

choropleth showing flood prone areas



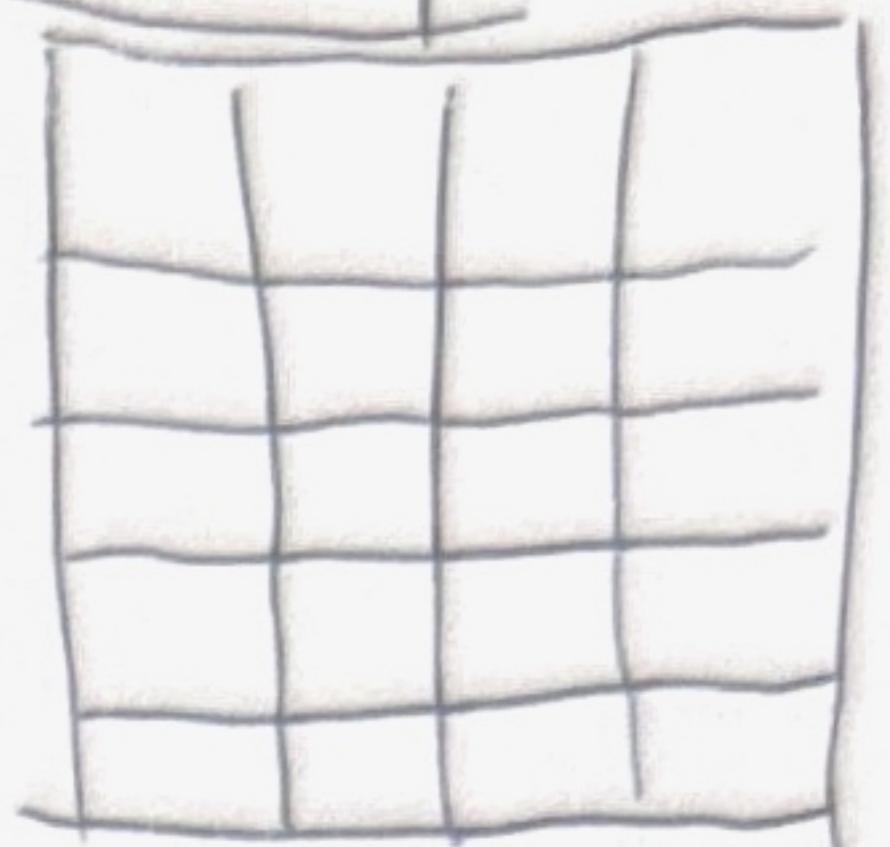
bar chart showing economic impact by year

