

1. What do you understand by the term 'geopolitics'? Explain. How does resource endowment shape the geopolitics of a region? Illustrate.

Demand of the question:

It expects students to clarify with relevant facts and implications the meaning of the term 'geopolitics'. It also expects to investigate and establish the key facts and issues related to how resource endowment shape the geopolitics of a region.

Introduction:

Geopolitics is the study of the effects of Earth's geography (human and physical) on politics and international relations. In general terms geopolitics refers to countries and relations between them.

Body:

Geopolitics focuses on political power linked to geographic space. In particular, territorial waters and land territory in correlation with diplomatic history. Topics of geopolitics include relations between the interests of international political actors focused within an area, a space, or a geographical element; relations which create a geopolitical system.

- Geopolitics requires at least two actors to be separated geographically (usually in different countries or continents). Both (or more) actors must be aware of each other.
- Geopolitics is reliant upon this kind of knowledge and geographical location.
- Knowledge of each other is important because that assumes that both actors will act strategically. For instance, if two people owned parts of a forest, it can be assumed that both people would be interested in how the other approaches fire safety, because a fire could harm everyone's land.
- The political processes include forces that operate at the international level and those on the domestic scene that influence international behaviour. Both geographical settings and political processes are dynamic, each influences and is influenced by the other.
- Geopolitics usually focuses on the subjects such as resource endowment, trade, pollution, travel, immigration etc.

As the ice started to melt in the Arctic region, Arctic ocean surrounding countries have expedited their actions to emerge as highly resource endowed by claiming more land in the Arctic. It shows the importance of resource endowment. In this COVID-19 Pandemic resource endowment has gained importance due to its effects on the International relations.

- As we know, on the Earth no country can claim that it is Self sufficient in Resources. Hence, the resource endowments of countries form the foundations of International relations. e.g. India imports more than 80% of its oil and gas needs from the Gulf region, and exports refined petroleum which forms 13.7% of total exports.
- As we know Africa is resource rich continent, but due to geographical and historical reasons this region is highly underdeveloped, surrounded by

conflicts in many parts, economically down sided and lags to utilize its true potential. Hence, Countries all over the world are seeking diversification of its oil supplies away from the Middle East and Africa can play an important role in changing energy matrix.

- Multilateral engagement was launched with the first India Africa Forum Summit (IAFS) in 2008. India is investing in capacity building providing more than \$1 billion in technical assistance and training to personnel under the Indian Technical and Economic Cooperation (ITEC) program.
- Here training the human resource of the African countries is helping to improve the relations between two nations.
- The Gulf region has become a major economic partner, is home to over 4 million Indians and a major source of oil and gas. So the highly oil resource endowed region of West Asia despite the cultural differences is emerging as a major world player. For instance, Saudi Arabia exports around 16.3 billion dollars oil to India.
- Land as a resource forms the basis for security of the region. Russia with its vast expanse of landmass is a major arms and ammunitions player on the global scale. So, Many of the countries maintain good relations with Russia.
- Also resource endowments give value to say of the countries on world scale. e.g. China which accounts for more than 80% of the rare earth metals is asserts its say whenever needs to.
- South east Asian nations are the major rice and fish exporters, especially Vietnam is major exporter of Palm oil in the world. Hence, resource endowments help the small countries such as Vietnam to stand shoulder to shoulder with big developed countries like USA.
- Resource endowments ensures Security of the region. It also helps to maintain good relations for the sake of greater good of greater number of people.
- But sometimes the greediness of the resources leads to conflicts in the some regions. e.g. USA's invasion in Iran under the motive to control oil resources.

Conclusion:

As we have seen that resource endowment of countries impact the geopolitics on various fronts. Though the resources are necessary for the human civilization to survive, their excessive use will harm the nature. Hence, we need to adopt a sustainable approach while utilizing the resources, which will surely help to have good geopolitical implications.

2. Examine the distribution of freshwater resources in Asia. How is water distribution shaping the fate of this continent? Analyse.

Demand of the question:

It expects to investigate and establish the key facts and issues related to the distribution of freshwater resources in Asia. It also expects the candidate to break the issue of 'Impact of water distribution on the fate of the Asian Continent' into its constituent parts and explain how these relate to one other and present as one summary.

Introduction:

Most water in the Earth's atmosphere and crust comes from the world ocean's saline seawater, while freshwater accounts for nearly 1% of the total. The planet's fresh water is also very unevenly distributed.

Body:

Today most fresh water exists in the form of ice, snow, groundwater and soil moisture, with only 0.3% in liquid form on the surface. Of the liquid surface fresh water, 87% is contained in lakes, 11% in swamps, and only 2% in rivers. Small quantities of water also exist in the atmosphere and in living beings. Of these sources, only river water is generally valuable.

