

What are desalination plants? Analyse the feasibility of the desalination plants in the country.

Desalination plants refers to the process of conversion of salt water to portable drinking water through Reverse Osmosis process. Desalination plants incurs high cost and it is the future of conversion of seawater to cater the water scarcity condition in future.

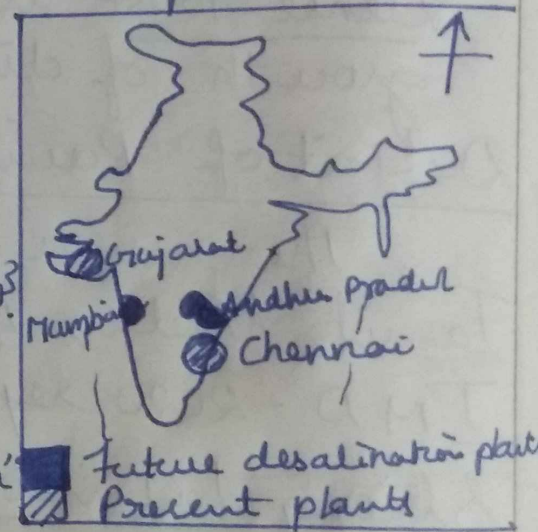
Drinking water necessity:

1. India is in the water stress condition of annual per capita availability $< 1800 \text{ kg/yr}$ by FAO.

2. India thus needs the feasibility of desalination plants over the 7500 km coastline to prevent from Zero day.

3. (e.g) Bangalore, Chennai is in water stress condition as per NITI Aayog and hence the feasibility arises

Fig: Desalination plants in India



Locational feasibility of plants:

1. Generally desalination plants require 20-30 areas near the coast.
2. India's 7500km coastline favours the perfect feasibility for the enactment.
3. (e.g) Chennai has 2 desalination plants of 100MLD in its perfect coastline.

Cost feasibility of plants:

1. Desalination plants are very costly and requires 100 crore for 100MLD capacity.
2. Due to this only developed states having affordability usually construct the plants.
3. (e.g) Mumbai till now has no plant due to construction and maintenance cost.

Energy feasibility of plants:

1. High energy is another issue for construction.
2. 75% of 100 crore cost is borne by the energy conversion and utility.
3. (e.g) Gujarat plans to use Renewable energy for its plants.

Ecological feasibility:

1. Disposal of Brine salt water is a concern for ecology and its marine environment.
2. Hence proper scientific disposal is needed for construction of plants.

Desalination plants is the future for Zero day cities and towns in India.