

Collaborative disaster management activities against flood by JMA with related governmental organizations



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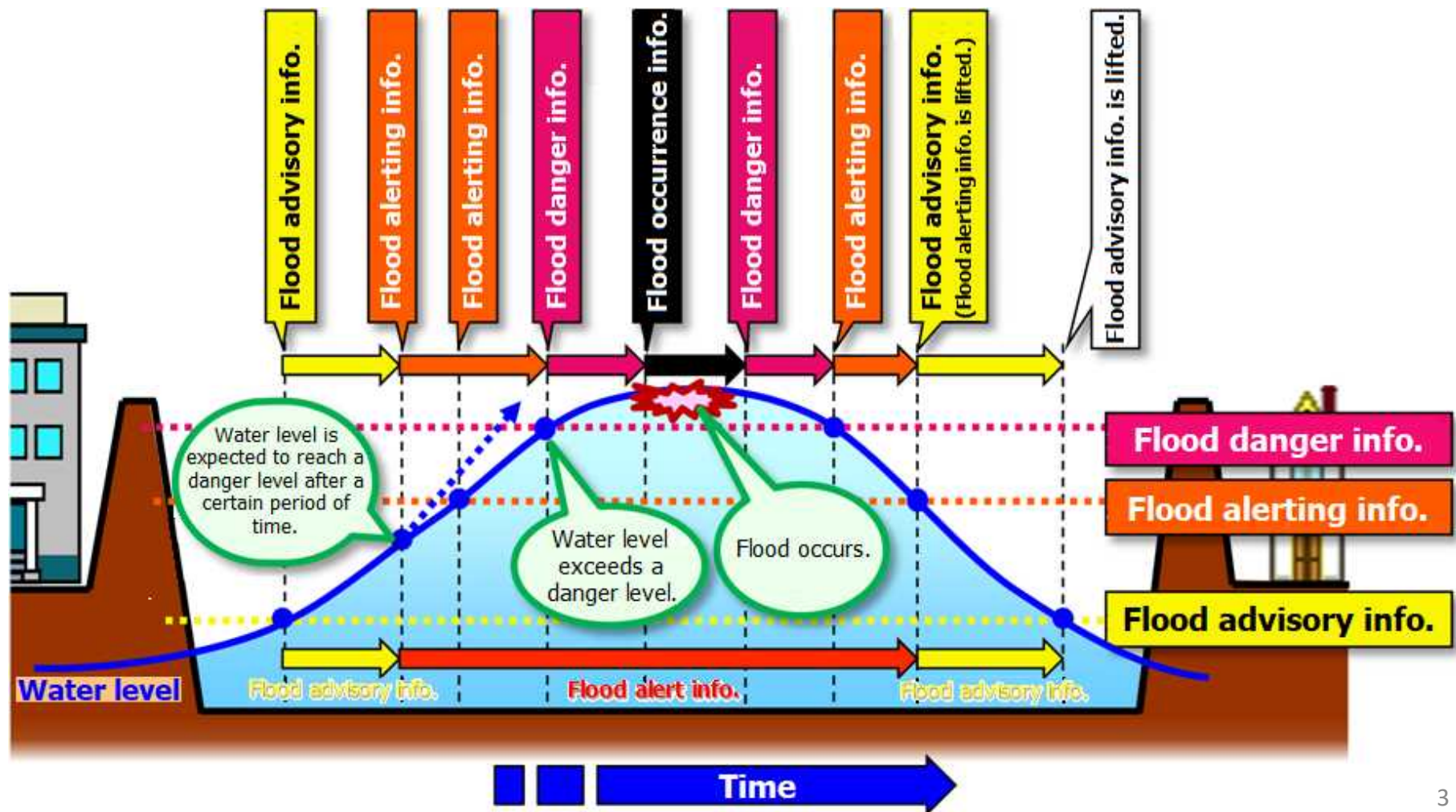
Disasters and meteorological information for disaster management in Japan

- Timing and areas for evacuation are shown in concrete in Guidelines for Evacuation Recommendations created by the Cabinet Office.

