INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

INSTA MINDMAPS

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General Studies – 1

Topic: Salient features of Indian Society, Diversity of India.

1. Plight of India's older women

Introduction

- Age compounds the hardships of many older women in a society marked by gender inequality.

Dependency on Kin

- The '**feminisation of ageing**' as evidenced by the increased life expectancy of women implies that older women will continue to be dependent on others for prolonged periods.
- Being dependent on kin can exacerbate vulnerabilities.
- Many experiences abuse after transferring property to their adult children.

Challenges faced by older women

- **Patriarchal cultural norms** relegate women to domestic duties.
- Many women remain unemployed throughout their lives and a majority do not own assets.
- This creates economic hardships in late life.
- Older women face additional challenges of **financial insecurity, destitution and health challenges related to ageing.**
- Care work in the family remains highly devalued.
- A common concern of many older women living in cities has been sourcing essentials and recruiting reliable care workers for themselves.
- **Crimes against older women** in cities are often reported especially in metropolitan cities.

Legal Provisions

- The **Hindu Adoptions and Maintenance Act, 1956** allows a widow to claim maintenance from the legal heirs of the deceased who share the property of the deceased.
- The **Maintenance and Welfare of Parents and Senior Citizens Act, 2007 (MW Act),** was formulated especially for senior citizens' welfare.
- Legal safeguards against abandonment, usurpation of property and abuse exist in the MW Act and the **Protection of Women from Domestic Violence Act, 2005.**

Way Forward

- Restoring dignity in women's labour can give older women the care and respect they deserve in late life.
- Care work must be accorded due importance in the political discourse.
- There is a need to proactively implement existing laws.
- Patriarchal ideas that prevent women from pursuing a life of one's own choice must be questioned.
- Age-appropriate occupations can be considered for women to enhance financial security.
- Need to have more care homes in the country.
- Ensuring safety, access to helplines and counselling support, access to inexpensive medical care, palliative care, dementia care, affordable permanent housing and financial security through pension schemes are areas where attention needs to be given.

Conclusion

- 'Older women' is not a homogenous category.
- Therefore, identifying unique needs based on their context is also crucial to meet the goals of the UN Decade of Healthy Ageing (2021-2030).

General Studies – 2

Topic: Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure

2. One Nation One Election (ONOE)

Introduction

- **A democracy thrives when social and political experiments like changes in the electoral process are conducted.**
- Initially, elections for both the 25 states and the general elections were held simultaneously.
- However, **due to state reorganizations and political instability, elections became a year-round activity,** putting immense pressure on resources.

The ONOE Proposal

- The **One Nation One Election (ONOE) proposal, recently accepted by the Union Cabinet**, seeks to synchronize elections across India.
- The ONOE seeks to return to the synchronized electoral process that **existed during India's first general elections in 1952.**

Rationale for ONOE

- A single election cycle can help **align local and regional development with national goals**, fostering a collective political experience.
- **Continuous elections place a financial burden on smaller regional parties**, especially those focusing on issues of the marginalized.
- Frequent elections enforce the **Model Code of Conduct (MCC)**, which halts development projects.
- ONOE can promote **efficient resource management**, allowing them to participate both in state and national elections.

Social and Political Benefits

- **Elections play a crucial role in fostering national integration,** ensuring that both the majority and the marginalized have a say in governance.
- A significant portion of migrant workers come from marginalized communities, often unable to vote due to geographical dislocation.
- ONOE is expected to **increase the political engagement of Dalits and marginalized groups**, giving them a clearer voice and ensuring their presence in governance.
- This reform reflects B.R. Ambedkar's vision of social democracy, where **political engagement is key to uplifting disadvantaged communities.**
- **Regional and smaller political parties, often financially constrained, would benefit from reduced election costs.**

Challenges in the Current Electoral System

- In 1952, voter turnout was 48.27%, and by 2009, it had marginally risen to 58.21%.
- **Frequent elections are believed to cause voter fatigue and a devaluation of the ballot.**
- **Political instability, policy paralysis, and frequent government toppling** are cited as reasons for voter disinterest.
- Moreover, elections every year lead to **over-reliance on freebies, money, and liquor to sway voters**.

Broader Implications of ONOE

- ONOE is expected to **reduce political instability caused by frequent elections**, allowing for more focused governance.
- **Governments can focus on long-term policy planning** and development without constant disruptions.
- A unified election cycle will result in **significant savings in terms of logistical, financial, and human resources** that are otherwise repeatedly used during elections.

Committee Reports and Recommendations

- Several expert bodies, including the **Election Commission (1983)**, **Law Commission (1999, 2018)**, the **Constitution Review Commission (2002)**, and **Niti Aayog**, have all emphasized the need for **simultaneous elections**.

Ensuring Migrant Workers' Participation

- Allow migrants to vote for their home constituencies from wherever they work.
- Provide postal ballot options or mandatory leave to vote, ensuring that employment doesn't hinder their electoral participation.
- Introduce special trains at reduced fares to transport voters to their home constituencies.
- Use local infrastructure, like ASHA Kendras and colleges, as convergence polling stations to bring polling booths closer to voters.

Concerns / Challenges

- In the case of **early dissolution** of the Lok Sabha or an assembly, holding elections only for the remainder of the term could cause **political instability**.
- While certain amendments can be passed by **Parliament**, some, such as those concerning **local bodies**, require **ratification by state assemblies**, posing a legal challenge.
- Critics argue that ONOE may weaken **federal principles**, as national issues might overshadow **regional concerns** during a single electoral cycle.

Way Forward

- ONOE must be accompanied by **structural reforms to maintain the integrity of the electoral process** and enhance people's participation.
- Innovative steps like **multi-location voting, postal ballots, and accessibility of polling stations** must be implemented to ensure the inclusion of marginalized communities.
- ONOE should be used as an opportunity to **foster social and political belonging**.
- Educating citizens about the **benefits** and **processes** of simultaneous elections will ensure higher **voter participation** and **acceptance**.

Topic: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

3. Importance of Food Safety, Security, and Food Irradiation in India

Introduction

- **The food industry contributes significantly to India's economy through domestic consumption and exports.**
- Advancing food safety and security is crucial for achieving the vision of "Viksit Bharat".
- Minimizing food loss and waste, particularly of perishable items like fruits and vegetables, is essential to ensure sufficient, nutritious food for all.

