

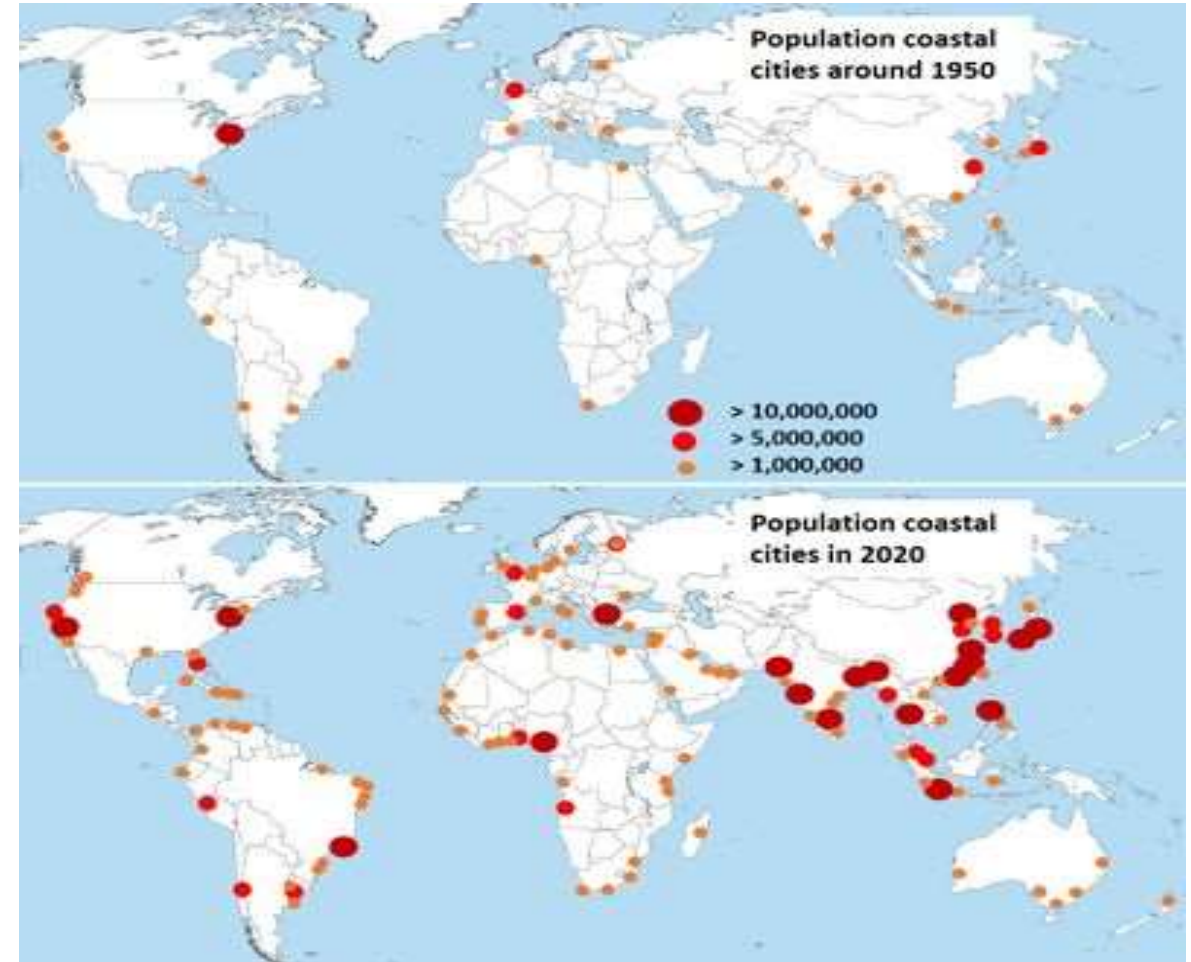
Coastal Reservoir

U Kyaw Oo

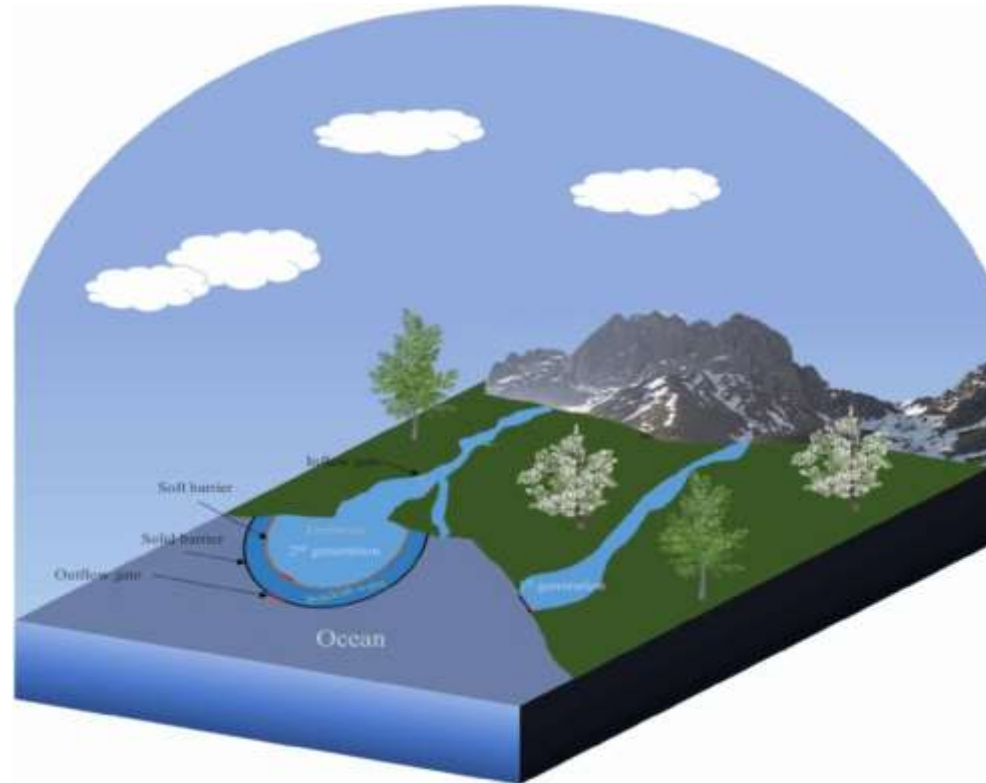
B.E. (Civil)

Dip.S.E. (Delft) with Endorsement for Special Studies in
Groundwater Recovery

- 40 % of the total population living within 100 kilometers of the coastline.
- Apart from surface water and groundwater, other water supply options are considered and commissioned for coastal areas.
- Desalination plants, wastewater reuse and coastal reservoirs are among them.



- A coastal reservoir is a freshwater reservoir located in the sea, at the mouth of a river or along the coast line with a sustainable annual flow.
- An impermeable barrier separates the fresh water from the salty sea water.



A coastal reservoir has many advantages;

- minimal land acquisition
- no land submergence
- no reduction of environmental flows
- no habitat or forest submergence
- fresh water can be transferred to nearby areas

Construction cost per
kilolitre of water (US\$)

| | |
|--------------------|--------------|
| Coastal reservoirs | 2.67 - 6.01 |
| Inland reservoirs | 5.83 - 7.5 |
| Desalination | 6.41 - 10.08 |
| Water recycling | 5.57 - 8.30 |

Some coastal reservoirs

| Coastal reservoir | Catchment area (1000 km ²) | Length of dike (km) | Storage capacity (billion m ³) | Construction cost (billion US\$) | Constructed year |
|---------------------------|---|---------------------|---|----------------------------------|------------------|
| Holland | 170 | 33 | 5.6 | | 1937 |
| Qingcaosha Shanghai | 1800 | 43 | 0.55 | 2.8 | 2011 |
| Saemanguem S. Korea | 3320 | 33 | 0.53 | 2.1 | 2006 |
| Marina Bay, Singapore | 1130 | 0.35 | 0.04 | 1.5 | 2008 |
| Plover Cove, Hong Kong | 459 | 2 | 0.23 | 0.007 | 1968 |

