

What is Satoumi?¹

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1. Introduction

Twenty years have passed since the concept of Satoumi was proposed in 1998. Academic research on this concept has progressively accumulated, and the integrated coastal area management practice centered on Satoumi has spread across Japan and overseas.

Since 2004, Japanese-language articles on Satoumi have been continuously published, with a total of 298 articles, to date (Table 1). Meanwhile, there have only been 17 peer-reviewed academic papers published overseas, thus far (Table 1). Research on Satoumi has been conducted from a variety of perspectives, including those of humanities, social sciences, and natural sciences, due to its diverse aspects. Among them, the Japan Satoyama Satoumi Assessment (JSSA) conducted by the Japan Satoyama Satoumi Assessment Committee of the United Nations University Institute of Advanced Studies involved the participation of multiple researchers, wherein the conceptual framework of the Millennium Ecosystem Assessment (MA) was applied to assess the Satoyama and Satoumi of Japan.

At the national level, the Japanese Ministry of the Environment has incorporated the concept of Satoumi in the Strategy for an Environmental Nation in the 21st Century (approved by the Cabinet on June 1, 2007) and the National Biodiversity Strategy and Action Plan 2012-2020 (approved by the Cabinet on September 28, 2012). In addition, the Cabinet Office has adopted the concept of Satoumi in the Basic Plan on Ocean Policy (approved by the Cabinet on May 15, 2018), in accordance with the Basic Act on Ocean Policy (approved on April 20, 2007). Initiatives for creating Satoumi are spreading worldwide, and a survey conducted by the Ministry of the Environment in 2014 showed that 216 activities have been carried out from Hokkaido to Okinawa to promote the creation of Satoumi. In the Seto Inland Sea, where such activities are particularly intense, the associated prefectures have formulated and implemented a coastal management plan which incorporates the concepts of Satoumi based on the Basic Plan on Conservation of the Environment in the Seto Inland Sea (approved by the Cabinet on February 27, 2015), in accordance with the Revised Act on Special Measures concerning Conservation of the Environment of the Seto Inland Sea (promulgated and enforced on October 2, 2015). Efforts have also been made at the municipal level: for example, Bizen city, Okayama Prefecture, established the Bizen Satoumi / Satoyama Branding Promotion Committee with ICM (February 6, 2017) to integrate Satoumi and Satoyama.

This round-table discussion was led by Professor Emeritus Yanagi of Kyushu University and Professor Emeritus Matsuda of Hiroshima University, who has been a long-time proponent of creating Satoumi. The discussion centers on what Satoumi is and the issues involved in promoting future implementation and research while reflecting on the past 20 years of Satoumi research and creation activities. This round-table discussion was held from 14:00 to 16:00 on May 10, 2019, at the Osaka Umeda Campus of Ritsumeikan University.

Table 1. Publication of papers on Satoumi (Number)

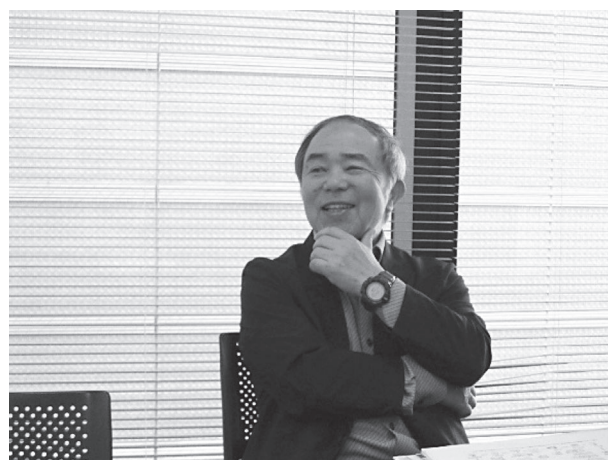
Publication year	Japanese journal							English journals (peer-reviewed papers only)
	Academic journal	Research institute report (other than university)	Professional magazine	General journal	University bulletin	Other	Subtotal	
1998	1						1	
2001			2				2	
2002			1				1	
2003				1			1	
2004			11	1			12	
2005	2		4		5		11	
2006	1	1	4	5			11	
2007		4	1	4	2		11	
2008	1	1	7	5	2		16	
2009	4		8	4			16	2
2010	3	11	4	2	2		22	
2011	10	12	7	5	9		43	
2012	4	1	14	2	5		26	
2013	12	3	6	1	5	1	28	5
2014	18	2	5	5			30	1
2015	2		6	6	2		16	1
2016	8		4	1	4		17	4
2017	10		7	1	2		20	3
2018	5		8		1		14	1
Total	81	35	99	43	39	1	298	17

Note: The search keyword "satoumi" was used for the publication years 1998-2018 on the search service CiNii for Japanese papers. The search keywords "satoumi" or "sato-umi" were used without any specified publication years on the search service Web of Science for English papers.

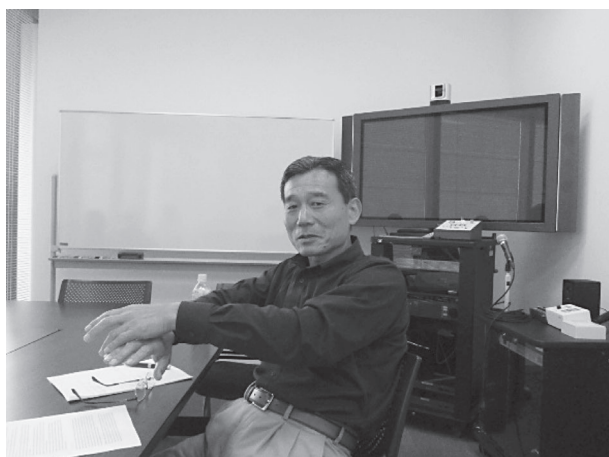
2. Round-table discussion



Tetsuo Yanagi



Osamu Matsuda



Takeshi Hidaka



Ryo Sakurai



Taisuke Yoshioka



Takuro Uehara

Birth and Evolution of the "Satoumi" Concept

○ Uehara: With regards to the purpose of this meeting, I believe that the concept of Satoumi has spread with its advocacy by Prof. Yanagi. At present, I think that the most commonly asked question is "What is Satoumi?" I would also like to clarify this concept and what kind of research will be necessary in the future. First, I would like to ask for your views on Satoumi, one by one. Afterwards, I would like to discuss these concepts with everyone.

That said, Prof. Yanagi, as the proponent of Satoumi, what, in your opinion, is Satoumi?

○ Yanagi: In my opinion, a crucial aspect of Satoumi is that fishermen have a continuous source of food. I had made this sound fancy by using the terms "manpower, biodiversity, and productivity," but I think that these terms hold true even today. I was told that this definition alone was insufficient after the second year of my proposing "Satoumi" in 1998, after which many people have come up with various definitions. Personally, I welcome all definitions. Under such circumstances, what caught my attention when speaking to Prof. Uehara was perhaps the concept of the social ecosystem, and how definitions include some aspects of social science to set out the path for Satoumi. Presently, I believe that this is what everybody is searching for.

The Architectural Institute of Japan recently published a special feature on the topic of making the Seto Inland Sea a *territorio*. A *territorio* is an Italian term which refers to how an entire region is socially and culturally reorganized,

which is essentially a social design. The Setouchi Triennale has been successful in the Seto Inland Sea, and this can be used as a hint to promote the social and cultural characteristics of the Seto Inland Sea to the world. I was asked to write on Satoumi for the special issue, so I wrote a story about how the region of Hinase is becoming a *territorio* in the Seto Inland Sea through the horizontal collaboration of Satoyama, Satochi, and Satoumi and the vertical collaboration of fishermen, high schoolers, junior high schoolers, and elementary school children. In addition, I also stressed on how this can be used as a model to show the future potential of the entire Seto Inland Sea (Yanagi, T. (2019)), Collaboration between the Satoyama, Satochi, and Satoumi in the Seto Inland Sea. *Journal of Architecture and Building Science*, May 2019, Issue 17). I have received a positive response on the article, stating that it was very interesting.

It is important to socially coordinate Satoyama, Satochi, and Satoumi, moreover the human aspect, in addition to the social aspect, must be coordinated due to the links between the two.

The first generation of people who received oceanographic education at Hinase Junior High School are probably in their second year of university this year. I am very excited about what kind of support groups will be formed by the junior high school students who have received environmental education, and if this goes well, it would be the best example of relational values. I expect Prof. Uehara to position Satoumi as social ecology. This is no longer within our scope of business, so we look forward to its development.

○ Uehara: I would like to hear a little about the beginning. How was it before the paper was published in 1998?

