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Rivers of Life: Climate Change impacts on the Mekong Delta

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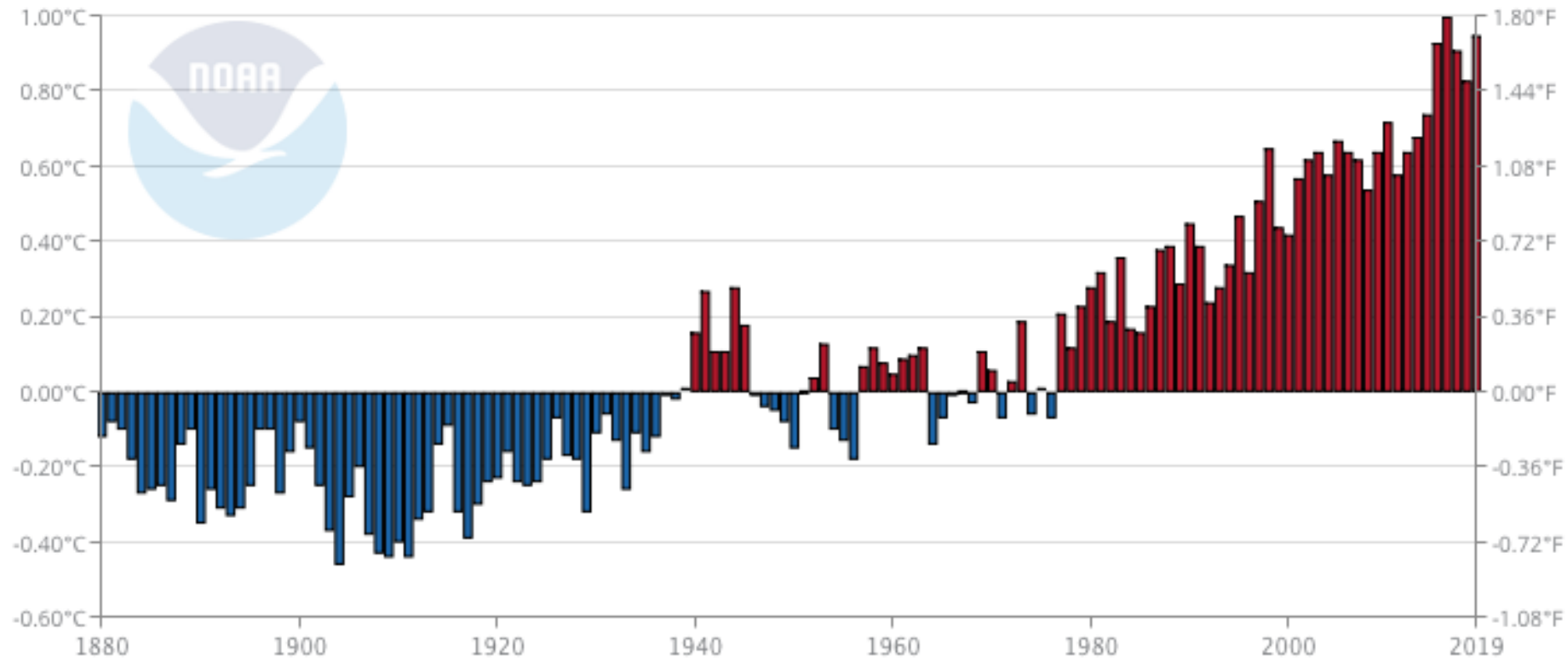
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Since 1880, the average global temperature has increased by more than 1° C

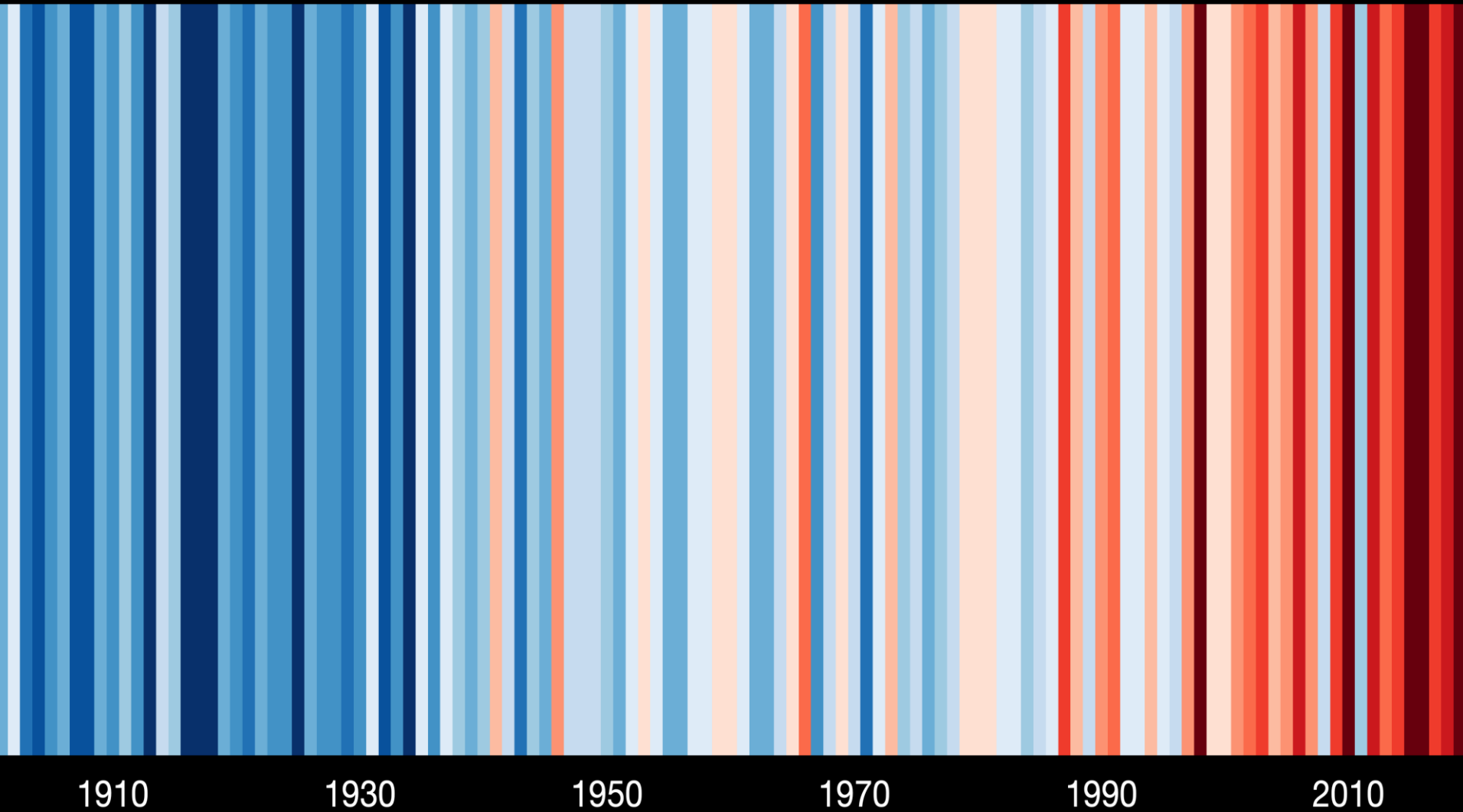
Global Land and Ocean
January–December Temperature Anomalies



