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Impacts of post-disaster restoration projects on communities and their environment through the landscape



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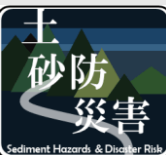
Siccard Vincent. Université Lyon 3 - Jean Moulin, UMR 560 CNRS - Environnement, Ville, Société (EVS) – CRGA

Arnaud-Fassetta Gilles. Université Paris Cité - ED 624 Laboratoire, PRODIG UMR 8586

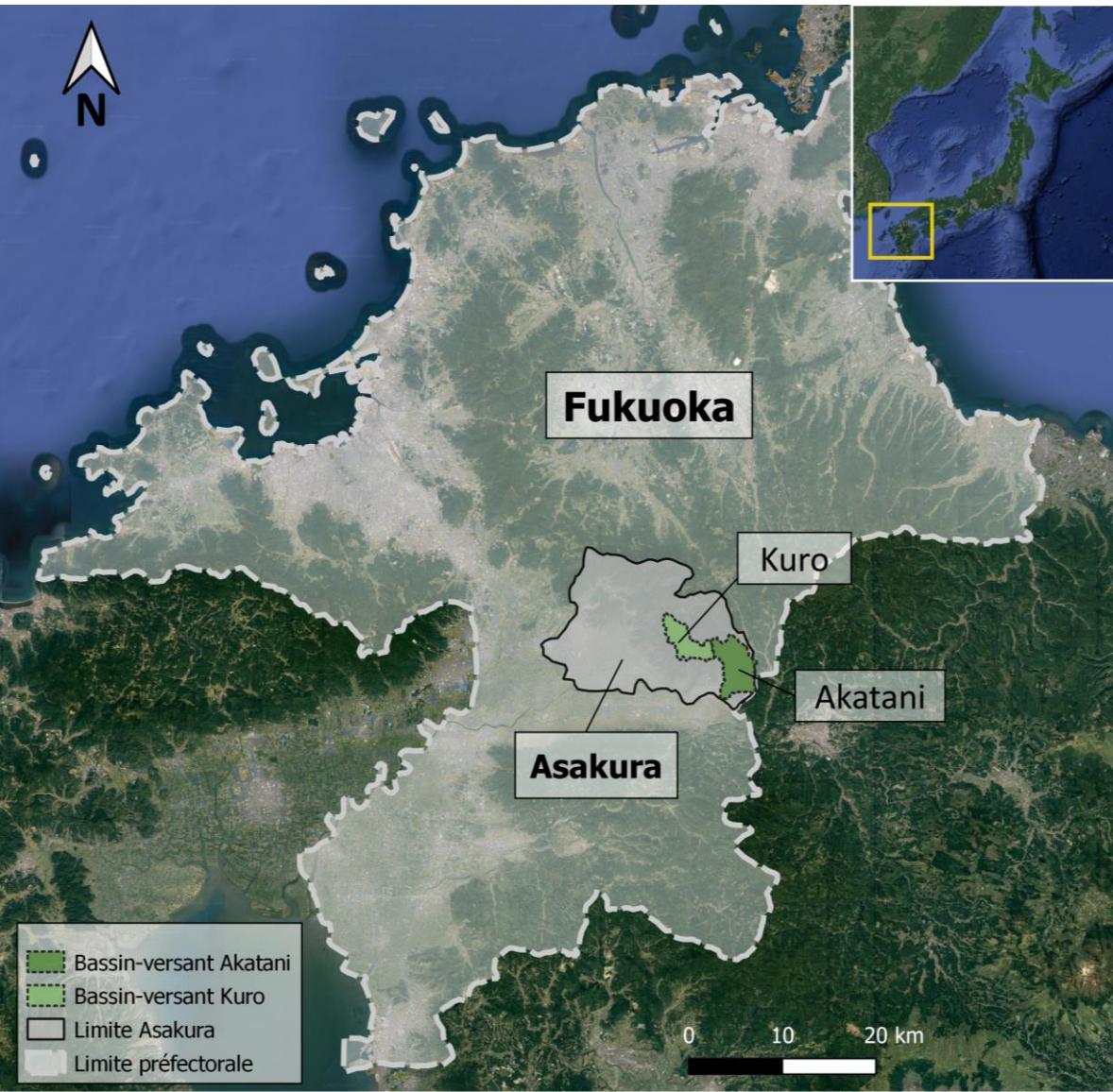
Gomez Christopher. Kobe University, ESSH

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Viel Vincent. Université Paris Cité - PRODIG UMR 8586