○ Yanagi: I lived in the Seto Inland Sea when I was a child, and I was involved in several social activities related to pertinent issues. I traveled around the Seto Inland Sea for two years with the Seto Inland Sea Pollution Research Group. During my interactions with the fishermen there, I felt that they needed reinforcement. On an individual level, I spoke to them about the residual flow and was researching the story of red tide. Although I wanted to do something for those fishermen, as a single student, I could not do anything. I wanted to develop a strong academic background so that I could be a proper witness to the trial. To that end, I went to graduate school, and with time I became a university faculty member. During that time, I was focused on accumulating publications because I had heard that I would not achieve my goal without presenting relevant publications as evidence in a trial. Incidentally, in 1998, the Journal of the Japan Society of Civil Engineers and the Journal of the Japan Society on Water Environment requested that I write about the future direction of coastal oceanography; so, I wrote that the Satoyama should be applied to coastal regions. Above all, I wanted to ensure that fishermen had access to nutritious food. Finally, I wanted to improve the fish production in the coastal areas.

○ Uehara: I see. So, originally, it was mainly about wanting to do something for fishermen.

○ Yanagi: Ehime University did not have an observation vessel, so fishing vessels were chartered for oceanographic observation. While working on those fishing vessels, we would speak to the fishermen, and they would always say the same thing: "If things keep going this way, we won't be able to eat." In time, we agreed with them and started thinking, "what can be done for them...."

○ Uehara: Prof. Matsuda, which aspects should be expanded when you say that the scope of Satoumi should be slightly broadened?

○ Matsuda: Although researchers provide their perspectives through a definition theory, such a theory will not emerge successfully because there are various field activities to be considered, such as creating a Satoumi. Those engaged in Satoumi creation sites are motivated by what they want to do and what they must do. A definition theory is extremely important for researchers and scholars to present their papers objectively. In addition, perspectives regarding Satoumi vary; it is viewed as a static and a kinetic state, and a definition theory is a crucial factor, particularly for field-level behavior which actually improves the familiar sea. Thus, it would be better to focus

on parts that need a definition while considering the definition theory.

Previously, *Nippon Suisan Gakkaishi* published a special feature entitled "My Theory of Satoumi." In this paper, I wrote that it would be better not to define the term in a narrow sense. This is because if a very detailed definition is created, then even slight deviations will disqualify something from Satoumi. Therefore, comprehensive conceptual regulation was chosen as a term.

For instance, the famous concept of "wise use" from the Ramsar Convention did not have a specific definition. In other words, what actually constitutes "wise use" should be decided among associates based on discussions of each Ramsar site. Thus, perhaps Satoumi could be defined in a similar way?

The Ministry of the Environment has been conducting fact-finding surveys of Satoumi activities, approximately every five years, with the first and second surveys carried out in FY 2010 and 2014, respectively, and the latest in FY 2018. Looking at the results, the location and number of Satoumi activities are both increasing. Nevertheless, human resource development is becoming increasingly important, as staff, experts, and participants are aging and the number of personnel is running out.

These surveys by the Ministry of the Environment are, in some sense, like a self-declaration system which describes what is being done to create Satoumi. In other words, it would be good if the stakeholders thought that their activities are creating Satoumi. This is also one way of thinking. If we were to present a clear conceptual rule, we would instead be discussing whether activities fall under this rule or whether it is slightly different after examining each activity. Indeed, there may be cases where this is necessary, but I do not think it is essential. Numerous examples exist where words have no proper definitions. Perhaps, in some cases, definitions should be responsible for excluding something?

○ Uehara: I see. How is this survey being conducted?

○ Matsuda: This is a questionnaire-based survey system. Municipalities are often the contact points, and from there, the survey sheets were delivered to various local activity groups, researchers, NGOs, and so on. One problem in the method is how to spread the survey sheets; currently, however, it has become possible to compare the data.

○ Uehara: So, this means that each group would report through their local government when they believe it is Satoumi.

How about Prof. Hidaka?

○ Hidaka: Continuing the present conversation, I also conducted a national survey to find out the total number of Satoumi in around 2014. We asked local governments and prefectures all over the country to distribute questionnaire forms and to inform us of any sea management activities that they were aware of. When talking about Satoumi in preliminary surveys, it was very difficult to define Satoumi, and we would be flooded with questions such as, "what is that?" and when talking about management there would be questions like, "what is management?" In such cases, it was slightly difficult to handle the situations.

○ Matsuda: There were 122 Satoumi creation activities in the first survey in FY 2010. This became 216 in FY 2014 and 291 in FY 2018. Of course, the content must be checked, but simple comparisons show that the number of activities is increasing. Areas of activity are also increasing.

○ Hidaka: When I conducted the survey in 2014, it was around 240, and I remember thinking that the number was close. However, I also remember having a difficult time understanding the way in which the explanations were written in the questionnaire form. How do we define Satoumi? I imagine that this would be hard to answer, if we would simply look it up. So, what I finally decided to ask was, "are there any initiatives where the coastal areas are managed in various ways?"

○ Matsuda: The reason that the number of activities increased remarkably in the second survey was because the

Fisheries Agency-based multi-functional measures project began. In other words, a budget was allocated for it. The project does not refer to Satoumi's creation, but the people who are working in this project are possibly responding to the questionnaire, thinking that this could refer to Satoumi creation.

○ Yanagi: The multi-functional project was so big. Such a large amount was distributed.

○ Uehara: Has it already finished?

○ Yanagi: It is probably continuing.

○ Matsuda: However, the term "multi-functional" may be all-encompassing, as if anything can fit under it. As a result of the increased activities, there were apparently complaints from the Ministry of Finance, which sets the budget.

○ Uehara: Letting anything qualify is not good.

○ Matsuda: Apparently, many checks were put into place.

○ Hidaka: Even now, there were nine groups in Omura Bay. In each region, various locals, mainly fishermen, would form a council and implement management goals and plans. So, if we called this Satoumi's creation, then it could be acceptable.

○ Matsuda: It feels as though the council's method has become established, even in small-scale communities.

○ Uehara: Given the possibility that it is better not to define Satoumi, on an individual level, when conducting surveys, how do you explain Satoumi?

○ Matsuda: In the case of the surveys by Prof. Hidaka, this was rather difficult.

○ Hidaka: Yes, this was the earlier story, and the way in which I asked this was by framing it as activities by fishermen, companies, residents, and others wherein they tried to examine the ocean to protect the quality of the coast and sea.

○ Uehara: In that case, you are asking about the preservation of natural resources.

○ Hidaka: It included the natural environment.

○ Uehara: This was why you did not talk in detail about the productivity, diversity, and improvements, as mentioned by Prof. Yanagi earlier.

○ Hidaka: I faced these difficulties, so I did not speak about them.

○ Uehara: If anything, it was asking whether natural resources were properly protected.

○ Matsuda: Therefore, by setting out the three criteria of biodiversity, productivity, and human relationships, as defined by Prof. Yanagi, the first two are, in some ways, problems only related to the coastal sea. In such cases, a major emphasis was placed on conventional marine science or environmental management. However, the third criterion of human relationships emphasizes the subsequent actions, which now also covers the social aspect. Combining the first two criteria with the third is key to the relational values mentioned by Prof. Uehara.

Originally, the sea alone had several values such as fishery resources. Beyond that, human beings would act as themselves. However, there were either cases where they would act separately, or where they would associate and create a relational value, in which even if the original material is the same, the total value increases dramatically. That is, perhaps, one of the goals of Satoumi. Recreating the relationship between humans and the sea is extremely important in Satoumi, but this would be extremely difficult to express, if a strict scientific definition was applied.

○ Uehara: Indeed. Until now, the references about "manpower" in the biodiversity, productivity, and labor, specifically referred to fishermen, perhaps?

○ Matsuda: No, I do not think it is just referring to fishermen. It is true that fisherman was a major motivator for Prof. Yanagi, but at present, the number of fishermen is very small. So, the group that includes markets, such as supporting fishermen—including people who eat fish, or those who buy seafood—is extremely large, so I feel this may better include at least some parts of them.

○ Yanagi: Fishermen in Japan are less than 0.2% of the population. In total, 99.8% of people regularly write that they have nothing to do with the sea and that they could not possibly get engaged in Satoumi. The reason that I was startled regarding the councils, support groups, or the relationship value mentioned by Prof. Uehara earlier, was whether this can be used to involve that 99.8%.

○ Uehara: We discuss whether that 99.8% could be involved when talking about Satoumi creation, but is the Satoumi, originally referred to by Prof. Yanagi, something that was only done by fishermen and not really related to the surrounding people? Essentially, were conventional Satoumi mainly associated with fishermen and not really associated with the other surrounding people?

○ Yanagi: That is possibly the core of it.

○ Hidaka: My approach was from this direction. My concern was about fishery rights and systems. There are now fishery rights and common fishery rights, but the original form was that there were seas, coasts, and fishing villages, and those who lived in fishing villages protected the coast, including the resources and environment. People living in fishing villages followed their own rules regarding the ocean surrounding them. In the past, most people living in those fishing villages were related to the fishing industry. The customs of that time remained as customary laws, changed from the old fishing laws to the current ones, and are institutionalized as a common fishing right.