https://www.ncdc.noaa.gov/cag/global/time-series/globe/land_ocean/ytd/12/1880-2019

Rivers of life

Temperature change in Vietnam since 1901



An aerial photograph of a glacier in 1986. The glacier is a large, bright white mass with a small circular feature in the center, surrounded by brown, rocky terrain. A semi-transparent white box with the year '1986' is in the top left corner.

1986

An aerial photograph of the same glacier in 2019. The glacier has significantly melted and fragmented into smaller pieces, with much more brown, rocky ground visible. A semi-transparent white box with the year '2019' is in the top left corner.

2019

A letter to the future

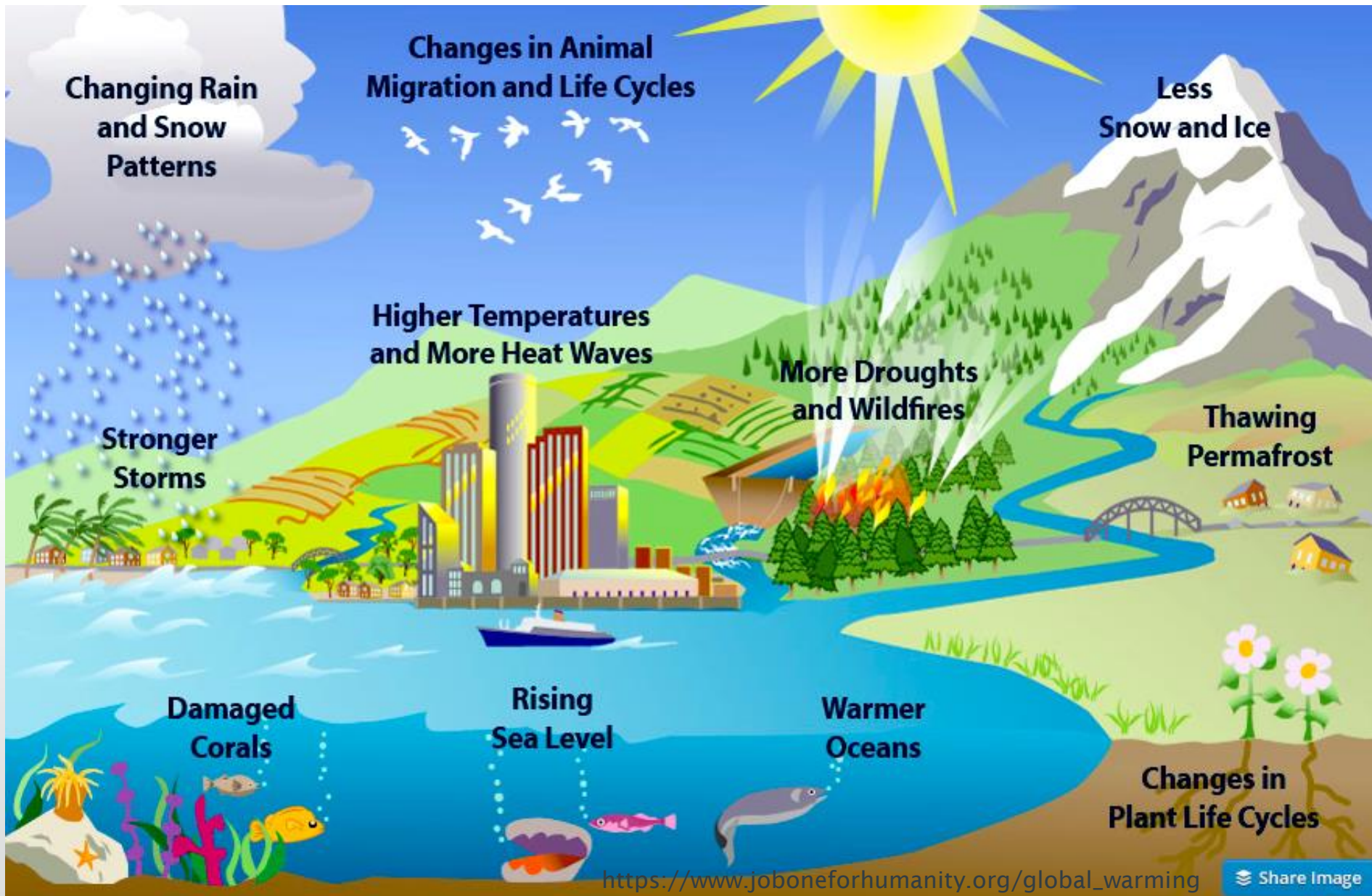
Ok is the first Icelandic glacier to lose its status as a glacier.
In the next 200 years all our glaciers are expected to follow the same path.
This monument is to acknowledge that we know
what is happening and what needs to be done.
Only you know if we did it.

