GS PAPER 2-INTERNATIONAL RELATIONS-INDIA AND ITS NEIGHBOURHOOD- RELATIONS

The major issues in Pakistan's western borderlands

The article discusses the overlooked geopolitical issues surrounding Pakistan and Afghanistan, focusing on the Pashtun Qaumi Jirga and the rise of Pashtun nationalism. It highlights how instability in Pakistan's western regions could impact India-Pakistan relations and regional dynamics.

What are the major issues in Pakistan's western borderlands?

1. **Pashtun Discontent**: The Pashtun Qaumi Jirga and Pashtun Tahafuz Movement (PTM) reflect growing unrest among the Pashtuns. PTM's 22 demands include the removal of the Pakistani Army and militants from their lands.
2. **Tehrik-e-Taliban Pakistan (TTP)**: The TTP, allegedly sheltered by Afghanistan, is fighting to establish autonomous zones in Pashtun areas, further undermining Pakistan's control.
3. **Taliban-Afghanistan Tensions**: Pakistan's hope of controlling Afghanistan through the Taliban has failed. The Taliban is asserting autonomy and challenging Pakistan's policies.
4. **Baloch Nationalism**: Violence in Balochistan is increasing, with attacks on Chinese nationals and Punjabi settlers due to rising discontent over political and economic issues.
5. **Instability Spillover**: The unrest in these regions could destabilize Pakistan further, with consequences for neighboring countries, including India.

How do these issues affect bilateral relations between India and Pakistan?

1. The India-Pakistan relationship remains stagnant despite occasional diplomatic efforts, including Jaishankar's visit, which had minimal impact.
2. Key bilateral issues remain unresolved for decades, with no major breakthroughs.
3. The ongoing unrest and demands for autonomy in these areas threaten Pakistan's stability, which in turn affects its relations with neighbors, including India.

What could be the future implications for the region?

1. The destabilization in Pakistan's western regions could have long-term impacts on the entire South Asian region.
2. The unrest might not only shape Pakistan's domestic politics but also its international relations, particularly with India.
3. The situation could influence future diplomatic strategies and border policies between the two countries.

GS PAPER 3– INDIAN ECONOMY GROWTH AND DEVELOPMENT

How different types of institutions impact a country's prosperity

The article discusses the **2024 Nobel Prize in Economics awarded to Daron Acemoglu, Simon Johnson, and James A. Robinson**. They studied how different types of institutions impact a country's prosperity. Their work shows that inclusive institutions promote growth, while extractive institutions lead to poverty.

What is the significance of the work by the 2024 Economics Nobel laureates Daron Acemoglu, Simon Johnson, and James A. Robinson?

1. The significance of their work lies in their analysis of **how the quality of economic and political institutions impacts national prosperity.**
2. They argue that "**inclusive" institutions**, which feature secure private property rights and democratic governance, foster long-term economic growth and higher living standards.
3. In contrast, "**extractive" institutions**, which are characterized by insecure property rights and lack of political freedom, lead to economic stagnation and poverty.
4. Their research highlights the crucial role that **these institutions play in explaining the economic divergence between rich and poor countries.**

How do the laureates explain the lasting economic effects of colonialism?

1. The laureates suggest that colonialism shaped the institutions that persist today.
2. In colonies where Europeans settled, inclusive institutions that promoted long-term economic growth were established.
3. In contrast, in regions where Europeans did not settle, such as India, extractive institutions were set up for short-term exploitation, resulting in long-term economic stagnation.

Why are inclusive institutions not universally adopted, according to the laureates?

1. Inclusive institutions, while beneficial for long-term growth, are often resisted by ruling elites who benefit from extractive systems.
2. If rulers can continue to extract wealth without facing rebellion, they have no incentive to implement reforms.
3. Inclusive institutions only emerge when the masses revolt or rulers see a threat to their control.

What are the implications of their findings for global economic development?

1. The implications are profound for global economic development. The laureates emphasize that the presence of inclusive institutions is crucial for sustainable economic growth.
2. They suggest that without democratic frameworks that protect individual rights and encourage economic participation, countries are unlikely to achieve significant economic advancement.
3. Their findings underscore the importance of reforming political and economic systems to create more inclusive institutions, which can lead to more equitable growth and development across nations.

