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Ganoderma Lucidum: The Magic Mushroom

- Recently efforts are being made globally to popularize Ganoderma lucidum (magic mushroom) by cultivating wood logs and sawdust for trade and livelihood.

About Magic Mushrooms:

- It is a medicinal mushroom used for centuries to cure diseases such as diabetes, cancer, inflammation, ulcers as well as bacterial and skin infections.
- However, the potential of this fungus i.e. Magic Mushroom/Ganoderma lucidum is still being explored in India.
- It is considered one of the most important medicinal mushrooms in the world because of the many medicinal properties found in its chemical constituents.
- It has been given nicknames such as “Mushroom of Immortality”, “Celestial Herb” and “Auspicious Herb”. It is also known globally as “Red Reishi Mushroom”.
- Information about the use of this mushroom can be found in the history of China 5,000 years ago. It is also mentioned in the historical and medical records of countries like Japan, Korea, Malaysia and India.
- Unlike common mushrooms, the specialty of this mushroom is that it grows only on wood or wood-based substrates.
- It thrives well in hot and humid climates and grows preferably in mixed forests of sub-tropical and temperate regions.
- Contains more than 400 chemical constituents, including triterpenes, polysaccharides, nucleotides, alkaloids, steroids, amino acids, fatty acids and phenols.
- They exhibit pharmacological properties such as immunomodulatory, anti-hepatitis, anti-tumor, and antioxidant, antimicrobial, anti-human immunodeficiency virus (HIV), anti-malarial, hypoglycaemic and anti-inflammatory.

- In addition to medicines, *Ganoderma lucidum* is also used as a base material for the manufacture of products such as tea, coffee, energy supplements, health boosters, beverages, baked goods and anti-aging cosmetics.

What is the scope of its cultivation in India?

- Its mass production is limited to the countries of China, Japan, Korea, Malaysia, Thailand and the United States of America.
- Awareness is spreading about *Ganoderma* and the demand for this mushroom has inspired many countries including India to mass produce it and manufacture its products.
- India is a country where most of the population is mainly dependent on agriculture and there is a lot of potential for cultivation of this mushroom.
- It can be grown indoors and thus is protected from the effects of extreme weather conditions, human-wildlife conflict, harsh topography and poor soil conditions.
- Presently, mushroom in India is mostly confined to laboratory research. However, some successful efforts have been made by various Indian organizations for its cultivation.
- It is cultivated in the country on wooden logs.
- It may have immense potential for livelihood generation, but there are also some challenges in this regard.
- Dried fruit or raw powder of '*Ganoderma lucidum*' can be sold at Rs 4,000-5000 per kg.

Namami Gange

- Ministry of Jal Shakti has launched 'Digital Dashboard for District Ganga Committees (DGCs) Performance Monitoring System' (GDPMS) under the 'Namami Gange' programme.
- This digital dashboard has been designed to help District Ganga Committees i.e. District Ganga Committees in promoting the link between the common people and the river.

About 'District Ganga Committees':

- 'District Ganga Committees' were formed in the districts situated on the Ganges river basin to establish a mechanism at the district level to ensure people's participation in management and pollution abatement in the Ganga and its tributaries.

- The DGCs have been entrusted with the task of ensuring proper utilization of the assets developed under 'Namami Gange', monitoring the drains/sewage falling into the river Ganga and its tributaries and building a strong connect of the people with Ganga rejuvenation.

What is 'Namami Gange'?

- Namami Gange Program is an Integrated Conservation Mission, approved as a 'Flagship Programme' by the Central Government in June 2014, to fulfill the twin objectives of effective abatement of pollution and conservation and rejuvenation of the National River Ganga.
- It is being operated under the Ministry of Water Resources, Department of River Development and Ganga Rejuvenation and Ministry of Jal Shakti.
- The program is being implemented by the National Mission for Clean Ganga (NMCG) and its state counterpart organizations i.e. State Program Management Groups (SPMGs).
- NMCG is the implementation wing of the National Ganga Council, it was established in the year 2016 which replaced the National Ganga River Basin Authority (NGRBA).
- It has a centrally funded, non-lapsed fund of Rs 20,000 crore and covers about 288 projects.