Lake IJssel



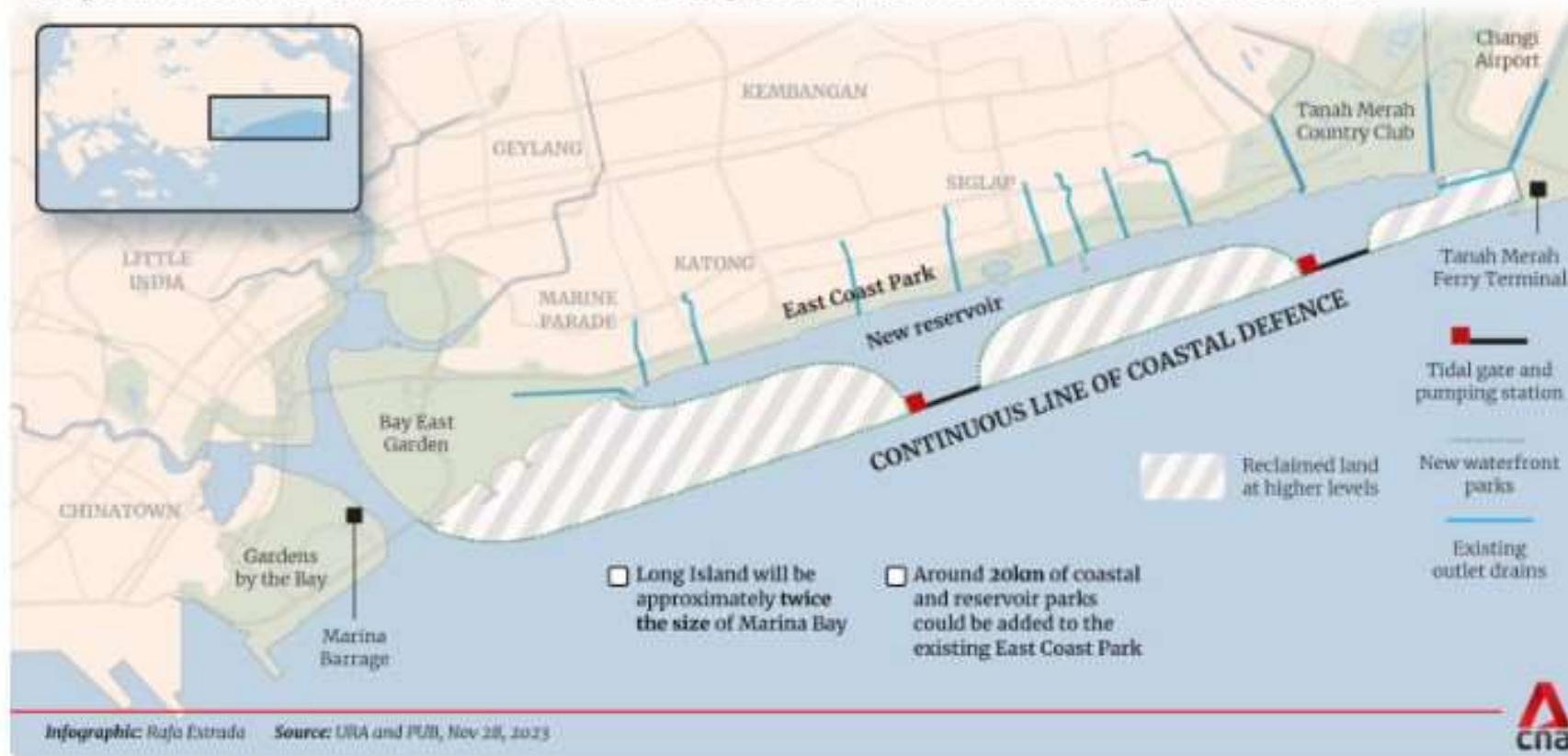
Marina Barrage



Long Island

What Long Island at East Coast Park could look like

Long Island is a land reclamation project to protect Singapore's East Coast from flooding and sea level rise



Dawei Peninsular



Potential Coastal Reservoir for Maung Ma Gan Beach



Myeik Archipelago



Thank You