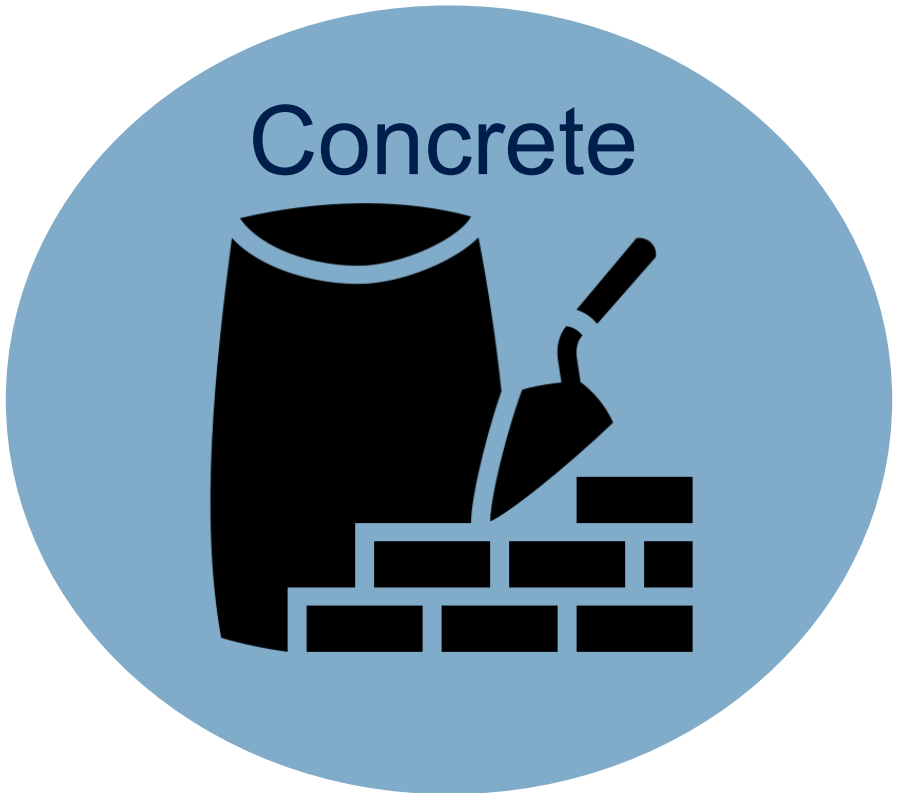


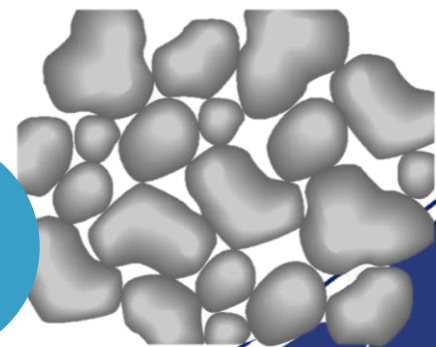
THE SOCIETY BROUGHT BY RESOURCE UTILIZATION OF SOIL



Soil Cement?



Aggregates
(sand & gravel)





