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Interdisciplinary Study of Geography of Aravali and Hills Riverian Fisheries of Aravali Range under the Integrated Teacher Education Programme (ITEP)

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***Abstract* - Geography is the systematic study of the Earth and Earth's resources, it may be interrelated with Biology through Environmental Biology. In Rajasthan state, there is the diversity of different geographic conditions; In Rajasthan the mountain is called Aravali Hill. The Aravali Mountain is also the identification factor of Rajasthan. It is the oldest mountain and main Natural Resources of Rajasthan, In Rajasthan Various Rivers are flowing, these are rain water or spring water rivers. These rivers are originated in Aravali ranges. The various types of fishes are habitated in rivers of aravali range. These are fresh water fishes. These are cultured and captured by the fishing methods same as other fresh water resources. Under ITEP the Geography also integrated with fishery in science.**

Keywords: Aravali Hills, Geography, Fishing Crafts, Fisheries and ITEP.

I. Introduction

Geography is the systematic study of the Earth, its properties, and the phenomena occurring there. An object often needs a spatial component that can be found on a map, like coordinates, place names, or addresses, in order to be considered inside the realm of geography. As a result, geography started to be linked to place names and cartography. The distribution of Earth's characteristics, processes, and occurrences in space and time, as well as how people interact with their surroundings, are all studied by geographers. Geography is extremely interdisciplinary since place and space have an impact on many different topics, including economics, health, climate, plants, and animals. The geographic approach's interdisciplinary nature relies on paying attention to the connections between human and physical phenomena and their spatial patterns.

Hill system of the Aravali Mountains in northern India, extending 560 km (350 mi) northeast across the state of Rajasthan. Scattered rocky outcrops extend south of Delhi. The series of peaks and ridges, ranging from 6 to 60 miles (100 km) wide, typically range in elevation from 1,000 to 3,000 feet (300 to 900 meters).

The system is separated into two parts: the Sambhar-Khetri ranges, which create three irregular ridges, and the Sambhar-Sirohi range, which is higher and features Guru Peak on Mount Abu, the highest peak in the Aravali range (5,650 feet or 1,722 meters). The western desert's expansion is restrained by the Aravali range, which is abundant in minerals and other natural resources. It is the source of several rivers, such as the Banas, Luni, Sakhi, and Sabarmati. Despite being highly forested in the south, it is typically bare and rarely populated, with masses of pink quartzite deposits and huge sandy areas.

The nearby regions receive a substantial supply of fresh water from the Aravali Mountains. The range is essential to India's monsoon season. It also aids in preventing desertification in India by acting as a buffer between the Thar Desert and the more humid regions to the South. The Aravali Range is a source of economic activity in the surrounding communities. The area is home to various notable wild life species, including the endangered Great Indian Bustard, the black buck, leopards, tigers, and hyenas, the range also contains numerous rare and endangered plant species, some employed in traditional treatment.

Between 1950 and 1970, the world's fish and other freshwater and marine product captures increased by roughly 6% a year. In just 20 years, this expansion nearly tripled world production. Global production has been rising continuously since 1970, albeit a little more slowly.

About 88.6% of the weight is made up of fish, with lobsters, crabs, shrimp, and prawns making up 3.2% and mussels, clams, oysters, octopuses, and other marine life making up roughly 63%. About 1.9% of this harvest is made up of seaweeds that are both edible and useful for industry.

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II. Geography of Aravali Hills

Five primary boards make up the Indian board. Boards are a component of the continental crust, which is made up of an ancient lower layer known as bedrock shields and an upper layer known as platforms. They belong to a plate where the bedrock is the most stable and comparatively smaller portion that is exposed at the surface and is not distorted by plate tectonics. Rajasthan as well as western and southern Haryana are under the jurisdiction of the Aravali Board, often known as the Marwar-Mewar Board or West Indian Board. To the east and west of it are the Mewar and Marwar cratons, respectively. Its borders are the Indo-Gangetic Alluvium to the north, the Son, Narmada, and Tapti river basins to the south, the large boundary Fatten Fault to the east, and the Thar Desert to the west. Originally exposed in Aravali-Delhi, Malawi, it is primarily composed of quartzite, marble, limestone, grey granite, and extinct volcanoes. The Geological Survey of India designated Jodhpur a national geological monument as a result of the intense chase there.

Aravali Range: Aravali Range is the principal mountain range of the Rajasthan. The Mountain range runs approximately 692 kms in a south-west direction starting near Delhi passing through Southern Haryana, running across diagonally in Rajasthan and ending in plains of Gujarat. The range runs from Khetri in the north-east to khed Brahma in the south west within Rajasthan for a length of about 550 kilometers.