However, this was fine when possible. Most of them were workers in fisheries, and they made their own rules. However, various people entered the fishing villages, and the fisheries business were no longer the only ones to use the ocean. When this happened, when the people who lived on the shore managed the resources in front of them, the people and the way they used resources changed. My belief is that as the people living on the shore have new communities, the usage pattern of the sea should be protected by new rules.

○ Uehara: So, in this case, because the old Satoumi did not have others besides fishermen...

○ Hidaka: There are places where this transition is occurring even today. There are fishing villages where fishermen and those who are not involved in fishing but are involved with the sea live together. There are some who are only involved once a year with the sea. There are places where people visit once or twice a year to use the sea based on the old rules, which are being made including those people.

○ Matsuda: If we simply divide the old Satoumi, and the Satoumi in the present conversation, then we can see that there is indeed a need to look at the Satoumi, which emerged, after Prof. Yanagi's definition, in a historical light. The reason that Satoumi developed in Japan, particularly in the Seto Inland Sea, was because Japan achieved advanced growth and reconstruction after its loss in the Second World War and became one of the world's leading economic countries. At the same time, it is important to understand that when we were children, the issues of pollution, environmental contamination, and environmental destruction were severe, and Satoumi emerged as a countermeasure to this. I think that understanding this aspect is necessary when introducing Satoumi or pitching this to an international audience.

These days, I have been referring to the relationship diagram between Satoumi and the SDGs, which Prof. Nakagami showed me the other day, as the *Satoumi Mandala*. In this figure, Satoumi is associated with virtually all the goals of the SDGs. However, as you know, the "Sustainable Development," SD, in the SDGs was first brought up in the 1992 Earth Summit in Rio. So, it took more than 20 years for the G to be attached to the SD to create the SDGs.

Satoumi has been progressing simultaneously with these historical events. For example, elementary / junior high school students today are taught that the environment is important, that ecosystems must be taken into consideration, and trash cannot be just thrown away anywhere. However, I wonder whether it would be better if in a historical context, Satoumi were understood as being created for solving problems of the past. There are still some

countries which put economic growth first over environment and human rights, so I think there is still a need for Satoumi in the future.

In February 2018, there was a joint symposium between JICA and the University of the South Pacific, which is the local university in Fiji, a country in the South Pacific. The theme of the symposium was "SDG14 and Satoumi." I was invited to this symposium and talked about Satoumi. As the national ODA, JICA has taken up the concept of the Satoumi and is trying to develop it overseas.

For example, international expansion of Satoumi has been promoted by Professor Yanagi and other researchers. Other than this, organizations, such as the International EMECS Center, have spread these concepts. Over the past 20 years, one new development is the effort by JICA to internationally present Satoumi as a national policy. Therefore, I think it is very important to create a key paper that is easy to understand, as proposed by Prof. Uehara.

Relationship between "Satoumi" and Society

○ Uehara: I would like to pose some questions to Dr. Yoshioka. I would imagine that you have seen fishermen involved in the preservation of the sea in various places. So, what are some of the differences and commonalities between them?

○ Yoshioka: We visited various places in connection S-13 Project, and in most of the places we visited to conduct a survey, people were practicing well thought out initiatives and fishermen were also having motivated activities. They were engaged in different activities, for example, environmental education tying-up with local junior high school in Hinase and acquisition of international certification like ASC (Aquaculture Stewardship Council) in Shizugawa but they are all tracking environmental issues with enthusiasm. The fishermen's faces are cheerful and although, in general, fishermen are getting old, I had the impression that there were more young ones in places we visited.

○ Uehara: So, you had gone to Hinase and Shizugawa.

○ Yoshioka: Yes, places like Hinase, Shizugawa, Echizen town in Fukui Prefecture, or Nanao in Ishikawa Prefecture.

○ Uehara: Did this have connections with people other than fishermen? I had clearly seen in Hinase that junior high schoolers and co-ops were involved, and activities were conducted while connecting with the surrounding people, but I did not visit the other places.

○ Yoshioka: For example, in Shizugawa, since a co-operative in Miyagi Prefecture was the major buyer of fish products sold in Shizugawa, there were projects for the co-op members to visit and observe the sites where the fish they eat were raised. The co-op members are also consumers in a broad sense, so I think I can say that fishermen have direct link with consumers. In Nanao, there were numerous forest preservation efforts to protect mountains for the sake of preserving sea environments. Fishery association members also participated in these activities and were able to connect with non-fishermen.

○ Uehara: Besides fishermen, what kind of people were involved in these preservation activities in Nanao?

○ Yoshioka: This was originally hosted by a local radio station called FM Ishikawa, and companies and citizens who agreed to the purpose participated in the activities. Since this was conceived as a tree-planting activity for the sea, the fishery association in Ishikawa Prefecture has taken a cooperative stance to some extent. In addition to their participation in activities, the fishermen served seafood to the participants after those activities.

○ Uehara: How many people participate in these conservation activities?

○ Yoshioka: The number? I do not quite remember, so I will investigate and let you know. (Note: About 100,000 participants per year)

○ Uehara: Do you know when these activities started?

- Yoshioka: I think it was around 20 years ago (Note: Started in 1995). It originally began as a beach clean-up activities, included in “Clean Beach Ishikawa.” activities. “The Ishikawa Fisherman’s Forest campaign” was one of the Clean Beach Ishikawa activities, and this activity initially focused on tree-planting. However, it has recently been extended to include activities such as thinning and weed-cutting, of the planted forests, being aware of the importance of maintenance of past activities.
- Matsuda: The Noto Satoyama and Satoumi of the Noto Peninsula have been designated as a Globally Important Agricultural Heritage System (GIAHS).
- Uehara: Was there any other place, among the places that Dr. Yoshioka had visited other than Hinase, where the fishery operative was also learning oceanography?
- Yoshioka: At Shizugawa, the activities were conducted by the “Sustainability Center” and not directly by the fishery cooperative, and I here that in Nanao, Obama, and Echizen town, fishery cooperatives were not directly, either.
- Hidaka: Experiential fishing has increased quite a bit in Shizugawa, hasn’t it? For example, making tourists work on seaweed farming.
- Matsuda: During school excursion, Obama also arranges fishing experience for junior high schoolers in the Kansai region. However, this is centered around the village of Ano.
- Yoshioka: With places like the “Blue Park Ano”. Ano offers homestay at fisherman’s house.
- Matsuda: This is the “forerunner” of the homestay at fisherman’s house. But in a sense, it is responsible for marine fisheries education.
- Yanagi: Diving shop employees in Notojima Island are protecting eelgrass, and they cooperate with fishermen.
- Yoshioka: In Echizen town, even though they are not for schools and children, there are programmes for adults to get on the boats and experience fishing.
- Uehara: That indeed seems like something local children would be doing year-round, like in Hinase...
- Yoshioka: As far as my observation goes, there are no other places whose activities are so extensive.
- Yanagi: Hinase stands out. In no other place has activities been conducted to that extent.
- Hidaka: I think there are many places where the comprehensive learning period is sporadic but not so many places where it is as continuous as it is there.
- Yanagi: This is because the teachers at Hinase Junior High School worked very hard.
- Yoshioka: Even in Fukui Prefecture, there are schools in the coast which take their students for seaweed picking on the rocks, but there are none like schools in Hinase that let their students have many experiences including observation of oyster rafts, harvest of oysters and shell processing all through the year.
- Hidaka: They indeed experience the series of tasks. Like planting, harvest, cooking, and eating rice, experiencing the entire series of steps might help them see the entire picture.
- Yanagi: It is particularly good for listening. That is a great idea. It has become a very good combination, hasn’t it?
- Matsuda: In this way, the students’ academic abilities have greatly improved.
- Uehara: Prof. Sakurai, the junior high school in Hinase has been the center of observation, Do you have any opinions on this?
- Sakurai: Let us see. What I feel as a part of research on environmental education is that in conventional environmental education, it was generally often the case that teachers taught something to children, or specialists and researchers to residents. At Hinase, however, fishermen, who were local residents, taught something to students, and this was different from conventional environmental education. I think that this is closer to education for sustainable development (ESD). There was a conversation on definitions earlier, but ESD also has a broader

definition. I feel that the marine education in Hinase is closer to ESD than environmental education, and I believe that this is a notable example. Even looking at previous international research, there have been few programs like Hinase, where students work together with fishermen as a unit over a long period of time.

