Evaluation of a Regional Reactivation Project
by the WSR System Methodology

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Abstract. This paper presents a research result of promoting and evaluating a regional revitalization project based on the WSR system methodology. The paper introduces a regional revitalization project in Japan. Then, it explains the promotion and evaluation of the regional revitalization project by the WSR system methodology. From this research we obtained a convince that the WSR system methodology is quite useful in promoting as well as in evaluating such a social project.

Introduction

During high economic development period in Japan, the population movement from country to city took place, and as a result agriculture relatively turned down. Especially due to bad environment condition in mountain regions and the regions between plains and mountains, the regional societies' decline was accelerated. Moreover, the pressure of the farm products trade liberalization, and the enhancement request of the infrastructure for the home demand expansion became big problems. To cope with the changes of such inside and outside situations a lot of attempts of local revitalization have been performed, utilizing regional resources and characteristics.

Japanese Government set up the Regional Revitalization Headquarter in the Cabinet Office on October 24, 2003. After having set up this headquarter, the recognized regional revitalization plans reached 1158 places in the whole country. Moreover, the law concerning regional revitalization was promulgated to advance the regional revitalization business of the whole country in 2005. However, the regional revitalization business of the whole country has not been necessarily advanced well in current years.

In such surcomstances, people in the Hakusan Foothills region in Ishikawa prefecture, Japan, established the Regional Revitalization Project. One year has passed since they submitted a plan to the government. This paper explains how we have been promoting and evaluating this project based on the WSR system methodology (Gu and Zhu, 2000; Gu and Tang, 2005; Gu, 2006; Zhu, 2000, 2004). This paper first considers the regional revitalization project of Hakusan Foothills from the aspects of human, subject and matter. Then it presents the questionnaires to persons working for the regional revitalization project. Finally, after analyzing the questionnaires, it shows the usefulness of the WSR system methodology in promoting as well as evaluating such a social project.

Target Region

The Hakusan Foothills region is being composed by the Kawauchi village, the Yoshinodani village, the Torigoe village, and the Okuchi village, in Hakusan City of Ishikawa Prefecture, Japan (the city was born by merging of municipalities on February 1, 2005; see Fig. 1.). Hakusan is one of the Japanese three major great mountains, which has been worshiped for a long time with the sacred mountain. It is a region also in Japan where scarce flora and fauna live a lot. The water resource in the Hakusan Foothills region is also abundant. The water that flows from Hakusan has enriched four great plains of Kaga, Echizen, Seo, and Tonami. Hakusan undercurrent water is used for specialty in the region, and is also the source of the hot spring of Hakusan village.

However, negative implications such as declining birthrate and a growing proportion of elderly people and depopulation, problem of the society's infrastructure, increase of vacant houses and empty facilities, and increase in the abandoned cultivated land are factors to decline the Hakusan Foothills region. Especially, the population decrease has become a big problem in the Hakusan Foothills region. The population was 8,000 people or more in 1995, which decreased linearly up to about 7,000 people in 2009. A decrease of 1,000 people or more exerts a very serious influence for this region in ten years because there is originally not a lot of population.

There are 61 districts in this region, among them the so-called marginal villages (the population of more than 65 years old is more than 50%) account for 16%, and the semi-marginal villages (the population of more than 55

years old is more than 50％) account for 33％. The increase in the abandoned cultivated land is also a big problem for the Hakusan Foothills region. The cultivated land under management area of Hakusan City decreased from 5,447ha in 1985 to 3,445ha in 2005. The greater part of the abandoned cultivated land has been generated in this region.

Local residents are made embarrassed with the problem of the dissatisfaction of the society's infrastructure in this region. As just mentioned above, the population of the senior citizens occupies more than half of the whole population in this region. The transportation to hospitals and supermarkets is important for the senior citizens. However, the traffic in the Hakusan Foothills region is inconvenient, and the number of hospitals and supermarkets is small. The lack of the society's infrastructure causes the population decline further. Therefore, it becomes difficult for persons to settle down here, and then regional revitalization becomes more difficult.
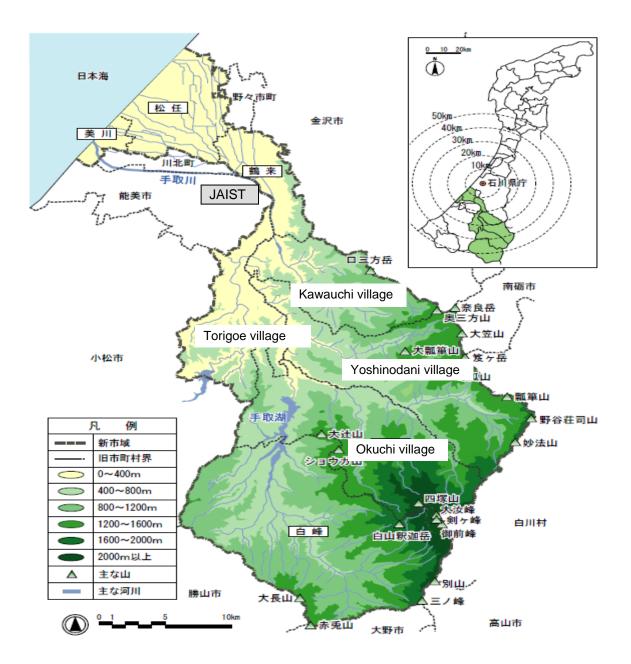

Fig. 1: Hakusan Foothills region.