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How do the laureates' theories apply to modern examples like China and Singapore?

1. While the laureates **advocate for democratic institutions as ideal for economic prosperity**, they acknowledge exceptions like China and Singapore.
2. China, despite its autocratic regime, has seen significant economic growth, though with notable internal inequalities.
3. Singapore, also not fully democratic, has thrived due to strong institutional frameworks.
4. These examples show that while inclusive institutions generally foster economic growth, there can be variations based on specific national contexts and policies.

GS PAPER 3-INDIAN AGRICULTURE

Problem with focusing only on agricultural yield

The article argues that India's focus on maximizing agricultural yield (kg/hectare) is outdated. While it helped secure food supply, it now harms nutrition, biodiversity, and long-term sustainability. It suggests shifting to indicators that measure nutrition, water efficiency, biodiversity, and overall farm resilience.

What is the problem with focusing only on agricultural yield?

1. **Scarcity of Inputs**: Essential inputs like water, plant nutrition, and labor are becoming scarce, making yield maximization less sustainable.
2. **Nutritional Deficiency**: High-yield varieties of rice and wheat have reduced micronutrient content. Zinc levels in rice dropped by 33%, and in wheat by 30%. Iron levels in rice and wheat decreased by 27% and 19%, respectively.
3. **Malnutrition**: This lack of nutrition contributes to widespread malnutrition, with one-third of Indian children under five stunted and two-thirds anaemic.
4. **Farmer Income**: Maximizing yield does not always increase farmers' incomes effectively, as the cost of additional inputs like fertilizers can outweigh the benefits
5. **Biodiversity Loss**: India has lost about 1,04,000 varieties of rice since the Green Revolution, reducing agricultural resilience.
6. **Monoculture Focus**: The area under millets has reduced by 10 million hectares, while rice and wheat have expanded by 13 and 21 million hectares.

What alternative indicators should be considered?

1. **Nutritional output per hectare**: Focus on the nutritional value of the crops produced.
2. **Soil health**: Include metrics like soil organic carbon.
3. **Water-use efficiency**: Use technology to provide farmers with real-time data for better water management.
4. **Biodiversity**: Assess not just crop diversity at the farm level but also regional diversity and economic resilience through indicators like the 'Landscape Diversity Score'.

What are the benefits of these new indicators?

1. These indicators aim to ensure that agriculture contributes to nutritional security, conserves natural resources, and enhances farmer profitability through sustainable practices.
2. **Economic Resilience:** Intercropping practices in Andhra Pradesh have shown to provide stable income and increase profitability, demonstrating the benefits of diverse and resilient farming methods.
3. **Resource Efficiency**: Water-use efficiency indicators help conserve resources. The 'Saagu Baagu' project in Telangana shows how AI can improve irrigation and crop management.

GS PAPER 3– AGRICULTURE – FOOD SECURITY

World Food Day 2024 emphasizes the right to safe and nutritious food for all

The article discusses World Food Day 2024, emphasizing the right to safe and nutritious food for all. It highlights India's progress in food security, ongoing challenges in agriculture, and the need for equitable systems to ensure everyone, including urban families, has access to food.

What is the theme of World Food Day 2024?

1. The theme for **World Food Day 2024 is "Right to Foods for a Better Life and a Better Future."** It stresses the need for safe, nutritious, and affordable food for all.
2. The Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD) and the World Food Programme (WFP), and the Government of India are working together to ensure this human right is upheld.
3. Around 733 million people worldwide face hunger, emphasizing the urgency of addressing food insecurity.

How has India progressed in food security?

1. India transitioned from a **food-deficient nation to a food-surplus country** over the past 60 years.
2. **The Green Revolution**, supported by institutions like the Indian Council of Agricultural Research, helped improve food availability.
3. The **National Food Security Act (NFSA) of 2013** ensures food entitlements for over 800 million people.
4. **Fortified rice** distribution, from July 2024 to December 2028, is a step towards improved nutrition.
5. Initiatives like the **White Revolution (milk)** and **Blue Transformation (fisheries)** diversified food sources.
6. India's robust food systems help address hunger and promote nutrition security across rural and urban communities.

