

# ARK CITY MANGROVE AS TACTIC MAKING DELTA 2050

The Vietnam Mekong Delta: An area of population of 17 million people and famous because of the enormous fruit and rice cultivation.

This fairy tale is at risk. The deterioration of agriculture and rivers here occurs daily. If no action is taken, this fairy tale will flood in less than 30 years due to rising sea level and subsidence. As a result and the coastline will even further return to the similar location as 2000 years BC.

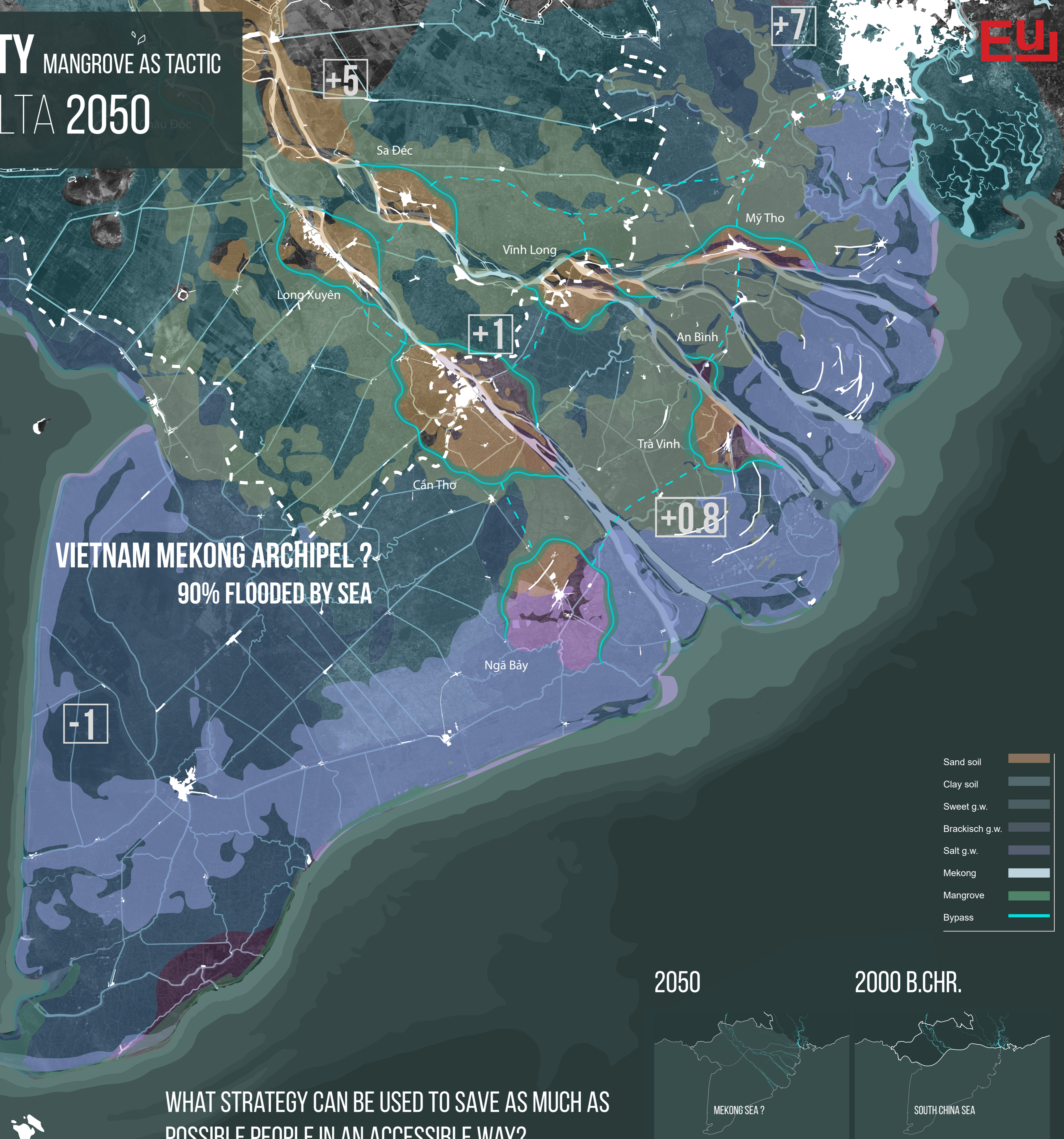
The critical situation has caused a massive migration from rural to urban area. Cities are growing at the seams.

