

An Analysis on the Projects Structure to Expand Renewable Energy

– A Case Study of the Maniwa Biomass Project in Japan by Checking from the viewpoint of PPP (Public Private Partnership) –

Yoshiki Ogawa
Professor, the Faculty of Economics, Toyo University

Abstract

After the adoption of UNFCCC in 1992, the expansion of renewable energies has been pursued by planning various regional development projects in Japan. In this paper, we made a case study on the regional development project of Maniwa in Japan. Because this project has continued during past 24 years step by step, we can definitely say this project is one of successful examples.

First, though the regional development projects in Japan were often made under the leadership of the central governments, they were not always successful. Judging from the case of Maniwa, the participation of local players from the public, private and other sectors and the cooperation among them would be crucial.

Second, the searches and pursuits of local needs would be a quite important task for the regional developments. In the case of Maniwa, this role has been charged by NPO “Maniwa circle for the 21st century.” The function for local opinion exchanges would be also crucial.

Third, the participation of powerful local companies would be essential to accomplish the projects. In the case of Maniwa, this role has been played by Meiken Kogyo Co., one of local leading company in the wood sector. The participation of local strong company from the private sector would be essential.

Forth, the continuous piling up of various projects step by step over the long period would be required for the successful developments. Because of this, the role of local government such as Maniwa city government and its connection to central government would be also a key factor.

Introduction

After the adoption of UN framework convention on climate changes (UNFCCC) in 1992, the expansion of renewable energies has been pursued to a great extent by planning various kinds of regional development projects in Japan. In the past 25 years, we have experienced so many happenings and troubles related to the introduction and expansion of renewable energies through these projects.

In December 2015, the Paris agreement on post Kyoto GHGs reduction was finally approved by many countries including various developing countries. In May 2016, Japanese Government has authorized the new target of GHGs reduction to achieve 26% reduction from the emission level in 2013 up to 2030. In addition, Japan need to intensify GHGs reduction measures, because she already committed 50% (or 80%) reduction of GHGs in 2050 in the long-run.

Thus, the expansion of renewable energies related to regional development projects will be one of important options to achieve GHGs reductions in Japan. In this paper, we made a case study on the regional development project in Maniwa city, Okayama Pref. of Japan. Because this project has continued during past 24 years with step by step progresses, we can definitely say this project is one of successful examples in Japan.

Methods

First, we surveyed historical events on the regional development projects in Maniwa city which was focusing local biomass and wood resources. We especially discussed in this study what kinds of biomass projects has been piled up step by step during the past 24 years and also checked how to expand these projects synergistically.

Second, we analysed on the players' structure of various biomass projects, respectively. We also discussed who was a key player in order to make these projects successful and what kinds of player's relationship were required for these projects, if judging from the view point of PPP (public and private partnerships).

Third, by checking statistical data such as population and finance in Maniwa city, we analysed the effects brought by the regional developments. Finally, we summarized several conclusions of this paper.

Results

Table 1 shows historical events on the Maniwa biomass projects [1-3]. It should be pointed out that the starting point of this regional development project was "Maniwa Circle for the 21st century" in which local younger people got together. Based on the discussions in this circle, various kinds of development projects such as the eco-friendly power generation, the industrial cluster plan, the commercialization of wood chip cement and cat litter, the biomass town plan and so on has been piled up until now, as shown Table 1.

Table 2 shows PPP structure of recent Maniwa biomass projects [1-3]. The players shown by red characters are a key leading one in individual projects. The players shown by blue characters are an organization for linking various players participating to individual projects. The notable characteristics in the players' structure are that the local powerful players are joining to the projects from the public, private and other sectors, respectively. Especially, the role of Mani city government, Meiken Kogyo Co. and Maniwa circle for the 21st century is quite important.

