

## Strategic Environmental Assessment for Planning Low Carbon Cities

### *-Meeting based SEA for consensus building-*

#### Introduction

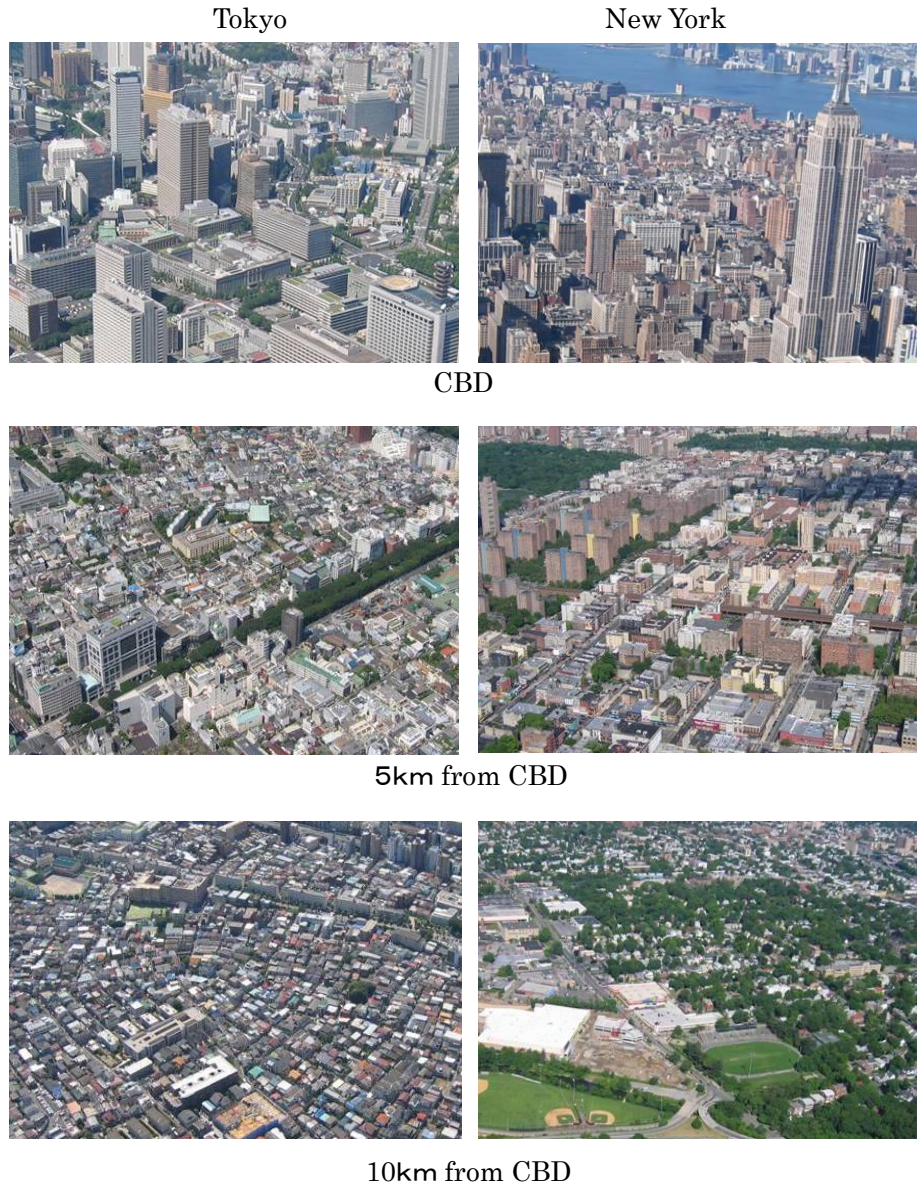
It is necessary to change the life style of people towards sustainable way. Urban and regional planning has the key role, because behavior of the people deeply depends on the spatial structure of their living environment. Creating low carbon cities should be a fundamental way in this meaning. For this, we need have a way to share the concept in a society and collaborate towards this goal. But in many cities all over the world, it has not been successful until now. Some European cities have been changing towards low carbon cities by creating “eco cities”, but it is not prevailing. Most metropolises are too far from sustainability. Especially, Tokyo has a big problem of sustainability caused by its spatial structure. The metropolitan area is the most sprawling and densely populated area on the globe.