Disaster of July 5-6, 2017 in the Kuro and Akatani watersheds



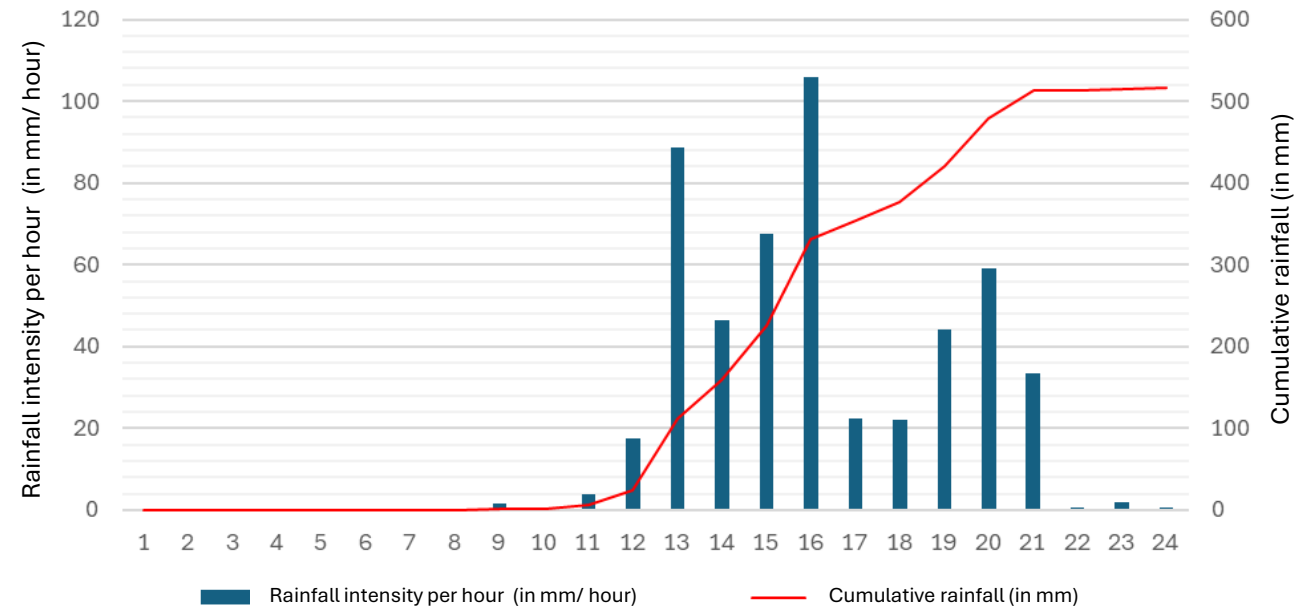
Physical phenomenon

- 516 mm rainfall
- Torrential floods
- Landslides
- Driftwood

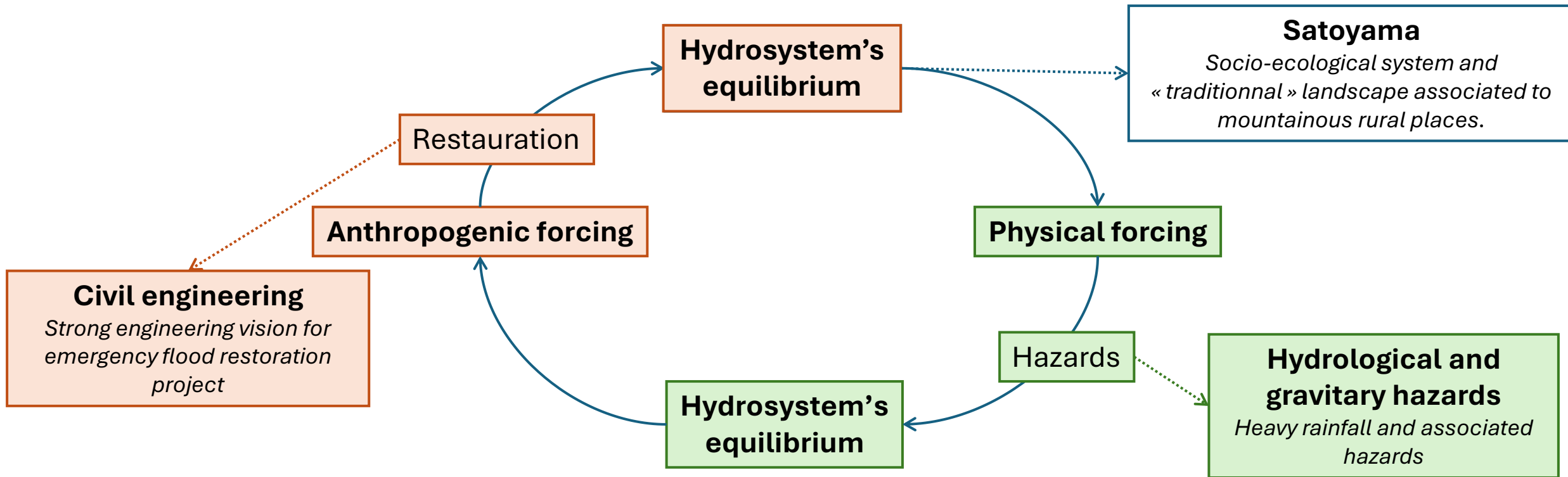
Fukuoka prefecture

- 3,000 homes destroyed
- ¥220 million in damage
- 42 people dead or missing

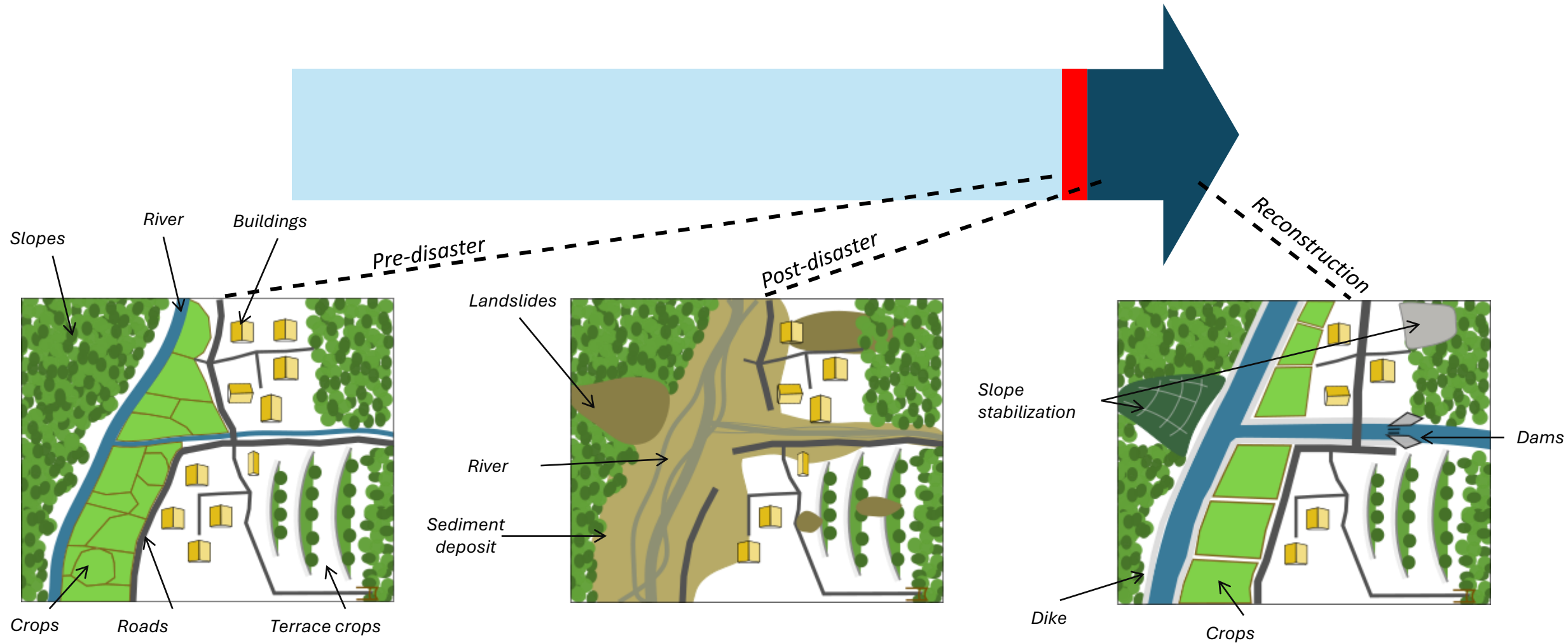
Hourly precipitation at Asakura station on July 5th 2017