A potentially solution to save the most people may be found in the power of the mangrove ecosystem. Throughout time, mangroves has protected the delta by preventing coastal erosion, as well providing a natural breakwater from intens waves. Despite the social and ecological benefits of mangrove ecosystems, the number of mangroves within the Mekong Delta has been reduced to half. The remaining mangrove ecosystems are no longer sufficient in providing protection to The Mekong Delta.

What strategy can be used to save as much as possible people in an accessible way?

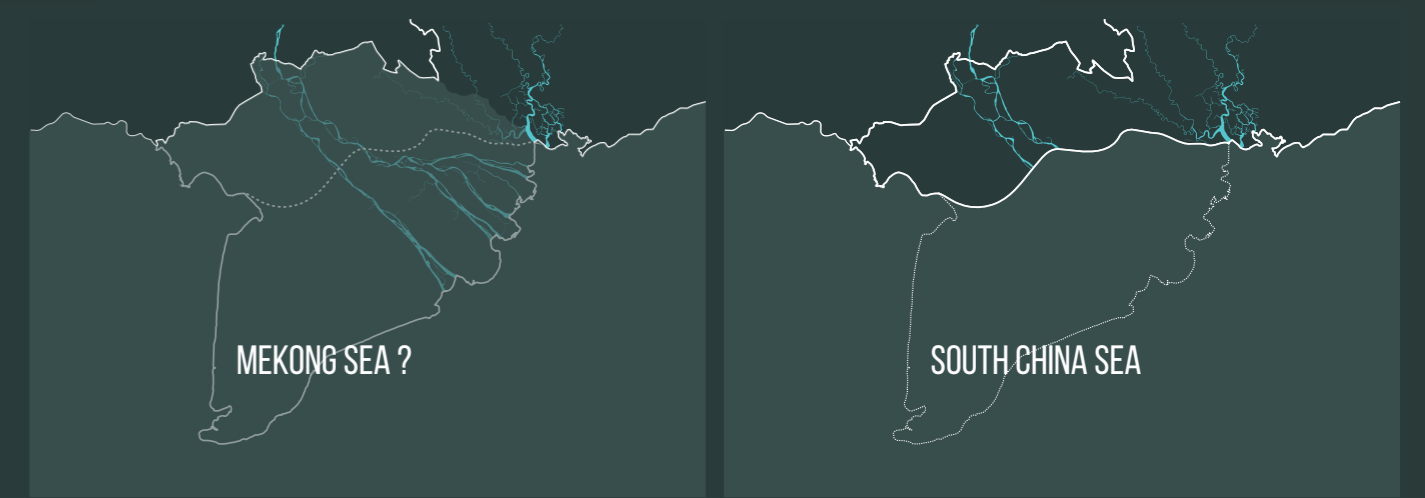


## VIETNAM MEKONG ARCHIPEL ? 90% FLOODED BY SEA



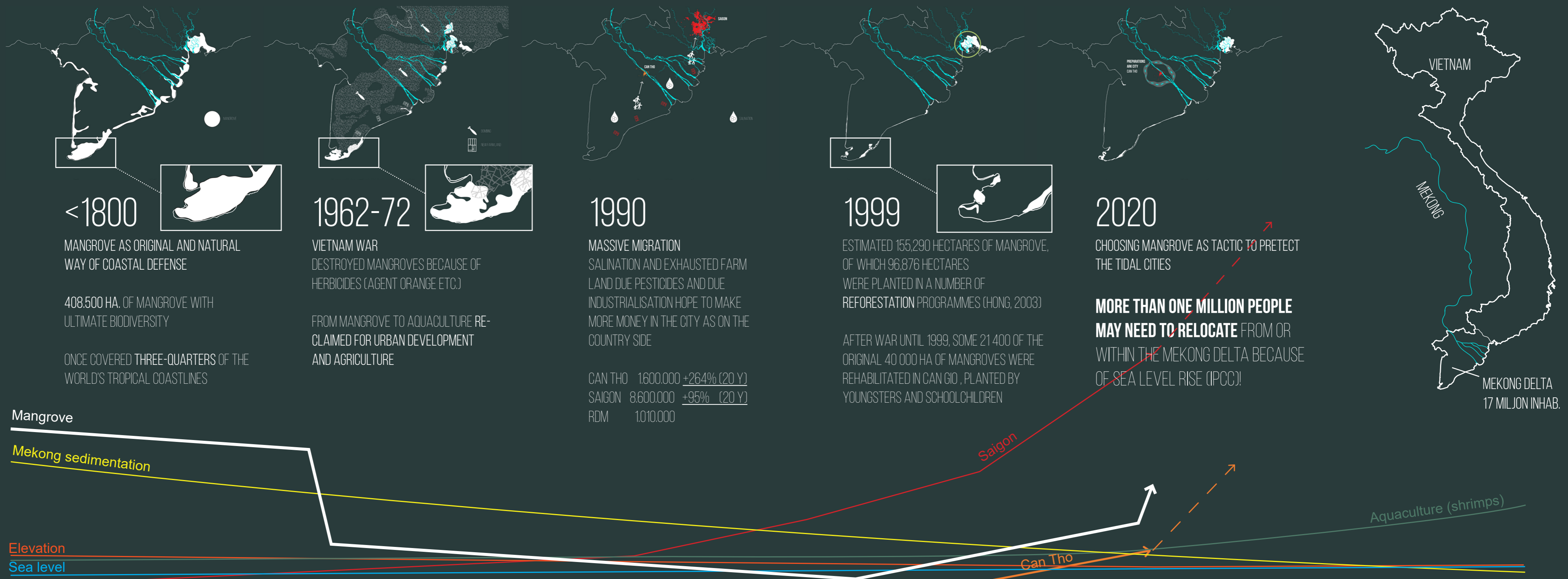
2050

2000 B.CHR.



WHAT STRATEGY CAN BE USED TO SAVE AS MUCH AS POSSIBLE PEOPLE IN AN ACCESSIBLE WAY?