@IcelandicEcon

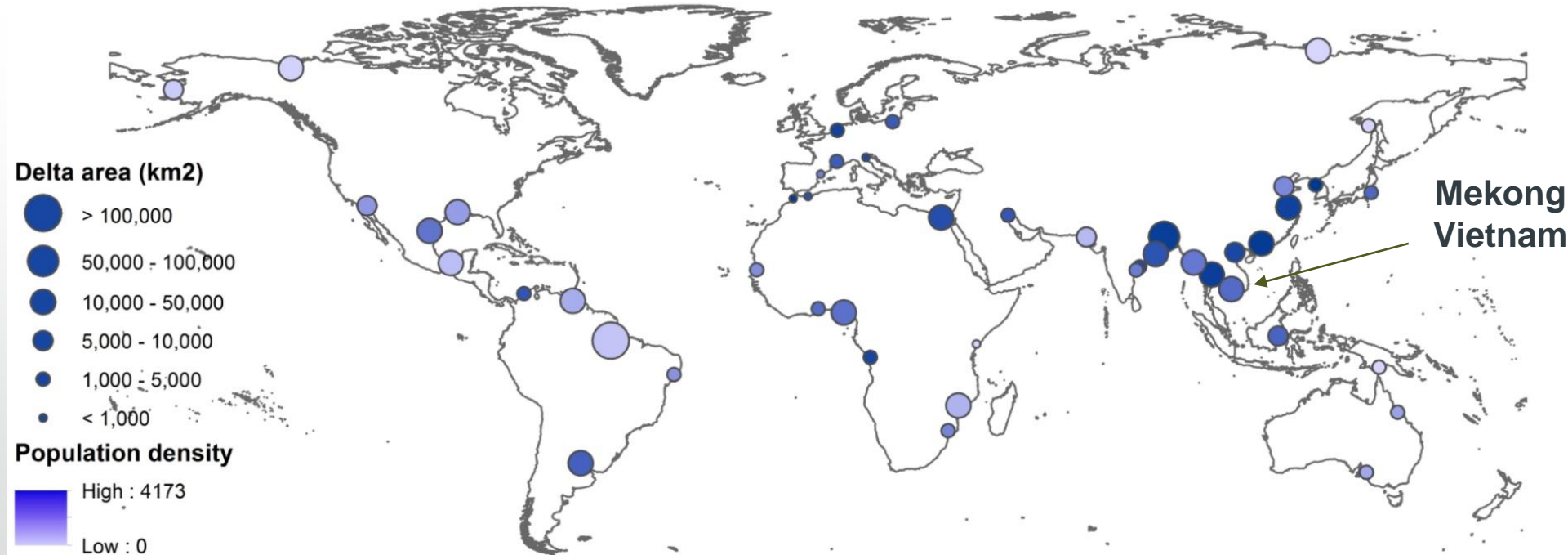
Agúst 2019
415ppm CO₂

NASS

1. Introduction

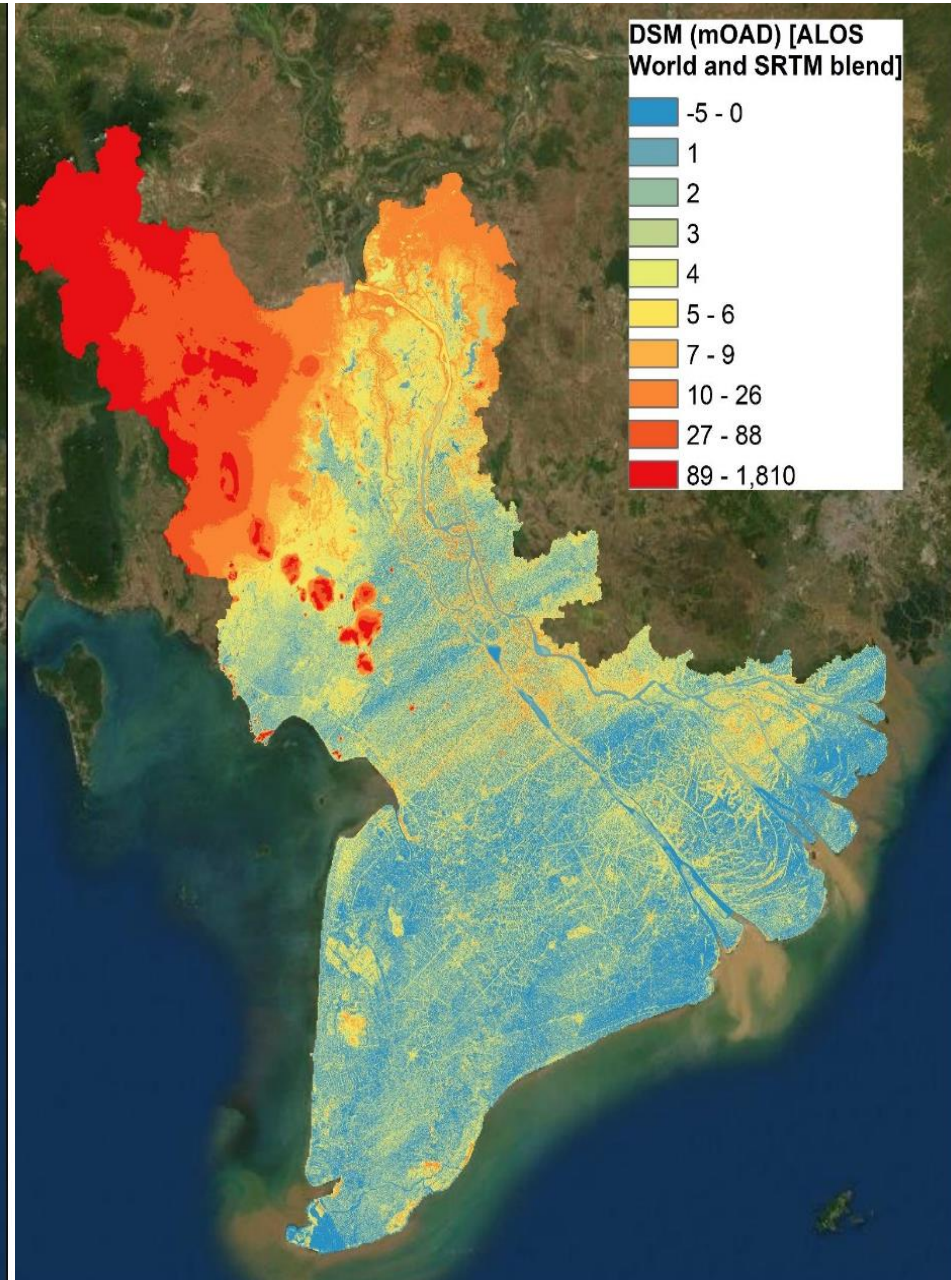
