

**Rethinking the Great East Japan
Earthquake and Social Capital**

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1 . Things that became clear following the Great East Japan Earthquake

The Great East Japan Earthquake that occurred on March 11, 2011 was a large-scale disaster with a scope that included an earthquake, tsunami, and a nuclear power incident, and it caused unprecedented levels of human and physical damage. Although the DPJ's Kan administration was in power when the incident occurred, nine months later on December 16 under the Noda administration that was established after much dissenting public opinion and intra-party conflict, it was declared that step two of the control roadmap had been achieved with the achievement of cold shutdown conditions at the reactors for Unit 1 through 3 at the Fukushima Daiichi Nuclear Power Station that had caused much concern for everyone. However, the seriousness of the accident and the uncertain outlook going forward was obvious to everyone. The insufficient and at times makeshift response of the DPJ to the earthquake was one of the factors that in the end triggered the DPJ's defeat at the 46th general election held on December 16, 2012 and the landslide victory of the LDP.

One of the things revealed by this earthquake is that up until now Japan's responses to and preparations for earthquake, tsunami, and nuclear accidents have been overly formal and cosmetic and that there have been failures to seriously anticipate actual conditions. This form of confusion was suffered at not only at the scene of the earthquake and accident, but also among core decision making parties, and as a result much time was wasted going about fruitlessly in various directions. It was not possible to implement in a true sense crisis or risk management at any level of society. It is not as if there were no procedural manuals in preparation for large-scale disasters. However, when disasters do occur, what was needed more is a calmness to come back to these manuals; knowledge and concrete action to call for the minimum required actions; and frameworks, know-how, and cooperation that works in a systematic and organized manner rather than in an individual, fragmentary, or piecemeal manner. In other words, the frameworks and preparations for responding to risks in a systematic and organized manner that

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were in place in Japan from the second half of the 20th century to the beginning of the 21st century, as well as the day-to-day confirmation of the functions of these frameworks have become mere façades and deteriorated.

Secondly, fractionalization in the world of academia and research has progressed to abnormal levels. Following the Meiji and Taisho era, while steady progress was made in the field of seismology based on the Great Kanto Earthquake (1923), there was a tendency to dedicate considerable human and material resources to particular projects, such as earthquake detection in particular regions. In the end, the lessons espoused in *Earthquakes Strike When They Are Forgotten* (1934) of Torahiko Terada, professor at the University of Tokyo, a physicist and well-renowned essayist, were not applied during the recent earthquake. It is unfortunate that this available knowledge has not been properly communicated to other fields, and much more unfortunate that it has been communicated in a partial or distorted manner to the general public. The damage caused by fractionalization and segmentalization of this knowledge has not had only an effect on the fields of natural science and technology, but also the social sciences and humanities.

In the social sciences, for various social systems and structures that were fundamentally designed and established under the assumption of normal conditions, it should have been studied when to switch over in response to abnormal conditions through thought experiments conducted in advance in order to study the relevant problems and issues. However, regarding these issues, large-scale disasters were considered to be exceptional cases due to their rare occurrence, and for this reason it did not become the focus of mainstream research. In the end, such type of research area cannot become major in normal conditions.

In history, literature, and other fields in the humanities, much has been written in both formal records and diaries on extraordinary natural phenomena like the recent earthquake. In addition, considerable knowledge has been accumulated in recent years in the fields of geology and archeology across Japan. By combining this knowledge and forming networks between the various fields, it should be possible to create new forms of knowledge. To be sure, in some cases, such as for the Jogan Sanriku Earthquake of the Heian Era (869), there have been matches between historical documents and knowledge in the fields of archeology and geology, and accordingly knowledge has been shared among researchers. However, unfortunately for the most part this sharing has been limited to only sharing among some researchers and practitioners as past records. There are also concerns that presentation of such information to general citizens would have too strong of an impact if thrust upon them, and issues that were generally recognized as possibly having an impact on the present were never fully instilled.

Generally speaking, in connection to the first and second issues mentioned in this section, when various phenomena (which may be somewhat peculiar, but definitely not extraordinary) occur that we purposely try not to think about in modern day Japan society in which day-to-day life is conducted within highly elaborate and intricate social frameworks, people are often caught off-guard in terms of how to respond. In this sense, the past Great Kanto Earthquake (September 1, 1923) should actually be fully used as a reference point for top-level officials deciding on

policy and at disaster sites when deciding how to act with limited resources and information.¹

In consideration of these reflections, the third point is that the orderly behavior of people in disaster areas is especially deserving of recognition. The calm behavior of the public has received much attention from the overseas media right after the Great East Japan Earthquake, and there has been praise towards the composed response of the Japanese to the disaster. While this may make many Japanese people feel somewhat bashful, the opinions of admiration from overseas should not be treated ironically or with too much self-depreciation. What has become clear here is the certain existence of social capital that has been formed and accumulated within Japanese society.² Accordingly, this social capital that has played an important role when evacuating from earthquakes, tsunami, and nuclear accidents should also play an important role in the recovery and reconstruction process, and recovery and reconstruction should be approached in consideration of this social capital.