symbol map



icons for infrastructure

heatmap



represent the density of floods by region

Filter

Bar, scatter can be filtered out

flood expansion over decades



time sliced heatmap

Scatter plot



relationship between rainfall intensity and number of flood incidents in regions

Line chart



comparing rainfall and flood events over time

Categorise

Causes

deforestation

rainfall patterns

- choropleth of deforestation

- line chart rainfall

Combine & Refine

Impacts

flood prone areas

population vulnerability

economic loss

- heatmap of flood prone areas, overlaid with population density

Solutions

flood control infrastructure

- symbol map for flood infrastructure

heatmap of flood prone areas, overlaid with population density dots



rainfall line chart with flood incidents

Summarise and question

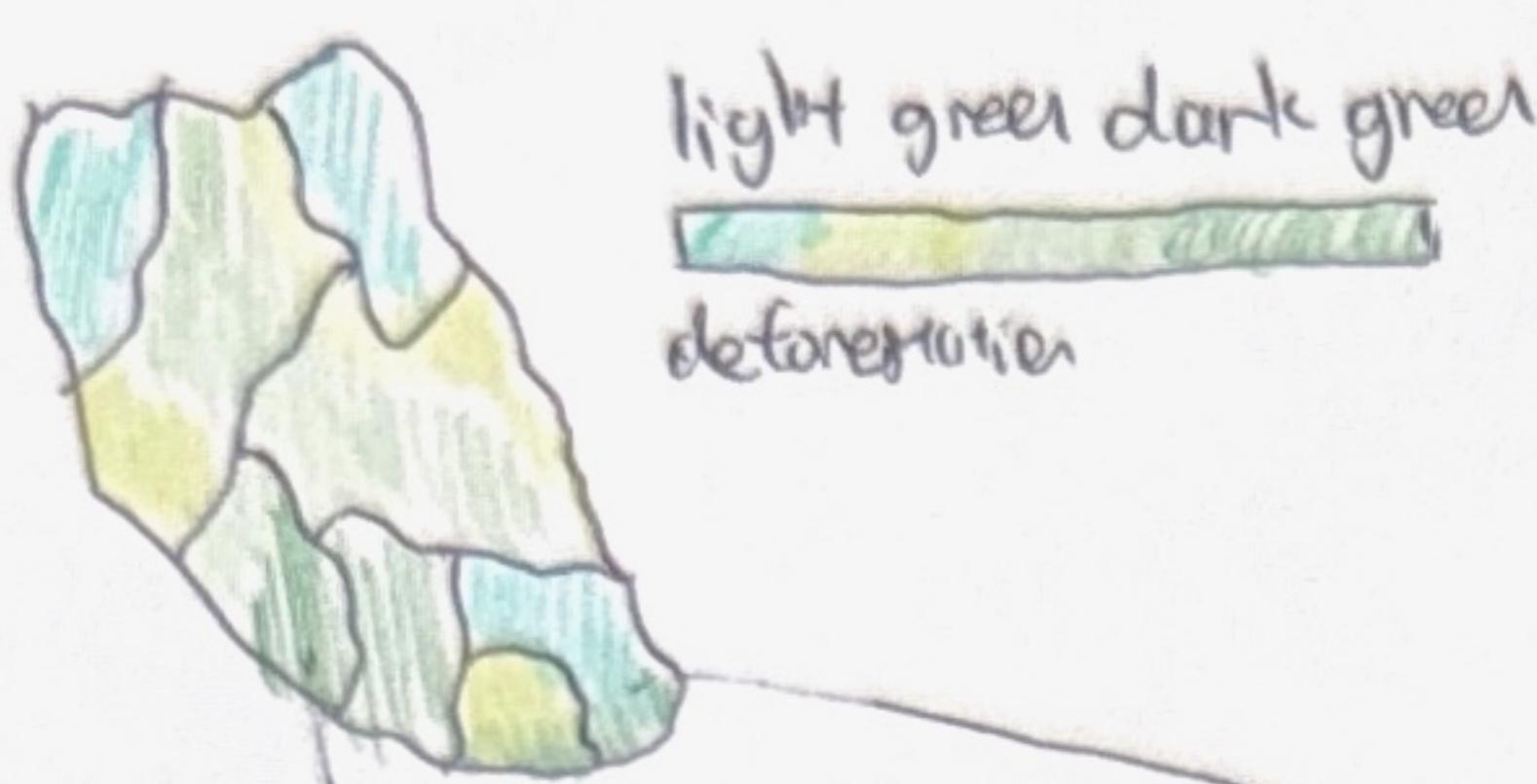
does heatmap show flood prone areas, interactive?

choropleth map clearly communicate deforestation trends?