Water

Soil Cement

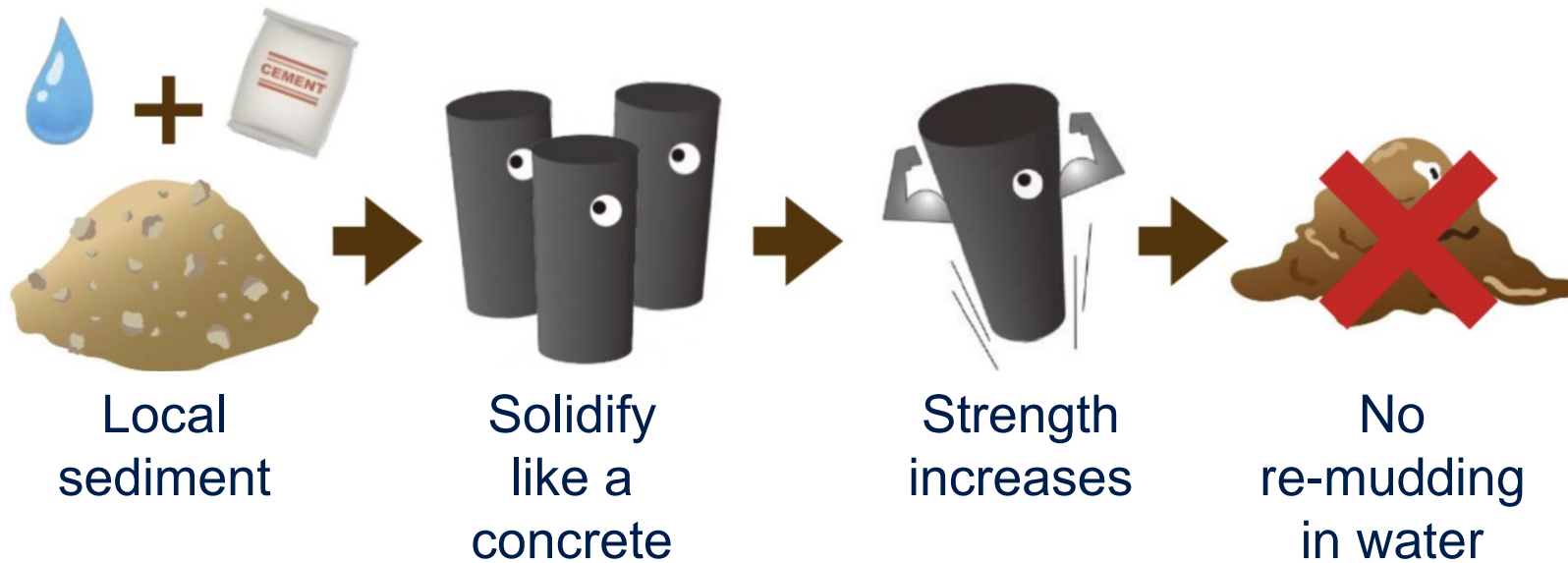


Cement



Soil

Hydration Optimized Soil Cement



Sediments....



