Geography Class 40

16th December, 2023 at 9:00 AM

THE CLASS STARTED WITH A BRIEF OVERVIEW OF THE PREVIOUS TOPICS (09:17 AM)

PROBLEMS ASSOCIATED WITH EXTRACTION OF OCEANIC RESOURCES (09:20 AM)

- **Distribution**:
- The resources are **'not distributed uniformly'**, for example, petroleum and natural gas resources in the Persian Gulf, Gulf of Mexico, etc.
- Polymetallic nodules are 'widely distributed' on the ocean floor making them difficult to extract, It is concentrated only in a few regions.
- For Example, Clarion Clipperton zone, Peru basin, near Cook Island and the central Indian Ocean.
- **Note:** The **'International Seabed Authority'** is the authority that gives permission for the extraction of resources like polymetallic nodules from the open sea.
- **Technological issues:**
- The current 'development of technology is not enough'
- For Example, Thorium extraction, OTEC, Wave energy, and production of fresh water from marine water.
- **Economical issues:**
- The cost of extraction of resources is too high.
- **Environmental issues:**
- 'Bottom trawling' affects the ocean seafloor ecosystem.
- Increased sedimentation of plastic. For Example, the Great Pacific Garbage Patch.
- Physical Barriers:

  -> Oceans are too dip, too dark, too cold and have very high pressure and within ocean surface there are not uniform surface as mountains, oceans, ridges, volcanoes etc. are present.

along eastern pacific

The Cook Islands is a group of 15 small islands located in the South Pacific Ocean.

Ocean Thermal Energy Conversion

(production of fresh water from marine water can be done by reverse osmosis and electrodialysis process but they are costly since they require electricity but this type of instrument is installed in Lakshadweep.)

extraction of bottom material through net for fishing

FISH RESOURCE (09:47 AM)

- Fish resources are obtained through both inland fishing and marine fishing.
- Marine fishing is done mainly near the continental shelf.
- **Major Fishing Areas:**
- North West Atlantic Ocean. (Grand Bank)
- North East Atlantic Ocean. (Dogger Bank)
- North West Pacific Ocean.
- Entire west coast of North America.
- Peru, Chile coast.
- Along South East Asian Islands.

(also draw world map to show these areas)

- **Conditions favouring the growth of Fishing activities:**
- Wide continental shelf enabling wide sunlight and growth of plankton.
- The merging of warm and cold currents.
- Upwelling zones in the ocean.
- Presence of the coral reefs.
- **Factors responsible for the growth of the fishing industry:**
- Higher investment in the fishing industry.

In some regions temperature is moderate and reduces cost of fish preservation.

- The demand for fish is high where agriculture development is less. for example, Japan.
- The broken coast or **indented coast** helps in developing the fishing industry.

wherever mountains near the coast then coast will be broken for ex: western ghats, rockies

