

roundtable discussion "The Future Efforts and Challenges of NASHIM".



(Chair Uetani)

I would like to start the roundtable discussion entitled "The Future Efforts and Challenges of NASHIM".

First, we have Professor Takamura to speak on his impressions of NASHIM's efforts to date as one of the organization's most dedicated members. If you will.



(Professor Takamura)

As introduced earlier, one of the biggest features of NASHIM is its support for Chernobyl and Semipalatinsk, with our main project being inviting and sending medical experts from Nagasaki to Chernobyl and Semipalatinsk, which I believe was our toughest project, so that left an impression on me.

Especially around the time when NASHIM was started in the 90s, the former Soviet Union was in great economic turmoil, and you could not contact people easily online the way you can now, so inviting these medical experts took a great deal of effort.

But the greatest thing about NASHIM is its collaboration with universities and medical institutions as well as local governments, prefectures, and cities; members of prefectural government staff worked particularly hard to help invite guests and coordinate various other projects.

This kind of collaboration has left a great impression on me throughout my involvement in NASHIM.

(Chair Uetani)

Thank you.

Next, I have a question for Dr. Kodama, the chairman of HICARE.

What do you think are the similarities and differences between the efforts of HICARE and NASHIM thus far?



(Dr. Kodama)

I'll start with the similarities. I believe that the principles and objectives are basically the same and that the constituent organizations are similar, as we already know from today's discussions.

Even if the scope or outcome of their projects differ slightly, the content is similar, meaning they are doing similar projects for the same purpose.

I'll do my best to describe what I see as the differences between HICARE and NASHIM. As I mentioned in my overview of the features of HICARE, HICARE is an IAEA Collaborating Centre.

Medical use of radiation has been included within the scope of training as a project at the Collaborating Centre, so radiation therapy has become a major theme of training there.

This is also related to the fact that there is a cancer high-precision radiation therapy center in Hiroshima.

So its collaboration with IAEA is one important difference. As I mentioned earlier, we send medical students to an internship program with the IAEA. I understand that this is a great way to foster successors and help them acquire international sensibilities.

Now for the features of NASHIM, one thing NASHIM has that HICARE does not is the 'Nagasaki Dr. Nagai Peace Memorial Prize'.

Another difference is that NASHIM has its own organizational newsletter, while HICARE does not.

I also get the impression that NASHIM has stronger and more extensive collaboration with foreign institutions compared to HICARE.

While HICARE collaborates with IAEA, the WHO, and the National Cancer Center of Mongolia, NASHIM, as we already discussed, goes beyond the IAEA and WHO to collaborate with organizations related to the accident at Chernobyl, as well as the University of Würzburg, where Dr. Reiner, who gave a special lecture today, hails, and I think this is clear from today's special commemorative lectures and the trainee status report.

Another feature of HICARE is that it sends experts on treating radiation exposure overseas. Emphasis in this area is placed on North and South America. This started when Hiroshima Prefectural Medical Association began medical checkups for atomic bomb survivors in North America in 1977. They then started medical checkups for atomic bomb survivors residing in South America in 1985, so it is also connected to that.

I get the impression that NASHIM focuses on Korea.

These are what I believe to be the similarities and differences between NASHIM and HICARE.

(Chair Uetani)

Thank you, Dr. Kodama.

I think we now understand the difference between HICARE and NASHIM.

HICARE's association with the IAEA is very distinctive, and I felt that the fact that HICARE has been training medical students all these years is a wonderful thing.

Next, I have a question for Director Terahara.

What are your impressions on medical treatment for victims of radiation exposure over the years that you have been appointed to Nagasaki Prefecture, as well as on the support for such treatment provided by NASHIM?



(Director Terahara)

I was in charge of Health Management in Fukushima at the Ministry of the Environment about five years ago, so I have known about the existence of NASHIM for some time.

I was particularly impressed by its presence in Chernobyl when I visited. I also visited Ukraine and Belarus, which were mentioned earlier by Professor Takamura during the discussion on NASHIM's efforts. I also visited, for example, Gomel State Medical University.

There were several medical workers who had received training at NASHIM and were kind enough to share their opinions with me, and they said they received not only technical support but also advice on how to disseminate information among residents.