Food Safety and Trade Growth

- With the expansion of processed food trade, **food safety management has gained importance, especially in complying with stringent regulations in developed economies.**
- Food safety incidents can cause public health risks, disrupt food supplies, reduce consumer confidence, and destabilize prices.

Food Irradiation Technology

- **Irradiation involves exposing food to ionising radiation, eliminating harmful microorganisms**, delaying spoilage, and reducing the need for chemical preservatives.
- It extends shelf life, prevents premature ripening, and reduces food loss.

- The Union Budget 2024-25 has allocated funds to establish 50 multi-product food irradiation units in the MSME sector.
- After the Codex Alimentarius Commission set global standards for food irradiation, **countries such as the US, Japan, and the EU adopted the technology for both domestic and export markets.**
- The 2012 agreement allowed Indian mangoes to be exported to the US after undergoing irradiation.
- This agreement marked the end of a 20-year ban, demonstrating the effectiveness of irradiation in meeting stringent international food safety standards.

Investment Opportunities and Government Support

- The Indian food processing sector is expected to reach $535 billion by 2025-26.
- With rising domestic and international demand for safe, long-lasting food products, food irradiation facilities are a promising investment.
- The Ministry of Food Processing Industries (MoFPI) offers up to Rs 10 crore per project to establish food irradiation units, particularly to treat perishable produce and enhance shelf life.
- MoFPI has invited entrepreneurs to set up irradiation units under the **Integrated Cold Chain and Value Addition Infrastructure Scheme.**

Challenges in Food Irradiation Facility Commissioning

- Establishing a food irradiation facility involves multiple stages, including proposal approval, site clearance, safety assessments, and ongoing maintenance.
- Key institutions like the Bhabha Atomic Research Centre (BARC) and the Atomic Energy Regulatory Board (AERB) oversee these processes.

Way Forward

- India must expand its food irradiation infrastructure to meet the growing demands of the agrifood supply chain and export sector.
- Entrepreneurs and investors should seize the opportunity to contribute to the sustainable development of India's food industry by establishing irradiation facilities.
- The expansion of food irradiation facilities plays a vital role in transforming the agrifood industry and contributing to India's long-term economic growth.

4. India's Economic Growth and its Impact on Youth Lifestyle and Mental Well-being

Introduction

- India is poised for rapid economic growth driven by its young population.
- The youth contribute significantly to both production and demand, positioning India to be a future economic powerhouse.

Lifestyle Changes Affecting Youth

- The rapid changes in lifestyle, spurred by economic growth, have negatively impacted the mental well-being of Indian youth.
- **India reports the highest growth in ultra-processed food consumption among youth,** contributing to poor physical and mental health outcomes.
- Research suggests these foods may be as addictive as smoking.
- **Low levels of exercise and inadequate sleep** are becoming common, contributing to health concerns.
- **The early introduction and widespread use of smartphones among teenagers** have adverse effects on cognition, emotional regulation, and overall mental well-being.

Mental Health Challenges

- **India is experiencing a silent mental health epidemic, particularly among adolescents**.
- Recent findings from a database of over 1,50,000 individuals highlight this growing issue.

- Shifts in cultural practices, such as weakened family relationships, are contributing to declining mental health, especially among youth.

Socioeconomic Factors and Mental Well-being

- Data indicates that **youth from lower-income families who exercise regularly, have strong family relationships, and avoid ultra-processed foods show better mental well-being** than their wealthier counterparts with sedentary lifestyles and weakened family bonds.
- There is growing evidence that **returning to traditional values**, such as strong family connections, healthy diets, and physical exercise, contributes to improved mental health.

Long-term Consequences

- If the current trends of poor mental health continue, India's demographic dividend may be undermined.
- A shortage of qualified, capable, and productive workers could affect the economy as a whole.

Paths to Transformation in Mental Health

- **Step up funding and human resources** in mental health services across health and other sectors.
- **Reduce stigma and discrimination** by including individuals with mental health conditions in all aspects of society and decision-making.
- **Address social and structural determinants of mental health** by intervening in homes, schools, workplaces, and communities.
- Implement actions such as protecting children from abuse, supporting early childhood development, addressing bullying, and enhancing green spaces.
- **Regulate harmful substances, such as ultra-processed foods and hazardous pesticides**, which are linked to poor mental health outcomes.
- Build networks of community-based mental health services.
- Scale up care options for common mental health conditions, such as depression and anxiety.
- **Ensure that mental health services are accessible and affordable, particularly for vulnerable and underserved populations.**

Conclusion:

- To protect the demographic dividend and ensure sustainable economic growth, India must intervene now to improve the mental well-being of its youth.
- This requires a coordinated effort from government, the private sector, and civil society to reshape environments, strengthen care systems, and promote mental health as a national priority.

5. Palliative care

Introduction

- India has experienced a steep rise in the burden of lifestyle-related non-communicable diseases.
- Nearly 1.4 million people are diagnosed with cancer in India every year while diabetes, hypertension, and respiratory diseases are also on the rise.
- All these diseases need palliative care sooner or later in the disease trajectory.

Palliative care

- Palliative care is the branch of medicine **focusing on improving the quality of life and preventing suffering among those with life-limiting illnesses.**
- It aims to **address the physical, psychological, spiritual, and social domains of the health of people suffering from life-limiting diseases.**
- It supports the affected families in a way that **focuses on the person as a whole**, not just the disease.
- The global need for palliative care will continue to grow as a result of the ageing of populations and the rising burden of noncommunicable diseases.

Palliative care in India

- Palliative care in India has largely been available at tertiary healthcare facilities in urban areas.
- It is accessible to only 1-2% of the estimated 7-10 million people who require it.

National Programme for Prevention & Control of Non-Communicable Diseases (NP-NCD)

- The programme envisaged the provision of promotive, preventive, and curative care from the primary to tertiary institutes.
- Thus, it provides health services delivery across the continuum of care.

Concerns / Challenges

- 55 million people in India are pushed below the poverty line every year due to health-related expenditures.
- The revised NP-NCD guidelines mention palliative care in synonymy with cancer only.
- The guidelines have also skipped an opportunity to bring focus on children suffering from chronic diseases.
- Palliative care is provided for relief rather than to cure the symptoms and suffering caused by cancer.
- **Lack of a dedicated budget has prevented the implementation of National Programme for Palliative Care (NPPC).**
- Regulations for morphine and other essential controlled palliative medicines deny access to adequate palliative care.

