Disaster Management: Lesson Learned from Japan

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Abstract— *Disaster management in Japan has been divided into 2 categories which are Human Made Disaster and Natural Disaster. Human Made Disaster is resulting from an atomic bomb in Nagasaki while Natural Disaster is focusing on earthquake, tsunami, Fukushima power plant disaster (3/11 disaster) Kobe earthquake(Hanshin-Awaji earthquake). The objective is to study Capital Role in Japan Disaster Management.*

The research is based on qualitative method and the findings are as followed:

1. *Disaster Management in Japan has been learned by Socialization System.*
   Socialization System has been processed through 6 media: (a) School (b) Museum or Disaster Learning Center (c) Volunteer Groups (d) Local Community (e) Local Government (f) University or Research Institute. Each medium has implemented Socialization systems into their learning process, preparing the community for future risks.
2. *Japan has Preparedness Culture in Disaster Management. Disaster Management Preparedness Culture in Japan incorporates (a) Self Responsibility (b) Social Responsibility (c)Disaster preparedness (d) Self and social trust (e) Warning strategies (f) Dedication*
3. *Disaster Management in Japan, The various dimensions Capital have important role.*
   The capital in this category has been divided into: a) Physical Capital b) Social Capital c) Cultural Capital e) Human Capital f) Financial Capital

In conclusion, the prevention of a natural disaster, the relief of its effect, the preparedness and restoration, as well as development, will result in strengthening experiences and creating learning knowledge for future disaster management. Therefore, a prior education process will also provide a system of Adjustment, Assessment and Development, in order to confront an oncoming disaster. Thus, each catastrophe formulates and develops a Socialization system such as the disaster management dynamic in Japan, which is relevant to Thailand in cultural-based form. In consequence, the system can be simultaneously implemented in order to serve Thailand or in GMS country as well.

Keywords— **Disaster management, social capital**

1. INTRODUCTION

"Hanshin-Awaji disaster management in Hyogo has taught us that the important of disaster preparedness is not how to prevent a disaster from happening, but preparedness for an emergency situation and rescue town members, plus the rescuers, who are not government officers or police. However, they are the neighbors and people who live next to each other. The reason is, with this type of situation, we can't fully depend on the government. We have to depend on ourselves. Disaster has caused human to form a group and assist group members. A community with high social interaction will reflect in a less number of death tolls as they know the neighbors' house plan such as bedroom location and other living spaces. They spend short time to mark an exact area to search for survivors. On the other hand, a community with low social interaction will result in a high number of death tolls as they have no knowledge regarding the neighbors. As town members are forming groups in Japanese society, they are creating a community with social reciprocity causing a stronger interaction among members. The previous context has been mentioned in "UTOPIA in Disaster" that a characteristic of collaboration in Japan during the time of disaster is one unique identity of its people."

The above saying is a study conclusion from senior researchers, Kazumori and Nakajima of Hyogo Earthquake Memorial 21st Century Research Institution, and has resulted 2 following aspects:

1. Disaster is unavoidable and meant to happen to mankind. Therefore, we, as every country, should prepare for the emergency once the disaster occurs.
2. Neighbors, those who live together in the community, are in a higher potential than government officers in rescuing town members and victims. Thus, a community with strong positive relationship and generosity is a community with Social Capital and Cultural Capital, the two important capitals to cope with disaster.

The author believes that Japanese communities are in

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high level of Social Capital and Cultural Capital; the two important factors for Input, Process, and Output in Disaster Management.

This paper is going use Japan experiences for applying in Thailand even though there are differences between Thai and Japanese societies, disaster management throughout socialization can be implemented in term of cross cultural in Thailand and Asian country.

2. JAPAN DISASTER MANAGEMENT CAPITALS

Moreover, an increasing knowledge in Japan from experiences of disaster encounter has prepared the country for future risk and outgrown the country in using their capitals for Adjustment, Assessment, and Development. As follows, important capitals in disaster management are commonly developed in order to prepare progressively.

This article is partially based on a research "Knowledge Synthesis of Socialization in Japan on Crisis Situation". The author has studied 2 categories of disasters which are Human Made and Natural. Samples are commonly known as an atomic bomb in Nagasaki, Hanshin-Awaji Earthquake, tsunami earthquakes, and Fukushima power plant explosive disaster or 3/11. Disaster Management has been defined as the process of prevention, relief, preparation for emergency, recovery, and development of a study based on disaster management knowledge from various correspondents which are private own companies, public benefit organizations, local governments, education institutes, and other related government authorities.