Landscape change as a result of physical and anthropogenic forcing



Using landscape change as a starting point to examine the impact on people's relationship with their living space



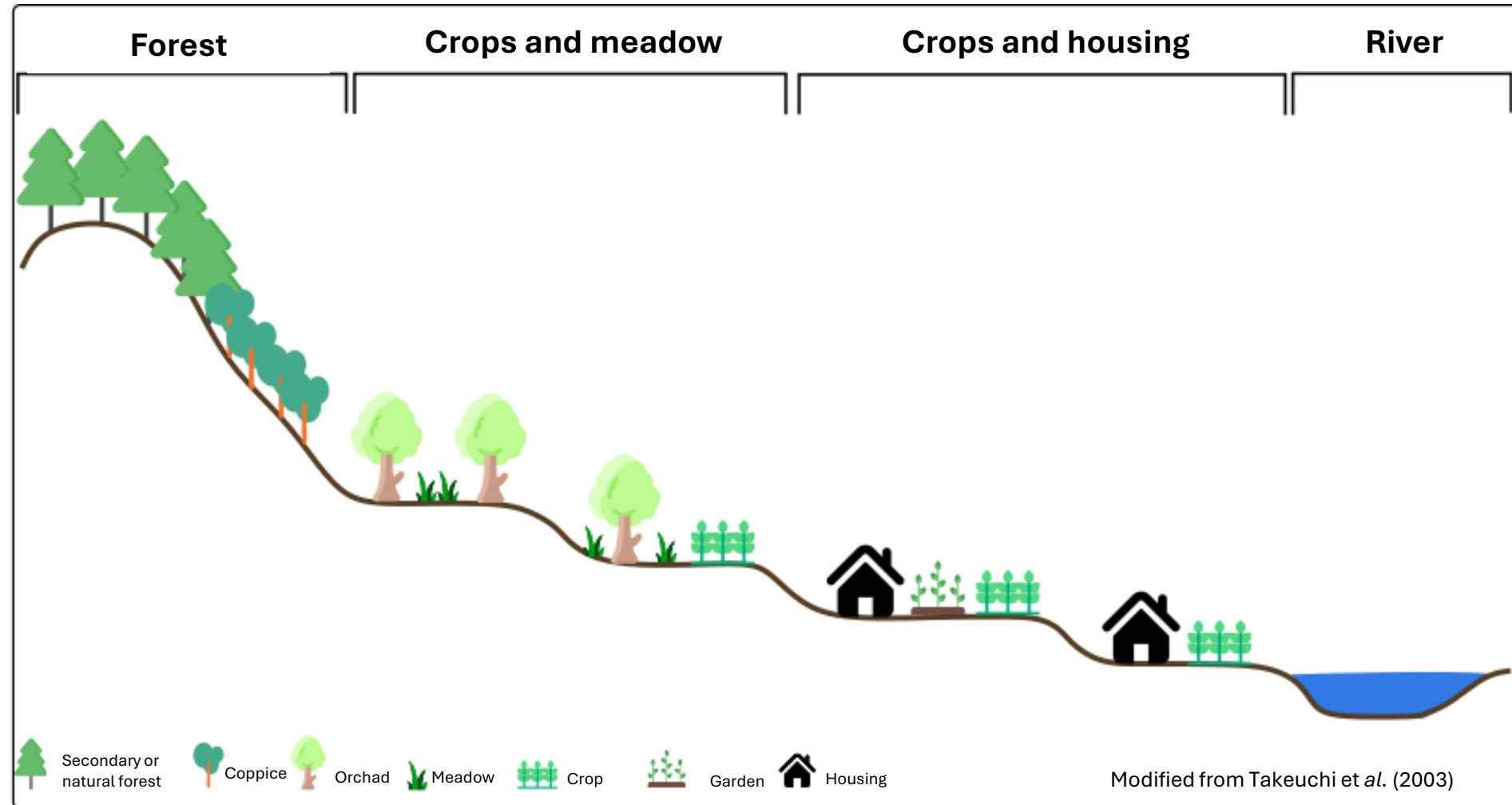
Satoyama as a socio-ecological framework

