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Guyana

Syllabus: GS-1; Geography- Mapping

Context

- Prime Minister Narendra Modi's just concluded visit to Guyana, the first in more than 50 years and his summit meeting with leaders of the Caribbean basin point to Delhi's focus on a long-neglected region.

Geography and Location

- **Location**: Guyana is bordered by Venezuela to the west, Brazil to the south and southeast, Suriname to the east, and the Atlantic Ocean to the north.
- **Capital**: Georgetown, located on the Atlantic coast.
- **Area**: Approximately 214,969 square kilometers.
- **Topography**: The country features coastal plains, the Guiana Highlands, and the interior rainforest. The terrain is generally flat, with a few highlands in the south.

Political System

- **Government Type**: Guyana is a republic with a parliamentary democracy.

- **Head of State**: The President, elected for a five-year term.
- **Legislature**: The National Assembly, which consists of 65 members elected by proportional representation.
- **Political Parties**: Major parties include the People's Progressive Party (PPP), the People's National Congress (PNC), and the Alliance for Change (AFC).

History

- **Colonial History**: Guyana was originally colonized by the Dutch in the 17th century before being ceded to the British in 1814. It became a British colony known as British Guiana.
- **Independence**: Guyana gained independence from the United Kingdom on May 26, 1966.
- **Post-Independence**: Guyana has experienced political instability and ethnic tensions, primarily between the Indo-Guyanese and Afro-Guyanese communities. It is a member of the Caribbean Community (CARICOM) and has pursued regional cooperation.

Economy

- **Natural Resources**: Guyana is rich in natural resources, including bauxite, gold, timber, and fish.
- **Oil**: The discovery of large offshore oil fields in recent years has transformed Guyana's economy, making it one of the fastest-growing economies in the world.
- **Agriculture**: Rice and sugar are major agricultural products, along with timber and tropical fruits.
- **GDP and Growth**: Oil production has driven rapid GDP growth, with the country forecast to continue benefiting from its oil exports in the coming years.
- **Challenges**: Despite its growing wealth, Guyana faces challenges like inequality, environmental degradation, and infrastructure limitations.

Biodiversity and Environment

- **Rainforests**: A significant portion of Guyana is covered by the Amazon rainforest, home to diverse wildlife and indigenous communities.
- **Conservation Efforts**: The government has made strides in environmental conservation, particularly in protecting the vast rainforest and biodiversity.
- **Climate Change**: Guyana is vulnerable to rising sea levels, given its low-lying coastal region. The government has developed climate change adaptation strategies.

Culture

- **Ethnicity**: The population of Guyana is ethnically diverse, with the largest groups being Indo-Guyanese (descendants of Indian indentured laborers) and Afro-Guyanese (descendants of African slaves). There are also smaller groups of Amerindian, Chinese, and Portuguese descent.
- **Languages**: English is the official language, while Hindi, Guyanese Creole, and other languages are also spoken.
- **Religion**: The major religions are Christianity (primarily Roman Catholicism and Protestantism) and Hinduism, followed by Islam.
- **Festivals**: The most celebrated festivals are Diwali (Hindu festival of lights), Phagwah (Holi), Christmas, and Easter.

Foreign Relations

- **Caribbean and Latin America**: Guyana is an active member of CARICOM, the Union of South American Nations (UNASUR), and the Latin American Economic System (SELA).
- **Border Disputes**: The country has a longstanding border dispute with Venezuela over the Essequibo region. The dispute remains unresolved despite diplomatic efforts.
- **Relation with India**: India and Guyana share a strong historical connection due to the migration of Indians to Guyana during the colonial period. India is an important trade and diplomatic partner for Guyana.

Strategic Importance

- **Geopolitical Role**: Guyana's strategic location near the Caribbean Sea, coupled with its emerging oil wealth, has increased its geopolitical significance in the region. It has attracted attention from both regional powers and foreign investors.
- **Security**: Guyana's defense is a concern due to its border dispute with Venezuela, and the country has historically relied on international support, particularly from CARICOM and the United States.

Development Issues

- **Infrastructure**: Guyana's infrastructure, including transportation and energy, needs significant improvement to support its economic growth.
- **Human Development Index (HDI)**: Guyana ranks lower than many other Latin American countries in terms of HDI, reflecting challenges in healthcare, education, and overall quality of life.