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What are the challenges in India's agriculture sector?

1. **Small and Marginal Farmers**: 82% of India's 93.09 million agrarian households are small and marginal farmers holding less than two hectares of land. Fragmented landholding reduces their productivity.
2. **Resource Degradation**: Overuse of groundwater and chemical fertilizers harms water tables and soil health, reducing agricultural productivity.
3. **Limited Market Access**: Smallholder farmers struggle to access markets due to infrastructure limitations and supply chain inefficiencies.
4. **Rural Poverty**: Small farmers lack access to financial services, technology, and irrigation systems, which impacts their income and livelihoods.
5. **Climate Change**: Erratic weather patterns affect farming. Sustainable practices like water conservation are needed to build resilience.

How does food security affect non-agricultural households?

1. Food security is essential for both farming and non-farming families. As urbanization increases, ensuring that non-agricultural households have access to nutritious food becomes crucial.
2. India's Public Distribution System plays a key role in providing food to both agricultural and non-agricultural households.
3. Strong social safety nets and market interventions are important for stabilizing prices and supporting vulnerable communities.

Why is food security a collective responsibility?

1. Ensuring food security goes beyond producing more food. It involves creating fair, resilient, and sustainable food systems that benefit everyone.
2. The partnership between the FAO, IFAD, WFP, and the Government of India reflects a shared responsibility to build a food-secure society.
3. This includes supporting both farmers and urban communities, reducing food inequalities, and ensuring no one is left behind.

PRELIM FACTS

1. Mechazilla

SpaceX has achieved a significant milestone in space exploration by **landing its Starship rocket** using an innovative structure called **"Mechazilla**."

What is Mechazilla?

- **Mechazilla** is the nickname for **SpaceX's 400-ft tall rocket-catching structure** at Starbase, Texas.
- It has **two massive mechanical arms**, called **"chopsticks,"** designed to catch the **Super Heavy booster** mid-air as it returns to Earth.
- Aimed at **revolutionising rocket recovery** by making it more efficient and reusable.

How Mechazilla Works?

- **Launch and Ascent**: Starship rocket with Super Heavy booster launches.
- **Booster Separation**: After reaching a certain altitude, the booster separates from the upper stage.
- **Controlled Descent**: The booster uses thrusters to descend back to Earth.
- **Catching the Booster**: **Mechazilla's arms** catch the booster mid-air for a controlled landing.

Significance of Mechazilla

- **Reusability**: Reduces wear and tear on the booster, allowing **quick refurbishment** for future launches.
- **Cost Reduction**: Enables **rapid turnaround time**, reducing the overall cost of space missions.
- **Environmental Impact**: Less damage to boosters compared to traditional sea landings, reducing environmental harm.

Future Implications

- **More Frequent Space Missions**: Mechazilla will allow **faster reuse** of rockets, increasing the frequency of launches.
- **Cost-Effective Space Exploration**: By reducing costs, SpaceX can make space exploration more **accessible**.
- **Interplanetary Missions**: Supports Elon Musk's vision of **interplanetary travel**, including future missions to **Mars** and the Moon.

2. Prime Minister Early Career Research Grant (PMECRG)

The newly operationalised **Anusandhan National Research Foundation (ANRF)** recently announced the launch of **first two of its initiatives**— the Prime Minister Early Career Research Grant (PMECRG) and the Mission for Advancement in High-Impact Areas -Electric Vehicle (MAHA- EV) Mission.

Prime Minister Early Career Research Grant (PMECRG)

- **Objective**: To support **early career researchers** in contributing to India's scientific excellence and innovation.
- **Key Focus**:
  - **Encourages young researchers** to engage in innovative, high-quality research.

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- Expands **knowledge boundaries** and drives technological progress.
- Aligns with **ANRF's goal** of fostering a vibrant, research-driven ecosystem.
- **Impact**: Aims to position India as a **global leader in Science and Technology (S&T)**, nurturing early researchers to contribute to groundbreaking discoveries.