I was impressed by the breadth of NASHIM's ongoing support. Meanwhile, I thought it was incredible that the organization had continued for this long.

I was appointed to Nagasaki Prefecture in August of last year, and as Professor Takamura mentioned earlier, NASHIM is an all-Nagasaki organization consisting of many medical and research institutions involved in the treatment of victims of radiation exposure as well as educational institutions and governmental agencies, and I believe this is its strength and one of the reasons this organization has been able to continue for so long.

That's all.

(Chair Uetani)

Thank you.

Next, I have a question for Mayor Endo. Were you aware of NASHIM and its activities in Chernobyl and the treatment of radiation exposure victims overseas prior to the earthquake?

Also, I would like to hear a little about your thoughts on the atomic bombings of Nagasaki and Hiroshima.



(Mayor Endo)

I was unaware of the existence of NASHIM prior to the accident at Fukushima. I honestly did not know about it.

Later, when I myself visited Nagasaki, Nagasaki University, and the Atomic Bomb Museum, I heard about NASHIM from Professor Yamashita, Professor Takamura, and Associate Professor Orita.

I heard they were working on human resource development and dispatched trainees, and also that they provided aid to Chernobyl, but I did not fully understand what exactly it was they were doing at the time.

As for my thoughts on the atomic bombings, these created a situation so tragic that words cannot express it. When I visited Nagasaki and saw the exhibitions and photographs at the museum, I was deeply moved. I was once again reminded that such a situation once existed. When I was listening to the stories, I also heard that many people hid the fact that they were exposed to the atomic bomb. At the time, I was afraid that people in Fukushima might do the same thing. There were also photographs of the immediate aftermath of the atomic bomb, and I thought that these somehow resembled Fukushima after the tsunami hit.

Meanwhile, I also heard that there were people who wanted to get started on reconstruction at the center of the explosion right away to help rebuild residents' lives. I felt this was very encouraging for Fukushima, where the nuclear power plant accident occurred.

That's all.

(Chair Uetani)

Thank you.

NASHIM and HICARE play a variety of roles, and one of those is education; however, since trainees cannot actually come due to the COVID-19 pandemic, we've been trying to use e-learning programs to continue education, but it hasn't always gone that well.

Professor Takamura, do you have any ideas for continuing this education?

(Professor Takamura)

Yes, as stated earlier, one of the most important features of NASHIM is its teaching materials. NASHIM makes thorough teaching materials and distributes them to doctors and students in Chernobyl and Semipalatinsk.

The former Soviet Union had a very weak educational system, especially in the 1990s and early 2000s. Therefore, they did not have the proper knowledge to diagnose disease correctly. Even if data were published, the reliability of such data would be a real problem, so there was a need to train doctors and specialists who could make correct diagnoses. That is why NASHIM was so focused on education and human resource development. Meanwhile, recently with the COVID-19 pandemic, we've been online for the past two years, creating a situation where people cannot actually come and train.

But on the other hand, doing things online makes it accessible to more people. Up until now, we have invited six people per year, but now with online training, we've had nearly seventy people apply, a tenfold increase. I believe we could use this technology effectively to actually make things more universal, to expand our efforts at NASHIM.

(Chair Uetani)

There are limits to the number of people who can attend an out-service class as well.

HICARE in Hiroshima is also doing something similar, but if out-service classes incorporated e-learning and online education, they could be expanded to a wider audience.

(Professor Takamura)

Right. Out-service classes usually means going to a single school and conducting a single class.

While this is of course an important initiative, if we did online initiatives like the one just mentioned, for example by combining it with out-service classes to have even more elementary and middle school students in the city of Nagasaki participate, or going beyond the city to include students from both inside and outside Nagasaki Prefecture, then I think NASHIM's efforts would reach a wider audience.

(Chair Uetani)

Yes. I'm also very interested in HICARE's efforts and how medical students are being taught at the IAEA. Would you mind talking a little more about what exactly these medical students are learning?

(Dr. Kodama)

Yes, well, we listen to what each student wants to study, and one who is interested in learning radiation therapy, so is sent to train at the Human Health Campus of the IAEA for three months.