#### A Lesson from Tokyo: Failure of Strategic Planning

Figure 1 shows the difference of land use patterns of Tokyo and New York. These were taken by me for the TV program on environmental assessment for the University of the Air, Japan. In the central business districts (CBDs) of the two cities are well developed. The densities in the areas of 5km from the CBDs are looking similar. But in the areas of 10km points show a clear contrast. The area in Tokyo is still well developed and that in New York is covered with many green spaces. The difference is much bigger in the 20km points. Why this happened? The answer is the lack of strategic plan in Tokyo, though the New York had a regional plan since 1929, the year of the Great Depression. New York people had been strategic.

For energy efficiency of public transportation, it is good in Tokyo. But having too many build-up areas is a cause of heat island phenomena. The use of electricity has been increasing in summer time for air conditioning. Sustainability of Tokyo in total, therefore, is low. How can we resolve this problem? The answer is making a strategic plan of changing the spatial structure of the area to a system of low carbon cities by utilizing the current very efficient railway network. This eco cities linkage is a **multi urban core city** (Harashina & Kumata, 1977) or Sociable Cities as the legacy of Ebenezer Howard (Hall & Ward, 1998).

As we need strong leadership to change the spatial structure combined with a strict land use control, social consensus is required. The plan, therefore, must be made by good practice of public participation based on sufficient information disclosure.



S. Harashina 2004

**Figure 1: Land Use Patterns of Tokyo and New York**

**Strategic Approach towards Low Carbon Cities**

From the experience of failure of Tokyo, we need consider how to make a strategic plan. In Tokyo, after World War II, the urban planners of the Tokyo Metropolis Government argued that growth of Tokyo should be controlled. Their plan was to control the population of the 23 Urban Wards area, the central area of Tokyo, should be less than 3.5 million. But it was not realized by strong opponent from the industries and land owners. They thought that the restriction have adverse impacts to economic catch up after the War. Economy had a big priority than the quality of the life at that time. Then, Tokyo became an extraordinary great city. Population of the central area is 8 million and that of Tokyo area in total is 33 million, which is the only one in the world. Other major metropolises are less than half of Tokyo (Table 1).

Table 1 Comparison of Population Density of World Metropolises, Central Areas

Metropolis (total population, million)	Area Size (km <sup>2</sup> )	Population (million)	Pop. Density (people/ha)
Tokyo (33)	617	8.14	132
New York (17)	682	7.56	111
London (11)	588	4.10	70
Paris (11)	761	6.16	81
Berlin (4)	862	3.40	39

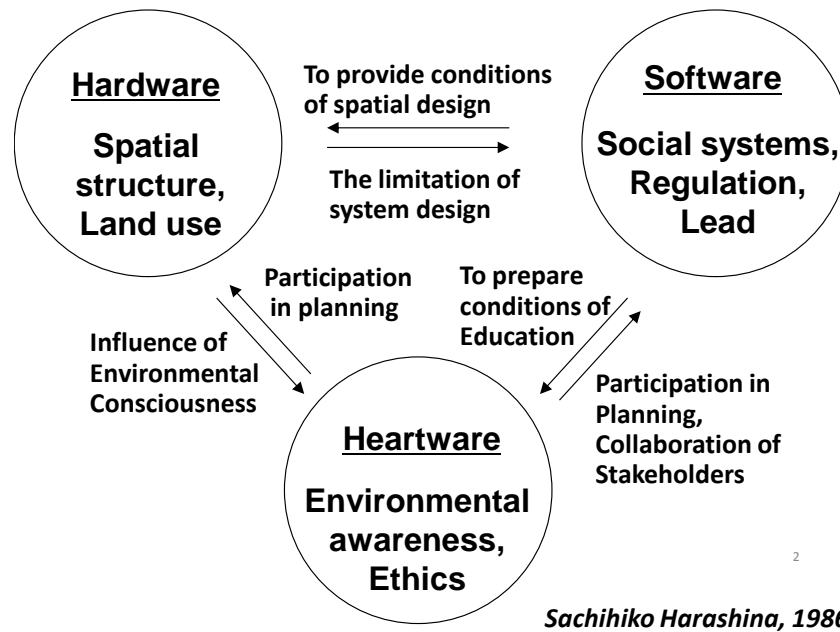
- Tokyo (23 wards):2002    ● Berlin(12 wards):2004
- New York (NY City excluding Staten Island):2000
- London (Inner London and outer 6 wards):2001
- Paris (Including outer 3 pref.):1999