Disasters and meteorological information for disaster prevention (: high-risk areas with a threat to life)			
Landslides	Floods (for designated rivers)	Storm surge	Example of actions by municipalities and residents (: zones where evacuation advisories should be issued)
Heavy Rain (landslide) Warning, Landslide Alert Info. Landslide prone areas with high risks in Real-time Landslide Risk Map	Flood Warnings and Advisories for designated rivers Expected inundation areas in hazard maps on floods	Storm Warning, Storm Surge Warning Areas where inundation is expected when a storm warning or a storm surge warning is issued	
Heavy Rain Advisory	Information to call attention to flooding	Storm Surge Advisory	[Municipalities] - set up a liaison - prepare for issuance of notifications to "Prepare to evacuate and start evacuating elderly and other persons requiring special care" [Residents] - pay attention to meteorological information such as warnings
Heavy Rain (landslide) Warning with Red in Real-time Landslide Risk Map	Information to provide a warning on flooding	Storm Surge Advisory (indicates the likely issuance of a Storm Surge Warning)	[Municipalities] - issue notifications to "Prepare to evacuate and start evacuating elderly and other persons requiring special care" - prepare for issuance of evacuation recommendations [Residents] - prepare to evacuate (elderly and other persons requiring special care start to evacuate)
Light-purple in Real-time Landslide Risk Map or Landslide Alert Information	Information on potential flood hazard	Storm Warning OR Storm Surge Warning	[Municipalities] - issue evacuation recommendations - establish Disaster Management Headquarters [Residents] - start to evacuate
Dark-purple in Real-time Landslide Risk Map	(High probability of flooding)	(Over the hazardous tidal levels)	[Municipalities] - issue evacuation instructions (emergency) [Residents] - complete evacuation (start to evacuate if not evacuated; move to a room with low risk of exposure to disasters for safety if evacuation may be hazardous due to heavy rain or storm winds)
(Landslides occurred)	Information on flooding	(Extreme overflow occurred)	2

Use of meteorological information for disaster management related to flood in Japan

- JMA issues flood forecasts in cooperation with MLIT or prefectures for rivers under government control which has large basin area and may suffer great damage due to flood.



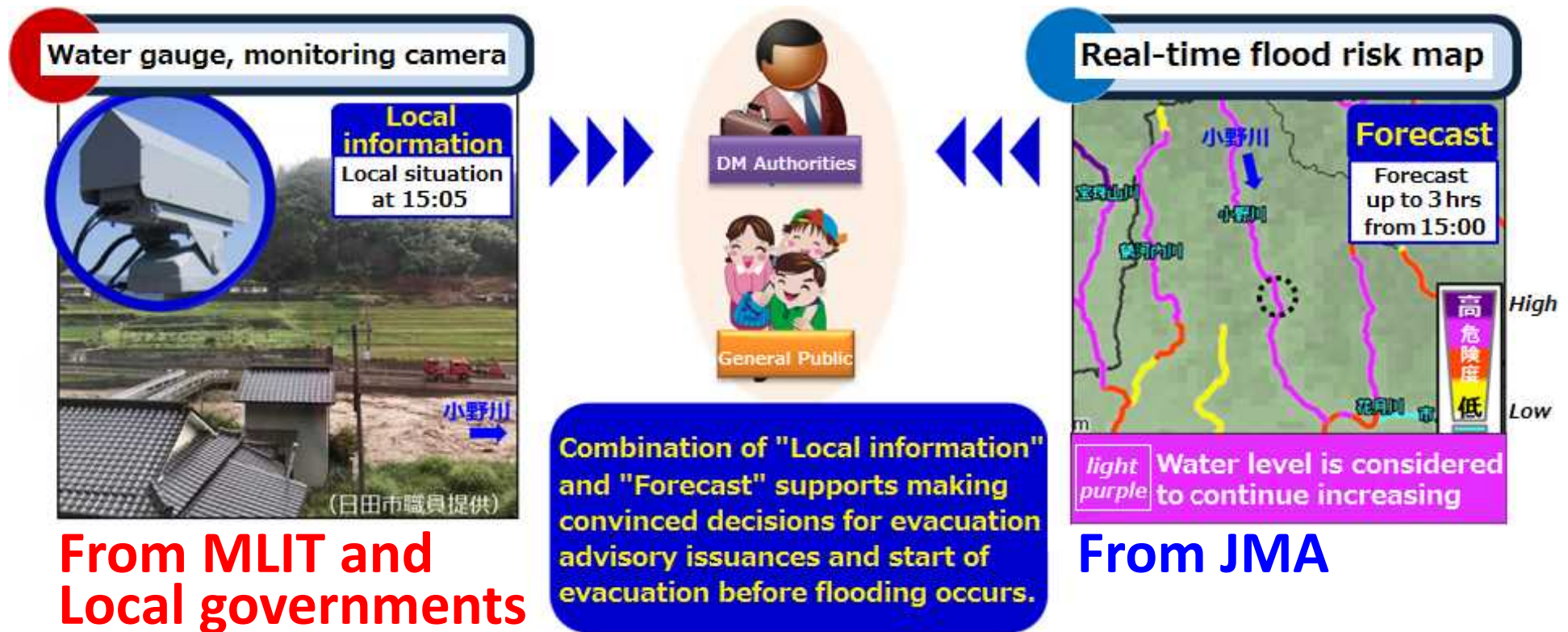
Use of meteorological information for disaster management related to flood in Japan

