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A photograph of a paved road winding through a lush green forest. The sun is shining from the left, creating a bright glow and long shadows on the road. The trees are tall and leafy, with their canopies forming a natural archway over the road. The overall atmosphere is peaceful and natural.

Land Resources

...make everyday Earthday !!!



What are Land Resources ?

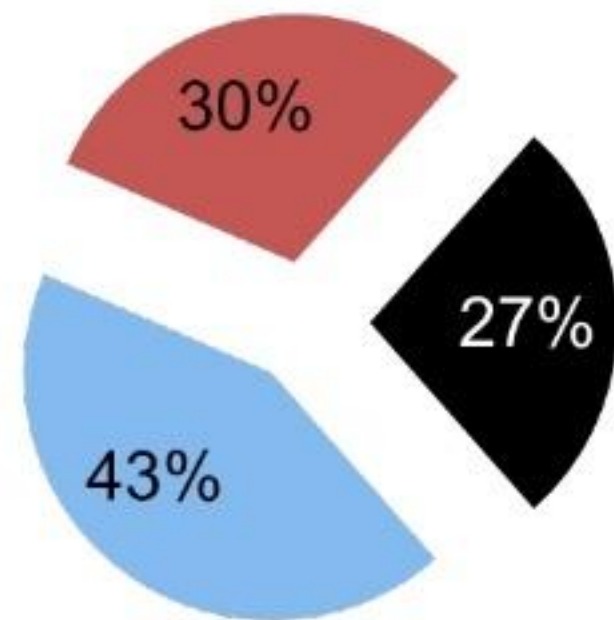
In the direct words 'Natural resource in the form of arable land.'

Land is among the most important natural resources. It covers up only 29% of the earth's

Land Resources in India
enclose approximately 1.3 million sq. miles and is a cape, protruding into the Indian Ocean, in between the Bay of Bengal on the east and Arabian Sea on the west. Indian land resources are segmented into varied relief features, 43% of land area is plain region; Indian mountain region constitutes 30% of the area, where as plateaus account for 27 % of the total surface area on the nation.