Way Forward

- Palliative care must be delivered at least at the health and wellness centre and sub-center level.
- **Palliative care must be integrated into health systems at all levels.**
- Include palliative care along with curative treatment.
- It is high time we realise the pandemic of non-communicable diseases in India and strengthen the palliative care services.

6. Sustainable Food Production

Introduction

- There is a critical need today to address how climate change is reducing agricultural productivity with frequency of extreme weather events.
- **Climate-smart agriculture will go a long way towards augmenting food security.**

Local agriculture initiatives for promoting climate resiliency

- Local agriculture initiatives **strengthen global food systems** by shortening farm-to-fork distances.
- During COVID-19 people could only buy what was available locally.
- In the era of extreme natural disasters and climate change, we need a **combination of global and local food production systems to create food resilience.**
- Food and Agriculture Organization designated 2023 as the International Year of Millets.
- This was the culmination of a decades-long effort by multiple regional organisations to highlight the climate-adaptive and nutritional benefits of millets.
- However, it is too early to say that these efforts have already transformed global food systems significantly.

Concerns / Challenges

- Scaling successful models in farming has been tricky because no single solution fits all contexts.
- Farmers in Jharkhand may not be able to grow a certain variety of sweet potatoes with the methods proven successful for farmers in southern Odisha.
- Methods must be customised based on soil, elevation and many other parameters.
- **Scaling food production sustainably to meet global demand is the defining challenge of our times.**

- The UN projects that more than 600 million people worldwide will be facing hunger by 2030.
- Regenerative farming is not the only answer to global food insecurity.
- It can help mitigate damage to ecosystems, not restore them entirely.

Way Forward

- **Nature-based solutions and adaptation** to address the impact of climate change.
- This approach helps us protect our environment and preserve natural resources.
- Historically, farmers from a particular geography have coordinated and exchanged knowledge.
- Technological innovations that can mimic this at a macroscale and integrate climate analysis will help to deal with climate extremes in the future.
- To care for our planet's health and eradicate hunger decisively, we need a **sustained commitment to the SDGs.**
- Empower farming communities with knowledge and tools to tackle climate change with smart and adaptive solutions.
- **Reclaiming ancestral farming techniques** can be a step toward sustainable food systems

Topic: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes;

7. Swachh Bharat Mission (SBM)

Introduction to Swachh Bharat Mission (SBM)

- **Launch:** Initiated on **October 2, 2014**, as the largest sanitation project in India.
- **Goal:** To make India **open defecation-free** (ODF) and promote “swachh” behaviour.
- **Impact:** Construction of **18 crore toilets** and a wide range of public campaigns.
- **Celebrations:** Marked 10 years of its launch with various activities, contests, and discourse.

Job Insecurity Faced by Sanitation Workers

- A major issue is the prevalence of **contractual jobs** without job security.
- In places like Noida, thousands of workers protest against the **contract system**.
- **Problems with Contracts**
  - **Unfair salary cuts** by contractors.
  - Non-issuance of **appointment letters** and **insurance cards**.
  - Difficulty in accessing **minimum wages** and **social security** benefits.
  - The practice of **"thekedari pratha"** (contractor culture) often exploits workers.
- Workers are often left jobless without notice when contracts expire, leading to precarious livelihoods.
- **Civic authorities** and **contractors** pass responsibility to each other, leaving workers vulnerable.

Work Safety Concerns

- Sanitation workers, especially **sewer and septic tank workers** (SSWs), are exposed to **toxic environments**.
- Despite the **Prohibition of Employment as Manual Scavengers Act (MS Act), 2013**, and SBM’s mechanisation efforts, workers continue manual cleaning without protective gear.
- Inadequate safety gear such as **gloves, respirators, and masks**.
- Workers face life-threatening risks from **toxic gases**, **asphyxiation**, and **electrocution**.
- Despite the **NAMASTE scheme** offering some entitlements, **43 workers** died in the first half of 2024 while cleaning sewers.
- Many deaths occur in **private contracted work**, where regulations are lax, and accountability is unclear.

The Need for Structural Interventions

- **Addressing Gaps**
  - Improving **accountability** and **regulation** in private contracted sanitation work.
  - Ensuring **adequate safety provisions** and monitoring contractors’ adherence to worker welfare laws.
- **Reforming Sewerage Infrastructure**

- Modernising sewage systems to match **urban demands** and reduce reliance on manual labour.

Way Forward

- Integrating sanitation workers into the **Swachh Bharat Mission discourse** as **'champion safaimitras'**.
- Moving away from contractual systems towards **secure employment** with proper benefits.
- Programs like SBM should foreground the **rights and dignity** of sanitation workers.
- Implement strict monitoring mechanisms to ensure that workers receive **fair wages**, **social security**, and access to **health insurance**.
- Fully implement **SBM-Urban 2.0**'s emphasis on **mechanisation** of sewer and septic tank cleaning to reduce human exposure to hazardous environments.
- Improve **data collection** on sanitation workers to help design better policies, ensure accountability, and reduce instances of **violations**.
- Encourage **corporate social responsibility (CSR)** initiatives from private companies to improve the safety and welfare of sanitation workers.

Conclusion

- The success of **Swachh Bharat** relies heavily on **sanitation workers**, yet their contributions and struggles are often overlooked.
- For India to truly achieve a **"swachh Bharat"**, there needs to be a fundamental re-evaluation of the rights, security, and dignity of those who keep the country clean.

Topic: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

8. Digital Public Infrastructure (DPI)

Introduction

- India has achieved over 80% financial inclusion in just six years, which has garnered international praise.
- This achievement sets a benchmark for other developing nations, especially in the Global South.
- India's success demonstrates the country's ability to create scalable, inclusive, and efficient digital and financial infrastructures for over a billion people.

What is Digital Public Infrastructure (DPI)

- **Digital Public Infrastructure (DPI) refers to the foundational technology that enable a wide range of digital services for citizens, governments, and businesses.**
- The implementation of DPI aims to achieve broader goals like digital inclusion, financial inclusion, and efficient governance.
- India's success with the Pradhan Mantri Jan Dhan Yojana (PMJDY) and UPI highlights the power of DPI in bridging financial gaps.
- DPI is closely aligned with the United Nations Sustainable Development Goals (SDGs), particularly those related to **reduced inequalities**, **economic growth**, and **strong institutions**.