do all visualizations tell a cohesive story

Big Picture / Layout

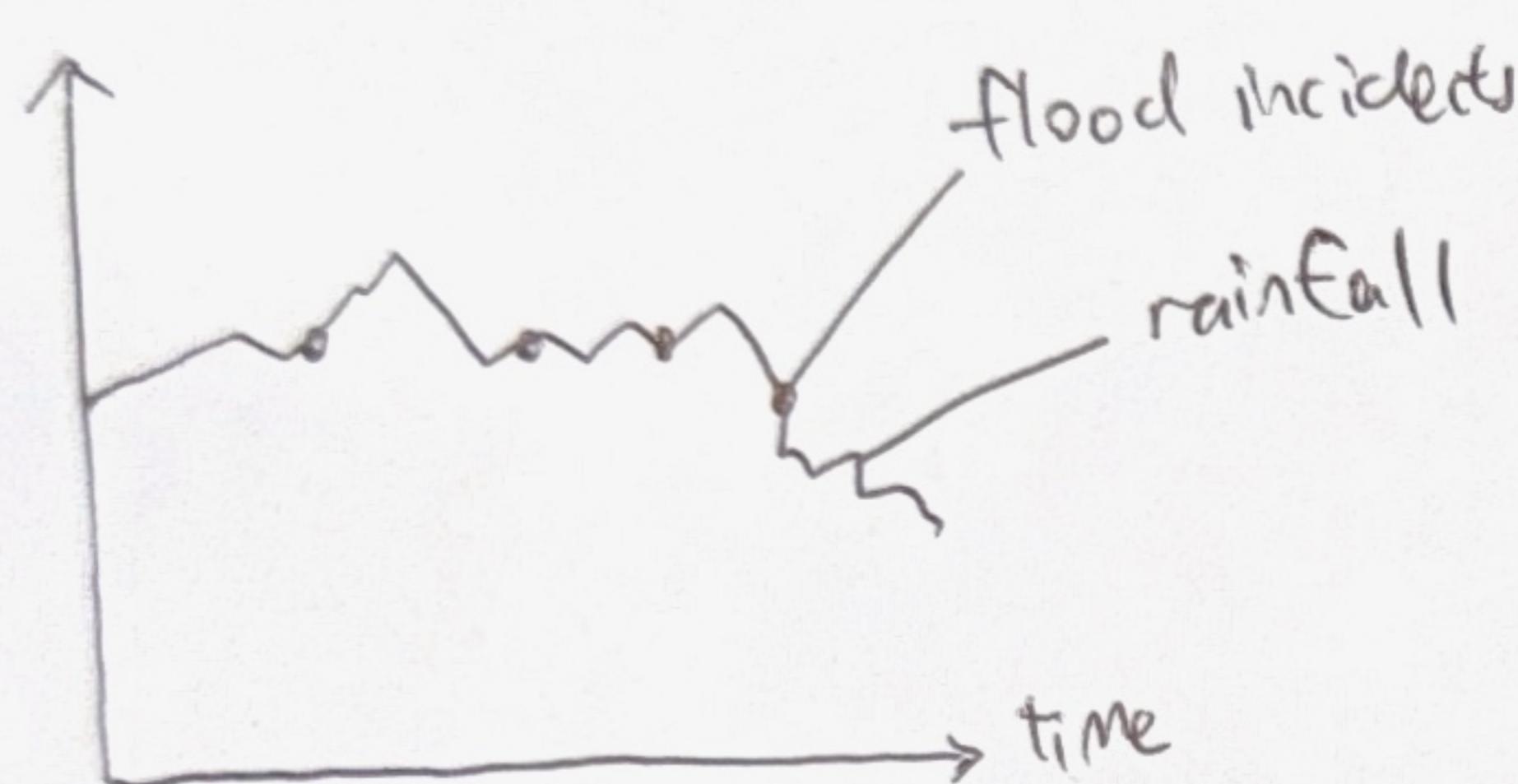
choropleth map of deforestation



high deforestation polygon

line chart of rainfall & flood incidents

rainfall amount



Sheet 2,3,4
Name Joshua Loh
Date 1/10/2024

Title floods in Malaysia

Description

causes of floods

Components / Operations

hover:

