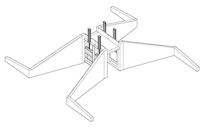
POLDERS

WHO FIGHT TIDE AND HATE SALINITY



A polder is an artificial hydrological management system that uses dikes or embankments to secure a controlled waterscape. The embankments become routs of communication. The water needs to be controlled from coming in during dry season salty tides and during the monsoon, the excess water needs to go out from the polders. This water mangement is done with help of sluice gates. Local people keep traces of saline and tidal data and decide collectively when and how to control the gates. The polders create a cultural landscape that is different from higher land agricultural practices. To secure reserve of fresh water, the lands beside the embankments usually have a series of ponds. These ponds are filled with freshwater during the monsoon king tides and used for fish farming and irrigation.

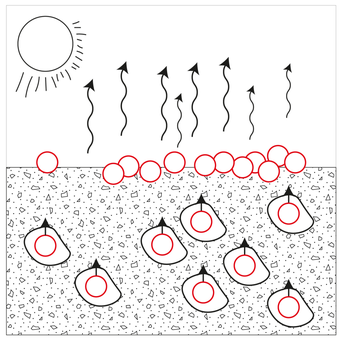
In order to describe the polder inland landscape, different polder landscapes having site specific practices are drawn and illustrated within a polder map.

Gher farming is done Inside areas with good water drainage system. In this technique polyculture of fish, rice and vegetable is done in a plot all year around.

Lands that are partially or totally submerged by fresh water, elevated or floating agriculture technique is practiced.

And the Lands with logged salt water usually are taken over by industries and converted into shrimp farms. Since the case of increasing salinity is comparatively new, people still do no have any precedence of growing crops in salt water logged areas.

1. CROSS DAM
2. SLUICE GATE
3. POLDER EMNAKMENT
4. PRIMARY CANAL
5. SALT WATER FLOODED
6. FRESH WATER FLOODED
7. TIDAL INFLUENCE
8. WELL MANAGED

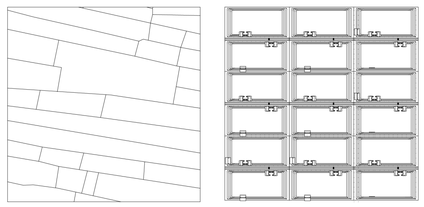


CAPILLARY EFFECT

When lands are left fallow, sun evaporates the water and with water, the salt particles come up and accumulate on the top layer of the soil.

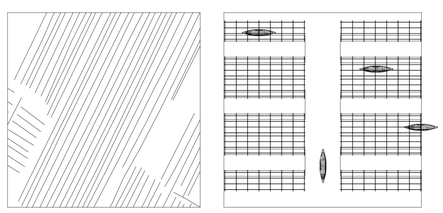
When this happens, land become unproductive because the plants can not take water inside.

Only the mangrove have a high water incidence level in saline conditions.



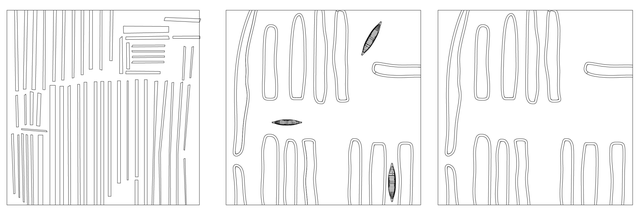
SALT WATER SHRIMP FARMING

Lands that are submerged by salt water are used for this farming. Intensive version of this farming involves lot of pollutants and even spreading of artificial salt during the seasons of low salinity, this farming affects adjacent fields by increasing salinity. Communities that are strong enough to reject shrimp farming are usually more productive in terms of small-scale year around crop harvesting.



