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Harnessing the power of digital for climate disaster prevention and recovery: Hitachi's innovations for climate adaptation

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Tomoko has engaged in Hitachi's wide-ranging research projects for environmental innovations, including hydrogen production, waste power generation, and ballast water purification.

She leads the Planetary Boundaries Project to create the R&D strategies for Hitachi, focusing on business and technology solutions for societal and environmental challenges.

Hitachi's vision

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Support people's quality of life with data and technology that fosters a sustainable society

Planetary Boundaries

Protect the earth while maintaining social infrastructure

Society

Growth

Co-creation for Society

Green

Digital

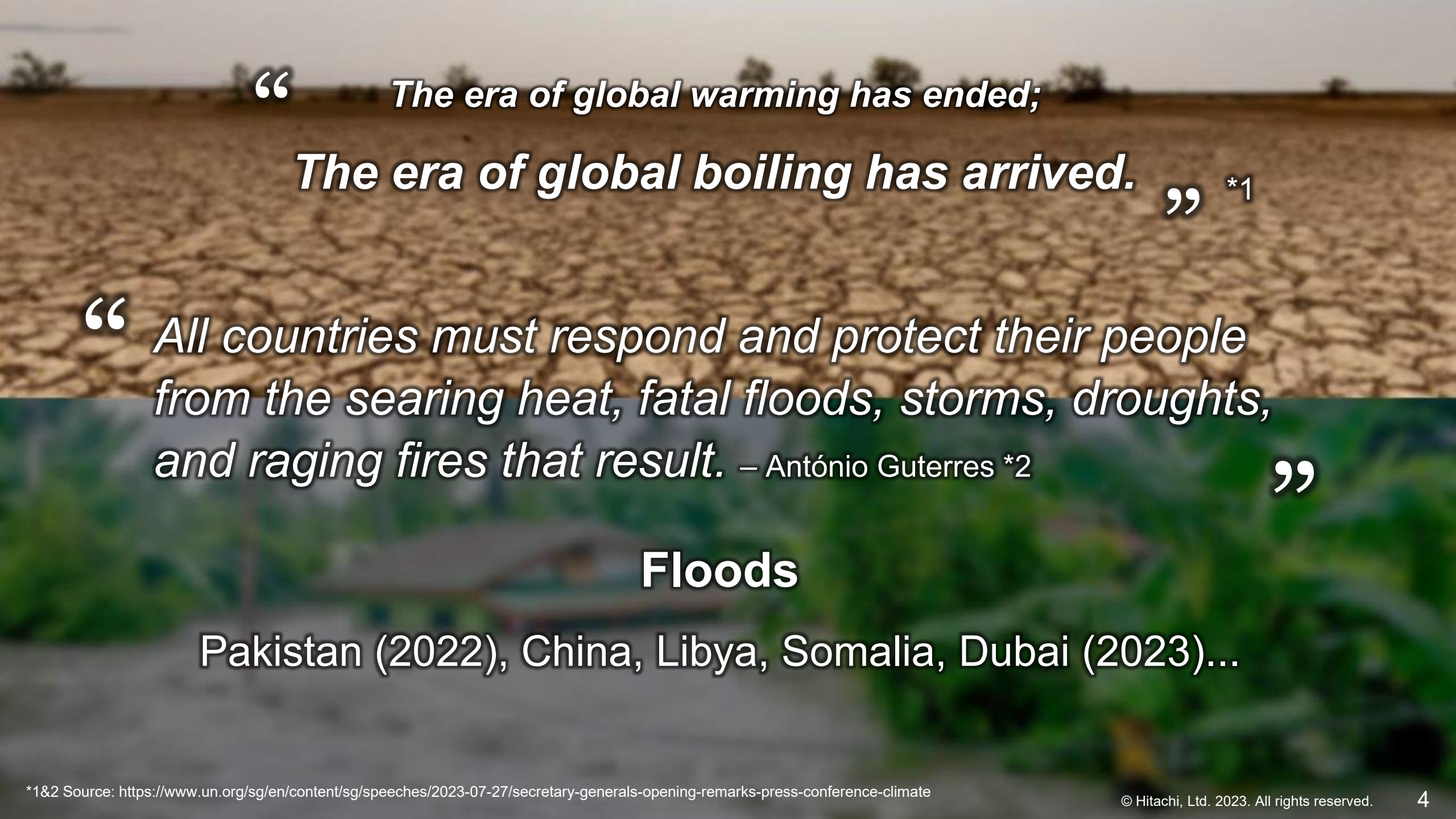
Innovation

LUMADA

Wellbeing

A society where every individual is comfortable and active

People



“***The era of global warming has ended;***

The era of global boiling has arrived.” *1

“*All countries must respond and protect their people from the searing heat, fatal floods, storms, droughts, and raging fires that result.* – António Guterres *2”