tooltip

state

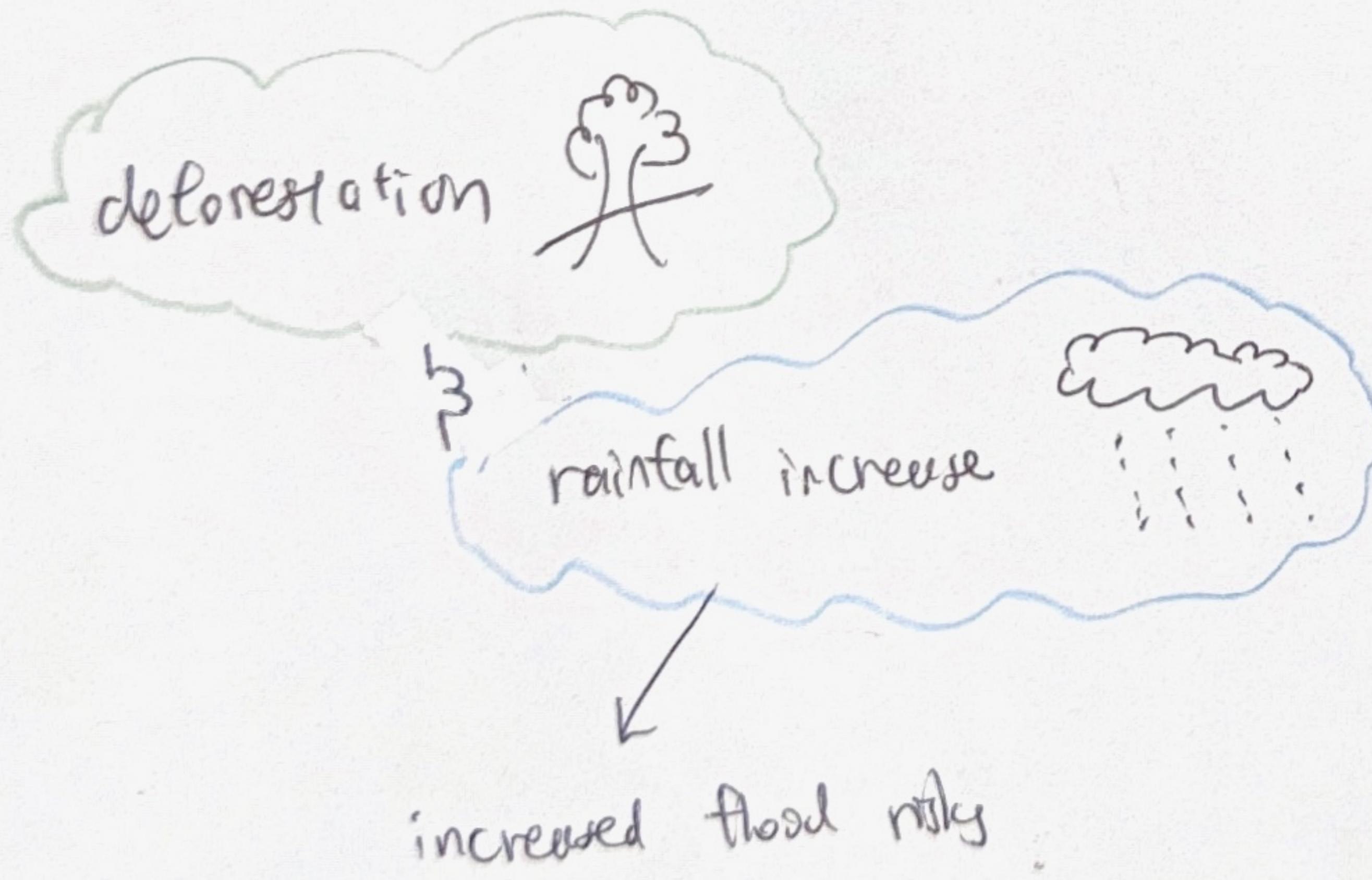
deforestation-1.
rainfall data

year slider:



Part / Focus

"deforestation exacerbates flooding by reducing the land's ability to absorb rainfall"



Pro & Cons

pros:

- clear cause-effect relationship between deforestation, rainfall, and floods
- combines geographic and temporal data effectively (deforestation map + rainfall chart)
- simple interactions like hover or slide

cons:

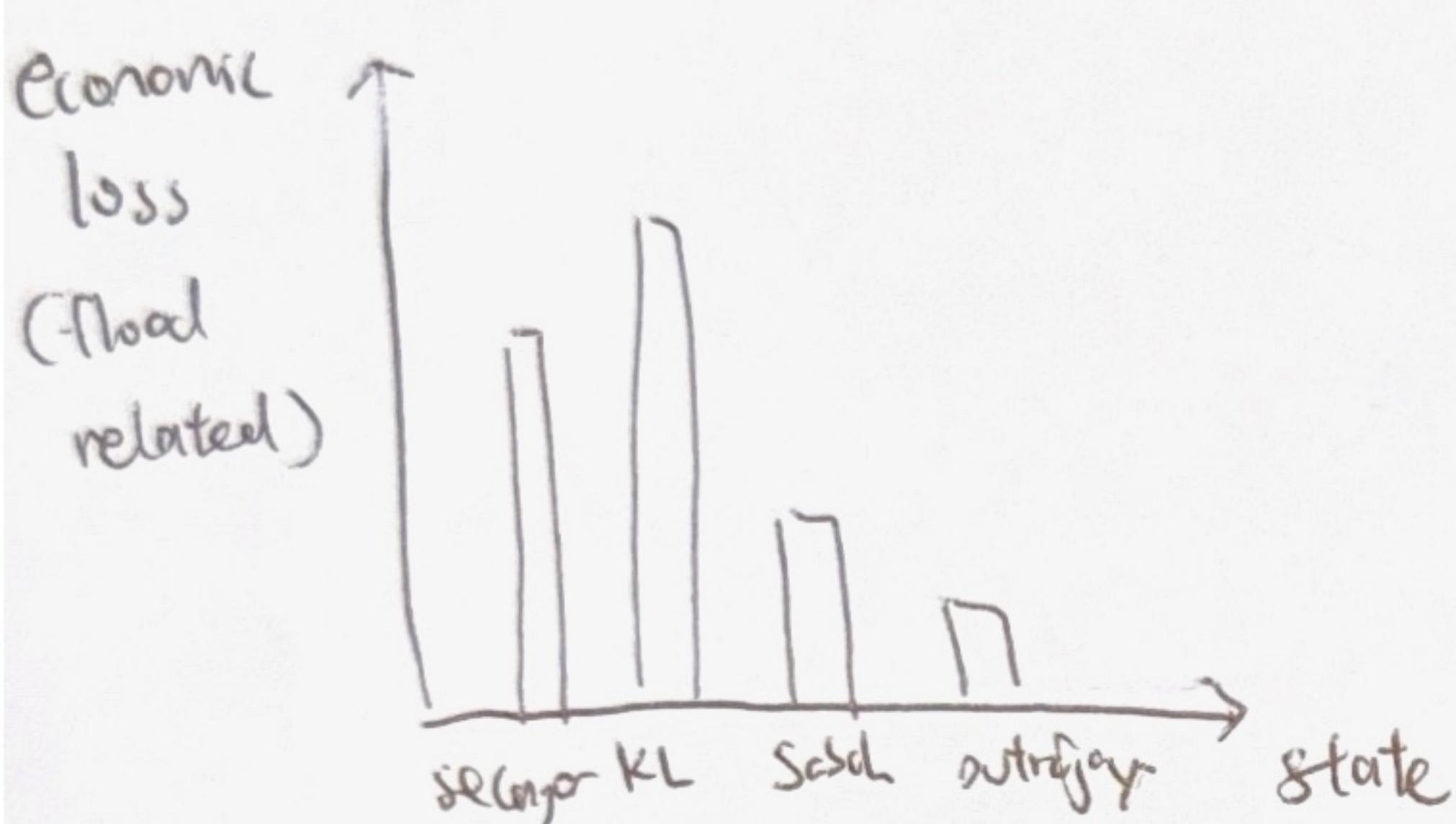
- may require data cleaning
- might not account for other flood causes