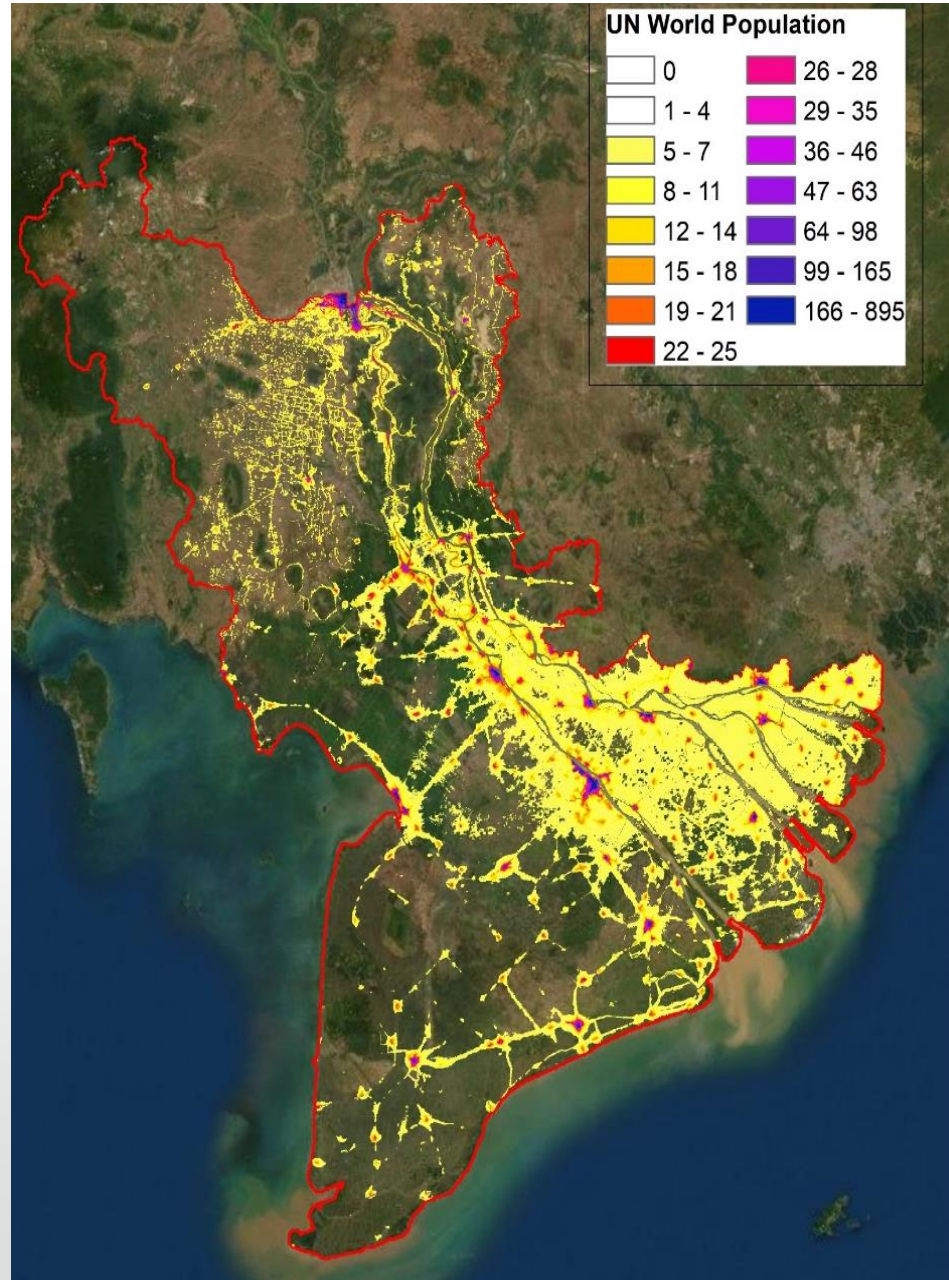


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Nicholls et al. (2020)