The QOL of daily life in Tokyo is not so high, though the economic activities are good and it is quite convenient to enjoy such activities of urban life as shopping, dining and various entertainments. But because of long commuting time of the people, time budget for family life in weekdays is quite poor. It also affects the community activities of daily base. In weekends, the people have other difficulties. Because of high density of the living areas and lack of green space, the recreational areas are not enough. The QOL is low in this meaning.

There is another shortcoming in Tokyo. It has a big risk of earthquake hazard. A great earthquake happens almost every hundred years in Tokyo. The last one was in 1923, it was 86 years ago. We could see the huge damage by this in highly urbanized area like Kobe. But the case of Kobe was much better, as it has much more green space very close to the CBD and the housing areas. Kobe could be helped from Tokyo and other parts of Japan. But, if Tokyo was attacked by a big earthquake, no other region could help Tokyo. It should bring a quite serious problem not only in Japan but in the world as Japanese economic must be damaged. The impact would be great such as current economic turmoil.

We, therefore, need a strategic plan for the future of the Tokyo area. But it should be very difficult. The consensus building process required for making the policy and the concrete regional plan of Tokyo need an innovation as the public participation on the **regional level** is quite different from usual participation in urban planning.

As policy measures of environmental planning, I think that we should consider the following three types of wares of “hardware”, “software” and “heart-ware” or mind-ware. Among these three wares, there are reciprocal relationships as shown in Figure 2. Though the goal of the plan is change of the spatial structure of the Tokyo region, that is “hardware”, we need provide



**Figure 2: Hard, Soft and Heart Wares as Environmental Policy Measures**

necessary institutional and financial support that is “software”. And we also need make deep environmental awareness in the mind of the people, “heart-ware”, to build consensus.

Strategic Environmental Assessment (SEA) would be a way to create “heart-ware” among the public, as it could become a way for deliberative democracy. The paper discusses on the possibility of application of SEA for tackling the problem. A meeting based SEA with applying the **Hybrid Model** will be examined for this purpose.

### **Role of SEA for Planning**

Environmental Impact Assessment (EIA) and SEA are the way for pursuing sustainable development by controlling human activities to have a good harmony with the environment. As SEA is applied at strategic level of decision making, it is more suitable to secure this goal. SEA has been prevailing all over the world from the last decade (Sadler & Verheem, 1996; Therivel & Partidario, 1996; Therivel, 1998).

I think that the function of EIA or SEA is to conduct “**discussions in a public space**” to ensure the decision makers to take the mitigation measures against adverse impacts to the environment. The “public space” is a space for communication, which is open to the society and accessible for everybody. It is a similar concept of “public sphere” of the German sociologist Habermas (1962,), which is used as a term for overall society. But here, the word of “space” is used for indicating a certain area as the urban or regional environment is not for overall society but for a spatial subset of a society.

The function of EIA is exchanging information between proponents and stakeholders by utilizing paper documents such as scoping documents, draft impact reports or final impact reports, and written public comments. These are for information exchange in the participation process. There are usually very many affected groups in project EIA. Paper documents are convenient for sending information to everybody with high accuracy. But for efficiency of exchanging information, meetings are better way if the number of the participants is not big. The shortcoming of meetings is that the member size should be limited.