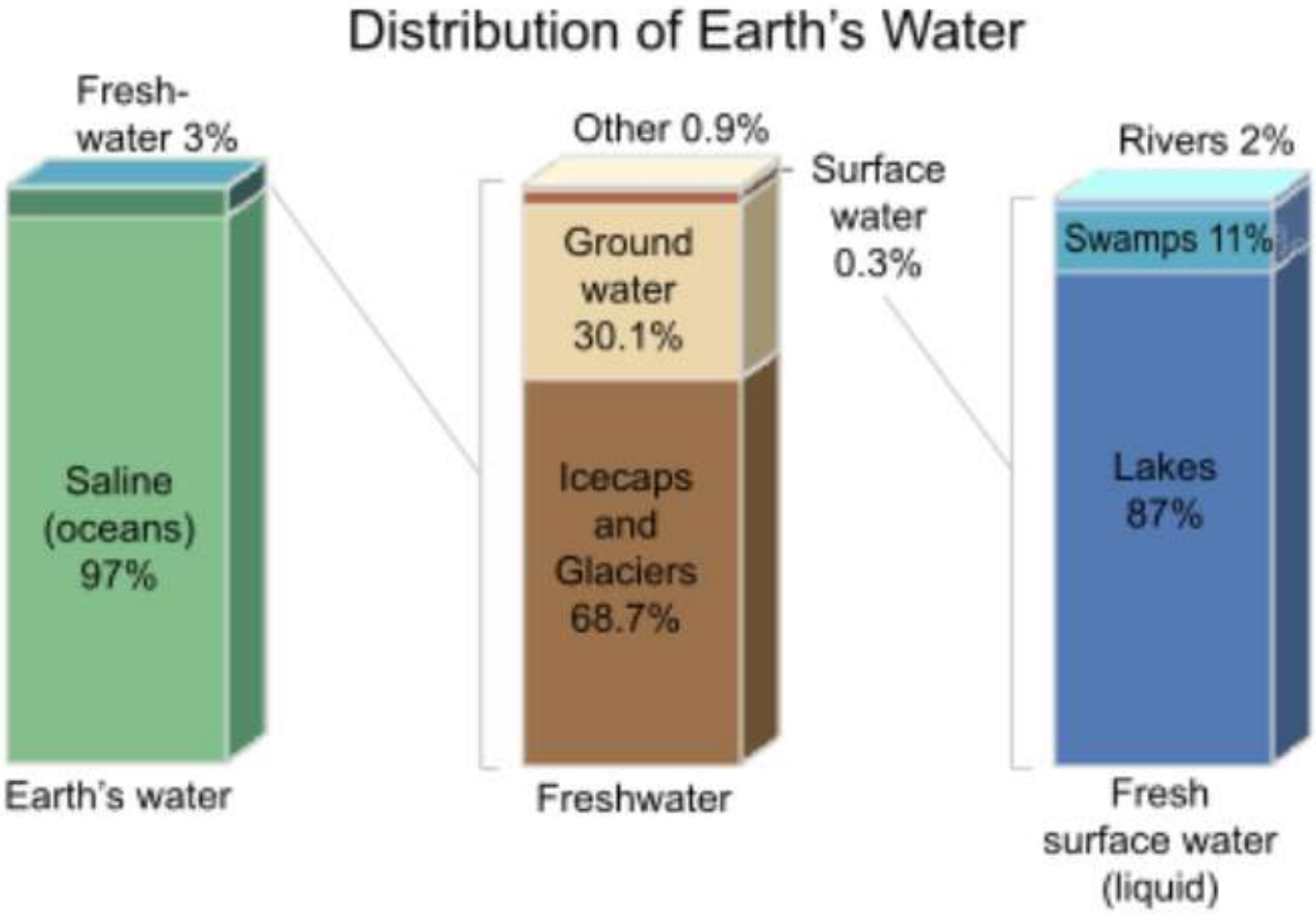
production and boat

- Presence of Forest resources for wood making.
- **Reasons for non-development of fishing in the tropical regions:**
- High agricultural development led to less demand for fish.
- Preservation is difficult because of the high cost of refrigeration and associated infrastructure.
- Presence of Tropical cyclones.
- Less infrastructure and development as these are less developed countries.
- Growth of plankton will not be great due to high temperature.

- **Indian Fishing Sector:**
- India has a wide coastline of around 7,500 km.
- **Problems associated with India's fishing sector:**
- Less demand for fish exists due to cultural and other factors, compounded by a substantial vegetarian population
- High Temperature.
- Better agriculture development in the country.
- Low infrastructure development of Cold storage, supply chain, etc.
- Unorganized and informal fishing sector.
- Indian fishermen use traditional methods of extraction resulting in inefficiency and lower profits
- In India, fishing is a caste-based economic activity and it led to less development in the sector.
- Emergence of cyclones, Monsoons, strong winds, etc also affects the fishing sector.
- India's territorial issues with neighbouring countries like Pakistan are also crucial for this sector.
- **Initiative taken in the fishing sector by the Indian Government:**
- **Blue Revolution:**
- It was launched during the 5^{th} and 6^{th} FYP, It was launched in two phases.
- **During phase -I:** (1980-1991)
- Government-established **FFDA (Fishing Farming Development Agency)**
- It was developed to provide better quality seeds, etc.
- A program was started which is called ~~**FSDA**~~ FSDP **(Fish Seed Development Programme)**
- The output from Inland fishing was doubled.

