

SETO LAB.

[Water-related Disaster Assessment]

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Risk Evaluation of Water-Related Disasters

Future change of the precipitation

Numerical climate models suggest that heavy precipitation will be more frequent under warmer climate (Fig.1).

The objectives of this study

● Estimate the damage of water-related disasters under warmer climate quantitatively

There were few studies that estimate the damage of water-related disasters under warmer climate quantitatively. We estimate the damage quantitatively, or the cost in Yen, of the disasters.

● Consider disasters caused by moderate and weak forcing

Previous studies considered only the largest disasters of each year and consider very heavy precipitation as the forcing for the disasters. Our new risk assessment method can consider the possibility that disasters can happen more than once in a year. Furthermore, relatively moderate and weak precipitation can be considered as possible causes of the disasters.

Risk of the disasters due to various intensity forcing (Fig.2)

Previous studies underestimated the risk of water-related disasters because they did not consider the possibility that disasters are caused by moderate and weak rainfall. Figure 2 suggests that even moderate and weak rainfall can lead to disasters.

Present and future risk (Fig3)

The spatial distribution of the future risk of water-related disasters is estimated quantitatively.

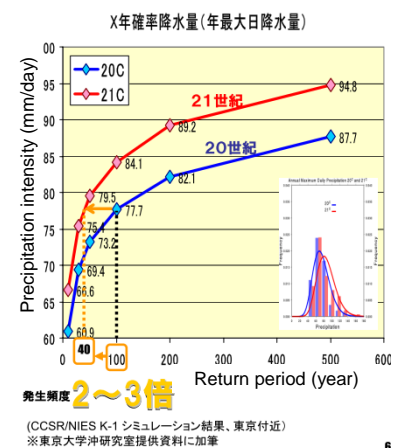


Figure1. Probability distribution of daily precipitation

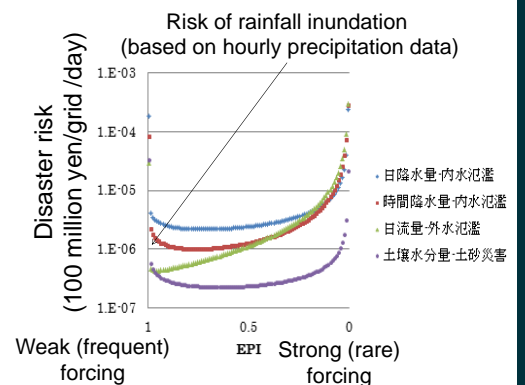


Figure 2. Forcing in various intensities and its risk

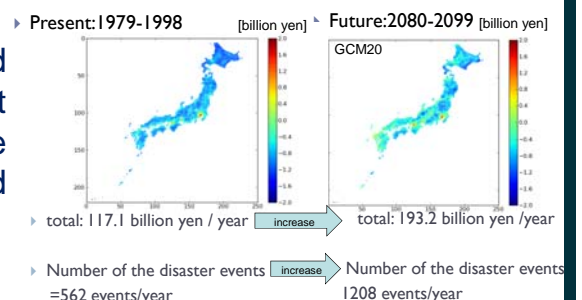


Figure 3. Risk of the rainfall inundation