### TIME LINE

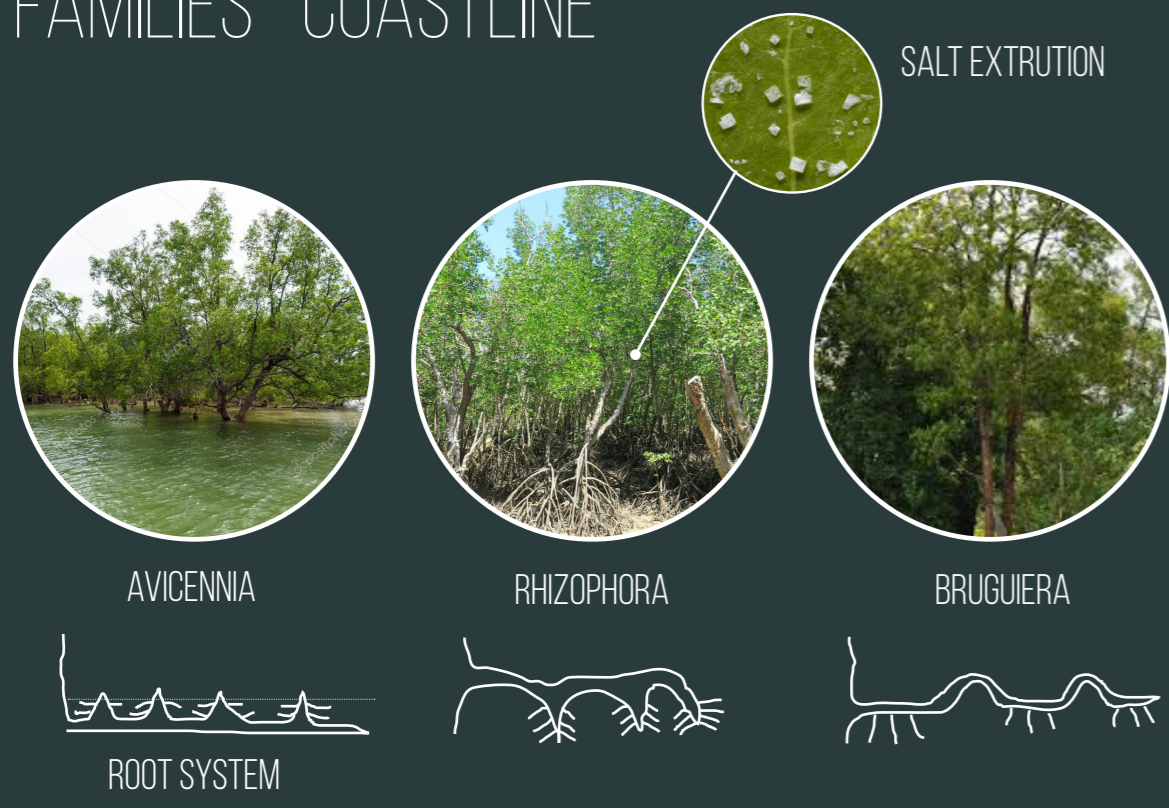


# ARK CITY MANGROVE AS TACTIC



## MANGROVE FACTS

FAMILIES COASTLINE



## INLAND - SALT - L&H TIDE



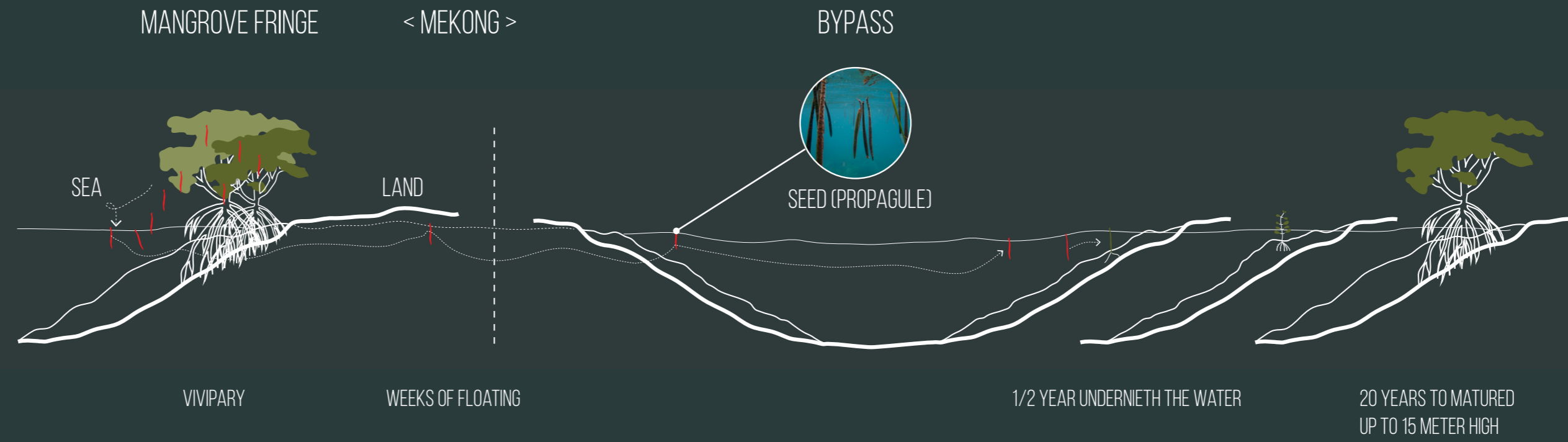
## INLAND - BRACKISCH - H TIDE



### MANGROVE BENEFITS

- BOTTOM RISE: SEDIMENTATION & BY ORGANIC MATTER
- BREAKWATER: 100 M OF MANGROVE = 1 METER HIGH WAVE
- EROSION PREVENTION
- BIODIVERSITY
- FILTER
- NATURAL RESOURCE
- CO2 STORAGE
- FISHING
- TOURISM

