WORKSHOP ARRANGEMENT IN NEIGHBORHOOD COMMUNITIES FOR RESIDENTS’ PARTICIPATION IN THE RECONSTRUCTION LAND READJUSTMENT PROJECT OF MACHIKA DISTRICT, OTSUCHI TOWN, KAMIHEI COUNTY, IWATE PREFECTURE

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This paper reports the detailed process of a residents’ workshop for the Reconstruction Land Readjustment Project in Machikata District of Otsuchi Town, Kamihe County, Iwate Prefecture, which suffered devastating tsunami damage caused by the Great East Japan Earthquake (Machikata Machizukuri WS 2013). It focuses on the community unit to gain a multilateral understanding of the target local community with characteristics, post-disaster changes in lives, residents’ sentiments, challenges, and ramifications.

Key Words : Great East Japan Earthquake, reconstruction land readjustment project, workshop, residents’ participation, community, Otsuchi town, Kamihe county, Iwate prefecture

1. INTRODUCTION

(1) Background
This paper reports the detailed process of a residents’ workshop for the Reconstruction Land Readjustment Project in Machikata District of Otsuchi Town, Kamihe County, Iwate Prefecture, which suffered devastating tsunami damage caused by the Great East Japan Earthquake (Machikata Machizukuri WS 2013).

In the last decades, Japan has been affected by many natural disasters such as the Great Hanshin-Awaji Earthquake in 1995 and the Great East Japan Earthquake in 2011. During this time, methods for reconstruction projects including residents’ participation have been continuously developed. Reconstruction plans after a large-scale disaster in most cases come up against unusual facts as preconditions; for example, loss of resources, lots of supporting staffs from outside, absence of local people because of their moving to temporary houses in a different place, and so on. There have been many reports and studies on the specific challenges from various perspectives.

This paper aims to analytically trace a case of a reconstruction project, in which the author has been engaged as an expert on public space design, and to state a view on the importance of carefully targeted community level in the planning process, which very few researches had focused on. Many local facts need to be considered for spatial planning, but they are sometimes hard to see from outside. For example, after repeated municipal mergers, most Japanese communities today contain historical boundaries of smaller districts deeply rooted in the sense of neighborhood of the residents. These are difficult for outsiders to find out, but still critical to create new communal spaces that are really ideal for local people in the long run. This paper introduces a detailed process of trial-and-error in arranging a residents’ workshop with carefully targeted community levels that was necessary to promote consensus building in Machikata District.

(2) Outline of Machikata Machizukuri WS 2013
The author has been involved in technical support activities in the reconstruction project for Otsuchi Town since 2012. The reconstruction project for
Otsuchi Town has been aimed at resident-led project promotion, since Mr. Ikarigawa assumed the post of mayor in September 2011 and set up some occasions for discussion like a round-table meeting in each district and individual interviews with locals. These worked successfully for substantive discussions between residents and the government in most parts of the town; however, the center of the town, Machikata District, faced some difficulties.

As a possible cause of the problem, the operation staff noticed a gap between the discussion place set up by the staff according to administrative boundaries and a community unit in which the residents can keep their sense of neighborhood. After the analysis and consideration, they tried to rearrange a discussion place for residents of the district, which resulted in setting of the Machikata Machizukuri WS 2013. This workshop is characterized by the careful operation in virtual community-units according to historical boundaries to overcome the gap as a cause of the problem.

(3) Objectives

This paper has the following objectives: 1) to sort out the issues related to the Machizukuri Reconstruction before Machikata Machizukuri WS 2013 to make sense of its background; 2) to report the process and details of Machikata Machizukuri WS2013, and its contribution to the Reconstruction Land Readjustment Project of Machikata District with an analytical view of its characteristics and significance in the process of the reconstruction project; and 3) to examine the significance of careful arrangement for discussion in the process of consensus building with residents for the reconstruction project, and the contribution of the result to future spatial planning.

(4) Related reports

Dr. Nakai (2013) reported the process of the basic reconstruction plan for Otsuchi Town (December 2012) as basis for the reconstruction project for Otsuchi Town, characteristics of the reconstruction plan for Otsuchi Town, and details of the basic reconstruction plan for Machikata District. Dr. Nii (2015) reported on the Machizukuri Reconstruction in the Kirikiri District of Otsuchi Town. In his paper, the process of the Machizukuri Reconstruction from the disaster until 2014 was divided into four phases to analyze the characteristics of each phase and relations among the phases. Dr. Tanaka (2012) reported on the historical process of settlement formation along the Otsuchi Bay in Otsuchi Town including Machikata District.

2. GENERAL INFORMATION, CASUALTIES AND DAMAGE IN OTSUCHI TOWN AND MACHIKATA DISTRICT

(1) General information, casualties and damage in Otsuchi Town

Otsuchi Town is located in Sanriku Region, the coastal area of Iwate Prefecture. The town was created from Otsuchi Village by annexation of Kozuchi Village and Kirikiri Village with the establishment of the municipality system in 1889, and expanded to the current state by annexation of Kanazawa Village in 1955. The majority of the population lives in the coastal area, where the people suffered serious damage from the Meiji Sanriku Earthquake and Tsunami (1896) and the Showa Sanriku Great Tsunami (1933) in the past. The town consists of five main districts and a scattering of small settlements. Three of the five main districts, namely Machikata District, Ando District, and Akahama District are facing the Otsuchi Bay while the other two, Kirikiri District and Namiita District are facing the Funakoshi Bay. (Fig.1) Otsuchi Town had a population of 16,058 before the Great East Japan Earthquake (as of February 28, 2011). The town was worst affected by the Tsunami of the Great East Japan Earthquake of March 11, 2011. (Number of missing and dead 1,285; damaged property (completely or half destroyed) 3,717 (as at February 1, 2016)).

(2) General information, casualties and damage in Machikata District

Machikata District (population of 4,483 before the earthquake; number of human suffering of missing and dead 668; damaged property (completely or half destroyed) 1,421 (as at November 30, 2011)) is the biggest and central urban area in the
town. Located here were public facilities as government office and library, the Otsuchi station of JR Yamada-Line, a local shopping area, and so on. In the basic reconstruction plan, Machikata District is planned to be an administrative and commercial center for Otsuchi Town as it used to be.