Regional Revitalization Project

The Hakusan Foothills regional revitalization project was proposed by parties concerned in the autumn of 2008 in the lecture "Regional revitalization systems theory" in Japan Advanced Institute of Science and Technology. This is an open lecture, which means that any citizens can attend the lecture without tuition, with the support of the Cabinet Office. In this systems theory course in 2008 fiscal year, "Mountainous area promotion" was considered as one of the themes of group work, and the "Regional revitalization project" was proposed. Ten groups participated in this project, including an agriculture, a sightseeing, an eco-tourism group, etc. The project considered revitalization of agriculture, tourism, etc., and started working on various businesses with the following targets (in three years):

- Expansion of participating retailers: 31 shops to 33
- Expansion of farm production: 10 million JPY to 15 million JPY
- Expansion of exchange population: 50 persons to 500 persons (by holding events etc.)
- Recruit of agricultural pursuers: 1 person to 3 persons (farm pupils etc.)
- Reuse of abandoned cultivated land: 0 ha to 1 ha

Promoting the Project by WSR System Methodology

In the WSR system methodology, there are six stages: understand demands, explore conditions, clarify objectives, make a proposal, execute the proposal, and evaluate outcomes. The factors and the activities related to the regional revitalization project are classified into Wuli, Shili, and Renli. The contents applied to six stages of the WSR system approach are described below.

Wuli in the Project. Wuli is not physics of a usual meaning but the one that can be explained by natural sciences such as chemistry, biology, astronomy, or geography. Wuli in the WSR system methodology means the principle and the mechanism concerning the things, the states, and the rules, etc.

Stage 1: Understand demands.
- The current state of the region (negative implications and plus elements) was clarified in the course of "Regional revitalization systems theory".
- The futuristic view in the Hakusan Foothills region was clarified also in "Regional revitalization systems theory".
Stage 2: Explore conditions.
- Those who took part in the project executed the site investigation.
- The project members visited towns that succeeded in regional revitalization.
Stage 3: Clarify objectives.
- The project members examined the targets to be achieved through the grasp of the situation in the region and the visit of another regions.
Stage 4: Make a proposal.
- Ten groups in the project made each proposal, exchanged opinions at the meetings, and finally proposed each action plan.
Stage 5: Execute the proposal.
- The project applied and got a subsidy of two million JPY from the central government, and each group of the project started acting.
Stage 6: Evaluate outcomes.
- Leaders evaluate the achievement level of targets.

Shili in the Project. Shili is reasons for the society, meaning how we should do. The rationality of logic etc. used in the project execution is requested. Management science or operations research could be methodologies in Shili. This group understood the current state and established the regional revitalization project according to the regional revitalization law.

Stage 1: Understand demands.
- The current state of the region was analyzed in the course of "Regional revitalization systems theory".
- After communicated with those who took part in the region, a futuristic view was submitted.
Stage 2: Explore conditions.
- The locale was surveyed for the plan making that was able to be applied to the region.
- Through the visit of successful regions, insufficient things in this region were clarified.

Stage 3: Clarify objectives.
- After the current state was understood and analyzed, the target was set up.

Stage 4: Make a proposal.
- The regional revitalization project made a reasonable plan, referring to the plans of succeeded regions.

Stage 5: Execute the proposal.
- The relations between groups have been adjusted by the leader of the regional revitalization project when putting a proposal into practice.

Stage 6: Evaluate outcomes.
- Leaders evaluate the usefulness of used methods.

Renli in the Project. Renli is reasons for human relationships. Renli in the WSR system methodology can be analyzed with CATWOE (Customers, Actors, Transformation, Worldview, Owners and Environmental constraints). In the current case they are:

  C: Opinions of residents
  A: Opinions of members of the project
  T: Meetings and inspections
  W: Opinions and viewpoints of relevant people
  O: Opinion of the leader of the project
  E: Current state of the region

It is said that the community building starts from a human-making, and ends in a human-making. Thus, Renli is very important for regional revitalization.

Stage 1: Understand demands.
- After the intention of residents in the region had been understood, "Regional revitalization project" started.

Stage 2: Explore conditions.
- The project members cooperated with the residents in different fields.
- The project members communicated with people in the successful regions with friendly relations.