### Meaningful Reply

What kind of participation is necessary for good public participation? There have been many discussions on the levels of public participation. The classic answer was given in the late of 1960's in the US by Arnstein (1968). She showed the eight rungs ladder model of participation. I made another model as follows (Harashina, 2001). It was developed based on the studies in this field. The concept is based on the feedback process for meaningful discussions.

\* The words in the parentheses show Arnstein's usage in her article.

<b>(1) Informing</b>	<b>(Informing*)</b>
<b>(2) Hearing</b>	<b>(Consultation*)</b>
<b>(3) Reply only</b>	<b>(Placation*)</b>
<b>(4) Meaningful reply</b>	
<b>(5) Partnership</b>	<b>(Partnership*)</b>

The concept of the five levels model of participation was originally appeared in 1994 (Harashina, 1994). I found that there were a big gap between Arnstein's the fifth step (placation, a tokenism) and the sixth step (partnership, a citizen power). Jumping from tokenism to citizen power is not realistic. There should be another step between these two. Even though a government has power, public require accountability of the decision in a democratic society. Public and the government need to have discussions through any transparent channel. It might become tokenism, but "discussions in public space" means real reply or response of the government to the public. It should not be reply only, but should make **meaningful reply**. The decision-making of the government should reflect the information created through the discussions. It is an indirect decision making by open discussions.

For controlling human activities, we need build consensus about the decision in a society. The decision making process should be rational and fair. For rationality, scientific approach is required, then, systems analysis is applied to EIA (or SEA) analysis. For fairness, democratic process is must in a modern society, then, public participation and information disclosure as the base of participation is inevitable in the EIA (or SEA) process.

By these two conditions, “**discussions in public space**” is the essence of the mechanism of EIA or SEA. For instances, in usual EIA processes, paper documents such as scoping documents, draft impact reports or final impact reports, and written public comments are exchanged. And face to face contact is also utilized as compliments to the communication by paper documents. This encompasses informing meetings, public hearings, and workshops.

### **New Style of SEA: A Meeting Based Way**

Thus, I classify two kinds of communication media for public participation. One is paper documents and the other is meetings. The principal media for project EIA is usually paper documents and meetings are utilized as compliments to them. I, therefore, name this as “**paper based way**”. In the case of so-called public involvement (PI), it is commonly considered that the principal media is meetings. Then, paper documents are compliment to it, in contrarily. I name this type of participation as “**meeting based way**”.

As communication process, the function of EIA or PI is “**discussion in public space**”. It is more efficient if meetings could be held more intensively. But in the case of EIA, the shortcoming of the meeting based way is clear, as the number of the affected people or stakeholders is usually large. It is difficult to select relevant number of representatives from the stakeholder groups. But on the strategic level of decision making, the situation is different. The information exchange could be conducted through meetings by representatives of stakeholders and experts. It, therefore, is possible to conduct the process based on meetings in the case of SEA. This is a new style of SEA, which is conducted by the meeting based way. The principal media are meetings and paper documents are utilized as compliments.

The process of decision-making of a project is done stepwise starting from the policy level, then the plan or the program level and to the project level. In this way, there are upstream decision-makings before the decision of the individual project. This structure is common in every human society, and consensus building is necessary on each stage of decision-making in order. It is required to conduct assessment on plan or program level and policy level for making accountable decision. Then, an approach of SEA is required, if one would like to build consensus about a certain project.

In SEA, as the contents of the action are not quite concrete as those of project EIA, the number of stakeholder groups is relatively small. It, therefore, might be possible to select major stakeholder groups in this case. Theoretically, meeting based way could be applied to SEA for the effectiveness of communication between proponents and stakeholders, if it was transparently conducted. This is a new style of SEA. To conduct this type of SEA, the following three conditions are required for realizing “**discussions in public space**”. These

are derived from experiences not only studies in the field of consensus building and planning science but also various experience of myself.

