



# MP-PSC

## राज्य सिविल सेवा

मध्य प्रदेश लोक सेवा आयोग

**Additional Topics  
According to  
New Syllabus (Mains)  
Part - 1**



Following Changes have been introduced in the Latest Syllabus of State Services Mains Exam 2024 conducted by the Madhya Pradesh Civil Services Commission.

1. New subject **“Entrepreneurship, Management, Personality Development and Case Study”** has been added as the **Part (B) of Paper IV**.

Unit-I	Entrepreneurship Concept and Development	<ul style="list-style-type: none"> <li>• Concept and Significance of Entrepreneurship,</li> <li>• Symptoms of Entrepreneurship, Principles, Characteristics and Importance of Innovation.</li> <li>• Process of Entrepreneurship- Creativity, Idea Generation, Analysis and Business Plan.</li> <li>• Important factors and statutory requirements for new Enterprise Management, Challenges faced by Women Entrepreneurs.</li> <li>• Development of Entrepreneurship in India- Startup India, Make in India, Organizations for promoting Entrepreneurial development in India.</li> </ul>
Unit-II	Business Organizations and Management	<ul style="list-style-type: none"> <li>• Business- Concept and Significance, Scope, Administration and Management, Purchase and Material, Management.</li> <li>• Management Process, Resource Management and functions of Management Plan, Organization, Direction, Control, Coordination, Decision Making, Motivation, Leadership and Communication.</li> <li>• Time Management and Organization.</li> <li>• Branding, Marketing and Networking.</li> </ul>
Unit-III	Administration and Management	<ul style="list-style-type: none"> <li>• Important dimensions of Management in Public Administration. Human Resource Management.</li> <li>• Financial Management- Its scope and significance in Public Administration.</li> <li>• Stress and Conflict Management Techniques and their significance in Public Service Domain.</li> <li>• Administration and Management of Plurality, Opportunities and Challenges in Public Administration.</li> <li>• Disaster Management.</li> </ul>
Unit-IV	Overall Personality Development	<ul style="list-style-type: none"> <li>• Overall Personality and National Development.</li> <li>• Different component of Personality Development.</li> <li>• Concepts of successfulness.</li> <li>• Impediments in achieving success.</li> <li>• Factors responsible for success.</li> <li>• Learning from failure- accepting failure as an opportunity for continuous improvement and valuable introspection</li> <li>• Implementation of Government Programme- Planning effective strategy to ensure successful implementation of Government Programme.</li> <li>• Approach and facts regarding following issues- Civic Sense, Loyalty to the Institution, Voter Awareness Programme. Transport Management, Trend of Drug abuse, Adulteration in food items, Night Culture, Value based life and Legal Awareness Programme.</li> </ul>

2. Some new topics have been incorporated:

Paper	Unit	Topics
1 Part (A)	5	Struggle of Tribal Heroes of Madhya Pradesh and contribution in History- Shankar Shah, Raghunath Shah, Bhimaji Nayak, Khajya Nayak, Tantya Bhil, Ganjan Singh Korku, Badal Bhoje, Pema Falya.
1 Part (B)	1	Geographical Knowledge in Ancient India
	2	Millets – Production and Distribution Irrigation – Types of irrigation techniques, Sources of Irrigation and Multipurpose Projects.
2 Part (A)	3	Devi Ahilya Bai Holkar
	5	Administration of Madhya Pradesh- Secretariat, Chief Secretary, Secretary and Commissioner, District Administration in Madhya Pradesh, Role of District Collector. Rural Local Self Government in Madhya Pradesh- Panchayati Raj organization and Powers, Urban Local Self Government- Organization and Power, Finance Bureaucracy in Local Self Government and importance of autonomy. Political Scenerio of Madhya Pradesh- Upliftment of Tribal, Backward and Deprived classes and issues related to Naxalite problem. Contribution of Women in Politics of Madhya Pradesh. Current Issues in the Politics of Madhya Pradesh.
2 Part (B)	1	Indian Concept of Society- Joint Family, Family, Kinship, Lineage, Clan, Gotra tradition. Community, Institution, Association, Culture, Norms and Values. Social Institutions- Family, Education, Religion, Varna, Rin, Yagya, Sanskar.
	2	Conceptualizing Indian Society- People of India, Unity in diversity. Changing scenario of Crime- Drug addiction, Suicide, Cyber Crime, Crimes against Women and Domestic Violence. Current Debate- Tradition and Modernity in India. Problems of Nation Building- Secularism, Pluralism and Nation building.
	3	Approaches to the study of Rural Society- Rural-Urban differences, Ruralism, and Urbanism. Peasant studies, Panchayati Raj System before and after the 73rd Amendment, Rural Leadership, Factionalism, Empowerment of People. Social issues and Strategies for Rural Development- Bonded and Migrant labours, Trends of changes in rural society. Characteristics of Urban Community, Changes in Urban Community, Causes and Impact of Urbanization. Concept of Town Planning, Factors affecting to Urban Planning, Problems of Urban Management in India.
	4	Industrialization and Social Change in India- Impact on Family, Education, Stratification. Class and Class Conflict in Industrial Society. The Challenges of Globalization, Indianization of Sociology, Privatization of Education. Social Structure and Development, Facilitators, Inhibitors, Development and Socio-Economic disparities. Culture and Development- Culture as aid and impediment, Post-Modernization, Westernization. Population Growth and Distribution in India- Growth since 1901, Causes and Effects. Concepts- Fertility, Mortality, Morbidity, Migration, Age and Sex composition.
3 Part (A)	1	Salient features of Indian economy. Viksit Bharat @2047.
	3	Tribal Economy – Farming Methods, Major Forest Produce, Handicrafts and Haat Bazaar Tourism, Trade and Investment Promotion
	4	Policies for Natural Resource Management – Forests, Water and Minerals Financial and Social Inclusion and Welfare Schemes State Revenue, Expenditure, Debt and Financial Discipline
3 Part (B)	1	Application of Ethnobiology Contribution in Astronomy by Arya Bhatta, Varahmihir, Brahmagupta and Bhaskar First and Second. Initial Information of Ancient and Modern Observatories.
	2	Area and Volume of Geographic shapes and Surface area
	3	Ayurveda- Basic knowledge of Tridosh, Panchamahabhut, (Aakash, Vayu, Agni, Jal, Prathvi) Dincharaya, Ritucharaya, Panchkarma. Biological Clock. Yoga Preliminary knowledge of Panchkosh Principles, Ashtanga Yoga, Shatkarma, Mudra.