A recent analysis has shown that although it is common to say that marine education has a significant impact on students, parents also learn a considerable amount from their children because children return home and talk to their parents about what they learned. Analyses show that the more children at home talk to their parents about what they learned in the marine education program, the higher their parents' awareness and knowledge of the ocean in their communities, and the more they develop positive feelings towards marine conservation. Even after graduation, some children personally continue to study eelgrass. To put it in definite terms, marine education is a program that affects students' lives even after they graduate the junior high school. These educational effects are generated because it takes place in a specific environment of Satoumi.

○ Uehara: When thinking about the entire coastal area of Japan, it is worrying why favorable initiatives like those in Hinase do not work in other areas. I do not really understand why, and if the oceanographic learning was successful because Satoumi was originally there, as mentioned by Prof. Sakurai just now, then I feel that introducing this in other regions would be difficult.

○ Matsuda: Since 2003, I have been involved in Satoumi creation in Ago Bay for over 15 years. Awareness among adults does not change so easily even there, so educating parents through children was extensively conducted from the outset. There are some among fishermen who still throw away trash into the sea as they used to. Back then, it used to be only the rough skin of fish or orange peels, but now they have become plastic or aluminum cans, and this has become a problem. However, children learning environmental education and telling their parents, "Daddy, you shouldn't do that" seems to be particularly effective.

In addition, with regards to the old-fashioned Satoumi, it is great that it is continuing in an old-fashioned manner, but it is something that an individual should re-interpret in the present context. It is important that someone communicates, "what you're doing has these kinds of meanings, and for example, they're properly linked to the SDGs."

○ Uehara: Is this something that an outsider should do?

○ Matsuda: Outsiders should not suddenly show up, so the way in which it is done is another issue with regards to methodology. There are various debates on how Satoumi should be viewed, and from the opinions of Prof. Uehara, perspectives, such as landscapes and production landscapes, are included as well. In either case, I believe it is the job of a professional to interpret the current situation in a slightly different way. The ways in which the various activities of Satoumi should be expanded are related to the theme of this round-table discussion, but this may be surprisingly difficult.

SDGs and Satoumi

○ Uehara: Nowadays, terms like SDGs are being used in many places. My child has been learning SDGs in elementary school, and now that they are interested, it may be one way of connecting Satoumi with the SDGs.

○ Matsuda: Although this has not been mentioned much, I believe that one of the characteristics of the SDGs is that it is an approach that would not appear in Japan through ordinary political ways of thinking. I would say that Satoumi is a bottom-up concept, so there are many activities based on the awareness of the current situation, for example increasing the number of eelgrass because currently, so many have been lost. However, the SDGs set a target for 2030 and then it back-calculates the activities from there. It may be a far-reaching target-setting method.

○ Uehara: Like back-casting.

○ Matsuda: I think there would be criticism if Japanese politics does back-casting, for example, “why are you not recognizing the current situation and saying things that can’t even be realized?” However, there is a value in that, and these days, the top-down framework at the level of the United Nations has become widely recognized across the world. Thus, I think that it would yield unexpectedly good results to connect this with the typically bottom-up Satoumi.

○ Hidaka: What was the term you had used for the entire Seto Inland Sea?

○ Matsuda: *Territorio*.

○ Hidaka: So, a new type of Satoumi in the form of *territorio* may be possible as well. There is a small traditional Satoumi, and from here, various new aspects enter, which then combine to create a new type of Satoumi. I think that this way of setting large strategies and goals first, and then back-casting, must be the way forward.

○ Uehara: I see. How wide is this *territorio*? Is this something like the entire Seto Inland Sea?

○ Yanagi: At the very least, the Architectural Institute of Japan seems to be thinking at that scale.

○ Hidaka: The way I see it, the ecological range should be around that of the Seto Inland Sea.

○ Uehara: It is larger than bays or seas.

○ Hidaka: I think that it would not work if it is not large enough.

○ Matsuda: This also leads to Prof. Hidaka’s network theory.

○ Hidaka: I think so.

○ Yanagi: A Satoumi network.

○ Uehara: There would be a connection there.

○ Matsuda: I want to hear that story as well.

○ Hidaka: This is a basic story. In the case of Hinase, the Satoumi which was the foundation at the time, evolved from the typical Satoumi, to which was managed by fishermen based on fishing rights, to finally new type of Satoumi from 1985, when the eelgrass growth activities began. Many external researchers have come in, communicated the local conditions to the external world, and brought in various external knowledge inside the community, acting as a sort of translator. I think that the role is very important. Various people have become involved in the eelgrass growing activities, and finally flourished after about 20 years, and this was when it really began to change as a new type of Satoumi. The marine education activities of Hinase Junior High School were also brought into this process. I think that this is one of the elements of the dynamism of Satoumi.

○ Uehara: In that case, what was the original trigger for the dynamism of Satoumi?

○ Hidaka: I would say that this was the initiatives from around 1985.

○ Uehara: However, when discussing the creation of Satoumi, it would not be possible to say, “alright, let’s start with eelgrass,” for example.

○ Hidaka: Ultimately, the eelgrass is not the important part, but rather how some fishermen began these conservation activities, external experts came in, and people from the local community started getting increasingly involved.

○ Matsuda: I have never heard the term *territorio*, but there used to be a term called “eco-regions.”

○ Yanagi: The term, at least.

○ Matsuda: The concept that Prof. Uehara is proposing right now is that of a social ecological system. Therefore, looking at a social structure and ecosystem, it would be an idea to set a given group as a single unit, and perhaps it is not necessary to suddenly conform it to the geographic scale.

○ Yanagi: There used to be “watersheds,” long ago.

○ Matsuda: “Watershed” may have a closer meaning. So, a “gathering” is created in that sense. The traditional

Satoumi was quite small since a single unit was generally at the level of a fishing village. However, councils that exist today are quite large, such as the Bay-Sea Council, Osaka Bay Revitalization Project, and Hiroshima Bay Revitalization Project, based on the Act on Special Measures concerning Conservation of the Environment of the Seto Inland Sea. Setting aside whether these “gatherings” are easier to operate, questions about the extent to which the ecosystem and social system elements are lumped together will probably be answered by research. I feel that an approach which effectively uses this is valid.

○ Uehara: With Hinase, a rough image of a social-ecological system can be seen. We are currently conducting research on Harima Sea, but it is unclear where to make the divide. For example, when considering Harima Sea, what should we do with the Kobe citizens? It seems strange not to add them in, and simply adding those living in the coastal regions seems incorrect. In such a case, what happens when the Kobe citizens are included? The other reason that I want to say “social” is because everybody is not just thinking about ecosystems separately, and the “ecosystem” in most of our lives is so small. This is important, so it needs to be properly positioned in our lives and managed. In that sense, I have not decided, whether to incorporate the Kobe citizens while considering such matters.

○ Matsuda: An example related to this is that the Fishery Agency’s approach toward fisheries environmental management has changed in the recent years. The conventional approach was that only the fish that we wanted to catch should be increased. However, upon careful consideration, the habitat of the organisms which feed the fish that we want to increase is also important, and it is important to consider their entire life cycle and ecosystem. This is like the previously-mentioned social ecosystem, and for a given fish species, if the spawning ground is in one location, their infancy is in another, and parents live in yet another location, then the count of this species will not grow unless this entire ecosystem is preserved. Thus, for the fisheries environmental management in Harima Sea, the government has taken the initiative to create a joint plan for the three prefectures of Hyogo, Okayama, and Kagawa.

○ Hidaka: When was this?

○ Yanagi: About 5 or 6 years ago.

○ Matsuda: I was also involved, and it was the Fisheries Agency’s new fisheries environmental development policy.

○ Yanagi: Did you have a target for flounder or something, with the bottom fish?

○ Matsuda: It is novel to consider the spatial aspects over the entire life history with fishes like flounder.

○ Yanagi: I think the direction is correct, but there are no results yet.

○ Matsuda: Planning should currently be in progress at each prefectural level.

○ Uehara: Resource recovery plans have been conducted in the past, such as those for the Japanese seerfish. Perhaps something more comprehensive than that.

○ Matsuda: It was slightly different from that. Resource management and environmental improvement are separate concepts in the Fisheries Agency systems.

○ Yanagi: Qualitatively, it is completely different. That was a net restriction.

○ Matsuda: Fishing is in some sense, resource management.

○ Hidaka: However, most of the life history is in the Seto Inland Sea. Releasing fish, net restrictions and fishing season restrictions are very good examples for resource management.

○ Matsuda: Indeed. They are successful examples.

○ Uehara: For Japanese seerfish. These fish were an example where management alone, and not ecosystem management, was sufficient. Therefore, I think that this is usually not the case.

○ Hidaka: We were able to cover many parts of its life history. The related prefectures all cooperated, and coordinated regulations were implemented.

○ Uehara: I see. Understood.

Toward the Educational Effects of Satoumi and the Formation of Support Groups

○ Uehara: I would like to return to Prof. Sakurai's point when trying to replicate the education at Hinase Junior High School elsewhere.