The result of the study shows that important factors in Japanese disaster management are variables. Socialization is a crucial part which has been risen from socialization agents such as school, government authority, community, or individual. The transmission of disaster management knowledge to local practice has built the country to a well-planned society with a culture of disaster confrontation. Meanwhile, social connection in Japan has been strongly constructed in forms of local group, public benefit organization, or volunteering team, in order to react promptly before the arrival of government aids.

The above correspondents act as a community center to relief town members and victims; whereas, local governments and aids funding are aimed for area development and recovery in order to retrieve a pre-disaster living condition.

City planning, correlated with buildings and houses, has been considered as another crucial factor legally required for emergency case such as fire exit, emergency alarm, and vibration control construction.

The above factors are considered to be Japan disaster management capitals, divided into 2 types as followed:

1. Software: cultural capital and mankind capital
2. Hardware: physical capital and social capital

The author has divided 'capital' into 5 categories:

1. Physical Capital
2. Social Capital
3. Cultural Capital
4. Human Capital
5. Financial Capital

2.1 Physical Capital

Physical capital is defined as structures for human basic needs and important factors for human survival. City planning and urban renewal simply reveal city location, residence area, commute safety control, city planning for crisis situation like fire, earthquake and tsunami, building houses according to city planning, piping for gas and water, tidal wave protection wall, tidal wave emergency exit, etc.

We can assume that Japan is a well-planned country with physical capital for crisis and disaster as shown in 1946. After Nankai earthquake, the government has launched Disaster Relief Act. In 1959, the government issued soil protection and water level for flood indicator legislation, followed by coping with disaster legislation in 1961. After Fukai earthquake in 1984, the government has launched Flood Control Act, and Housing Construction and Safety Standard Act. Japan has controlled and developed more efficient basic needs after each disaster such as safer system for housing and commute constructions and a higher tidal wave protection wall.

Otsuchi, a town in Iwate, is an area of the study where a tidal wave protection wall has been built along the coast. However, the wall was constructed to prevent a 10-meter tidal wave, not a 38-meter in March 2011. Death toll rose to 800 and more without an emergency escape plan set by the community. The plan was to gather at community center, located in a higher landscape, once the town was under attack. Nowadays, town members refuse to return to their homes and remain at the temporary shelter provided by the government. They also expect the government to provide an area where they can build a community.

Residents of Kobe prefecture have experienced an earthquake in 1995 and were designated for Disaster Recovery and Rehabilitation and Reconstruction Plans. The objective of the plans is "to build a city with disaster management system where town members undoubtedly resided."

In conclusion of Japan Recovery Plan, some important aspects have been identified as followed:

1. Recovery period and town members capability for disaster preparedness are essential, especially piping system which provides basic needs for survival.

2. Daily accurate information is provided to relief anxiety and to reduce stress.

3. Building demolition fund must be promptly provided in order to deliver an adequate living atmosphere. Opinions and reactions from town

members and victims are crucial at this point.

4. Town member and victims must participate in a recovery program concerning city planning and renewal the area from earthquake effects.

5. Recent study has found that the majority of victims are senior citizens and homeless with low-income. Hence, housing construction for these particular citizens must be size-related with communication device installation in order to maintain social interaction and other related activities. Town center or plaza is provided as a meeting point in need of life control and security.

In addition to Japan Recovery Plan conclusion, members of Kobe prefecture also provide the knowledge of building vibration control system to others. Kobe museum has provided learning area for housing and building construction under vibration control with volunteers for demonstration. Besides housing construction, a part of physical capital for human basic needs, the ability to assess updated information is crucial. Once the disaster occurs, Japanese media automatically broadcast news concerning recent situation. The aim is to contribute immediate facts and details in order to provide lp and support.

In local area, communities have a shortwave radio set to communicate and exchange updated details regarding their relatives, number of survivors and death toll, etc. As the town members gain concrete development of physical capital, the number of those who suffer is certainly reduced.