Besides that, there are people who want to know more about IAEA's overall efforts as an international organization, and we have people tell us what topics they are interested in and whether these are covered by the IAEA, then decide. So it's not like everyone must do the same thing.

(Chair Uetani)

One student spends three months ? --

(Dr. Kodama)

Yes, right. Every year, just one student is sent.

They are trained for three months.

(Chair Uetani)

That's wonderful, but it might be even better if a few more people had the chance to go.

(Dr. Kodama)

Right, for internships, not only HICARE but many other countries send interns as well, so we can only send one at the moment.

(Chair Uetani)

Thank you.

I would also like to ask Mayor Endo a question. I believe there is some fear among citizens about radiation exposure; have you been doing any education or public awareness activities related to this recently?

(Mayor Endo)

First of all, even if they knew about the structure or systems of nuclear power plants, they only had a very basic understanding of how radioactive substances affect the human body.

So there was the fear and anxiety of not knowing, I got the sense that the residents who were evacuated felt resentment at the lack of information and at the fact that there'd been no evacuation drills or anything like that in the surrounding area.

Currently, study sessions on what are radioactive substances or radioactivity and how they affect health are given

once or twice a year to elementary and middle school students.

Also, while residents don't discuss their concerns about radiation levels much now, at that time, there was a lot of conflicting information, and they were very worried about which experts to trust.

That is why, thinking about it now, giving both the pros and cons when conveying information can be quite difficult. It can confuse residents. That is why I felt at the time that it might have been better to speak decisively.

(Chair Uetani)

Trying to reassure people too much may lead to not being trusted, but fanning the flames of anxiety is not a good idea either, so I think finding that balance is extremely difficult. How is the mental health, or the anxiety, of the people living in Kawauchi Village now?

(Mayor Endo)

I can't say it is completely gone. However, I believe there is now a stance of wanting to learn among citizens. In the eleven year since the accident, I think citizens have learned a lot about what radioactivity is and what to do if something happens.

(Chair Uetani)

Thank you. Now then, I would like to enter round two of discussions.

So far, we've heard about the struggles and issues you've been having, and for round two, first of all, I would like to ask Dr. Kodama, what are some of the difficulties you have experienced in running HICARE, and do you have any suggestions for NASHIM?

(Dr. Kodama)

It feels a bit presumptuous for me to make any suggestions, but there are several points I've struggled with, so I will talk about that first.

I've been part of HICARE as the coordinator since 2005, so I have been the coordinator at HICARE for seventeen of its thirty-one-year history. I have worked under five different chairmen during that period. My biggest struggle in these past seventeen years was in 2012, when we published the second revised edition of the Effects of A-Bomb Radiation on the Human Body. This was part of a project for HICARE's 20th anniversary, and a working group was put together in 2006 to edit it. We started working on it for publication, but since we wanted to completely revise the 1992 edition, it took a great deal of time and effort, and we only just barely were able to publish it in time for the 20th anniversary in March 2012. It took six years. It would probably take some hours to go into the details of these struggles, but I will tell you that making the second revised edition of the Effects of A-Bomb Radiation on the Human Body, published as part of HICARE'S 20th anniversary project, was quite a struggle.

After that, we host lectures to raise awareness about once a year, and while it is relatively easy to decide lecture themes for milestone events such as the 60th or 70th anniversary of the atomic bombings or HICARE's 20th anniversary, it is quite difficult to choose a theme that will interest citizens of the city or prefecture on years that are not milestones.

Also, we've taken on 176 trainees thus far, but we are still struggling with how to objectively evaluate the effectiveness of this program. We conduct questionnaires and everyone says it was a good experience, but I'm not sure if we can just accept that.

An exception to this was a case of someone who came from California, USA to undergo training. In November 2010,

we held a local training session and the alumni association heard about it and held a reunion, where we were able to exchange honest opinions over dinner, then in Korea, when I visited KIRAMS, we were able to exchange opinions directly with trainees, but this has only happened twice in my experience; for everything else, we only have the questionnaires to rely on for evaluation. I am constantly thinking of what a better way to do this would be.

As mentioned earlier, for training successors and out-service classes, we've hosted seven out-service classes so far, four of which I have served as the lecturer for, and as I have done this, I have thought about how to go about it in a way that will make the students interested in listening and understand the importance of contributing to the international community, and I have found that coming up with ways based on who your audience is, for example, high school students listen with interest when I focus on my own experiences internationally because they are starting to consider their own career paths.