There was a recreation place for residents, called Oshachi, in the town center, which had been developed from a pond of a shrine (Fig.2). Furthermore, there were many artesian wells in the residential areas. In the basic reconstruction plan for Machikata District, these springs are recognized as key elements to utilize local history and natural resources in the rehabilitation of pleasant urban spaces.

Table 1 Process of Machizukuri Reconstruction in Machikata District.

| Date       | Contents                                                                 |
|------------|---------------------------------------------------------------------------|
| March 11   | The Great East Japan Earthquake                                            |
| June       | The Broad Examination of Reconstruction Patterns in accordance with the Extent of Damage Caused by The Great East Japan Earthquake, The City and Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism (MInfra/TOKC E.E.Consultants Co.,Ltd, U-Plannning Office Co., Ltd., Yasushi Onodera Civil Engineering & Landscape Architecture Design office, EAU Ltd, Akiyoshi NII (Kokushikan University) Technical Advisers: Yu NAKAI (University of Tokyo), Kenjiro OMURA/riakita University) |
| August 29  | The new Mayor Yutaka IKARGAWA was elected with the election slogan “a beautiful town with an ocean view that encourages people to take a walk” Decision making on the principles of Reconstruction Plan and the location of residential areas |
| October-November | Local Reconstruction Councils for 10 affected districts of the Town |
| December   | The Basic Reconstruction Plan of Otsuchi Town from the Great East Japan Earthquake and Tsunami |
| 2012       | April | District WG started. Decision making on the structure of each district |
| September  | Urban planning decision of the Reconstruction Land Readjustment Project, and minster approval of collective relocation for disaster prevention |
| March 14   | 1st meeting of Machikata District WG Meeting.  (ODC) |
| June 26    | 2nd meeting of Machikata District WG Meeting.  (ODC) |
| July 9 - August 25 | Shino River WS (4 sessions) |
| September 27 - November 9 | Kamouchi-Honcho WS (4 sessions) |
| October 17 | 3rd meeting of Machikata District WG Meeting.  (ODC) |
| November 30 | Omachi WS (1 session) |
| December 19 | 4th meeting of Machikata District WG Meeting.  (ODC) |
| January 28 | 5th session of Shino River/Omachi WS: Explanation of changes in the Reconstruction Land Readjustment Project |
| February 4 | 5th session of Kamouchi/Honcho WS: Explanation of changes in the Reconstruction Land Readjustment Project |
| March      | 1st change of plan of the Restruction Land Readjustment Project for Machikata District |
| March 5    | 5th meeting of Machikata District WG Meeting.  (ODC) |
| ODC submitted “Design Note for Otsuchi Town” as the outcomes of the ODC to the mayor. |

Table 2 Supporting staff (March, 2011- March, 2014)[7].

| Otsuchi Town, Reconstruction Office, Regional Management Division (March, 2011 - March, 2012) |
|---------------------------------------------------------------|
| Tomoe NASU, Tsunichi DOBASHI, Tomohiro NAKANO, Koya OGUNI, Fumihito MATSUHASHI(Otsuchi) |
| Otsuchi Town, Urban Planning Division, Land Readjustment Section (Machikata Section) (April, 2012 - March, 2014) |
| Tomoe NASU, Tsunichi DOBASHI, Tomohiro NAKANO, Koya OGUNI, Fumihito MATSUHASHI(Otsuchi) |
| Directors, Urban Planning Division Shigemi KAWANO(Minamisatsuma), 2012 Yoshihiro AOKI(Kobe), 2013- |
| Leaders, Land Readjustment Section Takeshi KOBAYASHI(Kawagoe), 2012 Tsuyoshi AKAMINE(Tomizuru), 2013-
| Member(Takeshi KOBAYASHI(Kawagoe), 2012 - March, 2014) Yutaka KOBAYASHI(Kawagoe) Kazuhiko NISHINO(Toyonaka) Hirakazu NAGATA(Toyonaka) Yoshiaki IZU(Takaraduka) Kenji HOSOGAI(Kawagoe) Masahiro TSUTSUMIMOTO(Kawagoe) Hisato NISHIWAKI(Takaraduka) Kousuke FUKUMOTO(Kagoshima) Yuuki MATSUSHITA(Kawagoe) Takahide KANEHAMA(Otsuchi) Kenji HOSENOI(Toyonaka) Akira NISHIYAMA(Minoo) Hirokazu NAGATA(Toyonaka) Toshiki KIUCHI  Architectural Planning Office, Masayuki TANAKA Architectural Design Office, | |
| Project Team (Machikata) Urban Renaissance Agency (UR), Machikata Reconstruction Project Construction Manager (Machikata CM) |
| Planning Team (Machikata) Urban Design Council  (Machikata CM)  (March, 2012 - March, 2014) |
| Tomoe NASU, Tsunichi DOBASHI, Tomohiro NAKANO, Koya OGUNI, Fumihito MATSUHASHI(Otsuchi) |
| Design Team (Park No.6, 8, 10, 11) Yutaka KITA Architectural Design Office, Toshikatsu KUCHI Architectural Planning Office, Masayuki TANAKA Architectural Design Office, Hideya FUKUSHIMA(University of Tokyo) |
| Academics Yu NAKAI, Itoke KOIZUMI, |
3. THE PROCESS AND CHALLENGES IN MACHIZUKURI RECONSTRUCTION IN MACHIKATA DISTRICT

(1) The process of Machizukuri Reconstruction

Table 1 shows the process of Machizukuri Reconstruction in Machikata District from 2011 to 2014 and Table 2 shows the main members of the supporting staff. This paper focuses on the third phase shown in Table 1, “Decision making for special image of Machizukuri Reconstruction”. The Machizukuri Reconstruction for Otsuchi Town began with the setting up of the Local Reconstruction Council for each of the 10 affected districts in the town, just after the current mayor Yutaka Ikarigawa was elected in September 2011.

The town intended to arrange a place for discussion with the residents on the basic policies of the reconstruction plan. The Local Reconstruction Council consists of administrative staff of the town, a planning team (consultants and designers), and academics. The academic experts of civil engineering, architecture, and urban planning were to coordinate discussions in each district from a neutral and professional perspective. The outcomes were wrapped up in the “Reconstruction Plan from the Great East Japan Earthquake and Tsunami for Otsuchi Town – Basic Plan” (Basic Reconstruction Plan) in December 2011 (Fig.3).