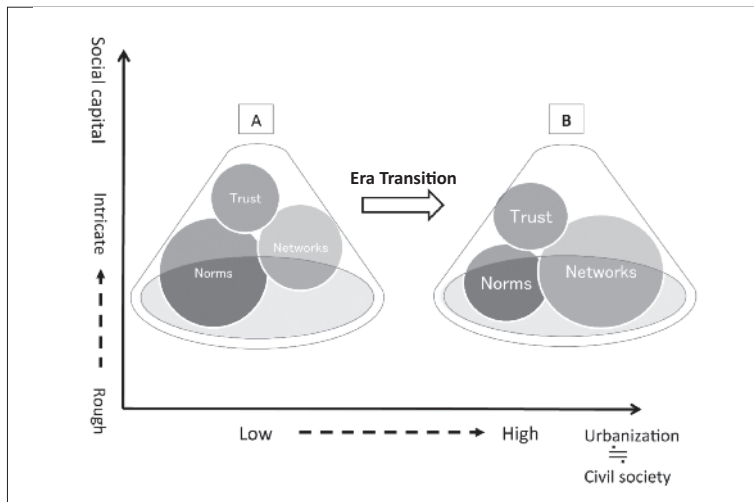
2 . The economic significance of social capital

There are various definitions of social capital, and some aspects of social capital such as its structure, function, and roles can be difficult to define. Nonetheless, it is generally understood to be composed of the three elements of norms, networks, and trust. Norms serve as the basis for behavior among family members and relatives, communities, and organizations. While the codification of norms has not been required for internal and close relationships, as relationships become more extensive there is a tendency and necessity for a gradual shift to codified norms. Networks grow at the same time as ties exceeding blood and regional relationships become needed and necessary as the social activities of people become broader and more advanced. Specific examples of this type of phenomena include the ties formed through union membership or gatherings of people with shared interests. Trust is not only a necessary precondition for the proper functioning of norms and networks, but also serves to integrate and harmonize norms and networks so they function well overall. A general image of the interaction between these three elements is displayed in Figure 1.

¹ These circumstances were described by Yoshimura (1977).

² The importance of social capital in response to the Great East Japan Earthquake and the lack of awareness towards the social sciences up until now were covered by Harada (2012).

Figure 1 Categories and Transformation of Social Capital



Each type of society has unique forms of social capital, and this type of social capital does not change easily. In this sense, the level, degree, and extent of social capital of a certain era in each country and community can be assumed to be constant as a general rule. In other words, social capital does not change on the A and B level on the vertical axis. However, with changes in the state of the times and the progression of typical urbanization, there are changes in the nature of social capital. For example, because the constraints of the community are strong in agricultural societies, norm-like elements are strong. Meanwhile, in urban societies connections between people become multi-faceted and varied, leading to the creation of various types of networks. In other words, with changes in the times as represented by urbanization, social capital tends to transform from A to B. While this can be seen as a time series change in one country or community that proceeds with the passing of time, it can also be seen as differences in cross sections for differing countries and communities in the same era. It should be noted that while the changing of eras (passing of time) and urbanization can be viewed as almost parallel (proceeding simultaneously) on a vertical axis, this is mostly in connection with the development of civil society incorporating the level of political maturity.

According to Inaba (2011), the functions of social capital defined in this matter can be divided into private goods, common goods, and club goods based on the scope (micro or macro) and characteristics (structural or cognitive, such as values). Essentially, structural individual networks that are micro in nature are considered social capital as private goods. Because trust towards society in general (general trust) and norms are macro and cognitive in nature, they are considered social capital as common goods. Trust and norms (including reciprocity) between specific people and groups that are midway between the previous two items are considered social capital as club goods. While this classification incorporates the multi-faceted elements of social capital, it is essentially a definition focused on consumption.

If seen as a consumption good, the two important distinctions are the perspective of the final economic behavior by the consumer, in other words, the perspective of demand, and the perspective of production and sales of the target consumption good. In terms of the former aspect, if the consumer commits an act of consumption, even if the satisfaction (utility) of the consumer is increased, the good itself will no longer exist socially. What survives in society is the aspect of production and sales of the consumption good. For companies engaged in these activities, it is this production and sales that is the purpose of its activities, giving meaning to the various corporate activities for continuing these activities, including organizations, frameworks, human resources, and financing. If understood in this manner, with social capital as a consumption good from the perspective of final demand, because increased available consumption increases the utility of the parties involved, it is socially desirable to provide greater quantities, although it is necessary to incorporate the element of changes to the relative price. Meanwhile, in terms of production, in general the expansion and continuance of production is considered after giving comprehensive consideration to how people demand the applicable good, as well as production costs and profitability. Production may be reduced or suspended as a result. The problem is that the production of social capital as a consumption good is a difficult challenge for general companies to take on lightly due to factors such as the expansion of production costs and uncertainties towards profit sharing due to difficulties in identifying involved parties. In this aspect, there are some similarities with common goods.