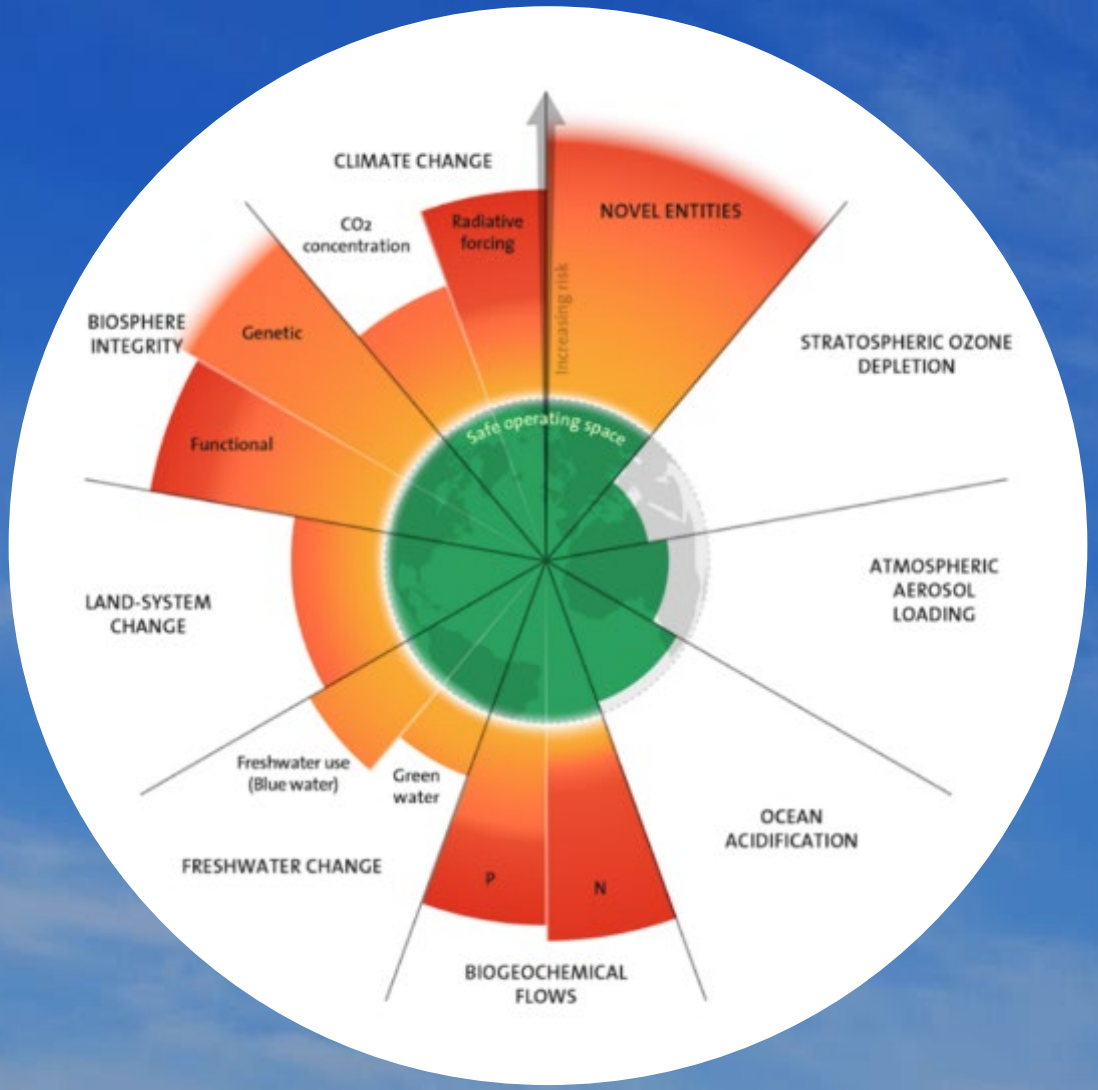
Floods

Pakistan (2022), China, Libya, Somalia, Dubai (2023)...

*1&2 Source: https://www.un.org/sg/en/content/sg/speeches/2023-07-27/secretary-generals-opening-remarks-press-conference-climate

Six out of nine Planetary Boundaries have been crossed:

Increasing risk of “large-scale abrupt or irreversible environmental changes”



The Planetary Boundaries and Hitachi's R&D

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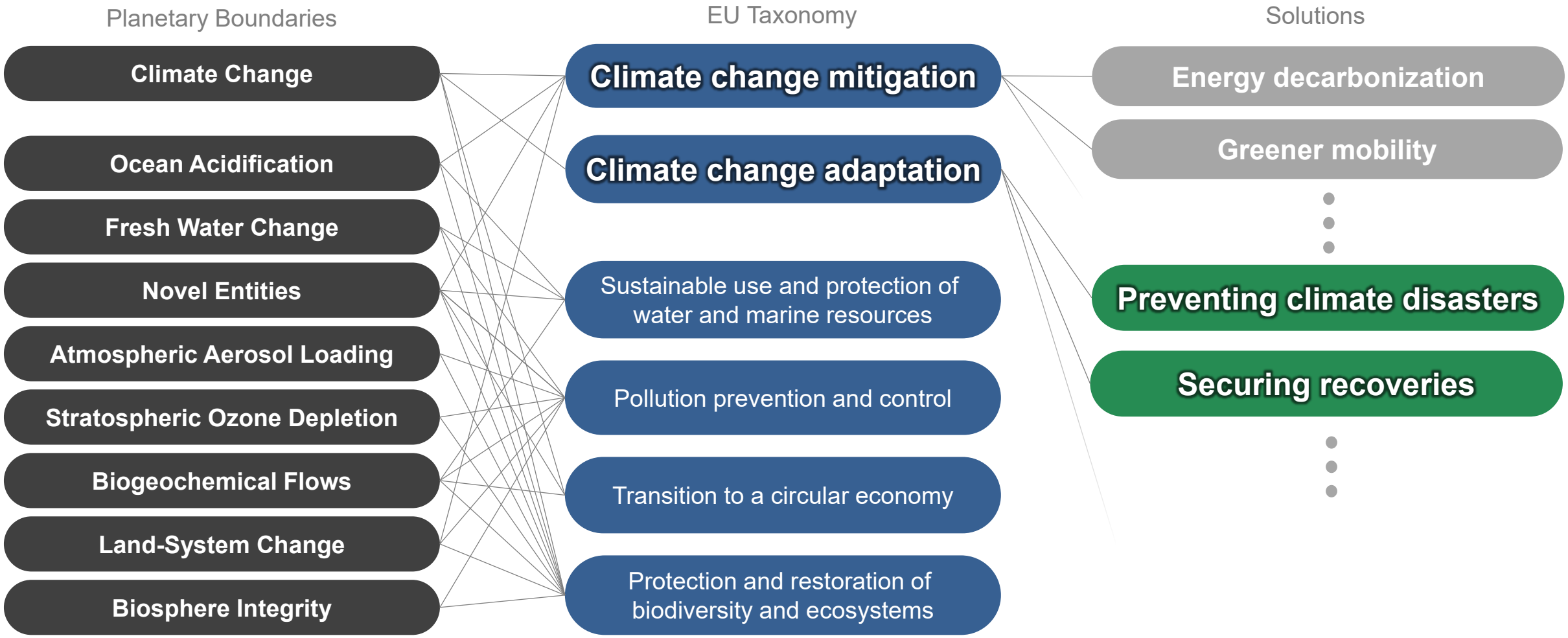
Developing climate change solutions in a multi-dimensional planetary health approach