- **During Phase II:** (1991 - 2005)
- The government established the FFDA all over India.
- Both Inland and Marine fishing were targeted.
- The focus areas were Coastal states like Andhra Pradesh, West Bengal, etc.
- The **National Fisheries Development Board** was established in 2006.
- It acts as a Nodal agency for all the fishing activities in India.
- **Mission Neel Kranti**, started in 2015.
- Integrated development and management of the fisheries were brought with a target year between 2015 to 2020.
- It aimed at enhancing the economic prosperity of the country by augmenting fisheries, and fish farmers and contributing towards food and nutritional security.
- **PM Matsya Sampada Yojana** announced in the 2019 Budget.
- It aims to promote aquaculture, benefit all fishermen with social security, and expand the coverage to accidental insurance.

FRESHWATER RESOURCES (10:38 AM)



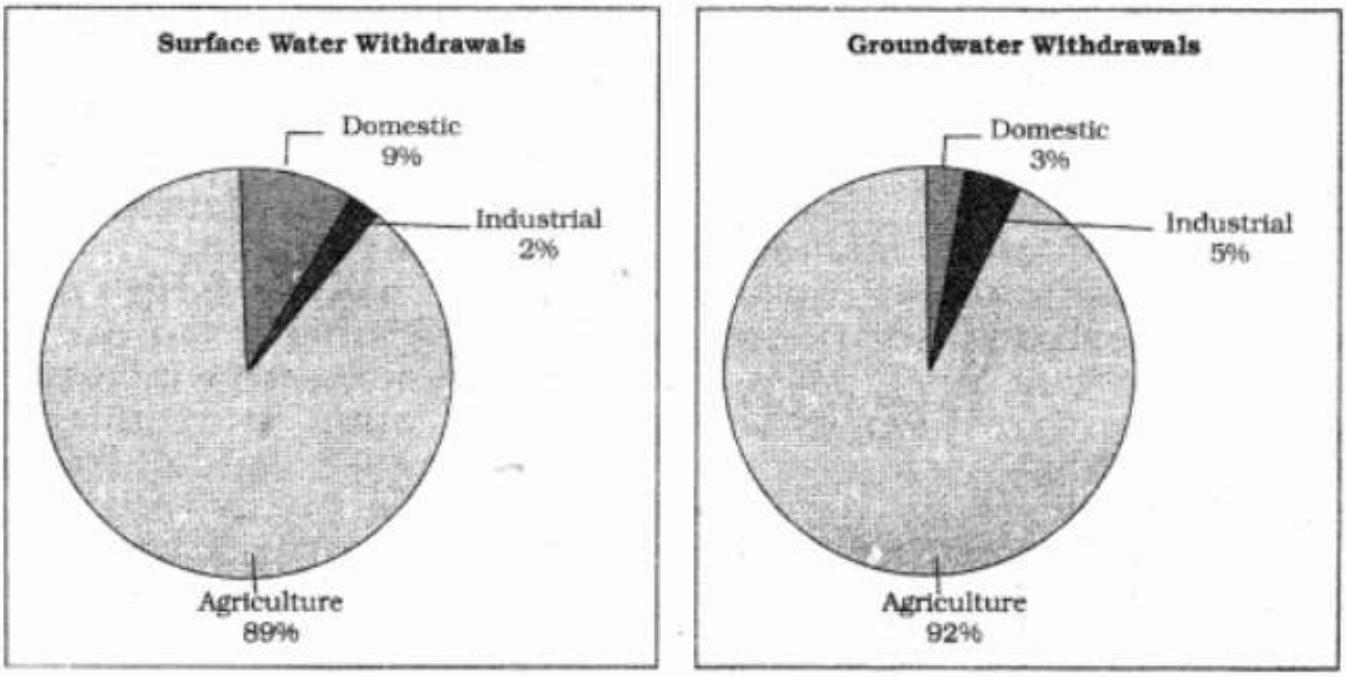
The availability of ground water is not uniform for ex: in hard and plateau rocks of peninsular region has low capability to percolate and aquifer system is also not so strong whereas sedimentary part of Himalayan region has high capability to percolate water and their aquifer system is also strong.