For example, I tell them how I learned cardiology in the United States, then learned epidemiology in the United Kingdom, and that I did this kind of activity at this international organization, that kind of thing. When I tell students how important encounters with other people are and to cherish such encounters, they listen with great interest. I don't know if that qualifies as a suggestion, but those are some of the struggles I have experienced.

(Chair Uetani)

Right, thank you. I would like to ask a question to Professor Takamura. Would you please discuss what you have gained and what you have struggled with through your activities at NASHIM, including activities in Fukushima?

(Professor Takamura)

This was mentioned earlier, but 1992, exactly 30 years ago when NASHIM was founded, was shortly after the collapse of the former Soviet Union. It was at this stage that NASHIM decided to provide medical support to Chernobyl. Until very recently, the Iron Curtain divided the East and West, and providing support in places with such different political and cultural climates was extremely difficult. I have been going to Chernobyl for 25 years for medical support and research, and in many different ways the thinking is different, the way they do things is different, and the culture is different. It was very difficult to continuously train human resources and provide support under such circumstances, especially in the early days.

They didn't speak English at all, and it was quite cold for someone from Nagasaki. These kinds of things made things a struggle, especially early on.

But on the other hand, the greatest thing we gained from all of that is in the response to the incident at Fukushima. We've been working at Chernobyl for a long time, and from our experience learned what happens in a nuclear disaster, what the effects on health are, and how to minimize them. That is precisely why, when the nuclear disaster occurred in Fukushima in March 2011, medical experts from Nagasaki were the first to go to Fukushima and provide emergency response as well as support for reconstruction up to the present. This is because of the experience of experts from Nagasaki University and Nagasaki who have worked in Chernobyl, through NASHIM as well, and have actually worked and taught in the field. In my own experience, that is why I think we were able to respond to the situation in Fukushima at such an early stage.

(Chair Uetani)

So your experience in Chernobyl was of great use in Fukushima. You have been overseas countless times; do you discover something new each time you go?

(Professor Takamura)

The former Soviet Union has developed a lot since the 1990s when I first went. When I first went to Kazakhstan in Central Asia, I got the impression that there was nothing there, but now, the city of Astana, which was mentioned earlier, has developed tremendously.

On the other hand, in Semipalatinsk, where the nuclear test site in Kazakhstan was located, and its surrounding villages, I feel that the level of medical care is still inadequate. That is why now I think the urban areas have developed, so the rural areas will start developing from here on out.

(Chair Uetani)

I went not to Semipalatinsk but to Kazakhstan once to give a lecture on radiation, and I felt that the level of medical care was lagging. Japan has provided all kinds of expensive medical devices, but they are not using them effectively. I have come to think that education and human resource exchange is far more important than donating equipment or money.

(Professor Takamura)

In the past, Japan was overly focused on building facilities, so even if we provided equipment or built hospitals overseas, we did not put much effort into training medical experts who could use the equipment properly. In that sense, the way NASHIM continuously invited or sent people back and forth to teach proper diagnostic and medical techniques had great significance, especially in the early days.

(Chair Uetani)

Next is a question for Mayor Endo. After the accident at the TEPCO Fukushima Daiichi Nuclear Power Plant, you visited Chernobyl; what was your impression of Chernobyl and how did you apply your experience to the reconstruction of Kawauchi Village?

The second visit was to Ukraine, to a medical center in a place called Korosten where there was a doctor who wished to train with NASHIM. At that time, did you feel a connection between Chernobyl and Nagasaki, and did you feel a connection to Fukushima?

(Mayor Endo)

Yes, when I first went to Chernobyl, it had been about twenty-five years since the accident, but the area within a 30 km radius was still off-limits. This made me acutely aware of how terrifying it is that there is, in science, technology that humans can't control.

However, I felt there were only surface similarities to Fukushima. The size and scale of the accident are different, so the difference in the nuclear material that flew nearby.

The response after the accident was different as well.

One thing that struck me was the way the information was disseminated. I felt that information was controlled. This is ultimately a difference in government systems.