2.2 Social Capital

"Social capital is a result of social structure and social process. In reverse order, social structure and social process are implied to be the results of social capital." Relation diagram is shown below:
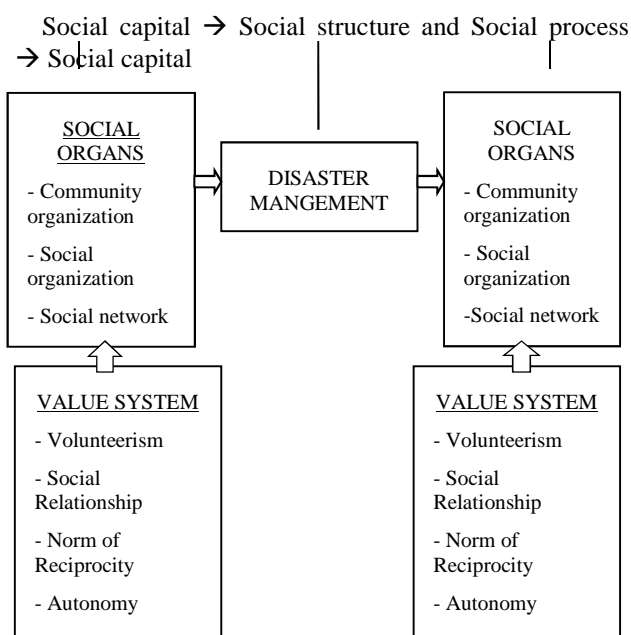
Social capital → Social structure and Social process → Social capital

Fig. 1. Social capital in disaster management.

In disaster management context, community organization, social organization, social network, volunteerism, social relationship, social reciprocity and self determination or autonomous skill are the outputs of the process. In synchrony, social capital is a community resource in disaster management practice.

(1) Community organization

Community organization occurs in both local and urban. The organization is categorized as a non-profit organization and represents in a form of resident association, local welfare foundation, volunteer group, etc. Organization members are town members and victims only, or town members and victims together with rescue team.

The study of Hyogo Earthquake Memorial 21st Century Research Institution shows that, in Mano district, a community development organization is constructed and called "Community Development Promotion Organization in Mano District". Members of the organization consist of town residents who encountered an earthquake in 1995. They have been maintaining the goal of pollution prevention since 1960. Community members gathered at the primary school on the first day of the quake. The plan of borrowing heavy tools from manufacturers and companies was introduced and saving 7 lives.

After 3-day, the residents generated the task, helped rescue team providing food, and excavated other town members to safe zone.

Once the temporary shelter was completely closed, Mano Community Center for Development and Recovery was founded. A contribute work of the center was to reconstruct residence area with government support in both permanent and temporary for public. Representatives were required for reconstruction plan and project advisors, coordinated with out-town volunteers and professionals who were in support prior the quake.

Community organization is common in a form of:

*   *Resident Association*

Resident Association is partially resulted from an interaction process among town members and victims who adjusted themselves to new rules and regulations at temporary shelter, provided by government in Kobe.
Residents participate in activities and rules concerning child, senior, handicap, and single survivor care programs. The arrangement of living area is focused on building positive responsiveness such as confidence, happiness, and friendliness. Land for agriculture is provided in order to create long term self reliance which are housing relocation, career path set up, government negotiation for basic needs , etc. Group interactions have been developed to a community organization which is called Resident Association. Once the group is stable and concrete with number of members, particular roles are set as followed: (1) to promote temporary shelter services for an individual who requires special care for health and medical treatment, including an efficient local

welfare (2) to hold a meeting between local welfare agents and association members (3) to spread an adequate knowledge to survivors, town members and victims (4) to provide center where members can interact (5) to search for more opportunities in funding and development.

- *Local Welfare Foundation*

It was founded after Hanshin-Awaji earthquake with the mission of responding to problems and basic needs. The group was corporate by Resident Association and senior members exchanging opinions, receiving assistance from out-town correspondent, and seeking government social welfare. The request in social welfare concerns housing reconstruction and relocation, career path supply which leads to self reliance. Within 1997 funding, government provided social welfare support in community development and recovery activities which are Disaster Restoration Public Housing Community Plaza, care programs for children welfare, local care and visitor programs. Related projects include welcoming ceremony, tea party, house rules manual, board meeting, eyes-on project, etc. Community hall is a meeting point for miscellaneous task and discussion.

- *Volunteer Group*

Volunteer group is a community organization formed by volunteers in all aspects and run as Volunteer Center. Activities are varied and depended on recovery period. First session implicates medical treatment and nursing, public utilities and supplies, basic tools for survival. Second session focuses on post disaster period of survivors, town members and victims to maintain their daily life. Physical support and housing reconstruction are provided. Volunteer work runs under government authority attentively concerns on the number of the group; therefore, volunteer center has been organized by the government. After Hanshin-Awaji earthquake, local authorities established Volunteer Information System as a data center to cope with volunteer financial support activities, connecting city council and district council in Hyogo.

