

# Research on Quantification of the Cost and Effect of Vacant House Management and Measures

(Research period: FY2020 to FY2022)

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## 1. Introduction

In recent years, the number of vacant houses in Japan has been increasing. Accordingly, there is a concern about the future increase in the number of "unmaintained vacant houses" that are not properly managed. In addition, an increase in the burden of municipalities and owners has been observed, and it is required to strengthening the measures to prevent vacant houses from becoming unmaintained through appropriate management and various types of support. In response, the NILIM, in its "Research on Quantification of the Effective of Preventive Measures against Mismanagement of Vacant Houses," clarified "the minimum level of management required to prevent mismanagement," and aims to develop "a method for quantifying the effect of preventive measures against mismanagement." In other words, the goal is to show in an easy-to-understand manner how much "loss" is incurred when a vacant house is "dilapidated" and how much "gain" is achieved when it is properly managed.

In this issue, as preventive measures, we position the provision of information and advice on proper management and various support measures, as well as assistance projects for utilization and removal, and as responses to vacant houses, position owner surveys by the municipal department in charge, actions based on the Vacant House Act, etc.

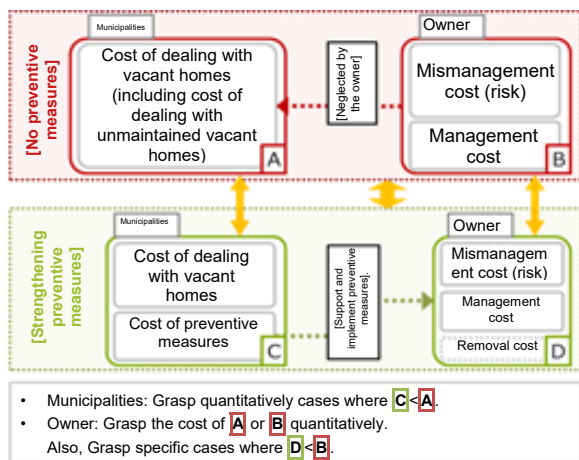


Fig. 1: Image of cost comparison by preventive measure

The basic approach to the quantification of the effect of preventive measures is to compare the costs when preventive measures are taken and when not taken (Fig. 1).

In FY2022, we 1) developed a "Quantification Tool for the Effect of Preventive Measures for Mismanagement of Vacant Houses" (the "Quantification Tool") to estimate the costs, and 2) conducted case studies targeting municipalities, etc. and mainly improved the Quantification Tool.

## 2. Development of quantification tools

Two types of the quantification tools were developed: municipal version and owner version. The municipal version of the tool uses the population, number of houses, and number of vacant houses as inputs, and estimates for a certain period based on assumed scenarios according to population size, etc. Specifically, the following are estimated: "cost of preventive measures," "cost of responding to vacant houses," "effect of preventive measures," and "effect of responding to vacant houses" for each year. The "effect" is calculated by the number of dwelling units with improved management, etc., and is expressed in the form of a decrease in costs required for response, etc., due to a decrease in the number of vacant houses requiring response at the next point in the estimation process (Fig. 2). This allows a quantitative grasp of the effect of preventive measures when they are taken,

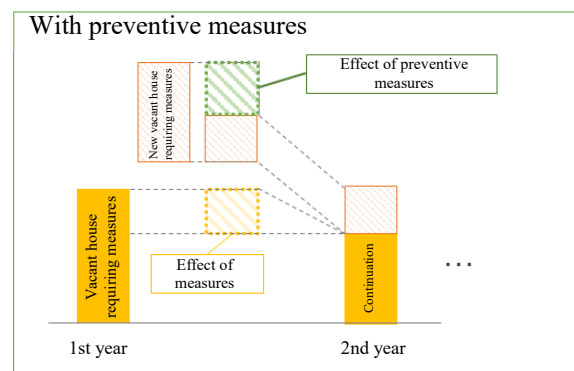


Fig. 2: Image of estimated effect of vacant house measures (by municipalities)

for example, the tool can be used to examine preventive measures to be specifically implemented, personnel arrangement, etc. in considering future measures for vacant houses in municipalities. The owner version of the tool calculates the "cost of management," "cost of response required due to mismanagement," and "risk of accidents, etc. resulting from mismanagement" for a certain period of time each year. The cumulative cost over the period and the assumed cost of removal can also be calculated (Fig. 3). By comparing these data, it is possible to quantitatively demonstrate that it is advantageous for the owner to implement proper management, or that in some cases, removal is a realistic option.