Significance of the Initiatives

- **PMECRG**: Boosts innovation by empowering early-career researchers, driving India's research potential and technological advancements.

3. Mission for Advancement in High-Impact Areas -Electric Vehicle (MAHA-EV) Mission

Mission for Advancement in High-Impact Areas – Electric Vehicle (MAHA-EV) Mission

- **Objective**: To develop a robust research and development ecosystem for **Electric Vehicles (EV)** in India, promoting **domestic innovation** and reducing import dependency.
- **Key Focus Areas**:
  - **Tropical EV Batteries and Battery Cells**.
  - **Power Electronics, Machines, and Drives (PEMD)**.
  - **Electric Vehicle Charging Infrastructure**.
- **Mission Goals**:
  - Supports **Atmanirbhar Bharat** by fostering self-reliance in EV components.
  - Encourages collaboration across institutions to tackle critical scientific challenges.
  - Aims to establish India as a **global hub for EV component development**.

Significance of the Initiatives

- **MAHA-EV Mission**: Positions India as a global leader in the EV sector, aligning with sustainability goals and promoting electric mobility for a greener future.

4. Nile River Basin Cooperative Framework (CFA) agreement

Recently, **Regional partnership** ratified the **Nile River accord** despite **Egypt's opposition**, which is aiming for equitable water use and sustainability for all.

About Cooperative Framework Agreement (CFA)

- CFA came into force on **October 13, 2024**, following ratification by **six upstream countries.**
- Aims at **equitable use** of Nile River water resources among **all riparian countries.**
- Seeks to replace **outdated colonial-era agreements (1929 and 1959)** that heavily **favoured Egypt and Sudan**.
- **Ratified by**: Ethiopia, Uganda, Rwanda, Burundi, Tanzania. South Sudan's recent ratification led to the agreement coming into force.
- **Opposed by**: **Egypt and Sudan**, who fear it will diminish their share of Nile water.
- **Transition to Nile River Basin Commission (NRBC)**: The CFA aims to establish the NRBC, replacing the **Nile Basin Initiative (NBI)** to manage the Nile's resources collectively.

Historical Agreements

- **1929 Agreement**: Signed by **Egypt and the UK** (on behalf of Sudan), giving Egypt the right to veto upstream water projects.
- **1959 Agreement**: Between **Egypt and Sudan**, allocating **75% of Nile waters to Egypt**, leaving **25% to Sudan**. These agreements excluded upstream nations.

About River Nile

- The Nile River is the **world's longest river** and a major source of water in Africa.
- The Nile is known as the **"father of African rivers"**.
- The Nile is formed by three principal streams**: the Blue Nile, the Atbara, and the White Nile.**
- **Length:** About **6,695 kilometres (4,160 miles) long**.
- **Basin:** Includes parts of **11 African countries,** including Egypt, Sudan, Ethiopia, Uganda, Kenya, the Democratic Republic of the Congo, Rwanda, Burundi, Tanzania, and South Sudan.
- **Tributaries:** T**wo main tributaries**: the White Nile and the Blue Nile.
  - The **White Nile** originates at **Lake Victoria** and flows through **Uganda and South Sudan.**
  - The **Blue Nile** originates at **Lake Tana** in **Ethiopia** and flows into **Sudan** from the southeast.
  - The two rivers **meet at Khartoum, the capital of Sudan**.
- **Delta:** forms an **arcuate delta (triangular or fan-shape)** as it empties into the **Mediterranean Sea**.

5. Biopolymers

Union Minister recently inaugurated India's first Demonstration Facility for Biopolymers in Jejuri, Pune, marking a significant milestone in India's journey towards sustainable innovation.

About Biopolymers Facility

1. India's First Demonstration Facility for Biopolymers has been established at Jejuri, Pune.
2. It has been established by Praj Industries.

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3. This facility showcases the nation's strides in developing integrated technologies for producing Polylactic Acid (PLA) bioplastics, aimed at reducing reliance on fossil-based plastics and combating global plastic pollution.
4. Purpose: The facility exemplifies India's commitment to transitioning from traditional plastics to eco-friendly alternatives, aligning with the global push for sustainable solutions.
5. Bioeconomy Growth: India's bioeconomy reached over $150 billion in 2023, with projections to hit $300 billion by 2030, supported by advancements in biopolymers and biotechnologies.