Big Picture / Layout

heatmap of flood prone areas



overlay population density



Part / Focus



"highlighting regions where floods disproportionately affect highly populated area, leading to severe economic consequences"

Sheet 2, 3, 4
Name Joshua Choo
Date 1/10/2024

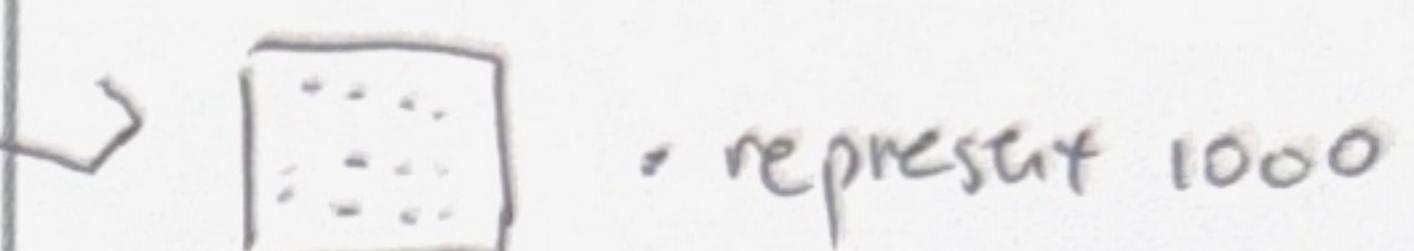
Title floods in Malaysia

Description

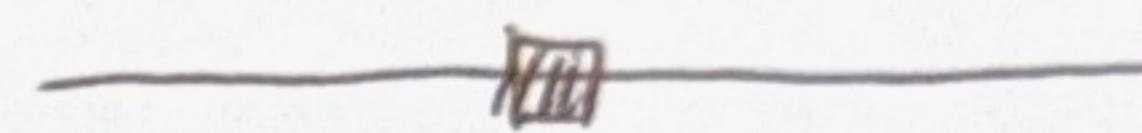
Impact of floods

Components / Operations

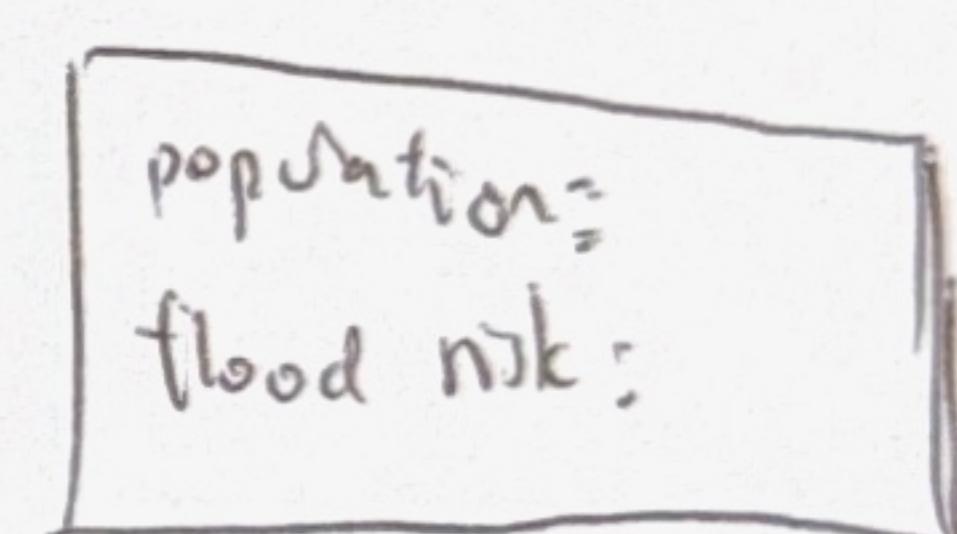
legends:



time slider



for heatmap tooltip, on hover



Pro & Cons

Pros:

- clear visual connection between flood risks and population density
- interactive elements is engaging
- economic data adds real world consequence

Cons:

- heatmap with overlay may be visually cluttered
- economic loss data may not be available for every event

Big Picture / Layout

Symbol Map of flood infrastructure



legends

- we can overlay the flood prone heat map

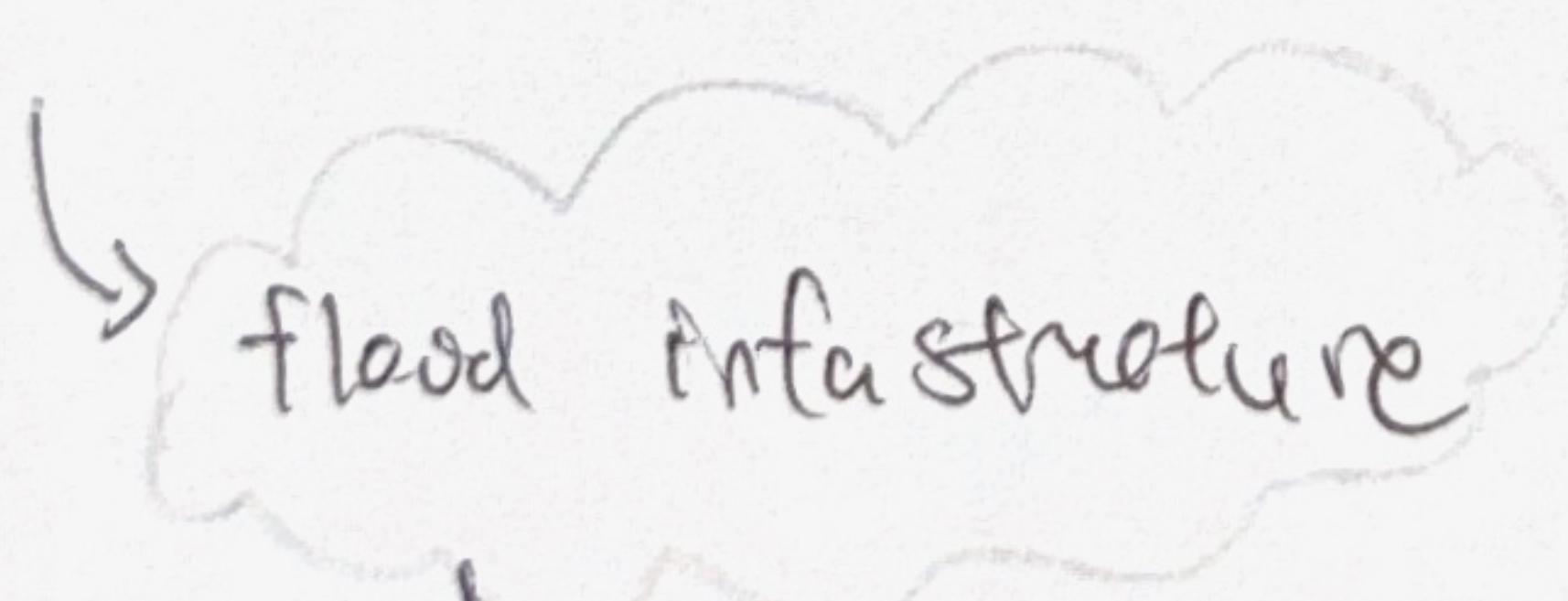
effectiveness of certain infrastructure



Part / Focus

"demonstrate the role of infrastructure in mitigating flood risks"

flood prone areas



reduced flooding

key intervention

Sheet 2,3,4

Name Joshua Ilwo

Date 1/10/2024

Title floods in Malaysia

Description

flood management / solutions

Components / Operations

- △ - dams
- ○ - drainage systems
- □ - levees
- tooltip on hover



- toggle button to filter by type dams / drainages etc.