Stage 3: Clarify objectives.
- The project members clarified targets after examining them enough at the meetings.

Stage 4: Make a proposal.
- The proposal of "Regional revitalization project" was made by the participation people's cooperation.
- The plan was written by the staff in the Hakusan City promotion room.

Stage 5: Execute the proposal.
- Members of ten groups of "Regional revitalization project" have exchanged opinions through the meetings.
- The general manager in the Hakusan City promotion room and the leader of "Regional revitalization project" hear members' opinions, and have been adjusting the relation of groups.

Stage 6: Evaluate outcomes.
- Leaders evaluate the satisfaction of residents.

Evaluatiing the Project by WSR System Methodology

Another purpose of the present study is to evaluate the project by the WSR system methodology. We made a questionnaire table by the WSR system methodology, asked leaders of ten groups composing the project to fill the table twice. The first and the second questionnaires were executed three months and six months after the project had started, respectively. Table 1 shows the questionnaire used in this study.

Without showing the details, we just present here the total scores of Wuli, Shili, and Renli, respectively, for the first survey in Fig. 2 and the second survey in Fig. 3, where G1 to G10 indicate the groups in the project.

Looking at these two figures, we easily recognize that the scores of Wuli and Shili dropped down in the most groups, while the scores of Renli raised in the most groups. From this observation, we could conclude that the leaders of most groups had confidence to some extent about their plans from the viewpoints of Wuli and Shili at the beginning, but they have gradually lost confidence. On the other hand, they gradually recognized the importance of Renli, which means that members' interpersonal relationships could be adjusted well, and the number of cooperators has increased.

Table 1: Contents of the questionnaire.
(Rating: Excellent=5, Good=4, Average=3, Fair=2, Poor=1)

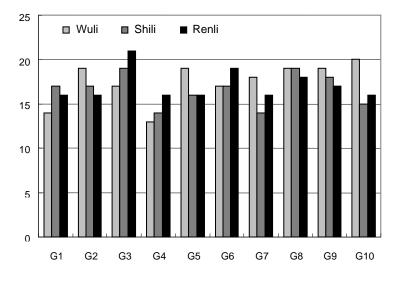|	Wuli	Rating	Shili	Rating	Renli	Rating
Understand demands	Did you deliberate what you being able to do for a regional revitalization?		Were you able to explain your hope to the project members reasonably?		Did you make the residents consent the targets of the project enough?	
Explore conditions	Did you understand the existing resource situation enough?		Did you reasonably set up effective use of the resource and the capital?		Did you receive the cooperation of the residents who related to the targets enough?	
Clarify objectives	Did you examine all targets that seemed to be enforceable enough?		Do you think that your approach to the objective is reasonable?		Did you make those who took part understand the targets enough?	
Make a proposal	Did you make the proposal after having investigated the condition etc. enough?		Do you think that you were able to make the proposal reasonably?		Did you make the proposal in consideration of the interests of those who took part?	
Execute the proposal	Did you procure the resource and the capital to execute the project?		Did you reasonably execute various adjustments at each stage of execution?		Did you make the system that the residents' complete cooperation was able to be received?	
Evaluate outcomes	Do you think that you were able to achieve the level that the target finishes being satisfactory?		Do you think that the techniques and the procedures used were effective?		Do you think that the residents are satisfying the result?	

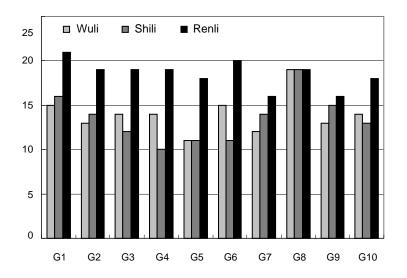Fig. 2: The total scores of Wuli, Shili, and Renli in the first survey.

Fig. 3: The total scores of Wuli, Shili, and Renli in the second survey.

We had them think about rebuilding the plan by intervening the group where such an extreme change occurred. One year after the project had started we asked the project leader to evaluate each group, which is shown in Table 2.

Table 2: Evaluation of groups by the project leader one year after the project started.

Project	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
Evaluation	3	3	3	4	4	3	3	5	2	4

Group 8 got the highest score among 10 groups, which is understandable when looking at Fog. 2 and Fig. 3. We see that the scores of all Wuli, Shili, and Renli are very high in the two surveys for this group. We could also recognize that the project doesn't succeed if it doesn't go well even in at least one of Wuli, Shili, and Renli.

Conclusion

This paper introduced a research for evaluation of a regional revitalization project of Hakusan Foothills based on the WSR system methodology. First, the regional revitalization project of Hakusan Foothills was considered from the situation of human, subject and matter. Second, two surveys to persons working for the regional revitalization project were carried out. At last, after the surveys were analyzed, the evaluation of the regional revitalization project was carried out. From this research we obtained a convince that the WSR system methodology is quite useful in promoting as well as in evaluating social projects.

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