Source: Mangroves for coastal defence



### GROW CONDITIONS

- \* TIDAL
  - \* SHALLOW
  - \* SALT WATER
  - \* NO BIG WAVE EXPOSURE
- Source: Indochina mangroves WWF

## THE ARK CITY 2045

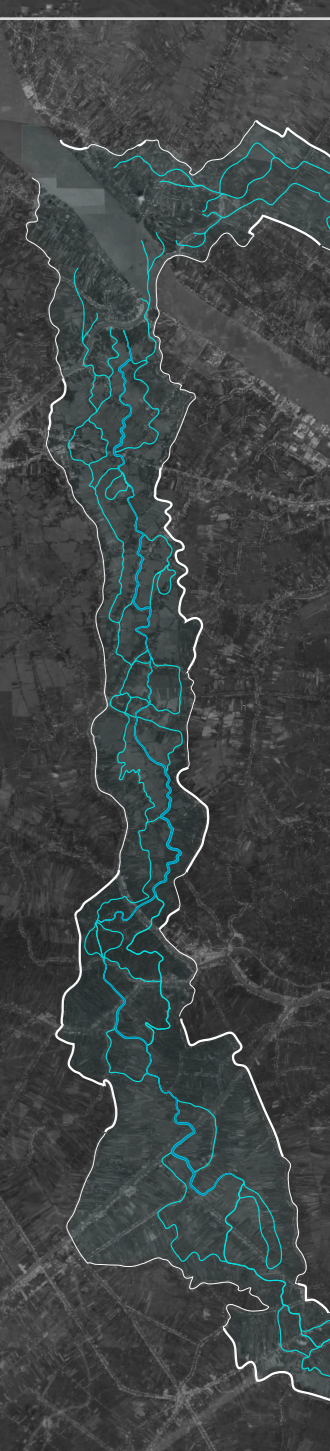
### DESIGN PRINCIPALS

- RESTORING NATURAL PATTERNS OF WATER FLOW
- ATTACHED TO STREETS AND PROPERTIES
- NOT IN VULNERABLE ECO SYSTEMS
- PREVENTING HUMAN DISTURBANCE
- BAMBOO BRANCHES AGAINST EROSION TO PROTECT THE PROPAGULE

- ### LEGEND
- MANGROVE FOREST
  - NATURAL CHANNELS
  - MUD PLAIN
  - WATER RETENTION
  - MANGROVE TRAIL
  - URBAN AXES
  - EXISTING CITY
  - URBAN EXPANSION
  - MAIN STREAM