○ Sakurai: The story always tends to be about how innovative efforts were made due to key people, for example an enthusiastic teacher. These points are important, but focusing only on those points would mean that such initiatives would not be established in other areas where there are no key people. Such enthusiastic people are not found everywhere.

I am currently conducting questionnaires and interviews with all the teachers and parents at the school. I think there might be some hints by listening to opinions from teachers other than those enthusiastic key people. For example, some teachers expressed the view that marine education is an important part of integrated study in junior high schools, but the burden on teachers is so great that devoting too much time to marine education can affect other subjects. I have also heard opinions from parents asking if students' academic abilities are still proficient when they are involved in marine education. Some other teachers have told me earlier that their grades have conversely improved because of marine education, but some parents may be worried if they do not have visible data or results. How can marine education be continued at schools? Since the key teachers may eventually retire or transfer to another school, I do feel that there should be some benefit for schools and teachers to conduct marine education.

There are also opinions where junior high school teachers can learn about the community and interact with the locals through marine education and that both the community and junior high school can work together to nurture students. These programs could end if the enthusiastic key teachers leave the school unless teachers themselves feel that it is beneficial—and unless they feel that there is a need to continue, despite the burden being somewhat large. To spread this to other regions, I think it is necessary to clearly convey that there is an advantage in doing marine education for all the parties involved.

○ Matsuda: The one I know about is that of Otsuki Elementary School, in Otsuki town, next to Sukumo city, Kochi Prefecture. The school principal who is enthusiastic about the project told me that the school has six years of fisheries and oceanographic education programs from Grade 1 to 6. This is done with the immense support of local fishermen and other local communities, and even though it is possible because the school is small, I think it's a wonderful project. From various environmental improvements, such as adding cedar leaves in the oval squid's...

○ Yanagi: Spawning bed.

○ Matsuda: Yes. Putting in spawning beds, and then eating them. In the case of Japan, instructors are subject to regular personnel changes, so I am not actually sure how they have been able to continue it.

○ Uehara: Is the Otsuki Elementary School doing these activities during its comprehensive study time?

○ Matsuda: They probably shift schedules around. If not, a single day could not be fully used.

○ Sakurai: The principal seems to be seriously struggling, trying to adjust various aspects.

○ Matsuda: Yes, that is right, so this would be easier if there was leadership like that of the principal.

○ Hidaka: Are there NPOs which develop these types of curricula and provide them to schools?

○ Uehara: When senior managing director Mr. Amakura of the Hinase fishery cooperative said "support group," I was curious as to what that meant.

○ Yanagi: Mr. Amakura told junior high schoolers, "I'm not here talking about the cooperatives in Hinase because I want you all to become fishermen. You don't have to become fishermen, so at the very least, come back to the town, make connections later, and support Hinase."

○ Matsuda: Are support groups a type of supporter?

○ Yanagi: He was saying that he used that expression.

- Uehara: Does “supporter” mean to buy things from that area, or to help regarding management of the coastal areas?
- Matsuda: Perhaps this may be fine at various levels. Even psychological support can be helpful. The other thing I am thinking about is that, since there is no high school in Hinase, those who live there go further out for high school and even further for university or work, coming back periodically and returning at retirement. I wonder if supporters could be there according to each period.
- Yanagi: I think I said this to Prof. Sakurai, but I am curious about the actual status of how the support groups are functioning. I think the first graduates are out of university, and they would be around 20 years of age. I would love to have a follow-up report on the junior high schoolers who first received the oceanographic studies.
- Sakurai: It would really be valuable, if we could conduct follow-up surveys all the time.
- Matsuda: Hinase has also seen a large population shift. This is also the case with Ago Bay, discussed earlier. In 2018, Tategami Elementary School on the coast of Ago Bay was closed, but the a son of fisherman who was elementary school students there wrote a graduation thesis on Satoumi in university, took the public exam in Shima city and became a city employee. However, he oversees disaster prevention and not Satoumi. There are some places where the next generation are returning. So, this may be the result of 20 years of Satoumi activities.
- Yanagi: These do seem to be budding.
- Hidaka: In various places.
- Yanagi: Yes, in various places.
- Uehara: The change in association depend on the stage of life, and it is just like the story of the associated population.
- Matsuda: Indeed, that is right.
- Uehara: Depending on the position, there are times when it is deep and other times when I recall it only occasionally.
- Matsuda: Although this can be far away to go, but I think there are various ways to create relationships, such as financial support. If there was a way for general people to understand more easily...
- Uehara: Sort of like a model case.
- Matsuda: There may be people who want to try it.
- Uehara: How about the definition of Satoumi, when looking at various Satoumi creation activities? The questionnaire from the Ministry of the Environment contains a lot of aspects, such as cleaning and planting activities, but I also feel that Satoumi is seeking something that is a little wider or deeper than this.
- Matsuda: With regards to the “manpower” included in Prof. Yanagi’s definition, if this was simply environmental conservation or ecosystem protection, they could be protected without direct human involvement by creating laws. However, as I wrote in my paper, Satoumi is a movement from passive conservation (e.g., legal regulations) to active conservation, so I think that Satoumi is to create a better coastal sea while involving individuals or groups. As can be seen from the history of the Seto Inland Sea, for example, the single-issue approach of merely improving the water quality has continued for decades. Instead, I believe that the comprehensive approach that includes other things is important for Satoumi.
- Hidaka: After all, the old-fashioned Satoumi is just a “single issue” approach.
- Uehara: That old Satoumi is historical, or...?
- Hidaka: It is historically and functionally old as well, because coastal fishermen have protected the ocean in front of them. However, so various elements must come in when becoming a new form, and scientific perspectives need to be added here as well.

○ Matsuda: Not only the fishermen, but also citizens and researchers.

○ Hidaka: This is also the case for people. In such cases, I think there are various levels for the strength of the relationship. From people who are involved daily, to once a year, to once every several years. If a line was drawn somewhere here, I do not think this would become a new Setoumi.

○ Matsuda: If you take the relational value, spoken about by Prof. Uehara, a little further as we had done earlier, I feel that we can create several angles to make this three-dimensional.

○ Hidaka: A similar story is in the "Community of Practice," where the view is to establish relationships where those with minimal associations can be appropriately involved, instead of drawing a line in relationships. I think this is exactly the case as well. It may be that the way people are involved change according to lifestyle and life stages as well.

○ Uehara: With regards to environmental conservation, even if people are not directly involved, the Fisheries Agency, the Ministry of the Environment, and the consultants may be successful in doing civil engineering work, and that may be sufficient. But when that is not the case, what I see is not only the results, but also the value of the people involved. This is when the concept of the relational value was mentioned, but I also think that it is not just the relational value either. Essentially, I think there is merit in theory, but I have not actually been on site very often, so I am concerned as to what the case is in actual Setoumi creation. Previously, when speaking to Prof. Matsuda, we had spoken about how we enjoyed not only fish but various other things as well. Are there any such cases like this, besides Hinase?

○ Matsuda: Let's see. In Ago Bay as well, Shima city (Ago Bay is located here) has a small local government, but many people have become involved in satoumi activities, some people have children, and the diversity of the participants, regardless of the absolute number, is high. I think that methods on increasing the number of participants while utilizing this diversity is a topic for future discussion.

In addition, Kagawa Prefecture is promoting prefecture-level policies such as "Kagawa Satoumi Creation," following the governor, which may be the only example of its kind in Japan. Satoumi creation in other prefectures often include sector policies such as those by the Ministry of the Environment, whereas Kagawa Prefecture is acting as a governor-level policy. It is also very popular with citizens due to its focus on ecotourism, with even a "Satoumi College" started to train ecotourism guides. We also set up a Satoumi consultation desk called Satoumi Concierge. I also acted as an adviser for Kagawa Prefecture and participated in eco-tours several times, and I saw that not a few families were participating like going to the beach, taking some shellfish and ingredients, cooking and eating. It is as though there is a mandarin orange orchard right next to the coast, so a visit was arranged there as well. The tours are not free, but there are many people who wish to participate, and there is a waiting list for cancellations.

To add to the "being able to eat" mentioned in the beginning by Prof. Yanagi, being able to live there could also be included. It is my hope that the guides there would be able to make a professional living out of this work. Eco-tourism includes travel agencies, and perhaps this could be done at the company level. This has been trialed to some extent before.

○ Hidaka: I think that, among those led by Prof. Matsuda, the initiatives in Kagawa are a great example of how various people were involved and how this had a collective impact. Developing people further while various people are involved and a system is built: this is very interesting.

○ Matsuda: I have been involved since the launch of the vision of "Kagawa Satoumi Creation." At that time, I thought it was good that essentially, it was not sufficient for officials and experts to just come together to create a vision and plan, but that there was a citizens' perspective, such as from PTAs or NGOs. There were quite a lot of women.