Excavated
soil



Disaster
sediment



Volcanic
ash



Dredge soil



 Disposal 

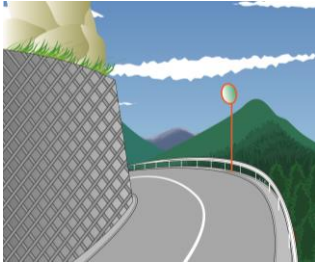


Disposed Sediments

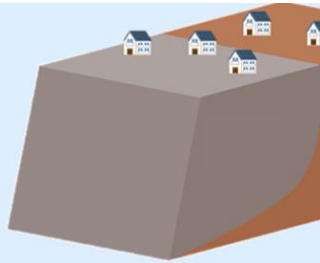
Check dam



Retaining wall

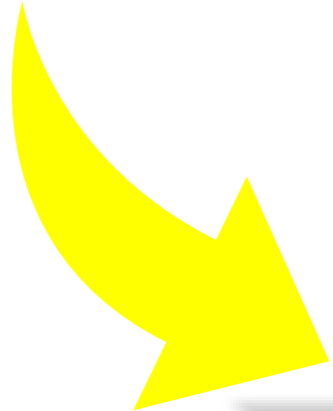
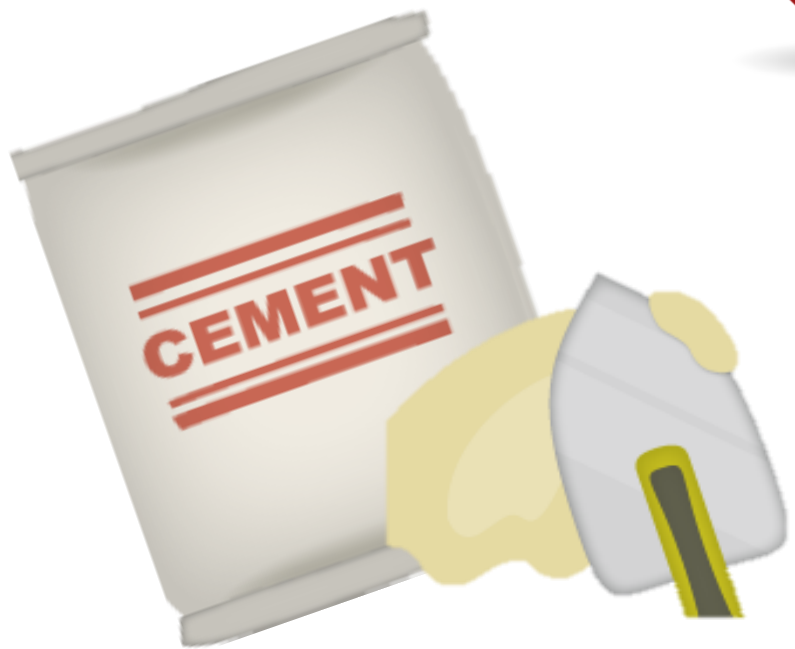
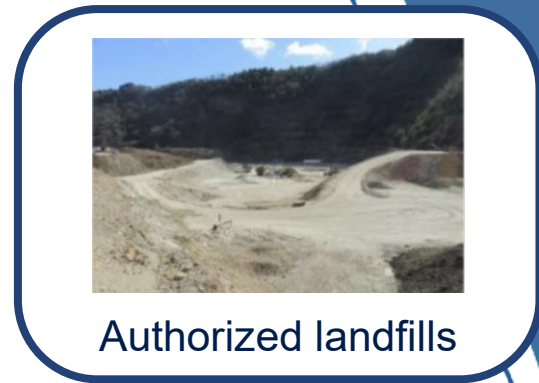


Filling



Check Dam (Sabo Dam)

