DAILY CURRENT AFFAIRS 10-03-2025

GS-2

1. India-Mauritius Relations
2. Convention on Cluster Munitions

GS-3

3. World Spice Organisation
4. Namami Gange Programme
5. Impact of Climate Change on India's Wheat Production

India-Mauritius Relations

Syllabus: GS-2: Bilateral Relations.

Context:

Context of PM Modi's Visit to Mauritius (March 11-12, 2025)

- **Purpose of Visit**: Celebration of deep and long-standing ties between India and Mauritius.
- **Significance**: PM Modi to be the chief guest at Mauritius' Independence Day celebrations on March 12.
- **Historical Context**: PM Modi last visited Mauritius in 2015.
- **Political Stability**: India-Mauritius relations enjoy bipartisan political consensus in both countries.
- **New Government in Mauritius**: Navinchandra Ramgoolam (Labour Party) became Prime Minister after a landslide victory in November 2024.
- **Objective of Visit**: Strengthen personal ties with PM Ramgoolam and reaffirm India's support for Mauritius' security and prosperity.

Historical and Cultural Ties

- **Shared History**:
  - Sir Seewosagur Ramgoolam (father of Navinchandra Ramgoolam) led Mauritius' independence movement and was its first Prime Minister.
  - Sir Ramgoolam collaborated with Netaji Subhas Chandra Bose during Bose's stay in Britain (1919-21).
  - Ramgoolam proofread Bose's *The Indian Struggle* and received an autographed copy.
- **People-to-People Ties**:
  - **Indian Diaspora**: 70% of Mauritius' population is of Indian origin, primarily descendants of indentured laborers from Bihar and Uttar Pradesh.
  - **Cultural Preservation**: Communities of Tamil, Telugu, and Marathi speakers have preserved their languages and traditions.
  - **Rainbow Culture**: Mauritius is home to African, mixed, and French populations, creating a multicultural society.
- **India's Cultural Initiatives**:
  - **Mahatma Gandhi Institute**: Established in 1976 to promote Indian languages and culture.

- **Indian Cultural Centre**: Largest and most active globally.
- **World Hindi Secretariat**: Hosted in Mauritius with India's support.

Economic and Trade Relations

- **Bilateral Trade**:
  - Trade reached $554 million in 2022-23.
- **Mauritius as a Business Gateway**:
  - Part of the African Union with preferential trade agreements.
  - Bilingual population (English and French) facilitates business with Francophone Africa.
  - Well-developed financial and banking sector with reliable laws.
- **Double Taxation Avoidance Agreement (DTAA)**:
  - Mauritius is a major channel for foreign investment into India.
  - DTAA has helped Mauritius become a successful international financial centre.

Strategic and Maritime Cooperation

- **Maritime Security**:
  - Mauritius is a sentinel of the western Indian Ocean.
  - Critical for India's maritime security in the Indian Ocean Region (IOR).
- **Colombo Security Conclave**:
  - Includes India, Sri Lanka, Maldives, Mauritius, and Bangladesh.
  - Focuses on ensuring a safe and secure Indian Ocean.
- **India's Contributions**:
  - Established coastal radar stations in Mauritius.
  - Redeveloped Agaléga Island as a joint surveillance facility.
  - Provided access to the Indian Navy's Information Fusion Centre for the Indian Ocean Region (IFC-IOR) in Gurugram.
  - INS Sarvekshak surveyed 25,000 sq.km of Mauritius' ocean territory.
- **Countering China's Influence**:
  - India-Mauritius maritime cooperation is vital amid China's expanding footprint in the Indian Ocean.

Challenges for Indian Diplomacy

- **Balancing Relations**:
  - Maintaining ties with all ethnic groups in Mauritius, including the French population (2%), who are influential in business and finance.
- **Cultural Diplomacy**:
  - Celebrating kinship with the Indian-origin population while engaging with other communities.

Way Forward

- **Strengthening Ties**:
  - Focus on deepening economic, cultural, and strategic cooperation.
- **Regional Leadership**:
  - Enhance India's role as a net security provider in the Indian Ocean Region.
- **Countering External Influences**:
  - Ensure India remains a preferred partner for Mauritius amid growing Chinese presence.

Convention on Cluster Munitions

Syllabus: GS-2: International Relations –Conventions and Summits.

Context:

- Lithuania recently quit the Convention on Cluster Munitions banning cluster bombs, citing security concerns over neighbouring Russia in a move that has drawn criticism from human rights groups.

Convention on Cluster Munitions (CCM)

Origin and Adoption:

- An **international treaty** aimed at banning cluster munitions.
- **Adopted**: 30 May 2008
- **Signed**: 3 December 2008
- **Came into force**: 1 August 2010

Objective:

- Prohibits the **use, production, transfer, and stockpiling** of cluster munitions.