Land Resources in India

■ Plains ■ Mountains □ Plateaus

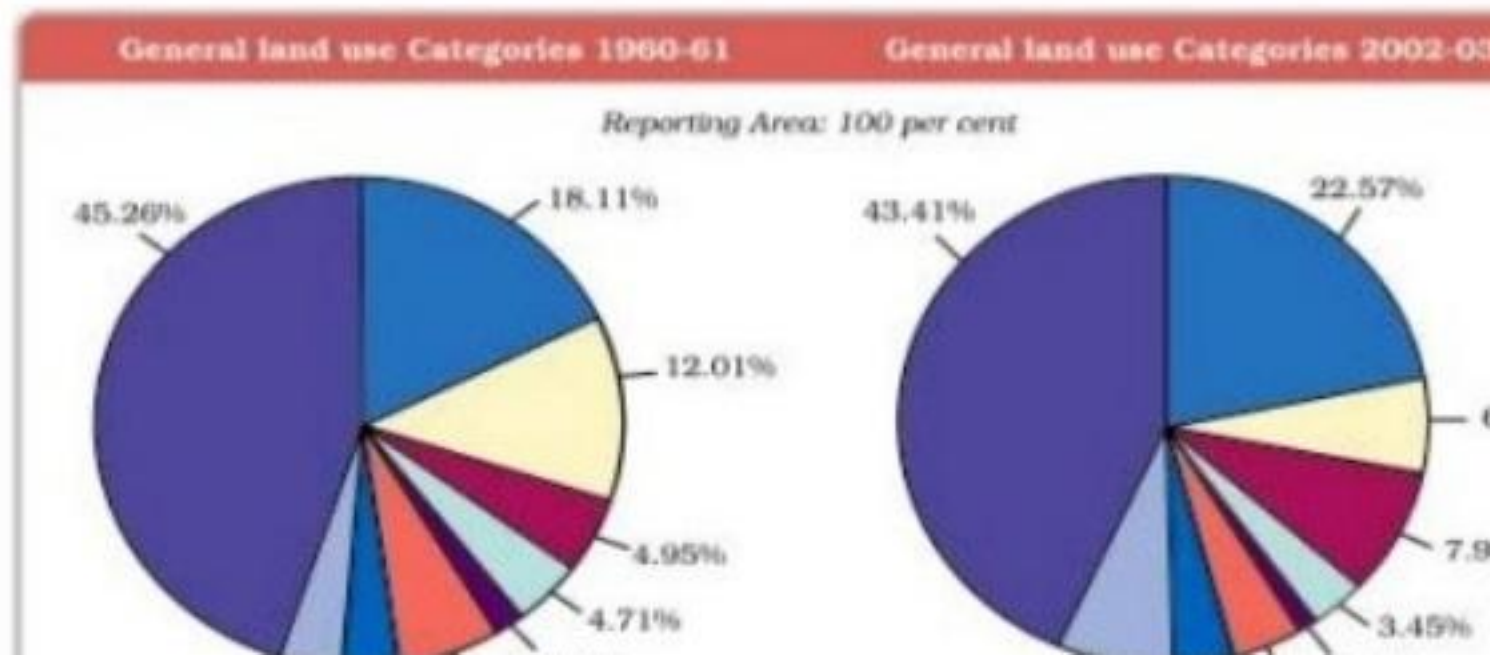




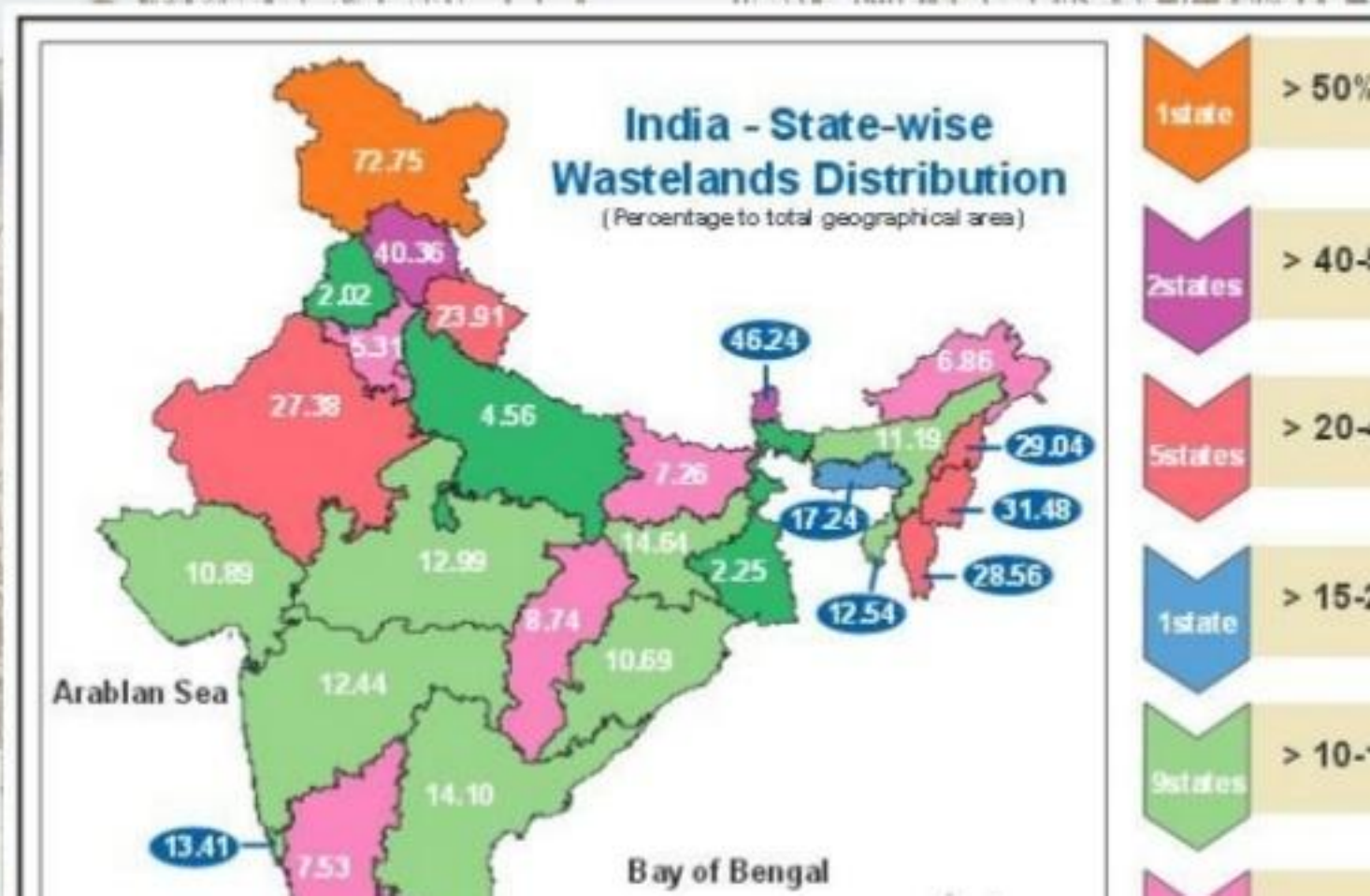
Land Use patterns in India

Land resources are used for the following purposes:

1. Forests
2. Land not available for cultivation
 - (a) Barren and waste land
 - (b) Land put to non-agricultural uses
3. Other uncultivated land
 - (a) Permanent pastures and grazing land,
 - (b) Land under miscellaneous tree crops



Land not available for cultivation



Pastures & Grazing lands

- According to the National Sample Survey Organisation, common property land resources constitute about 15% of the total geographical area of India, of which 23% is community pasture and grazing lands and 16% have been classified as village forests and woodlots.
- At another level, India has the largest livestock population in the world, with 485 million head of livestock, many of them raised by small and marginal farmers who depend on grazing land



area. The 2013 Forest Survey of India states its forest cover increased to 69.8 million hectares by 2012, per satellite measurements; this represents an increase of 5,871 square kilometers of forest cover in 12 years. However, the gains were primarily in northern, central and southern Indian states, while northeastern states witnessed a net loss in forest cover over 2010 to 2012.