In this manner Inaba's (2011) definition and recognition of social capital is somewhat overly limited in its focus on social capital as a final consumption good. The true significance of social capital is its nature as an intermediate good. Social capital can also be considered as an input good. Even if social capital is defined or understood as an economic good, it cannot be easily added to aggregate demand. From the perspective of final demand, it cannot be calculated doubly. Particular care is required for the handling of social capital as a common good. For both private goods and club goods, there is no need to add portions that have already been calculated. The portion that have not been calculated and thus is to be added should be limited.

The nature of social capital as a common good in particular can also be considered as soft infrastructure. It is not something that is physical or tangible, nor is it something that is specified in express terms. Regardless of this, social capital presents implicit codes of conduct and guidelines for the overall social activities of people, and serves as a comprehensive overall framework for these activities. However, depending on how this is recognized by individual people, there are various methods through which this is taken in. For any system, rule, or practice, there will be faithful practitioners that abide by them extremely strictly, as well as frequent deviators that will interpret these elements less strictly and act indeliberately. In other words, social capital that stands between the elements of intermediate goods and common goods exists within the world of epistemology. However, it does not necessarily mean that social capital has no relationship with actual economic value. The reason for this is that the economic value of actual things varies depending on how actual things are evaluated. Social capital has a function that allows it to be converted or modified into the value of an actual thing. This means that the

value of actual things is determined through the route of social capital. For example, the source of value for cash currency (notes and coins) is based on the trust held in the government (the government and Central Bank). It is none other than social capital from which this trust is born. From this perspective, the cognitive function of social capital mentioned by Inaba (2011) is believed to be reasonable.

3 . Support and policies with a clear view of social capital

If social capital only has the character of a consumption good, even if this is limited to consumption or if production is included, in either case it is economically desirable for larger amounts of social capital to be produced and accumulated, and accordingly policies that promote this should be adopted. As a result, social capital values should change (increase). However, as was discussed in the previous section, social capital also contains elements of intermediate input goods in terms of functionality. If intermediate input goods are in abundance, the ripple effect caused by the activation of economic activities using these goods can in turn be expected to lead to some form of multiplier effect. In relation to economic performance (net domestic product), consumption goods are a result, while intermediate input goods are a process. By social capital functioning as a production process, contributions to economic activities can be expected as a result. In other words, when looking at the link between social capital and economic activity, it is not meaningful to increase social capital itself, but rather in the stimulation of various social networks through social capital and the increased diversity and deepening of social transactions that can be expected in accordance with the characteristics of these networks.

However, the effects of social capital are not necessarily positive, and at times can work negatively. In short, the conventional types of social capital (social capital A in Figure 1) often restrict people's social relations and cause constraints on their day-to-day lives, and in some cases can cause restrictions on the actions of these people. The underlying motivation for people hoping for the progress of modernity or economic development contains the hope that if economic development continues it may be possible to break through these types of rigid human and social relationships. An example of this is the government and social system of the Edo Era, which Yukichi Fukuzawa, the founder of Keio University (1899), summarized as "the Monbatsu System being an enemy of parents." This point served as a driving force behind the anti-Shogunate movement during the final days of the Tokugawa Shogunate. In the case of Japan, it is possible that the transformation to social capital B in Figure 1 was made after going through the Meiji Era, Taisho Era and era of occupation following World War II , and through the development and instilling of modernization, civil society, and American culture.

In other words, while a constant form of social capital may exist in a country's or region's society during the conditions of a certain era, these patterns (component elements) change (transform) based on the changes in eras. These changes (transformations) are linked with changes (differences) in the value systems of people. In other words, what kind of element was prioritized by a certain society and it is possibly determined at least in history. However, it is

difficult to understand or express this quantitatively or through a single measure. Accordingly, the same cannot be said for historical or time-based changes (increases or decreases) or regional or cultural differences (high or low).

Furthermore, even if it is during the same era, social capital will not necessarily be uniform throughout an entire country, and different patterns of social capital can be seen depending on the area or region. For example, because the livelihoods, economic systems, and family structures of people differ in urban areas and agricultural areas, there are differences between the social capital of both areas. Even with large metropolitan areas, because the economic bases, living areas, and consciousness structures of people differ between central areas and the suburbs, there are also differences between the social capital of both areas. Moreover, differences in values between various types of professions and occupations can be seen due in part to the differences between respective types of social capital.

Considering this, policies meant to deliberately promote social capital is nothing more than setting targets to raise figures summarized through simple benchmarks and it seems to be approaching the issue in the wrong manner. However, there are various issues with promoting economic policies that have no relation with social capital. Because social capital is an evaluation (conversion) system that incorporates the values of various people, if the same policy is applied to a different region, it is possible that the people of each region that are on the receiving end could evaluate these policies differently based on a different form of social capital, and as a result there could be differences in the effects of the policy. In other words, if social capital differs by region, policy must be implemented in consideration of this. In summary, it is necessary to plan concrete economic policies and shift to implementation in consideration of the state (pattern) of social capital of each region at the current point in time. Above all, we must avoid making efforts to seek out efficiency and resource conservation that result in nationwide uniform policies being promoted that ignore the state (pattern) of social capital of each applicable region.³

4 . Expectations, uncertainties, and doubts towards *Abenomics*

In Japan the LDP won the 46th general election on December 16, 2012 and as a result the second Abe administration commenced at the end of December through a LDP-Komei coalition. Even during the final stages of the election, stock prices began to rise and the yen began to depreciate in anticipation of an LDP victory. After the Cabinet was formed and the administration got its full-fledged start, various economic indicators began to display positive signs and it has continued to enjoy positive support rates.