- Aims for **full universalization** and implementation of the Convention.
- Seeks to **reduce humanitarian harm** caused by cluster munitions.

Membership Status:

- **Total members**: **112 states**
- **Signatories yet to ratify**: **12 states**
- **Non-signatories**: **India, U.S., Russia, China, Ukraine, Israel** (due to military and strategic concerns).

Significance and Implementation:

- Addresses **humanitarian concerns** and prevents harm to civilians.
- Aligns with **UN Sustainable Development Goals (SDGs)**.
- Supports **international peace and security**, **human rights**, and **international humanitarian law**.

Challenges:

- **Non-ratification by major military powers** limits effectiveness.
- **Stockpiled cluster munitions** still pose a threat.
- **Enforcement and compliance issues** among signatory states.

Prelims Maps:

World Spice Organisation

Syllabus: GS-3: Indian Economy – Agriculture.

Context:

- India's share in global seasoning market a paltry 0.7% despite being world's largest producer: WSO.

India's Spice Industry: Challenges and Opportunities

India's Position in the Global Spice Market

- India is the **largest producer and exporter** of spices globally.
- Despite this, India's share in the **global seasoning market ($14 billion in 2024)** is only **0.7%**, compared to **China's 12%** and **USA's 11%**.
- India currently exports **1.5 million tonnes** of spices worth **$4.5 billion**, commanding **25% of the $20 billion** global spice market.

Need for Value Addition in Spice Exports

- Currently, only **48%** of India's spice exports are value-added products.
- The remaining **bulk is exported as whole spices**, limiting India's market share in processed and seasoning markets.
- The **Spices Board of India aims to increase exports to $10 billion by 2030** by raising the share of **value-added spices to 70%**.
- Expanding into the **seasoning segment** is a major opportunity for India.

Exploring Nutraceutical and Pharmaceutical Potential

- Many Indian spices have medicinal properties and are already used in **Ayurveda and other traditional medicine systems**.
- **Nutraceutical and pharmaceutical applications** of spices can add further value to exports.
- There is potential for **research and development** in this sector to create new spice-based health products.

Global Competition in the Spice Market

- India leads in global spice production but faces competition from:
    - **Vietnam, Indonesia, Brazil, and China** – major spice exporters.
    - **African nations** – emerging as new spice producers.

Increasing Domestic Spice Production

- Around **85% of India's spices are consumed domestically**, leaving limited surplus for exports.
- **Emerging spice-producing regions** in India include:
  - **Northeast India, Odisha, and Jharkhand**, in addition to traditional spice-growing states.
- India benefits from **15 different agro-climatic zones**, allowing the cultivation of diverse spices.

Challenges and Solutions for the Spice Industry

- **Low production for exports**:
  - Solution: **Increase spice production** and focus on **cost reduction**.
- **Low value addition**:
  - Solution: Encourage **processing and seasoning** industries.
- **Quality and safety concerns**:
  - Solution:
    - Train farmers on **pesticide limits, integrated pest management, and hygiene practices**.
    - Promote sustainable spice farming practices.
- **Climate change impact**:
  - Solution: Develop **high-yielding and climate-resistant** spice varieties.
  - **Indian Council of Agricultural Research (ICAR)** and **National Research Centre on Seed Spices** are already working on these aspects.

Role of World Spice Organisation (WSO) and Farmer Producer Organisations (FPOs)

- WSO collaborates with **FPOs, farmers, processors, academics, and end-users** to improve the spice industry.
- Key initiatives include:
  - **Farmer training** on quality control, pesticide use, and water management.
  - Promotion of **safe, high-quality, and sustainable spice cultivation**.

Conclusion

- India has **immense potential** to expand its share in the **global seasoning and value-added spice markets**.

- **Boosting production, improving processing, ensuring quality control, and exploring new markets** are essential for achieving the **$10 billion export target by 2030**.

World Spice Organisation (WSO)

Overview

- The **World Spice Organisation (WSO)** is a **not-for-profit** organization established in **2011** in **Kochi, Kerala**, known as the spice capital of India.
- It is **registered under the Travancore Cochin Literary, Scientific, and Charitable Societies Act, 1956**.

Objectives

- The primary goal of WSO is to **facilitate the spice industry in addressing issues related to "Food Safety & Sustainability."**
- It aims to achieve its objectives by engaging all stakeholders, including the **general public, industry, academia, and end-users**.