Uses of Land





Agriculture in India

As Per the 2010 [FAO](#) world agriculture statistics, India is the world's largest producer of many fresh [fruits](#) and vegetables, [milk](#), major [spices](#) select fresh meats, select fibrous crops such as [jute](#), several staples such as [millets](#) and [castor oil](#) seed. India is the second largest producer of [wheat](#) and [rice](#), the world's major [food staples](#). India is also the world's second or third largest producer of several [dry fruits](#), agriculture-based [textile](#) raw materials, [roots](#) and [tuber](#) crops, [pulses](#), farmed [fish](#), [eggs](#), [coconut](#), [sugarcane](#) and numerous [vegetables](#). India ranked within the world's five largest producers of over 80% of

and wheat.⁷
 claim India can
 population, plus
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2 million metric
 .1 million metric
 to Africa, Nepal,
 regions around

India's Agricultural Production			
Crops	2nd Advance Estimates 2010-11	Target 2010-11	Percentage of 2010-11 production to target set for 2010-11
Rice	94.01	102.00	92.17
Wheat	81.47	82.00	99.35
Coarse Cereals	40.08	44.00	91.09
Pulses	16.51	16.50	100.06
Total Foodgrains	232.07	244.50	94.92
Oilseeds	27.85	33.20	83.89
Sugarcane	336.70	315.00	106.89
Cotton*	33.93	26.00	130.50
Jute and Mesta**	10.08	11.50	87.65