- **Problems of Indian Water resources:**
- The **'nature of the Indian monsoon'** is short duration and non-uniform across the region and irregular in timing.
- The difference between the Himalayan and peninsular drainage systems.
- **'Influence of topography'** like rainshadow region of western ghats, coromandel coast, the orientation of Aravalis, El Nino, La Nina, etc.

(Himalayan rivers are young and abundant in water and peninsular region with old and deficient in water.)

Management Related Issues:-

- Increase in population, **'water-intensive agriculture'** such as flood irrigation, growing sugarcane in Maharashtra.
- **'Excessive extraction of groundwater'**, etc.
- **'Water pollution'** from Industry and agriculture.
- Unplanned urbanization. for ex: plateau region of Bangalore where natural lakes were there was converted to residential areas, Chennai, Pune, Hyderabad etc.
- Due to Rapid urbanization, it becomes unplanned management of the resources.



- Unscientific management and Changing natural vegetation patterns.
- Deforestation and overgrazing.
- Increased soil erosion and land degradation.
- Water sharing issues between states and countries.
- Global warming and climate change impact water availability.

(due to this: faster melting of glacier, flash flood, flash drought.)

Maharashtra grows sugarcane in rainshadow region and extract ground water which causes scarcity of water.

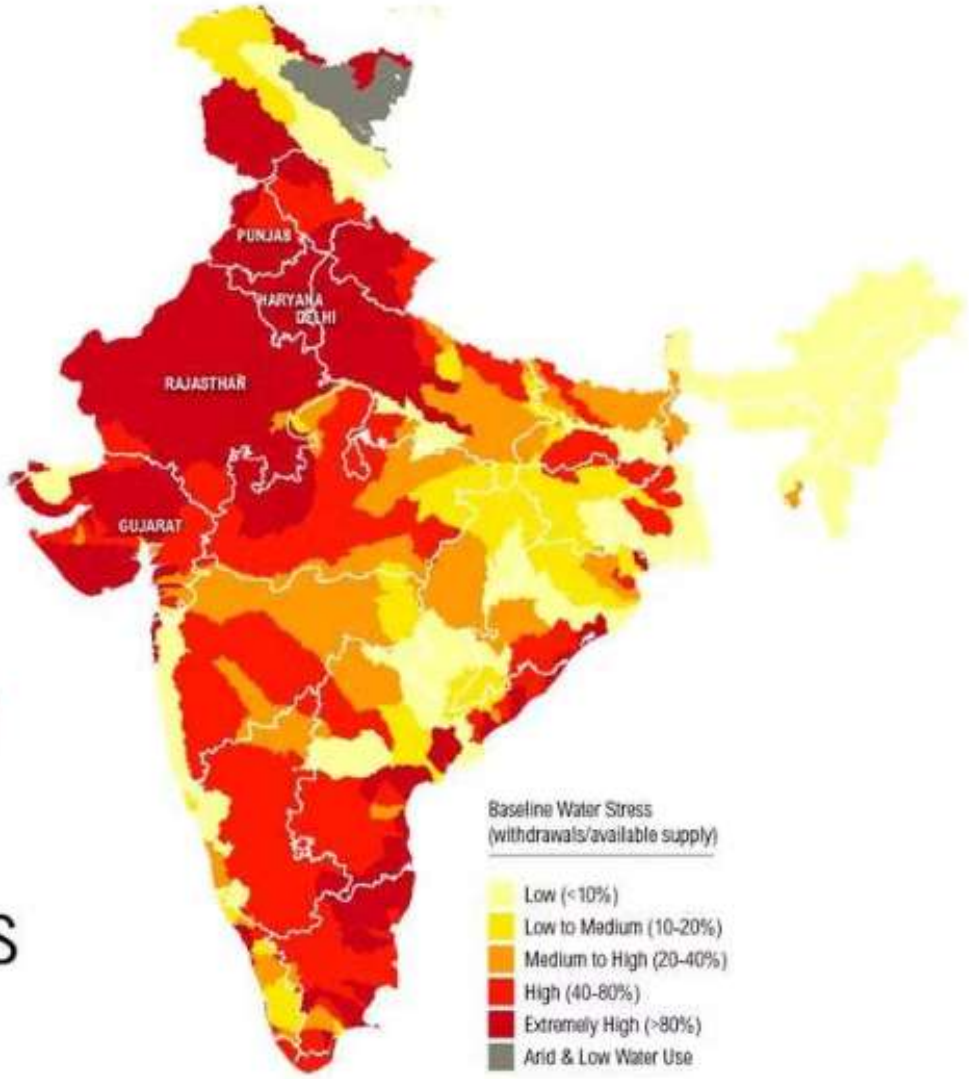
WATER STRESS (11:37 AM)