Table 1 Historical events on the Maniwa biomass projects

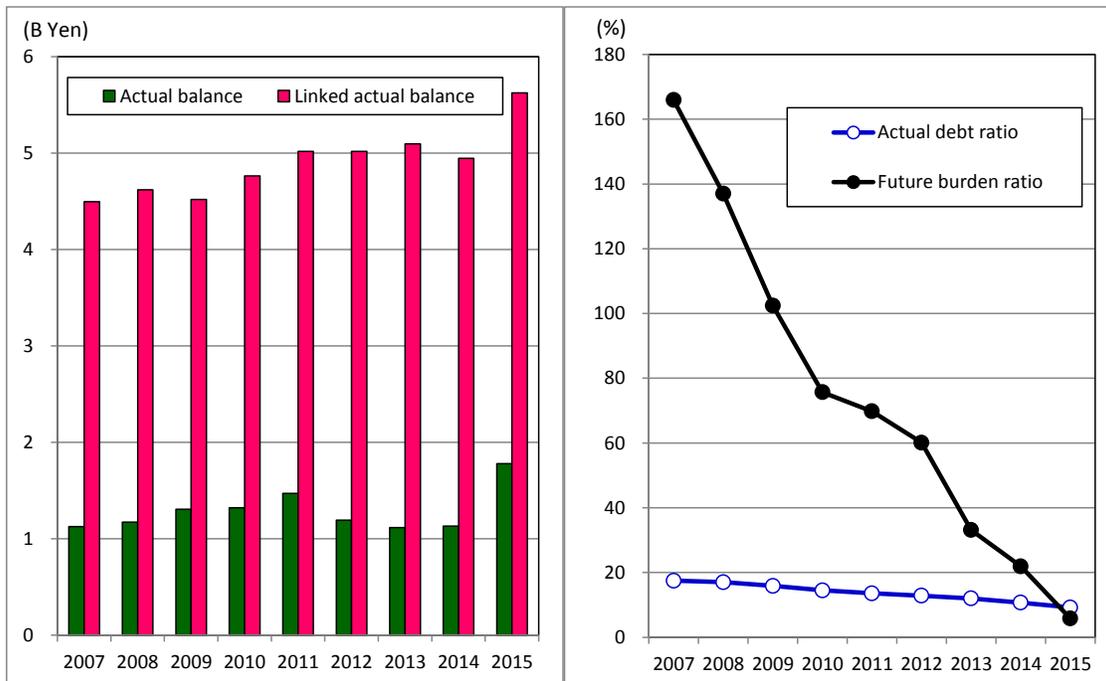
Time	Event
1993.04	“Maniwa Circle for the 21 st century” (Private organization) was started.
1997.10	A symposium on environmental-friendly town developments was held.
1998	The eco-friendly power generation using bio fuels was started.
2001.03	The industrial cluster plans using woody resources were made.
2002	Wood chip cement and cat litter were commercialized.
2002.11	“Maniwa Circle for the 21 st century” got a NPO legal personality.
2003.02	The Maniwa forum was held.
2005	Maniwa city started by the merger of towns and villages, NEDO demonstration project was started.
2006.04	The Maniwa city biomass town plan was announced.
2006.12	“Biomass tours Maniwa” were started.
2007.10	The next-generation energy park plan was authorized.
2009.04	Maniwa biomass gathering station was constructed.
2009.06	Maniwa biomass project was selected as 100 greatest new energies.
2011	The utilization of domestic credits system was started
2013.03	The guideline for Maniwa city woody biomass energies utilization was made.
2013	The Maniwa biomass industrial forests and city plan was made.
2015.04	The large-scale Maniwa biomass power generation plant was started.

Table 2 PPP structure of recent Maniwa biomass projects

Project	Public sector	Private sector	Other sector
I. Biomass power generation project	#Maniwa city government	#Meiken Kogyo Co. #Tsuyama integrated wood market Co. #Sanin Maruwa forestry Co. #Maniwa wood city sale Co.	#Maniwa biomass generation project promotion joint council #Maniwa forest owner’s cooperative #Okayama forest cooperative association #Maniwa wood industry cooperative
II. Biomass refinery project	#Maniwa city government #Okayama Pref. government	#Maniwa Bioenergy Co. #Maniwa Biochemical Co. #Mori Machinery Co. #FONTEC R&D Co.	#Maniwa biomass refinery project promotion joint council # Maniwa forest owner’s cooperative # Maniwa wood industry cooperative #NPO Maniwa circle for the 21st century #Okayama University
III. Agriculture network project	#Maniwa city government	# JA Maniwa # All Maniwa Co. #Roadside station “Kaze no ie” #Roadside station “Daigo no sato”	#Maniwa agri- network association #Maniwa farmer’s cooperative #Bihoku farmer’s cooperative #Hiruzen dairyman’s and farmer’s cooperative #Maniwa Highschool

