REGENERATION
from the East Japan Great Earthquake

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Gratitude and Contents

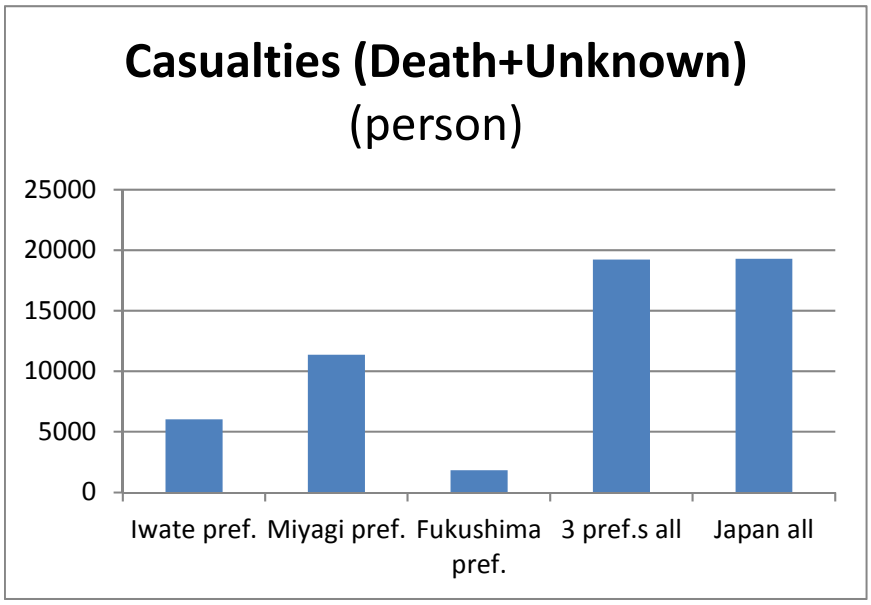
- Thanks for the help and the sympathy from overseas to the stricken areas of the East Japan Great Earthquake.

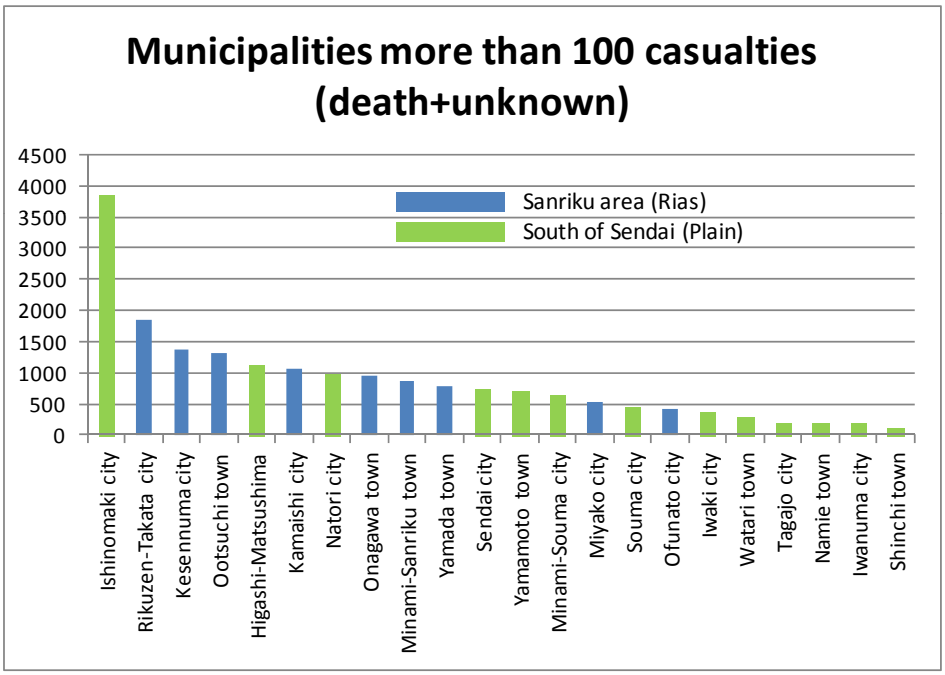
(table of contents)