- **Indigenous Rights**: Indigenous communities face challenges in securing land rights and political representation, although there have been legal advances.

World Anti-Doping Agency (WADA)

Syllabus: GS-2; International Institutions

Context

- India will host a 4-day Global Learning and Development Framework (GLDF) Results Management Training in collaboration with the World Anti-Doping Agency (WADA) in New Delhi from November 19 to November 22 2024.

About

- **Establishment**: Founded on **10th November 1999** under the initiative of the International Olympic Committee (IOC).
- **Headquarters**: Montreal, Canada.
- **Objective**: To promote, coordinate, and monitor the fight against doping in sports globally.

Governance

- **Structure**:
  - WADA is governed by a **Foundation Board**, comprising representatives from the **Olympic Movement** and **governments**.
  - A **12-member Executive Committee**, with equal representation from sports bodies and public authorities, oversees operations.
- **Funding**: Jointly funded by governments and the Olympic Movement.

Key Functions

- **Code Development**:
  - Created the **World Anti-Doping Code (WADC)**, a core document harmonizing anti-doping policies globally.
- **Testing**:
  - Sets international standards for drug testing and laboratory accreditation.
- **Education and Research**:
  - Promotes awareness about anti-doping measures.

- Funds scientific research for innovative testing methods.

- **Monitoring Compliance**:
  - Ensures signatories, such as national and international sports organizations, adhere to the WADC.

World Anti-Doping Code (WADC)

- **Definition**: A comprehensive set of rules aimed at ensuring a consistent approach to anti-doping efforts across countries.
- **Prohibited List**: Published annually, it contains substances and methods banned in sports.

Key Initiatives

- **Athlete Biological Passport (ABP)**: Tracks athletes' biological markers over time to detect doping indirectly.
- **Outreach Programs**: Educates athletes and officials about doping risks and regulations.
- **Independent Observer Program**: Observes anti-doping processes during major sporting events.

India and WADA

- **National Anti-Doping Agency (NADA)**:
  - Functions under the Ministry of Youth Affairs and Sports.
  - Operates as an extension of WADA in India.
- **India's Compliance**:
  - India is a signatory to the WADA Code.
  - Challenges include limited resources for testing and addressing cultural attitudes toward doping in sports.

Challenges

- Non-uniform implementation of anti-doping measures globally.
- Emerging techniques like **gene doping** and the use of **designer drugs**.

Way Forward

- Strengthening global cooperation for equitable anti-doping policies.
- Enhancing education campaigns targeting young athletes.
- Increasing transparency and accountability in doping investigations.

State of the World's Children 2024

Syllabus: GS-2; Reports and Indices

Context

The UNICEF's State of the World's Children 2024 (SOWC-2024) report, released recently, reveals a troubling global trend, highlighting that nearly 1 billion children – about half of the world's child population – live in countries facing high risks from climate and environmental hazards.

The report explores the impact of three critical global forces – demographic shifts, climate crises, and frontier technologies – on children's lives, with projections extending to 2050.

Key highlights from the report

1. Climate and Environmental Hazards

- **Climate destabilisation**: Rising temperatures, biodiversity collapse, and pollution threats are worsening globally. The report warns that children are facing an increasingly hazardous and unpredictable environment.
- **Vulnerability of children**: Children's developing bodies, including their brains, lungs, and immune systems, are particularly vulnerable to pollution and extreme weather conditions. Air pollution, for instance, significantly harms children's respiratory health.
- **Health risks**: Rising temperatures contribute to the spread of diseases like malaria, dengue, and Zika. Floods contaminate water supplies, increasing the risk of waterborne diseases, especially among children under five. Extreme weather events exacerbate food insecurity and contribute to mental health issues like trauma and anxiety.

2. Projections for the 2050s

- **Newborn survival rates**: Globally, newborn survival rates are expected to rise to over 98%, and the probability of surviving to the age of 5 will increase to 99.5%.
- **Life expectancy**: Life expectancy for girls will rise to 81 years and 76 years for boys, up from 70 and 66 years, respectively, in the 2000s.
- **Climate-related disruptions**: By the 2050s, a larger number of children will face extreme climate hazards. Since 2022, 400 million students have experienced school closures due to extreme weather, which also hampers learning and economic growth.