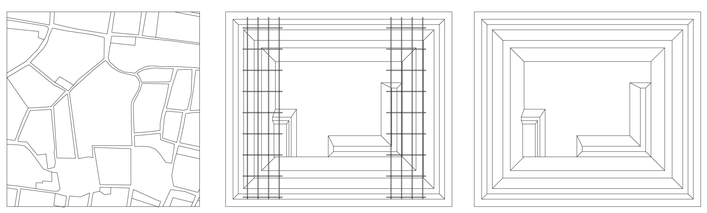
'SORJON' ELEVATED GARDENS

Sorjon is practiced where land is subject to regular tidal inundation. The raised beds used water hyacinths or rice husk and can be used year around to grow crops on the platforms.



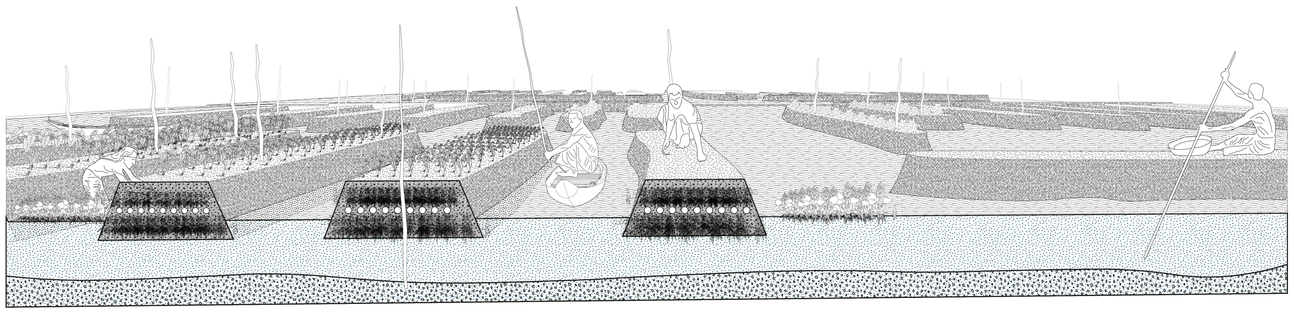
THE FLOATING GARDENS

Lands that are flooded more than half of a year with fresh water, this technique is helpful. Farmers use water hyacinths with bamboo structure to create beds that can float when tide comes. And during the dry seasons, the beds compose and enrich soil nitrogen level.

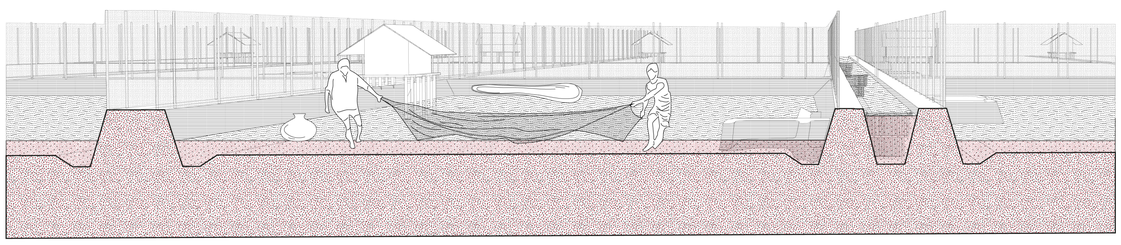


GHER FARMING

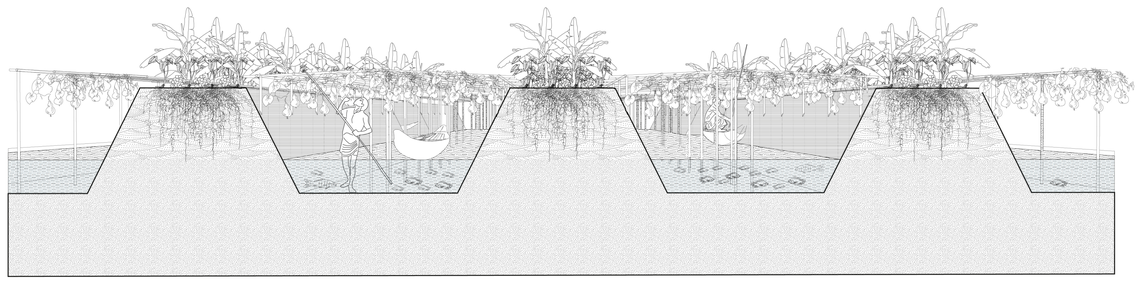
Lands that have a good water drainage system can have Gher farms. Part of the field is dug and the earth is used to raise the bunds or filed isles. Then the dug part becomes water storage where fish can be farmed and the regular elevated filed is used for rice farming. It is basically a polyculture technique where rice, fish and vegetable are grown together.