About Biopolymers

1. Biopolymers are natural polymers derived from renewable biological sources such as plants, animals, and microorganisms.
2. Unlike conventional plastics, which are made from petroleum-based products, biopolymers are eco-friendly and often biodegradable, making them a sustainable alternative.
3. They are increasingly being utilized across various industries, including packaging, agriculture, healthcare, and textiles, due to their reduced environmental impact.

Key Features

i) Renewable Source: Biopolymers are produced from natural resources like corn, sugarcane, and other biomass, reducing dependence on fossil fuels.
ii) Biodegradability: Many biopolymers, such as Polylactic Acid (PLA) and Polyhydroxyalkanoates (PHA), can decompose under appropriate conditions, reducing plastic waste and environmental pollution.
iii) Lower Carbon Footprint: The production of biopolymers generally emits fewer greenhouse gases compared to conventional plastics, supporting global efforts to combat climate change.
iv) **Versatility:** Biopolymers can be engineered to possess specific properties, such as flexibility, durability, or water resistance, making them suitable for diverse applications.

Applications in Various Industries

1. Packaging: Biopolymers are increasingly replacing traditional plastics in packaging, especially for food and consumer goods, due to their safety and biodegradability.
2. Agriculture: They are used to create biodegradable films, plant pots, and other products that contribute to sustainable farming practices.
3. Healthcare: Biopolymers are employed in medical applications, such as sutures and drug delivery systems, due to their biocompatibility and safe degradation.
4. Textiles: The fashion industry uses biopolymers to produce eco-friendly fabrics that are both durable and sustainable.

6. Greenwashing Guidelines

The government has issued new guidelines to combat greenwashing, which refers to companies making dubious claims about their products or services being environmentally friendly.
These guidelines, released by the Central Consumer Protection Authority (CCPA) aim to ensure that environmental claims are scientifically substantiated and transparent.

About Greenwashing

1. Definition: Greenwashing involves deceptive or exaggerated claims that a product, service, or activity is environmentally friendly.
2. Scope: The guidelines apply to advertisements and cover various entities, including corporations, organizations, and even countries, that may make unverified environmental claims.
3. Notable Examples: Companies like Volkswagen, Shell, BP, and Coca-Cola have faced accusations of greenwashing for exaggerating their environmental impact or misleading the public. Practices like carbon trading and carbon offsets often fall under scrutiny for potential greenwashing, especially if they lack scientific rigor.

Key Elements of the New Guidelines

The guidelines are issued by the CCPA under the Consumer Affairs Ministry, focusing on advertisements.
Criteria for Greenwashing: Greenwashing is defined as any practice that hides or exaggerates relevant information, misuses symbols or imagery, or makes vague or unsupported environmental claims.
Terms and Claims: Terms like "clean," "green," "eco-friendly," "sustainable," and similar phrases are allowed only if substantiated with credible evidence. More specific claims, such as "biodegradable," "recyclable," "net-zero," or "climate-positive," require verifiable scientific evidence, certifications, or third-party verification.
Exceptions: Hyperboles or "puffery" in advertisements are permissible, provided they do not mislead or deceive consumers.

Requirements for Companies

1. Companies must provide adequate qualifiers and disclosures for terms like "carbon neutral" or "organic" to avoid misleading claims.
2. Technical terms such as "environmental impact assessment" or "ecological footprint" must be explained clearly to the average consumer.
3. Environmental claims need to be backed by reliable scientific evidence or certifications from credible agencies.

7.Bone ossification test

One of the accused in the murder case of former Maharashtra MLA Baba Siddique claimed to be a minor. The court ordered a bone ossification test, which confirmed that the accused was not a minor, leading to his remand in police custody as an adult.

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About Bone Ossification Test

1. Definition: Ossification is the natural process of bone formation that starts in early fetal development and continues into late adolescence. It differs among individuals.

2. Purpose: The test approximates a person's age based on bone development.

3. Process: X-rays of specific bones, like those in the hands and wrists, are taken to assess skeletal development. These images are compared to standard references to determine the individual's biological age.