1. Disaster
2. Recovery activities headed by governments
3. Lessons of the disaster and principal direction of recovery plans
4. The present disaster as verification of the past disaster prevention plans
5. Economic regeneration through Machizukuri company

1. What was the East Japan Great Disaster like?

- Compound Disaster –Earthquagke, Tunami and Nuclear Power Generation Accident
- Wide Areas Stricken
  - Stricken Areas: Death casualty in 11 prefectures and heavily in 3 prefectures and about 40 local municipalities
  - Damage: More than 19 thousand people killed, more than 120 buildings completely broken, and the amount of damage reached 16.9 trillion yen, 1.7 times as much as that of Hanshin/Awaji great Earthquake in 1995
- Repeated Tsunami –Jogan Tunami(869), Keicho Tunami(1611), Meiji Sanriku Tsunami(1896), Shouwa Sanriku Tsunami(1933), Chile(1960), East Japan(2011)
- Disaster in Depopulated Areas – The population in Affected Areas, which is Pacific Coastal areas of North-East Japan, has been losing its population by 5% every 5 years





Amount of Damage

- The amount of damage in the Great East Japan Earthquake is estimated 16.9 trillion yen (240 billion US$) by the government.
  - Buildings 10.4 trillion yen
  - Life lines 1.3 trillion yen
  - Social infrastructure 2.2 trillion yen
  - Agriculture, forestry and fishery 1.9 trillion yen

Tsunamis hit Sanriku-area

Meiji Sanriku Earthquake Tsunami, 1896	**At 19:32 , June 15th. Mw 8.2. Seismic intensity was not strong. The first tsunami was hit 30 minutes later. 38.2m high at Ryori Bay. Death 21.9 thousands.**
Showa Sanriku Earthquake Tsunami, 1933	**At 3:30, March 3rd. Mw8.1. Seismic intensity was about 5. Death 3.5 thousands. The most serious casualties were in taro Village, where 763 people were killed.**
Chile Earthquake Tsunami, 1960	**At 15:11, May 22nd in Chile. Mw 9.5. Tsunami came to Sanriku early in the morning, May 24th. 142people were killed.**
The Great East Japan earthquake Tsunami,2011	**At 14:46, March 11th. Mw 9.0. the strongest seismic intensity was 7.0. Death 20 thousands.**

2. Government Actions for Regeneration

Budgets:

1st supplementary budget in May, 2011 was about 4 trillion yen.
2nd supplementary budget in July, 2011 was about 2 trillion yen.
3rd supplementary budget in November, 2011 was about 12 trillion yen.

Organization:

Reconstruction Headquarters was formed in June, headed by PM.
Reconstruction Agency was established in February, 2012, with three branch offices in Iwate, Miyagi and Fukushima prefectures.

Reconstruction programs:

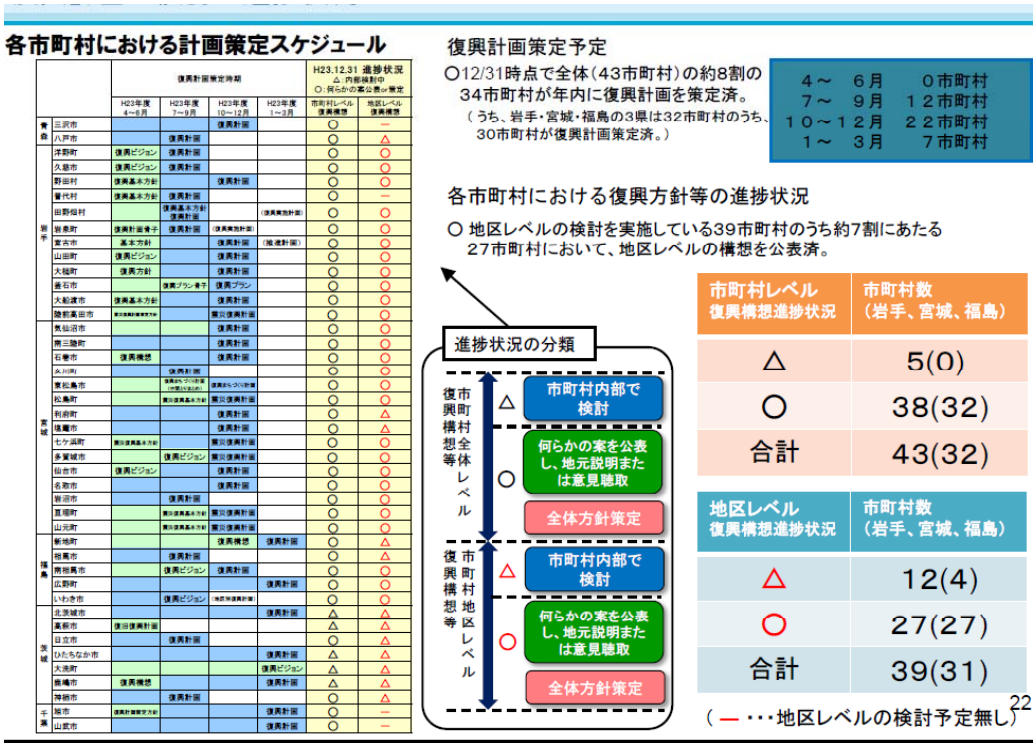
Basic Act was enacted in June(復興基本法）
Reconstruction Special Area Act in December(復興特区法）
Tsunami Disaster Prevention Area Construction Act in December（津波防災地域づくり法）

Recontruction Plans by Stricken Prefectural Governments

- Tsunami Disaster Reconstruction Plan of Iwate Prefecture, August 11th
- Disaster Reconstruction Plan of Miyagi Prefecture, August 26th
- Fukushima Reconstruction Plan, December 28th

Reconstruction Plans of Stricken Areas

All the local municipalities in coastal area of East Japan, more than 40 local municipalities, made their recovery plans till the end 2011 fiscal year.



各市町村における計画策定スケジュール

復興計画策定予定

○12/31時点で全体（43市町村）の約8割の34市町村が年内に復興計画を策定済。

（うち、岩手・宮城・福島の3県は32市町村のうち、30市町村が復興計画策定済。）

4～6月	0市町村
7～9月	12市町村
10～12月	22市町村
1～3月	7市町村

各市町村における復興方針等の進捗状況

○ 地区レベルの検討を実施している39市町村のうち約7割にあたる27市町村において、地区レベルの構想を公表。

進捗状況の分類

復興構想等 市町村全体レベル
- △ 市町村内部で検討
- ○ 何らかの案を公表し、地元説明または意見聴取
- 全体方針策定

復興構想等 市町村地区レベル
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市町村レベル 復興構想進捗状況	市町村数（岩手、宮城、福島）
△	5(0)
○	38(32)
合計	43(32)

地区レベル 復興構想進捗状況	市町村数（岩手、宮城、福島）
△	12(4)
○	27(27)
合計	39(31)

（— ･･･地区レベルの検討予定無し）

Present and Future Situation of Stricken Areas

- Rubble was put away in stricken areas, but reconstruction has not yet started in full scale.
- Planning and local agreement building is tried for reconstructing communities in safer high ground not to repeat similar damage.
- Since it takes several years for the completion of reconstruction, it is worried whether local employment and population can be maintained.
- In the stricken areas by collapsed Nuclear Power Generation Plans, no more major emission of radioactive materials observed since April, 2011. Government is planning to rezoning Warning Area and Planned Evacuation Area into Long-term Difficult-to-Return Area(More than 100 mSv of Annual Radiation Exposure), Prioritized Decontamination Zone and Decontamination and Possible to Return Area. It is worried that many people, especially younger generation, may not come back their home towns affected by radiation.
- All the nuclear power plants in Japan will stop working in April this year for trouble or regular check. The Government says there will be no shortage of electricity, but the future electricity supply will be un clear.