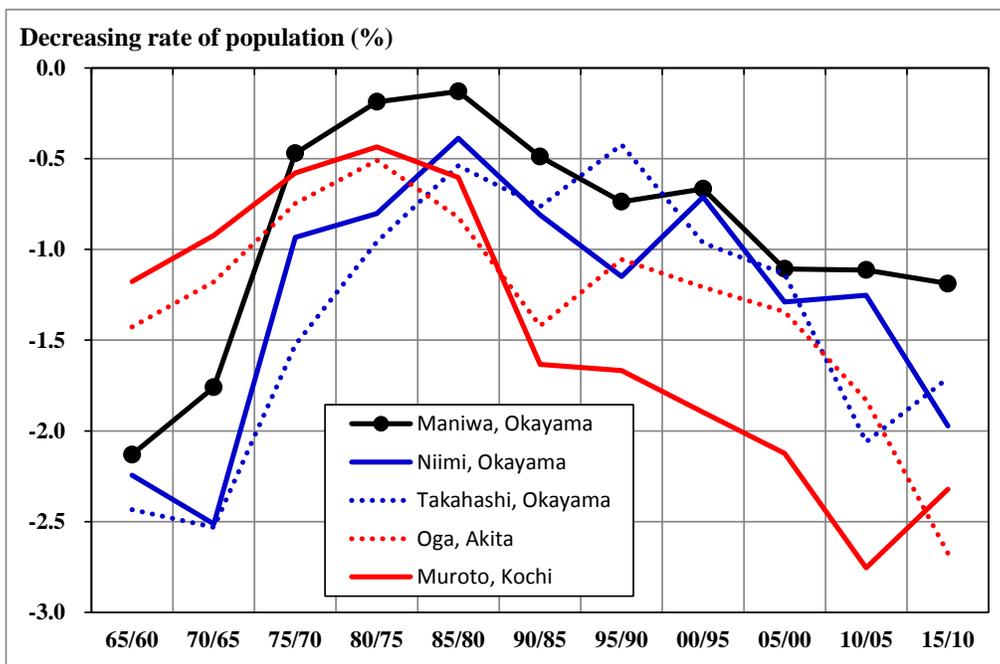
The regional developments in Maniwa city has been continued during the past 24 years by expanding various biomass and agricultural projects step by step. We also analysed the financial data in Maniwa city [4-5]. Accompanied with these developments, the finance situations in Maniwa city has been improved and changed to a healthy state, as shown in Fig. 1.

Especially, the future burden ratio has been improved drastically. The single actual balance and linked actual balance always showed a positive value and this fact indicates quite healthy finance situations.



(Source) Maniwa City Government, “Announcement on the ratio on healthy finance judgement and fund shortage” (from the versions in every year).