The Aravali Range has been further-subdivided into four physiographic units:

1. North-Eastern Aravali Range.
2. Central Aravali Range.
3. Mewar Rocky region and Bhorat Plateau.
4. Abu. Block Region.

The North-Eastern Aravali Range:

Districts: Jaipur, Sikar, Khetri, Alwar, Sawai Madhopur, stretches from and Delhi to isolated hills and Jaipur.
They are also called Alwar Hills, Average Height: 300 m to 670 m.
Valley between the hills is wide and with some cases stretch for many killometers, Flattened hill stops - form small plateau.
Lakes - Sambhar, Ramgarh, Pondupole.
Average elevation of 300-670 meters.
To north and east it merges with Ganga -Yamuna plains.
Hill Ranges : Malkhet and Ketri Group of Hills and Torawati Hills
Peaks: Raghunathgarh (Sikar) -1055 meters.
Koha (Jaipur) - 920 meters,
Bairach (Alwar) 792 meters.
Barwasa (Jaipur) 786 meters
Babai (Jhunjhunu) - 780 meters.
Bilali (Alwar) 775 meters,
Manoharpura (Jaipur) - 747 meters
Bairath (Jaipur) - 704 meters
Sariska (Alwar) - 677 meters
Siravas 651 meters.

III. The Central Aravali Hill Range

Districts: Ajmer, South-western Tonk, Jaipur Length of central Aravali Range is 100 km with width of 30 km and Valleys with depth of 550 meters.
Height / Elevation - 700m
Highest Peak / elevation - 799m in Rajgarh
The central / Aravali extends from Sambhar Lake to the bhorat Plateau, South of Deogarh Peak.

Surrounded on

- North by - Alwar Hills
- East by Kazoli table-land
- South by Bamas Plain
- West of Sambhar basin

Hill Range

- Shekhawati lewer Hill's.
- Marwar Hills.

Peaks of central Aravali Region

Gormaji (Ajmes) - 934 meters.

Taragarh (Ajmer) - 870 meters

Naag Pahar (Ajmer) - 795 meters.

This range is further sub-divided into A two geomorphic units

The Sumbhar Basin or shekhawati Love Hills

District - Churu, Sikar, Jhunjhunu, Nagaur.

Average of Region – 400 m

This region is full of sand Hills and with in land drainage

The Merwara Hills

Districts: Jodhpur, Barmer, Jaisalmer, Nagaur, Ajmer

Area: 4400 sq. km

Average level 550 m

The Taragarh (873 m) overlooks the city of Ajmer, Marwar Hills appear in the parallel succession of Hills in the vicinity of Ajmer city.

The Mewar Rocky Region and Bhorat Plateau:

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Districts: Udaipur, South-Eastern Region of Pali and Dungarpur Districts.

Area: 17007 sq. km.

Location: It is located from South East south beat; Average Height-1225 m.

The Highest portion of Aravali range lies between the forts of Kumbhalgarh in the form of plateau locally known as Bhorat.

Altitude: 1225 m

Bhorat Plateau is one of the highest table land of Aravali

Hill Ranges

- Mewar Hills and Bhorat Plateaus.
- Girwa Hills
- Merwara Hills

Peaks of Southern Aravali Range

Kumbhalgarh (Rajsamand) - 1224 meters.

Dhoniya -1183 meters

Harishikesh - 1017 meters

Kamalthath (Udaipur) - 1001 meters.

Sajjangarh (Udaipur) - 930 meters.

Lilagarh -874 meters

Abu Block Region:

District - Abu, Sirohi

Area:- 5180 sq.km.

Length: 10 km.

Breadth: 8 km

Location: West to Abu in Sirohi sea level-1200m2

It contains granite

It has been separate from the main Aravali range by the wide valley of the West Banas,

Mill Ranges: Abu Hills and Oria Plateau,

Peaks of Southern Aravali Range

Guru shikhare - 1722 meters.

Ser (Shahi). - 1597 meters

Dilwara 1442 meters.

Jurga 1431 meters.

Achalgarh - 1380 meters.