Information type for rivers with flood forecast

Type of info.	Criteria for issuance	Required actions
Flood occurrence info.	Flood occurs.	Caution is required against floodwater.
Flood danger info.	Flood danger level.	Flood may occur at any time. Action such as evacuation is required against flood.
Flood alerting info.	Flood alert level. Water level is expected to reach a danger level after a certain period of time or continue increasing after reaching an alert level.	Evacuation preparation is required against flood.
Flood advisory info.	Flood watch level. Water level is expected to continue increasing after reaching a watch level.	Attention is required against flood.

Use of meteorological information for disaster management related to flood in Japan

- For other rivers, river water level information from MLIT and others and JMA's Real-time risk map for flood are available.



JMA's Real-time risk map

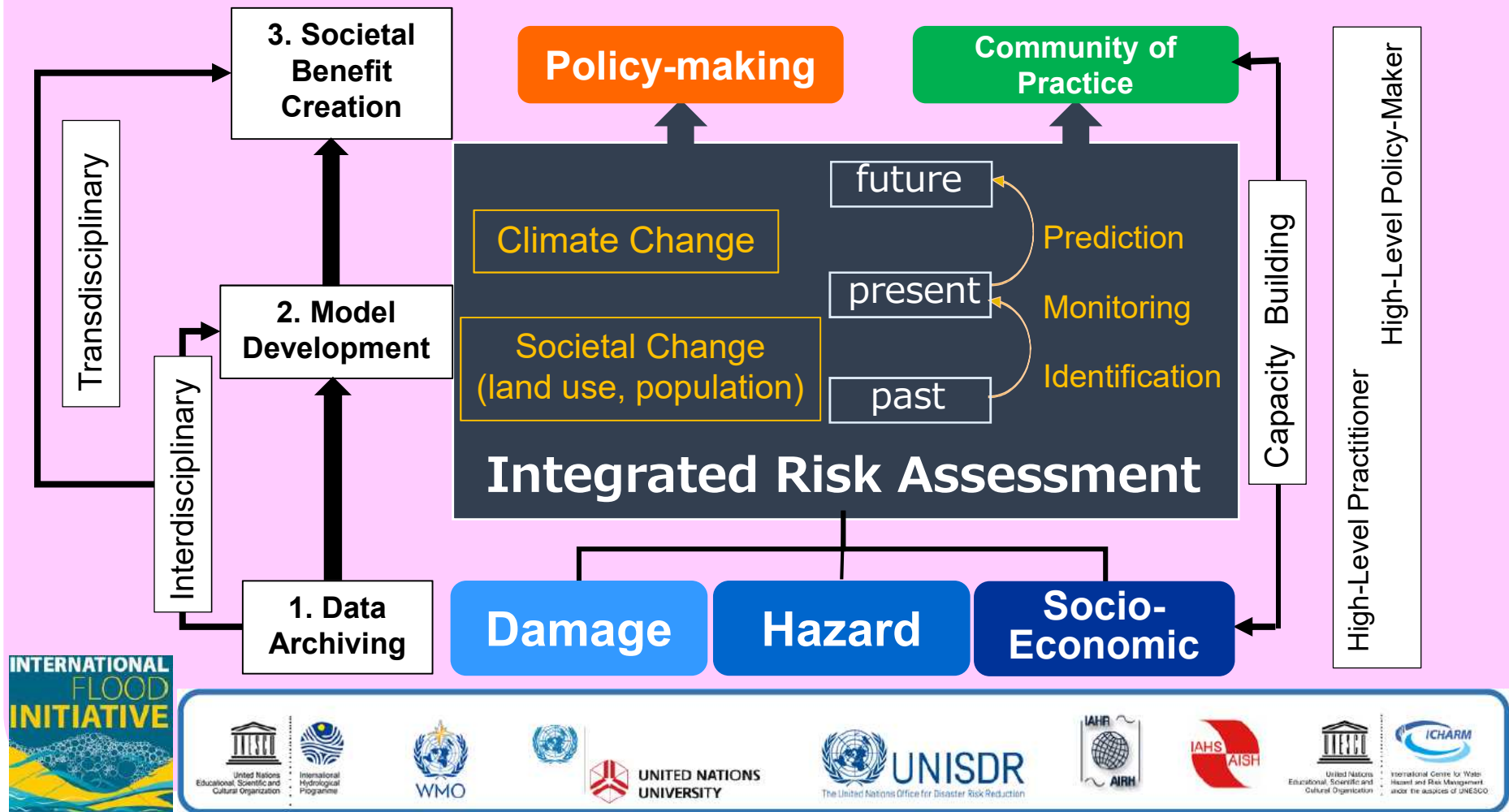
Risk-based information

	Landslide (2015-)	Inundation (2017-)	Flood (2017-)
<p>Risk Map Landslide Risk Map</p> <p> High Extreme risk [Level 4 eq.] Risk High risk [Level 4 eq.] Warning [Level 3 eq.] Advisory [Level 2 eq.] Low Check weather bulletin </p>			<p>Ono River (photo: provided by Hita city officer)</p>
Related Disaster			
Resolution/Update Interval/Lead time	1 km/10 min/2 hours	1 km/10 min/1 hour	1 km/10 min/3 hours

- Spatially specific information about risk-level of landslide, inundation and flood in colors using a standardized color code.
- Colored-grid information indicating how close current and forecasted hazards potential is to pre-defined warning criterion at each point.

