

## TRANSCRIPT

**Masami Yasunaka (Chair):** We will now start the panel discussion. I myself and some others in their discussions will be speaking in Japanese language; therefore, I would like to ask those who do not follow Japanese to use receivers for simultaneous translation. Thank you.

And, Dr. Kazumi Yamaoka, Research Coordinator of JIRCAS, is going to co-chair the panel discussion. We hope for your cooperation.

**Kazumi Yamaoka (Vice-Chair):** I am a Research Coordinator from the Strategy Research Division of JIRCAS. The present symposium began with Dr. Shiraishi's presentation yesterday, and we have heard three sessions already. We have conducted discussions focusing on networks, and various types of networks were presented, and there were also discussions that they could be integrated together or act up together. Later on, I would like to try to put the various views on networks before other perspectives to try to take them up and identify the issues. But before that, I would like to ask the panelists to make their remarks on others rather than those who are already delivered their remarks. I would like to ask them to make their brief presentations within five minutes with a few slides to introduce their activities and learn what they are doing in their organizations. So first, Dr. Ehara, please!

**Hiroshi Ehara:** First of all, our biology department has 130 researchers, and as an agricultural school, I think we are categorized as a large university in terms of scale. But in terms of international research, I think we are running short of manpower and research staff. As Dr. Asanuma mentioned, international collaboration by universities so far depend upon individual person's efforts. Therefore, in my institution, we are thinking that we should develop organizational support to promote international cooperation. Not only individual, but institution-wide support to international collaboration is what we need to promote.

This is one of the programs that we are exploring and pursuing for our network in the research area. More than one university can be set up in the consortium in Japan, and we also have overseas institutions and universities. Mie University is acting as a hub university. Kurashiki University of Science and the Arts, Tokyo University of Agriculture and Technology and Ryukyu University: these three universities are joining as members of the consortium. The Sago Palm Project pushed these universities to work and collaborate together instead of compete with one another (It was the fact in the past). And, overseas partners, Bogor Agricultural University, Haluoleo University, and Sriwijaya University also collaborate together. So we are making this proposal for food security through bio-energy and food, two needs to be resolved and we are making this proposal to balance the relationship between the two. When we perform the extraction of starch from sago palm trunks, about one half of these starch can be easily extracted and used currently for food purpose, and there are residues there, and more than 50 % of starch remains as residues. We have the technology to contribute to bio-ethanol and biodegradable plastics which can be made from residues of starch. Biomass utilization as alternative energy is what we are exploring, and biomass as a mass must be produced. And therefore, we need a pilot farm, and we would like to establish it in the partner institution and start and carry out the demonstration projects.

We need an intuitional rearing program. According to a survey, 49% of the new employees in business in Japan would like to avoid overseas assignment. According to a different statistics, the number of researchers stationed abroad for more than six months in Europe, US, and Asia are being reduced by half. Facing this declining number of researchers working aboard, how can we promote work abroad? In case of the frontier sciences, there is so much enthusiasm to work there, but for

international field science, there is a great deal of reluctance. We need to develop a rearing program for young scientists who will more enthusiastically engage in field science. Our university established an international training program. We would like to secure funds for young researchers to visit overseas. It can be supported by us. It means not just a visit, and we would like to receive scientists from abroad in our university to internationalize our campus. In that way, we would like to deploy and develop international field science activities.

This is just one example, the JSPS program. We would like to invite young scientists from Southeastern Asian countries under a unified program. Researches should cover relatively broad areas, and there should be workshops and seminars. It already started in 2009. From 13 universities, we invited foreign personnel. Heterogeneous collaboration and science, engineering and humanity are integrated together, so you will list the contents of special workshops held there under this integrated study program. This is the engineering field and this is the humanity field for overview. There were special lectures on microorganism, glycol-technology and genetic engineering. Biology, engineering, humanity, and life science and molecular science departments were put together. And, last year, we started the innovation science faculties. Heterogeneous faculties and disciplines are all involved in this cross-boundary faculty. Young scientists from abroad as well as our students in our faculty participated in various forms of workshops and lectures. We hope that we can internationalize our activities further. The basis of all these efforts comes from JISNAS which was presented by Dr. Asanuma and other networks including J-FARD.

**Kazumi Yamaoka :** Thank you very much, Dr. Ehara. Now, we would like to call Mr. Ishizuka, please.

**Moriyoshi Ishizuka:** I will talk about international networking at FFPRI. First, FluxNet is a research network for observing or measuring CO<sub>2</sub> flux. There are four networks around the world, Asian Flux, Carbo Euro Network, America Flux, and North Flux Oceania. Japan is part of Asian Flux. FFPRI has five flux sites to measure CO<sub>2</sub> in Japan, but we want to strengthen the Asian Flux, which is one of our objectives. In order to do that, we need capacity-building of Asian researchers. The handbook was published in English. We want to standardize data processing of flux observation. Also, there is CO<sub>2</sub> flux observation system for cellular phones which we have developed. You can compare measurements or you can compare the flux observation between different towers.

The second activity in FFPRI is focused on forest monitoring plots around the world. The first group is in the taiga of Siberia, and the second group is in Thailand and Cambodia. We also have tropical forest plots in Indonesia and desert plots in Australia. We are doing this monitoring at individual or small group basis in the past, but recently we are trying to form an institutional network at FFPRI.

Last October, we invited our collaborative researchers, held a workshop, and the East Asian Forest Dynamic Network was established. In the past, we were mostly networking in East Asia, but recently we have networking with Alaska also. We are collaborating with the Amazon Research Center in Brazil, too. In Amazon, there are no roads. So we have gone to research sites using boats. And, we will try to form networks in other areas: for example, on carbon cycling or flux observation with other networks.

FFPRI has just established the REDD-Research and Development Center to become a technical hub in Japan in July. REDD is a hot topic in forestry. The destruction of tropical forests accounts for about 20 % of the CO<sub>2</sub>. We want to give an economic incentive as to prevent the destruction of forestry.