Key Functions and Initiatives

- **Sustainability & Social Responsibility**
  - Undertakes **social responsibility projects** beneficial to the spice industry.
  - Promotes **sustainability and biodiversity** in collaboration with **national and international organizations**, including:
    - Spices Board India
    - Indian Institute of Spice Research (IISR)
    - Rainforest Alliance
    - GIZ (Germany)
    - IDH - The Sustainable Trade Initiative (Netherlands)
- **Global Collaboration**
  - Interacts with **international spice associations** to resolve industry challenges, such as:
    - American Spice Trade Association (ASTA)
    - European Spice Association (ESA)
    - International Pepper Community (IPC)
- **Standard-Setting & Regulatory Participation**

- Engages in **national and international standard-setting processes** for spices, ensuring industry interests are represented in organizations like:
  - FSSAI (Food Safety and Standards Authority of India)
  - BIS (Bureau of Indian Standards)
  - ISO (International Organization for Standardization)
  - Codex Alimentarius (International Food Standards by FAO & WHO)

- **Technical Expertise**
  - Serves as the **technical partner** of the **All India Spices Exporters Forum (AISEF)**.

Significance

- By addressing **food safety, sustainability, and regulatory issues**, WSO plays a crucial role in enhancing the **global competitiveness** of India's spice industry.
- It helps ensure that **Indian spices meet international quality and safety standards**, benefiting **farmers, exporters, and consumers** alike.

Namami Gange Programme

Syllabus: GS-3: Environment – Pollution Abatement.

Context:

- A total of 492 projects have been initiated across various sectors, valued at Rs. 40,121.48 crore. Out of these, 307 projects have been completed and made operational, marking significant progress in the mission.

Namami Gange Programme

Introduction

- **Namami Gange Programme** is a **flagship river conservation mission** aimed at cleaning and rejuvenating the **Ganga River**.
- Approved by the **Government of India in 2014** as an integrated mission.
- Implemented under the **National Mission for Clean Ganga (NMCG)**, under the **Ministry of Jal Shakti**.

Key Details

- **Launch Year**: **June 2014**
- **Initial Budget**: ₹20,000 crore (**later expanded to ₹42,500 crore**)

- **Implementation Authority**: **National Mission for Clean Ganga (NMCG)**
- **Scope**: Covers **Ganga River Basin** across **5 major states** – Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, and West Bengal.

Objectives

- **Pollution Abatement** – Reduction of industrial and sewage pollution.
- **Sustainable Waste Management** – Development of **modern sewage treatment plants (STPs)**.
- **Biodiversity Conservation** – Revival of aquatic ecosystems and protection of **Gangetic Dolphin**.
- **Public Awareness and Engagement** – Community participation in river conservation.
- **Afforestation and Eco-Restoration** – Improving vegetation cover to reduce soil erosion.

Key Features & Components

1. Sewage Treatment Infrastructure

- Over **200 STPs** launched to prevent untreated wastewater from entering the river.
- **Quadrupled sewage treatment capacity** in **Varanasi**.
- Enhanced water quality in **multiple states**.

2. Riverfront Development

- **Modernization of ghats and crematoriums** along the river to improve sanitation and boost tourism.
- Construction of new **eco-friendly crematoriums**.

3. Biodiversity Conservation

- Special efforts to protect and revive **Gangetic Dolphin** population (National Aquatic Animal).
- Increase in **fish species diversity** and overall aquatic ecosystem restoration.

4. Afforestation & Eco-Restoration

- Over **1.34 lakh hectares of trees** planted along the riverbanks.
- Helps in **reducing soil erosion**, improving groundwater recharge, and maintaining the river's ecological flow.

5. Ganga Gram Initiative

- Development of **1,674 villages** along the river.

- Focus on **sanitation, waste management, and clean drinking water**.
- **Open Defecation-Free (ODF) status** achieved in many riverbank villages.

6. International Recognition & Collaboration

- Recognized as a **Top 10 World Restoration Flagship Initiative** under the **UN Decade on Ecosystem Restoration (2022)**.
- Collaboration with **Germany, Japan, and other countries** for technical expertise in river rejuvenation.

Impact of the Programme

- **Increased sewage treatment capacity** – Significant improvement in wastewater management.
- **Improved river water quality** in key stretches of the Ganga.
- **Enhanced biodiversity**, with the rise in **Gangetic Dolphin population**.
- **Boost to eco-tourism** and better sanitation along the riverbanks.
- **Successful community participation**, making river conservation a people's movement.

Challenges & Way Forward

Challenges

- **Industrial pollution** – Discharge of untreated effluents remains a problem.
- **Encroachment & illegal sand mining** – Affecting river flow and ecosystem.
- **Limited municipal waste treatment capacity** – Many cities still lack proper waste disposal mechanisms.
- **Seasonal variations in pollution levels** – Water quality fluctuates based on monsoon patterns.