### Three Conditions of Meeting Based SEA

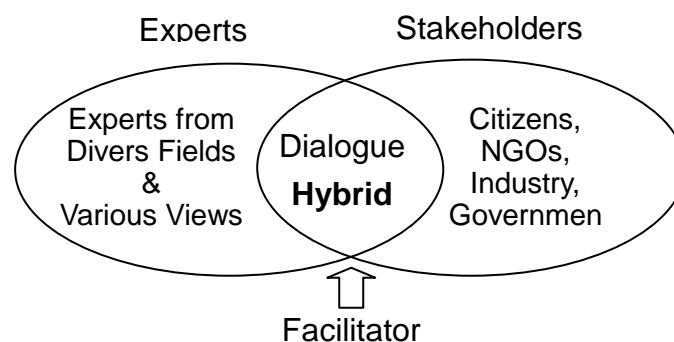
#### (1) Setting the Arena

Firstly, it should be guaranteed that the result of the discussions will be reflected in the decision by the decision maker, which is the indispensable condition. Then, the structure of the members of the arena is the practical problem. As the discussions are required to be conducted in a rational and fair way, the members should be selected to answer these. Experts are selected for promote scientific discussions, which satisfies the requirement of rationality. Representatives of Stakeholders are selected to exchange various opinions, which satisfy fairness in a democratic society. The hybrid of experts (E) and stakeholders (S) is essence in the arena. This is the **Hybrid Model** (Harashina, 2004).

For efficiency of discussions, the number of the members must be limited. The maximum number should be less than around twenty as the rule of thumb. Good balance of number of experts and stakeholders should be kept.

#### (2) Transparency of Discussions

The discussions must be done in a very open manner. Sufficient number of observer seats should be prepared. And efforts should be made to allow input from observers to resolve the outreach problem, because of the limitation of the number of the members. And even enough number of observer seats is supplied, not everybody can observe at certain time and place. For transparency, diverse communication media should be utilized concurrently such as TV , internet broadcasting etc. In the case of TV broadcasting, CATV is preferable especially for SEA applied to local actions. Written materials are also important for ensuring the contents of discussions. The minutes have to be made and publicized. The minutes of “who said what” type must be produced. For the convenience of making access of the public, not only printed minutes but also electronic minutes should be appeared on the web site.



**Figure 3: The Hybrid Model**

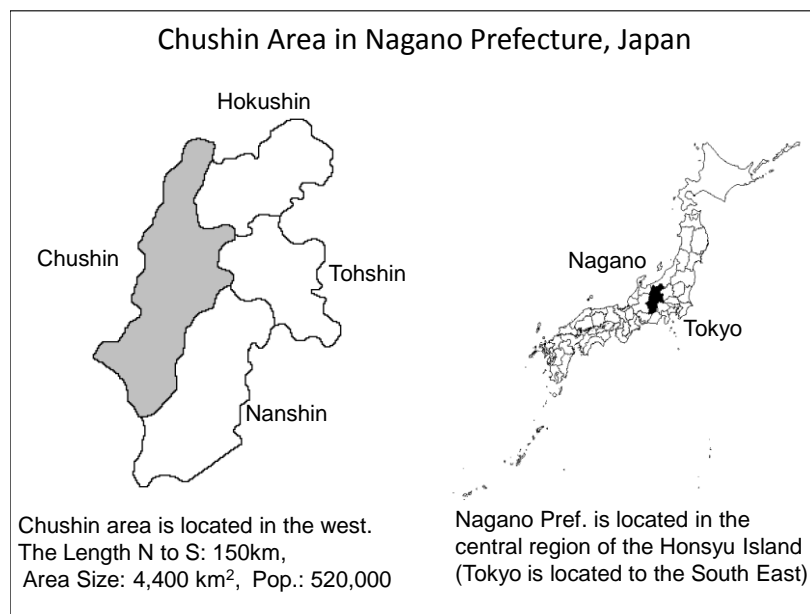
### (3) Sufficient Information

For meaningful discussions, we need sufficient information. Information disclosure is must. Necessary information includes those of “facts” such as reports and data, and those of “value” such as public opinions. The information should be collected from existing data and literatures. It might be necessary to invite pertinent experts for providing up-dated data and knowledge. Public comments should be invited not only by letter forms but also aurally at meetings occasionally. Through providing enough information to the members, a learning process among them could be realized. It, therefore, is desired to give opportunities to have various experiences and collaborations, such as technical visits and collaborative survey.