Focus of the G20 Summit 2023:

- The G20 summit in New Delhi highlighted the significance of **Digital Public Infrastructure (DPI)**.
- India's G20 task force released a comprehensive report emphasizing a **global strategy for developing DPI**, showing India's leadership in this domain.
- The comprehensive global strategy aims to assist countries worldwide in creating reliable DPIs that support their unique needs.

Stakeholders in the DPI Landscape:

- The digital landscape involves various stakeholders, including private enterprises, government bodies, non-profit organizations, and think tanks.
- This multi-sector involvement aims to **develop authentic and reliable DPI solutions to address societal needs.**

- The challenge lies in identifying trustworthy DPIs and ensuring they align with core values like security, inclusivity, and scalability.

The Role of Citizen Stack:

- **Citizen Stack** emerges as a trusted ecosystem inspired by the success of the **India Stack**, a comprehensive digital infrastructure serving over a billion citizens.
- Citizen Stack serves as a **regulatory body** or **auditor**, authenticating and certifying DPI solutions.
- It guarantees stringent standards of quality and security, thus providing a reliable benchmark for evaluating DPIs.
- India's commitment to high standards of DPI through the **Citizen Stack** represents its dedication to global excellence in digital infrastructure.

Five Sutras for a Good DPI:

- Uphold the citizens' relationship with the market and the state, ensuring the DPI is free from adverse influences.
- Safeguard citizen empowerment and privacy through consent-based data sharing.
- Prevent monopolistic lock-ins by ensuring **interoperability**.
- Promote **techno-legal regulation**, combining technology with law to ensure ethical use and protection of societal rights.
- Encourage public and private sector collaboration for innovation without the domination of corporate interests.

Concerns / Challenges

- There is often a **gap in access, especially in rural areas or among marginalized groups** lacking digital literacy or infrastructure.
- The more expansive and connected DPI becomes, the higher the risk of data breaches and misuse of personal information.
- Without proper regulation, DPIs may lead to the monopolization of digital services by a few large players.

Future of Digital Public Infrastructure:

- As the digital landscape evolves, the principles and models set by **India's Citizen Stack** will play a vital role in shaping the future of DPIs worldwide.
- India's focus on **authenticity, quality**, and **reliability** ensures that its DPI framework serves as a global standard, driving trust and adoption across borders.
- Advances in artificial intelligence (AI), blockchain, and machine learning will further enhance DPI's capability.
- Governments must continue to foster innovation through **public-private partnerships**, ensuring that the public good is prioritized over corporate profits.
- Need for **global standards** to ensure interoperability, security, and privacy across borders.

Conclusion

- India's remarkable progress in financial inclusion and its leadership in digital public infrastructure highlight its commitment to empowering the global community.
- With Citizen Stack as a model for excellence and security in DPIs, India continues to set the stage for a more inclusive and digitally sovereign world.

Topic: Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

9. China-Africa Relations and Implications for India

Introduction

- Over the past 24 years, the **Forum on China-Africa Cooperation (FOCAC)** has become a key platform for dialogue and planning between the two sides.
- The latest summit in Beijing reaffirms China's commitment to Africa, solidifying political, economic, and strategic ties.

Key Takeaways from the 9th FOCAC Summit

- **Beijing Declaration Highlights**
  - Focuses on creating a "China-Africa Community with a Shared Future."
  - Promotes synergy between China's Belt and Road Initiative (BRI), the African Union's Agenda 2063, and the 2030 UN Agenda for Sustainable Development.
  - Emphasizes China's Global Development Initiative (GDI), Global Security Initiative (GSI), and Global Civilization Initiative (GCI).
  - Calls for expanding exchanges on governance, modernization, and poverty reduction.
- **Economic Cooperation and Debt Relief**
  - Synergy between African and Chinese economic goals, including support for the African Continental Free Trade Area (AfCFTA).
  - China calls on international financial institutions to assist in debt relief for African countries.
  - China pledged $51 billion in financial support to Africa, focusing on loans, grants, and investment promotion.
- **Focus on Security and Development**
  - China supports increased UN funding for African peace operations and maritime security.
  - The summit stresses joint efforts to foster dialogue among civilizations.

Strategic Perspectives on China-Africa Relations

- **China's Perspective**
  - China sees a natural partnership with Africa, given that both are regions of the developing world.
  - Beijing positions itself as an alternative model of modernization, distinct from Westernization, which resonates with many African nations.
- **African Perspective**
  - While Africa benefits from Chinese investments, many African nations are concerned about becoming overly dependent on China, as seen in the donor-recipient dynamic.
- **Western and American Perspectives**
  - Some American analysts see China's deepening relations with Africa as part of Xi Jinping's anti-American strategy, positioning the Global South as a counterweight to U.S. global influence.

Way Forward for India

- India needs to resume high-level diplomatic engagement with Africa, akin to the three India-Africa Forum Summits (2008-2015).
- A decade-long gap in Africa-centered conference diplomacy has hindered India's strategic influence.
- While India enjoys historical and cultural ties with Africa, it must allocate more resources to match China's financial engagement.
- Without substantial investments, India risks falling behind in influencing Africa's developmental landscape.
- Africa's role in India's foreign policy needs reassessment.
- Political and financial commitments should reflect the continent's importance to India's strategic goals, especially in areas such as energy, food security, and technology.
- India should leverage multilateral platforms such as the African Union and G20 to expand cooperation with African nations in fields like renewable energy, counterterrorism, and capacity building.

Conclusion

- China's deepening ties with Africa through the FOCAC platform demonstrate Beijing's long-term strategy for gaining influence on the continent.
- India must adopt a more proactive and sustained engagement to ensure that it remains a key player in Africa's development.

10. Adoption of Cross-Border Insolvency Laws and their Importance in International Trade

Introduction

- **Importance of Cross-Border Insolvency Laws:** Essential for ensuring legal certainty and healthy operations of entities involved in international trade.
- **Current Scenario: Lack of harmonized cross-border insolvency laws in India** despite global initiatives, hindering effective trade and investments.