While these trends reflect the high expectations towards Abe's LDP-Komei coalition, these expectations are supported by the fact that the administration's political and economic strategy has been accepted as reasonable. Specifically, in order to drive off the deflationary

³ Inoki (2012) has also proposed the economics itself should be reconstructed from this perspective.

recession that has dragged on for 20 years, the administration has formed a growth strategy that focuses on both micro and macro aspects by (1) strengthening coordination with the Bank of Japan, (2) implementing fiscal policy that includes public work projects, and (3) newly launching the Headquarters for Japan's Economic Revitalization as a revival of the previously dormant Council on Economy and Fiscal Policy for the concrete implementation of economic and industrial growth strategy. The freshness of this mechanism and the reasonableness and clarity of the message have been favorably received by the stock markets and foreign exchange markets.

However, there is just one concern. The concern is the nation's infrastructure resilience policy.

Before the 46th general election, the LDP announced the Nation's Infrastructure Resilience Basic Plan on June 1, 2012. This concept was put forth by the DPJ in its victory in the 45th general election on August 30, 2009 under a manifest of shifting the focus from concrete to people. Even after the appointment of the administration, policies such as implementing review and prioritization of government programs and suspending construction of the Yanba Dam (Naganohara-machi, Gunma Prefecture) by Minister of Land, Infrastructure and Transport Maehara (a policy that was subsequently retracted in the end) appealed to voters. Furthermore, according to the argument by Fujii (2011) (2012), it is believed to be prepared for the scenario of the LDP determining policy. Afterwards when the LDP won in the 46th general election and the LDP-Komei coalition was restored, the nation's infrastructure resilience policy has taken on a sense of realness.

However, there are some doubts and concerns towards this idea. Firstly, if this kind of national comprehensive economic growth policy is simply aimed at forming a secondary national axis, it is somewhat outmoded. If we were still in an era in which infrastructure was lacking nationwide, perhaps achievement of this type of large scale and medium-term target would have some significance. However, a considerable infrastructure network has already been developed for the entire nation. Indeed, the deterioration of the infrastructure developed during the 1960s and 70s cannot be ignored. In summary, the problems are not with the quantity of public work projects, but the nature of these projects.

Secondly, there is the particular concern that the project could be implemented while ignoring the social capital in the area affected by the recent disaster. There is a tendency with public work projects to achieve quantity at any costs and for nationwide uniform project deployment to be aimed for. However, as discussed in this paper, the area affected by the recent disaster is a regional society where strong social capital has been accumulated and maintained. Of course, there have been many calls within the disaster area for the redevelopment of infrastructure. However, this does not necessarily mean that simply the development of infrastructure that is uniform and standardized nationwide should be called for. Infrastructure development in line with local conditions should be called for.

In consideration of the positive start that has been made by *Abenomics*, economic policies of the second Abe Cabinet, we have high hopes towards its success in driving off the deflationary recession that has inflicted Japanese economics and society. This is my only point of uncertainty

and concern against these expectations.⁴

5 . Things gleaned from the Great East Japan Earthquake recovery and reconstruction measures

Looking back on the period following the Great East Japan Earthquake, the nature of recovery and reconstruction has changed as time passed by. During the several days and weeks immediately following the disaster, saving lives and emergency support started in their truest sense. In the several months that followed, in order to transport as many relief supplies as possible, makeshift recovery measures were implemented for the transportation network that had become impassable and served as a bottleneck. Measures were gradually implemented to improve living conditions at evacuation areas as much as possible. When half a year had passed, temporary housing was constructed and allocated to disaster victims that had lost their homes, relief supplies were provided to regions and areas where day-to-day living was in distress due to people being cut off from their living foundations even if spared from direct damage, and the provision and extension of employment insurance was continued for disaster victims that lost their jobs or income (due to both direct and indirect damage) due to the loss or bankruptcy of their employer or workplace. Initially these activities were supported by the recovery and reconstruction baseline provided through the organized activities of public agencies (public offices, police offices, Self-Defense Forces, fire stations), and at the same time meticulous volunteer activities were implemented by both foreign and domestic NPOs and NGOs on-site. Furthermore, in addition to the traditional media of newspaper, radio, and TV, the penetration and spread of telecommunications networks also made a significant contribution in sharing information on these activities.⁵

After two years had passed from the disaster, steps towards reconstruction for the majority of disaster victim and disaster area were started, despite the extremely large scale of damage and loss. The FY 2011 and FY 2012 budgets that were rearranged and implemented with great haste and through great efforts had a considerable effect and made a considerable contribution

⁴ However, according to recent media reports, at a project team meeting concerning disaster prevention and mitigation held on February 27 (Wednesday), 2013, both the LDP and Komeito agreed to revise the Nation's Infrastructure Resilience Basic Plan in an aim to strengthen the domestic disaster prevention system in consideration of the lessons learned through the Great East Japan Earthquake. A proposal framework was set forth in March to unify this with the Disaster Prevention and Mitigation New Deal established by Komeito, and after considering changes to the Nation's Infrastructure Resilience Plan, it seems that it was jointly proposed as a legislation by House members at the 183rd regular Diet session. Finally, the Nation's Infrastructure Resilience Basic Plan was enacted on June 2013. The positive qualities of the second Abe Cabinet up until now have been reflected in this ability to quickly adapt to circumstances, a stance which has been displayed in the handling (change and modification) of this plan.