Main + Rivers in Aravali Range

Sabarmati Rivers: The Sabarmati River has its source in the Aravali mountain range located in Rajasthan. It spans a total length of 371 kilometers (231 miles). After traversing 48 kilometers (30 miles) within Rajasthan, the river crosses into Gujarat, where it converges with a left bank tributary known as the Wakai, in proximity to the village of Ghompankhoon. Subsequently, the river proceeds southwest towards Mhauri, where it encounters a right bank tributary, the Sei River. Continuing its journey, the Sabarmati joins another left bank tributary, the Harnaiv River, before flowing into the Daroi reservoir. Beyond the Daroi dam, the river meets yet another left bank tributary, the Hath Mati River. The Sabarmati then advances through the city of Ahmedabad, where it is augmented by the Watrank River, a left bank tributary. Ultimately, the Sabarmati River discharges into the Gulf of Khambhat, which is part of the Arabian Sea.

Banas River: This river is located entirely within the boundaries of Rajasthan, a state in western India. It serves as a tributary to the Chambal River, which itself is a tributary of the Yamuna, ultimately discharging into the Ganges. The Bamas River extends approximately 512 kilometers (320 miles) in length. Its source is found at Veron Ka Math, positioned in the Khamn hills of the Aravali range, roughly 5 kilometers (3 miles) from Kumbhalgarh in the Rajsamand district. The river flows in a northeastern direction through the Mewar region of Rajasthan and subsequently traverses the Hadavati area before converging with the Chambal River near the village of Rameshwar in the Sawai Madhopur district.

Chambal River: The Chambal River serves as a tributary of the Yamuna River, situated in the central and northern regions of India, and is consequently integrated into the Ganges drainage system. This river traverses a north-northeast trajectory through Madhya Pradesh, briefly passes through Rajasthan, and subsequently delineates the boundary between Rajasthan and Madhya Pradesh before veering southeast to merge with the Yamuna in Uttar Pradesh. The perennial Chambal originates from the Janapuw Hills, located south of Mhow, near Monpur in Indore, on the southern inclines of the Vindhya range in Madhya Pradesh. The Chambal River and its tributaries facilitate the drainage of the Malwa region in northwestern Madhya Pradesh, while its tributary, the Banas, which emerges from the Aravali range, drains the southwestern part of southeastern Rajasthan. Notably, the confluence of five rivers, including the Chambal, Kawari, Yamuna, Sindh, and Pahuj, occurs at Pachnada, situated near Bharch in Uttar Pradesh, along the border of the Bhind and Etawah districts.

Rivertine Fisheries: India leads the way with 14 major, 44 medium and numerous minor rivers spread over 252,000 km contributing to current production of 100,000 tonnes.

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Maximise the potential of the River Fisheries Scheme approved under Blue Revolution in 9 States/UTs.

Production of indigenous species in rivers will be targeted through seed breeding of indigenous stocks, improvement of river landing sites and instruments to provide financial support for the welfare of fishermen. Implementation of riverine farming as a pilot activity under the Central Sector Plan is also planned in six states in two phases with a total budgetary outlay of Rs 281 crore and Rs 140 crore. The first phase will be launched by the end of September while the second phase will begin in October. To support the fishermen, the ministry has approved the following with an investment of Rs 1,710 crores.

Fisheries Resources of Rajasthan: Rajasthan has about 4:23 lakh ha. freshwater area moreover 30,000 ha. area as rivers and canals, 8000 ha. waterlogged and 1.80 Lakh ha. salt affected areas of full tank level. The state is gifted with four major river basins viz. Chambal river basin, Mahi river basin, Luni river basin and Ghagh ghar river basin.

Around 70 rivers connect these major river systems with vast number of tanks, ponds and reservoirs during monsoon season regulating in natural recruitment of fish and other aquatic fauna throughout the state, It has around 153444 ha of water area under reservoirs, more than 33%/% of which full under the small category of the 123 reservoirs, only four are in the large category, while the small and medium sized are 389 and 30 respectively, Rajsamand, Banswara and Chittorgarh have a large number of small reservoirs, through they do not contribute much to the total area. The large reservoirs, wiz, Rawt bhata (19600 ha.) Maha Bajaj Sagar (13,500 ha) in Banswara district, Jaisamand (7,600 ha.) im Udaipur district and Kadana (9,000 ha.) in Banswara and Dungarpur districts, cover more than 32% of the total water area.