		Naturopathy- Therapeutic effect of Soil treatment, Sun Bath, Hydrotherapy and its types. Shodasha Sanskar- General Knowledge of Namkarana, Nishkramana, Karnavedha etc and its scientific importance.
	4	Different Biomarkers such as – normal range of Hematology, Biochemistry, Serology
	5	Concept of Environment in Indian Tradition and Culture. Janapadodhvansh– Distortions of Air, Water, land, Time.
4 Part (A)	1	Indian Shaddarshan Bharthari, Tulsidas, Sant Ravidas, Devi Ahilya Bai Holkar, Dr. Bhimrao Ambedkar, Pandit Deendayal Upadhyay
	2	Concept of Nation, Powers and Constituents. National Security, Interests and Character. National Security Operations, Armed forces, Bodies, Divisions and Spy Agencies. Basic Morality Concepts- Goodness, Virtues, Non-Violence, Responsibility. Role of Bhagawat Geeta in Ethics and Administration.
	3	Mental Disorders and Psychotherapy- Depression, Social anxiety Disorder, Schizophrenia, Social Phobia, Bipolar Disorder. Psychotherapy- Person Centered Therapy, Behaviour Therapy, Rational Emotive Behaviour Therapy, Cognitive Behaviour Therapy, Positive Therapy and Family Therapy.



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# 1 CHAPTER

## The Struggle and Contribution of Tribal Leaders in Madhya Pradesh's History

### Shankar Shah

**Birth** - 1787 AD.

**Who?** - Kings and revolutionaries of Gondwana Empire

**Contribution** - Conducting activities against the British in the Revolution of 1857

**Sacrifice** - British blew up from top

- Raja Shankar Shah was the king of Gondwana Empire and belonged to the Gond community.
- Raja Shankar Shah was born in **1787**.
- Raja Shankar Shah was the great grandson of Nizam Shah and the only son of Sumer Shah.
- On December 20, 1817, the British attacked Jabalpur and ended the Bhosale dynasty. On this occasion, Shankar Shah met Brigadier General Hardiman and presented his claim on the state, but his demand was rejected.
- Shankar Shah continued his activities against the British till 1857 AD.
- However, Raja Shankar Shah was very popular among the landlords and the general public.
- The commander of the British 52nd Regiment stationed in Jabalpur was L.J. Clark. He had troubled the small kings and the common people a lot.
- Maharaja Shankar Shah announced a struggle to end Clark's atrocities by taking the public and the landlords together.
- Clark sent his spies to Garhpurba palace of Gondwana kingdom to get news of Shankar Shah's preparations.
- Raja Shankar Shah was a lover of his people, hence he not only welcomed the spies who came to the palace but also requested them to contribute to the freedom struggle.
- The king also put the war plan before those spies. After a British peon named Girdhari Lal Das informed the British about the plan of the king of Gondwana Empire.

### Raghunath Shah

Shankar Shah's son and revolutionary

Contribution to father's revolutionary activities

Blasted with cannon along with Raghunath Shah

- Raja Shankar Shah's son's name was Kunwar Raghunath Shah.
- Raghunath Shah had fully supported his father in the war of 1857.

- On September 18, 1857, Shankar Shah and Raghunath Shah were mercilessly gunned down by the British.
- A grand statue of Raja Shankar Shah and his son Raghunath Shah is installed in Jabalpur.
- In honor of Raja Shankar Shah, in 2022, the Madhya Pradesh government changed the name of 'Chhindwara University' to 'Raja Shankar Shah University'.

### Durgavati

**Born** in the house of Chandela ruler Salvahan.

**Marriage**- with Gond ruler Dalpatishah

**As a ruler**-

Took over the kingdom at the age of 26

Defeated Malwa Governor Bazbahadur

Conflict with Mughal officer Asaf Khan

**Death** – 1564 AD

**Samadhi**- Barela (Jabalpur)

- Sangramshah had two sons – Dalpatishah and Chandrashah.
- According to Abul Fazal, in 1542 AD, Dalpatishah was married to Durgavati, daughter of Chandela king Salvahan of Rath and Mahoba.
- According to Smith and Cunningham, Durgavati was the daughter of Kirat Singh.
- Due to the untimely death of Dalpatishah, Durgavati took charge of the state at the age of only 26.
- It is said in Ain-e-Akbari that in the kingdom of Durgavati, the people used to pay taxes in gold, currency and elephants. And Durgavati fought with Afghan Mianna and defeated him. Later, Afghan Mianna got the job of a military officer at Durgavati's place.
- Durgavati also defeated Bajbahadur, the governor of Malwa between 1556-1562.
- Durgavati conquered Singorgarh Fort (Damoh).
- There was a conflict between Durgavati and Mughal officer Abdul Majeed (titled Asaf Khan) in Narai (between Gor and Narmada rivers). In this, Durgavati's soldier Arjundas Bais attained martyrdom. It was during the war that the queen sacrificed her life with a dagger. The queen's mahout was Adhar Singh Baghela. Durgavati died in 1564 in Barhagram (Jabalpur).

- At the time of Durgavati, there were scholars like Mahesh Thakkur, Thegh, Megh and Damodar.
- At the time of Durgavati, Vitthalnath of Vallabh sect had come to Gadha to whom the queen donated 108 grams.
- During the time of Durgavati, Padmanath Bhattacharya composed "Durgavati Prakash/Samayavalok and Veerchampu".
- Durgavati's Samadhi is in Barha (Barela) which was unveiled by Dwarka Prasad Mishra on June 24, 1964.

## Bhimaji Nayak (1840 -1860)

**Birth** – 1840 West Nimar

**Contribution** – Contribution to tribal conflict in the revolution of 1857

**Death** - Arrest 2 April 1968 in Andaman Jail

Bhima Nayak was born in 1840 in Panchmohli village of Western Nimar state.

- During the conflict between Bhima Nayak and the British in the Revolution of 1857, the British captured Bhima Nayak's old mother, but Bhima Nayak escaped.
- On April 2, 1868, Bhima Nayak was captured by British soldiers in the dense forest of Satpura and taken prisoner. The British caught him and sent him to Andaman jail. Died there.

## Khajya Nayak

**Birth** - 1830 (Nimar)

**Contribution** - Duet with Bhima Nayak in the Revolution of 1857

Colonel Oum arrested him

- Khajya Nayak was born in 1830 in a small village of Nimar.
- One day Khajya Nayak was suddenly made a prisoner in the British government on charges of murder and sentenced to 40 years of imprisonment and during the sentence he was put in jail.
- led the revolution of 1857. Did.
- Colonel Outram treacherously captured Khajya and killed him.