- It situation when the 'supply and demand' of water are mismatched. (i.e. demand > supply)
- It is measured using the **Falkenmark indicator.**
- The country is said to be water-stressed if the water availability is below **1,700 cubic meters per person per year.**
- As per the 2011 census, water availability in India was 1,545 cubic meters per person per year.
- If the water availability goes below 1,000 cubic meters per person per year then it is called **'Water scarcity'**

- **Regionwise water stress in India:**

54%

of India Faces **High** to **Extremely High** Water Stress



www.indiawatertool.in

WORLD RESOURCES INSTITUTE

- **a) Northern Region:**
- **Areas:**
- Himachal Pradesh, Uttarakhand, Ladakh, Western UP, Punjab, Haryana, etc.
- In these regions the water availability is very low.
- **Reasons:**
- The reasons are Deforestation, pollution, high population, water-intensive agriculture, excessive extraction of groundwater, etc.

rainshadow region, steep topography, away from coastal region, duration of monsoon is less, rapid tourism, flood irrigation method, pollution of Ganga and Yamuna.

- **b) Western Region:**
- **Areas**

  :
- Gujarat, Rajasthan, Maharashtra, Madhya Pradesh, etc.
- **Reasons**

  :
- Natural availability is low, Rainshadow region, deforestation, Water-intensive crops, etc.
- **c) Southern Region:**
- **Areas**

  :
- Goa, Telangana, Andhra Pradesh, Tamilnadu, Kerala, etc. Karnataka
- **Reasons**

  :
- Natural availability of water is less.
- Rainshadow effect.
- Hard rock topography.
- Unplanned Urbanization.

Groundwater is less.

- **d) Eastern Region:**
- **Areas**

  :

- Chattisgarh, Odisha, Eastern UP, etc.
- **Reasons**

  :

- Mining, pollution (Arsenic and fluoride pollution)
- Population , deforestation, industrial activities, excessive extraction of groundwater.

WATER MANAGEMENT (11:54 AM)