Later, volunteer group has been developed to a non-profit organization regarding Non-Profit Organization Law in 1998. Japanese citizens willing to participate have caused conflict among the group and the government. The conflict is obviously shown in the study of disaster management consequences in Otsuchi.

- *Disaster Relief Network or Magokoro Net*

It is considered as a form of Community Organization combining members among town members, victims, and community development and social work scholars in Otsuchi, Iwate. This group of networking has been founded after the tsunami and earthquake and responsible as a center of temporary shelter. Working period relies on post disaster development plan. First session of the plan, the network working area is collecting unidentified bodies for further cremation. Emergency support center, National Defense zone providing, disaster relief and problem hearings are also

parts of the network responsibilities and the network members are working both day and night shifts. Their task provides basic needs to relief anxiety and nervousness among members. They also act as a group of representatives requesting government support and welfare negotiation for benefit and encourage long term self reliance in members. Bento shop is one of the examples where women and housewives can earn regular income. Other examples of their contribute work are provided as farming area, senior residents activity, and career path opportunity. The objective of the network is to recover community members focusing on long term self reliance.

- *Nagasaki Peace Promotion Association*

The association is a civil society organization consisting of members with high awareness in wars, nuclear weapon, atomic bomb, and the effects. The majority of the members are senior residents who encountered A-bomb in 1945. The aim is to provide knowledge on nuclear weapon and its effects to children and young generations who sign for anti-nuclear weapon memorandum of understanding, incorporated with local government office in many countries, including Thailand. The organization is funded by Nagazaki municipal.

- *Yamagata Association of Mother Evacuation*

The organization consists of 'mothers' who, after Fukushima nuclear plant radiation leak, recognized disorders and symptoms in their children like facial bleeding. They decided to evacuate to a safe zone with the children and communicate with others by using Facebook. Later, they were set as an 'organization' assisting each other, exchanging children cloths, and sending requests to government.

(2) Social Organization

Social organization is social capital of Japanese people which resulted from international collaboration. A study on the output of disaster management in Kobe has created various Kobe social organizations in order to study, extend, and plan disaster management. These organizations are:

- *Disaster Reduction and Human Renovation Institution: DRI*

DRI is a government social organization, responsible for 6 tasks which are (1) to hold an exhibition regarding disaster and the effects at city museum (2) to conduct an action research for disaster reduction and to increase team profession (3) to provide basic needs for town members and victims by performing as a command center (4) to operate as a center for networking, exchanging information, conducting research and training with ADRC, IRP, UNISDR, OCHA, JICA, etc. (5) to organize a workshop for local government officers and correspondent team members in the country (6) to collect tools and data concerning earthquake in Kobe prefecture.

- *Asian Disaster Reduction Center: ADRC*

The organization is responsible for information exchange and technical collaboration in disaster management among country members, including training courses to increase disaster management team members potential. The 2 courses, which are disaster management and collaboration expansion for recovery and relief, are conducted semiannually.

- *United Nations International Strategy for Disaster Reduction: UNISDR*

It is a United Nation organization for world disaster reduction coordination, one office based in Thailand, and the head office is located in Kobe prefecture. The organization is responsible for corporation among member countries to create disaster reduction and disaster management models.
The objective is to establish a stable development. Kobe based center is aimed to expand Hyogo framework and practice.
DRI, ADRC, and UNISDR are parts of the study in role of disaster management capital. ADRC and UNISDR are funded by international organizations and work relatively.

(3) Social Network

Social network particularly generates vertical and horizontal communication channels which create team work trust and reliance, resulting in a greater approach to other considerable organizations. Post disaster mission is community recovery enforcing private and government sectors to stimulate mutual plan and find a resolution that most benefit the resident. There are 2 categories of social network as followed:

- *Corporation network among civil, community organization, private sectors and government authorities*

An example of the corporation task is public park design combined all related correspondents such as local government, professional landscape designer, town members and victims.

- *Corporation network among local governments*

Disaster management has also created corporation network among local governments in term of assistant perspective. The network is combined 2 local governments in term of towns paring or zone combination once the disaster occurs. This form of network has been founded after Hanshin-Awaji earthquake. Towns pairing sample is among Kobe and Osaka. Once there was an earthquake in Kobe, Osaka municipal took responsibility in assistance and corporation which included mechanic tools, heavy machines, manpower, and funding. One of the pairing regulations is to avoid towns which are connected. The chosen towns for pairing are distance; therefore, once a town has been stormed, the other is still in high potential to assist. Corporation network among two local governments is under comparable framework, but from a

distance.
The following value system is an element of social capital to establish community organization, social organization, and social network in accordance with Robert Putnam's framework; volunteerism, norm of reciprocity, autonomy, and social relationship.

