

Evaluation of Resident Satisfaction Level on the Environment Friendly Consolidation Channels

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I. Introduction

The concept, that is called “Environment Friendly Consolidation Channels”, has been recently introduced now. However, systematic studies to create the design criteria for the irrigation and drainage channels in Korea have not been successfully done. The purpose of this study is to evaluate the satisfaction level and to analyze the factors in the environment friendly consolidated channels.

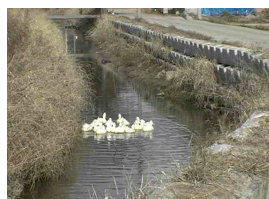
II. Materials and Methods

2.1 Study areas

Drainage is located Songsam-ri Yeosu-gun Gyeonggi-do, Korea and it has length of 490m, area of 7390m². The drainage is 150m far from village, which has been consolidated with environment friendly methods and natural materials. Also it provides waterfront space and convenience facilities such as playground, stepping stones across a channel.



a. Yeosu



b. Yeonggwang

Fig. 1. Landscape of study area

Length of Yeonggwang's channel is 875m. There are stepping stones for village residents' convenience. And sediment basin is installed for preventing outflow of sediment in the channel.

2.2 Method of analyze

The survey consists of four parts, such as the actual status of channel, satisfaction level for each item, overall satisfaction level and the personal features of the users. Total 128 samples out of 140 respondents were used for the final analysis. Analysis of the satisfaction level was fulfilled to survey results such as the basic statistics and the correlations of variables, in addition, dispersion analysis for two user groups were carried out.

III. Results and Discussions

3.1 Residents' characteristic

Ratio of individual gender was equal-male 50%, female 50%. Yeosu area indicates 51.6% male, 48.4% female, and Yeonggwang area indicates male 48.5%, female 51.5%. By total age distribution, most of them are sixties (59.3%), and then decreased by fifties, forties, twenties, thirties, and teens.

3.2 Satisfaction level of environment-friendly channel

It shows positive results of over 3.0. Convenience facilities gained highest average score (M=4.01). Average score of waterfront (M=3.10) is lowest. In lower rank, Yeonggwang area scored high marks about capacity of channel,

quantity and quality of water, and view. Yeosu region got high score in convenient facilities and waterfront. In the result of t-test, Average score of Yeosu convenience facilities is higher than Yeonggwang. By satisfaction of an item, friendly water facility showed large difference.

Table 1. Total satisfaction level of environment friendly consolidated channels

Item	Mean(M)	Standard Deviation(SD)
Function of Channel	3.39	0.79
Quantity & Quality of Water	3.73	0.63
Landscape	3.94	0.57
Friendly water facility	3.10	0.78
Convenience facility	4.10	0.80
Total Satisfaction level	3.65	0.45

3.3 Effective factors for environment friendly consolidated channel

First stage of regression analysis included quantity and quality of water, and this is the largest effect on the satisfaction level. In second stage, the function of channel is added to the first stage. Eventually function of channel, quantity and quality of water are priority of consolidating, where drainage is little bit far from village. In Yeonggwang area channel, first stage contained convenience facilities. In second stage is same as Yeosu area. As the result, the designer has to focus on convenience facilities.

The major results were summarized as follows:

1. Residents in Yeosu area were satisfied with the quality and quantity of water and the function of channel. And residents of Yeonggwang area were satisfied with the convenience facilities and the function of the newly consolidated channel.
2. Priority of drainage's design is considered quantity and quality of water, function of channel. Priority of irrigation's design is considered convenience facilities and function of channel. From the results, It can be utilized for the future research and the development of consolidation technique.

IV. Conclusions