

# Flood Risk Assessment of Houses / Household Goods and Development of Method for Promoting Countermeasure

## Introduction

(Study period: FY2015 to FY2019)

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key words: flood risk assessment, building inundation, climate change adaptation measures

### 1. Advance the flood risk reduction measures for houses and household goods

In view of the recent impact of global warming and the occurrence of devastating flood disasters, it would be important to advance steadily flood control measures for rivers and to reduce the risk of flood disasters by taking all measures available for river basins against floods that exceed the development level. For reduction of human damage, progress of measures, including information provision and evacuation, is remarkable. The following reports the findings from the study of a flood risk reduction method by taking an approach of advancing house-specific measures and thereby reducing total damage in the community, aiming to accelerate the inundation measures for houses and household goods.

### 2. Coexistence of the possibility of countermeasure introduction and risk reduction effect

House-specific measures were focused on movement of household goods to a higher place, waterproof board (wall), and heightening of housing site. Generally, when the higher the flood risk is, i.e., the more expensive houses and household goods are and the larger the possibility of inundation and water depth are, the more cost-effective benefits are expected and the higher the possibility of introducing countermeasures will be.

In addition, from a viewpoint of communities, it would be more effective to implement countermeasures preferentially in areas where the flood risk is high, many buildings with a high possibility are located, and their total amount of damage reduction (total benefit) is large. The proposed method evaluates the possibility of introduction by cost-benefit ratio and selects the areas and buildings (housing / business type) that meet the foregoing conditions and types of house-specific measures (See Fig. 1). This method is based on the flood risk assessment of building types, and an example of the results of assessment is shown in Fig. 2. Flood risk (relationship between the recurrence interval and the amount of damage) is estimated reflecting the assets (vulnerability) and location (hazard) of each building.

### 3. Utilization of results

The report <sup>1)</sup> of this study has chapters corresponding to the stages of research, planning, and countermeasure promotion considering the

convenience in practical use. The chapter of countermeasure promotion (Chapter 5) describes advanced examples at home and abroad and systems of city planning, construction, housing, etc. Utilization for countermeasure examination according to the characteristics of buildings and communities is expected.

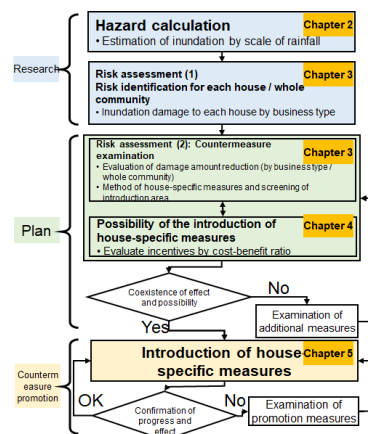


Fig. 1 Method of promoting the introduction of house-specific measures based on risk assessment

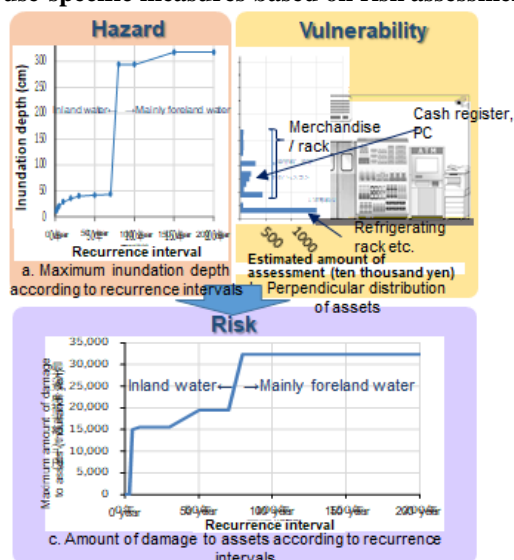


Fig. 2 Flood risk assessment by building type (an example of convenience store)

See the following for details.

1) Technical Note of NILIM No.1080, p. 364  
<http://www.nilim.go.jp/lab/bcg/siryou/tnn/tnn1080.htm>