

Introduction :- Water is the most important resource on the earth's surface because plants, animals and human beings cannot survive without water. Water is synonymous with life. About 71% of the earth's surface area is surrounded by water.

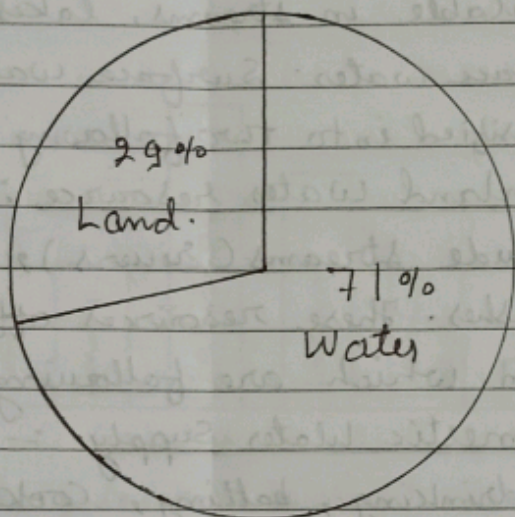


Fig:- The approximate area of water on the earth's surface.

Among it, 97% of this water is found in the oceans and seas and only 3% of fresh water in the form of snow and ice, rivers and lakes.

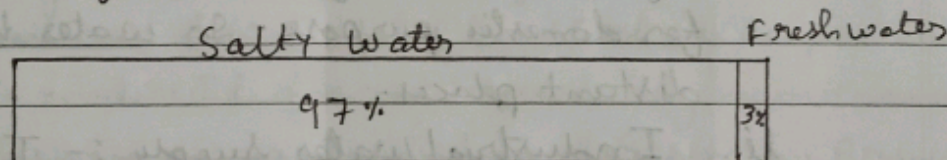


Fig - Availability of water into different forms.

Distribution and availability of water resource :-

Water resource is distributed and available into two forms which are following:-

- I. Underground water Resources
- II. Surface water Resources.

I. Underground water resources :- Underground water is lie at different depths in strata. Some of the rain that falls on the land evaporates, but much of it soaks into the ground. Part of the water that soaks into ground becomes available to the root plants, but most

of it goes deeper and joins the underground water. Underground water is a potential source of drinking and industrial water even for irrigation purposes.

II. Surface Water Resources :- Water which is available in streams, lakes, seas and oceans is called surface water. Surface water resources may be classified into two following parts -

1. Inland Water Resource :- Inland water resources include streams (rivers), canals, lakes, ponds and marshes. These resources offer several services to man which are following -

i. Domestic Water Supply :- Domestic water is used in drinking, bathing, cooking, cleaning, watering plants and crops. But the distribution of fresh water resource is highly uneven on the earth's surface. That is why, big cities often face difficulties in procuring water for domestic purpose. So water has to be brought from distant places.

ii. Industrial Water Supply :- Industrial plants require water in more quantities than for domestic purposes for producing steam, for condensing steam for solution of chemicals, for humidifiers, etc. That is why most of the important industries are located on the bank of rivers.

iii. Fishing :- Rivers, lakes and ponds are sources of inland fishing. The Volga in Russia, the Mississippi in U.S.A., the Ganga in India, the Hwang Ho in China and many other rivers elsewhere provide fish for local consumption.

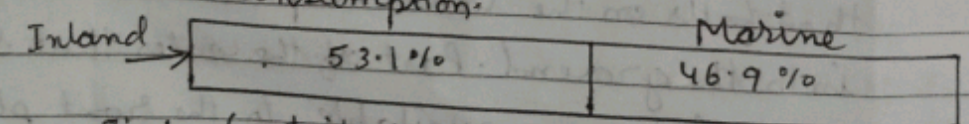


Fig:- Contribution of inland fisheries in fish production in India - 2003-04

iv. Irrigation :- Since the dawn of civilization man has been using water for irrigation purposes. Most of the early civilization arose in the river valleys where ample water was available for raising crops. The monsoon lands of the world largely practise irrigation.