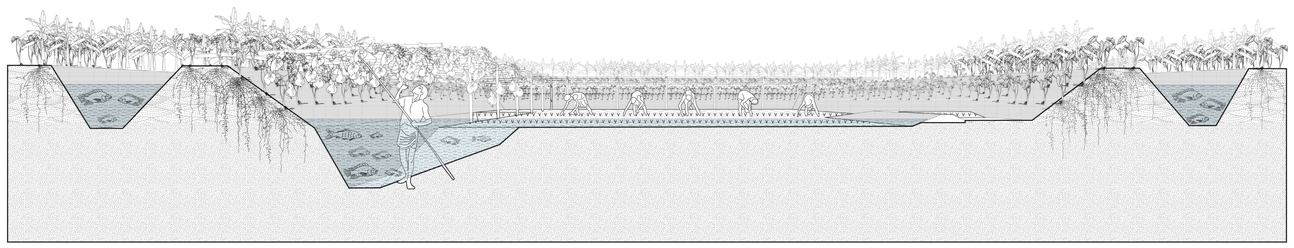
THE FLOATING GARDENS



SALT WATER SHRIMP FARMING



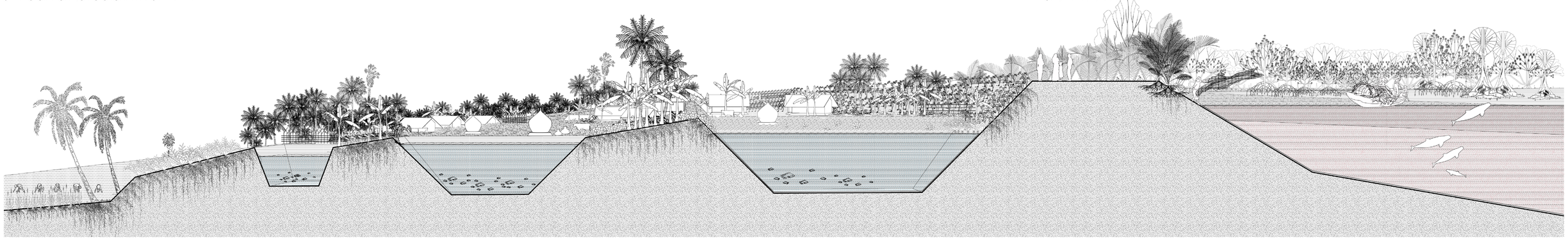
ELEVATED FARMING



GHER FARMING

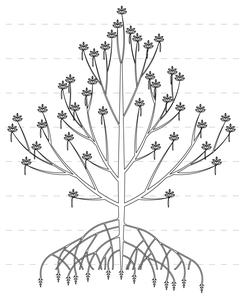
SERIES OF PONDS TO STORE FRESH WATER

POLDER EMBANKMENT

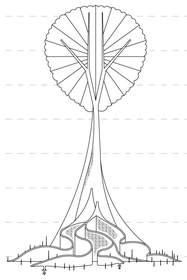


MANGROVES

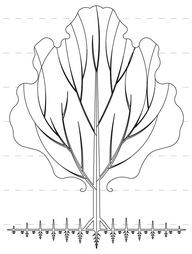
WHO LOVE TIDE AND FIGHT SALINITY



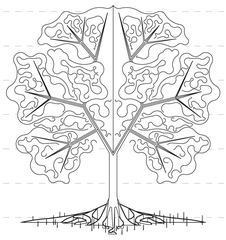
A



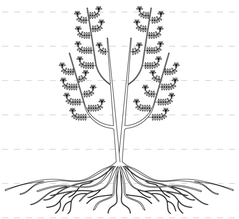
B



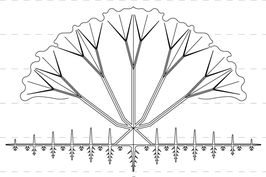
C



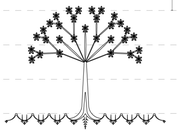