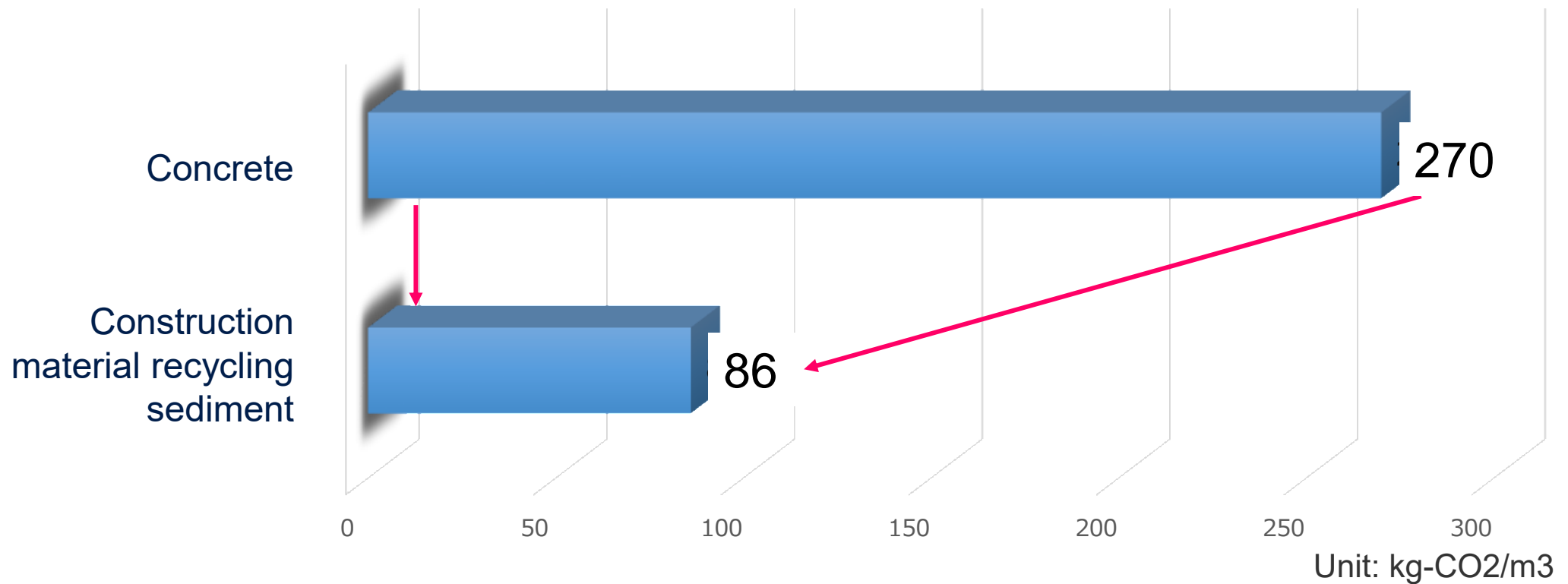




Blend On-Site

Benefit A

Reduction of CO₂ Emissions by 68%



Reference: Created based on "Environmental impact comparison of 'Sabo soil cement' and 'concrete'" by SB wall method symposium, April 8th, 2021

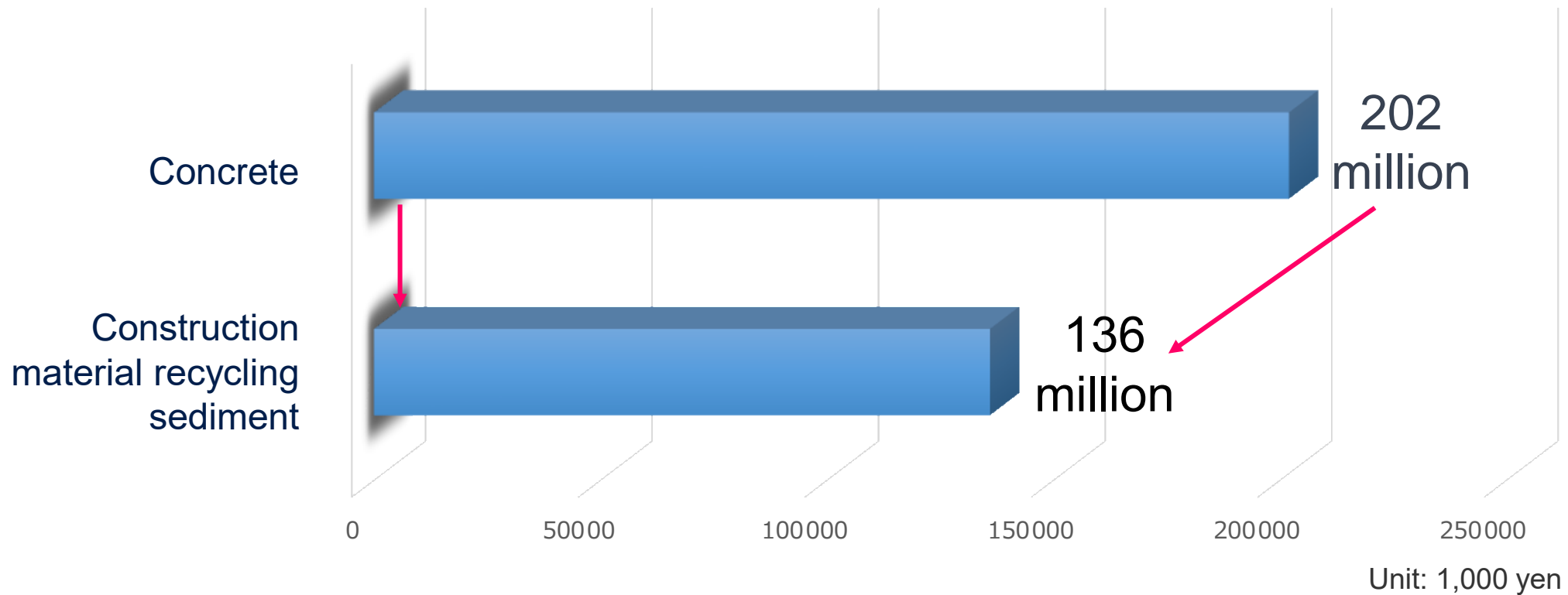


Soil



Benefit B

Cost reduction by 33%



Reference: Created based on "Environmental impact comparison of 'Sabo soil cement' and 'concrete'" by SB wall method symposium, April 8th, 2021