3. Child Population and Socio-Economic Impacts

- **Population stabilization**: The global child population is expected to stabilize at around 2.3 billion by the 2050s. South Asia will remain a region with the largest child populations, joined by Eastern and Southern Africa, and West and Central Africa.
- **Challenges in vulnerable regions**: These regions, already struggling to meet children's basic needs, face significant climate risks and lack adequate digital infrastructure, which can hinder children's future prospects.
- **Economic growth and resource distribution**: Fewer young dependents relative to working-age adults could free up resources to support children and boost economic development.

4. Technological Developments and Digitalization

- **Positive impacts**: Emerging technologies like artificial intelligence (AI), neurotechnology, next-generation renewable energy, and vaccine breakthroughs hold potential to improve children's lives in the future.
- **Risks of digital exposure**: While digitalization offers opportunities for empowerment, it also exposes children to online risks, including sexual exploitation and abuse.
- **Digital divide**: The report highlights a significant gap in internet connectivity, with over 95% of people in high-income countries having access compared to only 26% in low-income countries. This digital exclusion is expected to worsen inequalities, particularly in rapidly growing child populations.

5. Urbanization and Future Planning

- **Urban living**: As urbanization continues, nearly 60% of children globally are projected to live in cities by the 2050s, up from 44% in the 2000s. Ensuring that urban areas are healthier and more secure will be crucial for supporting future generations.
- **Economic disparities**: The report projects that 23% of the world's children will live in low-income countries by the 2050s, a significant increase from the 11% in the 2000s.

The SOWC-2024 report underscores the urgency of addressing climate and environmental threats, technological inequalities, and socio-economic challenges to secure a healthier, more equitable future for children worldwide.

Aquaculture

Syllabus: GS-3; Agriculture

Context

- The Food and Agriculture Organization (FAO) of the United Nations has offered its technical expertise and knowledge to deal with the impact of climate change on the country's aquaculture and the fishing community engaged with it.

About

- Aquaculture, also known as aquafarming, refers to the farming of aquatic organisms such as fish, mollusks, crustaceans, and aquatic plants.
- It involves the cultivation of these organisms in controlled environments, both in freshwater and marine ecosystems.

Key Aspects of Aquaculture

- **Types of Aquaculture:**
  - **Marine Aquaculture:** Farming of marine species like shrimp, oysters, and fish in coastal areas or in tanks with seawater.
  - **Freshwater Aquaculture:** Cultivation of freshwater species like fish (e.g., tilapia, carp) in inland water bodies such as ponds, tanks, and reservoirs.

- **Brackish Water Aquaculture:** Farming in coastal areas where seawater and freshwater mix, ideal for species like prawns.

- **Aquaculture Practices:**
  - **Extensive Aquaculture:** Relies on natural water bodies and minimal inputs. It is often practiced in ponds and reservoirs.
  - **Intensive Aquaculture:** Involves high stocking densities and the use of artificial feeds and water management systems like recirculating systems.
  - **Semi-Intensive Aquaculture:** Combines aspects of both extensive and intensive aquaculture, using controlled inputs but not to the extent of intensive systems.
- **Popular Aquaculture Species:**
  - **Fish:** Tilapia, catfish, carp, salmon, and trout are commonly farmed.
  - **Shellfish:** Oysters, mussels, and clams are popular in marine aquaculture.
  - **Crustaceans:** Shrimp and prawns are key species farmed in brackish water systems.
  - **Aquatic Plants:** Seaweed farming is also an important part of aquaculture in certain regions.
- **Importance of Aquaculture:**
  - **Food Security:** Aquaculture contributes significantly to global food production, providing a sustainable source of high-protein food.
  - **Economic Growth:** It supports livelihoods, especially in coastal and rural areas, through job creation in farming, processing, and distribution.
  - **Environmental Sustainability:** With proper management, aquaculture can reduce the pressure on wild fish stocks and can be integrated with other practices like agriculture and agroforestry.
- **Challenges in Aquaculture:**
  - **Disease Management:** Overcrowding and water quality issues can lead to disease outbreaks, which affect farmed species.
  - **Environmental Impact:** Poor waste management can lead to water pollution and habitat degradation. Escapes of farmed species into wild ecosystems can disrupt local biodiversity.
  - **Overfishing of Wild Feed Stocks:** The use of wild fish as feed for farmed species can contribute to the depletion of marine resources.
  - **Climate Change:** Alterations in temperature and ocean acidity can affect aquaculture productivity, especially in coastal areas.
- **Sustainable Aquaculture Practices:**
  - **Integrated Multi-Trophic Aquaculture (IMTA):** This system combines different species that occupy different levels of the food chain, enhancing sustainability by recycling nutrients.