## Tantya Bhil

**Birth** - 1842 (West Nimar)

**Contribution** - Leader in tribal conflict in the revolution of 1857

**Death** -4 December 1889

**Nickname**- Indian Robinhood and Tatiya Mama

- Tantya Bhil was born in 1842 in Viri village of West Nimar.

- Tantya raised her voice against the atrocities of the British but the British sentenced her to 1 year and imprisoned her. After serving his sentence for a year, Tantya continued working as a laborer, yet he was falsely accused of theft.
- The British caught Tantya while he was tying Rakhi to his sister Surekha and hanged him on 4 December 1889 .
- He is also addressed as **Tantiya Mama**
- He was also known as **Indian Robin Hood**.

## Sardar Ganjan Singh Korku

**Birth** - Betul (Korku society).

**Contribution**-Leadership of Ghoda Dongri Nangal Satyagraha of 1930

Contribution in development of tribal consciousness even after independence

- Ganjan Singh Korku was born in a village named Banjaridhal of Betul.
- belonged to Korku tribal society
- On August 22, 1930, he took command of the movement and started Jungle Satyagraha from his village Banjaridhal itself.
- Raku challenged the British hegemony by organizing and leading the Jungle Satyagraha (1930) in Ghoda Dongri ( Bai Tul) on the call of Mahatma Gandhi .
- British in A reward of Rs 500 was announced on
- every forest among the Korku tribals .

## Badal Bhoi

Tribal freedom fighter

\* **Location** – Hindwara

**Contribution** – Koytor Gondo called for independence in 1923

**Collaborators** - Sahra Bhoi, Amaru Bhoi etc.

- Badal Bhoi was a prominent tribal freedom fighter among the tribal leaders of Chhindwara.
- In 1923, nationwide freedom movement leader Badal Bhoi along with his comrades joined the freedom struggle.
- Badal Bhoi organized a meeting in Tamia tehsil in 1923.
- Due to the passionate speech and call of Badal Bhoi, the people of Koytor (Gond) tribe joined the freedom struggle.
- Under his leadership, thousands of tribal warriors took up the front. Among these revolutionaries, along with Badal Bhoi, tribal heroes like Sahra Bhoi, Amru Bhoi, Imrat Bhoi, Lotiya Bhoi, Tapru Bhoi and Jhanka Bhoi made immortal sacrifices while fighting for freedom.
- Shri Badal Bhoi State Tribal Museum, Chhindwara (1954) was established in the name of Badal Bhoi to promote and preserve the diverse tribal ethos of Madhya Pradesh.

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## Pema Falya

International artist of painting by Pichhaura tribe

Imaginative painter

**Location** – Jhabua

**Honors** – Shikhar Samman in 1986

Tulsi Award of Madhya Pradesh in 2017

**Death** – 31 March 2020

- He was an international artist of Pithora painting of Bhili tribe.
- Pema Fatya was a resident of Jhabua district.
- He was an imaginative painter
- Pithora painting is also known as Pithora, which is a special art of Bhil tribe, in which the amazing art of listening to sound and carving it in the form of a figure is demonstrated.

- This art is the only art in India in which listening to specific sound, understanding it and giving picture form through writing etc. are important.
- When G Gopalakrishnan, collector of Jhabua, saw Pema's paintings for the first time, he was impressed by them and sent Pema's painting to the exhibition and it also received two state level awards.
- Pema was awarded the Shikhar Samman by the state government in the year 1986 and in the year 2017, Madhya Pradesh Government Culture Department honored her with the annual Tulsi Samman in the field of tribal folk and traditional arts at the Tribal Museum of Bhopal.
- Death-31 March 2020



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# 2 CHAPTER

## Geographical Knowledge in Ancient India

### Development of Geographical Ideas in Ancient India

The oldest knowledge of the world is found in Indian texts. From the Ramayana and Mahabharata periods to the twelfth century, many Indian scholars have described different geographical aspects in their respective texts. In ancient times, there was no separate subject called geography, but the study related to the surface and celestial bodies was prevalent as a field science.

That is why geography and astronomy (astrology) were considered related to each other. Mathematical geography and astronomical geography were the major aspects of ancient geography. Along with this, regional descriptions of physical and human facts were also included in them.

#### 1. Solar System Knowledge:-

- In many mantras of Rigveda, Yajurveda and Atharva Veda, there are episodes of the relationship between the sun, moon and earth, changes of seasons, day-night, ushah, midday afternoon, etc.
- The descriptions of the earth, space and the Vedas and cosmic texts of twenty-seven constellations like Mrigshira, Krittika, Chitra, Revati etc. can be read.
- Equinox Day is mentioned in many places in the Vedas.
- Vedic astrology was presented on the basis of calculations of solar year, solar month, etc., movements of twenty-seven constellations and calculations of sun constellations.
- From the fifth to the seventh century AD, Indian scholars like Aryabhatta, Varahamihira, Brahmagupta, etc. made a lot of progress in astronomical geography. Among the principles propounded by him, 'Surya Siddhanta' is prominent.
  - A total of 14 chapters and 500 verses have been written in Sanskrit language in Surya Siddhanta.
  - In all the chapters, an attempt has been made to explain astronomy.
  - In this book, the entire solar system, planets, earth, zodiac signs, mathematics etc. have been told.
  - In the Surya Siddhanta, the origin and cataclysm of the universe, the motion and direction of the planets, time, distance and diameter, the occurrence and estimation of eclipses, zodiac signs and their effects, the Surya Siddhanta Panchang, trigonometry, gravitational force, the lines and poles of the

earth etc. are detailed.

- The origin of the earth is also highlighted in ancient Indian texts. According to the mantras of the Rig Veda, the Aryans imagined the molten form of the earth.
- There are episodes of earthquakes and volcanoes in Ramayana-Mahabharata. The Mahabharata discusses the rise of the volcanic mountain- 'The earth rose with its seven continents, along which mountains, rivers, forests, etc. also rose high. '
- In the Puranas, the origin of continents and mountains is imagined- 'The earth floats in the ocean like a great boat. Brahma leveled the earth and divided it into seven islands. This suggests an ideology equivalent to the current concept of the Continental Drift (continents made of Sial float on Sima).
- The age of the earth has also been imagined in ancient Indian texts.
  - 'Manusmriti' mentions that the earth has so far completed 1,96,91,03,000 years. Contemporary scholars also estimate the age of the earth to be about two billion.
- Solar eclipse and lunar eclipse are also discussed in Ramayana. The reasons for this are Rahu-Ketu.
- Other planets of the solar system – Mars, Mercury, Jupiter, Venus, Saturn, etc. are also discussed at many places.