2KM

## PATTERNS



FOLLOWING THE PATTERN OF BORDERS AND NATURAL WATER FLOWS

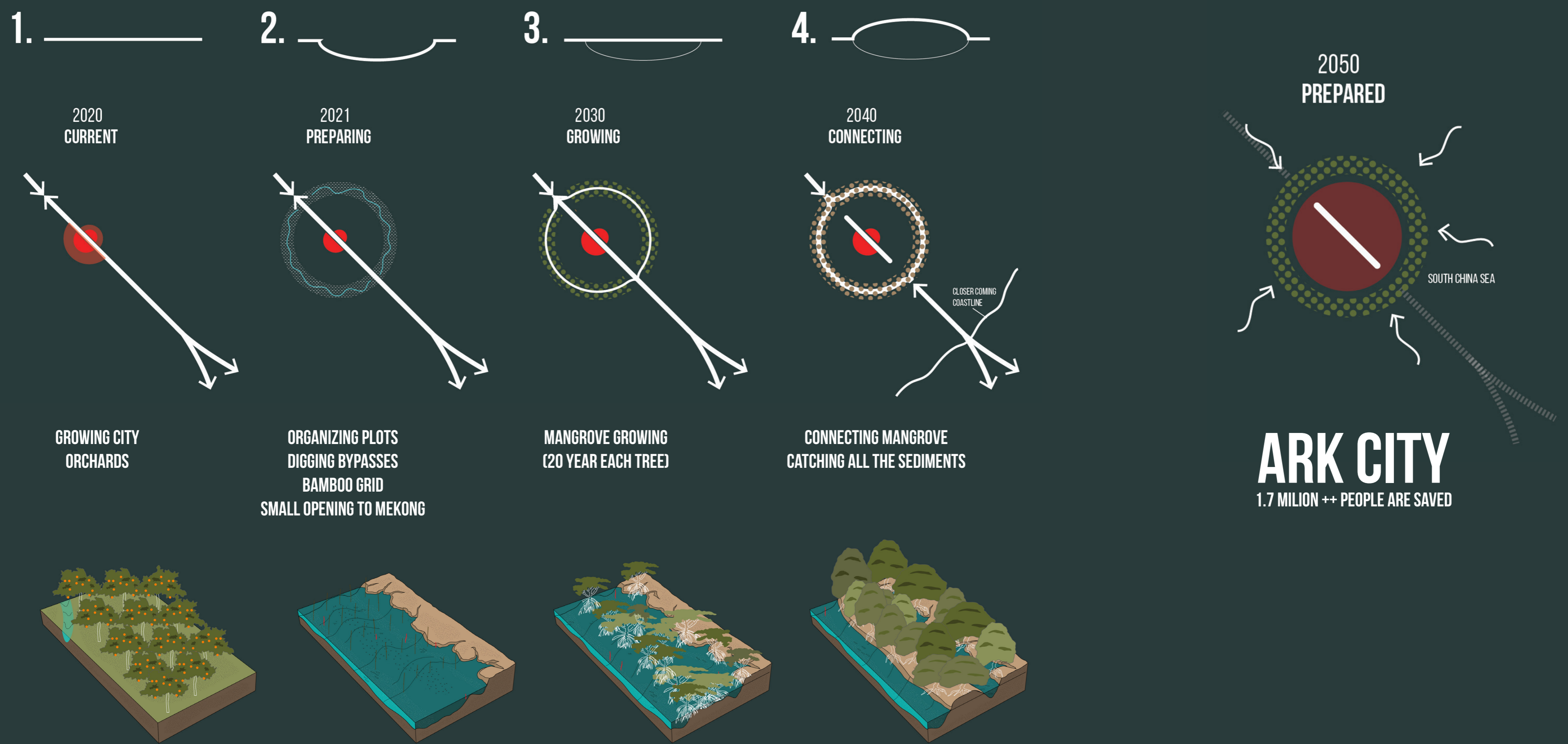
Looking to nature's past, the mangrove has been the protective factor for deltas. I proposed to create a substantial mangrove forest that acts like a shielding ring around a civilisation: a full-fledged mangrove forest that can withstand the forces of the sea within 20 years to protect the city. This concept 'Ark City' provides defense and services for civilisation.

The scalability of Ark City promotes a feasible solution across urban and rural landscape. From villages to mega-cities, capturing the benefits of mangrove ecosystem forest is possible, as long as it is in a tropical tidal area. We let nature do the greatest work. Residents and the government can in accordance organize it.