One of our network activities is to host international workshops or seminars. FFPRI will host these kinds of symposium for developing countries. For example, CBD COP 10 was held in Nagoya in last October. As one of the side events, we held an international workshop there, wherein 48 countries and international organizations as well as 86 Japanese organizations attended. So, this workshop was quite a big and a successful one. Then, in December 5<sup>th</sup>, COP 16 will be held, and we will also hold a side event. Next February, in Japan there will be a 20 countries- experts meeting from developing countries, and we will hold a technical seminar.

**Kazumi Yamaoka:** Thank you very much. Now I would like to invite Dr. Yagi.

**Kazuyuki Yagi:** I would like to talk about international partners on behalf of NIAES. We respect our international partnerships with the Landcare Research in New Zealand, Amazon Research Center in Brazil, and Ramolina Agricultural University in Peru. We have collaboration with a large part of South and East Asia. We also have collaboration with institutions in Europe and America. We also have collaboration with the National Academy of Agricultural Sciences in South Korea and have continued this joint research over ten years on reduction of GHGs emission and monitoring network and biodiversities and so on. And, we have had a long-term collaboration with Nanjing Institute of Soil Science in China, which is one of the research institutes under the Chinese Academy of Sciences. At present, we have a collaboration for the remediation of heavy metal contamination and mitigation of GHGs emissions as well as nutrient management in catchments.

We have also collaborative efforts with the Center for Development Research, the University of Bonn in Germany and have been working on conservation and utilization of natural resources. There are some themes that we have been collaborating with.

In these efforts, we have our mission for basic research concerning the agricultural infrastructure. We have human resources and economic resources, in particular, for monsoon Asian agri-environmental research. We are focusing on monsoon Asia. We are trying to layout various institutions in three regions. Based on these kinds of philosophy, we have some networks which we have been introducing to you.

The Monsoon Asia Agricultural Environmental Research Consortium was established in 2006. And here we are looking into common issues in monsoon Asia. For this purpose, we are trying to develop a network between NIAES and research institutions in Asia. One of the activities is to organize international meetings. We have already organized three meetings this year, one more on GHG emission from rice paddy field last September, and another seminar on soil carbon sequestration in Bogor in Indonesia. Today and tomorrow, we happen to have a research conference in this same conference center on biodiversity and agriculture jointly organized with NARO in Japan and FFTC in Taiwan. If you are interested in it, you will be able to drop by and see what kinds of presentations are being served.

Furthermore, we are also interested in exchange of researchers although we will not be able to invite as many people as JIRCAS does. We are also providing a website as venue for exchanging information. Likewise, we are very much at establishing relationships with other international organizations whose activities are common to our consortium. We have a lot of networking efforts that are ongoing, and we consider that it is very important to come up with a framework of international research efforts. In this area, what we are newly doing, as Mr. Suzuki has already introduced to you before, is the Global Research Alliance on Agricultural GHGs. It has only been a year since it was established in Copenhagen for COP15, and we have focused on the emission of GHGs from agriculture and how we will be able to sustain our agricultural production. Networking is

also considered here. There are three different research groups in the alliance: paddy rice, field crops and livestock farming. There are coordinator countries, and Japan is serving for paddy rice. NIAES is serving as the liaison office. We already initiated a workshop under this alliance in Tsukuba, Japan.

NIAES is also participating in other international organization networks including IPCC (Intergovernmental Panel on Climate Change), INI (International Nitrogen Initiative), and IPBES (Intergovernmental Platform on Biodiversity and Ecosystem Services).

Finally, we would like to cooperate with domestic research institutes to jointly extend our research outputs to the international communities.

**Kazumi Yamaoka:** Yesterday, we had a discussion on international agricultural science research network. And, I think that these networks can be categorized into two kinds. The first category is networks for individuals or networks to be participated by individual researchers. Individual researchers can go beyond their specialties, and institutions can go beyond the frameworks of their institutional organizations and universities. individually join the network. Of course, a few individuals can join as individuals in those networks for organizations, but the second category is the organizational network for organizations to collaborate together.

First of all, let us look at the expansion of networks for individuals. In the individual persons working there, they're not creating a personal network, but individual persons go into the existing network to advance. Let us conduct discussion on the first category; the networks for individuals.

Next, we will look at networks for organizations to get together and join. I think there are some sub-categories. First, there's the domestic network, say a network in Japan. Research institutions, universities and organizations have their own strength in their own areas, but they should not just stay within their own areas of the strength. They will go out of their own areas to collaborate with other institutions to try to find and explore something. And, the second sub-category is the networks with the overseas institutes and international organizations. You go there and join the international networks to create a give-and-take relationship. Now, how can we develop and strengthen the linkages and networks of Japanese research organizations with foreign and/or international networks? How can we develop the linkage between the domestic networks and international networks? I think, in that way, we will develop our discussion here. I would like to encourage as many as participants and speakers possible to join in this panel discussion. We would like to have very active involvement from the floor. If you agree with this flow of discussion, we will start right now.

I would like to ask someone to be one to kick-off this discussion. One who will trigger or kick it to determine how it will unfold and flow from now on. I would like to ask Dr. Iwanaga from NARO-NICS to be the first speaker because of his background with CIMMYT and other international research organizations. Dr. Iwanaga has served as head in those international activities. Therefore, regarding difficulties and benefits and advantages of international networks, I believe Dr. Iwanaga is very fully aware of these and have an extensive experience of these issues. And, how can NARO contribute to this field and how can it develop its role? I would like to invite Dr. Iwanaga to contribute to us.

**Masaru Iwanaga:** I might be deliberately making some challenging points or difficult points. First of all, in regard to the importance of networks, I have worked in more than one international agricultural research organization: CGIAR was the starting point. CIMMYT was awarded the Nobel Peace Prize for reasons including its success in creating networks. Speaking about creating network is

easy even if you only have eighty of intellectual score, you can create a network. But creating a network is one thing, and continuing a network is another thing. In CIMMYT, a big research organization, it was especially difficult to develop a partnership, the mechanism of network. And network is likewise a mechanism for creating a partnership. It is very difficult to enhance a network.

