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## Human Environment Interactions (The Tropical and the Subtropical Regions)

### Lesson Plan

#### Contents

- ▶ An overview of the interaction between human beings and the environment in the tropical and sub-tropical regions
- ▶ To understand the environment and the lives of the people living there through case studies

#### Objectives

- ▶ To understand the environment of the Tropical Region [the Amazon Basin] and the Sub-Tropical Region [the Ganga-Brahmaputra Basin]
- ▶ To learn about the way of life of the people who live there
- ▶ To know about the interaction between the people and their surroundings
- ▶ To appreciate how the environment shapes people's lives and vice versa

#### Teacher's Aids

- ▶ Globe
- ▶ Pictures, atlas and wall maps
- ▶ Blackboard
- ▶ Internet

#### Tips for Teacher

- ▶ Explain how people interact with their environment.
- ▶ Explain, too, how people influence the environment through this interaction.
- ▶ Students should be encouraged to know places, locations and their placement on the maps.

#### Background and Reading

- ▶ Read the lesson aloud and explain, sharing the aids, etc., pausing to examine and explain the data in the boxes.
- ▶ Particularly focus, in each region, on the interaction between the region and the people living in them; then compare the lives of people in the two regions also.

- ▶ Human beings adapt to the environment in which they live—they modify it to suit their needs and also adjust their own activities and customs to the physical and cultural environment.

### The Tropical and Sub-Tropical Regions

- ▶ Tropical region—between Tropic of Cancer and Tropic of Capricorn.
- ▶ Equatorial region 10° N to 10° S of Equator.
- ▶ Sub-Tropical region—extends up to 35° N and S.

### Life in the Amazon Basin

- ▶ Amazon River—second longest in the world [6500 km] after the Nile—but discharges the largest amount of water—source in the Andes Mountains in Peru—flows into Atlantic Ocean after crossing north of South America.
- ▶ Amazon Basin—Amazon and its many tributaries: Tigre, Putumayo, Japura, Negro, Baranco, etc., from the north; Jurua, Purus, Maderia, Tapajos, Xingu, Tocantins, etc., from the south.
- ▶ It includes a large part of Brazil, Bolivia, Peru, Ecuador, Colombia, and a small part of Venezuela—major part is south of Equator.
- ▶ Climate: Lies mostly in equatorial region—uniformly high temperature throughout the year—average annual temperature 27° C—nights also warm—rainfall heavy and well distributed all year—hot and humid, no dry season—even on cool nights, humidity high—average annual rainfall 250 cm.
- ▶ Vegetation: Hot, humid climate—dense—tall trees, creepers, bushes, ferns, orchids, shade-resistant epiphytic plants [which grow on others]—largest number of plant species—broad-leaved, tall, evergreen, hardwood trees: Mahogany, rosewood, ebony, rubber, cane, etc.—forests form a canopy—no sunlight reaching the ground—orchids and bromeliads grow as parasites—thick forests also called selvas.
- ▶ Wildlife: Rich in animals, birds, reptiles, insects, fishes, etc.—animals: Monkeys, tapirs, sloths, jaguars, pumas, armadillos, etc.—birds: Scarlet macaws, toucans, hummingbirds, etc., with brightly coloured plumage, loud voices and oversized bills—others: Crocodiles, alligators, pythons, snakes, anaconda [the largest python]; rich insect life and fishes, including the flesh-eating piranha.

### People in the Amazon Basin

- ▶ Sparsely populated—mostly tribal people—depend on food gathering, hunting and fishing—shifting agriculture: Following the slash and burn technique for clearing the forest.
- ▶ Men—gathering, fishing, hunting—women grow crops in villages—tapioca, pineapple, sweet potato—staple food is manioc or cassava—use wood for building houses—thatched houses like beehives or apartment-like houses with steep roofs called maloca.
- ▶ Recent Developments: Changes in means of transport and communications—bringing change into lifestyles of the tribals—earlier only reach interiors through the river—now

Trans-Amazon Highway–some tribals displaced and relocated in new areas to carry out further developments work.

- ▶ The development activities of government for welfare of tribals–destroying the rainforests–forests cleared for activities–deforestation essential for impact on climatic conditions, soil fertility and the future of the tribals living in the Amazon Basin.