IFI Platform

Platform on Water Resilience and Disasters



Started in 2019; expectation of the project

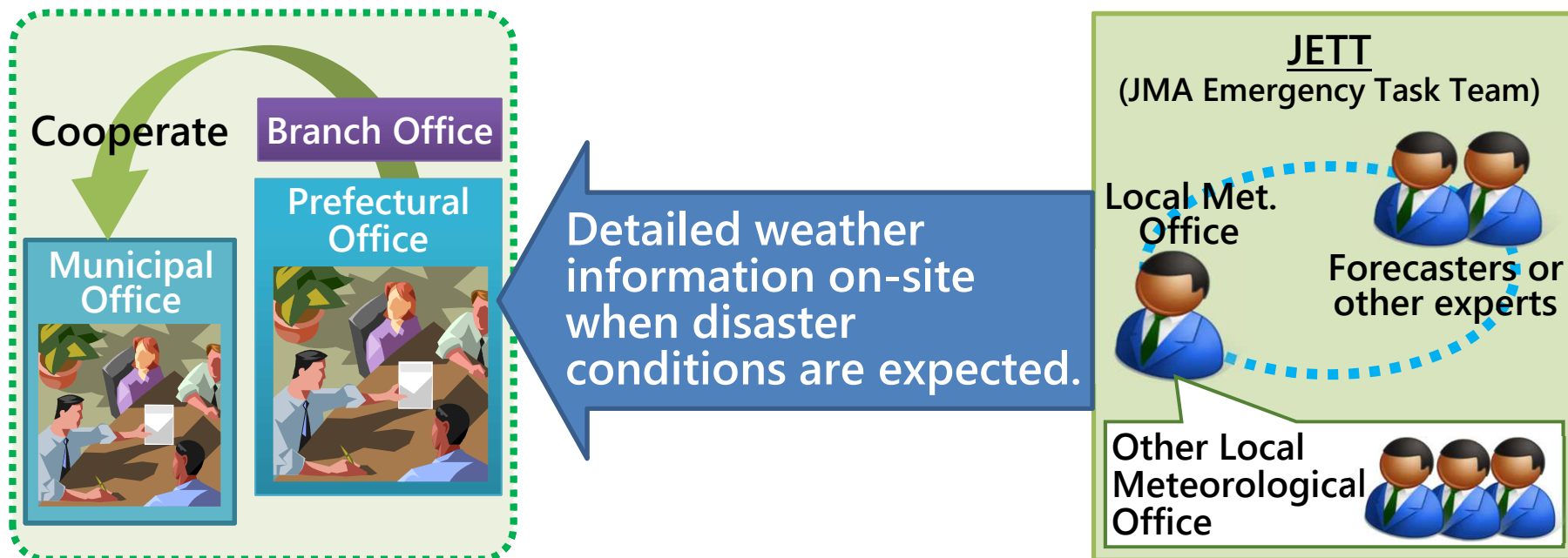
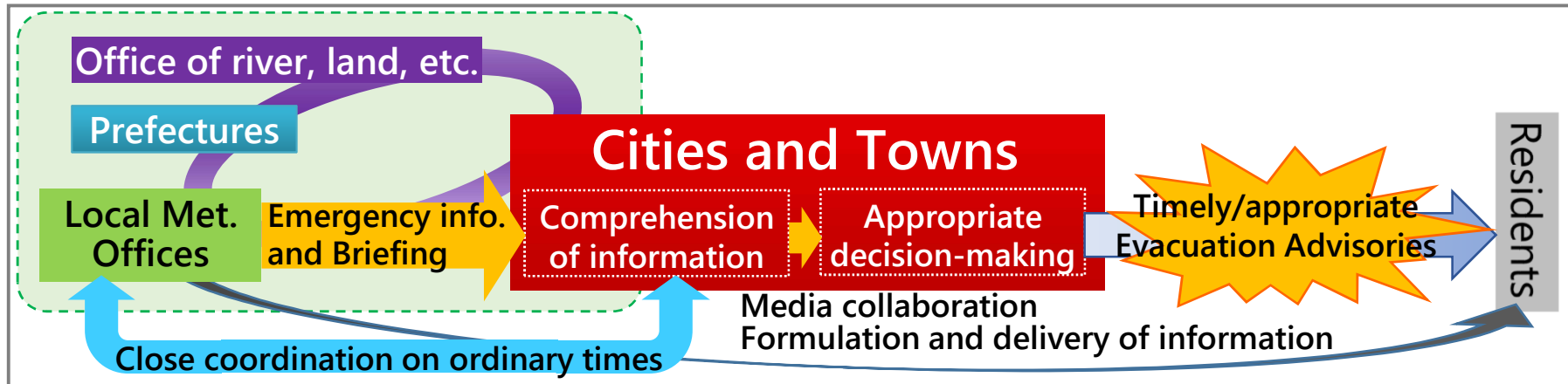
Risk-based information

	Landslide (2015-)	Inundation (2017-)	Flood (2017-)
<p>Risk Map Landslide Risk Map</p>			
Related Disaster			<p>(photo: provided by Hita city officer)</p>
Resolution/Update Interval/Lead time	1 km/10 min/2 hours	1 km/10 min/1 hour	1 km/10 min/3 hours

- Risk map requires disaster statistics to grasp the vulnerability.
- In IFI platform, various data are collected from related hydro-, met- and DRR organization, which are useful for investigating local vulnerability and creating warning criteria.

Decision support service for governments

JETT (JMA Emergency Task Team) since 1 May 2018



Thank you