⁵ This situation corresponds to the formation and restoration of shopping arcades, in a meaning opposite from the world described by Arata (2012). Furthermore, it is also similar to the situation criticized by Koda (1899) in comparing the haphazard process when the city of Tokyo was formed during the Meiji Era and the construction of Edo under the rule of the first member of the Tokugawa Shogunate.

to these reconstruction efforts. The FY 2011 budget had been determined at a Cabinet meeting on December 24, 2010 under Kan's DPJ administration, and was submitted to the National Diet for deliberation on January 24, 2011. However, the Great East Japan Earthquake then occurred on March 11, 2011 when the budget was still being deliberated by the Diet. Deliberations with the opposition in the Diet were temporarily shelved, and in the end on March 29, the FY 2011 budget was established with a general account expenditure of JPY 92,411.6 billion. Afterwards, the first supplementary budget for FY 2011 of JPY 4,015.3 billion was decided on at a Cabinet meeting on April 22 and established on May 2. Following this, the second supplementary budget for FY 2011 of JPY 1,998.8 billion was decided on at a Cabinet meeting on July 5 and established on July 25. The third supplementary budget for FY 2011 of JPY 12,102.5 billion was then decided on at a Cabinet meeting on October 21 and established on November 21. Furthermore, the fourth supplementary budget for FY 2011 of JPY 2,534.5 billion was decided on at a Cabinet meeting on December 20 and established on February 8, 2012. Implemented over four times, the total FY 2011 supplementary budget reached JPY 20,651.1 billion (simple total). While the entire amount was not allocated to recovery and reconstruction for the Great East Japan Earthquake, if items from this budget allocated to Great East Japan Earthquake damage are included it was nearly enough to cover the direct damage amount of JPY 16.9 trillion (Cabinet Office estimate as of June 24, 2011).

The FY 2012 budget was initially formed to incorporate reconstruction measures. First, the FY 2012 Budget Request Reorganization Standards were decided on by the Diet on September 20, 2011 so that the FY 2012 budget would be formed seamlessly and continuously with the third supplementary budget for FY 2011, and a special account was established to separately manage expense related to Great East Japan Earthquake recovery and reconstruction measures. As a result, the FY 2012 budget was decided on by the Diet on December 24, 2011. However, because it would be difficult to establish the budget within the year, a FY 2012 provisional budget of JPY 3,601.5 billion (approximately JPY 3,200 billion of which was tax revenues distributed to local governments) was established on March 29, 2012 to avoid a blank period at the beginning of the fiscal year. As a result, the FY 2012 budget that was established on April 5, 2012 consisted of a general account expenditure of JPY 90,333.9 billion and special account spending on reconstruction from the Great East Japan Earthquake of JPY 3,775.4 billion (including a transfer from the general account of JPY 550.7 billion). Afterwards, while a supplementary budget was not formed due to the economic downturn and based on the viewpoint of using reserve funds for recovery and reconstruction from the disaster, the Diet decided to use the Contingency Reserve for Economic Crisis Response and Regional Revitalization two times based on instructions from the Prime Minister. The first time was based on a Diet decision on October 26, 2012, accounting for a total of over JPY 400 billion in national expenditures and over JPY 750 billion in project costs, while the second time was based on a Diet decision on November 30, 2012, accounting for a total of over JPY 880.3 billion in national expenditures and over JPY 1,200 billion in project costs.

Furthermore, as a result of the voting and vote counting for the 46th general election held

on December 16, 2012 the opposition party, the LDP, enjoyed an overwhelming victory, while the incumbent party, the DPJ, suffered from a crushing defeat. This led to a new administration, and on December 26, the second Abe Cabinet was established through a LDP-Komei coalition. The LDP-Komei coalition launched a policy of seamlessly and continuously forming and using the supplementary budget for FY 2012 and the FY 2013 budget (a 15-month budget). A supplementary budget of JPY 10,202.7 billion (including special account spending on reconstruction from the Great East Japan Earthquake of JPY 1,195.3 billion) was decided on by the Diet on January 15, 2013 and established on February 26, 2013. In this manner, roughly the total damages have been covered for by the recovery and reconstruction project for the project overall. However, there are many individual issues.