UNCITRAL Model Law on Cross-Border Insolvency

- **Developed by:** UN Commission on International Trade Law (UNCITRAL) in the late 1990s.
- **Four Key Pillars:**
    1. **Access:** Enabling foreign representatives to access local courts.
    2. **Recognition:** Legal acknowledgment of foreign insolvency proceedings.
    3. **Cooperation:** Promoting collaboration between national courts and foreign representatives.
    4. **Coordination:** Aligning concurrent insolvency proceedings in different countries.
- **Adoption Status:** Only 60 countries have adopted it; India has yet to implement the Model Law.

India's Current Approach to Cross-Border Insolvency

- **IBC 2016:** India's Insolvency and Bankruptcy Code (IBC) does not have a comprehensive framework for cross-border insolvencies.
- India currently addresses cross-border insolvency cases through bilateral agreements or on a case-by-case basis, seen as inadequate and lacking consistency.
- Despite multiple committee recommendations, adoption of the Model Law has been deferred, with no mention in recent government policies.

Integration of Insolvency Provisions in Trade Agreements

- India has signed more than 54 **Free Trade Agreements (FTAs)**, **Comprehensive Economic Cooperation Agreements (CECAs)**, and **Comprehensive Economic Partnership Agreements (CEPAs)**, focusing on reducing trade barriers and fostering investment.
- These agreements largely lack detailed provisions on cross-border insolvency, despite covering broader areas like **intellectual property rights (IPRs)** and **dispute resolution**.
- FTAs and CEPAs could include insolvency-related provisions to better handle the collapse of entities with cross-border operations.
- This can create a more robust regulatory framework for international trade.

Challenges in Implementing the Model Law

- The non-binding nature of the UNCITRAL Model Law allows nations to modify it, resulting in variations that complicate uniform implementation.
- Some scholars argue that **customized international treaties** or protocols could effectively address specific insolvency cases.

Opportunities in India's Current Trade Strategy

- India has signed four new FTAs from 2021 to 2024 and is in negotiations with several other nations.

- Integrating insolvency clauses into these agreements could strengthen trade frameworks and address the challenges of cross-border bankruptcies.
- **Complementary provisions on insolvency in CECA/CEPA agreements could create more integrated, ambitious frameworks covering broader regulatory aspects of trade.**

Lack of Multilateral Focus

- Even major **World Trade Organization (WTO)** reports often omit detailed discussions on cross-border insolvency.
- There is a need to highlight the role of cross-border insolvency in multilateral trade agreements.

Importance of Sound Insolvency Laws for International Trade

- Strong insolvency frameworks create legal certainty, attracting foreign investments and protecting creditors and debtors alike in cross-border situations.
- Integrating sound insolvency provisions into India's FTAs would fortify the foundation of international trade, benefiting the nation's economy.
- Collaboration between the **Commerce Ministry**, **Insolvency and Bankruptcy Board of India (IBBI)**, and legal experts can create actionable strategies for including insolvency in trade negotiations.

Way Forward

- India must move towards adopting the UNCITRAL Model Law or develop its own robust cross-border insolvency framework.
- Future FTAs, CEPAs, and CECAs should explicitly cover insolvency provisions, ensuring protection for cross-border trade.
- Leveraging technology platforms to augment the existing insolvency framework for quicker and more efficient resolution of cross-border insolvency cases.
- A sound cross-border insolvency framework will not only support India's trade ambitions but also contribute to global economic stability.

Conclusion

The adoption of cross-border insolvency laws is a critical element in ensuring legal certainty, economic stability, and efficient international trade.

General Studies - 3

Topic: Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment

11. How Agriculture Can Be an Engine for Growth

Introduction

- Historically, economists like Arthur Lewis argued that development comes from moving labor from agriculture to manufacturing and services.
- However, **modern agriculture in developed countries has become high-tech and highly productive,** suggesting that Indian agriculture can follow suit.
- Despite a five-year average growth rate of 4%, **Indian agriculture contributes only 18% to GDP but employs 46% of all workers**.

Challenges in Agriculture

- India's water resources are depleting, and soil health is declining.
- Farming remains low-tech in much of India, with limited access to high-yield, climate-resilient technologies.
- Fragmented land holdings, poor credit access, and a lack of cooperative farming models hinder growth.

Ecological Solutions

- Half of India's gross cropped area is irrigated, but overuse of groundwater due to free electricity has led to declining water tables.
- A balanced combination of **groundwater regulation**, **rainwater harvesting**, and **micro-irrigation** is crucial.
- **Example:** Gujarat's rainwater harvesting led to 9.6% annual agricultural growth between 1999-2009.
- **Shifting from monocultures to crop diversity and agro-ecological farming** can revive soils and increase yields.
- India must focus on building irrigation infrastructure, soil health, and credit facilities for smallholders.

Technological Advancements

- Government studies show micro-irrigation boosts yields by 48-52% and incomes by 48%.
- Technologies like **heat-resistant crops** and the use of **drones** for pest control and crop monitoring can increase productivity and climate resilience.
- Agricultural advice provided via mobile phones increased yields by 4% and improved input adoption by 22%.

Institutional Innovation

- One solution to fragmented land holdings is group farming.
- Although earlier attempts failed, new models such as Kerala's **Kudumbashree** initiative show promise.
- Research showed group farms produce 1.8 times the output/hectare of small individual farms.
- Group farming enables the pooling of resources, reducing costs, and improving market leverage.
- Attracting youth to farming through advanced technologies and organized group farming can help tackle the rural-urban job divide.

Role of Allied Sectors

- **Livestock, Fisheries, and Forests** offer growth potential.
- Fisheries, for example, grew at 10% in 2022-23, employing 28 million people, with 44% of those jobs held by women.

Synergizing Agriculture with the Non-Farm Sector

- 61% of rural incomes come from non-farm sectors like agro-processing, machine tools, and eco-tourism.
- Strengthening these linkages can boost both job creation and incomes.

Conclusion

- By overcoming ecological, technological, and institutional challenges, agriculture can emerge as an engine of growth, contributing significantly to job creation and economic development in India.
- With innovative approaches and focused reforms, farming can become a highly productive and desirable sector.

Topic: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

12. Iron Ore Mining

Introduction

- Iron ore is a non-renewable national resource and a vital raw material for various industries.
- Strict control over its over-exploitation is necessary.
- Recently the government announced to auction around 500 mineral blocks by fiscal year 2025-26.