Socio-ecological system

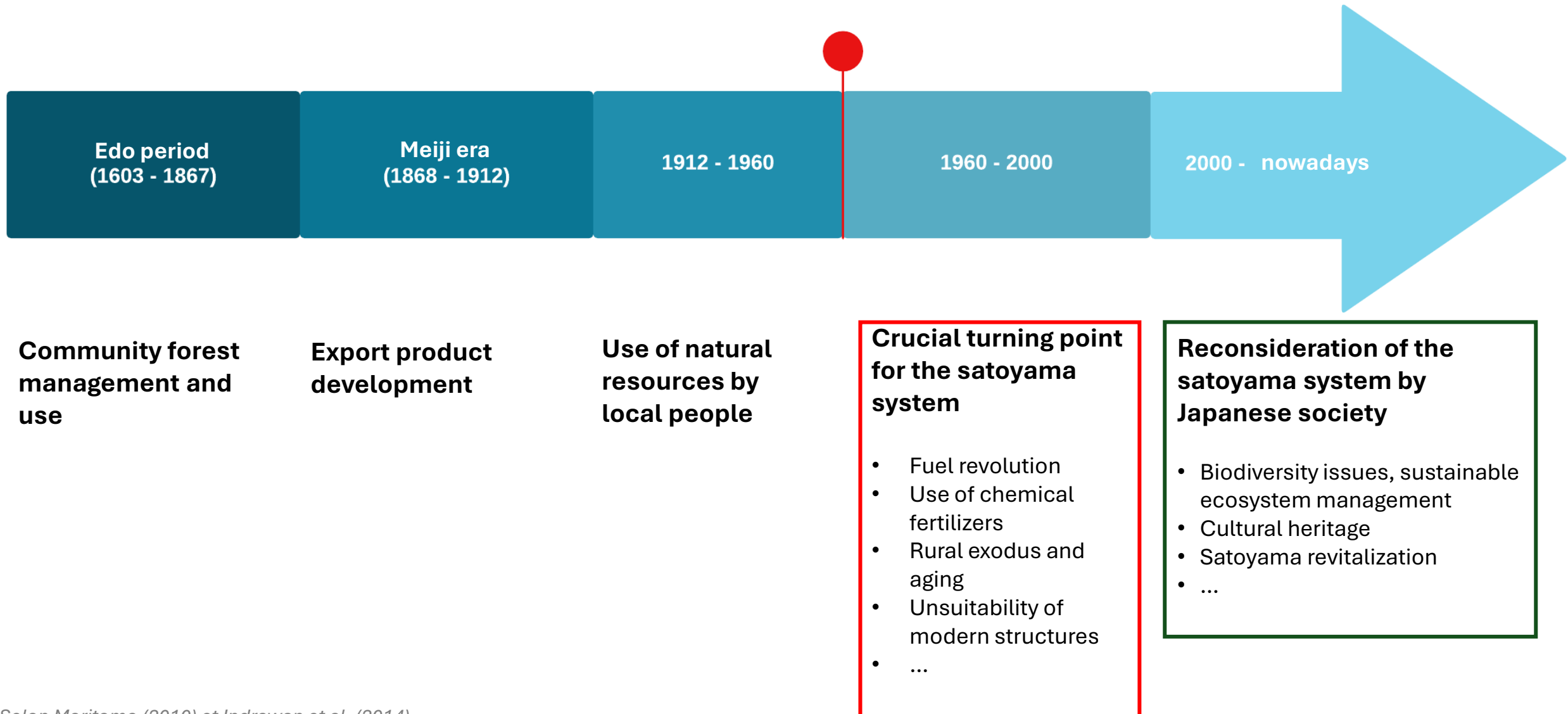
(Indrawan et al., 2014)

- Agro-silvicultural practices.
- Management by local populations.
- Spatial organization induced by associated practices.
- Landscape and biodiversity mosaics.

Simplified spatial organization of the satoyama



Satoyama as a socio-ecological framework



Satoyama as a socio-ecological framework

“ *Idealized image of a traditional Japanese rural landscape.* ”

Takeuchi, 2003

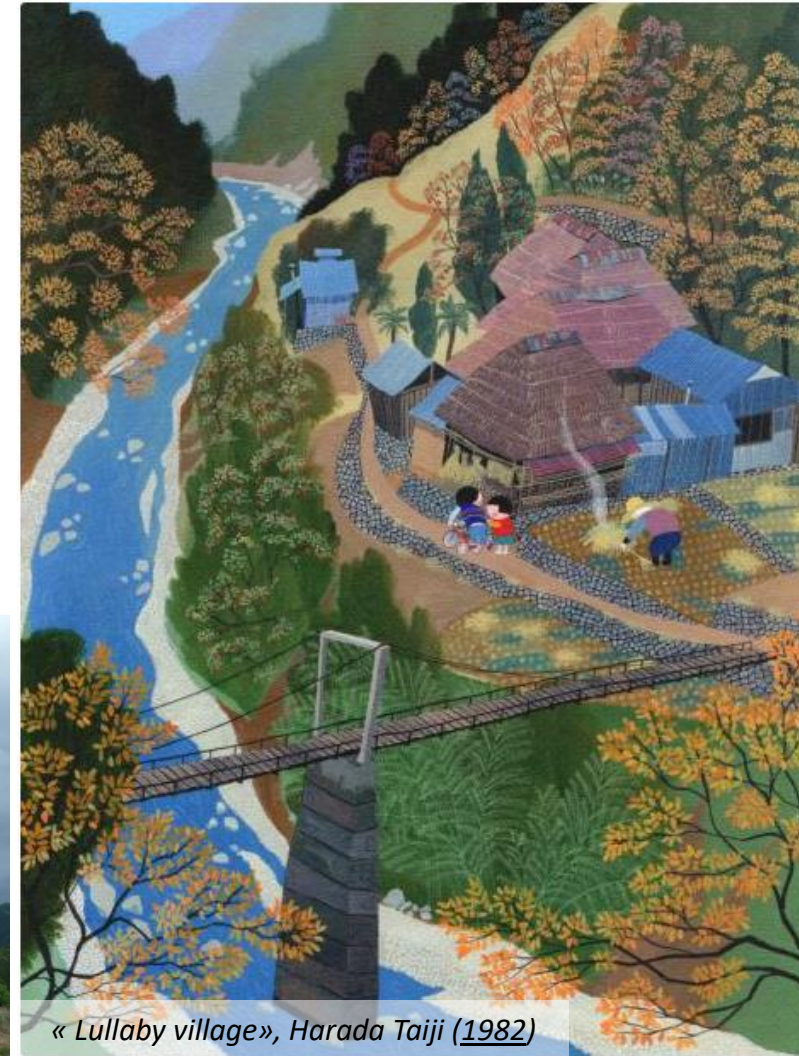
- Representation **influenced** by Japanese cultural context.
- Shared representation in the **collective imagination**
- Idealized \neq reality