There are many academic ties and boundaries in Japan, but they are individual networks. They are well-developed but amateurs. For networks, there are more than one definition; for consortium, there are various definition, for forum, there are various definitions in Japan. But very few people will be able to write down the right definitions. By tradition, the Japanese have difficulties in creating, maintaining and sustaining networks. If you disagree with that point, I am willing to listen to you. I did dare make that point because CIMMYT was awarded a Nobel Peace Prize. Why was it capable of conducting and carrying out such roles and activities to be awarded the Nobel Peace Prize? It was because of partnership, I would like say. Fifty years ago, that was already accomplished by CIMMYT. For example, which varieties to be supplied to south Asian countries? That was one of the areas of recognition of the Nobel Prize Committee. Network theories in research and education are not fully developed in Japan. They are at a sort of infancy level. I think I would rather make a difficult point although sarcastic because I would like to make the point clear.

There is another viewpoint. I belong to NARO or the National Agricultural and Food Research Organization. So what is NARO? There are 15 research institutes under NARO. NARO has 1,600 research staff as well as other supporting staff. In fact, NARO has more than 3,000 regular staff, aside from the number of part time workers. It has an annual budget of 60 billion yen, so ask me a question whether NARO is doing activities worth 60 billion yen. It exceeds the total of 15 CGIAR centers' budgets. I have been in international institutions for more than 20 years, and I am now working in a Japanese organization. So what are the Japanese technologies and Japanese expertise that Japan can contribute to the world? I think there are plenty of those. Even though agriculture is local and deeply rooted in localities, it is basically based upon fundamental science which is universal or common to the whole world including the science of green revolution, which technology was created by Japan and contributed to green revolution and propagated to the surrounding world.

For two and a half years since I returned back to Japan, I have belonged to NARO. How can an organization like NARO contribute to the whole world? How can NARO work and act in collaboration with JIRCAS? These have been long-term homework, headache or challenges. I have not had chance to resolve these questions yet or resolve the homework yet. I wish to make a more positive contribution or remarks here. NARO has plenty of research outcomes, and NARO has expertise. NARO is capable of making contribution to the whole world but it has not happened yet. NARO's research outcome has not been made to contribute to the world, so why is that? Is that because of some difficulties or some problems in Japan? What are these obstacles that still prevent NARO expertise and research outcome from contributing more actively and positively to do well? That has been my whole look at the puzzle. I am very frank. Thank you.

**Kazumi Yamaoka:** Thank you for the very frank opinion. Dr. Iwanaga mentioned that Japanese are not good at forming networks other than individual networks. They are not good at making organizational networks, and it is easy to form a network, but it is difficult to maintain and make the network function. How do we get the benefit? How are the net benefits shared from networking? That is the most important thing in order to maintain it. It is just not the matter of budget or human resources. How do we maintain the benefit and the positive aspects of networking? Individual network and organizational network are two things that we should keep in mind. In order to maintain these networks, how do we keep the centripetal force? Mr. Suzuki.

**Ryotaro Suzuki:** Mr. Iwanaga said that it is easy to form a network but difficult to maintain it. I agree with him. At the same time, who is going to bear the cost? This is something we cannot avoid. In the past, networks such as J-FARD and Mr. Asanuma's JISNAS were formed by researchers. These networks rely on budget. If they are truly independent, and if we form such a network, the members of network will have to bear the cost. This is the first point I wanted to say.

Next, when I first designed my network, I thought of continuing collaboration between organizations. I thought it would be good. That is how we started, but as we went on, I thought a network for individuals would be better because individuals may change their organization. Dr. Iwanaga used to be Director-General of CYMMIT, and now he is a director of the NARO. This kind of institutional constraint would happen on individuals as well. If an individual changes his organization, he would no longer be a member of the network that he used to belong to. I think maybe individual membership to the network is more flexible than institutional memberships. If you could form a network of individuals, it does not matter where each one belongs to. If this individual brings information sharing, and if the network could have some direction, then we could design an institutional or policy level network later on.

Therefore, it is important that free individuals come together and exchange information if we could form those kinds of network. As a part of the network, I want to emphasize information sharing through webpage or Information technology.

**Kazumi Yamaoka:** Thank you. Mr. Suzuki said that he was first thinking of organizational network, but he thought he changed his mind. He thought the individual one is better.

**Shuichi Asanuma:** As I introduced, JISNAS is only a one year-history organization, and we have organizational memberships as well as individual memberships. Organizational membership is given to agricultural departments of universities. If they cannot decide, then the faculty members can join first as individuals. The mission of universities is to educate. After education, if the individual moves to some other universities, there is not going to be any institutional linkage left. In order to avoid that, Mr. Ehara, as a professor from Mie University stated, how can universities support the education of researchers? That is something universities need to think of.

**Kazumi Yamaoka:** Mr. Miyata introduced J-FARD. J-FARD is a type of individual networking, but to maintain the network, you face the budget or human resource constraints. Besides these constraints, is there anything else?

**Satoru Miyata:** I was involved in the establishment of J-FARD and I can remember what the motivation was for making J-FARD. We did not distinguish individuals or organizations for our J-FARD at that time. In order to conduct international research, we felt that there was not enough efficiency. JIRCAS was doing international research, but also there was inefficiency. If there were some redundancies, such as similar researches going on in one country, we wanted to rationalize them to enhance efficiency. That is why we formed our network. As Dr. Iwanaga asked, "Are we successful?", and I already answered, "Not so successful." But if you looked at the situation back then, JIRCAS was an international research organization, but there were no organizations which had all the information on international research. In universities, they did it on an individual basis, so it was difficult to make it function organizationally well. That was one of the external factors. But as the panelists already mentioned, now we are seeing this even in other organizations, as Mr. Ehara has established that in their organization they conduct international research. Mr. Ehara mentioned that he have seen great progress in the past few years.