Notes : *million bales of 170 kg each

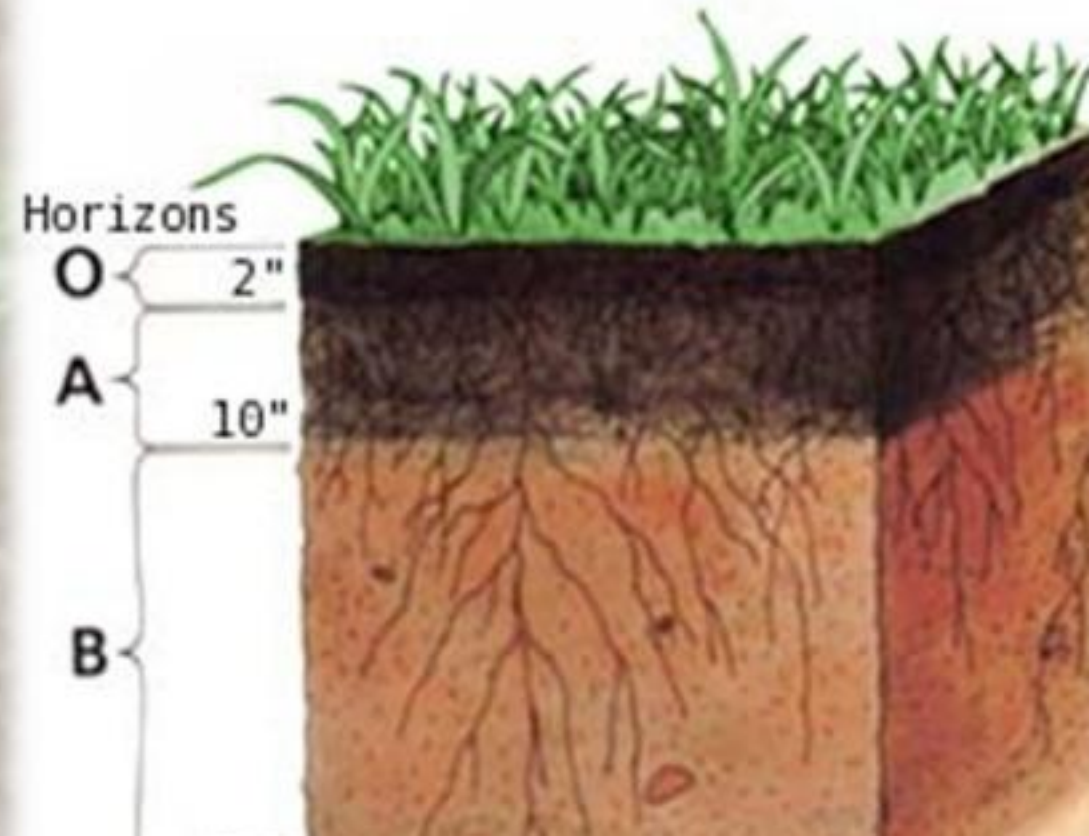
**million bales of 180 kg each

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Soil Structure

- When the soil is not removed, the so-called mature soil develops. Paedogenesis is the name of the process that leads to its creation. A mature soil is characterized by a series of layers, called horizons, which differ according to the soil structure and the composition of organic and inorganic parts. The layers create the soil profile:
- **Horizon A**: rich in organic components, but lacks clay particles. Clay particles are transported by the



Soil Erosion...



- Soil erosion is a naturally occurring process that affects all landforms. In agriculture, soil erosion refers to the wearing away of a field's topsoil by the natural physical forces of water.
- Erosion, whether it is by water, wind or tillage, involves three distinct actions – soil detachment, movement and deposition. Topsoil, which is high in organic matter,



Causes of Erosion

The main cause of soil erosion is the removal of vegetation. Vegetation removal takes place due to removal of forest covers. Unscientific farming has also led to barren lands. The removal of vegetation exposes the topsoil to water and wind. Water and wind cause the topsoil to be removed.