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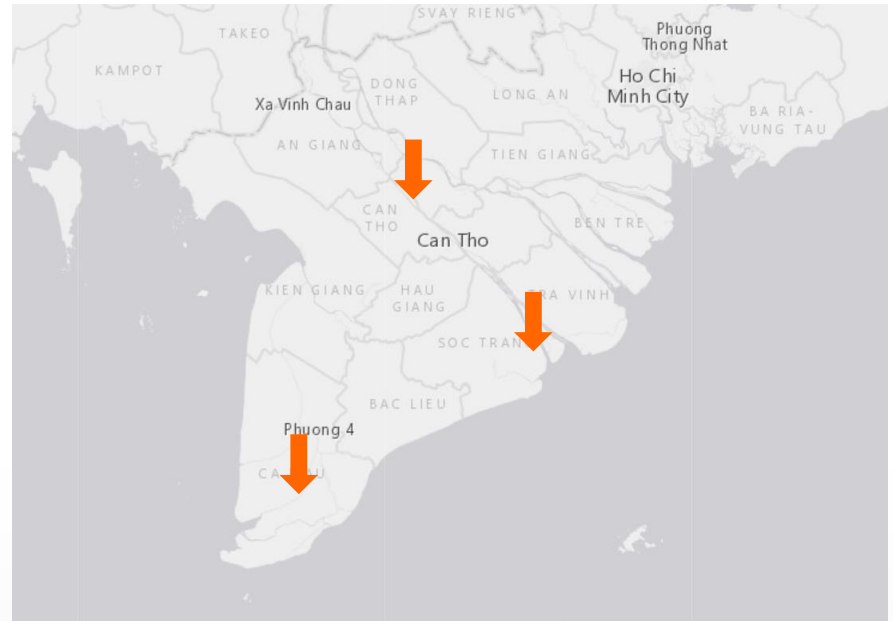
Recent flooding



Can Tho 18/10/2020 (max 2.15m)



Ca Mau 18/10/2020



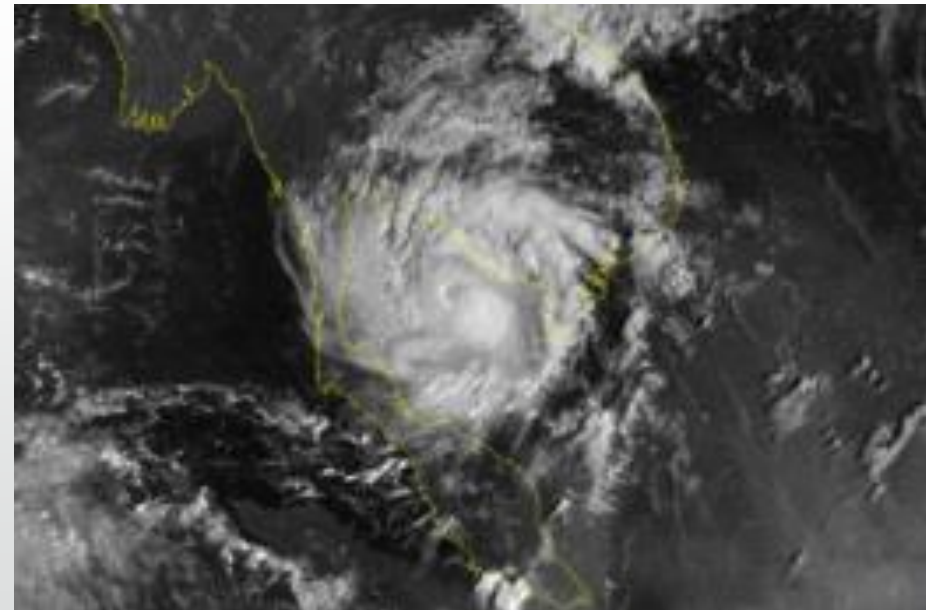
Soc Trang 19/10/2020

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In 1997, Typhoon Linda killed 4,000 people, destroyed 300,000 homes and flooded 4,500 km² of rice paddy crop across the delta.



Was the worst typhoon in southern Vietnam in at least 100 years, killing thousands of people and leaving extensive damage