(4) Volunteerism

Volunteerism is human flocking behavior that aims to enter disaster encounter area. Those mentioned among the group are people with their will to help and recover the area and they are considered to be social capital. During post Hanshin-Awaji earthquake, many volunteers gathered to enter the disaster encounter area. Among these, there were people who gained experience in rescue team and 70 percent was without any rescue skill. However, they were in attempt to help town members and recovery plan. Number of volunteers was exceeding and other correspondents were in charge of organizing volunteers' role and task.
Volunteers' role and responsibility are upon post disaster recovery plan. People are motivated to dedicate their power without reward or being paid which is a basic citizen qualification. Moreover, power of the volunteers significantly affects town members and victims as shown in a form of social capital.
A substantial social capital by civil lead develops further solid plan in town policy and civil benefit which have been included in social rules and regulations.
Volunteerism happens in an area of massive disaster, including Thailand. However, volunteerism in Japan is immense and powerful which resulted as a work institution. An act has been launched for volunteers' registration and control, caused a vast establishment of community organizations and social organizations in Japan. The objective in volunteers' registration and control is to clarify precise roles and responsibilities, including limiting of the number of area entries.

(5) Norm of Reciprocity

During post disaster, town members and victims are facing a stage of survival and are forced to help others in recovery program. Reinforce activities are temporary shelter safety and protection, child care, senior and handicap residents care and supportive skill which are collaborative activities among members and families. The result has been focused on a positive relationship among group members and volunteers leading to social capital based on community trust and reliance.

(6) Autonomy

Autonomy or self-determination of town members and victims is social capital. It has been raised from Japan disaster management process. As a country, the government insists in denial of being assisted by other countries with an excuse of language barrier. Community residents and town members repeatedly reject external help and contribution which tends to deconstruction community system and town members' determination process. They generally refuse the distribution of free food as it could affect town shop vendors. Volunteers'

entrance is withheld as some are without skills and causing complications. The objective of disaster management is self-determination in all aspects in order to create community or social relationship.

(7) Social Relationship

Social relationship happens between individuals or among group members. They can be implied to volunteer and volunteer, volunteer and temporary shelter member, town member or victim and social work agent, etc. The relationship concentrates on reaction and behavior during meetings, negotiation sessions, including development and recovery activities among volunteers, housewives and senior residents, temporary shelter members, and particularly in child care. The related activities motivate members to express their opinions, to discuss, and to participate in learning center in order to communicate and react to others. For senior residents, a meeting point is where they hold relaxation discussion that reducing the number of *kodokushi*, a Japanese term for dying alone. From social contacts, group members have created social relation that leads to aggregation, norm, rule and regulation. Robert Putnam (1993) describes that human interactions and civil activities have caused moral cycle which is indeed social capital.

2.3 Cultural Capital

Cultural capital means an approach based on culture in disaster management context. It can be identified as planning culture and lesson-experience-set of knowledge.

(1) Planning culture

Planning culture or a culture based on disaster confrontation is obviously shown in a study on organization plan in order to cope with emergency during disaster. At Bunkyo Gakuin University Girls' High School, a concrete sample shows by their preparation of life survival kit as a planning culture. Life survival kit contains canned food with 5 years expiration for 3-day consumption plan. The budget for life survival kit is provided by parents, government, and the school. It has been spent on other school utilities such as sanitary ware, lamps, torch lights, beddings, etc. Students always carry a booklet which provides important details about school, students, and safe route home in case of emergency.

Planning culture on household level has been initiated by the government in providing emergency box that contains life survival kit. Box size is designed differently and it contains food, water, medicine, torch light, hammer, and other life survival tools. Nowadays, housing construction has a special design to resist vibration from earthquake and with other research and development studies on technology and innovation. Throughout failure in strategic management controlled by government authorities and massive attack of particular disasters, new research and innovation might not be able to implement in order to save lives. One of the examples is a tsunami in Otsuchi, 2011. The wall was built for a record of 10-meter tidal wave while at the time; the wave was 38-meter and caused many lives and destructions. Town and resident areas were demolished. However, town members were agreed to meet at Community Center prior the attack and they were in the safe spot. Some remained home because of the expectation of a small hit and the concern of their properties.

