The Transdisciplinary Approach

Developing an Integrated Water-Related Disaster Information System for Municipalities（IDR4M)

TC-21 Seminar: Exploring the Synergy
Innovation and Transdisciplinary Approaches in DRR

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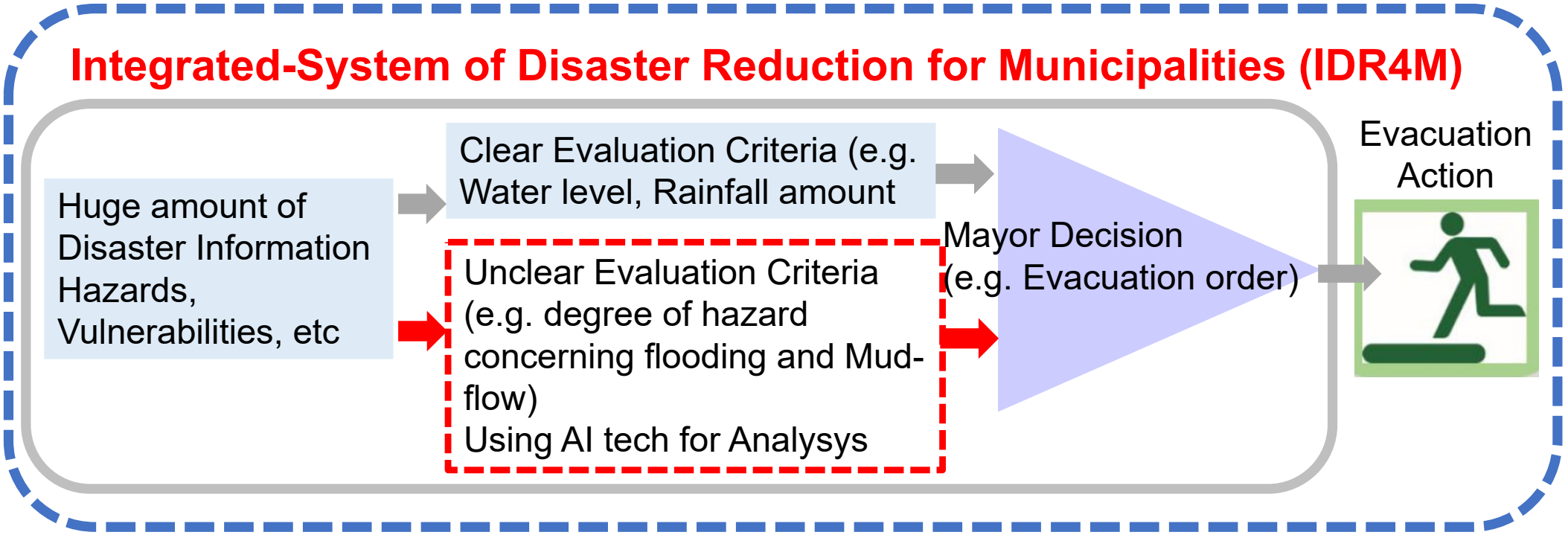
IDR4M Concept