Asia has 47 percent of the global average of fresh water per person, but also has 65 percent of the world's population.

- In Asia, water shortages—both in the form of stress and scarcity—are emerging as a major social and economic threat, especially in India and China.
- The glaciers in the Himalayan region are the major source of fresh water in the surrounding regions of India, Nepal, Bhutan, China. As the Brahmaputra river originates in eastern Tibet where as the Ganges river's source is in the West. Both the rivers are perennial in nature.
- Many of the lakes such as Dal lake and Wular lake in India, Lake baikal in Siberian region of Russia, Lake Balkhash in Kazakhasthan are the main freshwater resources in the region where freshwater supplied from river is sufficient.
- The Mekong Delta - Vietnam, Candaba Swamp - Philippines, Hakaluki Hoar - Bangladesh, etc. are the major freshwater supplying swamps.

As per Asia-Pacific centre for security studies, water scarcity is likely to worsen in Asia in the years ahead. India is experiencing shortages in accessing freshwater. In 1998, it is predicted that per capita availability of freshwater was declining due to rapid population growth and industrialization.

- The per capita availability of freshwater in 2025 is expected to be 1,500 cubic meters per year, as compared to 2,200 cubic meters in 1997 and 5,300 cubic meters in 1955.

- This will have a huge negative impact on food security, as Asian agriculture is already heavily reliant on irrigation, with much of the anticipated increases in food production likely to be dependent on even higher levels of irrigation and irrigation efficiency.
- The Green Revolution resulted in increased crop yields, but achieved these yields largely through extensive irrigation and with increased reliance on freshwater. In fact, almost 70% of the world's freshwater supply is devoted to agriculture, and thus is unavailable for other uses. In Asia, this reliance is even more significant because an estimated 35 to 40 percent of the region's cultivated land is irrigated and this area produces over 60 percent of Asia's total agricultural output.
- Aside from agriculture, another factor that influences the state of water security in a particular country is its degree of industrialization. Industries account for roughly 25% of the world's water use and that number is much higher in industrial countries (as high as 50-80%). In developing countries, the percentage tends to hover around 10-30 percent.
- Environmental factors (such as pollution or climate change) can also influence water security for a particular nation or region. In many parts of Asia, pollution is a major culprit behind the dwindling availability of freshwater. In South Korea, for example, more than 300 factories along the Naktong River illegally discharged toxic wastes directly into the river.
- The specific impact of freshwater on intra-state security is far more complex and less easily ascertained. e.g. Kaveri water issue in between the states of Karnataka and Tamilnadu.
- Freshwater resources are likely to spark conflict international relations. e.g. Tista water sharing issue between India and Bangladesh.

Access to clean, safe, freshwater is recognized universally as one of the most basic and vital needs of humanity. Yet with the world population projected to increase to nearly 9 billion over the next few decades, bringing with it the associated need for greater food production and industry, it stands to reason that shortages of clean freshwater can potentially have broad and far-reaching security implications. Hence, to conserve fresh water resources following steps needs to be taken:

- At the individual level the 3R formula of REDUCE, REUSE, RECYCLE needs to be applied.
- Also the basic individual level steps such as Check taps for leaks, Taking shorter showers, Turning off the water while brushing teeth needs to be taken up so that fresh water can be saved.
- At the government level too minimizing the pollution of the rivers, lakes and time to time precaution by cleaning them will in turn help to add fresh water availability. Such as Namami Gange programme.
- At the international level, various water cooperation initiatives will help to conserve freshwater resources.

Conclusion:

Clean freshwater is not only essential for human life, but also for economic development and agriculture in the Asian continental region. Emerging water scarcity and water security issues are posing a big challenge to the conservation of freshwater resources. Hence, as the impact of freshwater scarcity varies as per variation in distribution of fresh water resources in Asia the collaborative approach is essential to assure the conservation of freshwater resource.



3. Ocean beds are huge repositories of critical resources. Can you explain the distribution of such resources?

Demand of the question:

It expects students to clarify with relevant facts how Ocean beds are huge repositories of critical resources. It also expects to present the scenario of distribution of such resources.

Introduction:

Oceans cover 70 percent of Earth's surface, host a vast variety of geological processes responsible for the formation and concentration of mineral resources, and are the ultimate repository of many materials eroded or dissolved from the land surface. Hence, oceans contain vast quantities of materials that presently serve as major resources for humans.