Iron Ore Mining

- **Mining has played a crucial role in India's development.**
- India is the world's second-largest iron ore producer, after Australia.
- The production of iron ore is concentrated in a few states, such as Odisha.
- Odisha Mining Corporation (OMC) along with NMDC Ltd, accounts for around 65% of the country's iron ore production.

Contributions of Iron ore sector to India's growth

- The iron & steel sector contributes around **2% to India's GDP.**
- It provides **employment** to a large number of people directly and indirectly.
- Iron ore exports contribute significantly to **India's foreign exchange earnings.**
- It fuels **growth in downstream industries** such as steel manufacturing, construction, and machinery.
- It contributes to **government revenue**, supporting public services, infrastructure projects, and social welfare programs.

Concerns / Challenges

- **High prices of iron ore** are affecting the viability of small-scale pellet and sponge iron manufacturers that use iron ore as their primary raw material.
- High prices being charged by private mine operators.
- On account of minimum purchase obligations, customers are obliged to buy low-quality iron ore, as there is no quality-control mechanism in place.
- Competition law issues raised by various stakeholders in the mining sector.

Way Forward

- The base price for auctions be calculated through a transparent methodology.
- Linking the base price to a price index that should be publicly available on the website of the relevant PSU.
- Iron ore should be made available to industries outside Odisha by **opening up the long-term linkage agreement (LTA) route** to them.
- **Boost competition law awareness** across the country.
- Training programmes for small-scale industry and trade associations to empower them to confidently report anti-competitive practices in their fields to the CCI.
- Foster **competitive neutrality between public and private players**, ensuring a level playing field.

Conclusion

- India's sustainability goals must guide its reform policy and ensure judicious allocation of non-renewable resources.

13. Infrastructure Challenges in India

Introduction

- **Infrastructure is a key driver of India's economy and is seen as a catalyst for growth in sectors such as manufacturing, services, and logistics.**
- The government is heavily investing in infrastructure development.
- Issues such as **cost overruns**, **delays**, and **lack of efficient project management** remain major obstacles to achieving this goal.

Government Initiatives

- **PM Gati Shakti National Master Plan (NMP)** aims to bring multiple departments together on an integrated platform to ensure **coordinated planning** and implementation.
- **National Logistics Policy (NLP)** focuses on **streamlining logistics operations** to improve India's ranking in the global logistics performance index.
- **Smart Cities Mission** targets the development of urban infrastructure with a focus on sustainability, technology integration, and improved quality of life.
- **Capital Expenditure in Budget 2024** reflects the government's strong emphasis on creating long-term infrastructure assets that can contribute to GDP growth.

Challenges in Infrastructure Development

- A Ministry of Statistics and Programme Implementation report highlights that **431 projects with investments of ₹150 crore or more are facing cost overruns of ₹4.82 lakh crore**.
- These overruns are often due to **delays in project completion, with some projects being delayed by over 60 months.**
- A significant **gap exists in the planning stages**, particularly in urban infrastructure projects managed by **local self-government institutions**.
- Projects require **multiple approvals from different agencies**, which slows down implementation.
- Many projects **lack adequate oversight from skilled project managers,** which affects timelines, quality, and the overall success of the projects.
- The collapse of bridges and other infrastructure exposes the **weakness in quality control during construction**.
- Existing **practices in project management are outdated**, lacking the use of **modern tools** like **real-time data management.**
- **Lack of accountability and transparency** during project implementation often leads to **substandard quality.**
- Ministries and departments working in silos create challenges in the integrated implementation of projects.

International Best Practices

- The **Infrastructure and Projects Authority (IPA) in United Kingdom** focuses on improving the delivery of major infrastructure projects through established processes and regular audits.
- **With centralized project management agencies, China** ensures **end-to-end project delivery** through **strict timelines** and high-quality standards.
- **Saudi Arabia** has adopted **Project Management Offices (PMO)** within ministries to oversee infrastructure projects, with a clear focus on **accountability** and **efficient resource utilization**.
- These global examples show the importance of **dedicated agencies for project management**, accountability, and real-time progress tracking.

Way Forward

- Establish dedicated **Project Management Institutes** akin to the **Institute of Chartered Accountants of India**, to train professionals in **modern project management techniques**.
- Use **GIS-based ERP systems** for **real-time monitoring and tracking progress**, which can improve accountability and transparency.

- **India must learn from countries like the UK, China, and Saudi Arabia**, where dedicated infrastructure management authorities ensure timely project delivery.
- **Establish stricter quality control mechanisms** to prevent issues such as the collapse of bridges and buildings.
- Introduce a **single-window system** for all project clearances to reduce bureaucratic delays and speed up project initiation.
- **Implement transparent procurement processes** and ensure regular audits to reduce corruption and governance issues.

Conclusion

- With India aiming to become a **developed nation by 2047**, ensuring **future-ready infrastructure** is not only a necessity but also a cornerstone for the nation's socio-economic progress.

Topic: Major crops cropping patterns in various parts of the country

14. Agriculture in India's Cold Desert

Introduction

- Spiti, known for its beautiful barren mountains, is among the least populated regions of India.
- The cold desert in Himachal Pradesh is characterised by average temperatures between 39 degrees Celsius during summers and a chilling -30°C during winters.

Agricultural in Spiti

- The agricultural season is short, spanning from April to October.
- The area is completely irrigated with streams and rivers fed by glacial meltwater.
- Mere 0.28 per cent of the land used for agriculture.
- Traditionally, subsistence was through agriculture.
- With the establishment of the Regional Horticultural Research Station and Krishi Vigyan Kendra (KVK), cash crops like apple and field pea have made inroads.
- In Spiti, women farmers play a prominent role in agricultural tasks, from field preparation to sowing, irrigation and harvesting.

Various Farming methods Employed

- **Terrace farming** is widely adopted for perennial and annual crops in the region.
- This conserves vital water resources and prevents shallow-depth erosion.
- Soils primarily have very low water holding capacity — less than 30 per cent.
- To address this, farmers employ **gravity-fed canals and channels from streams.**
- Recognising the need for water conservation, farmers are turning to **micro-irrigation.**

Concerns / Challenges

- Shallow soil, labour intensity, geographical remoteness from major markets and a lack of quality planting materials.
- Water availability varies from 4 to 15 days, depending on stream water availability.
- Stream water has steadily declined by almost 10 per cent over the past 15 years.
- Limited by small field sizes and hilly terrains, farmers rely on traditional tools, as modern machinery is impractical.
- Farmers depend on intermediaries and traders for selling their produce.
- The roads are prone to frequent landslides and blockades, leading to the risk of spoilage for agricultural produce.