Tsuzura's rice terraces, Ukiha - © Dumont



Otoishi watershed, Asakura - ©Dumont, 2024



« Lullaby village », Harada Taiji (1982)

Using landscape change as a starting point to examine the impact on people's relationship with their living space

Hypothesis n°1
Modification of the hydrographic network by the 2017 hazards and the emergency flood restoration project.

Results
Significant change in the hydrographic network and its place in the landscape → central role.

Hypothesis n°2
Other landscape features affected by the restoration of the river system.

Results

- Spatial structure of the studied elements has been modified.
- Standardization of agricultural plots.
- Loss of built space to protective structures.

Hypothesis n°3
As well as visible physical changes, restoration projects influence people's relationship with their living space.

Diachronic analysis
Photo-interpretation [2009-2024]

Semi-directive interviews
16 inhabitants interviewed (2023)
2 entrepreneurs interviewed (2024)

Fieldwork

- Fieldwork with MLIT and the prefecture
- Inventory checking
- Landscape analysis

Results

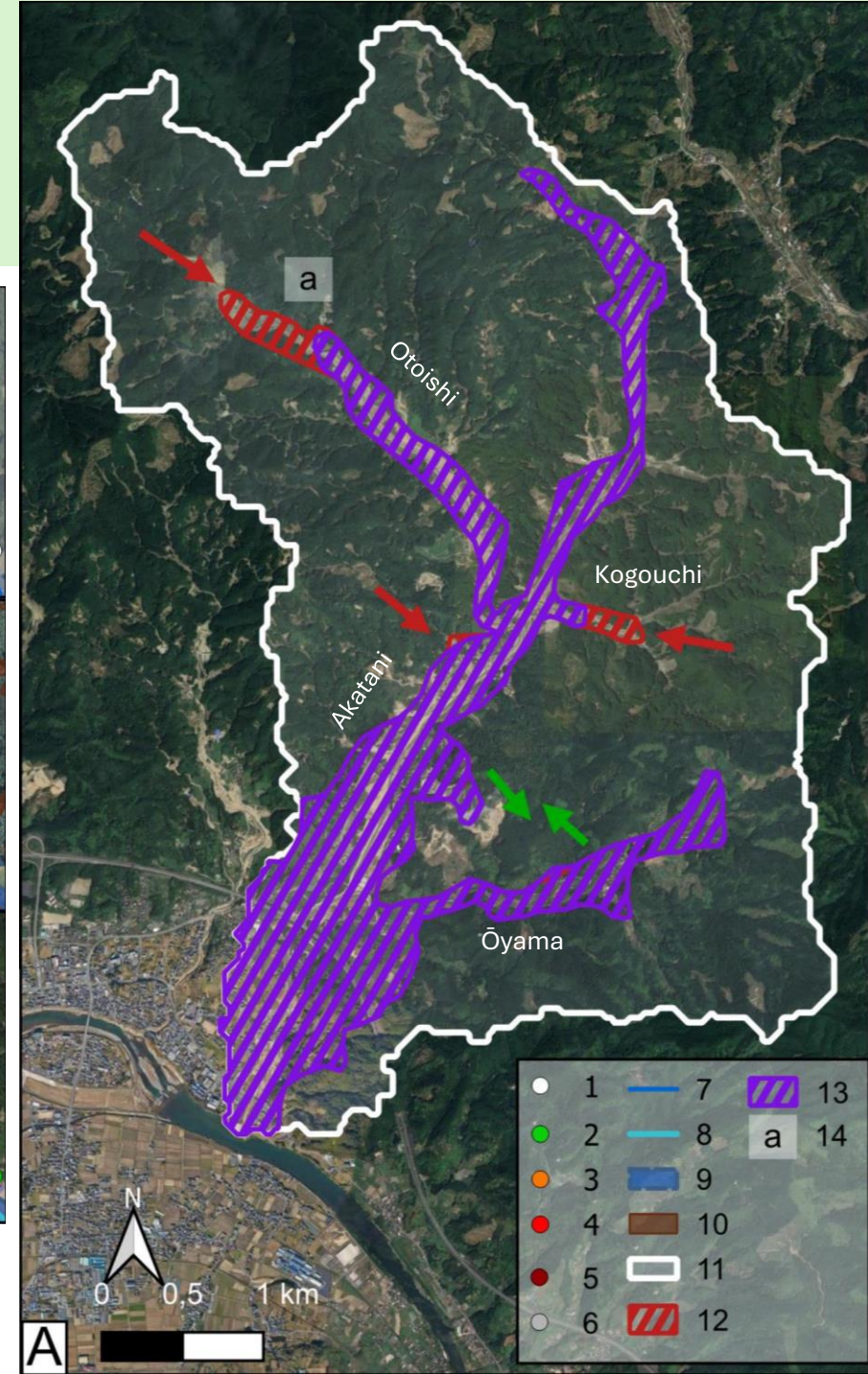
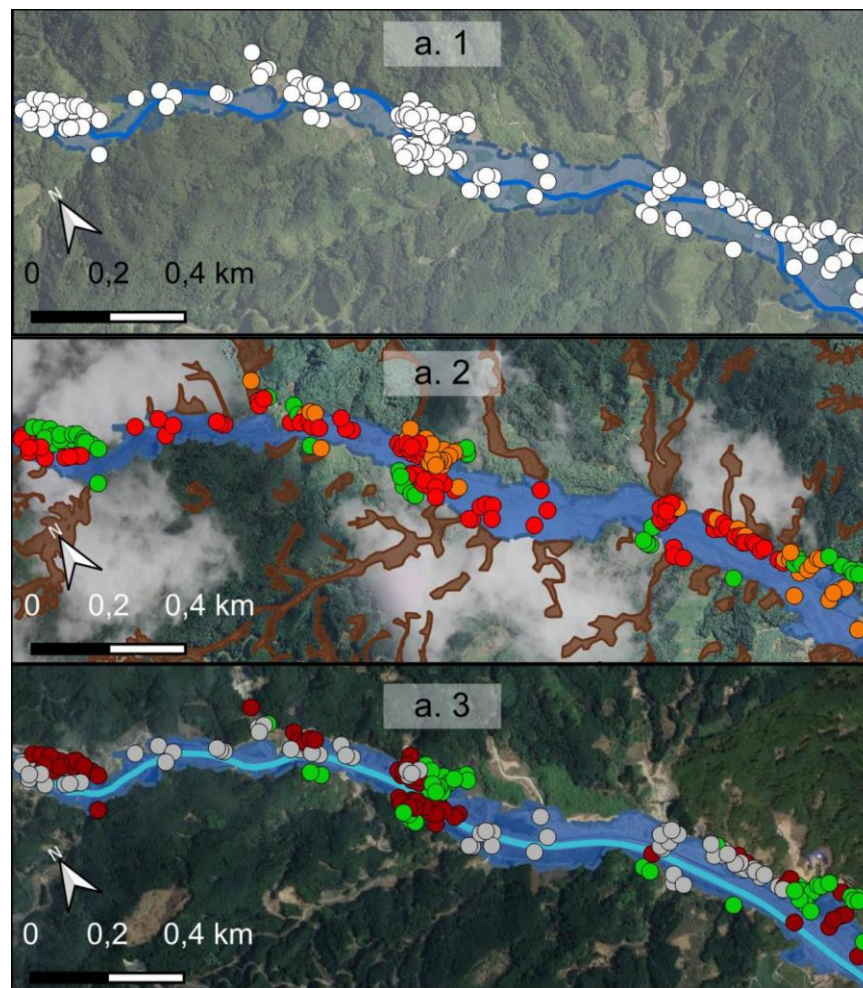
- Changes in spatial/cultural practices.
- Decline of “social” space in favor of “wild” space.
- “Landscape domination” by the State
- Different capitalization on “ordinary” and “remarkable” landscapes