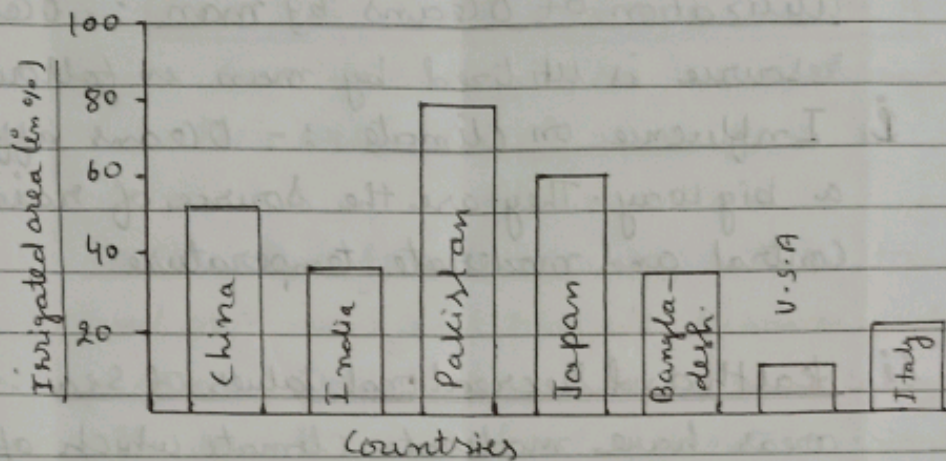


Fig:- Irrigated area under farming in some countries of the world (2006)

v. Navigation :- Inland navigation is done by rivers, canals and lakes. Water transport is cheaper than any other means. It does not require any maintenance cost either. In former U.S.S.R., China, Germany, France, Britain, U.S.A and Brazil water transport is more developed than the rail transport.

vi. Generation of Steam Power and Hydro-electricity :- Inland water resources are also used to generate steam power and hydro-electricity because hydro-electricity is the cheapest, cleanest, renewable and inexhaustible resource of power.

2. Oceanic Water Resources :- The extent of water on the earth is much more than that of the land. It covers almost $\frac{3}{4}$ of the earth's surface. There are five oceans on the earth. They are Pacific, Atlantic,

Indian, Arctic and ~~Antarctic~~ Antarctic. The Pacific Ocean is the largest ocean, occupying two fifth of the total area of the hydrosphere. Therefore, it is called the water hemisphere.

Utilization of Oceans by man :- Oceanic water resource is utilized by man in following ways:-

i. Influence on climate :- Oceans affect climate in a big way. They are the source of rainfall and they control and moderate temperature.

ii. Health and Recreational values of sea :- The Coastal areas have moderate climate which affects the human health directly. In tropical and subtropical areas, people like to visit sea coast, where they enjoy many recreational facilities.

iii. Food supply from Oceans :- Oceans are a great supplier of nutrients. Fishery is well developed in favourable areas, particularly in the Northern Hemisphere. In many countries such as Japan, fish is a major food of people. Fishery is most developed in China, Japan, U.S.A, U.K, Iceland, Norway, Russia, Peru, India etc.

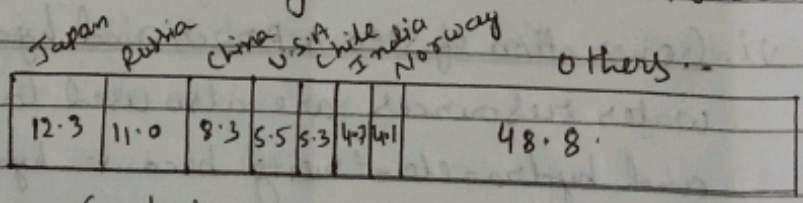


Fig:- Contribution of different countries in total world fish production (2003)

iv. Minerals from Ocean :- Practically all minerals of the earth's surface occur in oceans too, though in very small quantities. Marine water contains 3.5% salinity which is due largely to sodium chloride and magnesium.

v Ocean navigation :- Ocean provides cheapest and best navigation facilities. Many trade routes have developed in ocean. It provides nearly 98% of the international trade and commercial transport.

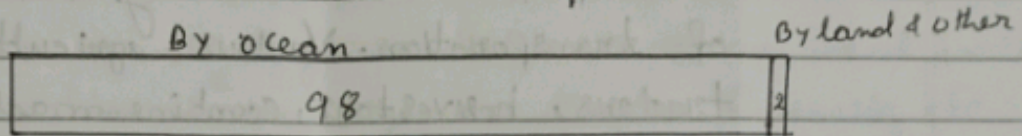


Fig :- Contribution of Ocean in international trade in the world (in %)

Conservation of water resources : Due to over exploitation and mis management water resource is facing two major problems - pollution and depletion. Sewage and water other waste, industrial effluents, agricultural discharges and industrial wastes are chief sources of pollution.

For conserving water, the following techniques should be adopted -

- (i) Redistribution of water.
- (ii) Rational use of underground water
- (iii) Use of geothermal water
- (iv) Protection of water from pollution.
- (v) Desalination

Finally, we can say that water resource is very precious resource because it is related to life of all creatures. Therefore, we should try to conserve it.

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