Water Erosion: Removal of topsoil by water is called water erosion. It takes place in the following ways:

- Sheet erosion
- Rill erosion
- Gully erosion
- Riparian erosion
- Wind erosion

Sheet Erosion

Prevention & Control of Soil Erosion

Increase of Vegetation

- When the land is covered with vegetation, the roots of the plants and trees interlock and interlace to bind the soil particles. This helps in two ways:
 - does not allow the soil particles to be carried away by wind or water
 - does not allow free flow of water over the soil which prevent erosion of soil by flowing water
 - the falling leaves of the plants get converted to humus by decomposing action of the soil microbes. This enriches the soil.
- Several methods can be employed to increase the vegetation cover of land. Some of them are as follows:

Crop Rotation

The practice of growing different crops at different times on the same land is called crop rotation. This

.....cont

- **Strip Cropping**

It involves growing of crops in strips. The most common method followed is the contour farming where the strips of crop are at right angles to the slope. Wind-strip cropping is when the strips of crop are placed at right angles to the direction of wind.

- **Restoring Soil Fertility**

Fertile soil supports vegetation. Loss of fertility results in loss of vegetation and this exposes the land to erosion. Fertility of soil can be increased by addition of natural and synthetic fertilizers.

- **Control of Grazing**

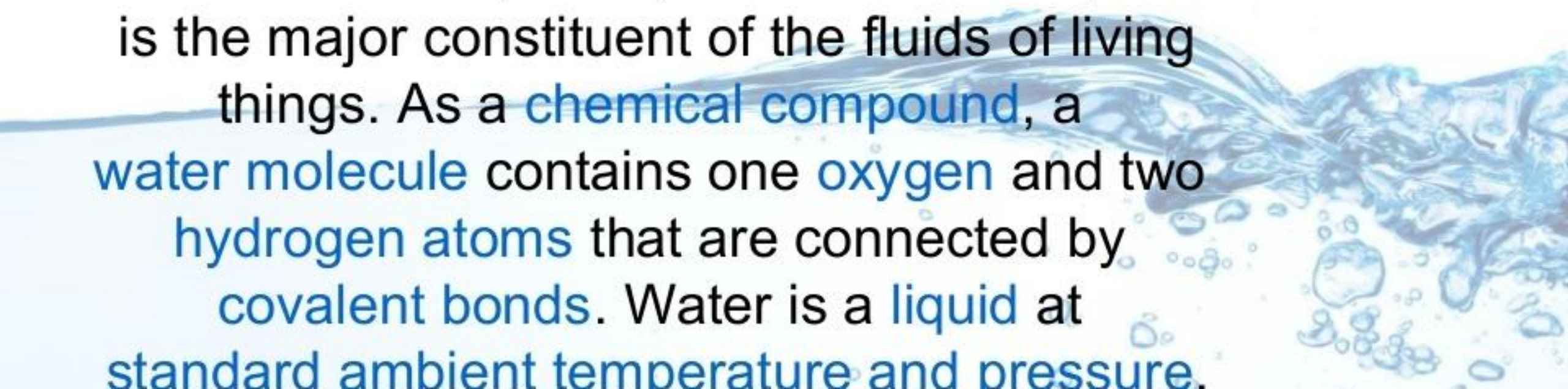
Covering the land with small plants and grasses helps the topsoil to remain in place as the roots of these plants bind with the soil particles. Cattle graze on these plants and expose the topsoil. Thus, grazing should be allowed only on the land meant for the purpose and other areas should be protected from grazing.

- **Terracing**

Fields are cut at right angles to the slope. This slows down the flowing water and allows it

Water...as resource

Water is a transparent fluid which forms the world's streams, lakes, oceans and rain, and is the major constituent of the fluids of living things. As a **chemical compound**, a **water molecule** contains one **oxygen** and two **hydrogen atoms** that are connected by **covalent bonds**. Water is a **liquid** at **standard ambient temperature and pressure**.

A decorative graphic of a blue water splash with bubbles, located on the right side of the page, partially overlapping the text.

Human uses of Water

- Agriculture
- Drinking
- Washing
- Transportation
- Recreation
- Chemical use



THANK
YOU!