Way Forward

- **Strict enforcement of pollution norms** for industries.
- **Expanding sewage treatment infrastructure** in small towns along the river.
- **Public participation & awareness campaigns** for sustainable river conservation.
- **Adoption of advanced technology** for real-time water quality monitoring.

Conclusion

The **Namami Gange Programme** is a **holistic initiative** for cleaning and rejuvenating the **Ganga River**. While it has shown **significant progress**, challenges remain in ensuring **long-term sustainability**. Strengthening **pollution control mechanisms, community participation, and international collaboration** will be crucial for its success.

Impact of Climate Change on India's Wheat Production

Syllabus: GS-3: Climate Change and Its impact.

Context:

India's Warmest February and Heat Wave Impact on Wheat

Key Highlights

- **February 2024**: India recorded its warmest February in 124 years.
- **March 2024**: India Meteorological Department (IMD) predicts above-normal temperatures and more heat wave days.
- **Impact on Wheat Harvest**: Extreme heat threatens wheat, India's second-most consumed crop after rice.

Wheat Cultivation in India

Geographical Distribution

- **Primary Regions**: Northwestern Indo-Gangetic plains.
- **Major Producing States**: Uttar Pradesh, Punjab, Haryana, and Madhya Pradesh.

Crop Cycle

- **Sowing Period**: October to December (rabi season).
- **Harvesting Period**: February to April.

Production and Procurement

- **2025-2026 Target**: 30 million tonnes (lower than previous targets).
- **2024-2025 Production Target**: 115 million tonnes (record target).
- **2024-2025 Procurement**: 26.6 million tonnes (exceeded 2023-2024 but fell short of 34.15 million tonne target).

Export Restrictions

- **May 2022**: India banned wheat exports due to global shortages caused by the Russia-Ukraine war.

Impact of Heat on Wheat

Climate Variability and Heat Stress

- **Overlap of Heat Waves and Crop Growth**: Heat waves during the wheat growth season reduce grain production and quality.
- **Physio-Bio-Chemical Effects**:
    - Alters photosynthesis, respiration, and water-nutrient relations.

- Reduces biomass, tiller count, grain number, and size.

Stages of Wheat Growth and Heat Sensitivity

- **Germination to Emergence**: Seedling development until first leaf emerges.
- **Growth Stage 1 (Emergence to Double Ridge)**: Shift from leaf production to flowering structures (spikelets).
- **Growth Stage 2 (Double Ridge to Anthesis)**: Transition from vegetative to reproductive stage (most heat-sensitive).
- **Growth Stage 3 (Anthesis to Maturity)**: Grain-filling period.

Optimal Temperature

- Ideal temperature for later growth stages should not exceed 30°C.
- High temperatures cause:
  - Early flowering and faster ripening.
  - Shorter grain-filling period, leading to lighter grains with lower starch content.

Indian Ocean Warming and Monsoon Impact

Indian Ocean Heat Waves

- **Study by IITM, Pune (2024)**:
  - Indian Ocean warming at an accelerated rate.
  - Expected to be in a "near-permanent heat wave state" by the end of the century.
  - Marine heat waves to increase from 20 days/year to 220–250 days/year.

Impact on Monsoon and Agriculture

- **Monsoon Alteration**: Affects kharif and rabi crop cycles.
- **Delayed Rabi Season**: Late sowing leads to overlap of heat waves with critical wheat growth stages.

Consequences of Heat Stress on Wheat

- **Reduced Yield**: Lower grain weight and starch accumulation.
- **Quality Issues**: Higher protein content but harder grains, affecting milling quality.
- **Economic Impact**: Lower market prices for farmers.
- **Resource Overuse**: Farmers may overuse fertilizers and fungicides, leading to inefficiency.

Adaptation and Mitigation Strategies

Immediate Measures

- **Compensation for Farmers**: Financial support for heat stress losses.
- **Weather Advisories**: Timely updates on heat waves and crop management.

Long-Term Solutions

- **Climate-Resilient Varieties**:
  - Promote heat-resistant wheat varieties.
  - Address supply chain and accessibility challenges.
- **Agricultural Management**:
  - Adjust sowing dates to avoid heat waves.
  - Introduce improved yield varieties with shorter growth duration.
- **Resource Efficiency**:
  - Efficient use of fertilizers, pest control, and water.
- **Policy Support**:
  - Financial aid and crop insurance for farmers.
  - Focus on yield gaps and food security.

Multi-Pronged Approach

- Combine scientific research, technological solutions, and farmer education.
- Ensure updated weather systems and mitigation efforts for all crops.

Practice Qs:

Q. Discuss the impact of rising temperatures and heat waves on India's wheat production. Suggest adaptive strategies to ensure food security and sustainable agricultural practices. (15 marks, 250 words)