#### 2. Atmospheric Knowledge:-

- According to the Rigveda, the Aryans had good knowledge about the atmosphere.
  - There is a mention of only five seasons in Rigveda, but in other Vedas, Upanishads, Ramayana, Mahabharata, Puranas and other ancient texts, the description of 6 seasons is found. These 6 seasons are summer, rain, hemant, autumn, shishir, and spring.
  - These texts describe in detail the atmospheric conditions of each season and their effects on vegetation, agriculture and human life.
- The Puranas, especially the Vayu Purana, Shiva Purana, Skanda Purana and Bhagavata Purana, describe in detail the amount of sunshine and rainfall, types of clouds, summer dryness, rainy rains and storms, winter snowfall and frostfall, and pleasant seasons of autumn and spring. Spring season has been called 'Rituraj'.
- Clouds are described in Valmiki's Ramayana. It discusses three types of clouds and seven types of wind.
- Mahakavi Kalidas, in his famous work 'Meghdoot', has described the causes of the arrival of the rainy

season, ten types of clouds and their characteristics, the amount of rainfall, etc.

○ He has also described the beautiful seasons at many places in a book called 'Raghuvansh'.

- In the twelfth century, Bhaskaracharya gave mathematical measurements of the layers of the atmosphere in his astrological book 'Siddhanta Shiromani'.
- Kautilya's Arthashastra explains the distribution of rainfall in different regions which is compatible with today's distribution.
  - Establishing the relationship between agriculture and rainfall, Kautilya has written that there are some clouds which rain for seven days respectively, 80 which receive less rainfall, 60 which make the fields ploughable. Kautilya also designed a rain gauge.
- Bhuvankosa explains, among other things, climatology and meteorology, and the Buddhists present a very good knowledge of ancient geography.

### 3. Hydrological knowledge:-

- The oceans are described in the Vedic mantras. In Samaveda and Atharvaveda, the number of oceans is stated to be 4, but in other Vedas their number is stated to be 7.
- In the Samaveda, there is a description of the rise of water in the oceans, from which the tides can be imagined.
- In Ramayana, tides are mentioned in many places, the reason for this is said to be the moon.
- In Kautilya's Arthashastra, there is a discussion of

coral, pearls found from the ocean floor and their deposits are also described.

### 4. Lithospheric Knowledge:-

- Indian scholars of ancient times had accurate knowledge of topography, morphology, flora, fauna, natural resources, agriculture and other socio-economic activities of India and surrounding countries.
- Ramayana lists 'mountains, rivers', plateaus and important places.
- The epic of Mahabharata can serve as an encyclopedia of geographical knowledge.

#### (i) Physical geography-

##### ○ Continent-

- The Puranas describe the Saptadwip (seven plots). Each island or land segment represents the vast mass of a continent or a continent. These seven plots (islands) are spread around Mount Meru like the petals of the lotus flower. These seven islands are-
  - ✓ Jambudwip,
  - ✓ Plaksh Island,
  - ✓ Shalmali Island,
  - ✓ Kush Island,
  - ✓ Crounch Island,
  - ✓ Saka Island
  - ✓ Pushkar Island
- These islands are named after their respective principal trees (Jambu, Plaksh and Shalmali), grass (Kush) and mountains (Kraunch and Pushkar).



### Mythological Seven Islands

- Jambu Island mentioned in the Puranas has been described as the most prominent and largest island which encompasses the Eurasian landmass.

- There are 9 subdivisions (years) of Jambu Dweep- Ilavrita Varsha, Ketumal Varsha, Bhadrashva Varsha, Bharatvarsha, Kimpurusha Varsha, Hari Varsha, Ramyaka

Varsha, Hiranyamaya Varsha and Uttara Kuru Year.

✓ These years are separated from each other by mountain ranges.

- In the middle of the Jambu Dweep, the best of the mountains is Meru (Sumer), which is currently known as Pamir. Large mountain ranges stretch from here towards different directions.

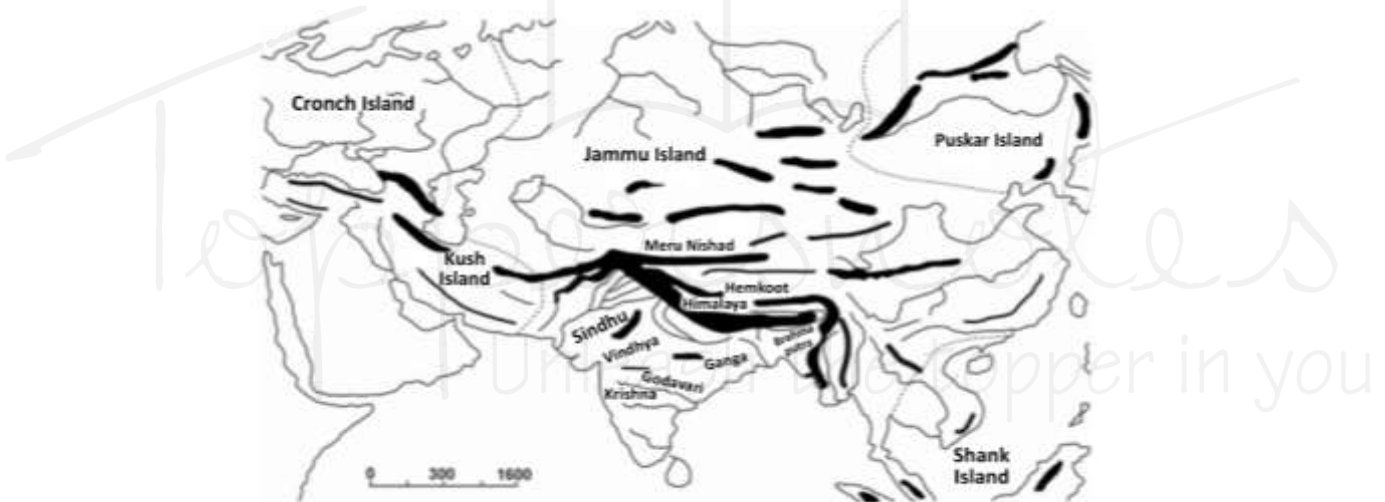
✓ The higher region adjacent to Meru is called Elavrta Varsha and the land lying west of Meru is called Ketumal Varsha.

✓ To the south of Meru are Bharatvarsha, to the east are Kimpurusha Varsha (Tibet) and Bhadrashva Varsha (Mongolia and China), to the north are Ramyak Varsha (Central Asia), Hiranmaya Varsha (Northern Sinkiang) and North Kuru (Siberia).