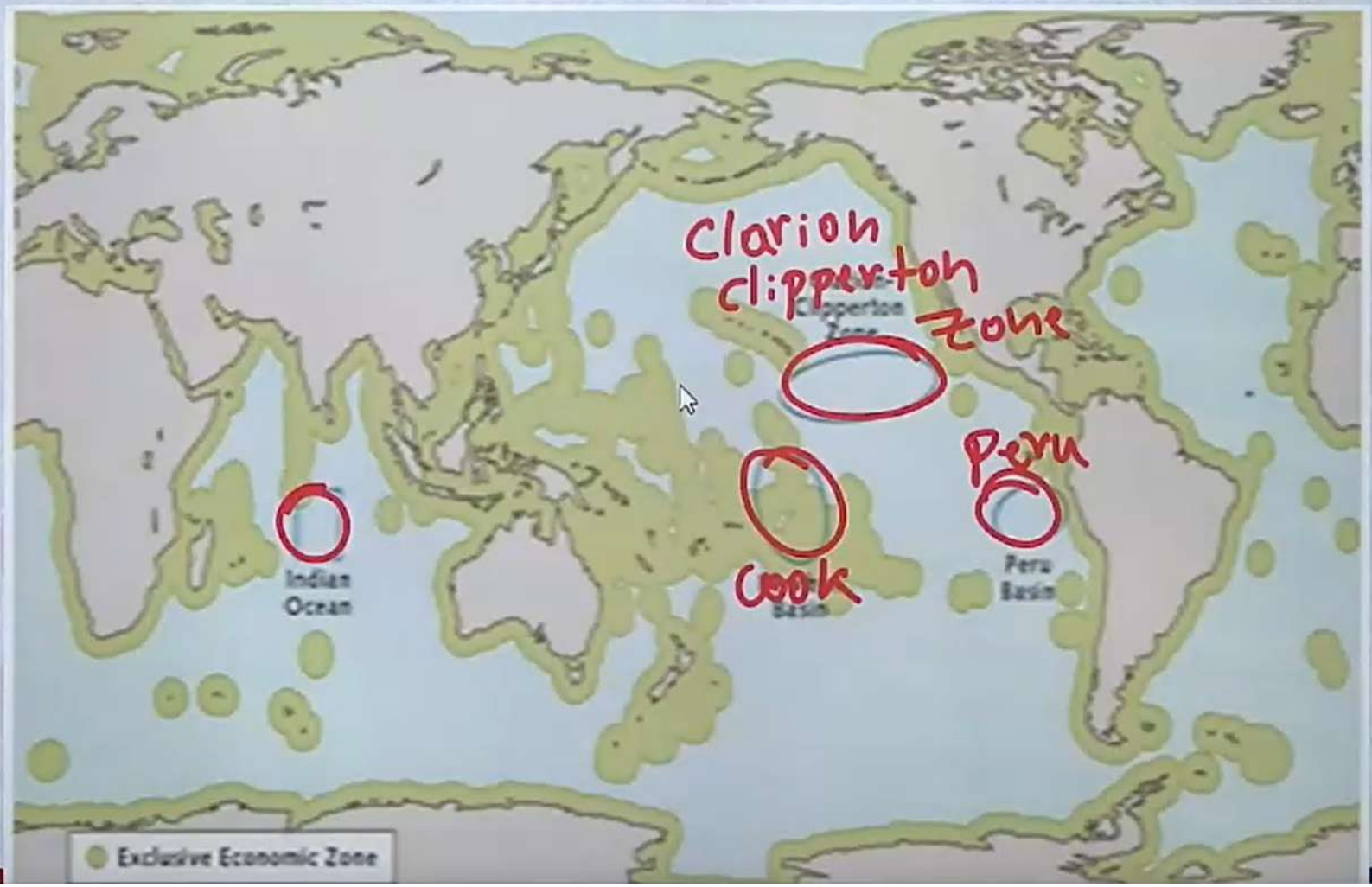
- **REDUCE:** Reduce the use of water, The use of RO water purifiers can be discouraged.
- **REUSE:** The excess water from the RO can be reused for washing utensils.
- **RECYCLE:** The grey water can be recycled. (grey water means which does not have chemicals for ex: water from utensils washing.)
- Reforestation and Afforestation. (Reforestation means jahan pr phle forest tha ab dubara teyar krna h and Afforestation means jahan phle nhi tha but ab teyar krna h.)
- **Sustainable Agriculture**:
- Done through Less intensive and through indigenous crops.
- Micro irrigation through Drip and sprinkler irrigation.
- Using locally available inputs.
- Terrace cultivation.
- Mulching. (debris, agriculture waste etc. se soil ko dhak dete h so that water would not lost and it helps in regenerating nutrients. or naturally grown weeds bhi rkh skte h)

TOPIC FOR THE NEXT CLASS: RAINWATER HARVESTING, INTERLINKING OF RIVERS AND NATURAL VEGETATION.

Water efficient agriculture:

-> Cropping as per the natural availability of rainfall.
-> Micro irrigation method like sprinkler irrigation and drip irrigation.

Manganese nodules



World: Major Fishing Areas