Way Forward

- Farmers in Spiti Valley practice natural farming, that provides the opportunity to get premium prices for such produce.
- However, government support is essential.

- Introduction of new fruits and vegetables.
- There is significant potential for processing of food products.
- Promoting FPOs and improving market ties can empower farmers to fetch better prices, aligning with the government's "Vocal for Local" drive.
- Spiti's scenic beauty combined with agricultural practices creates potential for agri-tourism.

Topic: Conservation, environmental pollution and degradation

15. Affordable Housing

Introduction

- In the interim Budget 2024, Finance Minister announced
  - the construction of two crore additional houses over the next five years under the Pradhan Mantri Awas Yojana Gramin (PMAY-G).
  - introduction of a new housing scheme for the middle class.
- Affordable housing emphasises on mass production, prioritising speed, cost, and ease of construction over thermal comfort and the implementation of low-carbon infrastructure.

Modern technologies in affordable housing

- Within the framework of the PMAY mission, Light House Projects (LHPs) are underway as part of the Global Housing Technology Challenge (GHTC).
- Utilising alternative construction technologies such as Mivan.
- This technology utilises advanced aluminium formwork, which is recyclable and reusable, to cast and construct various building elements.

Concerns / Challenges

- Extensive use of cement and steel without proper insulation results in increased heat gain from the building envelope, causing thermal distress.
- The reliance on cooling appliances triggers a surge in electricity consumption, thereby contributing to elevated greenhouse gas (GHG) emissions.
- Challenge lies in the implementation of passive design aspects because of the multi-stakeholder nature of the building value chain.
- Major hurdle in the adoption of passive designs is the lack of tangible benefits perceived by the end-users owing to a lack of awareness.

Prioritising thermal comfort

- To make vulnerable communities resilient to heat stress, it is imperative by integrating passive design strategies for thermal comfort.
- Such steps would help align the 'Housing for All' vision with broader environmental and climate goals.
- Implementation of guidelines embedded within building codes, such as Eco Niwas Samhita.
- The Smart Ghar III project in Rajkot serves as a prime example of achieving indoor thermal comfort through passive design implementation.

Way Forward

- An ecosystem change is needed across the entire value chain to encourage the adoption and rightful implementation of the building codes.
- The need to address the environmental impact of construction activities is imperative.
- Raising awareness and fostering collaboration among stakeholders and incentivising developers to prioritise passive designs.

16. Impact of Climate Change on Children's Health

Introduction

- The latest **Goalkeepers Report 2024**, released by the **Bill & Melinda Gates Foundation**, highlights how climate change could push an additional **40 million children to stunting** and **28 million more to wasting** between **2024 and 2050**.
- **Rising temperatures, extreme weather, and erratic rainfall patterns** are exacerbating malnutrition, food insecurity, and diseases, particularly in low-income regions.
- The report highlights regions such as **Sub-Saharan Africa** and **South Asia** are most vulnerable to these climate change-related effects.
- This situation calls for **urgent global intervention to prevent long-term health impacts** and foster sustainable development.

Challenges

- **Health Impact of Climate Change**:
  - Rising temperatures reduce crop yields, leading to food shortages. This increases **food insecurity** and worsens childhood malnutrition.
  - **Climate change is linked to the spread of diseases** such as **malaria** and **diarrheal diseases**, disproportionately affecting children.
  - **Malnutrition imposes severe economic costs**, with **$3 trillion in productivity losses** annually, hindering development in low-income countries.
- **Foreign Aid and Resource Allocation**:
  - Foreign aid to Africa, has dropped to its lowest percentage in 20 years, compounding the crisis.
  - The unequal distribution of resources leaves vulnerable regions exposed to **climate-induced food and health crises**.
- **Technological and Policy Gaps**:
  - Lack of investment in **climate-smart agriculture** and **preventive healthcare** limits the ability to mitigate the effects of climate change.
  - Limited access to **innovative agricultural technologies and food fortification initiatives** further exacerbates malnutrition and disease.
- **Gender Inequality**:
  - Women and girls, who play a crucial role in food production and child nutrition, are often disproportionately affected by climate change

International Best Practices

- **Canadian Model**: Health is viewed as a form of **human capital**, and healthcare is treated as a **public service**.
- Countries in **Europe** emphasize **holistic healthcare** by integrating climate adaptation strategies into health systems.
- **Australia prioritizes public service** and health promotion initiatives that are designed to protect the most vulnerable populations.

Way Forward

- Nations, particularly low-income countries, must **increase public health spending** beyond the current **0.9% to 1.35% of GDP**.
- Governments should invest in **climate-smart agricultural practices**.
- Donor nations and international organizations must **increase foreign aid** to climate-affected regions.
- Supporting established health organizations like **Gavi** and the **Global Fund** can improve child health outcomes.
- Focus on implementing **agricultural technologies** and **food fortification** to prevent childhood malnutrition and stunting, especially in climate-affected regions.
- Strengthening **social safety nets** for vulnerable populations affected by climate-related disasters.

Conclusion

- The **2024 Goalkeepers Report** underscores the critical need for urgent action to protect children from the devastating impacts of climate change.
- A multi-dimensional approach that includes **climate-smart agriculture**, **social protection**, and **health system strengthening** is essential to mitigate the impending crisis.

17. Regenerative Agriculture

Introduction

- The Green Revolution of the 1960s pulled India out of starvation, transformed the country's ability to feed itself and turned it into a big food exporter.
- But the revolution also made India the world's biggest extractor of groundwater.

Present Status

- According to the UN's World Water Development Report, **India extracts more than a quarter of the world's groundwater withdrawal each year**; 90 per cent of this water is used for agriculture.

Need for regenerative agriculture

- If agriculture want to feed India's undernourished population and drive the economy, it needs to work in harmony with nature, not against it.
- Farmers, activists and agricultural research organisations across the world are thus developing methods of chemical-less farming under the wider umbrella of regenerative agriculture.
- The key to improving water use and efficiency is enhancing the health and nutrient-holding capacity of the soil.
- Study shows severe and widespread deficiency of organic carbon and micronutrients in Indian soils.
- **The importance of regenerative agriculture was emphasised in the Intergovernmental Panel on Climate Change (IPCC) report on "Climate Change and Land."**

Regenerative agriculture

- Regenerative agriculture uses natural inputs and cultivation practices such as crop rotation and diversification.
- It includes minimum-till, mulching, multi-cropping and sowing of diverse and native varieties.
- It aspires not only to maintain the resources like soil and water but also to improve them.
- The natural inputs help improve soil structure and its organic carbon content.