**Kazumi Yamaoka:** When you think about funds, national institutions and universities have found it very difficult to get appropriations necessary for what they are doing, so it is going to be important to try to form linkages in order to be able to get necessary funding for research. And in this process, there are some people, not just individually but organizations which would like to arrange with each other to get necessary funding as well as try to ask the international counterparts, so that we will be able to extend these research interests around the world to get the needed allocations. I think that is this process and there will be functions which will be elevated in order to be able to give a kind of voice for research within this area. The chairman has a word to say.

**Masami Yasunaka:** I would like to make some comments, not as a Chairman. When J-FARD was established in 2004, I served as a member of the Secretariat, and I would like to explain what has happened over the years. J-FARD has been introduced to Japanese research institutes, universities, NGOs and other organizations which have shown their interests in international agricultural research, and want to try to make some contribution in this area. But, it was going to be important to get information and share information within the domestic circle because it was considered to be very important where few information existed, so those people who were interested individually or organizationally joined J-FARD, so that information could be shared with each other. That was the original purpose of the establishment of J-FARD. In the initial process, there were about 20 people who raised interests in trying to form this kind of organization, the meeting was organized, we had a secretariat and we included people from JICA, academic institutions and educational organizations. And, JIRCAS mentioned that it would be contributing to these kinds of efforts. However, over the past six years, it did not have so much of an activity. Why was it not as active as we hoped for?

We considered that it was very important to provide a platform for information sharing; therefore, we wanted to try to get the funding for the project. In that respect, we found it very difficult to get funding. We were thinking of how to gather information, but we found that there were limitations in what JIRCAS could do. Whether members were participating in J-FARD or not; it did not seem to bear much fruit. Reflecting back on what we originally planned, I think we have to get back to where we started and try to establish suitable juridical organizations, so that they will be able to serve the multipurpose functions that they were established for. The other point I would like to raise is in terms of networking, but we have been discussing things around this philosophy of the networking. In the case of J-FARD, for instance, nobody has any responsibility or duty, so it is sometimes available as a kind of network, but then there are also networks where people come together to try to serve for a purpose and to do some kinds of project together. There are different types of networking. Anything about networking, it is going to be important to think of how we will be able to maintain the different shapes or forms to come with the networking. I think it is important to try to set a purpose and also to distribute different types for functions to participants and to think what kinds of merits will benefit to the participants if this kind of framework is going to achieve success. If there is no purpose to be served, it is probably going to be very difficult to get the interest of people in networking.

**Kazumi Yamaoka:** Thank you. At the beginning of the panel discussion, Drs. Ehara, Yagi, Ishizuka and Iwanaga proposed views and we found that there was already high expectation in Mie University and also in agricultural research organizations, too. There were a lot of challenges in this area in FFPRI and in Mr. Yagi's organization. Dr. Yasunaka as Chairman has mentioned that these are organizations' networks which were made for the purpose of increasing efficiency in their work. Within this process, there is a merit for the existence of various kinds of organizations and there was a necessity to share different types of responsibilities. They contributed to this kind of driving force for networking and that might have been one of the reasons why this kind of organization is still remaining and

continuing. I was wondering whether there were any hints to the success of such organizations, Mr. Yagi or Mr. Ehara.

**Kazuyuki Yagi:** The chairman has mentioned the purpose by which this organization was established. I introduced the organization MARCO, so there were a lot of countries with circles with MARCO. As Dr. Iwanaga has mentioned, very frankly, I would like to reflect this too. The circles which appear on the slides should even be lighter in color to show that not all these organizations are very active. There are very active organizations as well as not so active organizations.

There were also interests of individual participants, but there are organizations which continue to exist because they serve as venues for the need for organizational or networking process. I think that it is going to be important to try to review as a kind of these organizations to try to choose to see how these organizations are being organized and how they are active or not in participation in various activities. If you join an organization on a personal basis, you do not have say too much. But if it is going to be for organizational type of needs, it is going to be important to try to establish a target on the project to make it successful.

J-FARD has been mentioning about a platform with JISNAS of Mr. Asanuma. There are organizations which can provide information they can share, so that kind of process is going to be also necessary. In the places with light colors, there are different ways of approach for the same problems. I think that we should not force each other as to how these organizations should be set up.

**Kazumi Yamaoka:** Mr. Ishizuka, would you like to add something to this?

**Moriyoshi Ishizuka:** Yes. About forests--- the characteristic of a forest is that usually individuals can participate in a network for laboratory purposes, but in creating a huge tower of observation, you need team work for a lot of individuals to work together in the forest. You cannot get into tropical forests by yourself alone. You need a team of people. And, in a forest area, you need to have the backup of an organization. You cannot do everything by yourself alone. Flux tower is what I have been observing and measuring for more than ten years. It has been like walking on a tight rope. If the budget was expired, I needed organizational backup all the time to sustain the budget; you need support from an organization.

If we maintain plots in various areas in the world, you really have to like doing so. But, at the same time, you need the support and backup from the organizations and the team of people needs to be dispatched by an organization that supports you. Running out of budget, people, and/or support are all constraints, so I referred to it as walking on a tightrope. You need to maintain the curiosity of individuals but you need to have organizational support to sustain it.

**Kazumi Yamaoka:** Thank you. Mr. Ehara, would you like to say something now?

**Hiroshi Ehara:** Yes, universities have a lot of manpower, but in terms of activity, how much activity can be done depends on resources. But the resources of institutes are finite. You do not like to decentralize or scatter your strength. Those who would like to individually can go ahead and do as individuals. But as an organization, if you want to get evaluation, reward, or recognition as an organization, you have to do it on an organizational basis in your university. We would like to prefer to the organizational activity--- participation by individuals in all the organizations.

Asian agricultural universities have a coalition or alliance. Two weeks ago, this organization had a general assembly in Guam, and the alliance charges a relatively expensive membership fee because they return benefits back to the members. This started to create international network.



Organizational participation is pre-requisite. The directors and the heads of divisions participated in the assembly. When we think about an organization, a consortium or a network, you have to make sure that every member of the consortium or network can receive benefits all the way or without discrimination, and that is not an easy job to do. In international agricultural research, I think that is important, and it is clear how to deal with the distribution of benefits by international networks or consortia, how to return the benefits, or how will the members get the returns and in what way? That is the very important. Our university would like to concentrate rather than scatter our power. What are the issues of an organization is a topic that I would like to come back to later on.