After formulation of the Basic Reconstruction Plan, Otsuchi Town welcomed many supporting members from other municipalities in April 2012 to cover the shortfall in human resources, especially in the technical staff. This new administration started to review the Reconstruction Plan with a view to making urban planning decisions in the Reconstruction Land Readjustment Project and minister approval of collective relocation for disaster prevention until September 2012. For the purpose of the detailed investigation, the town formed a district working team (District WG) for each district consisting of administrative staff, consultants, and academics.

The Machikata District WG made a draft for the reconstruction plan focusing on the following three points: a) consolidation of urban areas along the old route at the foot of the mountain, b) construction of a street system in consideration of evacuation routes, and c) networking of public spaces in consideration of everyday life and emergency. (Fig.4)

Based on the draft, the town completed a legal decision of the master plan for the Reconstruction Land Readjustment Projects and a minister approval of collective relocation for disaster prevention in September 2012 as intended. Accordingly the town made a legal decision on the project plan, gained agreement with residents on groundbreaking, and started preparations for the raising of land level in March 2013.

In view of the time length to be taken for the raising of land level, the town planned to crystallize the construction plan in parallel in this period and organized the Otsuchi Design Council (ODC) for planning and design of public spaces and facilities with coordination among the districts [10]. The ODC consists of two types of meeting: General Meeting with the representatives from each district and three

| Meeting Type       | Members                                                                 |
|--------------------|-------------------------------------------------------------------------|
| Otsuchi Design Council (ODC) | Prof. NAKAI (University of Tokyo) (Chairman)  
|                     | Prof. OTSUKI (University of Tokyo)  
|                     | Assoc. Prof. INUI (Tokyo University of the Arts)  
|                     | Matsuo IWASAKI (Town councilor)  
|                     | Representative residents of District WG Meetings                      |
| District Working Meeting (District WG Meeting) | Machikata  
| | Representaive residents + Coordinator |
| | Namiita  

Fig. 3 Basic Reconstruction Plan for Machikata District, December, 2011 [8].

Fig. 4 Reconstruction Plan for Machikata District, November, 2012 [9].

Fig. 5 The Otsuchi Design Council (ODC) [11].
academic experts (Chairman: Prof. Yu Nakai, the University of Tokyo) and District Working Meeting (District WG Meeting) for each district (Fig. 5). The town intended to conduct the District WG Meetings with the support of administrative staff, consultants, and academic experts who have been in charge of decision making for the reconstruction plan. As a result, it worked for all the districts except for Machikata District.

(2) Problems in Machizukuri Reconstruction and their backgrounds

Machiata District had two problems. First, the district was still unprepared for discussion and consensus building with the residents in March 2013, although the town was very aware of its importance, especially for the smooth promotion of the Land Readjustment Project and creation of attractive public spaces satisfying the residents. The town has therefore continuously made efforts to create occasions needed for that. For example, the town had organized a roundtable gathering for each district (RoundTable) as a place for announcement of the contents and the progress of reconstruction project from June 2012. Furthermore, the town had conducted individual interviews with 908 residents out of a population of 2,064 who had received victim’s certificates by February 2013[15]. Additionally, the town tried to arrange “Machizukuri Council (provisional)” for Machikata District as a representative organization of the residents for further discussion with administrative staff. However, these approaches ended up in vain. The RoundTable was negatively recognized as a place for one-way explanation from the town side and the proposed Council could not be established, because the residents selected as its members by the town did not accept the nominations.

Some residents also began to express an opposition to the project plan of the Reconstruction Land Readjustment Project. In January 2013, they submitted a written statement concerning the way of project promotion and the plan for widening prefectural roads[16].

In the first session of District WG Meeting for Machikata District, resident members commented that they could hardly discuss with a limited number of residents on public facilities for the whole district. As a result, the meeting did not progress to any active interaction.

The other problem was an inaccuracy in the results of residents’ survey that were to be the basic information for the Reconstruction Land Readjustment Project, the Disaster Prevention Project, and the Disaster Restoration Public Housing. It was already known through the individual communications with residents that they had physical difficulties to communicate with the original neighborhood before disaster; for example, because of location of temporary housing (Fig. 6), and could not gain important information that might be helpful for them to have a concrete future image of rebuilding of their everyday life. The staff in charge concluded that this reality of poor communication had affected the accuracy of survey results.

Different from the case of Machikata District, each of the other districts had a representative residents’ organization directly linked with an original neighborhood community like a residents’ association (Table 3). The Local Reconstruction Council played a similar role, too. As a result, the town could communicate with existing neighborhood communities, apart from the discussion in the newly arranged Roundtables. Also for the Design Council, these districts had no difficulty sending representative persons of the existing community to the District WG Meeting, because there was no gap between the Meeting and the originally existing unit of the neighborhood community.

In Machikata District, on the other hand, it was necessary to coordinate both the Roundtable and the Local Reconstruction Council with a larger number of members from several existing communities (Fig. 7). It was the reason why the participants in the district could hardly be active in the discussion conducted by the town.

As a conclusion, the community level of the existing neighborhood community between adminis-
trative district and each individual was recognized as a key point, because it was most appropriate for residential discussion and information exchange to conduct decision making from the residents. Such decisions included what to do for Machikata District at the time; 1) to rearrange places for discussion with careful attention to the existing neighborhood communities, and 2) to recreate places for the information exchange among the communities.

In May 2013, the administrative staff, consultants, and academic experts discussed the measures to improve the method for promoting the project, and arranged workshops to discuss the reconstruction project in an appropriate level of community. (Fig. 8)

4. MACHIKATA MACHIZUKURI WS2013

(1) Plan and preparation
Discussion topics in the Machikata Machizukuri WS2013 can be summarized as follows:
1. Confirmation and Sharing of the individual intentions of reconstruction among the residents in the neighborhood community level.
2. Collection and sharing of local information before the tsunami in a neighborhood community level.
3. Sharing and discussion on the future image of the town after the reconstruction works in the neighborhood community level.
4. Opinion exchange and consensus formation on details of the Land Readjustment Project, the land exchange, the procedure of the project (location and form of individual residential lots, intensive replotting of commercial areas, relocation of the town center).

Fig. 7 Development of Machikata District and neighborhood Communities. [14].

Fig. 8 Community levels and Machizukuri Reconstruction in Machikata 2011-2013.

Fig. 9 Working team for Machikata Machizukuri WS. [18].