### Case Study: Application to a Waste Management Program

Many disputes are arising in the process of construction of waste treatment plant all over the world. Those are so-called NIMBY phenomena. The new style of SEA was conducted in the consensus building process of a waste management program. As the program is a regional level one, this case could provide good information for consensus building of regional plan for creating low carbon cities. The case will be illustrated from this viewpoint.

This is a case in the Chushin area of Nagano Prefecture, Japan. The prefecture is located in the central part of Honshu Island, the biggest island in the Japanese Archipelago. The prefecture is very mountainous area with natural beauty, which has many water sources. It was a regional level problem as the area is quite large, the size of the area is about one ninth of Switzerland and the population density is almost same as Switzerland (Figure 4).



**Figure 4: Location of the Case Study Area**



The prefecture planned to construct a combination of a waste treatment plant and a landfill site in a small town for the waste management of overall Chushin area. Though the proponent conducted project EIA, the local residents claimed that the site location process was not transparent as it was announced just before building the plant had been started. A dispute was arisen there, and it became impasse in the end of 2000. The new governor tried to have a consensus building process in 2001.

Then, the SEA process based on highly transparent meetings was started. It was conducted under the above mentioned theory of consensus building. Though I had been trying to apply the theory in actual situation but had not been successful. The trials have been failed to fulfill all the condition for good performance, because of lack of understanding and leadership of governmental officials. The case in Nagano was the first one, in which the theory was applied fully in real situation (Figure 5). It is because of a strong leadership of the governor, Mr. Yasuo Tanaka, who is well known as the person of transparency in Japan.

By this setting, the stakeholder groups could reach consensus up to a certain stage. Consensuses on the policy-making stage, the basic planning stage and the programming stage (former half) were built within two years. The governor had understood that true public involvement process was necessary. The dispute was arisen at the final stage of the series of decision making process which had been done within the prefectural government secretly. For good public involvement, public should be involved in from the start of the policy making stage. Under the three requirements of “setting the arena”, “open discussion”, and “sufficient



Consensus of constructing the plants were built after only several months of discussions

**Figure 5: Meeting Based SEA in Nagano, Japan**

Information”, it was conducted. They could build stepwise consensus until indicating possible areas for the site location. The areas were finally selected by applying GIS analysis, as they could build consensus of doing it.

### The Consensus Building Process of the Nagano Case

A quite brief chronicle of the consensus Building Process is as follows (Chushin., 2003). New governor of Nagano prefecture, Yasuo Tanaka, was elected in October 2000. Just after his election, the project was refused by opinion poll of the residents in the November. Then he asked me to help him. All of three conditions of meeting based way were accepted by the governor when I was appointed as the chairman. After the preparation of setting the arena, “The Committee for the Waste Treatment Facility” was established in April 2001.

Then, the process started. The open round table meetings of the committee were conducted. During the period of 22 months from May 2001 to March 2003, 33 committee meetings were held and open and intensive discussions were conducted. Not only these, 32 workshop, and other types of joint fact finding processes such as technical visit and investigation of municipal wastes were also held. Though the stakeholders were confronted at the outset, they gradually began to understand each other and could reach consensus.

It was a kind of learning process among the committee members and also the people in the region. The region is not small. The Chushin area has two times bigger area of Tokyo Metropolis, with population of a half million. As it was very disputable situation, all the process had been reported through local newspapers and TV stations successively. It, therefore, brought about a regional level learning process on the waste management program.