Still, planning culture or a culture based on disaster confrontation runs in support by a set of social norm which are devotion, self-responsibility, social-responsibility, honesty, the important of building learning process and autonomy, etc.

(2) Lesson, experience, and set of disaster management knowledge

After each disaster, Japan generally pays great attention to the establishment of disaster management learning process, experience record for next generations, study and collecting data. These are organized by related sectors and correspondents such as local government, research institution, government authorities, etc. Moreover, a set of knowledge will be transferred and broadcasted to public, young generations, and world population. The evidences are presented as Atomic Bomb Museum, Nagasaki City Nagai Takashi memorial, and Disaster Reduction Museum by Disaster Reduction and Human Renovation institution.

From knowledge and experiences, various aspects have been focused and expanded. Knowledge and experience are the content held in exhibitions for disaster opening area, ceremonies of Memorial Day, learning channel through experience and discussion by volunteers who are town members and victims, town libraries with data and related objects concerning the strikes, conclusions from researchers and Kobe, Hyogo, in disaster management process towards Hanshin-Awaji earthquake. Further aspects of the study include researcher conclusion from Hyogo Earthquake Memorial 21st Century Research Institution engaging 108 researchers, both full time and by project. The conclusion is summed in 3 aspects:

(1) Immediate actions in response to disaster are put rescue team on task, apologize to public, and adjust government authority work plan.

(2) Problem in disaster management process is Japanese law that particular materials are not allowed to operate as they are again town regulation of the autonomous town and the administrative receives orders from line of command only.

(3) Lesson from Hanshin-Awaji is disaster awareness and preparedness is that the first area rescuer is the neighbor, not government officers or police. Therefore, norm of reciprocity must be promoted to create a sustainable community. The research also found that trees have a potential in saving life while flowers have the power of pain and sorrow relief. As suggested, trees and flowers are benefit to town members and victims in their new zone. The important lesson is not disaster protection,

but the relief program.

After 15-year experience of disaster, Kobe prefecture in Hyogo has a summary of their knowledge in various aspects such as lesson from reconstruction and recovery, summary of work procedure in lesson communication and earthquake experience. There are some important lessons which are immediate responses to earthquake such as saving lives, locating temporary shelter, recovering environment and surroundings, and acquiring daily routine. Temporary shelter is basic government funded; however, to be constructed in short term, it requires collaboration from local administration, private and government authorities. Recovery period of town members and victims depends on temporary shelter establishment.

Industrial plant relocation, tax modulation, investment campaign, policy and regulation cancellation are required for industrial recovery in order to propose the area for tourists and traveling site.

Regarding senior residents, it is essential that the living zone must be surrounded by mobilization facilities for daily routine activity. The most valuable lesson form Kobe earthquake is knowledge transfer in order to reinvent practical program and to develop human potential for an upcoming disaster. Knowledge transfer channels include a training session for city governors, mayors, government officers, researchers, volunteers, members, and students in all levels.

2.4 Human Capital

Human capital is a qualification of community members considered by education system, level of self-determination, and morals. Human capital plays an important role in Japan disaster management. A community with an adequate level of social morality in each member is able to handle disaster with self-conscious.

(1) Education System

Education has been applied to all Japanese people; however, the government also provides a study curriculum for disaster management. New set of knowledge in disaster management is the consequence from repeated experiences in disaster management. It is crucial for the country to set an education system for disaster management to its population. For example, all high school students must attend Nagazaki Atomic Bomb Museum or Hiroshima before graduation. In case of long distance, a volunteer is provided to school and conduct a relevant training or seminar. Likewise, students in Kobe must visit Disaster Reduction Museum where they can practice earthquake preparedness which everyone has experienced. Therefore, Japan population is deliberately trained for disaster preparedness and has combined the knowledge to their daily routine. This education system has been generated in all units such as school, education institution, related government sectors and organizations which are museums and research institutes, not only by the government.

(2) Autonomy

An important characteristic of Japanese people in disaster preparedness is self-determination which reflects in various stages as followed:

Individual stage:Japanese children are taught to look after themselves during disaster because an ability of self-rescue leads to the next step of survival.

Community stage : Community members refuse to constantly accept food from volunteers as they believe that external assistance tends to deconstruct community autonomous system and overturn community shop vendors. In case of acceptance, donated items are beneficially considered only as new devices for survival and in a proper amount.