3. Lessons from the disaster

- Disasters can be beyond assumption.(想定を超える災害の可能性）
- From disaster prevention planning to disaster reduction planning. (防災計画から減災計画へ）
  - Disasters cannot be prevented by man-made facilities, such as water breaks or sea walls.
  - The combination of disaster prevention facilities, town and village planning and evacuation facilities is most important
  - People's life must be saved, and the properties are protected as much as possible.
- The disaster reduction planning should be applied to the recovery plans of damaged areas and the preventive plans of areas where large scale natural disasters are expected.

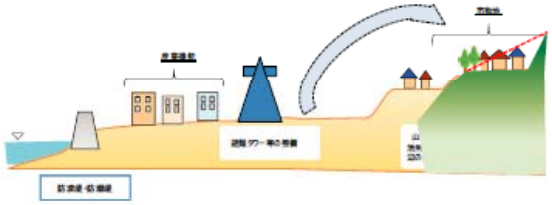
Basic Policies for Reconstruction

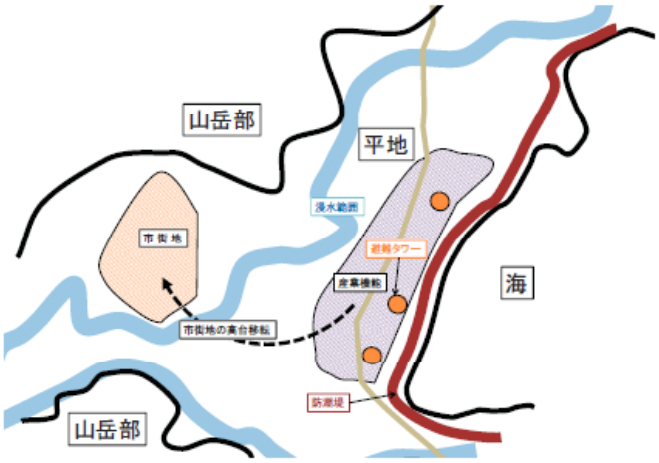
- **Reconstructing safe towns at safe places.**
- **Promoting the socio-economic reconstruction, making the reconstruction of regional economy lead physical reconstruction**
- **Giving first priority to participation and initiatives of local people**
- **Reconstruction within limited time, about five years.**

Safe, secure, beautiful, comfortable and environmentally friendly communities

- Avoid reconstruction on the original places, and stimulate relocation to higher places
- If the reconstruction at the original place is unavoidable, artificial deck should be provided
- Tsunami breakwater and seawall: their effects must be proved for judging how large they are if they are reconstructed.
- Evacuation facilities should be clearly provided and evacuation routes
- Emergency evacuation areas are served at different altitude so that people can evacuate from safe places ato safer places.
- The plans of the reconstructed towns must be designed in consideration with local conditions.
- Environmentally friendly design and low carbon cities.

Communities should be moved to higher ground so that Tsunami does not reach. Tsunami Evacuation buildings or man-made deck should be built at lower ground where business and commercial activities may be located.



