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RESOURCES FROM SEA AND UTILIZATION

Zoology

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ABSTRACT

The planet earth is often called as the watery planet because of the presence of enormous oceanic water. Oceans occupy 71%of the earth's surface. Sea was first used as a source of food and later for navigation and transportation. These two uses are ancient and continuing even today.

KEYWORDS

Planet,Ocean,Navigation

INTRODUCTION:

Additional uses of the recreation,a place to dump, disposal of radioactive wastes mining the sea,deriving the fresh water, generation of electricity from the sea water,a place to test the nuclear bombs and missiles,farming etc.Besides oceans effect on the climate and weather particularly in moderating temperature is considerable.Also life is believed to have originated in the oceans about 35 billion years ago because necessary conditions and basic ingredients for its evolutionary development existed there.

RESOURCES:

Potential resources of the sea are vast and of two types i.e. living and non–living.The most important non–living non-renewable resources is the fossil fuel.Lately much has been heard about this potential resource in the ocean. In shallow areas a considerable number of oil wells have been drilled and are operational.

ENERGY FROM THE SEA:

Harnessing the energy from waves tides and temperature difference in different depths of the sea is possible.Among the ocean energy technologies, tidal energy technology is most developed and well established.First startedin France in1967 producing 240MWof electricity.Now Russia produces about 400MW,China has 8 units ,Japan and Canada has one each.

Waves created by wind action are the basic features of oceans and contain substantial amount of energy. Only on a small scale system of about 30-60 kW are used in Japan, Norway and UK. India's pilot plant of 150 kW at Vizhinjam near Thiruvananthapuram in Kerala is working at present time.

Oceans thermal energy conversion (OTEC) technology is to use temperature difference between the warm surface water and the cold deep water to generate electricity. Japan has built four OTEC units of about 25-100 kW. Three projects are under test in USA.

Some of the disadvantages from the ocean energy technology are the problem of transmission of energy to land, danger from storms and are prone to environmental damages, technological problems and prohibitive cost. However these resources are renewable, pollution free, waste free and non hazardous.

CHEMICAL PRODUCTS FROM SEA WATER:

From the beginning, the chemical industry has been closely associated with oceans. Sodium chloride, sodium carbonate, bromine, magnesium and potassium and their salts were first recovered in industrial quantities from sea water. Marine algae were, for a long period, the major industrial source for iodine, bromine and potash. The total value of the materials derived from the world oceans by the chemical production industries certainly exceeds several thousand crores of rupees annually. In addition gypsum and potassium compounds are recovered in lesser amounts and heavy water (D2O) has been produced on a industrial scale. Desalination plants have been set up in some of the middle East countries for production of potable freshwater from sea water.

LIVING RESOURCES:

Both marine plants and animals are harvested on large scale for various uses. Among plants, mangroves, microalgae (phytoplankton) and macro algae (seaweeds) are being used by man. Mangrove termed as tropical tidal wetlands with typical vegetation like any other type of forest, form the national wealth providing timber, fire wood, tannin etc. Besides, mangrove serve as a good breeding and nursing ground for various fish and shellfish, serve as an important bird sanctuary, excellent site for aquaculture, place for safe recreational facilities like boating, hunting, bird watching etc., and play an important role in the protection of the coast line from cyclone and hurricane.

The microalgae(phytoplankton) like diatoms, golden brown algae, dinoflagellates, *Coccolithophora* are important in the household of sea as a basic food. They are also commercially cultured on large scale to feed the young ones of fish and shellfish in culture systems (Hatchery), beta carotene, phycocyamine, phycoerythrine, glycerol, food dyes are the extracts which are used for various purposes including cosmetology.

The macroalgae (sea weeds) are regularly harvested from nature all over the world as well as cultured regularly in many countries especially in South East Asia and Japan. Algin, Agar and Agar; and Carrageenan are the industrial products extracted from brown algae and red algae. These products are used widely in food bakery and confectionaries, cosmetics, pharmaceuticals, textile, paper and other industries. Agar is used as the media for plate culture of bacteria. Sea weeds like *Porphyra* are either eaten raw as salad or used in the form of sauce or soups. Sea weeds are also a good source as manure.

ANIMAL RESOURCES:

Total fish production in India is estimated to be 4.9m.mt, of which marine fish catch is 2.7m.mt and a gross annual income from marine sectors is estimated to be 8000 crores (at the landing center price level). This sector continues to be one of the major suppliers of food production to the domestic as well as overseas markets. The income through marine products export has grown to the level of US $1.3 billion during 1997-98 accounting for 7% of the countries net foreign exchange earnings. About three million people in the country are dependent on sea fishing directly or indirectly and the demandfor sea fish is growing steadily year after year. India exported 3.85 lakh tonnes of marine products to 69 countries. Japan, China, USA and European union are the target markets. Over 55 varieties of fishery products are currently exported from India.

Fish resources from the sea include finfishes, Molluscs and Crustacean shellfishes and others like Coelenterates, Echinoderms, Reptiles and Mammals. These resources are consumed as fresh or frozen, dried, canned, smoked, pickled and later used. Fish are also converted into various edible fishery products, cutlets, fish soup powder, surimi etc.

Other products and byproducts from these animal resources from the sea are fish manure, fish meal, FPC, fish body oil, liver oil, shark fins, air bladder, fish skin leather, fish glue, chitin, fish ensilage, fish sauce, fish roe, pearl essence, blubber oil, cuttle bone, Molluscan shells, Beche-de-mer, gorgonids, sea horse pearls, chanks, ambergis, corals etc.

DRUGS FROM THE SEA:

In the past man has developed awareness that seas may be a new

frontier of biomedical research and the seas may hold key to the cure of cancer, AIDS, Herpes and other dreadful diseases. The warm water of Indian ocean harbor a wide varieties of marine flora and fauna, marine fungus, algae, corals, sponges, Bryzoans, tunicates and other organisms from Andaman and Lakshadweep islands and the depth of the sea along the coast line of India are promising subject of study and exploitation.

In the man's last chance of survival, sea plays significant role in all his activities. Conservation of the resources from over-exploitation and protection from pollution is the need of the hour.

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