- Hidaka: It was great to see that there were citizens' perspectives, such as from NGOs, in addition to those from the prefecture, in the office.
- Matsuda: That had some effect. This seemed to have been a big part of it.
- Hidaka: Unfortunately, the issue was these were not connected to the fishery cooperative.
- Matsuda: At least not directly. The office (for the Kagawa Satoumi Creation) was managed by the Department of Forestry and Environment.
- Hidaka: It was disappointing that a gap would always be formed in the fishing industry, but other than that, I do feel that Kagawa Prefecture was the best example of a system where various people were involved in coastal activities.
- Uehara: I see. Is Kagawa Prefecture an example of such an old-fashioned small Satoumi?
- Hidaka: There are fishermen, fishing villages, and fishing areas with common fishing rights. However, I believe that aquaculture is a major component in Kagawa Prefecture.
- Matsuda: The Setouchi Triennale, brought up by Prof. Yanagi, is also present in Okayama Prefecture, but is centered around the Kagawa Prefecture. The prefecture has a small surface area, but it also has many islands and a long coastline for its area. Essentially, its percentage of land adjacent to the sea is extremely high. The rivers are short as well, so the path from the mountains to the sea can be taken as a whole. When the rivers are long, those upstream tend to think that they have no relationship with the sea, and the people in the sea also do not know much about those who live deep in the mountains, but any waste or pollution immediately goes to the sea in Kagawa. Therefore, a system is under way in which the cost of disposing of marine waste would be shared according to the population ratio by the upstream municipalities.
- Hidaka: There are some basic frameworks in which fishing villages protect the sea in front of them due to the common fishing rights. However, the main fishing industry in Kagawa Prefecture is aquaculture. This is a different dimension of usage. The purpose is increasing the productivity of farms surrounded by facilities instead of protecting the ocean together. When this happens, it will become difficult to connect the fishing and aquaculture industries with Satoumi creation in offshore areas.

SATOUMI

- Uehara: Changing the subject slightly, I wanted to ask a little bit about Satoumi practices overseas. I understand there was a story in Fiji, but is it same in other places?
- Yanagi: Indonesia is currently conducting a nationwide Satoumi campaign.
- Uehara: Is it nationwide? What was the reason for that? Was it because of Prof. Yanagi?
- Yanagi: The first was over 10 years ago, where one of my students was at the Agency for Applied Technology, and at an abandoned shrimp pond...
- Uehara: Shrimp?
- Yanagi: At an abandoned shrimp pond, where black tiger shrimp was wiped out due to illness, and the fishermen abandoned it. There was interest in re-developing it, so it was a project with Java and the central government, and the person in charge was one of my students. When I was called to the site and spoke, I was told that this would happen if it was only shrimp, and that multitrophic aquaculture was needed. Essentially, I told them that shrimp, tilapia, sea cucumbers, and seaweed need to be cultivated together, but they said that there are no sea cucumbers in Java. So instead of sea cucumbers, we used bivalve mussels and conducted a half-year experiment where shrimp, tilapia, mytilus and seaweed referred to as Gracilaria were cultivated. This was very successful, and the growth rate of shrimp in the pond with the four species simultaneously was better than that in the pond of shrimp cultivated

alone. All four species can be sold, and at the same time, the water and sediment quality are remarkably better than when cultivated alone. This is all because the material is properly recycled.

Now, the new president has created 100 model areas in Indonesia for each type of industry, referred to as Techno Parks. Among them, four Techno Parks named Satoumi were constructed nationwide based on the theme of this four-species mixed aquaculture. Using this as a key, we have been in talks about creating an open and closed IMTA nearby, and we are in the process of acting on it.

In France, oyster farmers have trouble when oyster production did not increase. Some of them visit Sanriku and Shizugawa, ultimately coming to Hinase, and eelgrass cultivation in oyster farms have also begun in France.

○ Uehara: In France?

○ Yanagi: This fall, local mayors and oyster farmers are scheduled to come to Hinase.

In the United States, the director of the Mote Marine Institute in Florida, complemented my book in the "Recommendations for the Study of Satoumi." They seem to have read my old book and loved it. The Mote Marine Laboratory is in a small bay in the western side of Florida, and they are engaged in the recovery of scallop resources. I was also called over since they wanted to work with citizens to recover resources under the concept of Satoumi. About 200 citizens gathered to hold a symposium, which continues to be held, to date.

○ Matsuda: This seems like Indonesia, but I have heard the initiatives in Thailand presented as Satoumi. In my laboratory, a student from Thailand was working in the fisheries laboratory of their home country and presented at Prof. Yanagi's symposium. We were talking about silvo-fisheries (silvo, "forests") at the time, but shrimp aquaculture is flourishing in Thailand, and this is a form of Satoumi creation which integrates mangrove forests and aquaculture.

○ Hidaka: A type of extensive aquaculture.

○ Matsuda: Well, yes.

○ Yanagi: I also went to Iran twice after being called by JICA.

Yanagi Iran was also called in JICA and I went there twice. The Iranian government wanted to conduct environmentally-friendly aquaculture on an island in the Strait of Hormuz, essentially Satoumi. During discussions, local fishermen came to Hinase and Ibukijima (in Kagawa Prefecture). Iran harvests anchovies, but they simply sell this as feed. There was probably no demand for it, but there was no technology to make dried sardines there. Dried sardines are now sold in France for use as a Japanese soup stock, so introducing the dried boiled fish technology may be valid (note: Ibukijima is famous for its dried boiled fish production).

○ Uehara: Is that so?

○ Yanagi: It would spoil easily if it were just feed. It has a poor efficiency, but they looked at the dried boiled fish factories in Ibukijima, decided to make the same back home, and they apparently restarted the recovery of their fisheries. This has been a sign for Satoumi.

○ Matsuda: As for JICA and Fiji, from 2019, it seems that JICA will start various activities related to Satoumi, such as a training course for Fijians in Japan. There are various projects in JICA as well, and Okinawans are expanding their efforts to create Satoumi which can be promoted in the Caribbean Sea. A large amount of oyster shells is produced as waste when farming oysters, so there has been difficulty in properly disposing of them. In response to this problem, we have an oyster shell reef called a "Shell Nurse" and even Hinase uses oyster shells to improve their fisheries' environment. Companies in Okayama have technologies that can be used to create Satoumi by improving the sediment quality and creating reefs with oyster shells, and JICA is addressing these technologies in a way that helps the international development of the technologies of SMEs (small and medium enterprises) in Japan.

The town of La Paz near the mouth of the Gulf of California in Mexico, is home to many fisheries which gather shellfish, but there have been problems with the massive accumulation of shells from the shellfish gathered thus far.

The story of using these shells for improving fisheries to create Satoumi was picked up by JICA and is likely to proceed. I also went there in 2018. JICA is taking up Satoumi in earnest as part of its ODA policies.

○ Uehara: France, the United States, Thailand, Iran, Fiji, the Caribbean Sea, all of these are overseas, but how has Satoumi been explained in these cases? Based on these stories, it sounds as though saying that doing productivity and diversity together is better, but is that the basic concept?

○ Yanagi: When I speak, I show them the definition from my book in English.

○ Uehara: I see. Saying that adding to the workforce increases diversity and productivity.

○ Yanagi: *Sato* is “village,” and *umi* is a “coastal sea,” so essentially, this is a story of relationships. A related topic was the Ishihimi international symposium in Ishigaki Island. Ishihimi refers to the fixed nets with blocks of stone piled on top. They are also present in Japan, South Korea, Fiji, and Spain. In Spain, an old man doing Ishihimi comes and hardens all the stones with concrete so the piled stones would not break. I said that this was not correct, but he brought a postcard with a picture of Ishihimi, and there it was written in English, “Satoumi.” When I asked why, he said that he liked the word “Satoumi” and its pronunciation. Some have said there were language spirits or even an old lady in the sound, Satoumi, but nonetheless, they have accepted it. Foreigners also use the term Satoumi, and this term has already appeared in newspapers in Indonesia.

○ Matsuda: I also said that Satoumi was first proposed with this definition by Prof. Yanagi, in 1998, after which this was changed to the slightly wider definition used by the Ministry of Environment. After this, I would introduce initiatives in Hinase or Shima city as examples of Satoumi activities conducted in Japan. Then, I think often, global positioning, such as Satoumi in changes in the global environment and relationships between the SDGs and Satoumi, are mentioned.

○ Uehara: I wonder if there is not much demand for its emphasis, such as its liveliness or connections, in Japan?

○ Matsuda: No, I think there is. Fiji, which I had mentioned earlier, now apparently has a good economy, and its urbanization and industrialization are advancing. Originally, there were communities like the old-fashioned Satoumi around the island, and each of them had very self-sufficient lives. However, recently, simultaneous depopulation and concentration has been seen in Fiji, with people gathering in urban areas, along with depopulation and aging in the countryside. So, we did consider that this may be a problem for Satoumi to handle.

