

On the feasibility of Bio-recycling system with special reference to the Rainbow Plan in Nagai City

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Key Words: Bio-recycling system, Rainbow Plan, comprehensive assessment
"Community-based" and "Cooperation-based" approach, farming and urban area

1. INTRODUCTION

The reconstruction of Bio-recycling system is to be one of the most significant approach in order to realize "Sustainable Society". In spite of many actors' efforts, few of them succeed in managing the system. And then the Rainbow Plan at Nagai-shi, Yamagata has established its reputation to be the most advanced attempt.

Therefore, Rainbow Plan is taken up in this study, and the system and formation factor is shown at first. Then, the directivity of development is examined by comprehensive condition analysis of this plan.

And finally, the guideline and formation conditions of Bio-recycling system is considered.

2. SYSTEM OF RAINBOW PLAN

In this chapter, the outline and formation factor of Rainbow Plan is shown.

3. ANALYSIS OF RAINBOW PLAN

In this chapter, the influence of this plan upon each actor is evaluated by dividing it into 3 aspects; Environmental, Economical, and Social aspect. And then, value and problem of this plan is clarified.

As Environmental aspects, mainly LCCO₂ emissions of food garbage disposal and CO₂ emissions by food transport is estimated. Then the superiority of Rainbow Plan's recycling system over the traditional (incinerating or long-distance transporting) system is proved. Besides, desirable ripple effect and social effect are observed. But municipal and farmers' financial conditions are negative.

By the analysis of this chapter, the problem of Rainbow Plan is clarified to be the distribution of food to make farmers' financial condition stable.

4. EXAMINATION ON THE DIRECTIVITY OF DEVELOPMENT

"Community-based" and "Cooperation-based" approach are considered as the directivity of development for this plan. Then, individual measures and role of related actor of each approach are shown. On the other hand, the lean development toward each approach is going to face its restriction. So advantages and disadvantages of each approach are examined.

Taking these arguments into account, the superiority of the circulation structure which built-in several different scale circulation system units is suggested. Besides, it is obvious that the external condition such as low self-sufficiency and separation of farming and urban area in our country is obstructing the attempt to Bio-recycling system.

5. CONCLUSION

The knowledge acquired by this study is arranged and formation conditions of Bio-recycling system is considered. Sustainable Society with Bio-recycling system could be carried out by both "Community-based" approach based on cooperation of all local actors and maintenance of external conditions, such as land planning.