**Kazumi Yamaoka:** JISNAS is just one year old. It is a newly formed organization and we already have thirteen universities involved. In creating university networking, we have been successful in doing so, and I think we are working hard to sustain the JISNAS activities. Now, we have a great senior officer within the organization to do the organizational network. That is Mr. Sim. APAFRI is a great leader. FRIM of Malaysia has provided core funding and has provided a Secretary General and three DGs dispatched by FRIM. Malaysia is doing it very actively and proactively. Why have you been able to do it so actively and so proactively, and why did your institution decide to do so? What is the motivation? What is the idea behind such as an active role played by FRIM?

**Heok-Choh Sim:** You listed what I wanted to say. Let me put this way.

At that time when the APAFRI Secretariat was transferred to Malaysia in 1997 from the FAO Office in Bangkok, it was mostly funded by a Canadian project, with activities in five ASEAN countries. A major portion of the money sustained activities in 1997 until at least 2001. During that period, there were a lot of complains from members. Members from outside those five countries did not benefit from the activities of APAFRI. Running a network is very costly and you need full time staff. I am paid by the Malaysian Government, but I worked full time for the network: thinking of how to run activities, how to get money, how to get more members, how to participate in the meetings, and what meetings to organize. For that, you also need organizational support, and there is FRIM's commitment as promised by FRIM Management since 2001. In my presentation earlier, FRIM has gone through a process of first being a receiver then to the status of trying to serve. I think there is a need to share some of the benefits that one has received all these years. A lot of forestry problems are trans-boundary problems. We cannot say we can take care of ourselves; problems in a neighboring country could cause trouble too. In forestry, there are a lot of trans-boundary problems, haze for example. FRIM has hosted the APAFRI Secretariat for ten years now. In fact, within the three years from 2006 to 2009, the chairman was from the Sri Lanka Forestry Department. Because he had no desire to host the Secretariat, FRIM continued to host the Secretariat. The Malaysian government continues to pay my salary, and also, my secretary and support all the other infrastructure-related expenses. The cost may not be very high because it is a low-cost country after all. But we needed to have money to run activities. A network must be active in organizing activities in order to attract members, and in turn to attract the attention of donor agencies to fund more activities.

**Kazumi Yamaoka:** Thank you very much for explaining the FRIM and APAFRI experiences well. We learnt from forestry issues, which are important issues for Malaysia. When we think of ourselves in Japan, food self-sufficiency issue is crucial, and it is so not only in Japan but also at the global level. How do we aim towards it, how do we achieve it, and how do we benefit consumers? These are also challenges that Japan is facing on. I think we can learn from Malaysia in order to make the network function. We need organizational support to run a network, we need to clarify the issues and we need people's opinions to attract other people's opinions.

**Masaru Iwanaga:** As I used to be a member of JIRCAS, I would like to say a few words. As Mr. Yamaoka proposed, Japan's food sufficiency is a very big issue. In the present symposium, Mr. Koyama from JIRCAS said that JIRCAS should create global public goods. I agreed totally with him. Global public goods, what is the meaning of that? There were some discussions. I think global public goods are for the people who live on the earth. Those public goods should be really of use to people.

How can we create these public goods? We aimed to deliver these goods to poor people, and these goods should be used towards the benefit of poor people. I think we can create these public goods through partnerships. We know the poor people. People understand how the public goods will be used by the poor. That is why we need partnerships. One of JIRCAS's works is to conduct work through partnerships.

In that sense, this is a kind of propaganda. But the role of JIRCAS is, of course, to research specific technology. But rather than technology, they need to find the process to create partnerships in order to carry out technological innovation. As the chairman mentioned, to create J-FARD, to create information and to initiate projects, those are something that JIRCAS should do. Those are very suitable for JIRCAS, and I think JIRCAS is in the position to be able to do that. Today, Mr. Miyata said there are various research institutions and research needs in Japan. There are a lot of institutions and educational institutions. JIRCAS stands between them to facilitate as focal point. That is what JIRCAS should do. I agree with it. If you put these two aspects together, we really hope that JIRCAS will move more towards this direction because specific results should not be just tangible technologies but has to be a process creating a process and creating a unified all-Japan effort in a strategic way. As Mr. Koyama mentioned, we have to analyze the global needs and also we need to analyze what kinds of research are available in Japan. But, we need a real deep capability for matching one seed with other seed. We have to tell research institutions what we need. This is analyzing capability. And if you are influential to these research institutes, then they will understand that they will be appreciated. If they change what they are doing a little bit, we can use it for international goods. This is what I mean by all-Japan. I think the role of JIRCAS in Japan will become outstanding.

As Mr. Koyama mentioned, it is a kind of explanation to Japanese tax payers that Japan's food self-sufficiency is very low. Why do we want to do this kind of international research? It is because there are 127 million Japanese to feed. The quality of food, the safety of food, and preservation of forestry--- we cannot attain these issues without international research. I think it is very strategic to say in that way. I used to be a JIRCAS member, so I will really like to support their efforts.

**Kazumi Yamaoka:** Dr. Iwanaga, I think he came up with a conclusion, but we would like to solicit some questions and comments from the floor. Does anyone have an opinion? Dr. Iiyama, please.

**Kenji Iiyama:** I would like to discuss one more thing about partnership. There is a world-wide forum, GFAR (Global Forum on Agricultural Research). And, under GFAR, there is a region-wide forum in our region, APAARI (Asia Pacific Association of Agricultural Research Institutions). Needless to say, I think that a Japanese domestic forum should be established and join APAARI. We, in JIRCAS, pay a considerable amount of membership fee to attend the meetings. I think J-FARD should be the one to take responsibility for it, not JIRCAS. You will not be able to get the budget appropriation because it is some kind of volunteer organization. And, JIRCAS is also a member of APAARI as mentioned by Dr. Sim, but, this should also be replaced with J-FARD. So I think the organizations involved here should think about the roles of CARD, Nagoya University's JISNAS and also the global challenges we face and

the organizations that are participating in. It is going to be very important to try to set up them as a kind of network.

