

Research on Night-Soil Disposal Management in Mt. Fuji

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I. Background

In Mt. Fuji, the self-disposal toilets installed at the mountain huts are facing difficulty in securing OM costs. Nonpayment of contribution fees by visitors is a major cause to this matter, however there are other fundamental problems, which are hypothesized as follows; the installed facility is unmatched with the environmental conditions, propriety of the usage fees price setting is low, and methods of collecting fees are inappropriate. In this research, the study was carried out on those hypotheses.

II. Research Overview

(i) Selecting method for Self-disposal toilets

Incorporating the data on the verification test report of ETV projects, conducted by the Ministry of Environment, 7 types of equipments are evaluated by scores on performances in 3 categories, such as comfort (odder, color, and operability), environmental impacts (amount of CO₂ emission and waste generated), economical performance (initial/running costs). After defining each score, the values were multiplied with preference factors which were set arbitrarily according to the demands of facility owners, and summed up to calculate the comprehensive performance score. The recommended method of selecting toilet is to choose the one with highest comprehensive performance score amongst the equipments which overcome the environmental constraints of the installed area. This method helps avoiding the installation of unsuitable night-soil treatment equipment.

(ii) Research on toilet usage fee by PSM analysis

Currently, the toilet usage fee is priced at 200 yen in Shizuoka Prefecture, and 100 yen in Yamanashi Prefecture, leading to 200 % disparity, which is not a favorable setting. Inappropriate pricing of the usage fee contributes to nonpayment of the fee by the visitors. In this research, using PSM analysis, fair price for the toilet usage was investigated. The research resulted in the fair price of 136.2 yen. Also, the interview conducted to mountain hut owners revealed that collecting fees in a box on a voluntary basis is not reliable measure.

(iii) F/S for Mt. Fuji entrance fee

Feasibility study for introducing entrance fee withholding system to the Mt. Fuji was carried out in order to cover the OM cost for self-disposal toilets. By applying CVM and a two-step binominal alternative form, WTP for covering OM cost of Mt. Fuji mountain hut toilets was studied. Number of valid response was 155, and WTP resulted in 1,569 yen with non-parametric estimation method.

III. Conclusion

The research verified the actuality of the hypotheses ~ , and clarified the issues on night-soil disposal management in Mt. Fuji. The ambiguity in responsibility among the subjective parties is the background factor to those issues. Establishing a new institution on environmental management of Mt. Fuji is desired.