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1. Coastal - Storm-tide



3. Fluvial – River Discharge



2. Coastal - Waves



4. Pluvial – surface runoff

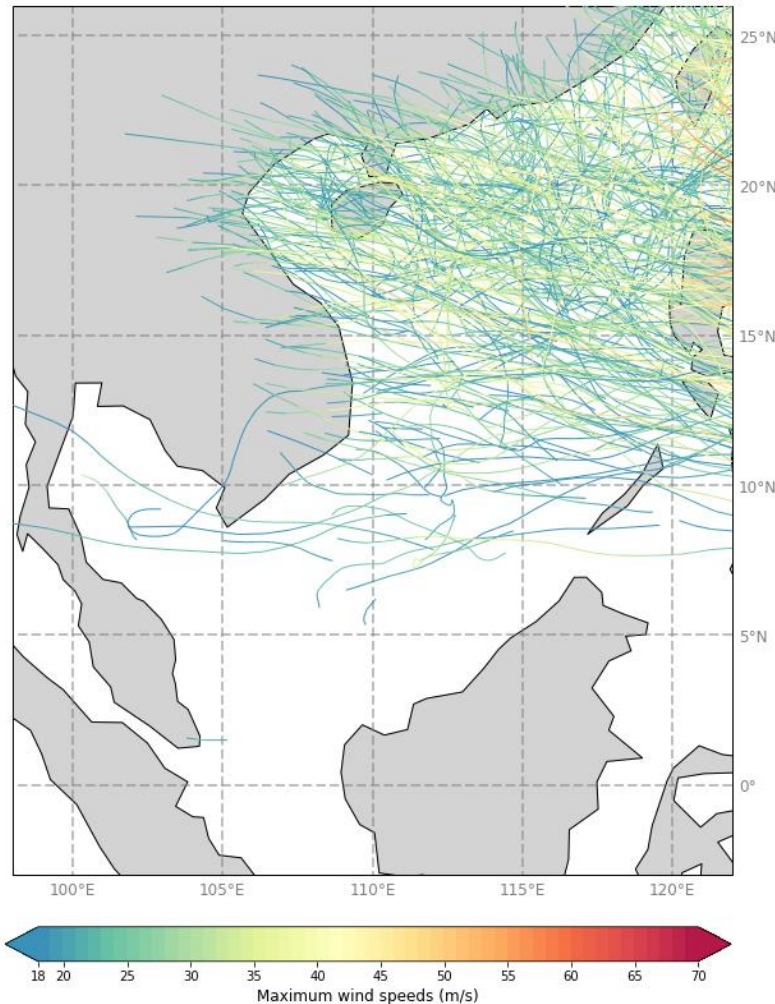
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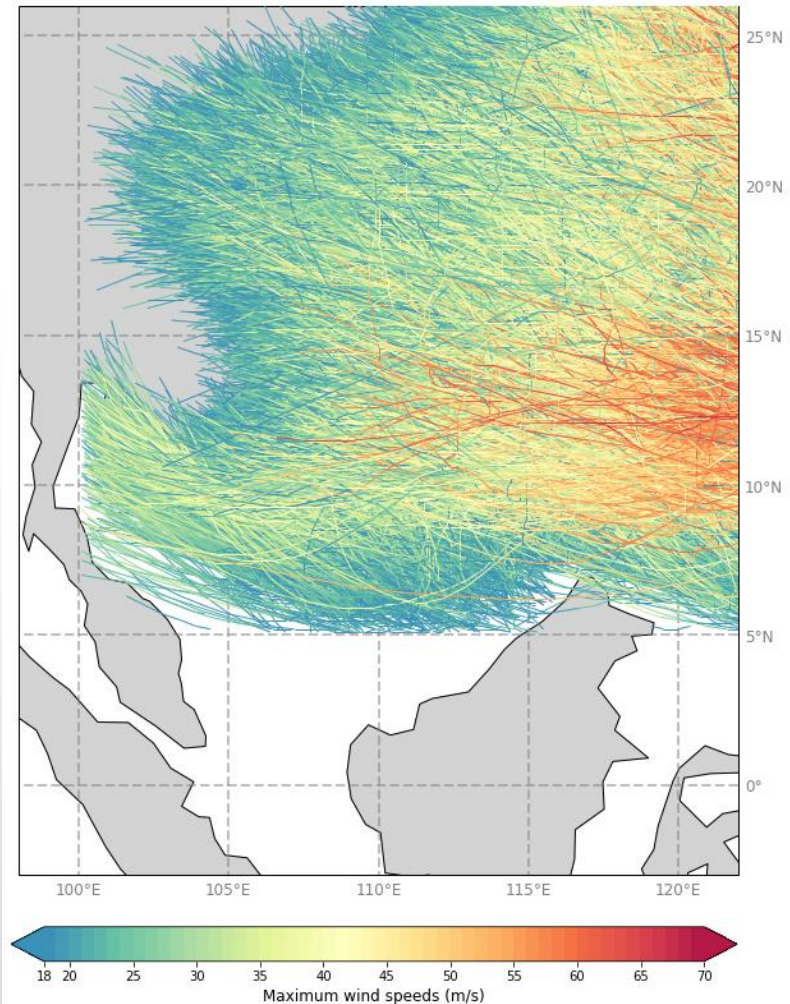
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CompFlood: Compound Flooding project