**Kazumi Yamaoka:** Mr. Asanuma, if you have any response?

**Shuichi Asanuma:** When we were thinking of organizing our JISNAS, we went to the Secretariat of J-FARD and we were talking about our position. We are an academic institution, so we would be very much interested in participating in and collaborating with the efforts of J-FARD. I think that this kind of approach is desirable. One other point I would like to raise is why we are so committed. The Ministry of Education, Sports and Culture asked us to become independent within three years. So they were willing to provide their fund for three years. But after that, they want us to become an independent organization. We were forced to be active. But, many universities tried to show a kind of interest in what we proposed in this area.

**Kazumi Yamaoka:** And I would like to know if there are other comments from the floor, please.

**Ganesan Balachander:** This discussion, on whether it is individual or institutional, made me look at the characteristics of what constitutes informal network and more formal network. Is it institutional or individual? For the institutional one, let's look at two examples. If you look at a few divisions within a manufacturing company, inputs and outputs, actually it is a joint benefit. You all have to work together. So, if you look at it as a network, these members have to have some complimentary strength. I come up with one example when I think about what the formal/informal network is; is it individual-wise or system-wise? For example, there will be no products in the factory, which have both inputs and outputs, unless all the employees work in unison. Therefore, from now on, we have to work supplementary for ourselves. Also, we do need a cost benefit analysis, because if the cost is high, it does not go well, and we have to be more informal. If you have an informal one, the questions and information seeking, these can evolve. It is not a formal setting. And the example here would be 'Facebook'. There is no cost--- some people are coming into it for the benefit of some people. So the key here is what you really understand of the costs and benefits. I have seen many networks that my organization has supported. And the common refrain is--- as long as the funding works, the network will work. So we are going to clarify what the key questions are, whether they are all working for the common purpose. Coming back to what Japan can do to strengthen, I think some of the answers are here. It is a very challenging course. Roughly, goals broken down to the key questions, can be looked at from the very different disciplines. I think that will elicit a lot more initiatives from individuals and institutions.

**Kazumi Yamaoka :** Thank you very much for very insightful comment. Mr. Singh.

**Ram Badan Singh:** Mr. Chairman, my comments shall be on international perspectives. Partnership is a rule of the game today and it has been so for the last 50 years. Therefore, networking is the most outstanding outreach to people at home you wanted to reach. There is no question, however, since I speak from the international perspective; I will submit that there has to be a formal institutional network because it is the formal institutional network which goes to international networks. In the individuals' network, even if they have several productive activities, they will not probably be expected to be with member countries of the international system. Therefore, my submission will be there, since Japan has to do so much in the development of the growing world as a whole. You have to come to an intuition based on institutional network, so that you can contribute in the best way you can to help. Now to do that, I am an outsider. I do not know this beautiful presentation and so many of these networks are eye openers--- these are doing outstanding works, FFPRI, MARCO, and JIRCAS. And, of course, they are placed at different capacities. If it is truly international or regional, I

can only say that these are truly regional international organizations. Although as of the moment, Malaysia is bearing most of the burden of APAFRI, it is truly a partnership among member countries. If you have to do that, then JIRCAS is a member of APAFRI and GFAR as you name it. In many of those international systems, JIRCAS is represented as the Japanese face. And it has been doing an outstanding one. JIRCAS' collaboration and contribution have been outstanding. Therefore, as what Dr. Masaru Iwanaga said, which I hope the President of JIRCAS also mentioned, J-FARD is the baby. This is how they would like to nurture it. JIRCAS and J-FARD are similar; how they want to do it is for them to decide. I leave it to them, to your excellent precedence itself.

However, I think the system should be allowed to perform the way it has been doing in the past. But, there has to be a mechanism by which the outstanding work in forestry by MARCO, and others will be reflected in the international system. This is more of an arrangement with the interested bodies in Africa or a few selected countries here and there. But, they do not get to be reflected in the international forum like AFO, like the UN system, CGIAR system and so on. Therefore, I would submit there that somehow we should find out ways by which it will be the outstanding way while other systems are doing within Japan synergistically, and  $1 + 1$  is 11. That is how it is done probably by JIRCAS or J-FARD to take responsibilities and then by the government of Japan. I am sure we will find it more comprehensive than what they are doing today because this brings out how Japan is beautiful, doing so much for people. This is what we really need these days, and this is my submission that it is. One point which disturbs me and we heard at this moment also is that young Japanese are not very keen to go out. This is very disturbing. I think if we look at Japan, the sun rises in the East for us. And if that is how we will become satellites to see if something can be done. If I can make an offer, on behalf of GFAR, please send one young Japanese scientist to come to work for GFAR in Rome. GFAR will provide all the facilities and let that young person, whether a male or female, depending on how you decide, we will certainly ensure to take care of the young person, make the person return back and send for many more. The president will request you to deputize one of your good people, a young one, anywhere to GFAR and we would like to allow this to happen, so we will initiate the young generation to play parts at the international level. I knew Dr. Masa Iwanaga when he was young, and you know what he has done far. He is still young. I am sorry. He is younger to me, so I should have not said that. Anyway, when he was absolutely very young, you see what he has done to the whole world or Japan. I think it is best for young people to be allowed to come and work for the system, and GFAR will stand for really to take that person, and we will be very happy if you can kindly make it happen. Thank you very much.

**Kazumi Yamaoka:** Thank you very much for your very valuable comments. I think our time for wrapping up is coming. Three questions were posed and I believe that the responses or answers to the questions have already been made. Lastly, I would like to have it wrapped up by our Vice-President.