○ **Mountain-**

- According to the Puranas, all the mountain ranges of the world go around the Pamir (Meru). Mountains are divided into five types:

- ✓ Central Mountain (Meru)
- ✓ Vishakambha Mountains (which extend around Meru)
- ✓ Varsha Mountains (main mountain ranges of different countries)
- ✓ Maryada Parvat (mountain on the border)
- ✓ Kesarachal Mountains (Intercontinental)
- The mountains of India are described in detail in the Puranas. Among them, Mahendra (Eastern Ghats), Malay (southern part of Western Ghats), Sahya (northern part of Western Ghats), Riksha (Middle Vindhya), etc. are prominent.
- The Varsha described in the Rigveda extended from present-day Afghanistan in the west to Ganga-Yamuna in the east and from Meru (Pamir) in the north to Kutch in the south.
- ✓ It mentions the Sharanyawat (Kashmir), Susoma (west of the Jhelum River), Yujwat (Gandhara) and the Sulaiman and Saline ranges (Afghanistan).



**Mountains and Rivers of the Legendary Jambu Island**

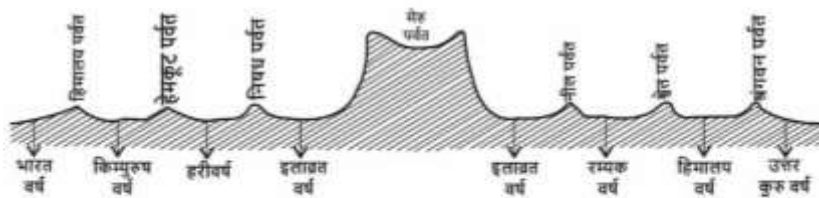
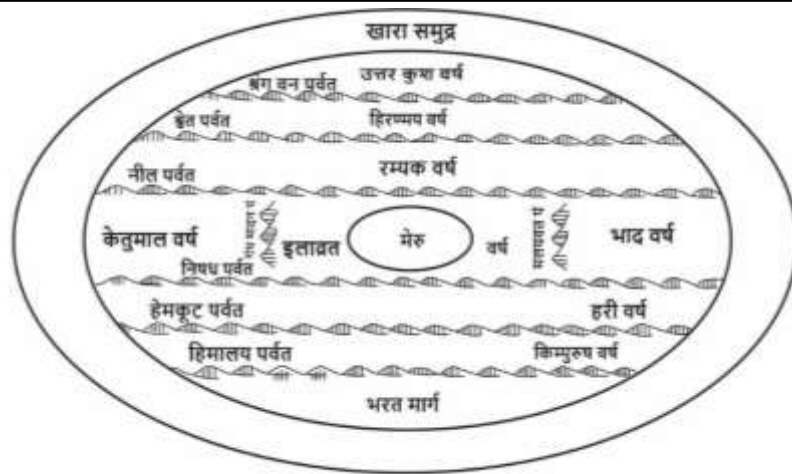
- The details of the major mountains mentioned in the Puranas are as follows:

✓ **Mount Meru** – It is said in the Vishnu Purana that Jambudwip is located in the center of all the islands and in the middle of it is located the golden mountain of Meru whose shape is like a lotus.

✓ **Himwan** – This is the ancient name of the Himalayas.

✓ **Malyavan** – Located in the west of Mount Meru, this mountain is called Malyavan in Vishnu Purana and Hans Mountain in Vayu Purana.

- ✓ **Nishadh** – The mythological name of the Hindu Kush Mountain is Nishadh, which had three major peaks and Brahma, Vishnu and Shiva resided on them.
- ✓ **Gandhamadana** – This is a range of Mount Meru which has been called 'Merumdar' in the Bhagavata Purana.
- ✓ **Hemkoot** – The mythological name of the present Kailash Mountain is Hemkoot.
- ✓ **Neel Parvat** – Located in South India, this mountain is known by the names of Nilgiri, Malayagiri, Malayachal etc.



## गौराणिक जम्बूद्वीप का आरेखीय प्रदर्शन ( एस. एम. अली के अनुसार)

### ○ Rivers-

- There are detailed descriptions of rivers in the Vedas.

- ✓ The Vedas and Upanishads describe the rivers of Afghanistan, Punjab and the Ganga-Yamuna region.
- ✓ The 75th Sukta of the 10th Mandala of the Rigveda is called 'Nadi Sukta', in which rivers are described in all the mantras.

☞ The fifth mantra of the Rigveda's Nadi Sukta means- "Ganga, Yamuna, Saraswati, Shutudri (Sutlej), Parusni (Ravi), Ashkin (Chenab), Maruddha, Vitasta (Jhelum), Armikia (Vyas) etc. rivers are associated with Uttam Soma." "

- ✓ In the Vedas, the region inhabited by the Aryans has been called **Sapta Saindhava** (country of seven rivers).

☞ It includes the Indus and its tributaries: the Sutlej, the Beas, the Ravi, the Chenab, the Jhelum, the Drishadvati (Ghaghghar) and the Saraswati.

- The last two rivers dried up and became invisible in later ages.

- ✓ In the Upanishads and Puranas, the characteristics of rivers like Indus, Sutlej, Rabi, Chenab, Beas, Jhelum,

Ganga, Yamuna, Saryu, Gandak, Kosi, Lohit (Brahmaputra), Son, Chambal etc. of northern India and Mahanadi, Narmada, Tapti, Godavari, Krishna, Tungabhadra, Kaveri etc. of southern India and their catchment areas have been described.

- According to the Puranas, rivers flow in the directions of Meru (Pamir).

- ✓ River Ganga towards the south
- ✓ Eye River on the west side
- ✓ Sita River on the east
- ✓ Bhadrason River on the north

- There is a detailed description of Indian rivers in the Markandeya Purana.

- ✓ There is a detailed description of the origin of Ganga.
- ✓ Among other rivers, Yamuna, Godavari, Narmada, Indus, Kaveri, Krishna and Tamraparni have special descriptions.

### ○ Vegetation-

- Different types of vegetation are described in the Markandeya Purana. There is also a description of the crops of the time.

- There is a reference to the milk tree (rubber) in Shiva Purana.

### (ii) Knowledge of Human Geography-

- The Rigveda describes the residence of five types of people on earth. These include

Asuras and Das.