Fig. 10 Discussion in the roundtable meeting (June 22, 2013).
5. Discussion and consensus formation on the local public spaces (streets, district parks, conservation and utilization of canals and springs)

Figure 9 shows the members of the working team for Machikata Machizukuri WS2013.

Arranging an ideal place for the residents to discuss with each other was most important. For this purpose, it was necessary to know their sense of neighborhood, before setting the scope of recruiting and grouping for discussion.

The administrative staff and the author interviewed local staff and residents, arranged a roundtable meeting, and had opinion exchange with residents of the target district, in order to figure out the reality of neighborhood (Fig.10). As a result, intangible boundaries of neighborhood communities emerged clearly. The outcome was very intricate and too difficult for a outsider to identify at a glance.

Based on the result, the workshop was arranged separately in three areas: Suehirocho, Kami-cho/Honcho, and Omachi. The participants in each area were divided into the groups corresponding to the smaller community levels which reflected their actual sense of neighborhood.

In careful consideration of the problems and situations of each neighborhood community, the workshop was planned as follows (see Fig. 11):

i) The workshop was first held in Suehirocho, because the area would be developed earlier in the Reconstruction Project and had several neighborhood communities with active commercial streets and local associations. (Suehirocho WS)

ii) Second in Kamicho/Honcho, after reflecting tricks and traps for the workshop operation from the experience of Suehirocho WS. The area had some problems with the plan for the Reconstruction Project, as residents opposed a plan of the widening of prefectural road. (Kamicho/Honcho WS)

iii) Finally in Omachi. There were only a few participants to the Roundtable from this area. (Omachi WS)

Suehirocho WS and Kamicho/Honcho WS had four sessions for each. The Town made technical reviews on the outcomes from the workshop and reflected them to the Land Readjustment Project. Accordingly, each workshop had a fifth session as a debriefing meeting from the town side.

The first session of Omachi WS was held with only one discussion group, because there were just a few participants. From the second session, the Omachi residents joined in the Suehirocho WS.
leadership of a town councilor, followed by a sub-
tion Project. For example, the residents’ opinions on
area was independent-minded for the Reconstruc-
tional area developed from the tenement of the
Matsunoshita, Suehiro-Shotengai (Shopping Street),
and Oshachi (Mukaigawara). Matsunoshita is a his-
torical area characterized by the mix-
committees that had been keeping a very good relationship. The community of this area was independent-minded for the Reconstruction Project. For example, the residents’ opinions on the land consolidation were wrapped up under the leadership of a town councilor, followed by a sub-
mission of a request for the construction of disaster recovery public housing in the area to the town.
Suehiro Shotengai was an unique and intensive commercial area in Otsuchi Town before the disaster. In this area, some storeowners who intended to reconstruct for themselves arranged voluntarily a study meeting to learn about subsidy system. Osha-
chi (Mukaigawara) area consisted of the Oshachi and its surrounding area characterized by the mix-
ture of commercial and residential areas. A key is-
ue in the Suehirocho WS was the land replacement plan for the development of a town center.
Information about the WS was announced through the website of Otsuchi Town, letters to all the former residents who had lived in the covered area until disaster, the newspaper (from the 2nd session) to all the houses in the area, to be disseminated to all the affected people.
Table 4 shows the dates and discussion topics of all the five sessions of Suehirocho WS. Table 5 shows the procedure of each session. First of all, the administrative staff and academic experts gave a briefing on the topics to be discussed and basic information as premises for the discussion with all the participants. They then discussed separately in each group with the facilitator in charge. The facilitators prepared large-scale plans and models so that the participants could sit around them to easily discuss with each other and to share the same image of post-disaster townscape (Fig. 12). At the end, a rep-
resentative resident from each group gave a presenta-
tion about the discussion to all the participants. After each session, free newspapers (Kawaraban) were distributed to all the households in the district (Fig.13). This manner of operation enabled the participants to lead active discussions in each neigh-

| Date     | Session/WS | Groups                  | Contents                                                                 | Participants | Coordinator |
|----------|------------|-------------------------|--------------------------------------------------------------------------|--------------|-------------|
| 2013 Jul. 9 | 1. Session Suehirocho WS | Matsunoshita/Suehiro-shopping street/Oshachi | Confiming and sharing of the intention of reconstruction, Exchange of opinions and consensus formation on details of the Land Readjustment Project, land exchange, procedure of the project, disaster prevention and evacuation routes. | 23           | KOIZUMI FUKUSHIMA |
| Jul. 23   | 2. Session Suehirocho WS | Matsunoshita/Suehiro-shopping street/Oshachi | Confiming and sharing of the intention of reconstruction, Exchange of opinions and consensus formation on details of the Land Readjustment Project, land exchange, procedure of the project, road planning, Oshachi, Utilization of spring, Disaster Restoration Public Housing. | 32           | KOIZUMI FUKUSHIMA |
| Aug. 10   | 3. Session Suehirocho WS | Matsunoshita/Suehiro-shopping street/Oshachi | Exchange of opinions and consensus formation on details of reploting and the center town, procedure of the project, road planning, Oshachi, the collective relocation for disaster prevention and new community, Disaster Restoration Public Housing. | 30           | KOIZUMI FUKUSHIMA |
| Aug. 25   | 4. Session Suehirocho WS | Matsunoshita/Suehiro-shopping street/Oshachi | Exchange of opinions and consensus formation on details of reploting and the center town, procedure of the project, road planning, Oshachi, the collective relocation for disaster prevention and new community, Disaster Restoration Public Housing, Parks. | 33           | KOIZUMI FUKUSHIMA |
| Nov. 30   | 1. Session Omachi WS | Omachi | Confiming and sharing of the intention of reconstruction, Exchange of opinions and consensus formation on details of the Land Readjustment Project, land exchange, procedure of the project, disaster prevention and evacuation routes. | 8            | FUKUSHIMA  |
| 2014 Jan. 29 | 5. Session Suehirocho/Omachi WS | Matsunoshita/Suehiro-shopping street/Oshachi/Omachi | Explanation of changes of the Restoration Land Readjustment Project, Traffic regulation(Zone30), Public space design. | 21           | KOIZUMI FUKUSHIMA |

Table 5 Procedure of each session20).

| Basic Program | Discussion group | Total 2h |
|---------------|------------------|----------|
| 1.Opening, Greeting | All participants | 5 min. |
| 2.Introduction |                  | 10 min. |
| 3.Briefing on topics of discussion and basic information of the reconstruction project |                  | 60 min. |
| 4.Group discussion | Discussion groups corresponding to neighborhood communities |                  |
| 5.Sharing of local information, Discussion |                  |
| 6.Summary |                  |
| 7. Presentation per group | All participants | 30 min. |
| 8. Discussion, Generalization |                  | 10 min. |
| 9.Closing |                  | 5 min. |

Fig. 12 Discussion with large scale plans and models.