Receding “social space” following emergency river restoration project



A symbolic boundary between social space, controlled by the state, and the wilderness that brings benefit or destruction.

Augendre, 2012



Evolution of social space between 2009 and 2022 in the Akatani watershed and of buildings in the Otoishi sub-watershed .
 1 : Existing buildings in 2009 ; 2 : Intact buildings ; 3 : Damaged buildings ; 4 : Destroyed buildings ; 5 : Demolished buildings ; 6 : Non-reconstructed buildings ; 7 : 2009 channel ; 8 : Chenal 2022 ; 9 : 2017 flood plain ; 10 : Landslide zone ; 11 : watershed boundary ; 12 : 2009 built-up area ; 13 : 2022 built-up area ; 14 : Close-up location

A

Receding “social space” following emergency river restoration project



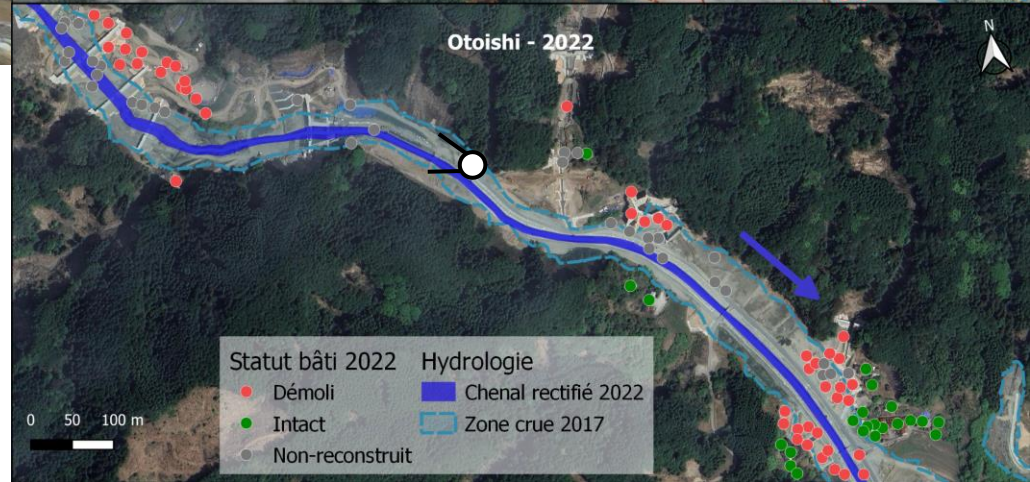
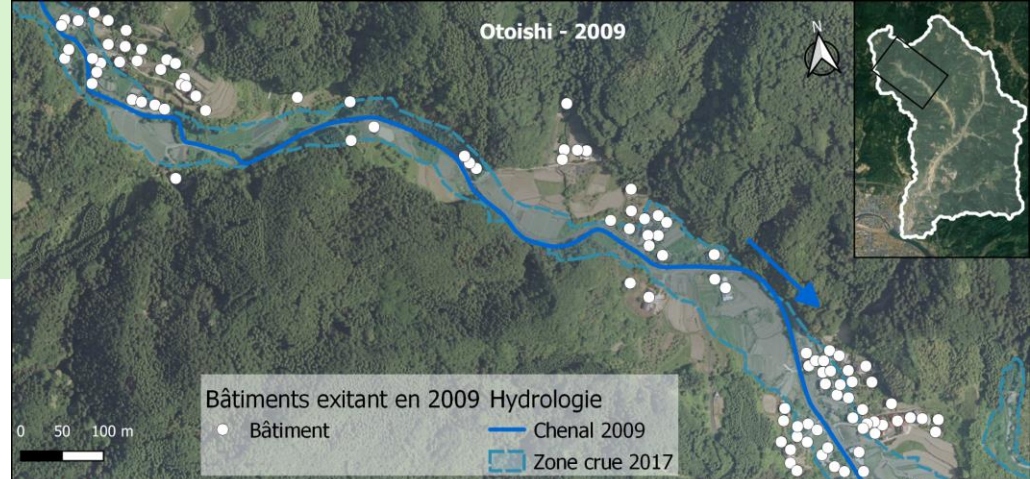
2013
©Google street view, 2013