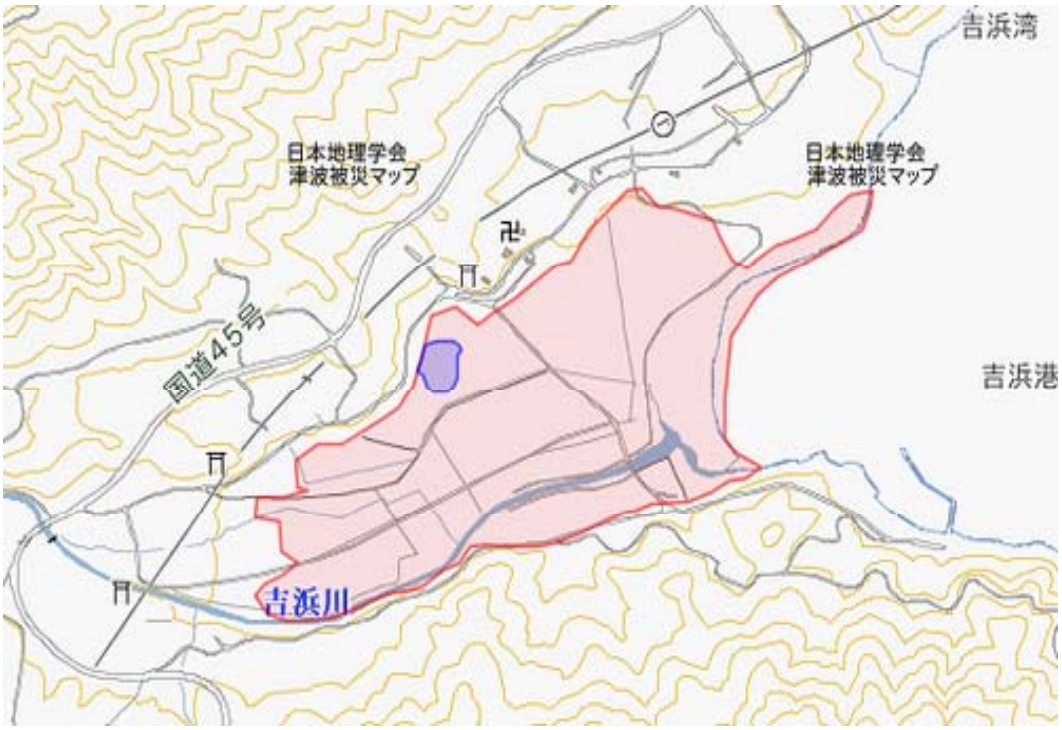


4. verification of the past disaster prevention plans

Ex. 1 Sanriku-cho Yoshihama

Ofunato City, Iwate Prefecture, before the disaster

Yoshihama
Tsunami Flooding areas in 2011
Pink color: flooding areas, Purple color: houses were damaged



Yoshihama, after the disaster
Damage was limited.

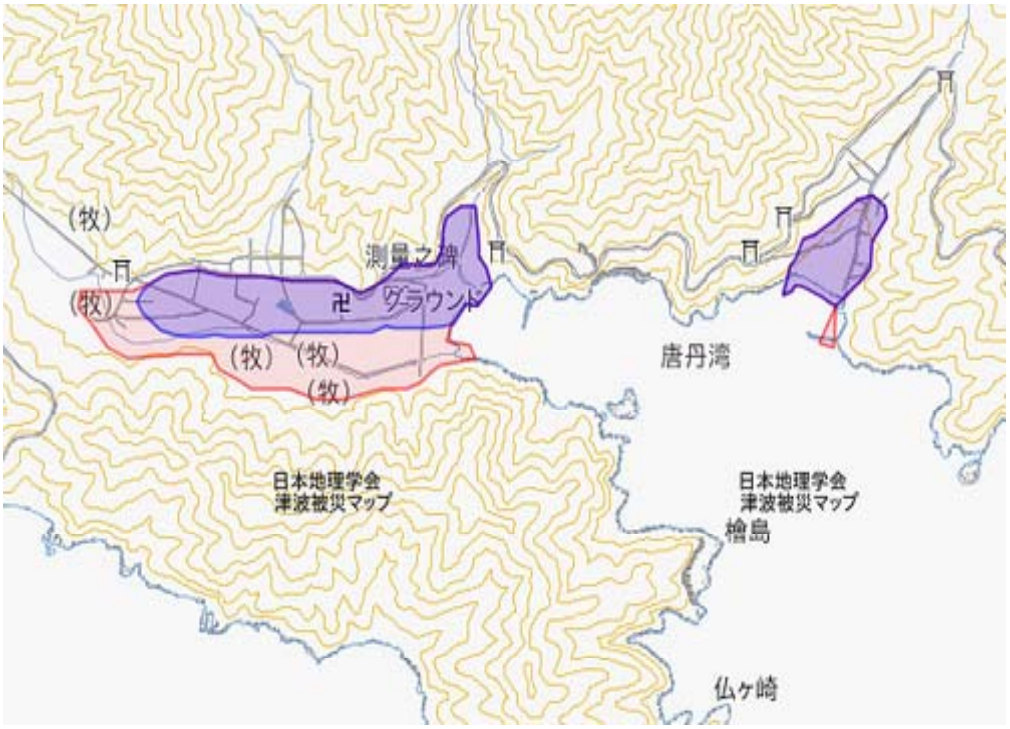
The community of Yoshihama, at high ground