(2) Suehirocho WS

Suehirocho WS had three discussion groups corre-
sponding to the neighborhood communities, Matsunoshita, Suehiro-Shotengai (Shopping Street), and Oshachi (Mukaigawara). Matsunoshita is a his-
torical area developed from the tenement of the pre-modern period. The residents had been keeping a very good relationship. The community of this area was independent-minded for the Reconstruction Project. For example, the residents’ opinions on the land consolidation were wrapped up under the leadership of a town councilor, followed by a sub-
neighborhood community, and to share the outcomes with each other.

There were also joint discussions. For example, the members of Shopping Street Group and Oshachi Group jointly discussed at their own initiative on the planned parks in neighborhood, especially about the contribution to the wide area of the district, after sharing the image of public spaces to be realized in the reconstruction work.

The large-scale models (S=1/200 for the whole district, S=1/50 for streets) were very helpful in sharing the detailed spatial images of the future neighborhood and also contributed to motivating the participants to actively participate in the discussions. Kamicho/Honcho WS was also conducted in this way.

(3) Kamicho/Honcho WS

The area of Kamicho has been developed with the two neighborhood communities, Jonai and Yokkamachi. Honcho is originally the area called Yokkamachi. These are both centers of the settlements developed along the street. Each house site has a characteristic reed-shape that is commonly noted in the settlements along the street.

Some residents in this area had an objection to the reconstruction plan as of 2012. They were opposed to the widening plan of the prefectural road Otsuchi-Kozuchi Line because it did not match the scale of the town. They also required the reconstruction of the disaster prevention canal used to extinguish forest fires, irrigating water from the Kozuchigawa River. The canal was located along the prefectural road before the tsunami.

In Kamicho/Honcho WS, the participants were divided into three groups: Jonai, Yokkamachi, and Yokamachi. Table 6 shows the schedule and main contents for the five sessions of the Kamicho/Honcho WS.

As is the case with Suehirocho WS, large-scale models were used to provide a feeling of the road width and a total image of the reconstruction plan for Machikata District, so that the participants can easily share the future image of the town. The outcomes were also integrated into the models, which

![Fig. 13 An example of free newspaper (Kawaraban)(21).](image)

| Date      | Session/WS                  | Groups                          | Contents                                                                 | Participants | Coordinator |
|-----------|-----------------------------|--------------------------------|-------------------------------------------------------------------------|--------------|-------------|
| 2013 Sep. 27 | 1. Session Kamicho/Honcho WS | Jonai/Yokkamachi/Yokkamachi     | Confirming and sharing of the intention of reconstruction, Exchange of opinions and consensus formation on details of the Land Readjustment Project, land exchange, Procedure of the project, Disaster prevention and evacuation routes, Width of prefectural road, reconstruction of the water channel, utilization of springs, Disaster Restoration Public Housing. | 26           | NAKAI       |
| Oct. 12   | 2. Session Kamicho/Honcho WS | Jonai/Yokkamachi/Yokkamachi     | Confirming and sharing of the intention of reconstruction, Exchange of opinions and consensus formation on details of the Land Readjustment Project, land exchange, Procedure of the project, Disaster prevention and evacuation routes, Width of prefectural road, reconstruction of the water channel, utilization of springs, Disaster Restoration Public Housing. | 29           | NAKAI       |
| Oct. 23   | 3. Session Kamicho/Honcho WS | Jonai/Yokkamachi/Yokkamachi     | Point of Issues (utilization of water, Width of prefectural road, street space), location and form of individual residential lot, procedure of the project, disaster prevention and evacuation routes, reconstruction of the water channel, utilization of springs, Disaster Restoration Public Housing. | 24           | NAKAI       |
| Nov. 9    | 4. Session Kamicho/Honcho WS | Jonai/Yokkamachi/Yokkamachi     | Proposition by coordinator (Width of prefectural road, reconstruction of the water channel, street space, location and form of individual residential lot, utilization of springs), Confirming the strategies of changes in the Land Readjustment Project. | 22           | NAKAI       |
| 2014 Feb. 4 | 5. Session Kamicho/Honcho WS | Jonai/Yokkamachi/Yokkamachi     | Explanation of changes in the Restoration Land Readjustment Project, Traffic regulation (Zone30), Public space design. | 17           | NAKAI       |
enabled participants to realize the meaningfulness of the workshop and encouraged them to discuss more positively (Figs. 14 and 15).

Newspapers were distributed after each session to all the households of Machikata District, as is the case with Suehirocho WS.

Unlike the case of Suehirocho WS, the discussion was facilitated based on the propositions by the coordinator, because the topics here were clearly defined from the beginning. After discussing with the participants in three sessions, the coordinator proposed a guideline for the plan change in the fourth session in order to gain the residents’ agreement before offering it as the outcome of the WS to the town.

Consequently, it led to a positive result, especially regarding the important topics, the road width, and the canal. The town accepted the coordinator’s propositions: 1) the planned width of road should be changed from 18m to 16m in consideration of the history of integrally developed both sides of the road, and the future density of the town, and 2) the possibility to remake the canal along the prefectural road for the purpose of disaster prevention or landscaping should be examined from technical viewpoints before proceeding to the next step of discussion with the prefecture.

Fig. 14 Discussion with large-scale plans and models.

Fig. 15 Discussion with a large-scale model.

Fig. 16 Changes in the plan.

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1) The planned width of road should be changed from 18m to 16m in consideration of the history of integrally developed both sides of the road, and the future density of the town.

2) The possibility to remake the canal along the prefectural road for the purpose of disaster prevention or landscaping should be examined from technical viewpoints before proceeding to the next step of discussion with the prefecture.
For other topics, they discussed the policy for the land replacement and planting, characterization of parks with the fountains, the public facilities such as station squares, and so on.

