

- An artificial reef is a manmade structure designed to mimic some of the characteristics of natural coral reefs.

- These underwater habitats serve several essential purposes, from supporting marine biodiversity to protecting coastlines.
- Planned artificial reefs can boost local economies by attracting tourists, divers, and fishermen.
- These reefs become popular attractions, offering opportunities for recreational activities.

Types of Artificial Reefs

- **Sunken Shipwrecks:** These provide shelter and substrate for marine organisms. The retired USS Spiegel Grove, intentionally scuttled off Key Largo, Florida, is a prime example.
- **Offshore Structures:** Oil and gas platforms, bridges, lighthouses, and other human-made structures can also function as artificial reefs.
- **Constructed Reefs:** Marine resource managers intentionally create reefs using materials like rocks, cinder blocks, wood, old tires, and even purpose-built structures made of limestone, steel, and concrete.

Importance

- **Biodiversity Conservation:** Natural coral reefs are under threat due to climate change, pollution, and overfishing.
 - Artificial reefs provide alternative habitats, allowing marine species to thrive.
- **Coastal Protection:** Coral reefs act as natural barriers, reducing wave energy and protecting coastlines from erosion and storm damage.
 - Artificial reefs can supplement this function, especially in areas where natural reefs are degraded.
- **Fisheries Enhancement:** By attracting fish, artificial reefs support local fisheries.
 - They create productive ecosystems where fish can feed, breed, and find shelter.
- **Habitat Enhancement:** Artificial reefs enhance habitat for a variety of reef organisms, including soft and stony corals, fish, and invertebrates.

- They provide surfaces for corals to attach and grow, attracting a diverse array of marine life.

Challenges

- Unfortunately, illegal dumping of materials to create habitat has led to poaching in some areas.
- Marine debris remains an ongoing issue, but efforts are underway to address it.

LB.1 AND FLIRT VARIANT OF COVID-19

Context

- The USA and UK are preparing for another potential wave of covid-19 infections as cases begin to rise again.

FLiRT Variants: A Subvariant of Omicron

- Recently, a group of new virus strains sauntered onto the scene, collectively known as the **FLiRT variants (Furin-like protease cleavage site)**.
- It accounts for more than 60% of COVID cases in the USA by July 2024.

LB.1 Variant

- LB.1 is **essentially a FLiRT variant**. Specifically, it has a mutation in the spike **protein called S:S31del**. The 'del' refers to a **deletion**—where a part of the virus's genetic sequence gets snipped out during replication.
- Both the variants i.e. FLiRT and LB.1 were **spotted doing the conga line in U.S. wastewater**.

Understanding COVID-19 Variants

- A variant is essentially a **genetic alteration in the virus**. New variants can emerge **due to mutations (nucleotide substitutions)** in the virus's genetic material.
- Some variants may spread more easily or cause more severe illness.
- Monitoring variants is crucial for public health. It helps us adapt testing, treatment, and vaccination strategies.

- If needed, vaccine formulations can be updated to better target specific variants.

HURRICANE BERYL

Context

- Recently, **Hurricane Beryl (a tropical cyclone)**, a category 5 storm with sustained wind speeds of over 252 km per hour, made landfall in the Caribbean region.

About Tropical Cyclones

- Tropical cyclones, also known as **hurricanes or typhoons** depending on their location, are intense weather systems characterised by strong winds, heavy rainfall, and low-pressure centres.

Origins and Structure

- Tropical cyclones form over **tropical or subtropical waters**. They consist of a rotating system of clouds and thunderstorms.
- The **low-pressure centre** at the surface is surrounded by a **closed circulation**.
- In the **Northern Hemisphere**, they rotate **counterclockwise**.

Conditions

- **Environmental Conditions:** Tropical cyclones thrive in warm ocean waters (typically above 26.5°C) and require sufficient moisture and instability in the atmosphere.
- **Coriolis Effect:** The Earth's rotation causes the cyclone's spin.
- **Eye:** The calm centre of a hurricane, surrounded by the eyewall—a ring of intense thunderstorms.
- **Landfall:** When a cyclone crosses from the ocean to the land, causing significant impact.

Classification

- **Tropical Depression:** Maximum sustained winds of 38 mph or less.
- **Tropical Storm:** Maximum sustained winds of 39 to 73 mph.

- **Hurricane (Typhoon/Cyclone):** Maximum sustained winds of 74 mph or higher.
- **Major Hurricane:** Maximum sustained winds of 111 mph or higher (Category 3, 4, or 5).

Formation Regions

- Tropical cyclones typically form between 5 and 30 degrees North latitude.
- Initially, they move westward due to trade winds.
- Later, atmospheric winds at higher levels may steer them northward or northeastward.