Inland Fishing Crafts - Various kinds of fishing crafts, designed and built according to local conditions, are used in different parts of the Country. In rivers and reservoirs, a very simple circular basket like craft, um in diameter is used. It is made up of bamboo covered with leather to make it water tight. The craft employed in Inland fisheries may be described under two categories.

a) Rafts: These are the most primitive type of boats. They are constructed from various indigenous materials. In West Bengal and some parts of Tamil Nadu, the stems of banana trees are tied together to form a floating plate form. In Bihar, on river ganga, earthen pots called Chatties are tied together to support a light plate form of bamboos. This type of raft is also met with in the Kaveri river in Tiruchirapalli and Tanjore districts.

b) Boats: These are built from planks and. are of various types. They are sturdy and can with stand strong currents and tides in rivers and large lakes. One of the well known types of dinghi, which is used in west Bengal in conjuction with purse nets and dipnets, Dinghits are without keels but are narrow and have a tapering bow and stern, Another common type boat is chandi nanka, which is large and it large and is shown 18 m long and 3m wide. It is used to operate drift nets.

IV. Integrated Teacher Education Programme (ITEP)

This comprehensive four-year undergraduate program emphasizes a dual-major approach and integrates teacher education within the broader higher education framework. The Integrated Teacher Education Program (ITEP) represents a significant initiative by the National Council for Teacher Education (NCTE) aimed at attracting exceptional students to the teaching profession. Its primary goal is to equip future educators with the essential skills and knowledge required to effectively teach students across the Foundational, Preparatory, Middle, and Secondary stages, in accordance with the revised educational framework established by the National Education Policy (NEP) of 2020. Students enrolled in this program will be rooted in Indian values, languages, knowledge systems, and tribal traditions, while also being well-informed about the latest advancements in education and pedagogy.

The Programme caters to the need for 21st century skills

ITEP aims to provide a comprehensive training experience by offering not only advanced pedagogical knowledge but also a firm grounding. An early childhood care and education (ECCE) program, along with foundational literacy and numeracy (FLN), inclusive education, and a comprehensive appreciation of Indian values, ethos, arts, and traditions, constitutes a vital framework for study. This course is expected to significantly impact the revitalization of the entire teacher education sector. Graduates of this program, who will be educated in a multidisciplinary environment that honors Indian values and traditions, will acquire a profound understanding of the requirements set by 21st-century global standards. Consequently, they will assume a crucial role in shaping the future of New India, acting as catalysts for positive change. The program has been thoughtfully designed to provide aspiring educators with a holistic and enriching educational experience.

The ITEP underscores the significance of a multidisciplinary framework in teacher education, acknowledging the essential contributions from various fields. It highlights the need to equip future educators with a comprehensive grasp of high-quality content and effective

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pedagogical strategies. This approach enables trainees to engage with disciplines beyond education, fostering a more holistic and flexible educational experience. Furthermore, it encourages academic exploration and individualization by allowing students to select majors and minors that align with their personal interests and career goals, in conjunction with their teacher education program. The technique encourages the development of a broad prospective and mastery of a specific subject area.

V. Discussion and Recommendations

Today, geography is place-based, but encompasses much more than the location of place names on a map. It integrates methods and knowledge from many different disciplines and connects all of these disciplines, embracing both the physical and social sciences, to find out why things happen in a particular place or in particular spatial patterns.

Physical geography incorporates geology, climatology, biology, ecology, hydrology, and other natural Sciences. Human geography includes cultural anthropology, economics, political science, history, demography, and other social sciences. Cartography, which is the art and science of mapmaking, provides graphic representations. geographic settings.

Geographers also use other tools in their data gathering, analysis, and representation - tools including statistics, photography, remotely captured images.

All over statement about Geography, it may be considered as multidisciplinary subject. Fishes are living in different Kinds resources. The whole life of fishes and their overall importance's are studied in the fishery Fish biology. This is also discipline of zoology (biology or life Science. Fishes are living in different water resources under different geographical conditions, on the base of environmental studies the biology is correlated with geography.

Under the Integrated Teacher Education Programme the more interdisciplinary points should be elaborated for the study of biology and geography.

Rapid advances in science and technology have put scientists and engineers on alert to cope with the simultaneous changes of the past few decades. Various kinds of revisions, corrections, modifications and even innovative ideas developed in many fields of study required their integration into the advanced concepts to keep pace with the latest advanced research in the relevant fields of study. Innovative techniques have brought research to a constant level of "thinking" and "rethinking" to take into account higher concepts related to biology.

The current study allows for the formulation of several recommendations, particularly regarding the integration of the principles of Indian Geography and Fisheries related to the Aravali Hill range, as well as the important roles that these elements play.

1. Awareness towards the health and hygiene cleanliness of Aravali range and Fisheries.
2. Awareness about the rare and endangered species of Fishes for Aravali Range in Rajasthan.
3. Combined study of Geography and Fishery as well as Life Science under ITEP is recommended by Indian Education system.

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