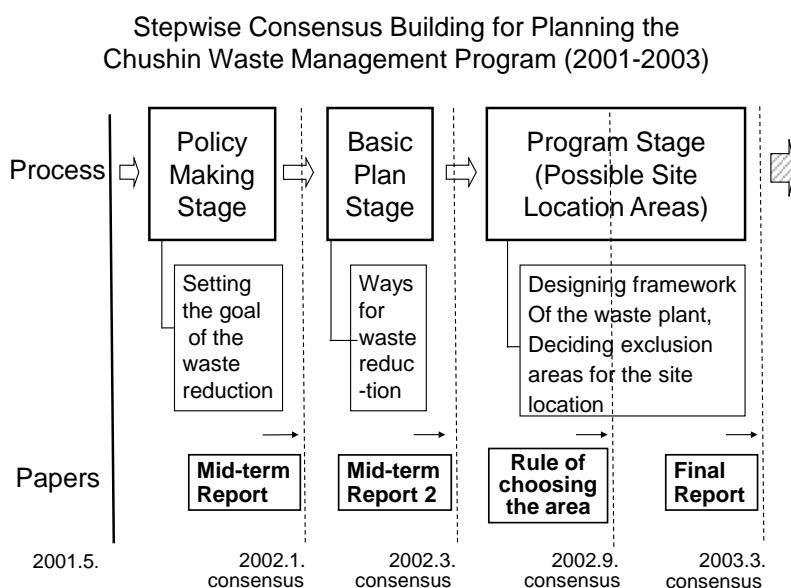


Figure 6: Process and Results of Consensus Building in Nagano Case

As illustrated here, the process was an application of a meeting based way. And paper documents were used to compliment it. Four documents, as shown in the bottom of Figure 6, were produced on each step of consensus building to ensure the contents of consensus. It is important that these documents were published in the process to help mutual understanding among the stakeholders and the experts.

### **Concluding Remarks**

What is the reason why those levels of consensus were built? The three conditions for good practice of meeting based way were well satisfied as follows.

- (1) Setting the arena:** The governor promised to respect the result of the committee at the first meeting. For the committee, experts and major stakeholders were collected. As the experts, seven representatives from academics and engineers, including me, were collected. Among six experts except me, half of them are from the prefectural area and the other half are from national wide. The stakeholder groups were diversified, which include those of the residents, local NGOs, municipal government and industry. The number of representatives of contending groups should be kept even for doing discussions fair. It was realized in this case.
- (2) Transparency of discussions:** Three kinds of sub-conditions for transparency are also fulfilled. For instances, not only preparation of enough number of the observers sheet but also CATV broadcasting was done. The “who said what” type minutes were produced and those were also appeared on the website of Nagano Prefecture. The facilitator was the chairman and as he was come from outside, actually from Tokyo area, the member could feel high neutrality.
- (3) Provision of sufficient information:** Information disclosure of the prefecture was realized under the strong leadership of the governor. The necessary information was collected as much as possible at that time through utilizing the existing data and literatures. When the special knowledge of experts was required, the committee invited those experts to give their lectures on the topics with newest information. Joint fact finding processes were also taken. Thus learning sessions were brought about.

We can learn from the case that public should be involved from the inception, which is policy making stage. At the outset of the consensus building process, the confrontation between opposing and supporting stakeholders was clear. The leader of the opponent group, who was a well known activist, eloquently insisted that the waste treatment plant and land filling site is not necessary as it was possible to make Zero Emission. But in the process of policy making

stage, he gradually recognized that Zero Emission was impossible in a certain time frame by open discussions based on the facts. The leader of the supporting group was the mayor of a town. He understood the concept of the opponent group, and he agreed to minimize the size of the plant. Both sides could make some concessions like this. Then, they could build step-wise consensus until to decide possible areas for the site location.

I believe that this type of SEA would be also effectively applied to planning low carbon cities, as it could promote the learning process in a regional level community. People could have strategic mind and create “**heart-ware**”, through SEA, because it is a very open process which could realize “**discussion in public space**” as shown in the case of Chushin area.

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