Hitachi's R&D efforts in climate adaptation

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Climate adaptation solutions for disaster prevention and recovery

Digital solution to calculate the flood-damaged areas and simulate the effect of prevention measures

Prevention Commercialized

AI-assisted image analysis solution for flood, land slide and building damages

Recovery Commercialized

Digital solution to analyze climate risks on business, including supply-chain disruptions

Recovery R&D

Two images were generated by the AI, Adobe Firefly

Flood simulator : the genesis of our research

Typhoon 23 of 2004 Tokage/Siony (Japan, October 2004)

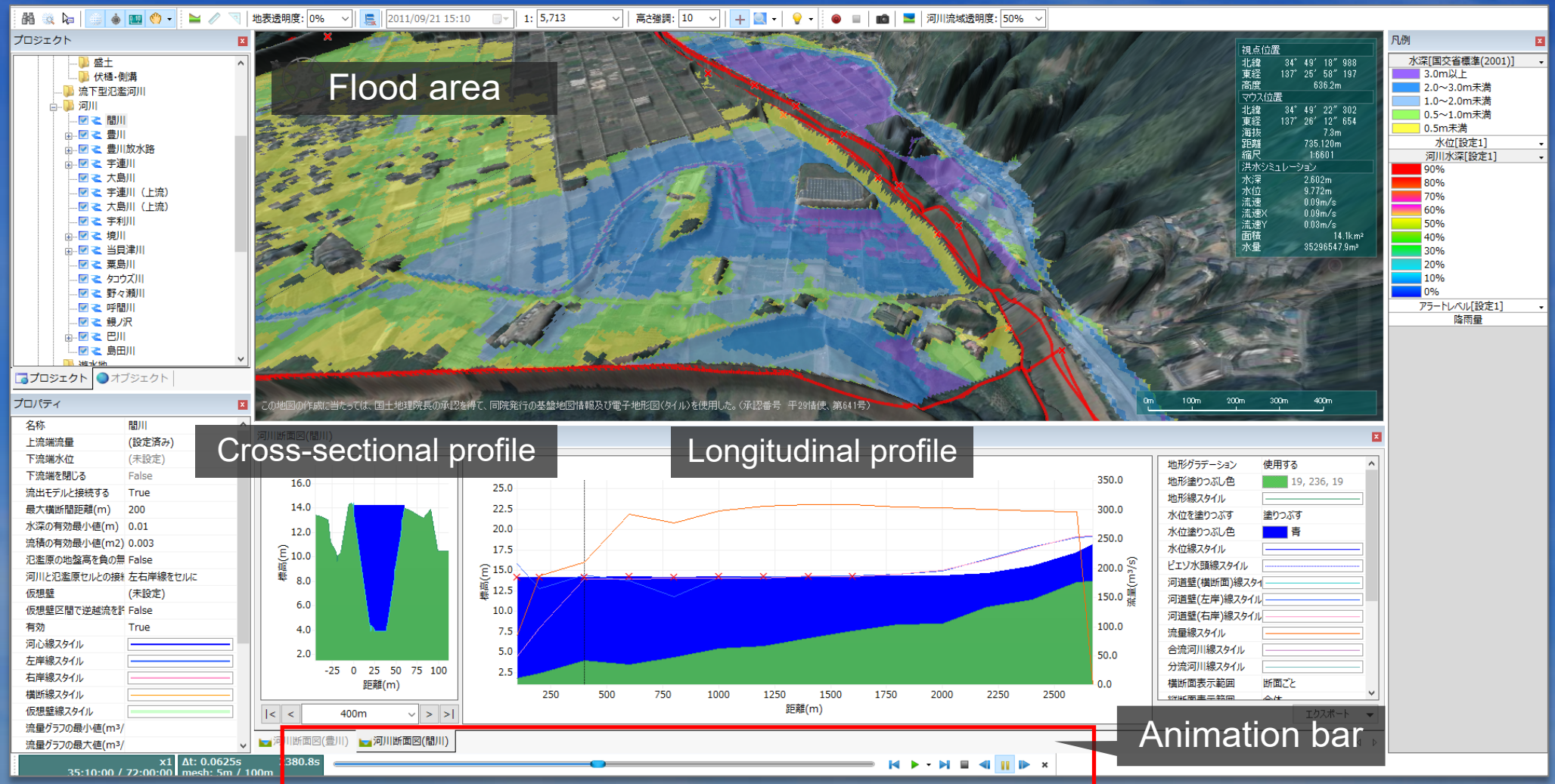
Source: Ministry of Land, Infrastructure and Transport of Japan