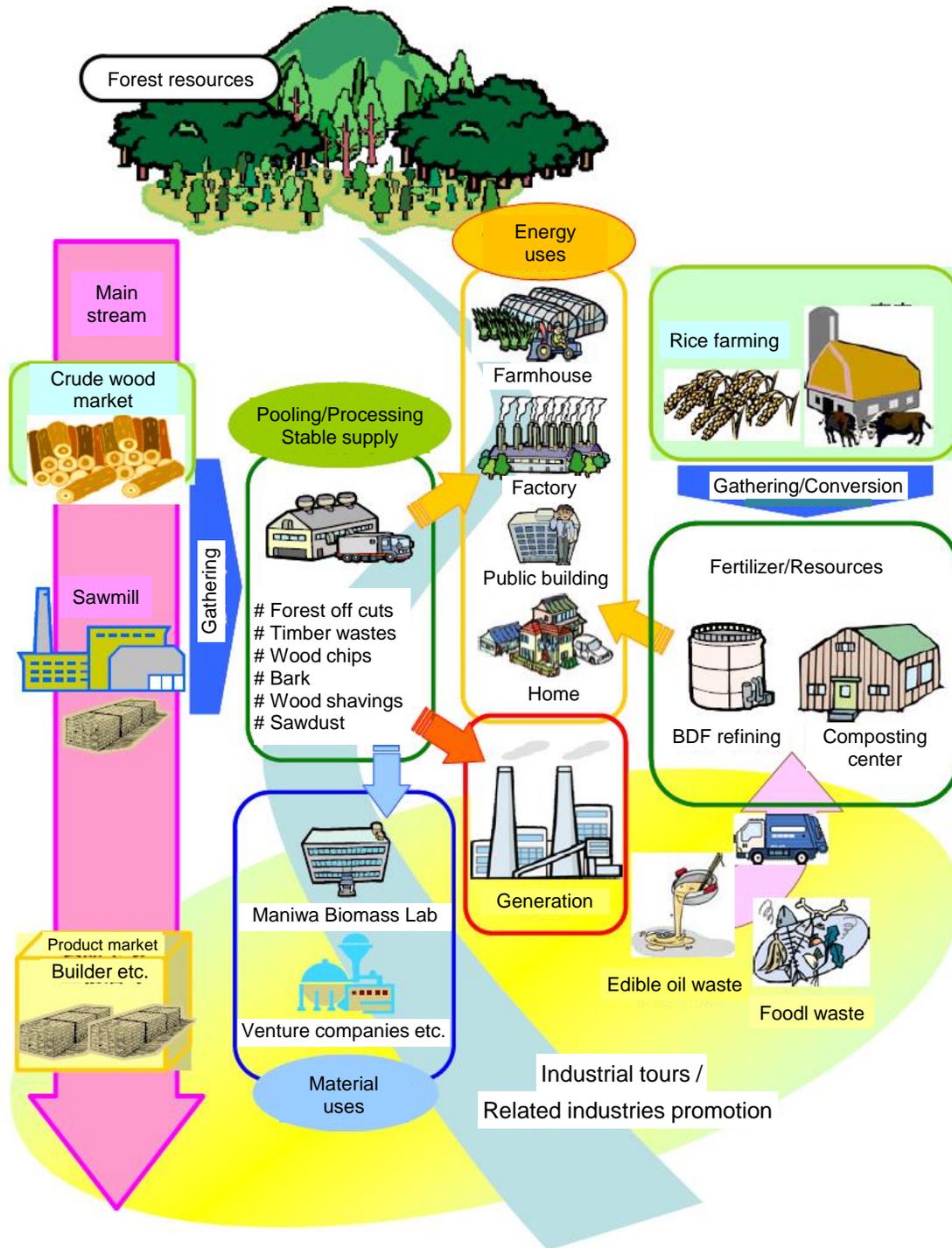
Fig. 1 Improvements of finance situations on the Maniwa City Government



(Source) Ministry of Public Management, Home Affairs, Posts and Telecommunications, “National population census,” each version (every five years).

Fig. 2 Changes in average annual decreasing rates of population in five years period for Maniwa and other cities

In addition, the population decreases in Maniwa city has not been accelerated since 2000, as shown in Fig. 2. The population decreases in Maniwa city could not stop, but the changes in the decreasing rate have been levelled off. This situation is somewhat different to other cities shown in Fig. 2.



(Source) Maniwa City Government, "The conception of Maniwa biomass industry and forest town," January, 2014.

Fig. 3 Resent whole aspect of Maniwa biomass industry and forest town project

Maniwa regional development plan have been continued by piling up various projects during the quarter of century. The whole aspects of Maniwa biomass industry and forest town are shown in Fig. 3. This plan was announced in January, 2014 and many vital activities have been also developed up to now. We can definitely say this project is one of successful examples in Japan.

Concluding remarks

First, though the regional development projects in Japan were often organized under the leadership of the central governments, they were not always successful. Based on the successful example in Maniwa city, the participation of local players from the public, private and other sectors and the linkage of these local players would be crucial.

Second, the searches and pursuits of local needs would a quite important task for the regional developments. In the regional developments in Maniwa city, this role has been covered by NPO “Maniwa circle for the 21st century.” The function for local opinion exchanges would be also crucial.

Third, the participation of powerful local companies would be essential to accomplish the regional development projects. In the case of Maniwa city, this role has been played by Meiken Kogyo Co., one of local leading company in the wood sector.

Forth, the continuous piling up of various projects step by step over the long period would be required for the successful regional developments. Because of this, the role of local government such as Maniwa city government and the connection between local and central government would be also a key factor.

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