Strategy on Resource Efficiency

Background

India's large population, rapid urbanization and expanding industrial production have led to exploitation of available limited natural resources with concerns regarding resource depletion and future availability becoming more pronounced. Ensuring resource security requires **integrated, concerted and collaborative approach** in order to fulfill the needs of a vast and growing population. Enhancing **resource efficiency (RE)** and promoting the use of **secondary raw materials (SRM)** is a pertinent strategy to address these challenges and reduce dependence on primary resource.

Definition

- **Resource efficiency** or resource productivity is the **ratio between a given benefit or result and the natural resource use required for it.**
- Resource efficiency is a strategy to achieve the maximum possible benefit with least possible resource input.

Indian Resource Panel (InRP)

- The Government of India has established the **Indian Resource Panel (InRP)** — an advisory body under the Ministry of Environment, Forest and Climate Change (MoEFCC) — through the support of Indo-German bilateral cooperation, to assess resource-related issues facing India and advice the government on a comprehensive strategy for RE.
- The focus of the outputs from the InRP is on **abiotic resources that are not used for energy production** (ores, industrial minerals, construction minerals) supplemented by the **material use of biotic resources** for future.
- **Selection of resources** was done on the basis of following parameters:
    - Economic importance of the material based on its usage across different sectors
    - Environmental impact due to extraction and production
    - Embodied energy
    - Supply risks determined through:
        - Limited geological availability and criticality
        - High import dependency
        - Geopolitical constraints

Rationale for Resource Efficiency

1. Economic benefits

- RE has the potential to **improve resource availability** that is critical to the growth of industries.
- RE/SRM can help to **reduce price spikes due to supply constraints** or disruptions.
- Import dependency and cost of imports would decrease.
- RE/SRM can **improve competitiveness and profitability of industries,** especially material intensive manufacturing industries.
- Give boost to our **export market.**
- RE/SRM based approaches can lead to **establishment of new industries,** especially in recycling, that can contribute significantly to economic growth.

- RE/SRM based innovation in design and manufacturing has the potential to create highly skilled jobs.
- There is a potential to create **new jobs in green product certification, eco-labeling, and green marketing**.
- A strong governmental push for improving recycling economy-wide should result in the upgradation of the informal sector and its integration with the formal sector.

2. Social benefits

- Reduced extraction pressures due to adoption of RE strategies have the potential to **reduce conflict and displacement in mining areas,** as well as improve health and welfare of local communities.
- RE can contribute to improved **affordability of and access to resources** critical for poverty reduction and human development.
- RE/SRM will lead to **reduced waste generation** which will contribute to cleaner cities and rivers/water bodies through reduced disposal and associated pollution.

3. Environmental benefits

- Reduced extraction pressures due to adoption of RE strategies will help to **reduce ecological degradation and pollution** associated with mining.
- RE and reuse of secondary resources has enormous potential to **save energy**.
- Reduced waste generation will not only reduce pollution associated with disposal but also **save related costs**.

Global Context

- Due to economic development and population growth, countries which are currently importing scarce raw materials will have to **pay higher prices or accept constraints** in supply of crucial raw materials.
- At a global level, UNEP established the **International Resource Panel (IRP) in 2007** as a central institution to provide independent scientific assessments on sustainable use of natural resources and their environmental impacts and policy approaches to promote decoupling economic growth from environmental degradation.

Indian Context

- In India, extraction of primary raw materials increased by around 420% between 1970 and 2010 which is lower than the Asian average but higher than the world average.
- Compared to extraction, **India's exports and imports are still small** in terms of quantity. However, both have grown significantly.
- **Biomass and non-metal minerals are the most important material groups** in India and domestic extraction is more important than trade.
- India has experienced **a remarkable growth of GDP, resource consumption and resource productivity** but still is lagging behind many other countries with comparable economies which suggests that there is much scope for improvement.

Congruence of RS with Government Schemes and Priorities

- Judicious use of resources is an important part of several **SDGs** i.e.
    - GOAL 2: Zero Hunger
    - GOAL 6: Clean Water and Sanitation
    - GOAL 7: Affordable and Clean Energy
    - GOAL 8: Decent Work and Economic Growth
    - GOAL 9: Industry, Innovation and Infrastructure
    - GOAL 11: Sustainable Cities and Communities
    - GOAL 12: Responsible Consumption and Production
    - GOAL 13: Climate Action

    - GOAL 14: Life Below Water
    - GOAL 15: Life on Land
- RE can help meet India's **Nationally Determined Contributions (NDC)** commitments under the **2015 Paris Climate Change Agreement**.
- **National Housing and Habitat Policy, 2007** and the **Pradhan Mantri Awas Yojana (PMAY),** 2015 emphasize on developing appropriate ecological design standards for building components, materials and construction methods.
- At the manufacturing stage, flagship programmes like **"Make in India"** that provide special assistance to energy efficient, water efficient and pollution control technologies through **Technology Acquisition and Development Fund (TADF)** can promote RE and SRM approaches.
- Reduced waste generation by RE will contribute towards fulfilling the goals of **Swachh Bharat**.
- MoEFCC is running an **eco-labelling scheme.**
- There are policies existing to tackle all types of waste ranging from hazardous waste to Municipal Solid Waste (MSW), Construction and Demolition (C&D) waste, plastic waste and e-waste.

Indicators used to measure Resource Efficiency

- Resource efficiency = GDP/Domestic Material Consumption
- It also calculated as, RE = GDP/Material flow indicator (MFA)

Recommendations Regarding RE Strategy

1. Promotion:

- **Eco-labelling** and standard certification of products.
- **Technology development** to promote quality in manufacture and performance of product
- Strengthen **awareness** regarding green products
- Improve **availability of green products** in the markets
- **Lowering costs of green products**
- **Green public procurement**
- **Industrial clusters** development.

2. Regulation, Economic Instruments:

- **Viability Gap Funding (VGF)** that can help businesses overcome the barriers and become competitive over time by building scale and upgradation of technology.
- **Policy reforms** across life cycle stages focussing on their design, emphasis, integration or implementation.
- **Tax reforms** can play an important role in steering the economy towards resource efficient practices and circular economy. Value-added taxes should be levied on value-added activities like mining, construction, and manufacturing.

3. Institutional Development:

- **Capacity development** of key actors responsible for undertaking or overseeing RE/SRM strategies, including ULBs, MSMEs, as well as the informal sector.
- A dedicated **institutional set up** for development, assessment of RE measures should be established.
- Baseline data collection and development of **indicators**.

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