Broken seawall in Yoshihama

Ex.2 Touni-hongo, Kamaishi City, before the disaster.

Touni-hongo, Kamaishi City

Pink color: flooding areas, Purple color: houses were damaged

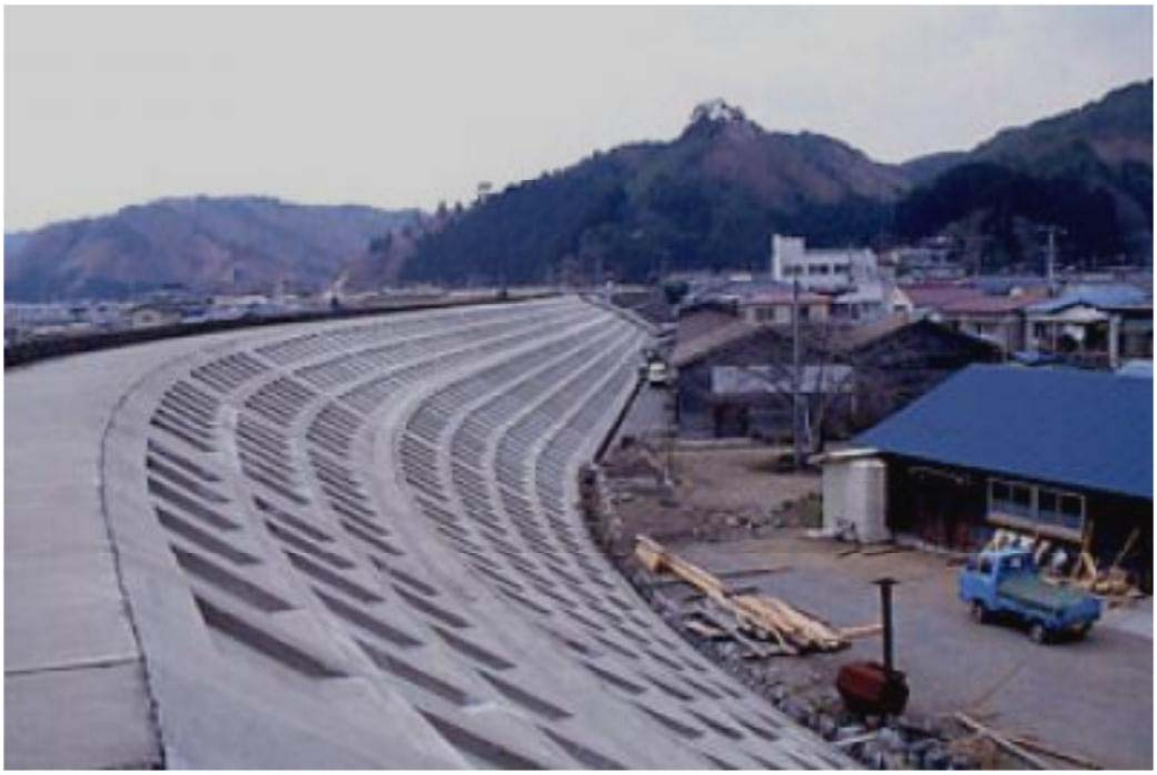


Toni-hongo, after the disaster

Toni-Hongo, seawall

Ex.3 Taro, Miyako City, Iwate Prefecture before the disaster

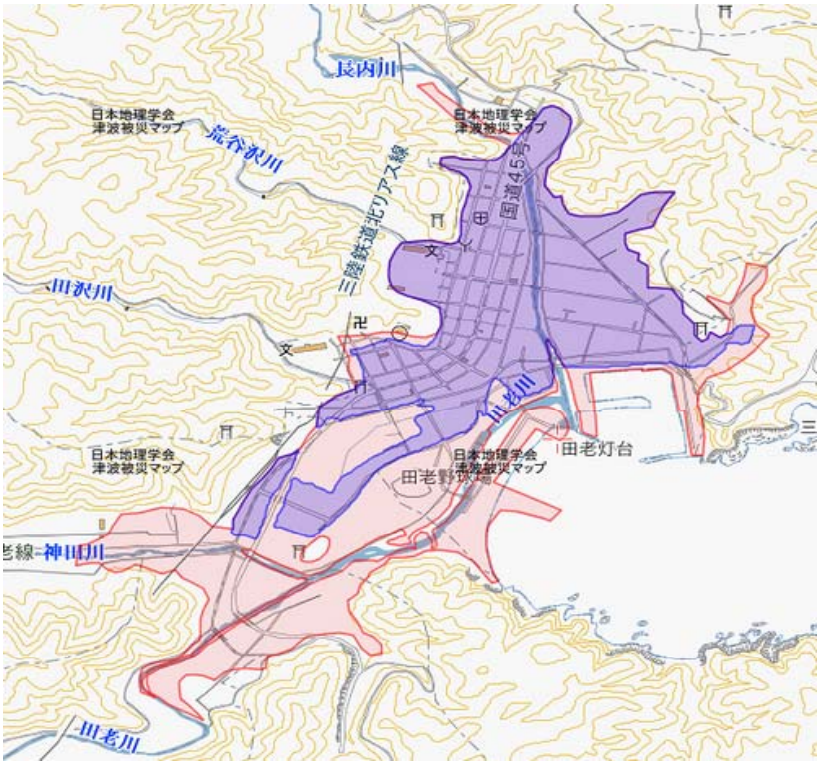
Toro, Seawall



Taro, 10 m high Seawall

Taro

Pink color: flooding areas, Purple color: houses were damaged



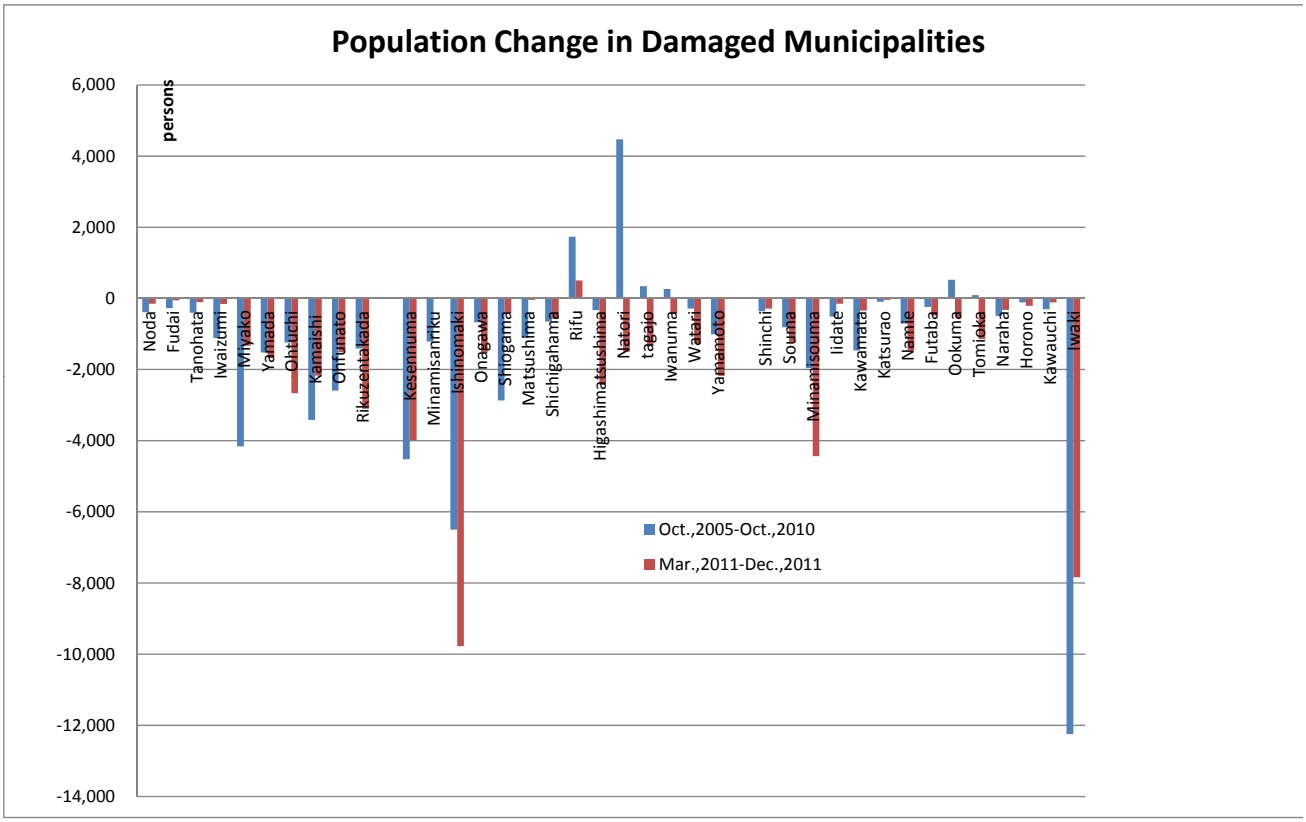
Taro, 2011, after the disaster

Latest issues concerning Machidukuri

- Relocation to higher grounds in various ways

  housing : new development of higher grounds, man-made deck in areas which might be flooded in case of huge tsunami, upper floors of medium or high rise building

  workplaces: requirements for construction in areas which might be flooded, such as anti-tsunami strength, installation of major equipment at safer floors, evacuation buildings or tower located nearby
- Raising of subsidence as public works
- Extensive government support for relocation to higher grounds: Reduction of local municipalities portion of expenditure of the relocation projects