https://www.mlit.go.jp/river/saigaisokuho_blog/past_saigaisokuho/taifu23/kinki/index.html

Source: Japan Meteorological Agency

Flood simulator : DioVISTA

In 2006, Hitachi Power Solutions released “DioVISTA,” a software which allows users to simulate and visualize flooding risks in Japan on an intuitive map-based interface.



Flood simulator : DioVISTA

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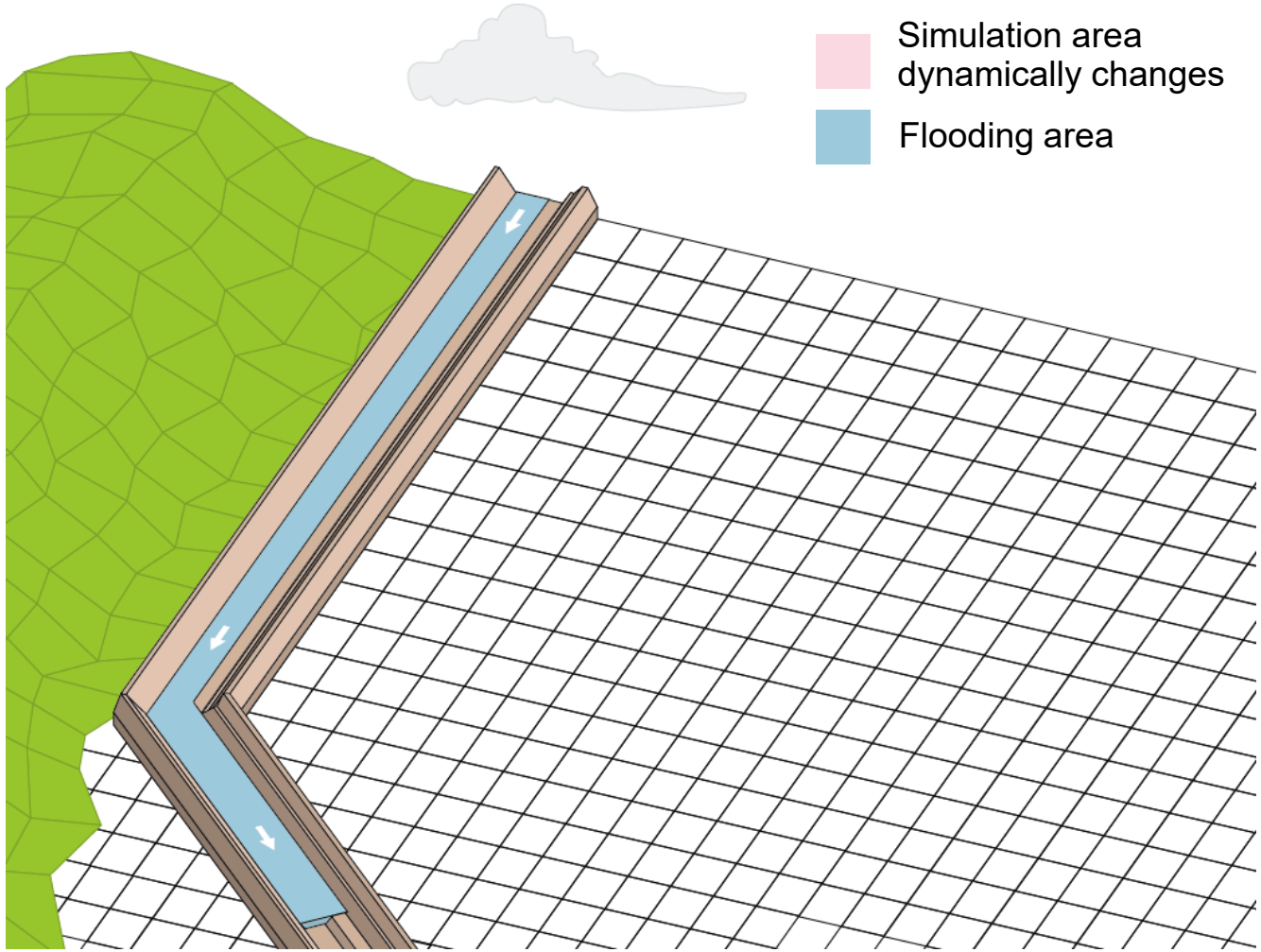
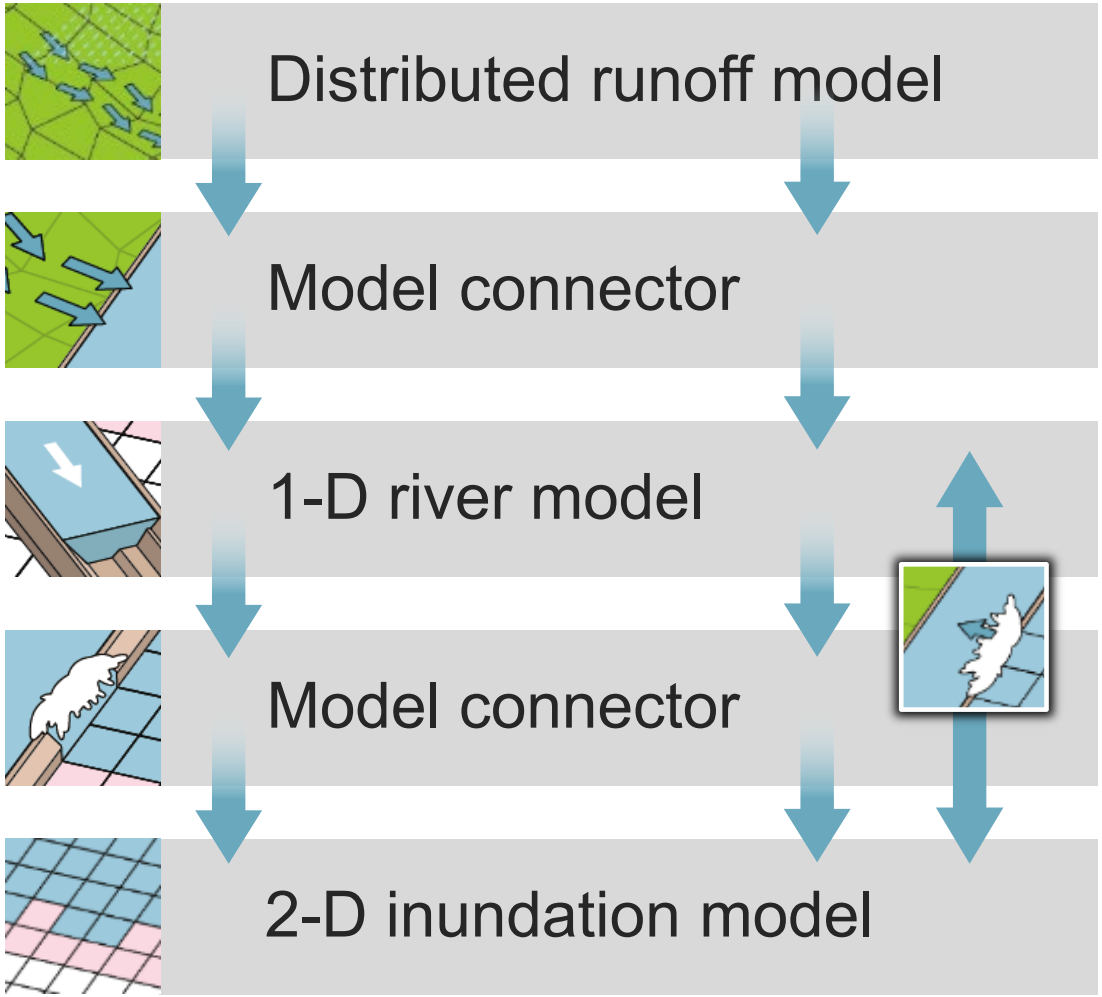
DioVISTA provides high-speed simulation results based on Hitachi's unique rainfall and water overflow models. It can also simulate the effect of built structures such as dams and reservoir ponds.