Government stage:The government has limited international contribution and considered one carefully. Only certain number of volunteers can enter disaster area.

(3) Morality

Even though morality is an abstract element and difficult to clearly identify, we can recommend individuals who have been devoting in regards of post disaster recovery. The examples are Dr. Nakai from Nagazaki University who generously treats radioactive patients, a group of senior residents volunteering in raising disaster effects awareness by repeating their stories at Atomic Bomb museum and Disaster Reduction museum, and Uzasawa who decided to encourage community members in maintaining lives after lost. The 3 cases clearly reflect morals in community members in terms of social responsibility, ethics, and social reciprocity. Morals awareness is revealed once the population is obligated in disaster.

Citizens of Japan have been abided with morals and ethics from a family unit through the spirit and teaching of Confucius which are loyalty, honesty, disciplinary and social responsibility. Until present, Feudalism has been crucial for social system, interaction in social stratification, and education structural plan for each hierarchy. Hence, socialization for Japanese family members has been influenced from social foundation in the past, adjusted and transferred to next generations in terms of loyalty, honesty, collaboration, proper manners and rules, frugality, patients, and self-discipline. Communities in Japan are adjusted to various influences, including political system; however, family culture remains. Family has become the first unit in providing a potential human resource through socialization. Moreover, education system, autonomous skill, and morals are essential in acquiring high potential and building pride in disaster preparedness for its population.

2.5 Financial Capital

Financial capital is a resource spending while funding need is highly demanded by town members during post disaster. It can be analyzed by capital resources, opportunities, and approaches.

(1) Financial capital resources

Financial capital is divided into 2 categories: a) Available Stock which are savings in cash, deposit,

jewels, including financial institutions, and b) Regular Inflows of Money which are earning income, pension, payment and others from government or funding.

The government allocates high amount of funds to rescue town members and victims in case of disaster in various forms. Hyogo Phoenix Plan is a 10-year recovery plan and is allocated as followed:

- 17 thousand million yen for emergency during the first session
- 57 thousand million US dollar for primary facilities recovery projects
- 9 thousand million US dollar for loan in recovery plans in housing reconstruction, daily life expenses, habitat compensation, industrial units, education and other extra expenses in restoration of old buildings

Funding allocation policy as supportive budget by the government is from central government and local government in order to increase autonomous skill in locals.

(2) Opportunity for financial capital

Besides cash, financial capital also includes creating an opportunity to make an income or to obtain a job. In Otsuchi, housewives have formed a bento shop. The shop owners are still capable in continuing their business at the provided shelter. After Kobe earthquake, a community plaza was reconstructed and turned to a commercial area.

(3) Financial capital approach

The government provides financial capital approach in many channels which are a community-run social welfare foundation for financial capital management and a recovery and registration work office for town members and victims. It also performs as a data center among local offices.

Financial capital is highly important for post disaster and unexpected situations. It forces projects to be accomplished before schedule.

In conclusion, disaster management relies on 5 capitals which are physical, social, cultural, human, and financial which provide a secure and strong community in disaster management.

Disaster management systems are different in order to manage emergency preparedness, recovery program, and solving problem skills in each community. The potential is partly depended on the acquired capitals. Community based on full capitals will be able to proceed well in disaster preparedness and management.

All capitals are substantial community program inputs for disaster preparedness to save lives, recover, and encourage town members and victims to live their ordinary life. In sequence, output of these capitals will be diverted to an input as a set of developed skills for next disaster management. The question is how locals and communities manage their capitals and the diversion process of output to input for next disaster preparedness.

3. DISCUSSION AND CONCLUSION

First, the research result has revealed Japanese disaster management community existence. However, a community alone is insufficient to manage throughout the time of disaster. Preparedness is required in degrees of physical capital, social capital, cultural capital, and funding capital. In case of strong society and weak state, a community is forced to play an important role in preparedness at emergency stage such as saving lives, neighbors rescue, public sector organization establishment, social responsibility mind set, including town members and victims recovery program. Recovery activities which are the evacuation to temporary shelter, shelter construction, basic needs recovery, are partially responsible by the community. Some activities are responsible by government and international authorities such as area recovery, funding support foundation, nuclear power plant explosive maintenance, and laws legislation.

Therefore, disaster intensity can be minimized by strong state and strong society with tasks divided into community base, city or local government base, and nation base.