Body:

Countries around the world need metals and minerals to satisfy burgeoning demands for technology and electronics. The ocean beds contains critical energy sources (petroleum and gas) and raw materials (sand and gravel, phosphorite, corals and other biogenic carbonates, heavy metal ores) which can fulfil this demand.

- Direct extraction of resources is limited to salt; magnesium; placer gold, tin, titanium, and diamonds; and fresh water.
- Ferromanganese crusts, manganese nodules, phosphorites, and hydrothermal vent deposits, which occur in many deep ocean settings from the Arctic to the Antarctic, could be important sources of these metals and minerals.
- Salt, or sodium chloride, occurs in sea water at a concentration of about 3 percent and hence constitutes more than 80 percent of the dissolved chemical elements in sea water.
- Potassium occurs in vast quantities in sea water, but its average concentration of about 1,300 parts per million (or 0.13 percent) is generally too low to permit direct economic extraction.
- Magnesium, dissolved in sea water at a concentration of about 1,000 parts per million, is the only metal directly extracted from sea water. Presently, approximately 60 percent of the magnesium metal and many of the magnesium salts produced in the United States are extracted from sea water.
- The ocean basins constitute the ultimate depositional site of sediments eroded from the land, and beaches represent the largest residual deposits of sand. Although beaches and near-shore sediments are locally extracted for use in construction, they are generally considered too valuable as recreational areas to permit removal for construction purposes.
- Limestones (rocks composed of calcium carbonate) are forming extensively in the tropical to semitropical oceans of the world today as the result of precipitation by biological organisms ranging from mollusks to corals and plants. There is little exploitation of the modern limestones as they are

forming in the oceans. However, the continents and tropical islands contain vast sequences of limestone's that are extensively mined; these limestone's commonly are interspersed with dolomites that formed through diagenetic alteration of limestone.

- The deep ocean floor contains extremely large quantities of nodules ranging from centimetres to decimetres in diameter (that is, from less than an inch to several inches). Although commonly called manganese nodules, they generally contain more iron than manganese, but do constitute the largest known resource of manganese.
- Complex organic and inorganic processes constantly precipitate phosphate-rich crusts and granules in shallow marine environments. These are the analogs (comparative equivalents) of the onshore deposits being mined in several parts of the world, and represent future potential reserves if land-based deposits become exhausted.
- Submarine investigations of oceanic rift zones have revealed that rich deposits of zinc and copper, with associated lead, silver, and gold, are forming at the sites of hot hydrothermal emanations commonly called black smokers. These metal-rich deposits, ranging from chimney to pancake-like, form where deeply circulating sea water has dissolved metals from the underlying rocks and issue out onto the cold seafloor along major fractures.
- The world's oceans, with a total volume of more than 500 million cubic kilometres, hold more than 97 percent of all the water on Earth. However, the 3.5-percent salt content of this water makes it unusable for most human needs.

Life on the ocean beds moves at a glacial pace. Sediment accumulates at a rate of 1 millimetre every millennium.

- With such a slow rate of growth, areas disturbed by deep-sea mining would be unlikely to recover on a reasonable timescale.
- There could be clogging of filter feeding structures of, for example, gelatinous organisms in the water column, and burial of organisms on the sediment. There could also be some metals that get into the water column, so there are concerns about toxicology.
- It is also likely possible that the extracting resources on large scale from the ocean beds may result in the disturbance in the water cycle. In turn affecting the climate of the Earth.
- Species such as whales, tuna and sharks could be affected by noise, vibrations and light pollution caused by mining equipment and surface vessels, as well as potential leaks and spills of fuel and toxic products.

A better understanding of the deep sea is necessary to guide mitigation strategies and proper enforcement of regulations in order to limit the environmental impacts of mining activities.

- Comprehensive baseline studies are needed to understand what species live in the deep sea, how they live, and how they could be affected by mining activities. More funds are needed for training and educational programmes focused on improving our understanding of the deep sea.

- High-quality environmental assessments are needed to assess the full range, extent and duration of environmental damage from deep-sea mining operations.
- The repair, recycling and reuse of products should be encouraged to help reduce the demand for raw materials from the deep sea.
- The ISA is operating with the dual mandate of promoting the development of deep-sea minerals whilst ensuring that this development is not harmful to the environment. This challenging and conflicting mandate will require improved oversight by the international community – including government representatives and the general public – to ensure that marine life is adequately protected.

Conclusion:

Here, we have seen that Ocean beds contain vast amount of critical resources which appear useful for the humans, but at the same time their over-exploitation is placing a negative impact on the oceanic life cycle and life in the oceanic region. Hence, it becomes imperative to conserve the oceanic critical resources while ensuring their sustainability.