1980-2017 423 Storms

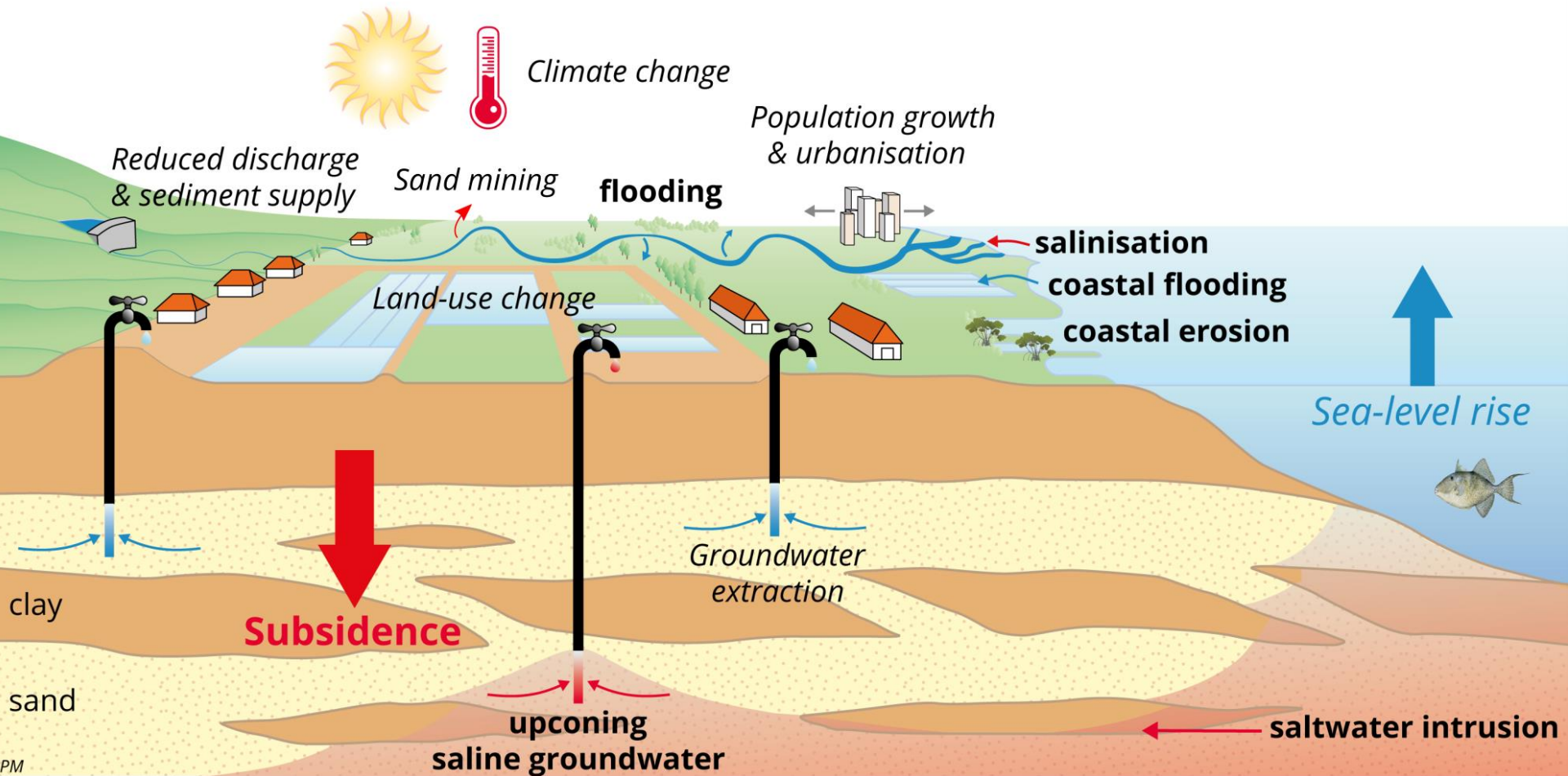


10,000 years: 100,100 storms



2. Flooding

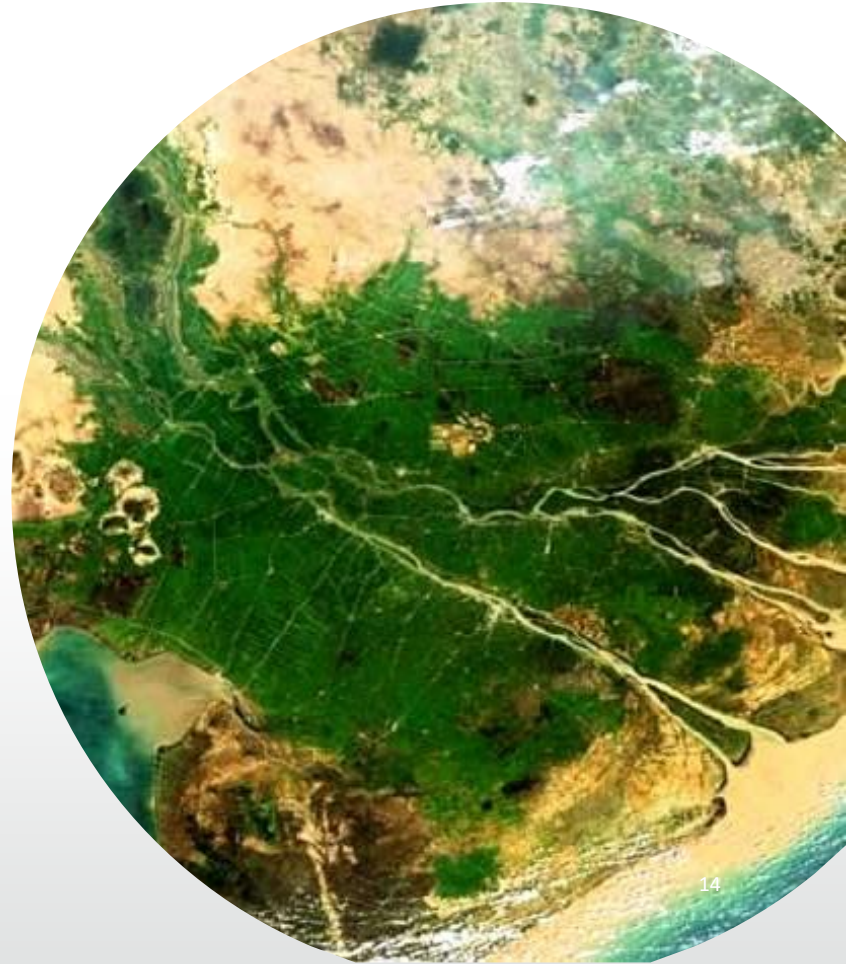
Not just mean sea-level rise – other affects as well