One such issue is the Reconstruction Agency. The Reconstruction Agency was originally formulated with the aim of providing comprehensive one-stop service for the disaster victims and the disaster areas. After the basic policy for establishment was stipulated by the Basic Act on Reconstruction in response to the Great East Japan Earthquake (June 24, 2011), the agency itself was established eight months later on February 10, 2012. First off, there are many problems in the background behind why it took such a long time for the agency to be actually established. Furthermore, the notification of the possible reconstruction grant amount (first) announced on March 2, 2012 as the first concrete measure of the agency was extremely disheartening to the spirit of the nation, disaster victims, and disaster area. While the amount applied for was for JPY 499.1 billion in project costs and JPY 389.9 billion in national expenditures, the allocation amount was only JPY 305.5 billion in project costs and JPY 251.0 billion in national expenditures. The agency faced much criticism from municipal governments in the disaster area, being called “an assessment agency rather than a reconstruction agency,” suggesting that even at that time the reconstruction project had not yet to implement full-fledged reconstruction measures that could address both physical and psychological issues. As these opinions seemed to address the heart of the matter, from the second time onward the distribution amount has always exceeded the application amount. As a result, in terms of the total amount over the first (March 2, 2012), second (May 25, 2012), third (August 24, 2012), and fourth time (November 30, 2012), compared to an application amount for JPY 1,577.5 billion in project costs and JPY 1,239.4 billion in national expenditures, the distribution amount was higher at JPY 1,682.9 billion in project costs and JPY 1,370.5 billion in national expenditures. In this manner, while the core activity of the Reconstruction Agency has gone through some trial and error, improvements are being seen. However, doubts remain as to whether projects are really being implemented at a scale in the regions to account for this budget.⁶

⁶ In response to this kind of criticism, the second Abe Cabinet has announced some new reconstruction measures. One of these measures is the expansion in the scope of projects for which reconstruction grants are applicable. While up until that time these projects had focused on the preparation of building sites for the reconstruction of houses and factories, from the fifth distribution (March 8, 2013) public facilities to serve as disaster prevention center and tractors required for agriculture became included in the scope. Because infrastructure development projects have been mostly funded, going forward distribution will go to more detailed areas in consideration of reconstructing the lives of people.

6 . Setting economic indicators and policy focused on households and community living

How have conditions for the people and areas affected by the recent earthquake been improved through the budget measures described in the previous section? In terms of the number of evacuees, it is believed that there were as many as approximately 470,000 evacuees immediately after the earthquake on March 14, 2011 (according to research by the Reconstruction Design Council in response to the Great East Japan Earthquake and the Reconstruction Agency). However, according to the first survey (conducted on June 2, 2011), there were a total of 124,594 evacuees, consisting of 41,143 people at evacuation areas (community centers, schools, etc.), 28,014 people at lodges and hotels, 32,483 at other facilities (homes of family members or friends), and 22,954 people at accommodations (including publicly-managed accommodations, temporary accommodations, private accommodations, hospitals, etc.). According to the results of the 20th survey conducted one year following the earthquake (March 8, 2012), there were a total of 344,290 evacuees, consisting of 586 people at evacuation areas, 86 people at lodges and hotels, 17,590 people at other facilities, and 326,046 people at accommodations. According to the results of survey conducted 11 months following that (February 7, 2013), there were a total of 315,196 evacuees, consisting of 139 people at evacuation areas, 0 people at lodges and hotels, 15,412 people at other facilities, and 299,645 people at accommodations. Because these statistics were gathered under various constraints immediately following the earthquake, they are not necessarily accurate or consistent overall, particularly for the period approximately six months following the disaster, and they may be subject to missing data or double counting. However, the fact that the number of evacuees was approximately 344,000 nearly one year following the disaster and approximately 315,000 two years following the disaster suggests that the situation has not improved much. In other words, it is possible that current reconstruction measures are not fully responding to the needs of the affected people. Another possibility is that what the affected areas need is not funds and projects, but human resources, employment, and workplaces. Facts like these are difficult to ascertain from the statistical data.

These kinds of mismatches are particularly severe in the eastern part of Fukushima Prefecture (the Hamadori area) that has strongly suffered from the impact of the Fukushima Daiichi Nuclear Power Station disaster. In this areas, the affected people have been forced into a life of evacuation as a result of nuclear contamination for which the range and serious of which remains unknown. For them there are no prospects of the situation coming under control, let alone the revival of their former lifestyles.⁷

In the day-to-day lives of people, daily routines and continuity under normal conditions are important. If it can be expected that there is a householder or equivalent party, that they have a steady job and as a result a level of stable household income can be expected, each household generally prioritizes the continuation and constancy of the lives of each member of that

⁷ As also pointed out by Yamashita (2013), it must not be forgotten that the significance of this major disaster occurring in Tohoku, including the earthquake, tsunami, and nuclear accident, cannot be ignored.

household. In this sense, if the main contributor to household income loses their job or if their income decreases and this situation continues, the household will have to make changes to the lifestyle they had up until then. Another person may have to fulfill the role of supplementing household income. It could become necessary to cut spending. In the former case, participation in the labor market could take place in the form of low wages or non-regular employment. In the latter case, consumption expenditure, particularly non-urgent expenditures, will be held back, leading to a trend of money-saving consumption. These types of changes to the demand structure will have a ripple effect on the supply departments of manufacturing and service businesses. If that happens, there will be an impact on the entire industrial structure. In any case, because individual households will respond in various ways, concrete economic policy needs to be taken in response to macro (aggregate quantity) economic variable benchmarks rather than targeting directly or individually individual households or companies. However, the point here is that even if these kinds of policy measures are to be taken, when making judgments on corporate proposals or policy effects, it is necessary to deliberately gather and use benchmarks that reflect the day-to-day states of individual households and companies. From this perspective, it is necessary to gather as much multi-faceted data as possible that reflects how the living foundations and bases for individual households and companies were restored during the reconstruction process following the recent Great East Japan Earthquake, and how the funds required for day-to-day living were procured or secured. Moreover, this data should not be uniform and nationwide, and it must be information that reflects the circumstances for each affected area.