Table 7 Opinions and the changes in the plan[17]

| Themes | Resident requests and opinions on the Reconstruction Land Readjustment Project | Changes in the Reconstruction Land Readjustment (*: reasons for changes in the Reconstruction Land Readjustment) |
|---------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 1 Matsunoshita Park (The Park No.10) | Requests for flower beds, benches, and arbors kept by the residents. Requests for a collection of daily-use shops, cafes and restaurants around the park as a center of the Matsunoshita area. | Park No.10 was not moved, but its shape was changed to be more friendly for users, in consideration of the residents' voices based on the interviews and consultations on the conservation of the high-voltage cable. Continue to consult with residents about the specific contents of equipment and maintenance of Park No.10. |
| 2 Oshachi Park (The Park No.8) | Requests for places for gathering and recreation, and space for the Bon Festival. Prefer keeping enough large flatland around the pond instead of embankments. Strong requests for utilization of springs in the reconstruction of Oshachi Park. Requests for restoration of the tsunami-driven monuments and Buddha statues. Wish to reconstruct this place from a long-term perspective. e.g.) raising a monument as a symbol of the historical meaning of this place. Requests for the design of the new Oshachi Park in consideration of the drainage and evacuation in the case of heavy rain. | As a result of consultation with the Board of Education for the preservation of historic sites, the shapes of Park No.8, Road No.8-1 and Road No.6-43 were changed.* Continue to consult with residents on the specific contents of equipment and maintenance of new Oshachi Park (Park No.8). |
| 3 Border area between Otsuchi and Kozuchi | Wish to leave the border area between Otsuchi and Kozuchi as a historical property of the town. | In order to leave the border area between Otsuchi and Kozuchi as one of the historical resources of Otsuchi, the Pedestrian walkway (PW No.4-17) was newly planned.* |
| 4 Suehiro Shopping Street | Wish to create an enduring street as it used to be. The street is the oldest commercial area of the town. Requests for attractive pavement of the street instead of asphalt. Requests for the safety and accessibility for elderly people and wheelchair users eliminating differences in levels of the street and pathway. | Because of the change in corner-cutting, etc. due to the linear change of city planning road, and improvement of linear shape, the shape of Road No.12-4 was changed.* Continuously consult with residents on the new street's design. |
| 5 Parks near the Suehiro shopping street (The Park No.6 and The Park No.11) | Park No.6 is an entrance to the street (face of the street). Therefore, a small sitting area with some plantings and street guides is needed. Wish to have a new park with an event site at the former parking place, at the T-junction on the way from the street to the Ando Bridge. | The shape of Park No.6 was changed because of some changes in reploting.* The area of Park No. 6 was reduced, and Park No. 11 was newly planned. |
| 6 Teramachi Street (approach to the Kouganji Temple) | Requests for the reconstruction of Teramachi Street as a daily-use pathway as it used to be. Request for the design of walkway based on the image of traditional approach to the Temple. | Because of the change in Urban Planning, the width of the Urban planning road Kobyo-Ando-Sen (= Prefectural Road, Otsuchi-Kozuchi Line) was changed from 16m to 16m.* |
| 7 Revision of the urban planning regarding Prefectural Road, Otsuchi-Kozuchi Line | It is difficult to avoid depopulation without keeping the identity of Otsuchi with the reconstruction of the historical roads and canals. Wish to preserve the townscape and the culture of this place by keeping the characteristic frontage as it used to be before the earthquake. The road width of 16m is ideal for the town scale, which enables the residents to communicate with each other across the street. Prefer spotting box plants rather than planted zone Requests for street trees and lightings at important landmarks for the evacuation like intersections, parks, and so on. Wish to have a canal, at least on one side of the road. It is helpful in the case of wood fires and snows. | Wish to leave Shichikencho Street as one of the historical resources of the town. In accordance with position of the crosswalk of the prefectural road, the shape of Pedestrian Walkway 4-9 was changed.* |
| 8 Shichikencho Street | Requests for places for gathering and recreation, and space for the Festivals, Square No. 1 was expanded and changed to Park No. 12.* | |
| 9 Road and squares in front of the station | Wish to have a new station road and squares as the welcoming entrance of the town. Wish to have an open canal in this place. Wish to have many shops around the station. | Requests for places for gathering and recreation, and space for the Festivals, Square No. 1 was expanded and changed to Park No. 12.* |
| 10 Asahi Street as a pathway of springs | Agree with the idea to create a walking path connecting disaster public houses and parks with artesian well. Some safety measures are needed for the path (Asahi Street) in consideration of children’s use. Guides and signs for walking with sights would be helpful. Wish to have characteristic parks and a walkway connecting them. Wish to have parks with utilization of springs. Requests for the reconstruction of “well of Asahi” at the same place, if possible; otherwise, in nearby parks. Many residents had been using the well. Requests for conservation of artesian wells in parks along Asahi Street. A scattering of small parks in the district would be more residents-friendly. | Consideration of changes in reploting and needs of local residents, in order to connect Road No.6-6 and Park No. 1, the shape of Park No. 1 was changed, and Pedestrian Walkway 4-14 was newly planned.* Parks using spring water or artesian wells. - Continue to consider in the design stage. - Continue to consult with residents on the specific contents of equipment and maintenance. Plan a walking path connecting disaster public houses and parks with artesian well. (Asahi Street). |
Resident requests and opinions in WS Reasons for Changes in the Land Readjustment

There was a boundary dispute between Otsuchi and Kozuchi Village in the Edo era (Kanbun era). The boundary Otsuchi village claimed is the line connecting Sainohana and Tsuchigasaki. The boundary Kozuchi village claimed is the line connecting Sainohana and Futatsuiso. Kozuchi village won. The magistrate planted pine trees and willow trees on the line.

Fig.17 Comparative chart (3. Border area between Otsuchi and Kozuchi) [18].

It is difficult to avoid depopulation without keeping the identity of Otsuchi with the reconstruction of the historical roads and canals. Wish to preserve the townscape and the culture of this place by keeping the characteristic frontage as it used to be before the earthquake. The road width of 16m is ideal for the town scale, which enables the residents to communicate with each other across the street. Prefer spotting box plants rather than planted zone Requests for street trees and lightings at important landmarks for the evacuation like intersections, parks, and so on. Wish to have a canal, at least on one side of the road. It is helpful in the case of wood fires and snows.

Fig.18 Comparative chart (7. Revision of the urban planning regarding Prefectural Road, Otsuchi-Kozuchi Line) [19].