- The Vajasneyi Samhita mentions four varnas: Brahmandas, Kshatriyas, Vaishyas and Shudras.
- There are descriptions of many Indian primitive castes in Ramayana. Among them, Rakshasa, Vanara, Nishad, Kinnar, Savar, Gandharva, Naga, Asur, Dev, etc. castes are the main ones. Among the foreign castes, the Sakas and the Yavanas are called the Gaura varna castes. The color of the demons is said to be black and the appearance is terrifying.
- In the Mahabharata too, there are descriptions of many castes, their appearance, marriage, family relations etc.
- In Manu's Dharma Shastra, eight types of marriages have been described: Brahma, Daiva, Arsha, Prajapatya, Asur, Gandarva, Paishacha and Rakshasa. Six of these had social support.
- Kautilya has also discussed the system of marriage and remarriage of women.

### (iii) Knowledge of cultural geography.

- **Agriculture-**
  - The Atharvaveda describes what precautions are required in agriculture.
  - The Rigveda commands to plough the field.
  - Patanjali's Mahabhashya describes methods of sowing crops, agricultural areas, storage of seeds and grains.
    - ✓ Panini Pranjali and Manu have also classified the land.
      - ☞ **Wasteland** – land unusable by flood affected land
      - ☞ **Transit** - Land used for pastoralism
      - ☞ **Silya** - Ploughable Land
    - ✓ Patanjali has also described the regional distribution of crops.
    - ✓ The means of irrigation are also highlighted. Wells and ponds were the main means of irrigation.
- **Endeavour-**
  - Various industries in ancient India were also in a fairly developed stage.
    - ✓ Industries related to barn, cloth making, coins, jewellery etc. are described in the Vedas.
    - ✓ Building construction, wood craft, clay craft, iron craft were also at the peak of their progress at this time.
      - ☞ The rustless iron pillar installed

near Qutub Minar in Delhi, which is said to have been built in the Gupta period, is a testimony to the efficiency of Indian iron craftsmen.

### ○ **Transport-**

- Transport routes were also in good condition in ancient India.
- The Brahmanda Purana describes ten types of roads:
  - ✓ Directions
  - ✓ Village Route
  - ✓ Border Routes
  - ✓ Raj Path
  - ✓ Shakha Rathya
  - ✓ Rathoparthy
  - ✓ Uparathy
  - ✓ Janghath
  - ✓ Grihantpath
  - ✓ Dhriti Marg

### ○ **Trade-**

- Foreign trade is also an Indian specialty since ancient times.
- Kamboja horses are mentioned in Vishnu Purana and Kambals of Nepal are mentioned in Matsya Purana.

### ○ **Dwelling-**

- Domicile knowledge is also derived from ancient Indian literature.
- The excavations at Mohenjodaro and Harappa introduce ancient Indian town planning and building construction.
- Human settlements are classified in 'Mayamatam'.

### (iv) Knowledge about political and regional geography-

- There are descriptions of Indian district territories in Vedic literature. Among them were Kashi, Kosala, Magadha, Panchal, Vidarbha, Saurashtra and Andhra were prominent.

## Geographers of Ancient India

### Kautilya

- Kautilya, also known as Chanakya, was the guru and prime minister of Chandragupta Maurya (reigned 322-298 BCE), the founder of the Maurya Empire in the 4th century BCE.
- Kautilya wrote a famous treatise called 'Arthashastra' in which the geographical discussion of the trade and political relations of northern and southern India has been given.
- This book describes the agricultural system, industrial progress, trade and trade routes etc. of ancient India.
- Important information related to political geography is obtained in 'Arthashastra'. In this, geographical and

political description of many cities like Pataliputra, Ujjain, Taxila etc. has been given.

## Aryabhata

- Aryabhata, the most prominent astronomer of ancient India, was born in Pataliputra in the fourth century.
- Arya Bhatta described the shape of the earth as spherical and calculated the diameter and circumference of the earth.
- He put the circumference of the Earth at about 24,835 miles, which is almost equal to the current estimate (24,901 miles).
- Aryabhata explained the reason for solar eclipse and lunar eclipse to the changing positions between the sun, moon and earth and propounded that a lunar eclipse is visible when the shadow of the earth falls on the moon on the full moon night.
- Aryabhata's major work is 'Arya Bhattiyam'. He was the first to discover that the sun is stationary and the earth rotates on its axis.

## Varahamihira

- Varahamihira was a contemporary of Chandragupta Vikramaditya (reigned 375-415 AD) and was the second famous astronomer of the Gupta period
- He wrote a book called 'Panchadantiva' in which five methods of astronomy have been explained. He was familiar with the method of finding the latitude of a point on the earth.
- He made Indians aware of the use and importance of decimal in mathematics. 'Brihajataka', 'Brihatsamhita' and 'Laghujataka' are other major texts of Varahamihira.
- Varahamihira proved that the moon revolves around the earth and the earth revolves around the sun.
- He also used many Greek works to study planetary movements and other astronomical problems.

## Brahma Gupta

- The third major astronomer of the Gupta period, Brahmagupta was a contemporary of Varahamihira.
- He wrote books called 'Brahmasiddhanta' and 'Khanda Bhojan' in which facts and principles related to astronomical geography are given.
- Brahma Gupta has also described some instruments rotating with oil, water and mercury.
- Brahma Gupta had described the diameter of the earth as 1581 yojanas (7905 miles), which is almost the

same as the actual diameter of the earth (7925 miles).

## Kalidasa

- The great poet of Sanskrit literature, Kalidasa is considered a contemporary of Chandragupta Vikramaditya.
- There was a congregation of nine scholars in the court of Chandragupta Vikramaditya, which has been called 'Navratna'. Kalidasa was the foremost among those Navrats.
- Kalidasa has composed 7 texts which are as follows - Raghuvamsa, Kumarasambhava, Meghadoot, Ritusanhara, Malavikagnimitram Vikramorvasiyam and Abhijnana Shakuntalam In which along with nature depictions, the details of places and routes are found.
- The season is described in the massacre. The geographical description of the cloud path is found in Meghdoot.

## Dhanvantari

- Dhanvantari was a prominent Ayurvedacharya and a renowned scholar of medical science.
- He was one of the nine jewels of Chandragupta Vikramaditya's Rajya Sabha.
- He has described the characteristics of different types of flora and their usefulness for the purpose of medicine.

## Bhaskaracharya

- In the twelfth century there was a great mathematician and astronomer known as Bhaskaracharya
- He wrote two famous texts named 'Siddhanta Shiromani' and 'Karankutuhah'.
- 'Siddhanta Shiromani' gives information related to arithmetic, algebra, geometry and astrology.
- Some of the major explorations are described in 'Karankutuhah'.
- Bhaskaracharya had told that the earth is round and there is gravitational force in it, due to which it attracts objects towards it.
- He divided the earth into 360° and used them to determine the location of cities by latitude and longitude.
- Bhaskaracharya had done all the calculations considering the earth as round.