Of course, without prospects of or hopes for a bright future, people lose their will to live or a sense of value towards living. For people and areas affected by disasters for which prospects and hopes appear to be dim, it is very meaningful for the country (the central government) or people from different regions to provide specific guidance and advice or business and employment opportunities. However, people (particularly adults) have an instinct to want to get up and proceed by themselves without help from the outside. More often than not, people want to stand on their own feet. In the reconstruction process, it is important to establish a mechanism that helps to bring out this instinctive sense of self-reliance. It should be organizations such as the Reconstruction Agency that conduct concrete measures to determine where these needs and desires are by working to understand the situation for each Reconstruction Design Council and Reconstruction Agency office established in each disaster area and prefecture. In doing so, release should be sought from the tradition of conventional overall national government policies that inflexibly stipulate the same systems and procedures nationwide (in this case uniformly for every prefecture and region affected by the earthquake) that serve to physically or spiritually cancel out this kind of instinctive sense of self-reliance and driving force.⁸

⁸ According to Minakami (1923) who described reconstruction efforts in Ginza following the Great Kanto Earthquake on September 1, 1923, how the lives of people affected by disasters are restored expresses the subtleties of the soul of the people.

7. Individual value and social evaluation

People have various values. In particular, in modern developed countries that are economically affluent and where political freedoms are guaranteed, unlimited freedom has been secured for people's day-to-day lives and economic and consumption activities. However, it is difficult to imagine to what extent these individual values freely formed against a backdrop of non-constrained behavior are formed independently (individually) of the external environment composed of families, communities, and organizations. Even people that boast that they have formed their own sense of individual values cannot likely really claim that they have grown without any relation to the external social environment. In this sense, people are very social animals.

As displayed in Figure 2, people develop within an environment composed of various social elements. It goes without saying that the family is at the center of these social elements. If the foundations of the family's livelihood is hunting or farming, the community becomes an important pillar. Even if through bartering, when interchanges between people and their lives are born, organizations of some form are born for the purpose of controlling and protecting themselves. As cash-based exchange spreads, trade become normalized, markets form, and economics begin to encompass all aspects of life. As the scope and scale of trade expands, mechanisms to govern this trade become necessary. This is where politics comes in. These politics require a spiritual, religious, and historical support pillar, which is culture.

Figure 2 Structure of Social Value



It is possible to describe the characteristics of a society based on which of the component elements is prioritized. For example, as displayed in Figure 3, societies that attach importance to communities maintain traditional lifestyles consisting of hunting, farming, and fishing. Archaic societies that were formed after going through the hunting and gathering era are societies that advanced their politics and culture by building their foundations on these activities.

Figure 3 Societies that Prioritize Community

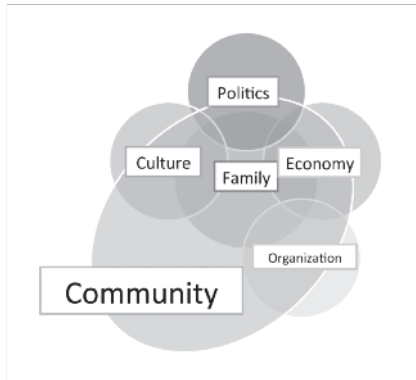


Figure 4 illustrates the decisive era of economic supremism which was already germinating during the Middle Ages as people sought to trade spices and local goods through cash-based trade regardless of the existence of vast oceans and deserts, eventually leading to the modern era in which large amounts of energy are used and large volumes of wastes are generated in order to manufacture and sell large volumes of industrial products. This era continues on today. Under this economic supremism, not only organizations, culture and politics are controlled by the economy, but traditional communities and families are also under the control of the economy.

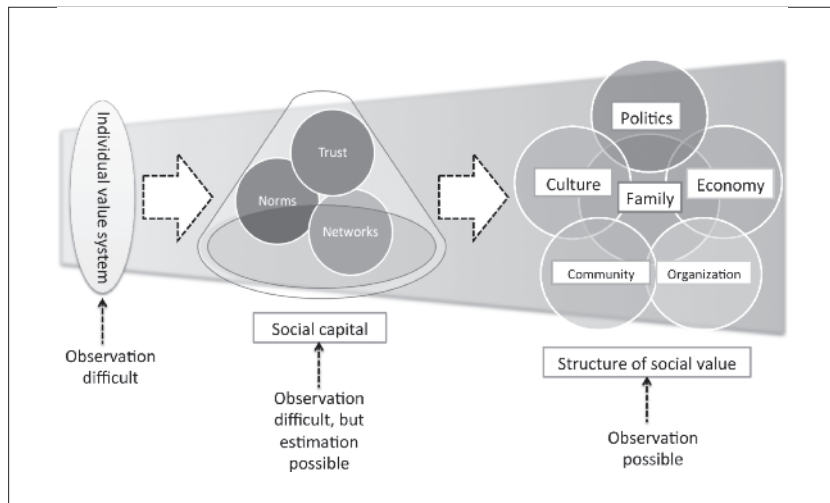
Figure 4 Societies that Prioritize Economy