FloodS: Overview

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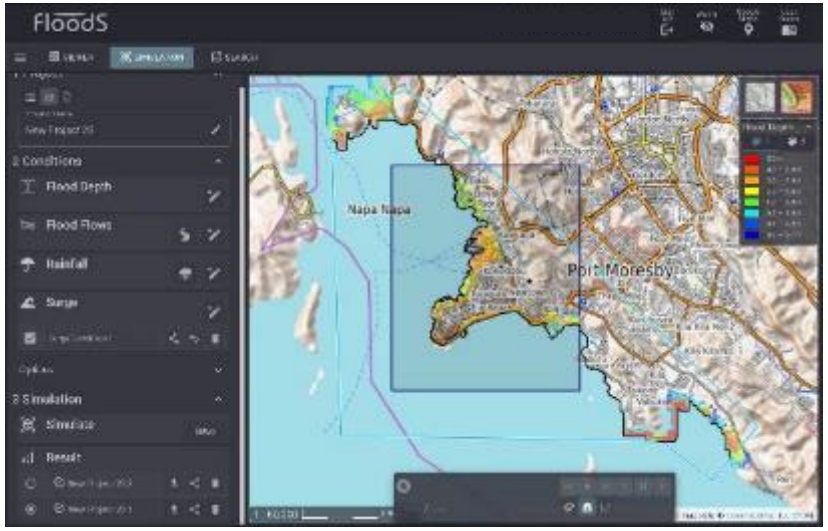
“FloodS” is a policy decision-making assistance service for climate adaptation, designed to support administrative staff in climate-vulnerable areas in building narratives for financial measures.



- In partnership with the Ministry of the Environment of Japan, Hitachi developed an easy-to-control web-based application to simulate flooding risk in different parts of the world
- Not only flooding caused by rainfall, but also flooding caused by storm surge and future sea level rise can be simulated
- “FloodS” is available for free from Nov. 30th

For future

Hitachi will continue to support the global climate disaster prevention and recovery efforts through international government, science and business collaborations, harnessing the power of digital technologies.


Hitachi Social Innovation is
POWERING GOOD

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