2017
©Google street view, 2017

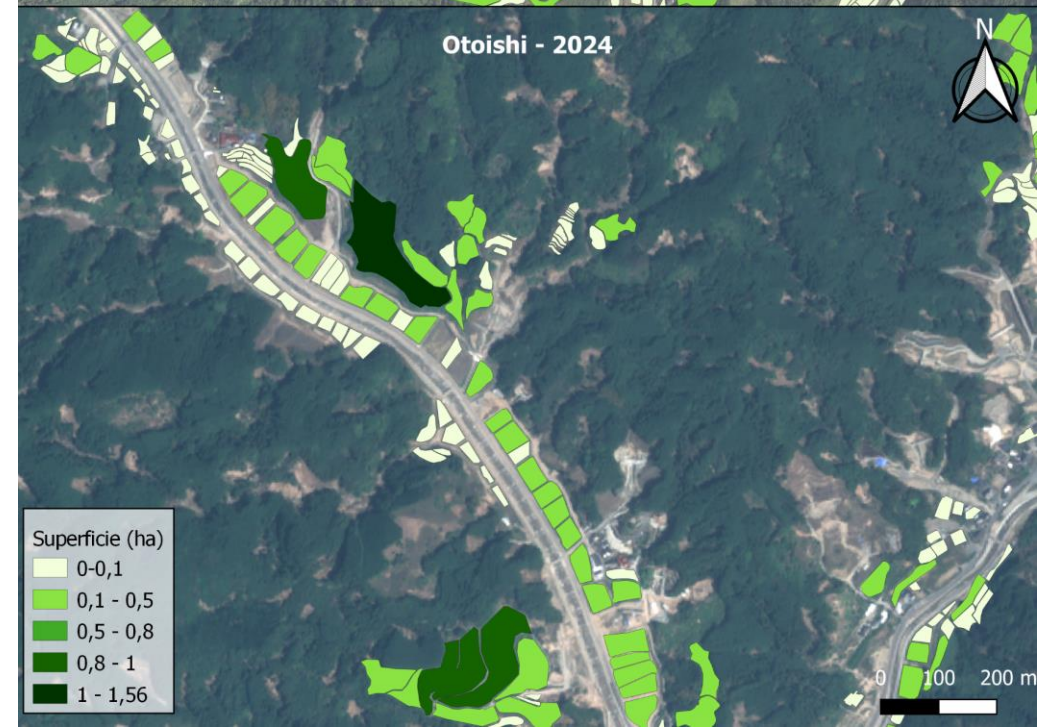
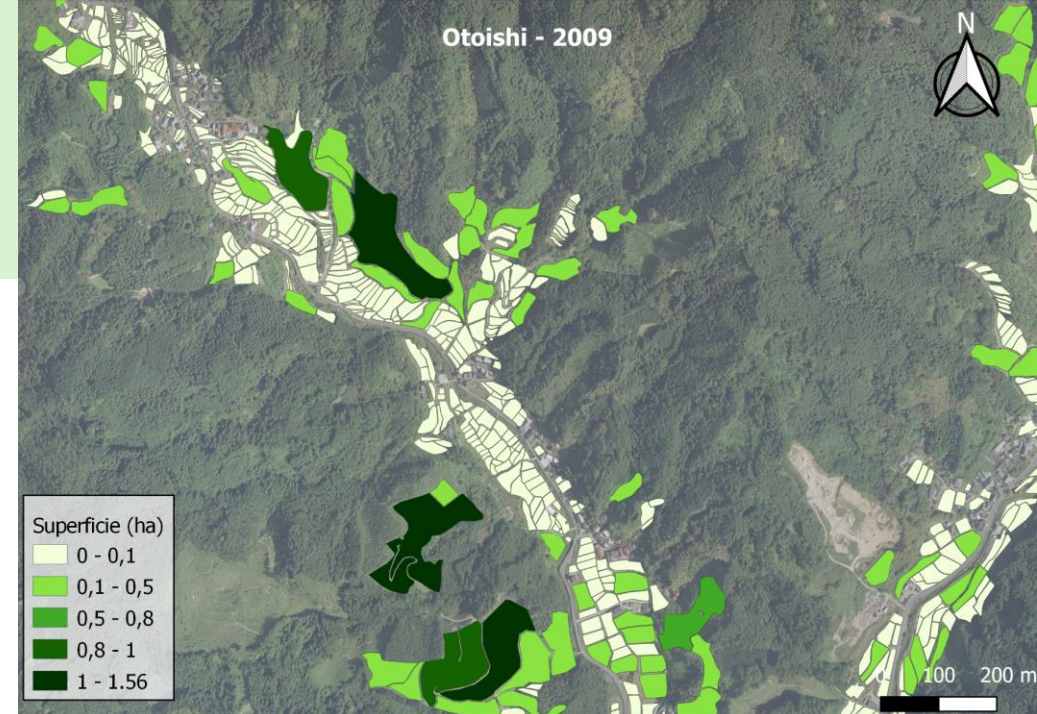


2024
©Dumont, 2024



Changes in physical features illustrating “landscape domination” by the State

- Change of social class dominating the production of space.
 - Production of space based on inhabitant’s practices;
 - Restoration mainly managed by the State (and the ingenierists).
- Dominant landscape vs dominated landscape (Bertrand, 1978).
- Contradictions between the **enhancement** of the satoyama and the landscape resulting from emergency restoration based on **heavy engineering**.