4. Scoring System: Experts analyze specific bones and their growth against standardized maturation charts for the relevant population.

Application in the Criminal Justice System

1. Juvenile Justice Act (JJA): Individuals below 18 are considered minors under the Juvenile Justice (Care and Protection of Children) Act, 2015. Minors are subject to different legal processes focused on rehabilitation rather than punishment.

2. Juvenile Justice Board (JJB): Minors in conflict with the law are brought before the JJB, which includes a magistrate and two social workers. The Board may issue penalties like community service or time in a special home.

3. Trials for Heinous Crimes: Following a 2021 amendment, juveniles aged 16-18 accused of heinous offenses (with a minimum of seven years' imprisonment) undergo an assessment. This evaluation checks their mental and physical capacity to understand the crime and its consequences before determining whether they should be tried as adults.

Legal Considerations for Age Determination

1. Section 94 of the JJA: When there's ambiguity regarding age, the Board seeks proof from school certificates or birth records. In the absence of documentation, ossification or other medical tests may be ordered.

2. Judicial Precedents: Courts have emphasized that bone ossification tests should be a last resort, especially when documentary evidence is available. Tests are supplementary and do not override existing evidence of age.

3. Supreme Court Directive: The Supreme Court has clarified that ossification tests are less prioritized and should follow after examining all other documentation.

Reliability and Accuracy of Bone Ossification Tests

1. Variability in Development: Due to differences in individual maturation, ossification tests are not foolproof. They provide an age range, e.g., 17-19 years.

2. Margin of Error: Courts often account for a margin of error, especially in sensitive cases. For example, in cases under the Protection of Children from Sexual Offences (POCSO) Act, the Delhi High Court advises that the upper age in the range should be considered, with an added margin of error of up to two years.

ANSWER WRITING

Q. Institutions play a crucial role in determining a Nation's economic success. Critically analyse the statement in light of the 2024 economic Nobel prize winning research. Discuss how colonial history has shaped modern institutions and their impact on economic development in countries like India.

The **2024 Economics Nobel Prize** was awarded to **Daron Acemoglu**, **Simon Johnson,** and **James A. Robinson** for their influential research on how institutions shape a nation's economic success. Their findings highlight the importance of **inclusive institutions** that promote secure **property rights**, **democratic governance**, and **economic opportunities**.

Crucial Role of Institutions in Determining a Nation's Economic Success

- **Secure Property Rights and Rule of Law:** Institutions that enforce property rights create a conducive environment for investment by providing security against expropriation.
  For example: Insolvency and Bankruptcy Code (2016) has improved business confidence by providing a framework for resolving insolvencies.
- **Political Stability and Economic Growth:** A stable political environment promotes predictable conditions, attracting investments and ensuring steady economic growth.
  For example: India's **democratic governance** has facilitated reforms that have helped attract over **$83 billion** in foreign direct investment **(FDI)** in 2021-22, according to the Ministry of Commerce and Industry.
- **Inclusive Economic Policies:** Institutions that promote inclusive policies ensure equitable distribution of economic benefits, reducing poverty and promoting sustainable growth.
  For example: Direct Benefit Transfer (DBT) scheme has streamlined subsidy delivery, benefiting over **900 million people** and improving transparency in welfare schemes.
- **Transparent Legal Frameworks:** Transparent and predictable legal systems help **reduce corruption** and encourage fair competition, fostering entrepreneurship.
  For example: The **Goods and Services Tax (GST)** reform has unified the market, increasing tax compliance by **17%** in **2023**, thus enhancing the business environment.
- **Institutional Support for Innovation:** Institutions that encourage research and innovation contribute to technological advancements and economic growth.
  For example: Atal Innovation Mission (AIM) has set up over **10,000 tinkering labs** in schools, promoting a culture of innovation
- **Infrastructure Development through Institutional Reforms:** Strong institutions support infrastructure development, facilitating trade and economic activities.

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For example: The National Infrastructure Pipeline (NIP) aims to **invest ₹111 lakh crore** by **2025** in infrastructure, improving connectivity and supporting sustained economic growth in India.