'FAUNA OF INDIA CHECKLIST' PORTAL

Context

- Recently, the Union Minister of Environment, Forest, and Climate Change launched the 'Fauna of India Checklist' Portal documenting all animal species in India.

About the 'Fauna of India Checklist' Portal

- It is claimed to be the **first of its kind globally**, consisting of records of more than 100,000 animal species, and has been prepared by more than 150 scientists of the **Zoological Survey of India** over the past two years.
- It is a comprehensive database that meticulously records all animal species found **within India's borders**. It includes an impressive 104,561 species across various taxonomic groups.
- It is a testament to India's commitment to biodiversity conservation and scientific documentation.
- **Kerala** emerged as the leader in new discoveries, **closely followed by West Bengal**. These states contributed significantly to expanding our understanding of India's rich biodiversity.

Noteworthy Discoveries

- **Hymenopterans:** These small to medium-sized insects, including ants, bees, and wasps, stole

the spotlight with 112 new discoveries. Their intricate lives and ecological roles continue to fascinate scientists.

- **Arachnids:** Spiders, scorpions, mites, and ticks — collectively known as arachnids — made a strong showing with 86 new species. These often misunderstood creatures play crucial roles in ecosystems.
- **Aquatic Wonders:** India's aquatic ecosystems revealed **47 new fish species**. These underwater inhabitants contribute to the delicate balance of our rivers, lakes, and oceans.
- **Reptilian Marvels:** Twenty new reptile species were documented. From elusive snakes to charismatic lizards, each one adds to our understanding of India's reptilian diversity.
- **Mammals:** While mammals were relatively scarce in the 2023 discoveries, two stood out. **An ibex species** found in the Himalayan range (specifically Himachal Pradesh and Ladakh) was scientifically named **Capra Himalayensis**. Additionally, a new bat species — **Miniopterus Srinii** — was found in Karnataka's Kodagu district.

Significance and Beyond

- The 'Fauna of India Checklist' isn't just a scientific resource; it's a beacon for policymakers, conservationists, and educators.
- **Reference Point:** Scientists can now access a reliable reference for India's fauna. Whether studying migration patterns, behaviour, or distribution, this portal provides essential data.
- **Conservation Insights:** Policymakers can make informed decisions based on this wealth of information. Protecting endangered species, preserving habitats, and mitigating threats become more effective with accurate data.
- **Educational Tool:** Schools, colleges, and nature enthusiasts can explore the portal to deepen their understanding of India's incredible biodiversity.

GREEN CREDIT PROGRAMME

Context

- Planned afforestation projects under **Green Credit Programme** lack clarity on the risks posed to India’s diverse, unprotected forest ecosystems.

About the Green Credit Programme (GCP)

- It is an innovative initiative aimed at incentivising environmental conservation through market-based mechanisms.
- It’s like a rewards program for Mother Earth, where participants earn ‘green credits’ by contributing to specific activities that enhance our natural environment.

Origins and Purpose

- The GCP was officially unveiled in 2023, with its roots in **Mission Life**, a principle championed by the Prime Minister of India, that **emphasises sustainability, waste reduction, and overall improvement of our ecosystem**.
- It aims to encourage voluntary actions that benefit the environment while also promoting economic growth.
- Individuals, organisations (both public and private), and companies are all eligible to participate.
- Sectors covered include **afforestation, water conservation, air pollution control, waste management, and mangrove conservation**.

Working

- Participants invest in specific environmental activities (e.g., afforestation projects) and, in return, earn green credits.
- The **Indian Council of Forestry Research and Education (ICFRE)**, an autonomous body under the MoEF&CC, administers the program.
- The ICFRE defines methodologies to calculate green credits based on the prescribed activities.
- A trading platform allows participants to trade these credits.

Afforestation Focus

- The initial phase of the GCP centres around afforestation. Companies, organisations, or individuals can pay for afforestation projects in degraded forest and wasteland areas.
- State forest departments handle the actual tree planting.
- After two years, the ICFRE evaluates the planted trees, and each successful tree becomes worth one green credit.
- So far, 13 states have offered 387 land parcels totaling nearly 10,983 hectares for afforestation projects.