So how are social values formed in this way? It is through social capital that is viewed to be composed of trust, norms, and networks. Depending on how people form social capital in a society, the structure of social values for that society differs. In other words, social capital corresponds to the Bergson (1938)–Samuelson (1947) social welfare function. For example, in societies that prioritize communities (Figure 3), the weight should be higher for norms.

Conversely, for societies that prioritize economics (Figure 4), it is possible that the weight is higher for networks. While social capital is formed based on the values of individuals forming the society, various things can be supposed assuming what types of systems and frameworks are used in social consensus building in the process of forming and synthesizing values. According to standard reasoning, the Arrow social welfare function applies to democratic systems.⁹

Figure 5 Relationships between Individual Values, Social Capital, and Social Values



The relationships between the three elements in Figure 5 (personal values, social capital, and social values) basically originates from individual values and determines social values through social capital. However, these relationships effect each other both ways, and the relationships are inter-dependent as a whole. Accordingly, these three elements do not exist independently. While this relationship may be understood, it is somewhat problematic for us to remain aware of this relationship in a concrete manner. Individual values and social capitals are particularly difficult to observe, and may in fact be impossible to measure objectively. In contrast, in terms of the structure of social values, it may be possible to infer the structure of social values through questionnaire surveys or statistical data if each component element is framed correctly.¹⁰

Considering the above, in terms of the social capital and social values of the people and

⁹ The understanding and organization of these two types of social welfare functions is basically in line with that stated by Kumagai (1964).

¹⁰ In an attempt to achieve this, Inoguchi and Blondel (2008) conducted a survey on 18 countries in Europe and Asia, while the Center for Social Capital Studies, Senshu University (2009 to 2013, led by Hiroo Harada) conducted a survey on 7 countries and regions in East Asia and Japan.

areas affected by the Great East Japan Earthquake, particularly in the Tohoku coastal region, it is clear that a value system prevails in which norms are prioritized and weight is placed on communities. As this structure is clear, reconstruction should be fundamentally based on this structure. People are not capable of living alone and exist in societies in the first place. At the same time, no matter who you are, you cannot help but to live on into the future based on the way that your family and community lived in the past, and not only in reference to your own experiences. Lives and lifestyles broken off from the various experiences of the past are rootless, with no stable emotions. We must avoid making efforts to seek for efficiency that results in rigidly uniform reconstruction policies being promoted for people and areas affected by disasters.

8 . Measuring social capital and the happiness index

Depending on the degree of social capital, the evaluation may vary for even the same quantity of economic goods, and the people's satisfaction toward the realities in the real economy varies. In short, depending on the state (pattern) of social capital, the level of satisfaction or happiness may be low among people that are rich economically and the level of satisfaction or happiness may be high among people that are poor economically. For this reason, there is no direct causal relationship between economic status and satisfaction or happiness. Nonetheless, it should come as no surprise if levels of satisfaction or happiness decrease if one's economic status deteriorates due to factors such as suddenly becoming unemployed. The satisfaction or happiness of people incorporates not only economic aspects, but also a social evaluation. By getting married, having children, and having a household and increasing the possibility of becoming recognized by society, the satisfaction and happiness of people is increased. Fukuyama (1995) has positively stressed this element. However, even for elements that are significant both socially and economically, in general, variables that cannot be measured concretely and objectively have been relegated to the sidelines of the social sciences, particularly economics.

The measurement of social capital has not been popular among economists, perhaps because the concept itself is somewhat ambiguous (in particular, there have been some criticisms of the use of the concept of capital). For example, even if Dasgupta (2001) does not go as far to refute the use of this concept, he suggests the possibility and stance that social capital be incorporated and included in systems and human capital rather than assessing or measuring social capital itself.

The same can be said of the similar happiness index. Recently there have been many reports and citations of Bhutan in the Japanese media as the happiest country in the world (as it is reported). However, when hearing that there were only the two options of "Are you happy or unhappy?" in the survey used for the happiness index (Komine (2012)), the results seem to be somewhat suspect. Nonetheless, rather than the somewhat arrogant position of removing social capital from the scope of economic study due to it being impossible to measure subjective variables, there are also more critical approaches from an academic perspective, a representative one which has been proposed by Frey (2008). With this it is clear that processes should also be

focused on and incorporated, rather than limiting the arguments of utility functions that have been used as evaluation standards for economics to quantities of economic goods.

Looking at the issue in this way, while it is difficult to directly measure either social capital or levels of happiness, they are both important elements in people's lives. If the issues are properly formatted, it would be possible to infer the size or changes in these elements through indirect or supplementary indices. I believe that giving up on these efforts represents a form of intellectual negligence towards the social sciences and economics.

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