What really shocked me was when I went to a park, there were placards with all the names of the towns and villages that were destroyed. I choked up when I saw that. I imagined something similar happening to Kawauchi Village and vowed never to let that happen.

When I went to the capital of Kyiv, I had a chance to talk with people from the ZEMLYAKI group who had evacuated



from Chernobyl, and they advised me to start from what was possible and move forward step by step. In that sense, it gave me great courage.

The second time, I visited Korosten with Professor Takamura and Associate Professor Orita. We heard from some of the trainees who had experience at Korosten, and also visited a hospital. I recall a doctor working there pointing to an Eiko machine and telling Professor Takamura, "This machine is quite old." This made me realize just how long NASHIM and Nagasaki University have been providing support.

Then there is the question of what to do with these experiences in the village. When I visited the headquarters of the Ministry of Emergency Situations in Belarus, I was told that it is impossible to make a judgment based on radiation in the air alone. They also talked about the efficacy of decontamination, so I felt how important it was to go forward with decontamination for the people.

And the most important thing I felt was that, when it came to disseminating information, I was frustrated that I myself did not have much literacy on the subject. That is something I have felt about Chernobyl. The accident at Chernobyl is not just someone else's problem. I believe that the contributions of NASHIM and Nagasaki University are part of the reason the various issues in Chernobyl at the time have gradually been resolved. I feel that the knowledge and human aspect from our experience in Chernobyl has contributed to Fukushima. The greatest example of this is perhaps Kawauchi Village.

At the time of the accident, Professor Yamashita and Professor Takamura went to Fukushima, and there was a great deal of criticism at the time. I've been told it was perhaps the system, or the government, or academics, but now I believe they are trusted by the citizens of the prefecture, which can be seen in the fact that Professor Yamashita was appointed vice president of Fukushima Medical University and Professor Takamura as the head of the Great East Japan Earthquake and Nuclear Disaster Memorial Museum. That's all.

(Chair Uetani)

Thank you. Next, I have a question for Director Terahara. When you worked for the Ministry of the Environment, you were in charge of health surveys and the risk communication project for residents of Fukushima Prefecture. How did you feel about the medical care for radiation victims and the support for Fukushima that Nagasaki University provided at the time?

(Director Terahara)

I have continued to work on three projects related to health in Fukushima since my time at the Ministry of the Environment.

The first is a health management project, the second is a research and survey project, and the third is risk communication. In all of these projects, we have received technical support from Nagasaki University and many other researchers.

In the first health management project, a citizen health survey is conducted by Fukushima Prefecture, and training on examining the thyroid is provided to doctors and technicians.

In the second research and survey project, we conduct research to estimate radiation exposure and try to understand disease trends, then use this for more effective risk communication.

Finally, the risk communication project has been developed based on the knowledge gained from the health management project and the research and survey project I just mentioned.

This was the hardest of all the projects, and we owe a lot to Nagasaki University and others.

Mayor Endo mentioned literacy and how information is disseminated earlier, and I strongly felt when I was on site

that even when you try to disseminate correct information, people interpret it many different ways.

Also, when I was at the Ministry, there was a time when we received petitions, and we were criticized quite harshly, or received a variety of opinions, and even when told the same information, some people would be relieved, while some people naturally were concerned about the effects of radiation exposure.

Broadly speaking, there were two things about this that I learned from Professor Takamura and the people at Nagasaki University. The first was the importance of developing local human resources, and the other was building trust with local citizens. National government staff changes every two or three years, but Professor Takamura at Nagasaki University or staff at the public health nurse are stationed permanently, and with the out-service classes and things like that, they are able to hold discussions with small groups of residents to exchange opinions. Professor Takamura was also invited in for the Ministry of the Environment's risk communication project and helped with that. I think we will need to continue taking long-term measures in Fukushima as well. That's all.

(Chair Uetani)

I think risk communication is an extremely important keyword. I think that just unilaterally conveying information is not really communication. What do you think is needed to build communication, to build that kind of trust? Gaining trust is very...

(Director Terahara)

I feel it would be very difficult to make gaining trust the goal. There tends to be dualism with safety and security, but of course, things are not so clear cut, and as I said before, even when you try to convey correct opinions and information, people interpret it differently, so I felt that it is very important to listen accordingly.