- Support for private housing reconstruction
- Arrangement of public housing



The damaged areas lost 56 thousand people totally, including death casualties, between March 1st and December 31st, 2011, whereas they had lost 47 thousand people between October1st, 2005 and October 1st, 2010.

5. Machidukuri Company for Regeneration form the Disaster

- Symbol of local initiative・・Public Private Partnership, setting-up new industries making use of public money for reconstruction

Restoration Stage
- Debris disposal
- Supporting life in shelters and temporary housing
- Planning for safe reconstruction and its implementation
- Reconstruction of infrastructure and production facilities

Reconstruction
- Reconstruction of local services, including health care and welfare
- Area specialties sales and commercial activities revitalization

Creative reconstruction
- Local energy supply
- Tourist promotion
- Revitalization of central districts
- Promoting sixth industrialization of marine products industry: fishing, marine product processing industry, marine food sales, tourism and restaurants

Machidukuri Company for Reconstruction

- Securing able persons

  Dispatch of able persons by public sector

  Public Private Partnership in affected areas

- Securing reconstruction funds

  Government reconstruction budget for hard projects

  Low-rate loan, measures to reduce double loan debts

- Securing knowledge

  Supporting system for disseminating specialized knowledge and institutional information

District Energy Supply

- Renewable energy: Bio-mass, wind power, solar energy
- Infrastructure arrangement when new housing estate is reconstructed.
- Independent energy firm which supply energy inside or outside the community. Making full use of Feed-in Tariff system
- Introducing smart energy system which combine renewable power generation and storage battery.
- New enterprises can operate the generation and supply system with local communities.

Revitalization of Central District

- Central commercial districts were severely damaged and should be reconstructed on the same site where the centrality is high.
- Reconstruction should accompany functional reorganization, including new entry into commercial activities.
- Various projects should be done for safer and more comfortable central districts.