<https://dspace.library.uu.nl/handle/1874/375843>

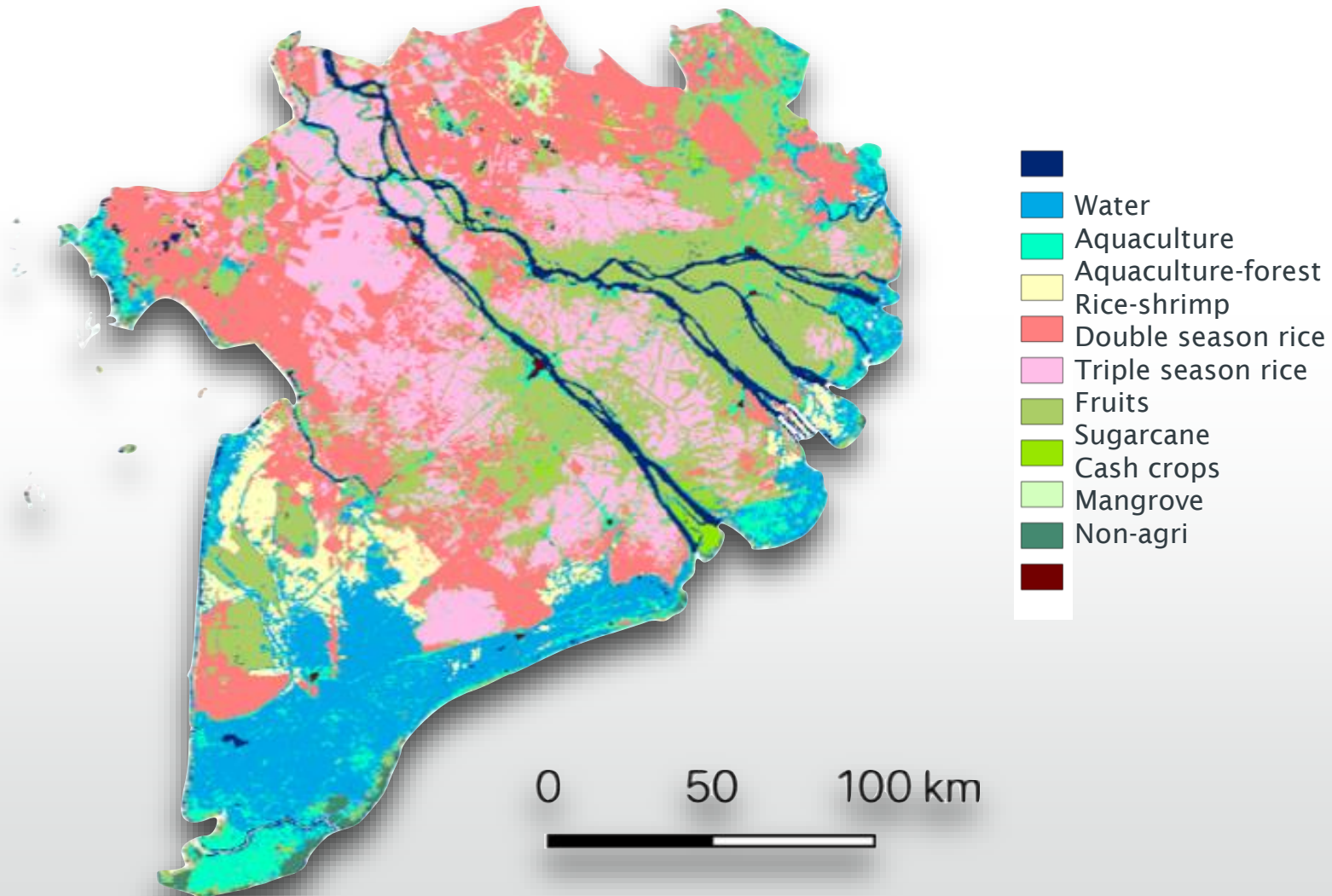
You live in a very important place

- Mekong river brings sediment needed for large scale rice production BUT dams are blocking lots of the sediment
- The flat land is good for agriculture BUT it is easily damaged by floods and salty sea water - which is getting worse with climate change
- How farming on the Delta is becoming more efficient and productive BUT this might not last for long and what happens to all the people who used to do the farming

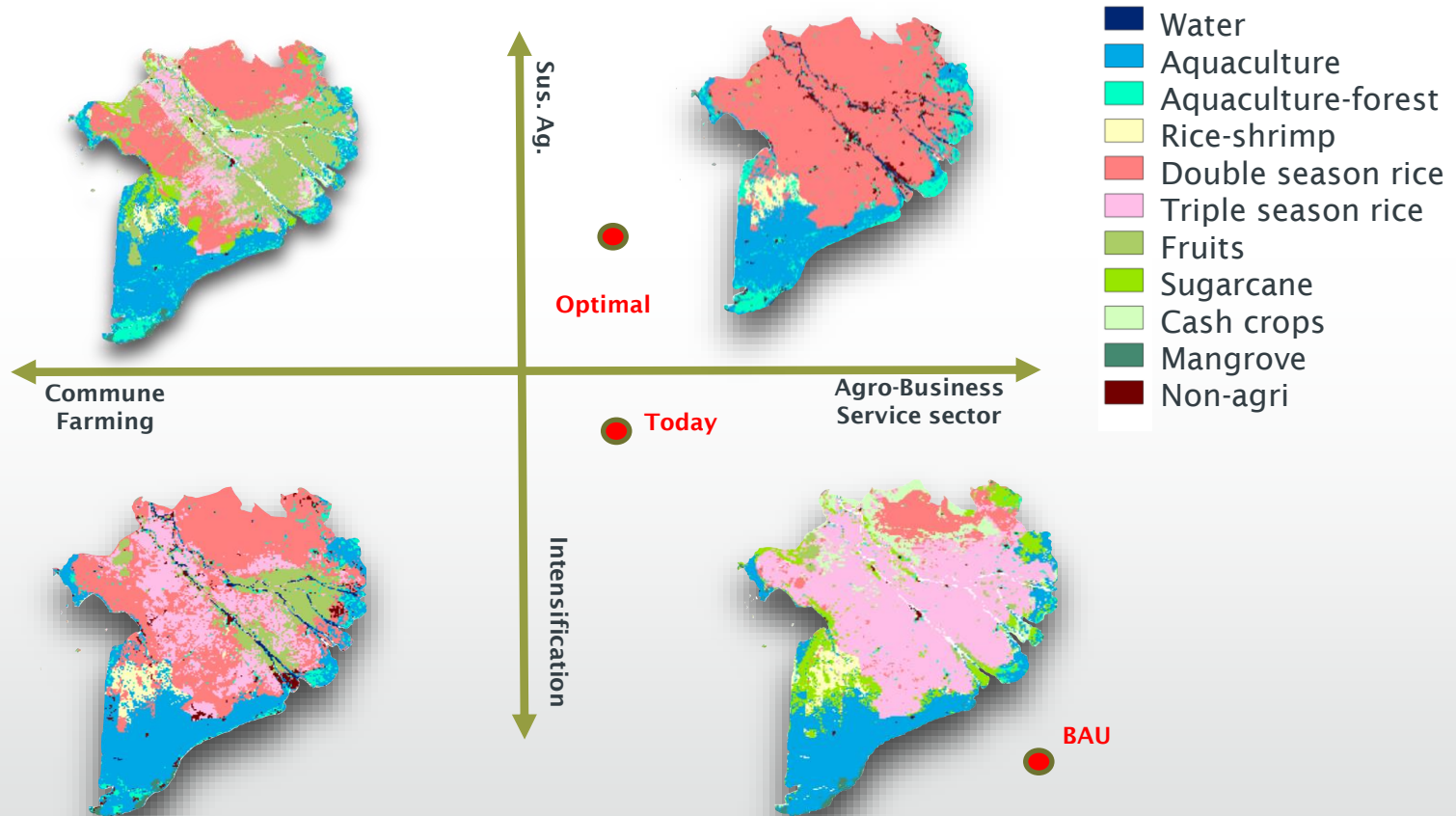


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BASELINE (2014) (BERCHOUX ET AL IN PREP)



What might the future look like?



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Stakeholder Workshop in Ho Chi Minh City, March 2019

Workshop Results (2050)