Pro & Cons

pros:- clear geographical view of flood infrastructure & its effectiveness,

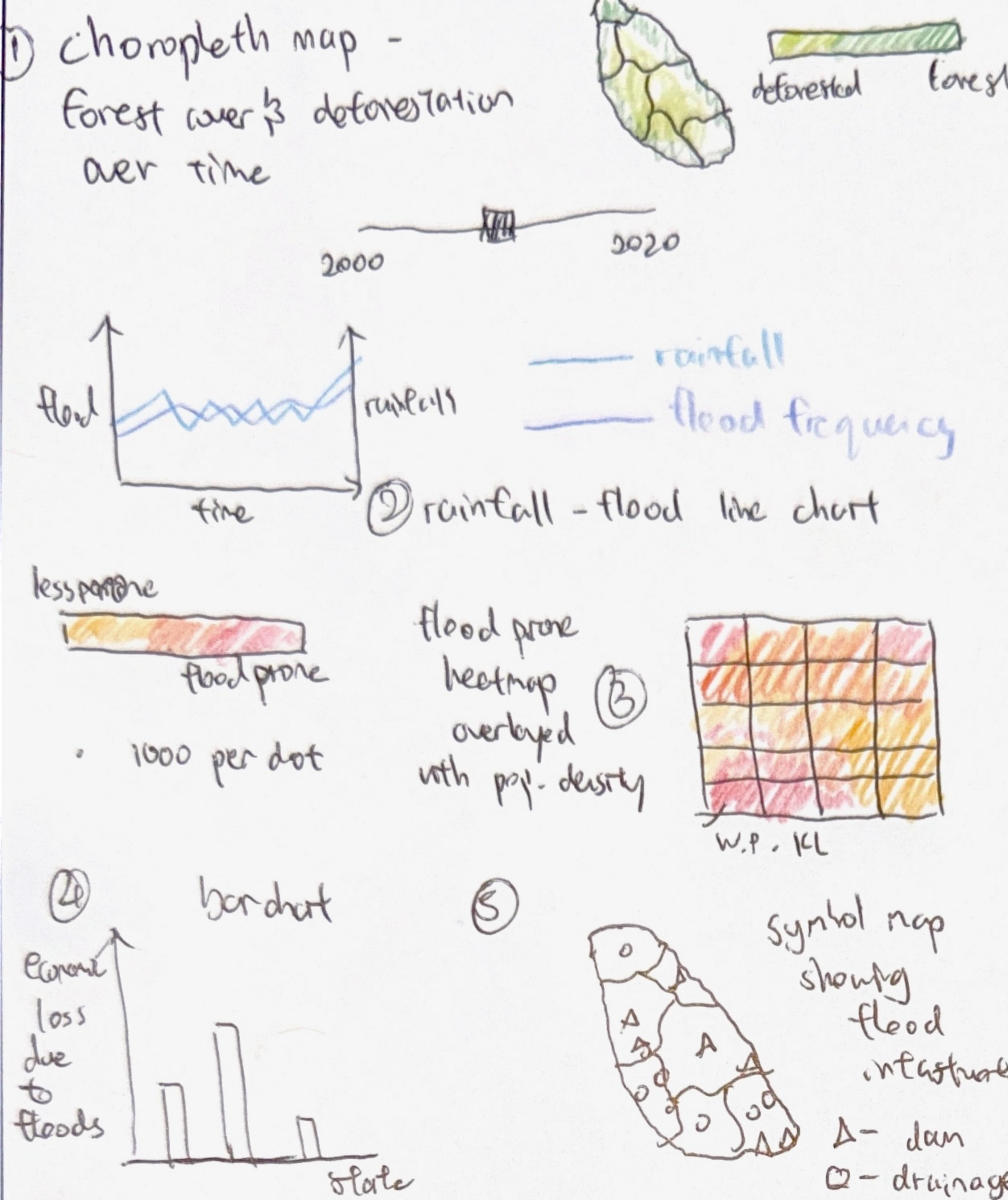
- interactive elements

- shows real world impact of flood mitigation

cons:- requires accurate & detailed data on flood infrastructure

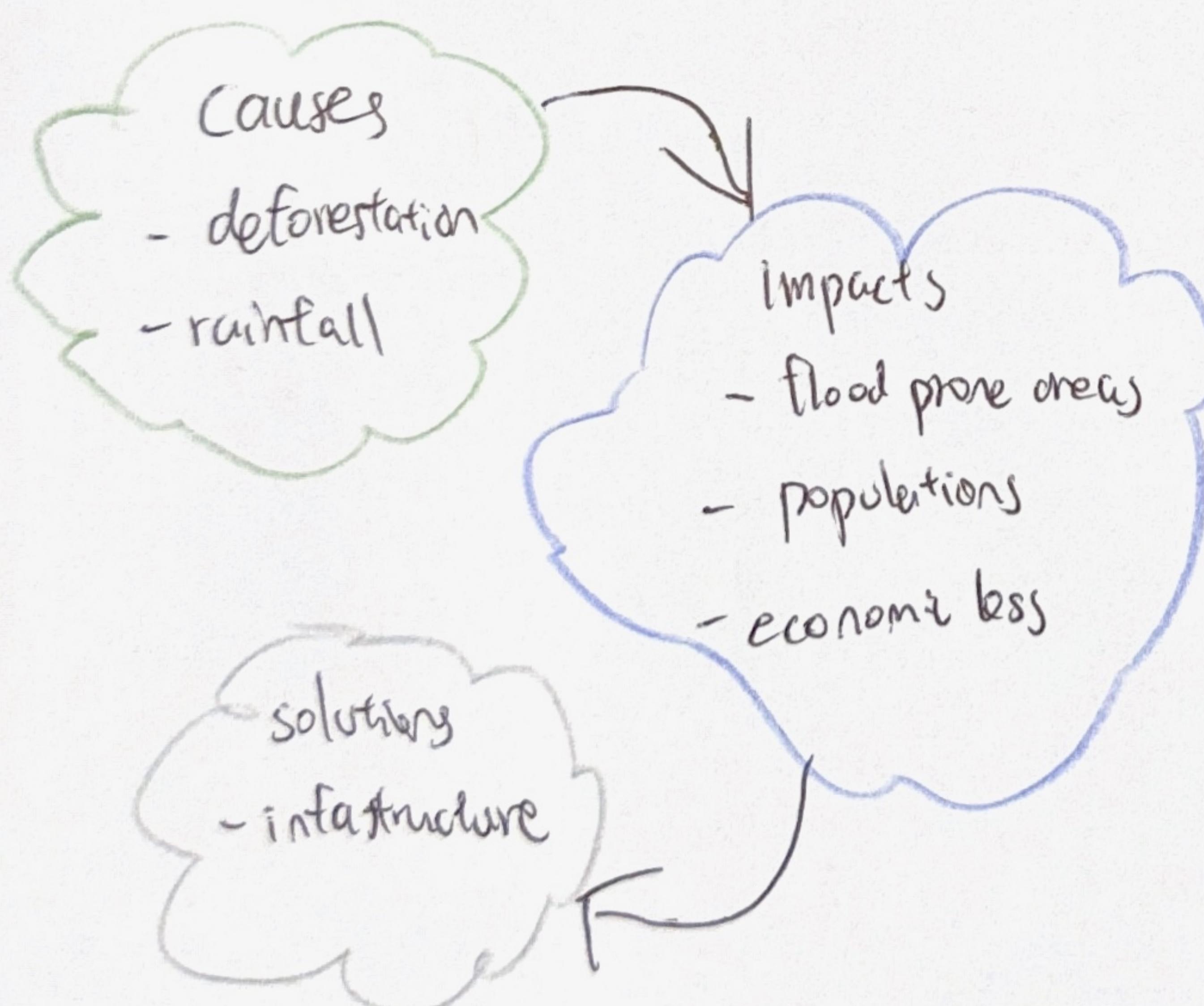
- overlay may lead to clutter

Big Picture / Layout



Part / Focus

Flood in Malaysia



Interactive dashboard visualizes information about floods in Malaysia, from causes to impacts to solutions. It aims to tell a cohesive story.

Sheet 5

Name Joshe Kwe
Date 1/10/2024
Title flood in malaya
Description

final dashboard

Components / Operations

- legends
- Hover interactions : tooltip

tooltip
x: data
y: data
extra info

- clear & concise
- standard formatting
- good visual

- click and drag : time slider

- allows user to adjust year to see changes over time

- deforestation rates, rainfall patterns, flood risk shifts
- layer toggle
- for viewing different types of infrastructure, or to overlay maps.

Details

implemented using vega-lite, and hosted on github.

Data Source

- deforestation from global forest watch
- rainfall & flood data from smdena's flood prediction dataset
- flood infrastructure from malaysian's national hydrological networks
- flood-prone areas & economic loss from fathom flood hazard data