(Chair Uetani)

How about you, Professor Takamura?  
I'm sure you experienced criticism as well.

(Professor Takamura)

Well, immediately after the accident in Fukushima, in March and April of 2011, there was little choice other than one-way communication, from experts to residents.

It was an emergency and residents knew nothing about radiation, as Mayor Endo said earlier, so early on we had no choice but going with a one-sided communication, but the support provided during the reconstruction in Kawauchi Village, for example, was slightly different in that there was back and forth communication.

So while we were the experts on radiation, the people of Kawauchi Village are the ones who've been living there so in that sense they are the experts on Kawauchi Village, and we didn't know enough about the area, so we communicated with this kind of respect for each other's backgrounds.

For example, radiation exposure is closely tied to food culture, and since we had the same purpose of wanting to restore the area, we respected each other's expertise as we communicated, and I think this was very important, especially during the reconstruction period.

(Chair Uetani)

If we used too much technical jargon, they wouldn't understand...

(Professor Takamura)

That said, over the past ten years, I think the people of Fukushima have become the most knowledgeable citizens in the world about radiation. They all watch their dosimeters and know how much radiation they have been exposed to, they know which areas have the highest levels of air radiation. Also, when we explain the significance of those values, I think it important to give relative values, like, oh, the amount is equivalent to a tenth the radiation of a chest x-ray, to give advice on how to live their lives, during the recovery period.

(Chair Uetani)

Dr. Kodama, you mentioned that revising the second edition of the Effects of A-Bomb Radiation on the Human Body was a struggle, and I think that also falls under risk communication, so when it comes to conveying scientific information properly, I am sure you had many struggles, but what was the biggest issue for you?

(Dr. Kodama)

When establishing our editorial direction, we decided to start by completely revising the 1992 edition with the intent of also publishing an abridged version.

For that reason, we wanted a summary abstract at the top for each disease, and secondly, we wanted a summary of results from research both on atomic bomb survivors and people who were not atomic bomb survivors.

An even greater struggle was choosing authors.

I was not directly involved in dealing with the publisher, but there was a great deal of hardship securing a budget and other things.

(Chair Uetani)

I see. It is hard for us to know the effects of low-dose radiation exposure and medical radiation exposure.

I believe low-dose radiation exposure is an issue, especially for the residents of Fukushima; has there been any discussion on this?

(Mayor Endo)

I don't recall any special focus on low-dose exposure.

Depending on the disease, there isn't enough data, making it very difficult to pinpoint exactly what level of radiation starts to affect the human body, but I think this is very important and one of our future challenges.

(Chair Uetani)

Thank you. I would now like to enter the third round of discussions.

I have a question for Director Terahara. For Nagasaki Prefecture, what direction do you think NASHIM should take in the future?

(Director Terahara)

There are still a great many people around the world suffering the effects of radiation exposure, including those exposed during the accident at Chernobyl. We believe this is still a very serious problem that requires our continued support. People in Japan have also become more concerned about radiation exposure after the accident at the TEPCO nuclear power plant.

I think that NASHIM's activities, such as training doctors and interns, dispatching experts, and publishing medical

textbooks is extremely important to make effective use of the experience in treating victims of radiation exposure and research on radiation damage that we have in Nagasaki.

I also think the direction of NASHIM's activity will not be limited to the medical care of radiation exposure victims, but will also lead to measures in other fields as well.

I believe support for victims and other so-called vulnerable members of society will lead to improvements in the level of health in society overall, so I believe this knowledge can be applied to various measures for health promotion throughout the prefecture.

I hope that, as a prefecture, we increase collaboration with various institutions and contribute to the world through NASHIM's activities.

(Chair Uetani)

Thank you. Next, I have a question for Dr. Kodama.

What do you think is the ideal direction for collaborations between HICARE in Hiroshima and NASHIM?

(Dr. Kodama)

First, I would like to touch a little on the kinds of collaboration we have done in the past.

Then, this is about writing the revised edition of the Effects of A-Bomb Radiation on the Human Body again, but we had fifty contributing authors, and actually ten of them were involved in NASHIM. NASHIM helped us a great deal with the writing of the revised edition. I would like to use this occasion to thank them.