- **Recirculating Aquaculture Systems (RAS):** These systems reuse water by filtering and purifying it, reducing water consumption and preventing pollution.
- **Organic Aquaculture:** Focuses on reducing the use of chemicals, antibiotics, and synthetic feeds, emphasizing ecological balance.

- **Aquaculture in India:**
  - India is one of the largest producers of fish and aquaculture products, particularly freshwater fish like tilapia and carp, and shrimp in brackish water.
  - Key States: West Bengal, Andhra Pradesh, Odisha, Tamil Nadu, and Kerala are leading states in aquaculture production.
  - Government Initiatives: The Government of India has implemented various schemes like the **National Fisheries Development Board (NFDB)**, **Blue Revolution**, and **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** to promote sustainable aquaculture development.
- **Global Scenario:**
  - Aquaculture accounts for a significant portion of global seafood production. Asia, particularly China, is a global leader in aquaculture, contributing to over 70% of the world's farmed seafood.
- **Future Prospects:**
  - **Technological Advancements:** Innovations like genetic improvement of species, better disease management practices, and automation in feeding and monitoring will likely drive the future of aquaculture.
  - **Increased Sustainability:** Focus on reducing environmental impacts through improved management practices and eco-friendly technologies.
  - **Expansion in Marine Aquaculture:** As demand for seafood increases, marine aquaculture is expected to grow, utilizing underused marine areas for sustainable farming practices.

Army Tactical Missile System (ATACMS)

Syllabus: GS-3; Science & Tech

Context

- Russia has acknowledged that Ukraine attacked it with six ATACMS missiles, out of which five were intercepted by the Russian air defense system.

About

- The **Army Tactical Missile System (ATACMS)** is a surface-to-surface, precision-guided missile system developed by the United States.
- It is designed to provide the U.S. Army and allied forces with long-range strike capabilities against high-value and time-sensitive targets.

Key Features

- **Range and Speed**:
  - Range: 165-300 km (varies with the variant).
  - Speed: Supersonic, enabling rapid strike capability.
- **Payload**:
  - Can carry a variety of warheads, including cluster munitions, unitary warheads, and submunitions for anti-personnel or anti-materiel use.
- **Launch System**:

- Compatible with the M270 Multiple Launch Rocket System (MLRS) and the M142 High Mobility Artillery Rocket System (HIMARS).

- **Guidance System**:
  - Equipped with a GPS-aided inertial navigation system (INS) for high precision.
- **Target Types**:
  - Enemy command and control centers, air defense sites, logistics facilities, and other strategic assets.

Significance in Modern Warfare

- **Tactical Advantages**:
  - Enables deep-strike capability, allowing forces to engage targets far behind enemy lines.
  - Reduces the need for close-range engagements, enhancing soldier safety.
- **Precision Strikes**:
  - Minimizes collateral damage due to its highly accurate targeting systems.
- **Mobility**:
  - Highly mobile launch platforms like HIMARS allow quick deployment and firing.
- **Integration with Network-Centric Warfare**:
  - Works seamlessly in modern battlefield environments, leveraging real-time intelligence and communication systems.

Strategic Importance

- **For the United States and NATO Allies**:
  - Provides a robust deterrence mechanism, particularly in regions like Europe (NATO's eastern flank) and the Indo-Pacific.
  - Crucial for countering threats from adversaries with advanced integrated air defense systems.
- **Role in the Russia-Ukraine War**:
  - Recently, ATACMS missiles were supplied to Ukraine to bolster its defense capabilities against Russia.
  - Used for precise strikes on Russian logistics hubs and airbases, demonstrating its operational effectiveness.
- **Comparison with Competitors**:
  - Comparable to systems like Russia's Iskander-M but with greater emphasis on precision and mobility.