D



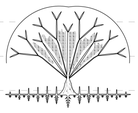
E



F



G



H

I

J

K

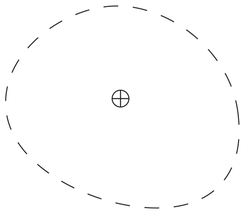
L

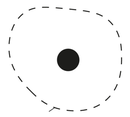
M

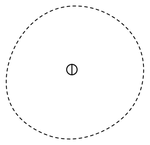
N

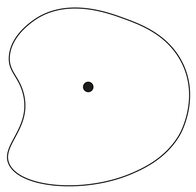
O

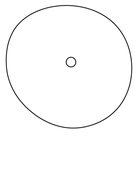
3m

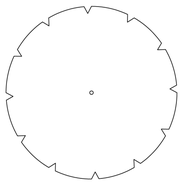


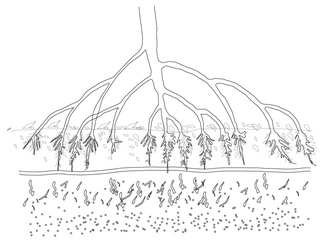




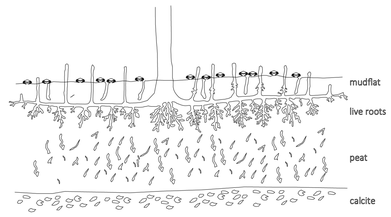




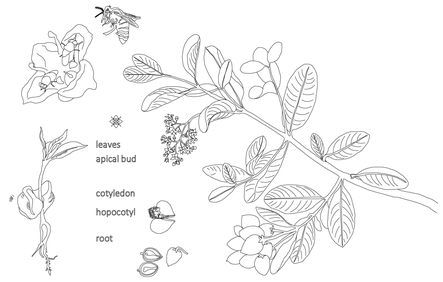




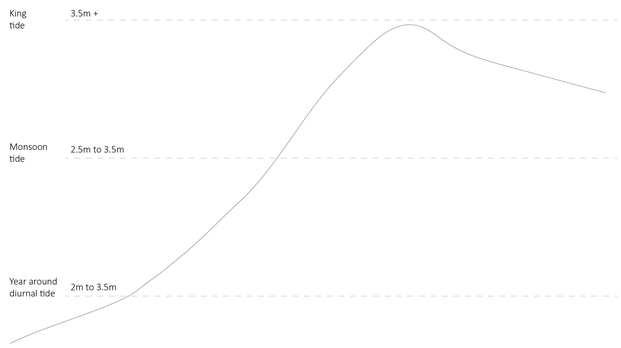
Tilt roots and fallen leaves enriching soil carbon