○ Yanagi: Since we have limited time to speak, I would first talk about know-how. Afterwards, I would try to speak about the true meaning, such as the relationships with society, adding manpower, and so on, like what we are talking about right now, but I think that we have not yet become that close to one another.

○ Uehara: The current state is such that Satoumi first enters to tackle the serious problem of reduced fisheries resources.

○ Matsuda: Depending on the country, it seems that so-called conventional small-scale fisheries have fallen into a critical state because foreign companies and large domestic companies are acquiring fishing rights. There is a possibility that Satoumi would be useful in such critical situations.

○ Yanagi: With the Revised Fishery Act.

○ Uehara: I see.

○ Matsuda: This is also true for Japan, correct? Well, it seems that the details have not been decided yet.

○ Yanagi: That itself must be the aim.

○ Hidaka: In the case of Southeast Asia, there were communities where small-scale fishermen used traditional fishing methods like coastal artisanal fishing. Meanwhile, there were large commercialized fishing boats off the coast which are catching more fish. Small-scale coastal fishermen have been involved in movements, such as community-based management and co-management with the government to manage coastal areas in the context of resource

management, for improving this situation and protecting coastal resources. This is a type of traditional Satoumi, in which fishermen create their own rules and protect resources.

○ Matsuda: This also applies to major convenience stores and supermarkets. It is great while profitable, but even with slight deviations and they completely withdraw, with communities abandoned as a result. So, these types of regionally-based efforts like Satoumi must be maintained to manage the coastal sea properly.

How to Involve People in Satoumi

○ Uehara: We cannot do research on Satoumi alone, so I think that it would be very useful in the future to raise awareness that these things exist. How about you, Prof. Yanagi?

○ Yanagi: I would like someone to do a variety of jobs, from fish meal to Satoumi culture. A story left behind in S-13.

○ Uehara: How about you, Prof. Matsuda?

○ Matsuda: A future issue will be linking it with current issues, so I will introduce one of these here. In the fact-finding survey on Satoumi activities by the Ministry of the Environment mentioned earlier, from 2014 to 2018, the number of "staff shortages" increased by a factor of three, "shortage of successors" by 1.5, and "insufficient participants" by two, and "aging participants and staff" by three. This was a change over just four years. This should not be taken at face value, but we can expect increasingly serious situations in the future.

In that case, efforts which promote further citizen participation are needed as a response to the challenge of "rebuilding the relationship between people and the sea," which is one of the missions of Satoumi. In terms of science as well, the promotion of a citizen participation-oriented environmental and biological monitoring is also necessary. I think it is important to increase opportunities for the public to be familiar with and enjoy the sea through citizen science and other means. I also think that initiatives for increasing associated populations are important for those with the sea.

○ Uehara: I see. How about Prof. Hidaka?

○ Hidaka: This is in fact the research we are working on right now. The theme is managing the sea with new coastal communities, and the research focuses on how to create these new communities. The first is the creation of networks with various people included. Currently, these are realistically achieved in the form of councils. These councils are now very much emphasized, but methods for creating good councils or members and operation are not very clearly shown, and no research has been done on this either.

○ Matsuda: The Bay-Sea Council should have been institutionalized in the Basic Plan on Conservation of the Environment in the Seto Inland Sea based on revised Seto Inland Sea Act, but this has not really been functioning in practice.

○ Yanagi: Not at all.

○ Matsuda: It is almost like nobody wants to take the lead.

○ Uehara: Who is in this? For example, Hyogo Prefecture?

○ Hidaka: Prefectures, fishermen, fishery workers. Also...

○ Matsuda: This includes NGOs.

○ Hidaka: This is also done in Osaka Bay. This does not take the form of the Bay-Sea Council in Osaka Bay, but they do form councils with various people involved and where discussions are held. However, there is no standard for what kinds of members are included and how many are included.

○ Matsuda: It is a council, so it is a forum for discussion and an exchange of opinions and information.

○ Hidaka: An issue would be the extent to which they have functions or rights.

○ Matsuda: They have almost no decision-making power. In the worst-case scenario, sessions can end after just an

exchange of information.

○ Hidaka: Conversely, in the case of multi-functional fisheries, the councils are too strict, and they should be more open so that a variety of people can participate. After that, the question is how to connect the various networks that have formed. There are ways to connect functions and work together functionally. There are many networks for each purpose. Particularly with administrative networks, how to link networks for the purposes of environmental conservation or tourism.

○ Matsuda: There may be no hierarchical relationship in networks.

○ Hidaka: No.

○ Uehara: In that case, there will be conversations, but the question is what happens afterwards..

○ Hidaka: In Omura Bay, where I am involved, there are many networks with different functions there, so what needs to be considered there is how to link these networks together to achieve favorable results.

○ Uehara: So, there is a foundation.

○ Hidaka: The foundation for Omura Bay would be that the administrative network is very well established. However, there is not much for the private sector. This does not mean that there are no private-sector activities, and what is needed is to how to support these activities along with network creation. In the case of network creation support, Kagawa Prefecture has done a variety of things on this front.

○ Matsuda: When considering the comprehensive management of Satoumi and coastal areas, Kagawa Prefecture is the only main prefecture in this regard. Activities of Hinase is focused on the Hinase fishery cooperative or rather the former town of Hinase, Ago Bay is centered on Shima city, and there is just one municipality for these, but management of Omura Bay is made by one city and five towns, am I correct?

○ Hidaka: Five cities and five towns.

○ Matsuda: Nagasaki Prefecture is also involved, and this has become a kind of model where multiple municipalities are involved.

○ Hidaka: Yes. The results of management do not appear easily, but they are very good samples because multiple governments are intertwined. Even in Omura Bay, there is some private-sector activity, when detailed questions are asked. For example, changing Omura Bay into a farm, by bringing scallops from the Tohoku region for aquaculture. I think that this will change even more when the wisdom of the private sector comes into play. More mechanisms for supporting these will become necessary.

○ Matsuda: With regards to the key person that Prof. Sakurai had also mentioned earlier, this key person is extremely important, and the smaller the community, the less likely that suitable human resources would be available. If the staff shortages and shortages in successors mentioned earlier continue to increase in the future, then environmental education and activities involving children must be more seriously incorporated for human resources development, ideally through public education, from a long-term perspective. You cannot just call someone suddenly.

○ Hidaka: There is a theme to analyze the structure and function of organizations, but here, research on how organizations create and develop human resources is necessary. So, the collective impact affected me tremendously. This is more of a kinetic theory than research as an academic field, but I thought that this was necessary for future progress in Satoumi and coastal management.

There are also various types of leaders. When discussing the creation of leaders or combining networks, leaders who promote interactive activities are necessary, and leaders who rather push from the bottom than pull from the top are needed. This changes depending on the situation, so I thought that there was a need to clearly define each of their roles.

○ Uehara: How about you, Prof. Sakurai?

○ Sakurai: What we plan to do in June is to bring my seminar students, who are all English-speaking international students, to Hinase Junior High School, and have both the junior high schoolers and international students experience the marine education program. The importance of global education is generally emphasized, but the junior high school also was enthusiastic about the proposal. I would like to think about how university faculty can continuously be involved in the community. Universities have students entering every year, and seminars will continue so long as there are faculty, so I want to make a program that lasts as long as possible. Moreover, I want to think again about the significance of Satoumi while interacting with junior high schoolers and international students, even though this is more about activities than research.

○ Uehara: If we were to do it in English, then it would not just be during comprehensive learning, but possible during English classes. In that sense, this may be a good new approach.

○ Yanagi: Excellent. Please do your best. If this goes well, then they will be asking you come repeatedly.

○ Uehara: How about you, Dr. Yoshioka?

○ Yoshioka: A teacher from Hinase Junior High School was mentioned, and I think it is important to raise teachers of next generations for the purpose of oceanographic education. Being near to the sea is an advantage for oceanographic education but ultimately it is crucial to have a person who would push it forward. Furthermore, teachers at schools are under heavy burden of work, as a result, they trend to dislike having unnecessary work. Seen from their side, what Prof. Sakurai will start here will probably be categorized as a part of regular English course, not as a part of comprehensive study like before. Therefore, I think that offering something that would also be beneficial for the school would be important.

○ Uehara: I understand. We are almost out of time, but in discussing the definition of Satoumi, I felt that it was difficult to come up with a definitive definition for the term.

○ Hidaka: It is not so much difficult as it is that it is better if we do not.

○ Uehara: You mean that we should not define it, and instead view it in soft terms, as in, the types of elements that constitute it.

○ Matsuda: Yes, that is correct.

○ Uehara: It would be ideal if at least an example of it could be given.