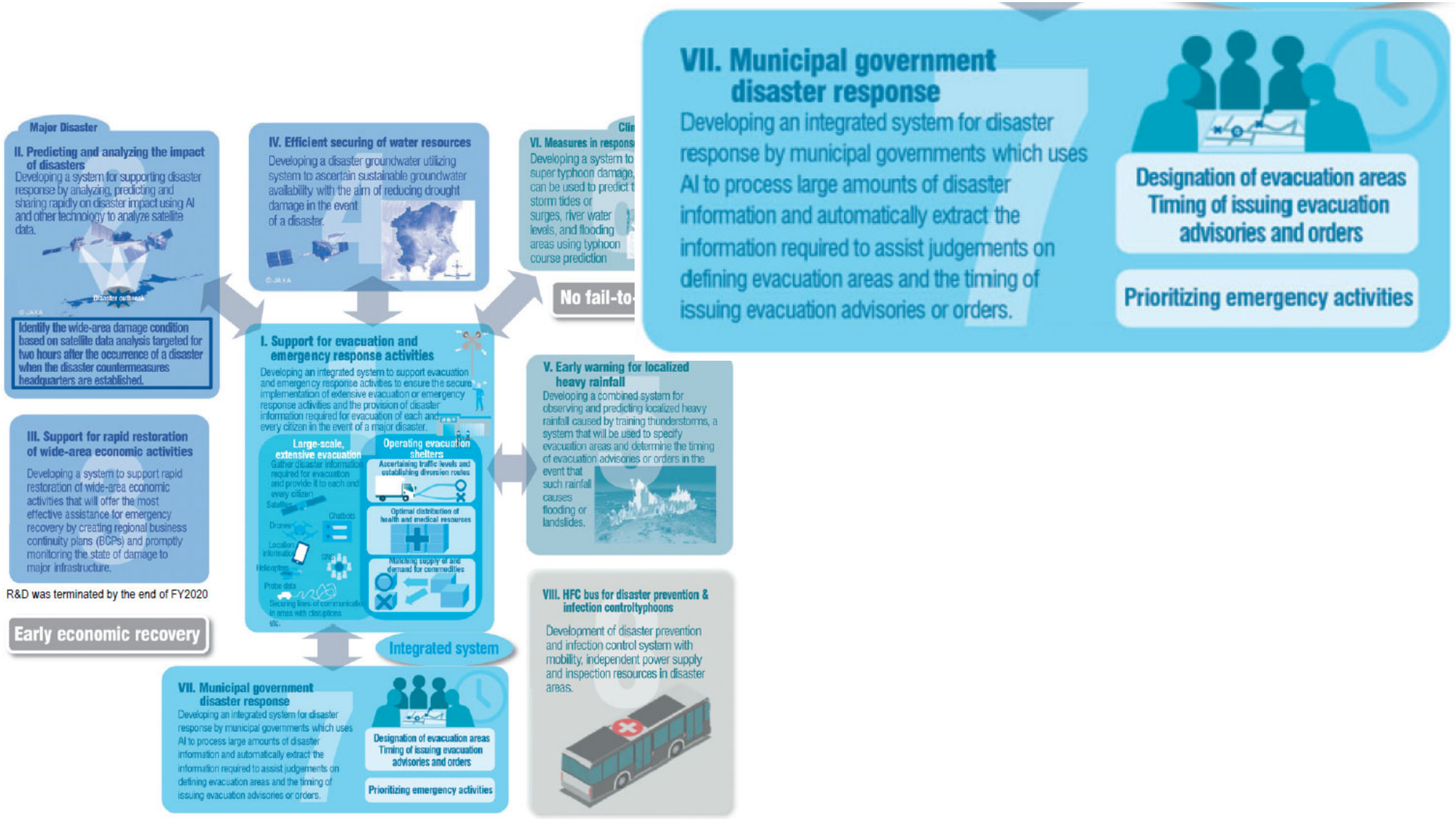


Problems at municipalities

- Limited officials and lack of experience for disaster response
- Huge amount of disaster related information to check in a short amount of time