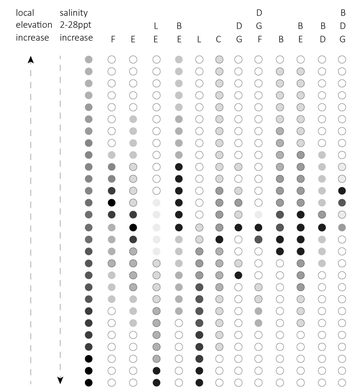


Knee roots and mudcrabs



Polination and vivipary germination of Avicennia officinalis

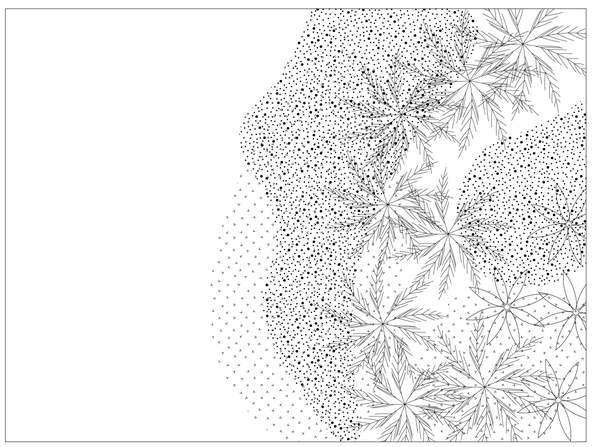




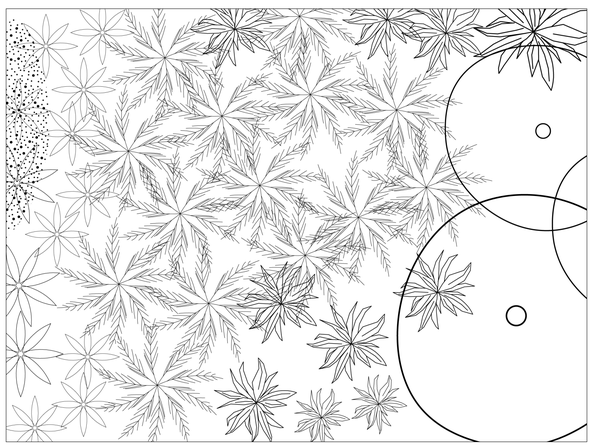
graphical interpretation of salinity incidence according to ppt interval
source: World Bank: Policy ResearchWorking Paper 7736

A. Rhizophora mucronata
B. Heritiera fomes
C. Sonneratia apetala
D. Xylocarpus mekhongensis
E. Excoecaria agallocha
F. Avicennia officinalis
G. Bruguiera gymnorrhiza
H. Aegiceras corniculatum
I. Acrostichum aureum
J. Phoenix paludosa
K. Nypa fruticans
L. Ceriops decandra
M. Phragmites karka
N. Acanthus ilicifolius
O. Myriostachya wightiana

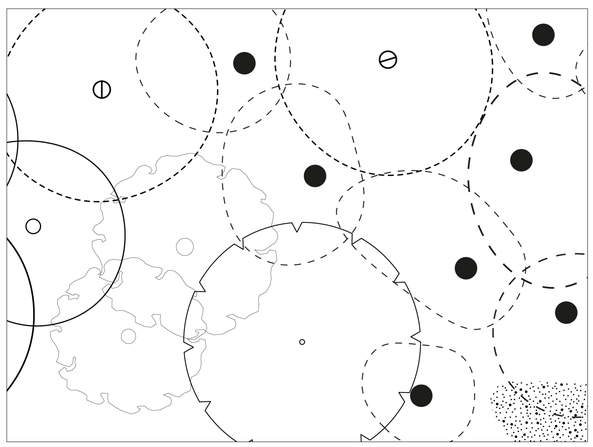
Graphical interpretation of the profile of vegetation along the geomorphic gradient according to : cegis 2001



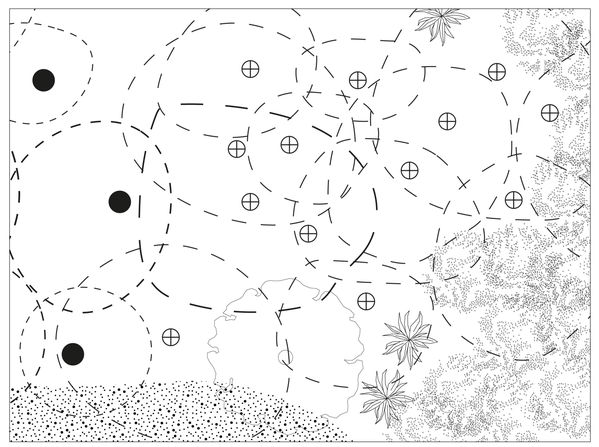
CANAL



MUDFLAT



RIDGE



BACKSWAMP