- **Empowering Human Capital:** Institutions focusing on **education** and **healthcare** build a skilled workforce, which drives long-term growth.
  For example: National Education Policy (2020) targets **doubling** the **Gross Enrolment Ratio** in higher education by 2035, positioning the country to leverage its demographic dividend.

Shortcomings of Institutions in Determining a Nation's Economic Success

- **Corruption and Bureaucratic Inefficiencies:** Corruption can undermine institutional effectiveness, leading to reduced investment and growth.
  For example: India's low rank in the **Transparency International's Corruption Perceptions Index** (85th in 2023) highlights challenges in reducing corruption, which can deter investors.
- **Slow Judicial Processes:** Delays in judicial processes can impede business operations and deter economic activities.
  For example: India's average time to resolve commercial disputes exceeds **1,400 days**, making legal processes cumbersome for businesses, according to the **World Bank.**
- **Resistance to Reforms:** Institutions often face resistance to reforms, slowing the pace of change.
  For example: Protests against **agricultural reforms** in India in **2020** revealed challenges in balancing economic reforms with public acceptance, impacting policy implementation.
- **Inequitable Access to Institutional Benefits:** Despite reforms, **marginalised communities** often struggle to access benefits.
  For example: Digital India initiative, though extensive, faces a **digital divide**, with only **37%** of rural areas having internet access, limiting economic inclusion.
- **Overcentralization of Decision-Making:** Centralised power can **limit regional autonomy**, affecting local development.
  For example: India's **fiscal federalism** has seen states demanding greater control over **GST revenues** to better address local economic needs.
- **Policy Uncertainty:** Frequent policy changes can create **uncertainty**, discouraging long-term investments.
  For example: Changes in India's **e-commerce** and **data localization policies** have raised concerns among global investors about **regulatory predictability**.
- **Inefficiencies in Public Sector Enterprises:** State-owned enterprises often suffer from low productivity, impacting economic efficiency.
  For example: India's **loss-making state-owned companies** continue to receive **government bailouts**, affecting fiscal health and diverting resources from growth-oriented investments.

How Colonial History Has Shaped Modern Institutions

- **Introduction of Centralised Governance:** Colonial powers often set up **centralised administrative systems** that persist post-independence.
- **Land Tenure Systems:** Colonisation introduced **land tenure systems** that prioritised extraction over development.
  For example: The Zamindari system in India led to **land dispossession** and **rural poverty**, effects that still impact economic disparities.
- **Legal and Judicial Systems:** Colonizers imposed **Western legal frameworks** that continue to shape current legal systems.
  For example: India's legal system, based on **British common law**, remains influential but faces challenges in addressing case backlogs.
- **Infrastructure Focused on Resource Extraction:** Colonial infrastructure was designed to facilitate extraction, impacting long-term development.
  For example: India's railways, initially built for **transporting raw materials**, laid the foundation for the modern network but were primarily focused on colonial interests.
- **Education Systems and Elites:** Colonizers established **education systems** to train local elites for administration.
  For example: Universities like Calcutta University (1857) were created to produce a class of English-speaking administrators, influencing India's bureaucratic culture post-independence.

Impact of Institutions on Economic Development in Countries Like India

- **Economic Reforms and Growth:** Institutional reforms have driven **India's economic liberalisation**, spurring growth and integration with the global market.
- **Improved Financial Inclusion:** Institutions have enabled wider financial inclusion, benefiting millions.
  For example: Jan Dhan Yojana has opened over **500 million bank accounts**, providing access to formal banking and reducing poverty.
- **Agricultural Policies and Rural Development:** Institutional initiatives have boosted **agricultural productivity** and resilience.
  For example: The Pradhan Mantri Fasal Bima Yojana (PMFBY) offers **crop insurance**, protecting millions of farmers from risks.
- **Social Welfare Schemes:** Institutions ensure the effective implementation of **social welfare programs**.
  For example: The **MGNREGA** has generated over **3 billion person-days** of employment, supporting rural livelihoods.

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- **Digital Infrastructure and E-Governance:** Investments in digital infrastructure have improved public service delivery.
  For example: The **Aadhaar system** has enabled **streamlined subsidy distribution**, improving transparency and access to welfare services.