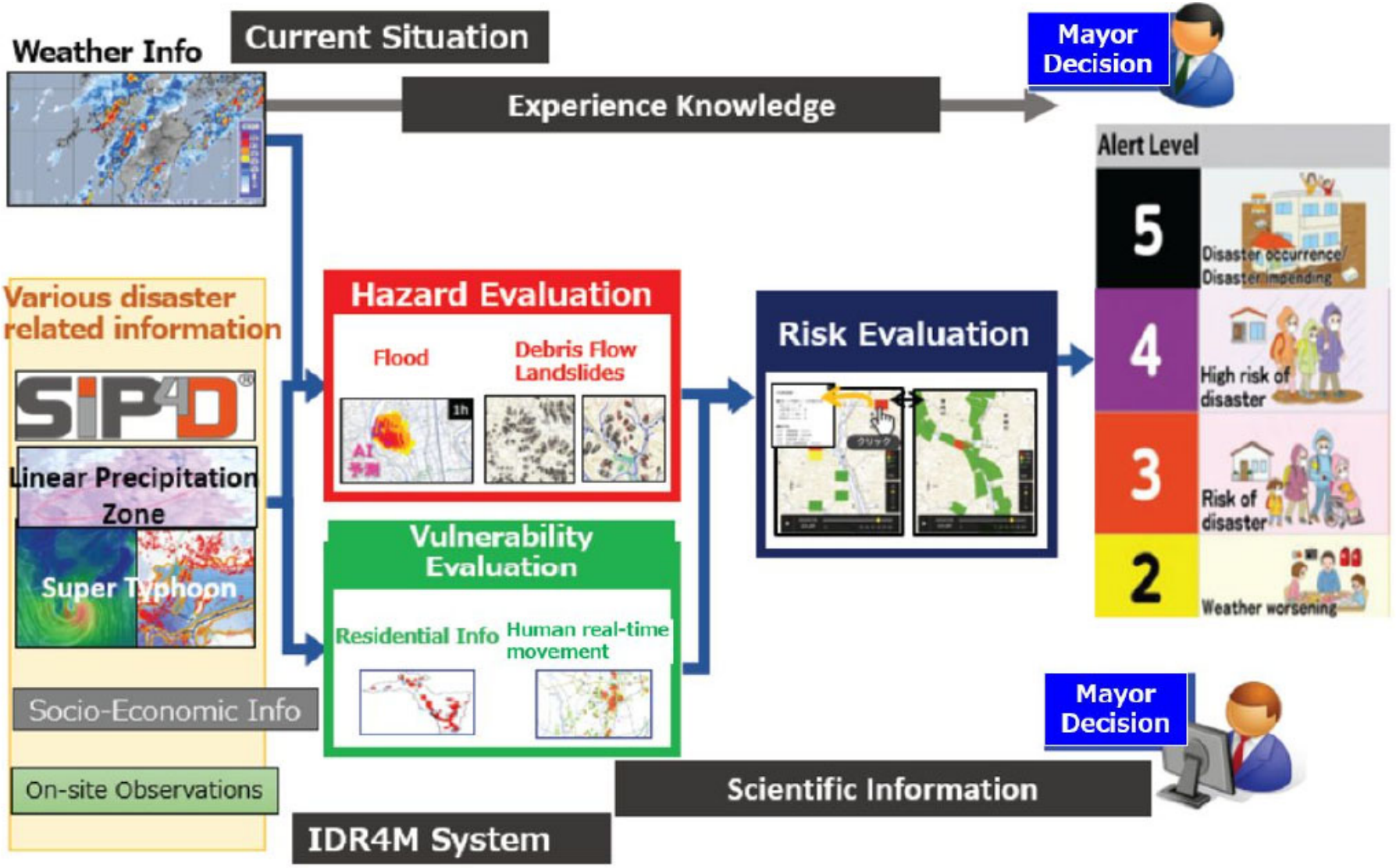
IDR4M aims to provide disaster risk information to municipalities for science-based decision-making in disaster response operations, such as issuing evacuation order

IDR4M Development flamework



- Developed in the “Cross-ministerial Strategic Innovation Promotion Program (SIP)”
- Developed under the theme of “Enhancement of Societal Resiliency Against Natural Disasters”

Outline of the IDR4M system



1) Integrate disaster information and deliver them to municipalities in a usable manner,
2) Develop an integrated hazards/vulnerabilities risk information system, and
3) Provide real-time/pinpoint risk information to residents.