Our technology

We can control the quality to suit various applications

100

High Strength

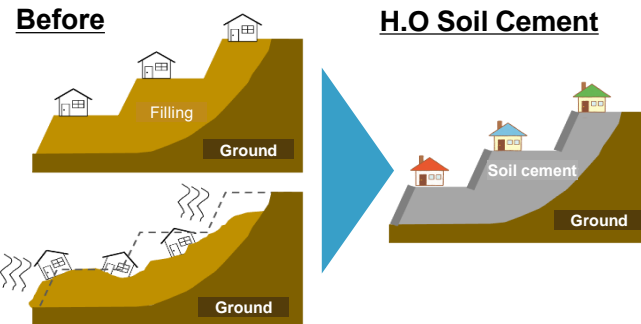
Solidifying like concrete
(ex. Check dam)



20 - 60

Soil Stabilization

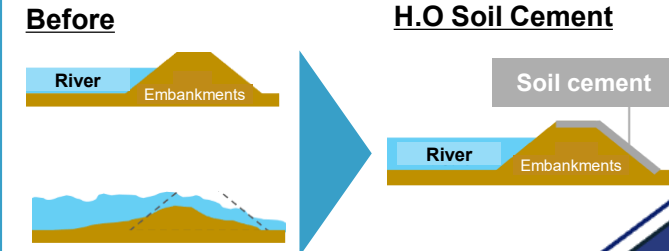
Enhancing the strength of weak ground and improving the physical properties of soil
(ex. embankment, disposal of surplus soil)



10 - 30

Prevention of re-mud

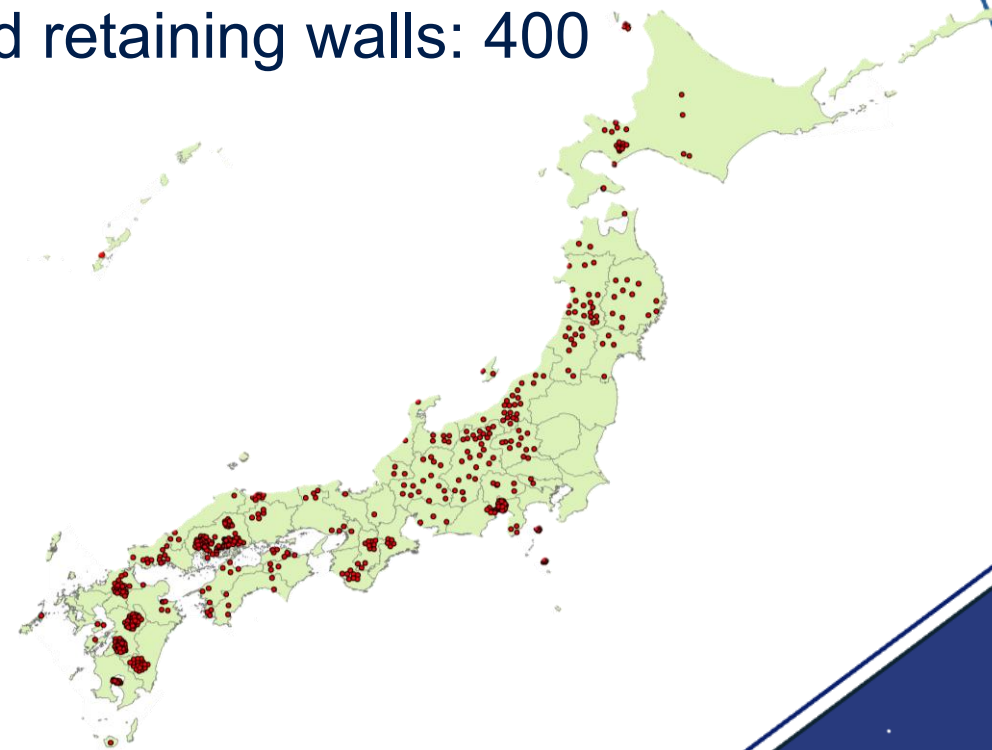
Modifying soil to prevent re-mud formation
(ex. for embankments)