They written out specific items, for example, they wrote about important items such as thyroid disease, leukemia, cataracts, and other important health effects of radiation on the body. I cannot say exactly when, it will probably be several years in the future, but we will at some point publish a third edition. When that time comes, I would like to ask for their help in writing once again.

Secondly, HICARE held a seminar on medicine for victims of radiation exposure in Korea in 2013, which was co-hosted with NASHIM, and one of the participants from NASHIM gave a lecture.

Then, in 2016, NASHIM was the one to host a seminar in Korea, and the chairman of HICARE was invited to join. Then, in February of last year, HICARE held an international symposium to celebrate its 30th anniversary, and Professor Takamura from NASHIM joined the symposium, making it a great success.

Such continuing efforts increase cooperation in a variety of areas, so we hope that we can move forward with these, all while sharing information and receiving advice.

(Chair Uetani)

Thank you. I would like to increase cooperation between NASHIM and HICARE in the future as well.

So, Professor Takamura, from the point of view of Nagasaki University, or from the point of view of reconstructing Fukushima, what do you think is the ideal direction for NASHIM?

(Professor Takamura)

The city of Nagasaki has been engaged in the medical treatment for victims of radiation exposure and research on the health effects of radiation since the atomic bombing in 1945, as we discussed today. In the wake of the Chernobyl nuclear accident, NASHIM has provided support for international medical treatment of victims of radiation exposure, especially in places like Chernobyl and Semipalatinsk.

As was mentioned earlier, this played a role in Nagasaki and NASHIM's response after the nuclear power plant

accident in Fukushima in 2011.

As for what NASHIM will do over the next thirty years, I think it will come to embody the contributions of Nagasaki to the world, as Director Terahara mentioned earlier.

We talked about this earlier, but the internet and various online systems have made it easy to host an international symposium from Nagasaki. Last October, we hosted an international training course in Kawauchi Village, and it was a great success with roughly 150 experts from every continent except Antarctica participating. We can now do things like this with a single idea.

That is why I think it will be extremely important for us to utilize the experience and knowledge gained from Nagasaki, Chernobyl, and Fukushima to train the world's experts and future experts. What I think will be important for this is—and Dr. Kodama discussed cooperation with NASHIM, but I think it will be important for Hiroshima, which has the longest experience, as well as Fukushima, where we have provided support over the past ten years, to work together as equal partners to provide a global response, to train human resources and global experts in this field.

I think that perhaps this should be a major pillar of NASHIM's activities in the future.

(Chair Uetani)

Finally, I'd like to ask a question to Mayor Endo.

What are your hopes for NASHIM and Nagasaki in the future, and what do you think is the ideal direction for Kawauchi Village in Fukushima for the future?

(Mayor Endo)

It's already been more than ten years. But there are many areas where issues have not been solved. I feel that solving these issues will likely take a great deal of time. Issues such as creating safety and security around radiation and communicating scientific knowledge and risk will probably require a great deal of time in the future, and I hope that NASHIM and Nagasaki University will continue to work with us in the future.

As for the future of Fukushima, we undoubtedly face major challenges. We are working our hardest to resolve issues that remain in our current era, such as, for example, issues with treated water, the future of the interim storage facilities, and the decommissioning of the nuclear reactor, but there is no doubt that some issues will remain a burden for our children and successors to bear. That is also why training human resources who can handle this burden is important for Fukushima. This could be one way to pay back everyone who has helped us so far.

Then from my perspective, I feel that risk management is an issue after listening to today's discussion. First, as was already mentioned, our job is to convey scientific information and to make sound decisions based on that scientific knowledge. Today's event made me feel that the quality of a leader will be determined by how they demonstrate their ability to make decisions. That's all.

(Chair Uetani)

Thank you. We've heard many comments today, and keywords such as education, risk communication, and risk management have emerged, especially when discussing NASHIM's efforts, and finally, Professor Takamura suggested that collaboration between Nagasaki, Hiroshima, and Fukushima would increase the level of their efforts and help spread them globally.

Does anyone in the audience have any questions or comments? Is it OK?

Thank you very much for your invaluable opinions today. This concludes the roundtable discussion.