The main pillars of the program are:

- Sewage Treatment Infrastructure
- River Front Development
- River-surface cleaning
- Biodiversity
- Afforestation
- Public awareness
- Industrial Flow Monitoring
- Ganga Village

Related Initiatives:

- **Ganga Action Plan:** This was the first river action plan which was brought out by the Ministry of Environment and Forests in 1985. Its objective was to improve water quality by water blocking, diversion and treatment of domestic sewage and to prevent toxic and industrial chemical wastes (from identified polluting units) from entering the river.
- The National River Conservation Plan is an extension of the Ganga Action Plan. Its objective is to clean the river Ganga under Phase-2 of the Ganga Action Plan.

- **National River Ganga Basin Authority (NRGBA):** It was constituted by the Government of India in the year 2009 under Section-3 of the Environment Protection Act, 1986.
- It declared the Ganges River as the 'National River' of India.
- **Clean Ganga Fund:** It was formed in the year 2014 to clean the Ganga, set up waste treatment plants and conserve the biological diversity of the river.
- **Bhuvan-Ganga Web App:** It ensures public participation in monitoring the pollution in river Ganga.
- **Ban on waste disposal:** In the year 2017, the National Green Tribunal banned the disposal of any kind of waste in the river Ganga.

Ganges River System:

- The origin of the Ganges River called 'Bhagirathi' is fed by the Gangotri Glacier and joins the Alaknanda at Devprayag in Uttarakhand.
- In Haridwar, the Ganges emerges from the mountains and enters the plains.
- Many tributaries of the Himalayas meet in the Ganges, some of which are major rivers Yamuna, Ghaghra, Gandak and Kosi etc.

World health day

- Every year 7 April is celebrated as World Health Day.
- World Mental Health Day is observed every year on 10 October.

Highlights of World Health Day:

- Its idea was conceived in the first World Health Assembly of the World Health Organization held in the year 1948, which was implemented in the year 1950.
- World Health Day is celebrated every year on 7 April to mark the anniversary of the founding day of the World Health Organization (April 7, 1948).
- Over the years it has brought to light important health issues such as mental health, maternal and child care and climate change.

Objective:

- Its purpose is to deliberate on global health and its related problems and to spread awareness about equitable health care facilities in the world.

Theme for 2022:

- Our Planet, Our Health.

Importance:

Increase in the incidence of death due to environmental causes:

- Worldwide 13 million deaths are caused by avoidable environmental causes.
- It also includes the climate crisis which is the biggest health threat facing humanity.

Rising Air Pollution:

- More than 90% of people breathe unhealthy air polluted by the burning of fossil fuels.

Impact of the pandemic:

- The pandemic has highlighted vulnerabilities in all sectors of society and underscores the urgency of building a sustainable welfare society committed to achieving equitable health for present and future generations without breaking ecological boundaries.

Rising extreme weather events:

- Extreme weather events, land degradation and water scarcity are forcing people to migrate and affecting their health.

Increasing pollution and plastic:

- Pollution and plastic are also affecting people's lives and have made their way into our food chain.

Unequal Distribution of Income:

- The current form of the economy leads to unequal distribution of income, wealth and power, with many people still living in poverty and instability.

Current Health Wellness Scenario in India:

- Although India's healthcare sector has grown rapidly over the past five years (compound annual growth rate of 22%), COVID-19 has highlighted challenges such as weak healthcare systems, lack of quality infrastructure and lack of quality service delivery is.
- India's health care expenditure is 3.6% of the Gross Domestic Product (GDP), which includes public expenditure apart from out of pocket expenditure.
- The combined total government expenditure of both the Center and the states is 1.29% of the GDP.
- India's expenditure on health care is the lowest among the BRICS countries. Brazil spends the most (9.2%), followed by South Africa (8.1%), Russia (5.3%), China (5%).
- Government of India has launched flagship initiative Ayushman Bharat Pradhan Mantri Jan Arogya Yojana, which is the world's largest non-contributory health insurance scheme sponsored by the government and provides inpatient health care to poor and vulnerable families with secondary and tertiary facilities. -Patient Healthcare).

Health Sector Initiatives:

- National Medical Commission Act, 2019
- Pradhan Mantri Bhartiya Jan Aushadhi Yojana
- Pradhan Mantri Jan-Arogya Yojana
- Health Index of India
- Enriched Program

Swadeep Kumar