Rules for afforestation in the Green Credit Programme raise doubts

PROVISIONS* IN AFFORESTATION GUIDELINES	POINTS LACKING IN CLARITY	EXPERT CONCERNS
Afforestation to focus on restoring landscapes, not just tree plantation	How projects will help in restoration of landscapes	Projects may destroy ecosystems with unique ecological services
Entities can apply to Indian Council of Forestry Research and Education to invest in projects and pay state forest departments for plantations	How and by whom value of plantation projects will be calculated. How forest departments will decide tree species	Plantations may lead to loss of native tree species and threaten local biodiversity
One credit will be given to the investor per tree planted, two years after a project is initiated and deemed successful	What would happen to green credits’ validity in case a plantation fails. It is also unclear whether investors will be able to avail carbon credits for a project, as initially suggested	Potential linkage of carbon credits and green credits may lead to double counting and violate principles of the carbon market
Investors can use green credits for corporate social responsibility and environmental, social and governance obligations; or to meet compensatory afforestation requirements		Plantation projects may simply be used as a proxy for compliance with corporate and compensatory afforestation obligations
Forest departments must identify “degraded” land parcels for plantation	What ecological parameters forest departments will follow to allot land	India lacks legal, ecological parameters for identifying “degraded” lands, leaving open grasslands, shrub lands and forestland protected under laws and court orders vulnerable. Land yet to be claimed under Forest Rights Act may be also be diverted

JAN AUSHADHI & QUESTION OF QUALITY

Context

- India’s top drug firms oppose the move to allow government drug stores to sell generic substitutes.

About the Jan Aushadhi Scheme

- The **Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP)**, or **Jan Aushadhi Scheme**, provides generic medicines at affordable prices to the public.
- It was launched in 2008 by the Department of Pharmaceuticals, Ministry of Chemicals & Fertilisers.
- It is implemented through dedicated outlets called **Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBJKs)**, and has a supply chain management system with warehouses in Gurugram, Chennai, Guwahati, and Surat.

Objectives

- Make quality generic medicines available to everyone;
- Provide medicines at lower prices than branded medicines ;
- Ensure that the generic medicines are as potent as branded medicines

Jan Aushadhi and the Quest for Affordable Medicines

- **India, often hailed as the ‘world’s pharmacy’** has a robust generics industry, and aptly describes its role in supplying inexpensive generic drugs globally. Jan Aushadhi stores are meant to provide unbranded generic medicines, which can significantly reduce healthcare costs.
- However, the medical fraternity and the generics manufacturing industry have raised their concerns.
- **Quality Concerns and the Indian Pharmaceutical Alliance (IPA):** The Indian Pharmaceutical Alliance (IPA), a group of 23 research-based drugmakers, is leading the charge against Jan Aushadhi’s medicine substitution plan.
 - The proposed changes could lead to poor-quality drugs being sold in Jan Aushadhi outlets due to issues with the drug regulatory system.

- **Indian Pharmaceutical Alliance (IPA)** argue that the proposed changes by the **Central Drugs Standard Control Organisation (CDSCO)** — the **central drug regulatory authority** — could lead to poor-quality drugs being sold in Jan Aushadhi outlets. Their concern stems from perceived flaws in the drug regulatory system.

SUBJECTIVE QUESTIONS

1. How has the global surge in drug use, particularly in recent decades, affected India's socio-economic fabric, public health, and cultural landscape?
2. How effective is the Payment for Ecosystem Services (PES) approach in incentivising the conservation and sustainable management of natural resources? Discuss the challenges and opportunities associated with implementing the PES Model.
3. Evaluate the effectiveness of government policies and initiatives aimed at addressing the water supply crisis in India, and propose potential solutions for ensuring sustainable water management in India.
4. What are the primary causes of coral bleaching, and what are the long-term consequences for marine ecosystems and biodiversity? Discuss the role of climate change in exacerbating coral bleaching events, and evaluate the effectiveness of conservation efforts to mitigate this phenomenon.

MCQS

1. Terms like ‘*FLIRT*’ and ‘*LB.1*’, sometimes appeared in the news, are in the context of:
 - (a) Covid-19
 - (b) Space Technology
 - (c) Early Warning System
 - (d) Vector Born Disease

2. *Hurricane Beryl* (a tropical cyclone) recently made landfall in which of the following regions?
- (a) Japan
 - (b) Mexico
 - (c) Guinea
 - (d) Taiwan
3. With reference to the '*Fauna of India Checklist Portal*', consider the following statements:
- 1. It records all animal species found within India's borders.
 - 2. Kerala emerged as the leader in new discoveries, closely followed by West Bengal.
- Which of the statements given above is/are correct?
- (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) Neither 1 nor 2
4. Consider the following regions:
- 1. Gulf of Kutch
 - 2. Gulf of Mannar
 - 3. Andaman & Nicobar
 - 4. Malvan
- How many of the above regions are associated with the Coral reefs?
- (a) Only one
 - (b) Only two
 - (c) Only three
 - (d) All four

Answer key: 1. (a) 2. (b) 3. (c) 4. (d)