The Ark City, a strategy that uses the power of nature to protect the city from the sea. (below it's started already)

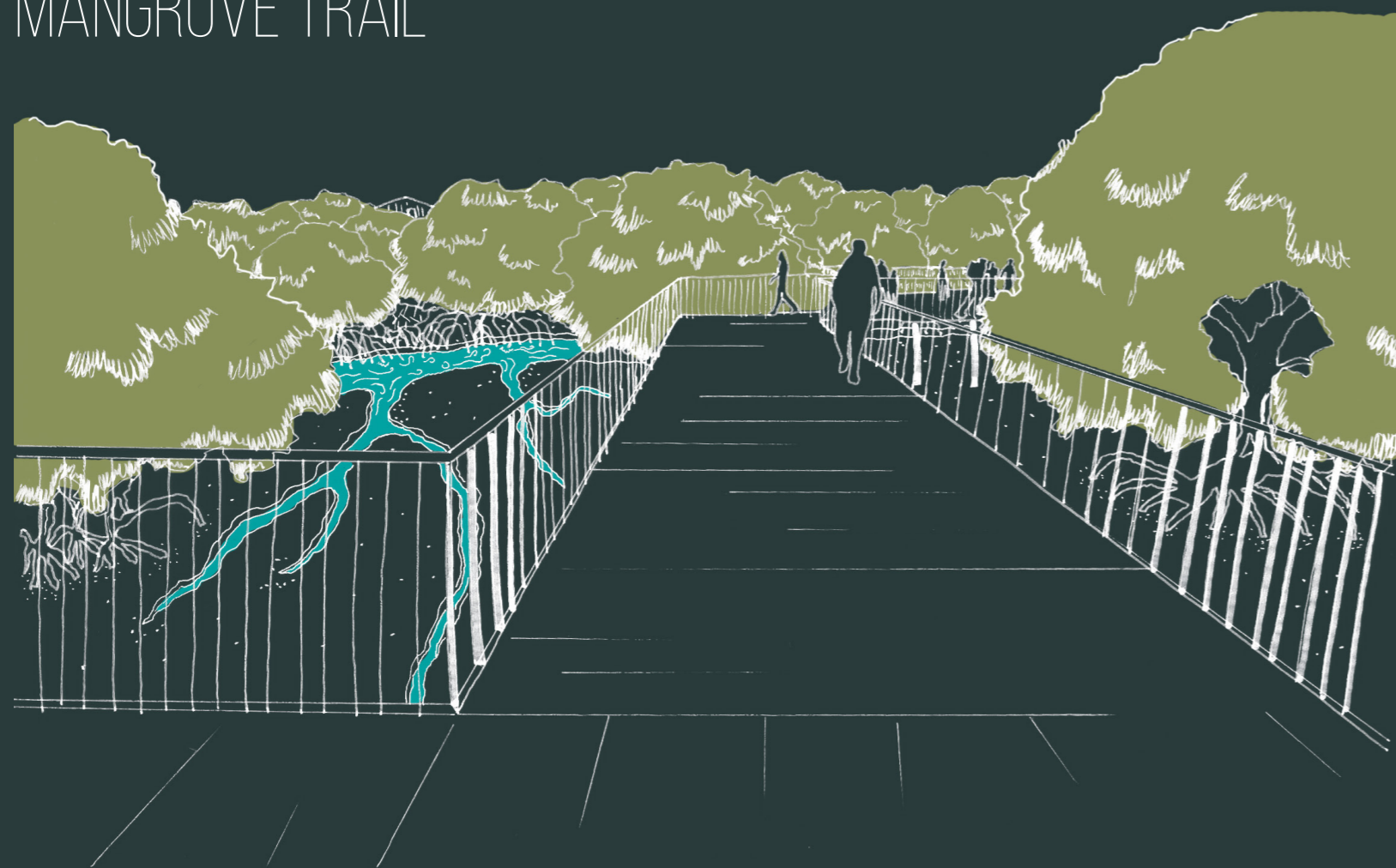
# ARK CITY MANGROVE AS TACTIC

## DEVELOPMENT



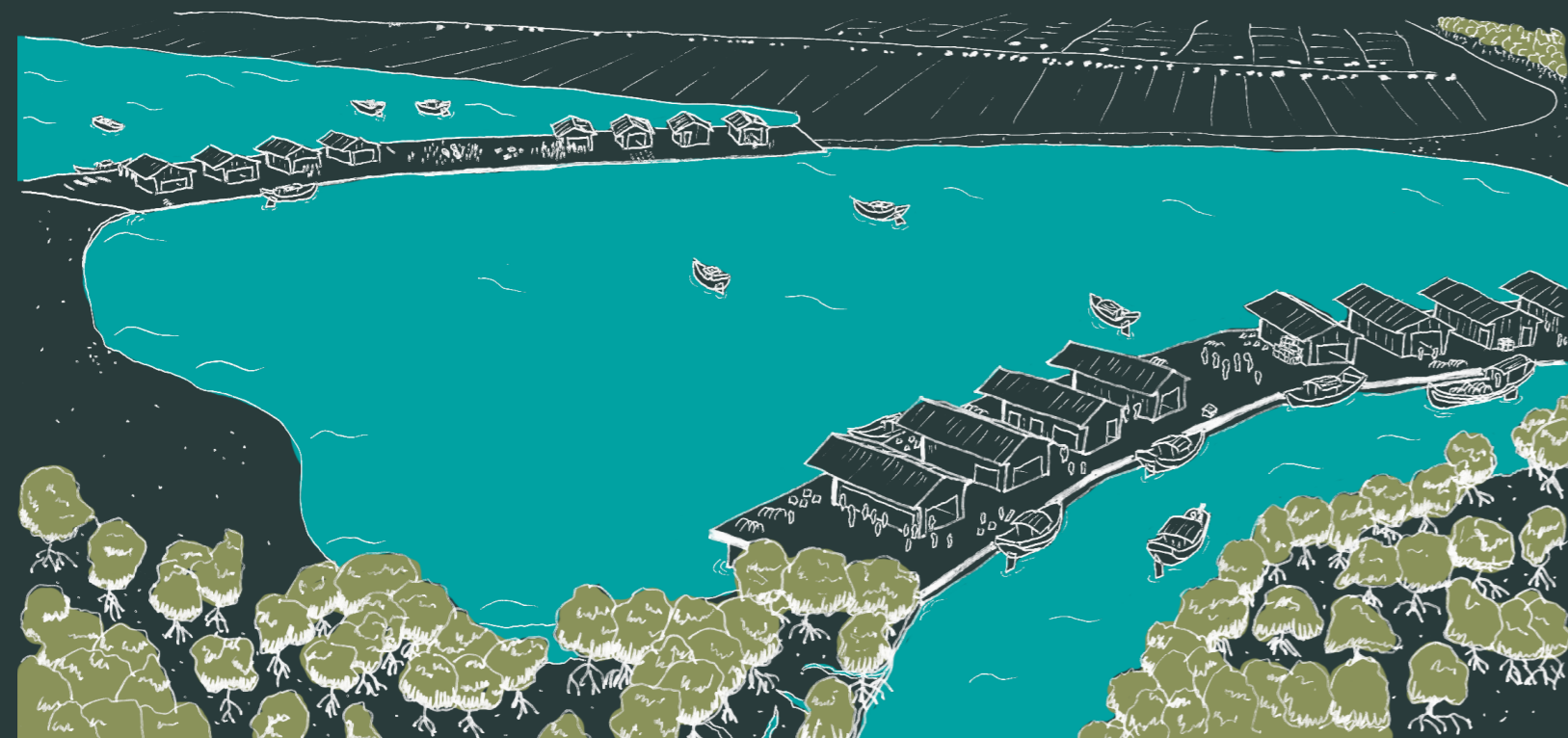
## SPECIALS

### MANGROVE TRAIL



-A- MANGROVE EYE LEVEL WITH LOOK OUT POINT AND CREEKS

### HARBOR



-B- HARBOR TRANSFER FROM HIGH BYPASS WATER TO LOW LAKE MEKONG WATER

## BENEFITS

### CURRENT SITUATION