Achievements

1,000 implementations (March, 2023)

- Check dams: 600
- Forest conservation, road retaining walls: 400



The Great Kumamoto Regional Flood

July 12, 2012



Reference: Kumamoto Prefecture website
https://www.soumu.go.jp/main_content/000295104.pdf



Reference: Disaster and Crisis Management Administration Division,
Kumamoto Prefecture
<https://www.pref.kumamoto.jp/soshiki/105/5727.html>

- Processing a large amount of generated sediment
- Immediate disaster recovery and reconstruction

Centralized Plant



- Gathered all sediments and debris to **one location**

Large check dams in 5 locations



Results

- Promotion of recycling-oriented society
- Construction period
→ shortened by **two months (30% reduction)**
- Cost
→ reduced by **¥200 million (20% reduction)**
- Achievement of quality improvement

Stabilizations of different kinds of soil

Andosol / Kuroboku



Kumamoto

Soils in cold region



Hokkaido

Stabilizations of different kinds of soil

Black Cotton Soil in Kenya

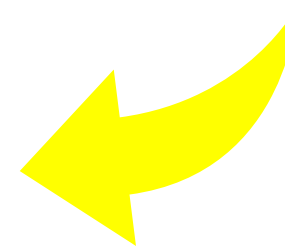
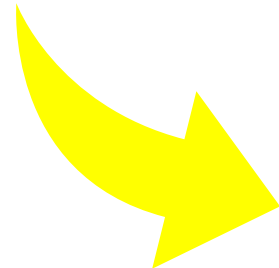
Problematic soil in civil engineers



Swells when wet in rainy season



Cracks when dry in summer

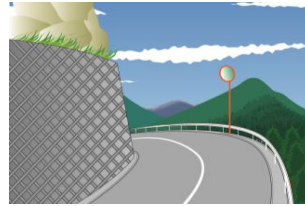


Our technology could be used for..

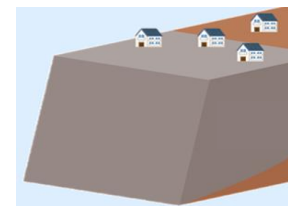
Check dam



Retaining wall



Filling



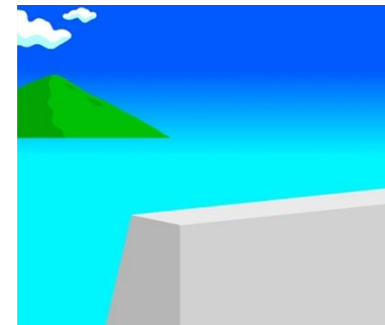
River
embankment



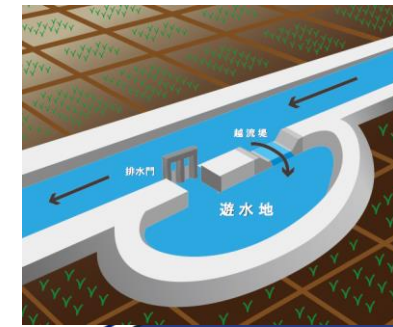
Road
subbase



Sea
embankment



Pond
embankment



For more resilient society

Use locally available materials

- Utilization of local soils
- No need to bring in, or out any materials

Creation of job opportunities

- Specialized skills are not required



Local Production for Local Consumption



Sayaka Akiyama

E-mail : info@invax.co.jp

URL : <https://invax.co.jp/>