### 3. Case study focused on municipalities, etc.

Fig. 4 shows the results of estimation made by the quantification tool for a municipality. In this example, decrease in the number of vacant house was limited to a certain level when preventive measures are not implemented.

On the other hand, when preventive measures were implemented, a constant decrease was observed, which indicates the effect of preventive measures on the utilization and removal of vacant houses.

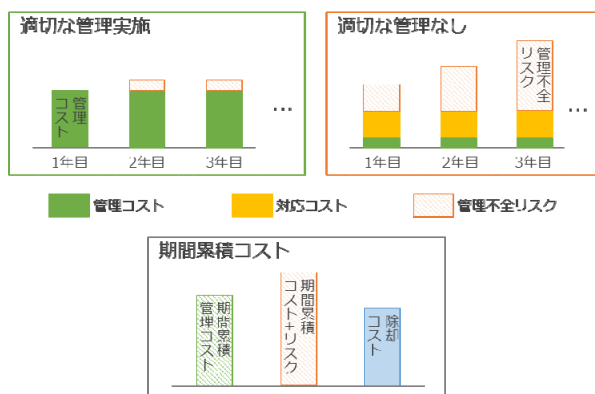


Fig. 3: Image of the estimation of vacant house management cost (owner)

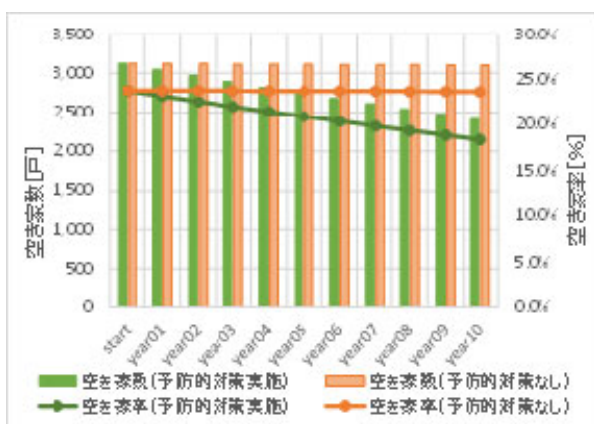


Fig. 4: Example of the estimation of the number of vacant houses in the future according to preventive measures

The analysis results also showed that the effect of preventive measures is likely to support the utilization and removal of vacant houses that are in relatively good management condition, while the effect of measures taken by the department in charge of vacant houses, including the Vacant House Act, are likely to raise the management condition of vacant houses that are in relatively poor management condition.

Based on these results, we conducted a hearing survey of five cities and towns (including prefectural capitals and municipalities with small populations) selected considering their housing and population characteristics, and interviewed them about the results of their calculations using the quantification tool and their measures for vacant houses, etc. Specifically, we asked for opinions on the extent to which there are differences between the results of cost and effect estimation using the quantification tool and actual results in light of usual operations, and on the appropriateness of unit cost data<sup>1)</sup> such as the unit cost required to address vacant houses in municipalities, which is necessary for the estimation.

As matters that should be improved, we found the identification of items that tend to cause large differences between actual and estimated values, and the clarification of the display of estimation results, etc. Also, as matters to be well evaluated, we found that the results of estimation have a certain validity and that specific situations of use can be expected. These opinions were organized and improvements were made in the form of feedback to the quantification tool.

### 4. Conclusion

Since FY2022 is the final year of the research, after making revisions based on the results of municipal hearings, etc., we will promptly compile as a method for quantifying the effect of preventive measures against mismanagement in a manner that includes the minimum required management level and quantification tools to prevent mismanagement. We also plan to publish the quantification tool on the NILIM website<sup>2)</sup> as soon as it is ready for use by municipalities and property owners in their future study of vacant house measures and management policies.

- 1) The basic unit cost data needed to create the quantification tool, such as the unit cost for municipalities to address vacant houses and the unit cost for owners to manage them, were collected from the 2020 and 2021 surveys.
- 2) Housing Planning Division website <http://www.nilim.go.jp/lab/ibg/index.htm>