**Masami Yasunaka:** The New Decade for International Agricultural Research for Sustainable Development, that was the theme of the panel discussion. We have had researchers gathered here, from CGIAR, GFAR, CIRAD, and Australia, also from Japanese research institutions working toward that mission. And, when we speak of a new decade, we have to activate and invigorate research as much as possible. The activity generates the outcome with which you can make further contribution. To do so, what can we do? I think the discussion so far has made something clear. JIRCAS is just one institution. There are many things that one single institution cannot accomplish by itself. JIRCAS cannot act alone. Nor can any other research institute. No single research institute can act alone. How more appropriately can a collaboration of collective efforts should be done? Then, together we can create outcome and more effectiveness. That has been explored. The mechanism for

collaboration or shared efforts should be based upon gathering and sharing of people in collective efforts, so that the shortfall can be closed and the most efficient utilization of resources can be accomplished. And the greatest efficiency can be accomplished in the way the job is done. I think that is the significance of network. We are aiming at creating a small-scale network and going together with all of the global networks such as CGIAR and other global networks with many different sizes, grouping of many kinds and different types, or even a team can be created. For example, at the level of government or at the level of universities or research institutions, at the national level and regional level and global levels. These networks can be created and eventually, they will link up together. We have the persons represented here and gathered here. We can make something from small scale and go up to a larger scale. We have those images in mind. So how can we build those things effectively and efficiently? So let's look at the new era to contribute ideas and our brains to that end, so I am confident we will be able to create something that will be really nice and good. JIRCAS celebrating the 40<sup>th</sup> anniversary and that is what I was thinking certainly in my mind. That is my aspiration, and thanks to every one of you.

**Kazumi Yamaoka:** Thank you. The moderator will have to close after the wrap up point which the Chair has studied, Dr. Yasunaka. All of you have joined in very active discussions for the past two days. Thank you every one for the discussions.

## Question

### Panel Discussion

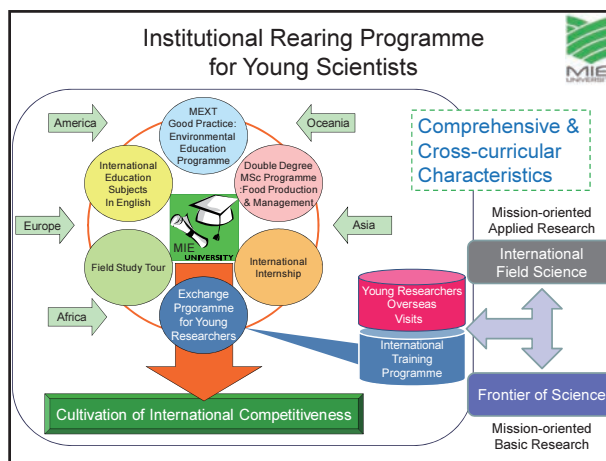
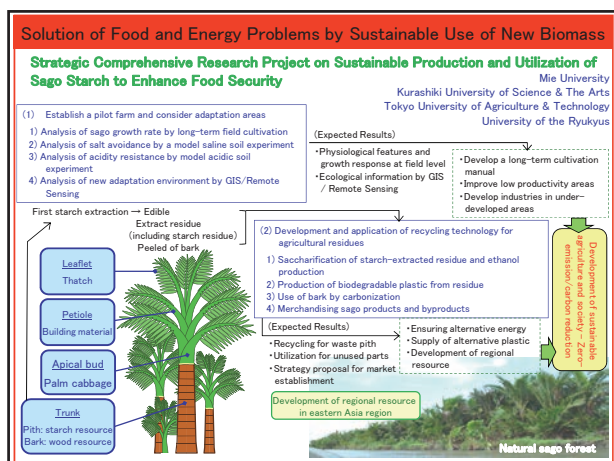
- Q1 Is the direction shifting from personal linkage and networks to more institutional, multi-institutional and consortium type one desirable or necessary for international research?
- Q2 What are major tasks or obstacles to achieve mandates and goals of the inter-institutional fora and networks for international research activities recently emerging in Japan?
- Q3 How can we develop and strengthen the linkage and networks of Japanese research consortia and fora with foreign regional/international networks?

### Panel Discussion

#### General Discussion:

What and how do we need to develop and strengthen our international research networks?  
Open the floor for any suggestions and advices