The 2024 Nobel Prize emphasises the role of inclusive institutions in shaping a nation's economic future. While strong institutions drive growth and equity, addressing their shortcomings through reforms and innovation is essential for sustained progress. A balanced focus on education, transparency, and collaborative governance can ensure that institutions continue to support economic prosperity.

MCQ

1. Consider the following statements about Samarthak Vessel:
   1. It is the first multi-purpose vessel built for the Indian Navy by L&T Shipyard.
   2. It has capabilities such as towing ships, launching targets, and operating autonomous vehicles.
   3. It is a part of India's 'Make in India' initiative for promoting indigenous shipbuilding.
   4. It is primarily designed for offensive naval operations.

   Which of the above statements are correct?
   a) 1, 2, and 3 only b) 1 and 4 only
   c) 2 and 4 only d) 1, 2, 3, and 4
2. Consider the following statements regarding e-Migrate Portal v2.0:
   1. It promotes safe and legal migration for Indian workers abroad.
   2. The platform integrates with Digilocker for seamless document submission.
   3. It was launched by the Ministry of Labor and Employment.

   Which of the above statements is/are correct?
   a) 1 only b) 1, 2, and 3
   c) 1 and 2 only d) 2 and 3 only
3. The Mechazilla structure by SpaceX is specifically designed for:
   a) Launching rockets into space.
   b) Catching the Super Heavy booster mid-air during its descent.
   c) Refueling the Starship during space missions.
   d) Conducting space research in microgravity environments.
4. Consider the following statements:
   1. Sugarcane is the primary source of ethanol production in India.
   2. Montreal Protocol supports the use of biofuels like ethanol to combat climate change.
   3. India has achieved the target of 20 percent ethanol blending with petrol.

   How many of the statements given above are correct?
   a) Only one b) Only two
   c) All three d) None
5. Consider the following statements regarding the Prime Minister Early Career Research Grant (PMECRG):
   1. It provides flexible budgets to support early-career researchers.
   2. The initiative focuses on multidisciplinary research to encourage global collaborations.
   3. It positions India as a leader in the global scientific community by fostering innovation.

   How many of the above statements is/are correct?
   a) Only one **b) Only two**
   c) All three d) None
6. Consider the following statements about the Mission for Advancement in High-Impact Areas – Electric Vehicle (MAHA-EV) Mission:
   1. It focuses solely on EV Batteries and Charging Infrastructure.
   2. It supports domestic innovation to reduce import dependency for EV components.
   3. The mission aligns with the vision of achieving a Viksit Bharat by 2047.

   Which of the above statements is/are correct?
   a) 2 and 3 only b) 2 only
   c) 1 and 2 only d) 1, 2, and 3
7. The Mission for Advancement in High-Impact Areas – Electric Vehicle (MAHA-EV) Mission focuses on all the following except:
   a) Developing electric aviation technologies.
   b) EV batteries and cells.
   c) Power electronics, machines, and drives (PEMD).
   d) EV charging infrastructure.
8. Consider the following statements regarding the Nile River:
   1. The Nile River forms a delta as it flows into the Mediterranean Sea.
   2. The Blue Nile and White Nile are two principal streams of the river.
   3. The Nile Basin includes parts of Kenya, Ethiopia, and Egypt.

   How many of the above statements is/are incorrect?
   a) Only one b) Only two
   c) All three **d) None**
9. Consider the following statements regarding the "Ossification test":
   1. It is a medical procedure that analyses bones in order to determine age.
   2. It is full proof science that can provide us with the exact age of the person.

   Which of the statements given above is/are not correct?
   a) 1 only **b) 2 only**
   c) Both 1 and 2 d) Neither 1 nor 2
10. Consider the following statements:
    1. Carbon capture and storage (CCS) from industrial sources is one of the methods of Carbon Dioxide Removal (CDR) from air.
    2. Carbon Dioxide (CO_2) removal from air cannot reverse all the damage caused by climate change.

    Which of the statement(s) given above is/are correct?
    a) 1 only **b) 2 only**
    c) Both 1 and 2 d) Neither 1 nor 2

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