Benefits of Regenerative agriculture

- Healthy soil helps in better water storage, transmission, filtering and reduces agricultural run-off.
- One per cent increase in soil organic matter per 0.4 ha increases water storage potential by more than 75,000 litres.
- Planting water-guzzling and water-efficient crops together or in alternating cycles reduces the frequency and intensity of irrigation.
- They conserve energy used by irrigation aids such as pumps.
- Regenerative agriculture and other farming methods that don't harm the climate can improve farmers' incomes, as well as cutting emissions and boosting soil health.

Government Initiatives

- In India, the Union government is promoting regenerative agriculture with an aim to reduce application of chemical fertilisers and pesticides and to lower input costs.
- States like Uttarakhand, Himachal Pradesh, Andhra Pradesh, Sikkim and Gujarat too have introduced schemes to promote it.

Way Forward

- Concerted research is required to understand the role of regenerative agriculture in saving water.

- The scientific findings will further help inform policy measures and future initiatives.
- There is an immediate and urgent need to provide all the necessary training and support to farmers so that they can prepare the required organic inputs in their own locality.

18. Climate Tipping Points

Introduction

- There are multiple reports highlighting the consequences of climate change, including droughts, water scarcity, severe wildfires, rising sea levels, etc.
- While climate records are being continuously broken, the impact could cause fundamental parts of the Earth system to change dramatically.

What are climate tipping points?

- **Climate tipping points are critical thresholds that cause irreversible and disastrous consequences for the planet.**
- E.g. rising global temperatures can trigger a change like a rainforest becoming a dry savannah.
- **Breaching one tipping point can increase the likelihood of crossing others** — triggering a catastrophic domino effect.
- Climate tipping points fall into three broad categories — cryosphere, ocean-atmosphere, and biosphere.

Triggering a domino effect

- Unabated global warming can cause irreversible ice melt from the Greenland ice sheet.
- This could slow down the ocean's circulation of heat, the Atlantic Meridional Overturning Circulation (AMOC).
- This in turn, could impact South America's monsoon system.
- Changes in the monsoon system may lead to a rise in the frequency of droughts in the Amazon rainforest.

Breaching of climate tipping points

- According to a report, five major tipping points are already at risk of being crossed due to warming.
- Three more are threatened in the 2030s as the world exceeds 1.5C global warming.
- Currently the tipping points at risk are
    - collapse of big ice sheets in Greenland and the West Antarctic,
    - widespread thawing of permafrost,
    - death of coral reefs in warm waters,
    - collapse of one oceanic current in the North Atlantic.
- Crossing these tipping points could have a catastrophic impact on societies.

Concerns / Challenges

- In 2023, greenhouse gas concentrations in the atmosphere reached the highest levels ever recorded in the atmosphere.
- While carbon dioxide concentrations last year were 2.4 parts per million (ppm) higher than in 2022, methane concentrations increased by 11 parts per billion (ppb).
- Global governance is currently inadequate to minimise tipping point threats.

How can we avoid breaching tipping points?

- **The best way is to curb greenhouse gases.**
- **Adequate Global governance** is required to minimise tipping point threats.
- **Implementing a global emergency action** to control some of the climate tipping points.
- Requires a shift in how tipping points are treated in climate policy today.

- **Technological development and innovation** to reduce the risks of crossing climate system tipping points.

Topic: Science and Technology- developments and their applications and effects in everyday life.

19. Technology to Boost Indian Agriculture

Introduction

- Agriculture and allied sectors are central to the Indian economy.
- India is promoting technology-enabled sustainable farming, including natural, regenerative and organic systems.

India's Food Security

- Though India has achieved food security, the demand for coarse cereals, pulses, oilseeds and vegetables is not fully met.
- They are not affordable for a large part of the population, leading to under/malnourished population.

Indian seed industry

- Indian seed industry was built on a strong foundation in the 1960s with the establishment of the National Seeds Corporation.
- Milestones towards the era of a technology-driven seed sector
    - introduction of the Protection of Plant Varieties & Farmers Rights Act, 2001
    - release of Bt cotton hybrids for commercial cultivation in 2002.
- The focus of the seed industry should be to promote varieties to combat the threats posed by climate change.
- The advancements made in seed technology can maximise the availability and quality of seeds.
- Applied seed technologies would ensure good performance even under less favourable, unpredictable, and harsh environments.
- R&D efforts of the public and private sectors must complement each other in developing environment-friendly, better-performing seeds at affordable costs.

India's millet production

- Millets are recognised as well-suited for sustainable agriculture.
- India is the global leader in millet production.

Technologies includes

- Genetic manipulation in variety development, subject to regulatory compliances.
- Seed treatments with biologicals.
- Bio-stimulants and nutrients for higher germination and faster seedling establishment.
- Incorporation of AI responsive sensors/substances in seed to help modulate plant responses to external stimuli.
- Incorporation of pesticidal formulations through film coating on seed.
- Most of these technologies are in commercial use globally, and some have been introduced in India.

Concerns / Challenges

- Depleting natural resources.
- extreme weather conditions and natural disasters because of climate change.
- India agriculture dominated by smallholder farmers.
- India's performance in achieving the SDGs linked to agriculture, are yet to reach desired levels.
- The costs of inputs such as seeds, fertilisers, and pesticides, besides land, labour and water, are the major determinants of profitability in agriculture.

Way Forward

- Increasing profitability in agriculture and its share of export in the world market.

- India needs to
    - close the gap between potential and achievable productivity in most grain crops and vegetables,
    - reduce the cost of production,
    - promote cultivation and consumption of nutritionally-rich crops like millets, and
    - focus on the quality of the agricultural produce.
- Focus must be on ensuring the availability of quality seeds and maximising the performance value of every seed.
- To meet the targets for food and nutrition security, effectively utilise every available technology including traditional knowledge in agriculture.
- A robust regulatory mechanism covering quality seedlings and planting materials is needed.