18 Model Municipalities

Kakogawa City, Hyogo

Himi City, Toyama

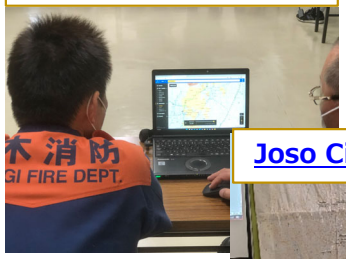
Ngaoka Citym Niigata

Obihiro City, Shintoku Town, Sikaoi Town and Memuro Town, Hokkaido

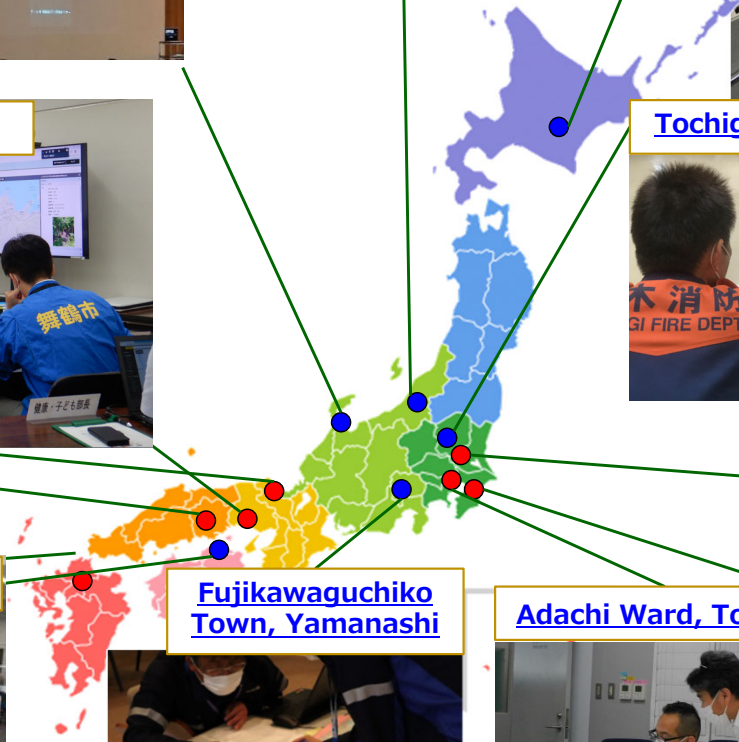
Takahashi City, Okayama

Maizuru City, Kyoto

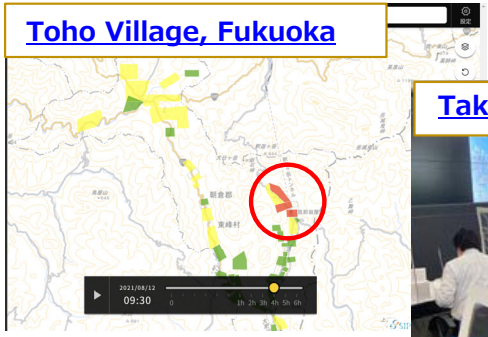
Tochigi City, Tochigi



Joso Citym Ibaraki

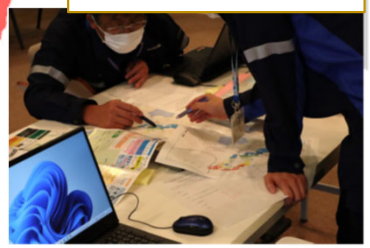


Toho Village, Fukuoka

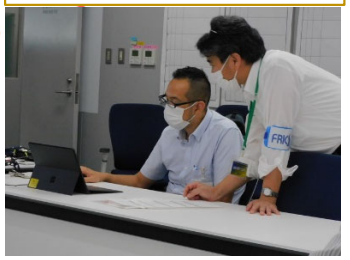


Takamatsu City, Kagawa

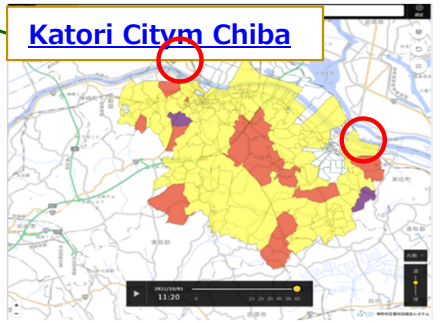
Fujikawaguchiko Town, Yamanashi



Adachi Ward, Tokyo



Katori Citym Chiba



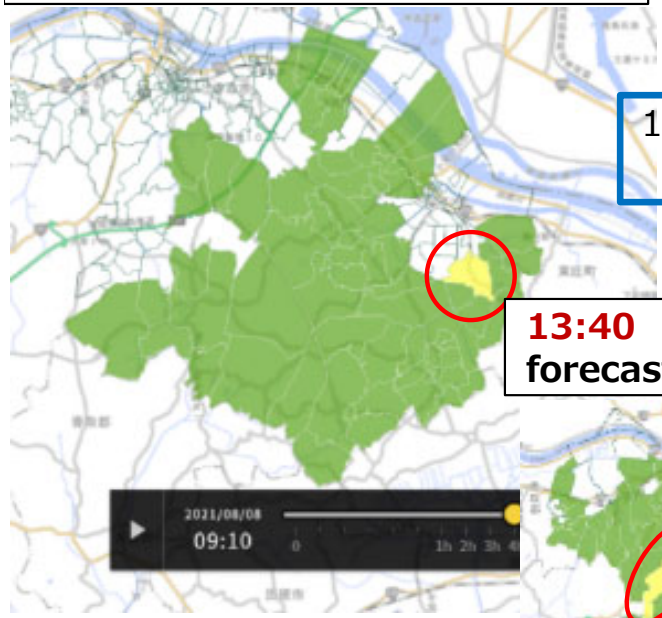
- Selected 18 municipalities from whole Japan in terms of different topography and characteristics.
- Conducted demonstration experiment in the model municipalities.

Practical use of IDR4M by Municipalities in Actual Disasters

	Municipality	Event
July 2021	Katori City	Day 3, 07:20, Evacuation instruction released
	Takahashi City	No action (judged not necessary)
August 2021	Katori City	Day 8, 14:50, Evacuation of the elderly released
	Toho Village	Day 12, 17:30, Evacuation of the elderly released
		Day 13, 17:30, Evacuation instruction released