# 3 CHAPTER

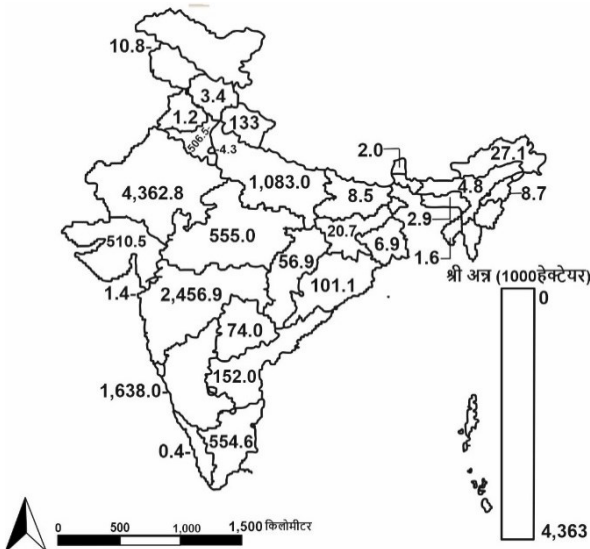
## Shree Anna (Millets)

- Shree Anna (Millets) is a nutritionally rich, drought tolerant crop grown mostly in the arid and semi-arid regions of India.
- It is a type of grass with small seeds.
- It is an important source of food and animal fodder for farmers and plays an important role in the ecology and economic security of India.
- Shree Anna (Millets) is also known as "coarse grain" or "poor man's grain".
- Major types of grains include jowar, bajra, and ragi/mandua, and minor types include kangani/kakun, china, kodo, sava/sawa/jhangora, kutki, and two pseudo-grains – kuttu and amaranth.
- India is one of the top 5 exporters of grains (millets) in the world.

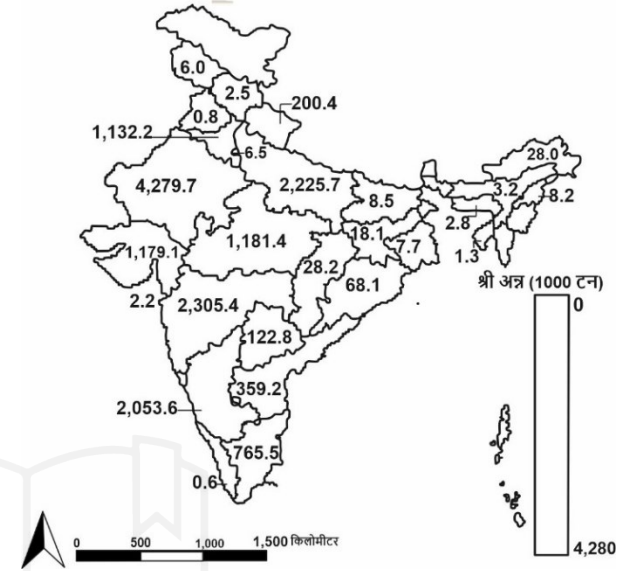
### Area, Production and Yield Trends

- Despite the immense benefits of Sri Anna, there has been a slow but steady shift in the dietary preferences of Indians towards rice and wheat over the last six decades
- Grains were marginalized after the Green Revolution, leading to emphasis on large-scale cultivation of rice and wheat using high-yielding seed varieties.
- As a result, the share of grain in Indian food products has declined from 20% in 1965-1970 to 6% only, with the area under grain cultivation declining by 33.9% between agricultural year 1951 and 2022.

**Figure:** State-wise area under grain cultivation in the agricultural year 2022 (thousand hectares)



**Figure:** State-wise grain production (thousand tonnes) in the agricultural year 2022.



### Area & Production

- India is the largest producer of grains in the world with 44% share, followed by China (~9%) and Niger (~7%)
- Grains in India are predominantly kharif crops, grown mostly under rain-fed conditions, and have lower demands on water and agricultural inputs than other major crops.
- Although the area under grain production declined by one-third between agricultural year 1951 and 2022, production has increased slightly (CAGR 1.7%) as a result of improvement in yield due to the adoption of better agricultural practices [at Compound Annual Growth Rate (CAGR) 0.2%].

**Figure:** Highest and lowest producing states in terms of grain yield in agricultural year 2022 (kg per hectare)

	Shree Anna	Jowar	Bajra
Highest	Andhra Pradesh: 2,363	Andhra Pradesh: 3,166	Madhya Pradesh: 2,533
Second Highest	Gujarat: 2,310	Madhya Pradesh: 1,941	Gujarat: 2,368
Lowest	Chhattisgarh: 495	Haryana: 527	Maharashtra: 903

Figure: State-wise yield difference in grain production (%)

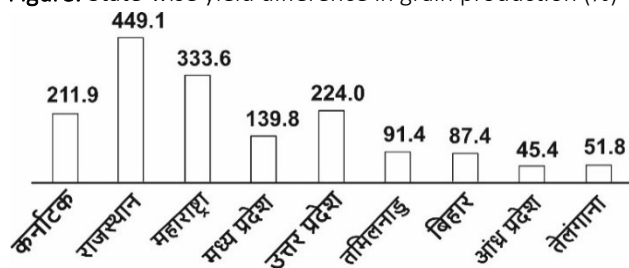
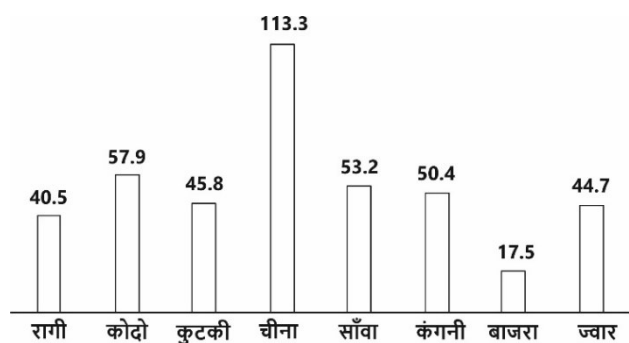


Figure: Yield difference (%) in the production of grain according to the type of grain.