## Hiroshi Ehara

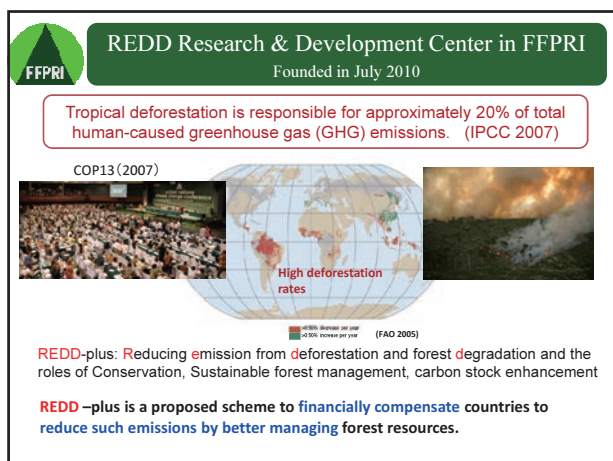
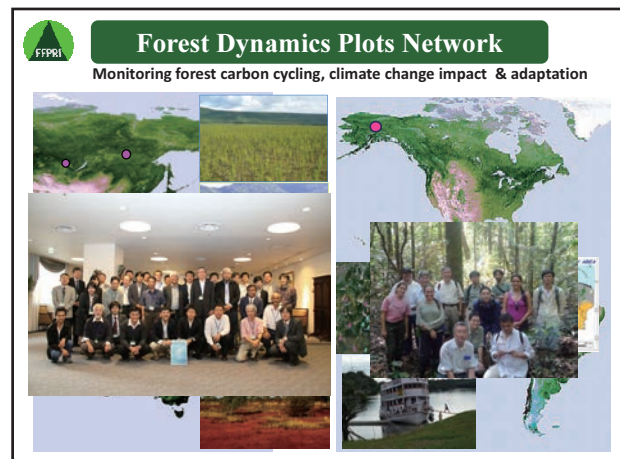
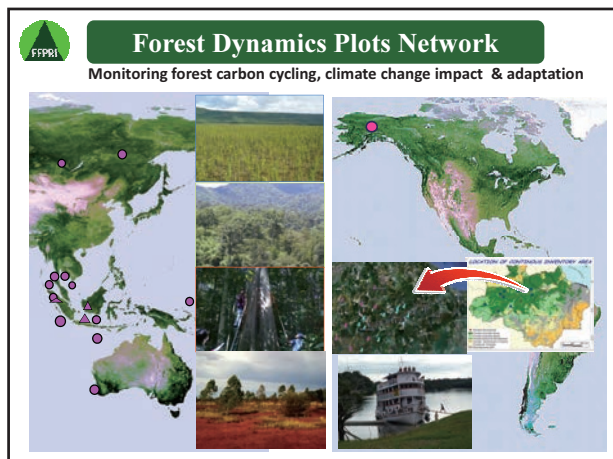
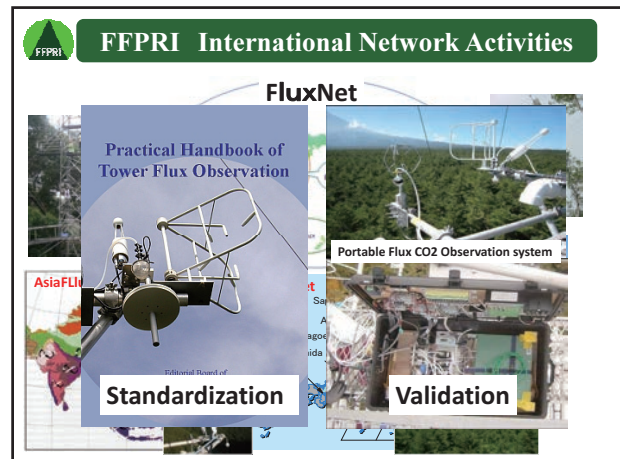
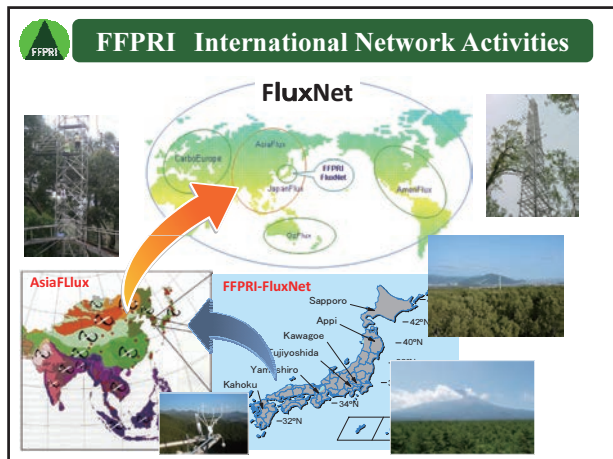


## JSPS Exchange Program for East Asian Young Researchers 2009 - 2010 Integrated Study Programme on Alternative Energy Production and Management

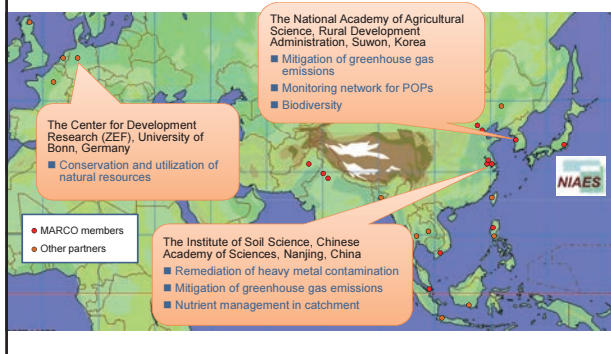
### Contents of Special Lecture and Workshop

Out line of Life Cycle Assessment  
Evaluation of Energy Efficiency of Heat Pump  
Actual Situation about Utilization of Alternative Energy and Environmental Conservation in Japan  
Introduction to Biomass-degrading Enzymes for Biofuel Production  
Some Applications of Tropical Bioresource "Sago"  
Frontier Industrial Network Connecting Forests and Chemical Industries  
Microbiota Analysis in Environmental Sources: Identification and Application  
Breeding and Genetic Engineering for Production of Alternative Energy Source  
Development of Biomass Materials Using Sea Algae  
Introduction of Application Study on Marine Microbiology  
Japanese International Cooperation for Environment





## NIAES International Partners



## Monsoon Asia Agro-Environmental Research Consortium (MARCO)



### Mission:

To promote the development of **agro-environmental research** in Monsoon Asia in order to achieve sustainable development of agriculture while maintaining the sound agro-ecosystem.

### Activities:

- ☐ To organize **international meetings** (seminars, workshops, symposia, and conferences).
- ☐ To promote **exchanges** with professionals and **capacity building**.
- ☐ To provide a **website** as a venue for exchanging information.
- ☐ To establish **relationships with other international organizations** whose activities are common to the Consortium.

## 農業分野の温室効果ガスに関する グローバル・リサーチ・アライアンス

GLOBAL  
RESEARCH  
ALLIANCE  
ON AGRICULTURAL GREENHOUSE GASES

- Is a bottom-up international network, founded on the voluntary, collaborative efforts of countries.
- Was launched on December 2009 in the margins of the UN climate change conference in Copenhagen, Denmark.
- Brings countries together to find ways to grow more food without growing greenhouse gas emissions.
- Initially organized 3 research groups - paddy rice, croplands and livestock.
- The first meeting of the Rice Research group was held 1-3 September 2010 in Tsukuba, Japan, as a MARCO/GRA joint workshop.



## NIAES Strategies for International Cooperation



- To promote **collaborative studies** and **other cooperation** with researchers and research institutes in the world by full and effective use of NIAES research resources
- To activate personnel exchanges by **training** NIAES researches for international activities and by **inviting** foreign researchers
- To participate in **international organizations and networks**, such as IPCC, GRA, INI, IPBES, etc., and input NIAES research outputs
- To organize the Monsoon Asia Agro-Environmental **Research Consortium (MARCO)**, which transcends the boundaries of specialization and countries, and lead agro-environmental research in this region
- To cooperate with **domestic research institutes** for extending Japanese research outputs jointly