As a result of consultation with the Board of Education for the preservation of historic sites, the shape of Park No.8, Road No.8-1 and Road No.6-43 were changed. Continue to consult with residents on the specific contents of equipment and maintenance of new Oshachi Park (Park No.8).

Fig.19 Comparative chart (2. Oshachi Park Park No.8) [20].

Resident requests and opinions in WS Reasons for Changes in the Land Readjustment

Wish to leave the border area between Otsuchi and Kozuchi as a historical property of the town.

In order to leave the border area between Otsuchi and Kozuchi as one of the historical resources of Otsuchi, the Pedestrian walkway (PW No.4-17) was newly planned.

Because of the change in Urban Planning, the width of the Urban planning road Kobyo-Ando-Sen (= Prefectural Road, Otsuchi-Kozuchi Line) was changed from 18m to 16m.

Continue to consult with residents on the specific contents of equipment and maintenance of new Oshachi Park (Park No.8).

Fig.20 Comparative chart (5. Parks adjacent to the Suehirocho shopping street (Park No.6 and Park No.11)) [21].
(4) Achievements of the Land Readjustment Project

The results of Machikata Machizukuri WS 2013 were partly reflected in the project as changes. Figure 16 and Table 7 show the changes in the plan as the results of Machikata Machizukuri WS 2013.

Successful results of the workshop are, for example, the border between Otsuchi and Kozuchi (Fig.17) and the revision of the urban planning regarding Prefectural Road, Otsuchi-Kozuchi Line (Fig.18).

(5) Achievements of spatial planning

Neighborhood communities were added to the contents of the Land Readjustment Project, which has been planned through the initiative of the government. The concrete cases are Oshachi Park.
The District WG of the Otsuchi Design Council worked successfully as an occasion to integrate the outcomes from each sensitive discussion in the neighborhood communities and further discussion from the perspective of the whole district. The significant outcomes from each WS were wrapped up as an achievement of the Design Council in “Design Note for Otsuchi Town” (Fig. 22).

(6) Changes in residents’ consciousness

At the beginning, the participants expressed more complaints about the project procedure and details of planning, or talked about their own issues on rebuilding. However, their concerns had gradually moved to the discussion about the future, namely the image of post-disaster life for each neighborhood community and the expected image of the whole Machikata District. Furthermore, some young people had been motivated through the workshop to take leadership in the neighborhood communities during the discussions. Members of a commercial area started volunteering to organize another workshop to conduct discussions on their commercial street, inviting some government administrators and experts. This is the very beginning of hopefully continuous Machizukuri conducted by neighborhood communities (Fig. 23).

5. CONCLUSION

(1) Characteristics of the Reconstruction Project for Otsuchi Town

The reconstruction project for Otsuchi Town is characterized by the bottom-up method for project promotion focusing on features of neighborhood communities in each district, and also by the working team for the implementation consisting of administrative staff and professionals.

The Project plan and planning process of the reconstruction project vary from district to district. This paper introduces only the case of Machikata District.

Another significant feature is the parallel promotion of residents’ participation to the process of land formation, which had already started with basic framework for the reconstruction plan, the decision of master plan, and the approval of groundbreaking. It flexibly changed the plans to reflect residents’ intention appropriately. This approach to achieve early recovery through careful consensus building provides useful insights for future methods for the project promotion.

On the other hand, it was based on the idea that the preliminary and detailed data gathering about residents’ intention can save reworking and result in an earlier recovery. The rights and wrongs of this idea should be argued in the future with analysis on longer-term results of the reconstruction project as a whole. Advantages and challenges of this distinctive project promotion for the reconstruction project are to be more deeply discussed after comparative analysis of a substantial number of cases about affected districts and municipalities.

(2) Findings for residents’ participation meeting coordination in the process of urban planning

The above report on Machikata Machizukuri WS 2013 delivers the following two insights for the residents’ participation in the process of urban planning.

The first point is the significance of appropriate unit for discussion, which is needed for residents’ proactive participation. For the purpose of creating an ideal occasion for discussion, where the residents feel a sense of belonging and join without any constraint, it is necessary to understand substantive community-units that are directly linked with the residents’ actual sense of neighborhood and to reflect them appropriately into the process of urban planning.

The second point is the significance of ingenuity in the materials for discussion, as Dr. Nii also says26). At the Machikata Machizukuri WS 2013, large-scale models enabled participants to have the post-reconstruction image of the town easily, and functioned effectively in the process of consensus building. Furthermore, the outcomes of each session were concretely integrated into the model as a tangible form and presented at the next session, which led to a presentation of total future image of the district as a whole. It was also helpful to link individual discussions to a comprehensive communal space.

The newspaper (Kawaraban) was also very useful. It was distributed and posted in common spaces.
in temporary housing, sharing the outcome to non-participants.

(3) Challenges for the future

The author strongly agrees with many other experts, that we need to have exhaustive discussions on the rights and wrongs of the Land Readjustment Project as a method for the reconstruction. However, it is also an important challenge to find more adaptable ways of operation for existing methods, because it requires time to newly establish an alternative method for urban planning. This paper aims to contribute to the decision making. Especially for municipalities like Otsuchi Town, where smaller settlements and smaller communities (Aza) within the municipality exist, arrangement for the discussion sessions is an important point. A lot of rural areas in Japan have a problem with cadastral data. Its deficiency constitutes barriers to implementation of the existing urban planning method including Land Readjustment Project, thus cadastral promotion is also needed as preparation for the reconstruction. Japanese local regions are also suffering from a shortage of technical staff for actual project promotion. The sending of support staff, normally with limited terms of three months to one year, has also problems in terms of continuity in project planning and communication with local residents. In the case of Otsuchi Town, each academic expert contributed more or less successfully to the continuity as a coordinator for district under his charge.

(4) Reconstruction Projects for Machikata District, Otsuchi Town since April 2014

While this paper focuses on the Machikata Machizukuri WS in 2013, the workshop itself has been continued after that, too, and gives meaningful occasion for the discussion with unit of neighborhood community on the decision of spatial planning and design of public spaces such as streets and parks. Workshop content in subsequent years must also be thought-provoking for creation of the new method of local planning and spatial design. However, there are several issues to be discussed and coordinated at the writing of this paper thus the argument should be saved for another occasion. The method for realization of spatial design as the result of discussion in the unit of neighborhood community in more comprehensive design for district and town should also be reported, along with introduction of efforts to promote the Design Note in another occasion.