		Day 16, 18:13, Evacuation of the elderly released
	Takahashi City	Day 13, 17:45, Evacuation of the elderly released
		Day 14, 10:30, Evacuation Instruction released
	Katori City	Day 15, 05:10, Evacuation instruction released
	Kakogawa City	No action (judged not necessary)
	Maizuru City	No action (judged not necessary)
	Adachi Ward	No action (judged not necessary)
	Joso City	No action (judged not necessary)
Sept. 2021	Katori City	Day 30, 16:00, Evacuation of the elderly released
July 2022	Toho Village	No action (judged not necessary)
	Takahashi City	No action (judged not necessary)
Sept. 2022	Toho Village	Day 18, 10:00, Evacuation of the elderly released
		Day 18, 15:00, Evacuation instruction released
	Joso City	No action (judged not necessary)

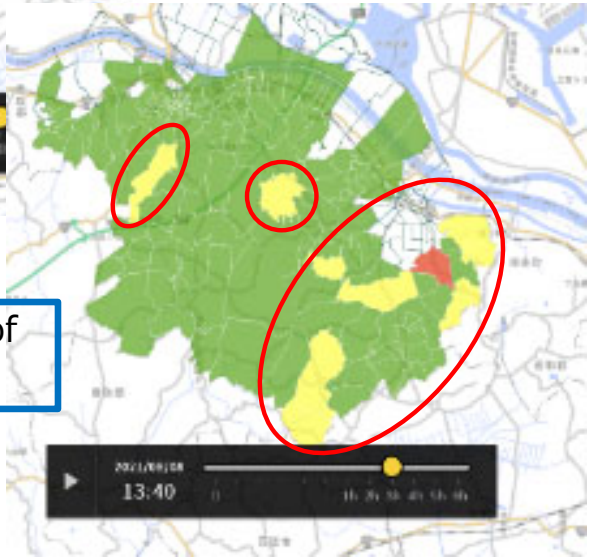
【Usage example: IDR4M Disaster risk of Katori city affected by Typhoon No.8, on August 8, 2021】

9:10 Disaster risk forecast after 4 hours; 13:10



13:36 issued "Heavy rain warning"

13:40 Disaster risk forecast after 3 hours; 16:40



14:50 issued "Evacuation of the elderly, etc"

Legend: Disaster risk
- Evacuation (Evacuation Instruction)
- Preparation (Evacuation of the Elderly, Etc)
- Advisory