○ Matsuda: Although the words are not elaborated at all, the image is that people in the community would be the focus, and they would achieve a desirable or rich sea. We should not decide in advance what a "rich sea" is, instead we should come up with this after discussing with everyone.

○ Uehara: As Prof. Matsuda said, I also think that Satoumi changes from time to time, and I cannot say definitively what is desirable. I also think that nobody knows what is its desirable form.

○ Yanagi: At the very least, a clean and rich and lively sea is qualitatively described in S-13.

○ Uehara: Even in such cases, when we consider Hinase for example, the factors would change, would they not?

○ Yanagi: This is something that the people of Hinase would define for themselves according to their situation.

○ Uehara: If we consider the value of Satoumi, there would be various other values other than those of productivity and diversity.

○ Matsuda: That is correct. Therefore, the relational value between the sea and humans will also become a major factor in the future.

○ Uehara: You speak broadly here, but more specifically...for example, there are various categories in ecosystem services, but when it comes to the desirable product and its quantity, I do not think anybody really knows. However, even now, I think that there can be more discussion about whether this can be more or less than what it is presently. Therefore, I personally think that it is possible to at least discuss the desirable direction, such as indirect

management, or the direction that one would want to go, relative to the current situation.

○ Matsuda: I do not know if this will be helpful, but four scenarios were made for the Satoyama Satoumi Sub-Global Assessment (SGA) initiated by the United Nations University. For these scenarios, the vertical axis progress either towards globalization or localization. The horizontal axis was whether talks about natural orientation or environmental adaptation become important, or whether progress will be seen even further in technological orientation. These scenarios were neither predictions nor desires, but simply outlining outcomes for each path.

When discussing in the Satoyama Satoumi SGA group, I felt that a majority were associated with Satoyama and I was the only one associated with Satoumi, so I will introduce them for reference. The places with the most advanced globalization and technology orientation axes are countries and regions with a “Global Technotopia,” with international migrations of populations and labor and population concentrations in metropolitan areas. These trends have been steadily seen in Japan as well. The other extreme scenario is referred to as the “Satoyama / Satoumi Renaissance,” which includes populations returning to local areas and increased exchanging populations. This involves the incorporation of environmentalism into economics and politics, national promotion of environmental conservation, and the expansion of decentralization. When considering these two extremes, I feel that Japan has both aspects in it at the same time. Therefore, the country is not entirely a “Global Technotopia” nor undergone a “Satoyama / Satoumi Renaissance,” but I do think that it shows the relationship between Satoyama / Satoumi and society.

○ Uehara: I understand. Thank you. We have now reached our scheduled time, so I would like to conclude with this thought for today. Thank you very much.

3. Publications on Satoumi by the participants

- Kakuma, S., Yanagi, T., and Sato, T. (Eds.). (2018). *Recommendations for the Study of Satoumi*. Bensei Publishing Inc.
- Sakurai, R. (2018). Effectiveness of Marine Education Program on Junior High School Students with a Specific Focus on Satoumi. *Japanese Journal of Environmental Education*, 28(1), 12-22.
- Sakurai, R. (2017). “Chapter 13: Biodiversity Conservation and Environmental Education”. Sato, M., Tashiro, N., and Kanie, N. (Eds.). *SDGs and Environmental Education*. Gakubunsha. 228-247.
- Seto Inland Sea Research Conference (Representative Editors: Matsuda, O., Muraoka, K., Kobayashi, E., and Yanagi, T.) (Eds.). (2007). *Seto Inland Sea as Satoumi-Renewal Policy from a New Perspective-*, Koseisha-Koseikaku Co., 109 pp.
- Hidaka, T. (2016). “Satoumi and Coastal Areas – Managing Satoumi”. Association of Agriculture and Forestry Statistics.
- Hidaka, T. (2018). “An Attempt of Multi-level Management System of the Coastal Areas based on Network Governance”. *Journal of the Japanese Association for Coastal Zone Studies*, 31(3):29-40.
- Hidaka, T. (2016). “Possibility of Coastal Management by the Multistage Management System”. *Journal of Environmental Conservation Engineering*, 45(3):126-131.
- Hidaka, T. (2015). “A Study on the Management System of Integrated Coastal Management: Effectiveness of Dual Management Systems and Network Governance”. *Journal of Japan Society of Ocean Policy* 4:61-72.
- Matsuda, O. (2018). “Commemorating the 20th Anniversary of ‘Satoumi’: Progress and Future Prospects”. *Aquanet* November Issue, 62-66.
- Matsuda, O. (2017). “Concept of Satoumi from Viewpoints of the International Community”. *Journal of the Japan Society on Water Environment* 40(A), 381-384

- Yanagi, T. (2006). *Satoumi Theory*. Koseisha-Koseikaku Co.
- Yanagi, T. (2010). *Satoumi Creation Theory*. Koseisha-Koseikaku Co.
- Yanagi, T. (Ed.). (2019). "Satoumi Management Theory". Association of Agriculture and Forestry Statistics
- Yamamoto, T. (Ed.). (2010). *New Uses for Coastal Areas as 'Satoumi'*. Koseisha-Koseikaku Co.
- Yoshioka, T. (2018). "Study on Proper Management of Coastal Area: A Case Study of Fishermen's Questionnaire Survey". *Policy Science* 25(3):169-182.
- Nakagami, K., Yoshioka, T., and Tomeno, R. (2018). "Dynamic Sustainability Assessment to Realize the Sustainable Coastal Sea". *Policy Science* 25(3):273-290.
- Berque, J., & Matsuda, O. (2013). Coastal biodiversity management in Japanese satoumi. *Marine Policy*, 39, 191-200.
- Matsuda, O. (2012). Combining Activities of Sato-Umi and Sato-Yama in Japan: Towards a New Type of Integrated Coastal Watershed Management. In Taniguchi, M. and Shiraiwa, T. (Eds.), *The Dilemma of Boundaries* (pp.211-220). Springer, Tokyo.
- Matsuda, O. (2019). New direction of management policies in the Seto Inland Sea, Japan, *Bulletin of Japan Fisheries Research and Education Agency* 49, 9-15.
- Matsuda, O., & Yanagi, T. (2019). Restoration of Estuaries and Bays in Japan—What's Been Done So Far, and Future Perspectives. In *Coasts and Estuaries* (pp. 401-411). Elsevier.
- Nakagami, K., Yoshioka, T., Tomeno, T., & Obata, N. (2018). Dynamic Sustainability Assessment towards the Integrated Coastal Zone Management. *Journal of Policy Science*. 12, 29-47.
- Sakurai, R., Ota, T., & Uehara, T. (2017). Sense of place and attitudes towards future generations for conservation of coastal areas in the Satoumi of Japan. *Biological Conservation*, 209, 332-340.
- Sakurai, R., Uehara, T., & Yoshioka, T. (2018). Students' perceptions of a marine education program at a junior high school in Japan with a specific focus on Saotumi. *Environmental Education Research*, 25(2), 222-237.
- Sakurai, R., & Uehara, T. (2020). Effectiveness of a marine conservation education program in Okayama, Japan. *Conservation Science and Practice*. DOI: 10.1111/csp2.167
- Uehara, T., Niu, J., Chen, X., Ota, T., & Nakagami, K. I. (2016). A sustainability assessment framework for regional-scale Integrated Coastal Zone Management (ICZM) incorporating Inclusive Wealth, Satoumi, and ecosystem services science. *Sustainability Science*, 11(5), 801-812. <https://doi.org/10.1007/s11625-016-0373-5>
- Uehara, T., & Mineo, K. (2017). Regional sustainability assessment framework for integrated coastal zone management: Satoumi, ecosystem services approach, and inclusive wealth. *Ecological Indicators*, 73, 716-725. <https://doi.org/10.1016/j.ecolind.2016.10.031>
- Uehara, T., Tsuge, T., & Ota, T. (2018). Long-term evolution of preferences for conservation projects in the Seto Inland Sea, Japan: a comprehensive analytic framework. *PeerJ*, 6, e5366. <https://doi.org/10.7717/peerj.5366>
- Uehara, T., Hidaka, T., Matsuda, O., Sakurai, R., Yanagi, T., Yoshioka, T. (2019). Satoumi: Re-connecting people to nature for sustainable use and conservation of coastal zones. *People and Nature*, 1(4), 435-441. <https://doi.org/10.1002/pan3.10047>
- Uehara, T., Sakurai, R., & Tsuge, T. (2020). Cultivating relational values and sustaining socio-ecological production landscapes through ocean literacy: a study on Satoumi. *Environment, Development and Sustainability*, 22(2), 1599-1616. <https://doi.org/10.1007/s10668-018-0226-8>

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Notes

- ¹ The paper is a translation of the article published in Japanese in *Seisakukagaku*, 27(1), 2019. The list of relevant publications by the participants was updated.