ACKNOWLEDGMENTS: Machizukuri Reconstruction in Machikata District has been developed and carried out by the residents, administrative staff of the Town, consultants, and academic experts. This paper reports a part of the whole process from the viewpoint of the author who takes all the responsibilities regarding the contents within the report. I would like to express my sincere gratitude to those people who provided information during the busy days of reconstruction work. I hope every effort for the reconstruction project comes to fruition of the attractive Town Otsuchi as soon as possible.

NOTES

[1] Otsuchi City Planning Projects Reconstruction Land Readjustment Project in Machikata District (Otsuchi Town, Project Area: 30.0ha, Project Period: 2012-2022 (Including the liquidation period 5 years), Project cost: 15.96 billion yen, Planned population: 2,100 :data after the 5th change of plan)
[2] For example, there is some studies on workshops of the Machizukuri Reconstruction from the Great East Japan Earthquake[12].
[3] For details of Machizukuri Reconstruction in Otsuchi Town until 2012, refer to Nakai(2013)[13].
[4] The author processed the map of flooded area published by the Geospatial Information Authority of Japan in December, 2011.
[5] This picture of Oshachi is provided by the results of the support activities for Otsuchi Town by Urban Design Lab, Department of Urban Engineering University of Tokyo.
[6] For details on artesian wells in Machikata district, refer to Fukushima(2013)[11].
[7] Table 2 is made by author based on the material provided by the Otsuchi Town.
[8] The author processed the map of the Basic Reconstruction Plan of Machikata district[15].
[9] The author processed the document of Machikata Roundtable (November, 2012)
[10] For details on the Otsuchi Design Council, refer to Nakai(2014)[14].
[11] The Otsuchi Design Conference establishment guidelines (March, 2013)
[12] The author processed the map of location of temporary housing in Otsuchi Town.
[13] Table 3 by author (data of the population before the disaster[17], Names of community organizations: hearing survey)
[14] Figure above: From Sanhe Dochu Map (Keep in the Central Community Center of Morioka City). Figure below: The author processed the aerial photograph of "Machikata" published by the Geospatial Information Authority of Japan in 1948.
[15] The author processed the 1st plan (September, 2012) of the Reconstruction Land Readjustment of Machikata.
[16] The author processed the 2nd plan (March, 2014) of the Reconstruction Land Readjustment of Machikata.
[17] From a report of Suchirocho and Kamicho/Honcho Workshop, freepapers (Kawaraban), “Design Note for Otsuchi Town”, and the proceedings of the 167th City Planning Council of Iwate Prefecture (February 14, 2014), the statement for reasons for changes in the Reconstruction Land Readjustment (March, 2014)
[18] Figure below: The author processed the figure of boundary dispute between Otsuchi and Kozuchi Village[19].
[19] In the 167th City Planning Council of Iwate Prefecture, change in prefectural road width was passed smoothly. In addition, during the discussion of other city projects, the council cites the case of this prefectural road changed as a
good example of opinion of the community is reflected in the planning. From the Report of Sehirocho Workshop and the statement for reasons for changes in the Reconstruction Land Readjustment (March, 2014). Designed by Kita, Kiuchi, Tanaka, Nakai, and the author.

[21] from “Design Note for Otsuchi Town”.

[22] Figure middle: The author processed the figure of “the correspondence to the existing artesian well” Machikata CMr. Figure below: the picture of the image model made by Landscape and Civic Design Lab, University of Tokyo, and the image of Park No. 3 from “Design Note for Otsuchi Town”. Designed by Kita, Kiuchi, Tanaka, and the author.

[23] An excerpt of “Design Note for Otsuchi Town” (March, 2014). “Design Note for Machikata” was drawn by Token C. E. E. Consultants Co., Ltd and the author.

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2) Chino, T. and Abe, K.: Ofunato city disaster reconstruction plan development and related community participation, Annual Report of Sociology, No. 42, 2013 (in Japanese).

3) Nakai, Y.: Reconstruction plan of Otsuchi town, Kamihei county, Iwate prefecture, Journal of JSCE, Vol. 1, pp. 242-250, 2013.

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5) Nii, A.: Machizukuri reconstruction in Kirikiri district, Otsuchi town, Kamihei country, Iwate prefecture, Conference for Architecture of Infrastructure and Environment, Vol. 11, pp. 131-138, 2015 (in Japanese).

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7) Otsuchi Town, Iwate Prefecture: The Reconstruction Plan of Otsuchi town after the Great East Japan Earthquake and Tsunami: The Basic Plan, pp. 4-5, December 2011.

8) From the website of Otsuchi town (http://www.town.otsuchi.iwate.jp/)

9) Otsuchi Town 8), op. cit. p. 5

10) Otsuchi Town 8), op. cit. p. 61

11) Fukushima, H. and Asai, J.: Description of springs and life histories –Study on Machikata district, Otsuchi town, Kamihei country, Iwate prefecture-, Conference for Architecture of Infrastructure and Environment, Vol. 9, pp. 1-4, 2013 (in Japanese).

12) Otsuchi Town 7), op. cit. p. 61

13) Otsuchi Town 7), op. cit. p. 61

14) Nakai, Y.: The spatial planning of each districts of the reconstruction project of Otsuchi town - attempt of Otsuchi design conference-, Conference for Architecture of Infrastructure and Environment, Vol. 10, pp. 290-292, 2014 (in Japanese).

15) The Proceedings of the 163th City Planning Council of Iwate Prefecture (February 12, 2013), p. 30

16) The Proceedings of the 163th City Planning Council of Iwate Prefecture (February 12, 2013), pp. 26-30

17) Otsuchi Town 7), op. cit. pp. 4-5

18) Otsuchi Town: The Report of Suehirocho Workshop, pp. 1-9

19) Otsuchi Town 18), op. cit

20) Otsuchi Town 18), op. cit. pp. 1-15

21) The free newspaper (Kawaraban) of 5th session of Suehirocho-Omachi WS.

22) Otsuchi Town: The Report of Kamicho/Honcho WS

23) “On the direction of Machizukuri of Kamicho/Honcho - Draft of the recommendations from the workshop to the town by Coordinator” 4th session, Kamicho/Honcho WS.

24) Otsuchi Fishery History, p. 278

25) The proceedings of the 167th City Planning Council of Iwate Prefecture (February 14, 2014)

26) Nii 5), op. cit. p. 138

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