#### What are millets and how are they beneficial?

- Millets are part of a group of small-grained cereal crops used as both food and fodder.
- Experts believe them to be one of the oldest foods known to humans and the first among cereals to be cultivated for domestic purposes. There is even evidence of the consumption of millet in the Indus Valley civilisation.
- Millets were earlier referred to as “coarse cereals” or “cereals of the poor”.
- The Union government renamed these as “nutri-cereals” owing to their high nutritional value.
- Millets offer more than one nutrient to the diet and are considered more nutritious than rice and wheat.
- Millets are rich in iron, dietary fibre, calcium, magnesium, potassium, zinc and vitamins such as thiamine, riboflavin, folic acid, and niacin.
- These grains contain 7-12% protein, 2-5% fat, 65-75% carbohydrates and 15-20% dietary fibre.
- Millets are also gluten-free.
- Growing millets is also beneficial for farmers since this rain-fed crop requires less fertile land and water, growing fairly well on dry land.
- They have a short growing season as compared to other major crops and can be grown in intercropping or under mixed cropping with pulses and oil seeds.
- With a low carbon and water footprint, millet crops can be cultivated without extensive use of fertilisers and pesticides and can survive extreme weather.
- Presently, millets are grown in more than 130 countries and consumed as a traditional food by over half a billion people across Asia and Africa.

## Major millets in India

### Jowar

- It is also known as sorghum, serves as the primary food crop cultivated in semi-arid regions of central and southern India.
- It exhibits low dependence on irrigation, particularly in rainfed conditions south of the Vindhyas, leading to lower yields in this area. Southern states sow Jowar during both Kharif and Rabi seasons, whereas in northern states, it predominantly serves as a fodder crop during the Kharif season.
- Optimal soils for Jowar cultivation include clayey deep regur and alluvium, and it can thrive on gentle slopes up to an elevation of 1,200 meters. However, it does not fare well in regions with rainfall exceeding 100 cm.

### Bajra

- Also called as pearl millet, ranks as the second most crucial millet, fulfilling both food and fodder needs in arid regions of the country.
- This rainfed Kharif crop is resilient in the dry and warm north-western and western parts, demonstrating resistance to frequent dry spells and drought.
- Bajra can be successfully cultivated in poor light sandy soils, black and red soils, requiring an annual rainfall of 40-50 cm, with an upper limit of 100 cm. It is commonly sown either as a pure crop or mixed with cotton, jowar, and ragi.
- It is also known as finger millet, is primarily cultivated in the drier regions of south India, specifically in Karnataka, as a rainfed Kharif crop.
- It thrives in warm climates with 50-100 cm of rainfall. Ragi can be grown in various soils, including red, light black, sandy, and well-drained alluvial loams.
- Karnataka holds the position of the largest producer, with Uttarakhand and Tamil Nadu being other significant contributors to ragi production.

## Millet production and food security

- India is the largest producer of millet in the world with a share of 41% in 2020, as per FAO.
- Nine types are grown as kharif crops in over 20 States in the country.
- Major millets include finger millet (ragi or mandua), pearl millet (bajra) and sorghum (jowar) and minor millets include foxtail millet (kangani or kakun), barnyard millet (sawa or sanwa, jhangora), little millet (kutki), kodo millet (kodon), proso millet (cheena) and browntop millet.

- Rajasthan, Karnataka, Maharashtra and Andhra Pradesh are leading producers.
- Though productivity has increased over the years, the area under cultivation of millets declined, especially after the Green Revolution, with a policy thrust on other grains.
- This gradually impacted the expansion of millets production in the country.
- In 2019, India accounted for 80% of the total production of these grains in Asia and 20% globally — around 170 lakh tonnes from 138 lakh hectares of land
  - providing yield per hectare greater than the global average, FAO data shows.
- India is also among the top five exporters— India exported millets worth \$64.28 million in 2021-22 and \$59.75 million in 2020-21, according to the Agricultural and Processed Food Products Export Development Authority.
- Despite offering high benefits to both the consumer and producer, millets are not very popular mainly due to a lack of awareness.
- But at a time when the world is battling a pandemic and climate change, and faces a significant challenge of food security, the nutri-cereal can play a significant role if marketed well, focusing on their high nutritional value, low input and maintenance requirements and climate-resilient nature.
- Problems of unavailability of good quality seeds, restricted cultivation, the low shelf life of grains, lack of research, absence of machinery for processing and market gaps also need to be addressed to tap into their true potential to increase farmers' income, generate livelihoods and ensure food and nutritional security.

#### **The global push**

- An ongoing war between Russia and Ukraine, climate change, and trade restrictions among other factors have jeopardized global food security.
- As per the latest State of Food Security and Nutrition in the World report, the world is moving backwards in its efforts to end hunger, food insecurity, and malnutrition.
- Faced with the growing challenge of food and nutritional security, the United Nations General Assembly (UNGA) declared 2023 the International Year of Millets to spread awareness about millets — a more affordable, sustainable, and nutritious alternative. The resolution was unanimously adopted by the UNGA in March 2021 after India proposed the initiative.
- The UN's Food and Agriculture Organisation (FAO) has termed the initiative as an opportunity to "raise

awareness and direct policy attention to the nutritional benefits of millets and their suitability for cultivation".

- Last month, the FAO launched the IYM in Italy and highlighted that the promotion of millets aligns with Sustainable Development Goals (SDGs) — zero hunger, good health and well-being, decent work and economic growth, responsible consumption and production, climate action and life on land.
- Millets are incredible ancestral crops with high nutritional value. Millets can play an important role and contribute to our collective efforts to empower smallholder farmers, achieve sustainable development, eliminate hunger, adapt to climate change, promote biodiversity, and transform agri-food systems

#### **India's efforts to promote millet**

- The Union government promoted millets under the Initiative for Nutritional Security through Intensive Millets Promotion (INSIMP), as a sub-scheme of Rashtriya Krishi Vikas Yojana (RKVY) between 2011 and 2014.
- In the following years, NITI Aayog worked on a framework to introduce millets under the public distribution system for "nutritional support".
- The Union government declared 2018 as the 'national year of millets' to trigger an increase in demand. In the same year, these grains were officially rebranded as a nutri-cereal. The programme under INSIMP was merged with the National Food Security Mission (NFSM) as NFSM-Coarse Cereals and implemented in 14 States.
- Several States led separate missions to promote millets. In 2021, the Centre approved the Pradhan Mantri Poshan Shakti Nirman (PM POSHAN), earlier known as the mid-day meal scheme, in government and government-aided schools and advised State governments to include millets in the midday meal menu to enhance the nutritional outcome.
- India's efforts to promote the consumption and production of millet got a boost when the UNGA accepted the country's proposal and dedicated 2023 to spreading awareness about these grains.
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