Civil engineering structures as a model for the economic enhancement of the landscape?



[The ordinary landscape] is not set up as a work of art that society wishes to “preserve as is”



Lelli & Paradis-Maindive, 2000

Akatani river, Kyūshū (2024)

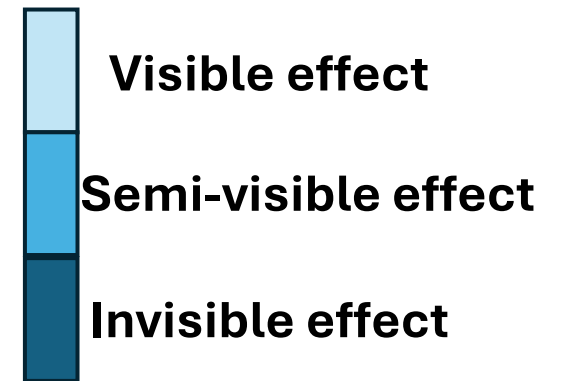
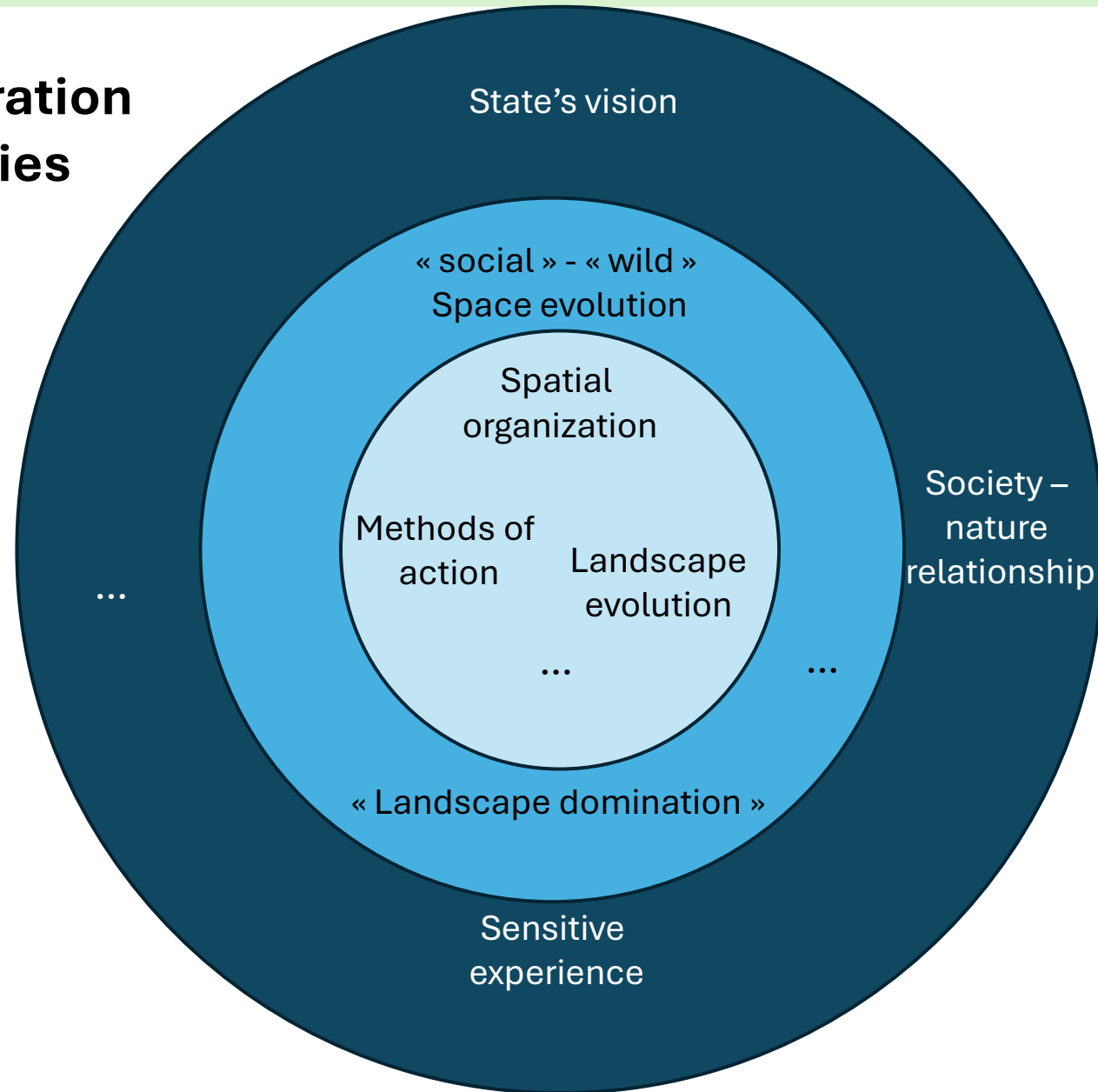


Canal of the Sogi waterfall just after completion of the work, Kyūshū



Discussion - conclusion

Post-disaster restoration project's modalities



Thank you for your attention

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