### Life in the Ganga-Brahmaputra Basin

- ▶ The Rivers and their Basin:
- ▶ Basin formed by the two rivers and their tributaries:
- ▶ Ganga: Ramganga, Ghaghara, Gandak, Rapti, Kosi, Yamuna, Gomti, Chambal, Sind, Betwa, Ken and Son–originates from Gaumukh at the Gangotri glacier–enters plains near Haridwar.
- ▶ Brahmaputra: Originates from the Mansarovar Lake in Tibet [China] where it is called the Tsangpo–flows eastwards and enters India after a sharp turn to south-west–In Arunachal Pradesh called Dihang River–flows through Assam–enters Bangladesh and joins the Ganga river–together form the largest delta in the world–Sunderbans–combined river called the Padma.
- ▶ Basin includes large part of northern and eastern India–Uttarakhand, parts of Haryana, Rajasthan, Madhya Pradesh, Uttar Pradesh, Bihar, West Bengal and Assam–Nepal, China and Bangladesh.
- ▶ Physical Features: Himalayan Mountains, the northern plains of India, and the Sunderbans delta–there are a number of ox-bow lakes in the plains.
- ▶ Climate: Located between 10° N and 30° N latitudes–Monsoon type of climate–four distinct seasons: (i) Rainy from mid-June to mid-September; most of the rainfall is from the Southwest Monsoon Winds–(ii) Summer from mid-March to mid-June is hot and dry–(iii) Winter from mid-November to mid-February; cold and dry–(iv) Spring brief from mid-February to mid-March; cool and dry.
- ▶ Vegetation: Hot humid climate most of the year favours forests–vegetation varies according to height from sea level–plains: Tropical deciduous forests–teak, sal, sheesham, papal; Assam: bamboo; Sunderbans: Mangrove forests; Uttarakhand, Sikkim, Arunachal Pradesh: pine, deodar, silver fir, chir.
- ▶ Wildlife: Freshwater aquatic life–fishes: Rohu, catla, hilsa–staple for many: Rice and fish–variety of dolphin [called susu].
- ▶ Life of the People: Physical environment affects lifestyle, activities and distribution of population–hilly areas: Population low [inhospitable conditions]; plains: Thickly populated [fertile, agriculture]–rice main crop–others: Wheat, maize, gram, sorghum and millets and jute and sugarcane–hill slopes of Assam and West Bengal: Tea plantations–Some parts of Assam and Bihar: Silkworms reared on mulberry leaves–hilly areas: Terraced slopes grow rice.
- ▶ Many large and small cities in this basin–bigger ones on river banks: Kanpur, Lucknow, Prayagraj [Allahabad], Varanasi, Patna, Kolkata–also called million cities because

population over 10 lakhs—variety of industries in these cities—waste, especially chemical waste, pollutes river water.

- ▶ **Transport:** Well developed in basin—roadways, railways and navigable waterways—Kolkata an important port on Hugli river—airports at Lucknow, Varanasi, Patna, Guwahati, Kolkata, etc.
- ▶ **Tourist attractions:** Agra: Taj Mahal, Red Fort, etc.; Prayagraj: Kumbh Mela; Gaya, Sanchi, etc., in Bihar and UP: Buddhist stupas, etc.; Lucknow: Imambaras; Varanasi: Shiva temple; Assam and Arunachal Pradesh: Wildlife sanctuaries at Manas, Kaziranga, etc.; Arunachal Pradesh: Tribal culture unique.

## Assessment Corner

### Oral Assignment

- A. Ask for answers at random from the students. Confirm the right answers. Let them write down the correct answers if they like in their books.

### Written Assignment

- B–F. The teacher has two options—(i) Either do these exercises orally first and then ask the students to write them down. OR (ii) Ask the students to write the answers on their own. Then the teacher can announce the correct answers and students can ask their partners to cross-check them.

In either case, the answers can be written as homework and the teacher can check them in the class.

### Think Tank

- G. **HOTS questions:** Discuss the questions in the class and let the students write the answers to G and H as homework. Teacher should assess individual work.