Second, a community combined with degrees of physical, financial, and cultural capitals has performed a strong disaster management in local government that is known for high potential in management. In fact, there are particular tasks which cannot be processed by local government, but by the community or others related organizations. Mafia gangsters, Yakuza, are allowed to help town members and victims during the first period while Kobe prefecture responds in coordination and collaboration.

The other aspect causing a perspective towards strong local governments is the belief in social structures and titles of bureaucracy which is greater than in any particular leader or staff. Hence, a task accomplished by local government has frequently been spread as an important issue.

Last, disaster management relies on degrees of all capitals. A community usually proceeds fluently with these capitals. Without one, work flow is interrupted. Otsuchin is in difficulty to rebuild a community because cultural and physical capitals have been disqualified. Residents are panic to return to town area and reconstruct. Moreover, the death of all local government officers has caused a negative perspective towards the situation.

In this study of disaster management, catastrophe in Japan and Thailand are incomparable in various angles such as town area, disaster intensity, and local government authority. However, result of the study has shown social process in disaster management focusing on input, process, and output. During time lapse of the 2 disasters, we can monitor on how experience and knowledge have been transferred. Moreover, we can investigate disaster management workflow and process of socialization. Knowledge of the study can be applied to Thai society, especially in socialization process for disaster preparedness, the creation and utilization of capitals.

One of the main findings is that development process and connection have been revealed between Nagazaki disaster management and Hanshin-Awaji earthquake preparedness, including knowledge development based on Hansin-Awaji earthquake towards Tohoku disaster management. Another finding is a development procedure of social process in Japan in order to transfer disaster preparedness to next generations, particularly in knowledge management and socialization through community agency, school and other sectors as shown below:
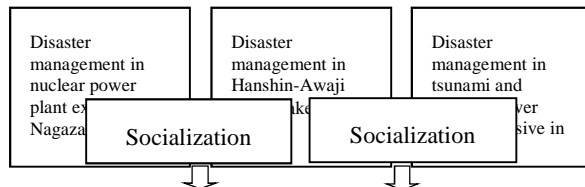
Fig. 2. The development procedure of social process in Japan.

Social process in disaster management is an important process in knowledge transfer from one disaster management to the next. The study has identified steps of passed-on knowledge from nuclear power plant explosive in Nagazaki to Hanshin-Awaji earthquake disaster management, and to tsunami and nuclear power plant explosive in Tohoki. The crucial factors are disaster management procedure, recovery plan, transferred knowledge and experience. The factors are applied and utilized by local governments, related organizations, schools, and community members to prepare for an upcoming disaster. Medium of the transfer is socialization which can be delivered in term of cross-culture. Japanese experiences towards disasters can be channeled to Thai culture in the same context without an expectation of disaster in the future. Socialization process with disaster demonstrations of fire and collapsing cinema can be flown in school, local government, family, press, religious office, and other related organizations.

Suggestion in Cross Cultural Disaster Management Knowledge

Even though there are differences between Thai and Japanese societies, disaster management throughout socialization can be implemented in term of cross cultural in Asian country. The study suggests an application of Japanese best practices which are:

(1) Lesson summary

The important aspect in disaster management from disaster experiences in Japan is lesson summary or knowledge management gment which is a strong point. Thai society can learn the lesson and apply the knowledge from disaster management in Andaman tsunami and central flood experiences accordingly.

(2) Socialization agents

Thailand has socialization agents which are school, government sector, local government, etc. The agents are responsible to transfer crucial factors of disaster management which are acknowledging, training, practicing, planning, and expanding the knowledge to next generations. The knowledge can also be specified in school curriculum variedly regarding each geographic area of disaster prediction. A curriculum of school located in the north combines knowledge on land slide and earthquake while school in the south contains tsunami and storm knowledge. School in the central considers water and flood. Besides, National Disaster Prevention and Mitigation Plan 2010-2014 should be fully activated.

(3) Making good value

Good value in Thai society is necessary as it is considered to be Japanese strong point in disaster management. It has been shown in cultural perspectives of substantial autonomy, disaster preparedness, Western influences of disciplinary, honesty, responsibility in society and other people. Another remarkable Japanese social value is an experiment for standard measurement before the knowledge is transferred and utilized. To conduct a training course and demonstrate best practices in order to create basic qualifications among young generations in Thailand is required.

From the interviews and perspectives of Japanese representatives in the field of disaster management, they have denied the success of disaster management in Japan. However, the researcher believes that experience and knowledge of Japan disaster management can be customized in cross cultural practice in all Asian country.

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