Symposium on Global Climate Change: Imperatives for Agricultural Research in the Asia-Pacific

Inaugural Session

Transcript

Moderator: We would now like to start the Symposium on Global Climate Change: Imperatives for Agriculture Research in the Asia Pacific Region. The chairpersons for the inaugural session are Dr. Raghunath Ghodake, the Chairman of APAARI and the Director General of National Agricultural Research Institute of Papua New Guinea, and Dr. Kenji Iiyama, the president of JIRCAS. The rapporteur of this session is Dr. Muhammad Kamali from AREEO. Dr. Ghodake and Dr. Iiyama, please start the session now.

Chairman Dr. Raghunath Ghodake, Chairman, APAARI: Thank you. Good morning, ladies and gentlemen, Dr. Kenji Iiyama, president of JIRCAS, Dr. Martin Parry, Chairman of Working Group II of IPCC, Intergovernmental Panel of Climate Change, representatives of our conference sponsors, Dr. Mark Holderness of GFAR, Dr. John Keatinge of AVRDC, Dr. Rodomiro Ortiz of CIMMYT, and Dr. Gowda of ICRISAT.

Representatives of APAARI member countries, distinguished speakers and delegates, ladies and gentlemen. Good morning and my greetings to all of you. As chairman of APAARI it gives me great pleasure in presenting a warm welcome to you all to this important symposium on Global Climate Change: Imperatives for Agriculture Research in the Asia Pacific Region. This symposium is organized jointly by JIRCAS and APAARI, and co-sponsored by GFAR, CIMMYT, ICARDA, ICRISAT, and AVRDC.

Let me first of all thank Dr. Kenji Iiyama, President of JIRCAS, and his colleagues as well as the government of Japan for hosting this symposium here in Tsukuba. The very presence of large and broad representatives from developing countries of the Asia Pacific region, CGIAR centers, and various stakeholders is indeed highly encouraging for all of us. As you know, APAARI is a neutral regional forum established to promote agricultural research for development in the Asia-Pacific region through interregional and inter-institutional cooperation. Its mission is to facilitate novel partnerships among NARS and other stakeholder organizations so that it contributes to sustainable agricultural development through both productivity enhancement and conservation of natural resource-base. We thus aim at food and nutrition security and safety, economic and social well-being of communities, and the integrity of environment and services. In this context, APAARI, in partnership with regional and international institutions, organizes periodically expert consultations on thematic issues of regional importance and contemporary nature. The members of APAARI have identified mitigation of adverse effects of and adaptation to climate change as an important subject matter, and expert consultation was held in a regional priority setting in August 2006 in Bangkok.

As you are aware, global climatic changes are impacting and likely to impact agriculture through their direct and indirect effect on crops, soils, livestock and pests. The Intergovernmental Panel on Climate Change (IPCC) report released last year has in particular indicated the vulnerability of developing countries in the Asia-Pacific region, especially mega-deltas, to increasing climate changes, and variability due to its large population and the predominance of agriculture, large climatic variability and limited resources to adapt. Runoff and water availability are projected to decrease in the arid and semi-arid regions of Asia. Sea-level rise and increase in the intensity of tropical cyclones are expected to displace millions of people in the low-lying coastal areas of Asia. Whereas increased intensity of rainfall would increase flood risk in temperate and tropical Asia, we have lately experienced all this happening in reality.

Eliminating poverty and attaining food security with the reduced resources in an adverse environmental scenario would be a major challenge to most of the Asia-Pacific countries in the 21st century. Focus on maximize food production, minimize environmental degradation, and attain socioeconomic development. That would need a reorientation of agricultural research, comprehensively addressing all urgent concerns relating to mitigation of an adaptation to climate change, together with other development goals.

Accordingly, APAARI has a plan to hold this symposium jointly with JIRCAS, and in collaboration with JIRCAS, AVRDC, CIMMYT, ICARDA and ICRISAT, our main aim is to develop a necessary framework for reorientation of agricultural research, both at the national and regional level, to address specifically issues involving mitigation of effects of climate change and adaptation to climate change.

The symposium has some very eminent speakers today, presenting global, regional, and national reports. We hope that the deliberations will lead to some specific development recommendations for reorienting agricultural research in the region so as to increase our adaptive capability to assist in mitigation strategies. You will agree with me that only through this and by our collective efforts we shall achieve the involvement of sustainability.

In conclusion, ladies and gentlemen, we are expecting a fruitful discussion and fruitful outcomes of this symposium. I would like to extend once again a very cordial welcome to all of you. I have not doubt that with your active participation, this symposium will lead to a region-specific roadmap toward sustainable agriculture. Obviously APAARI looks forward to your continual support as we move forward to address all emerging issues and concerns. Thank you once again, and we look forward to the symposium deliberations today and tomorrow. Thank you.

Dr. Kenji Iiyama, President, JIRCAS: Good morning distinguished participants and colleagues. Welcome to Tsukuba. It is our great honor to host and co-organize this symposium on global climate change, imperatives for agricultural research in Asia and Pacific jointly with APAARI.

This year, Japan hosted two important international conferences, namely, TICAD IV, the Fourth Tokyo Conference on African Development, and also the G8 Hokkaido Toyako Summit. In both conferences, issues of global climate change and agricultural research and development were the main focus of the discussion. At the beginning of this month, the Japan and African science and technology ministers meeting has been held in Tokyo, of which establishment was promised at TICAD IV and also the G8 Summit. The science and technology ministers from 20 African countries and ambassadors from 13 countries joined the meeting. I have been invited to give a lecture for agricultural research activities of JIRCAS. More than 80% of African politicians pointed out that the most urgent issues of science and technology in Africa are the development of agricultural research and transfer of agricultural science and technology, and also capacity building for scientists and technicians involved in agriculture, and farmers. The World Bank reported number of the population of extreme poverty in the world on [*inaudible*]. The World Bank changed the criteria of extreme poverty from 1 dollar per day to 1.25 dollars per day, so that the population of extreme poverty was counted as 1.4 billion people in 2005. The biggest number of extreme poverty is in Asia. 200 million in 2005, which is about two-thirds of the total extreme poverty people in the world.

We agricultural scientists in the Asia-Pacific have to resolve this situation and strongly responsibility to develop agricultural research even under global climate change. In this context, I sincerely hope that this symposium turns out to be very productive and fruitful, and will enable us to find several options for dissolving the current and future difficult issues on food security and also food safety in not only the Asia-Pacific region, but also worldwide. Now is the time for putting the plan into the practice. Under this circumstance, this symposium is quite timely and will provide and invaluable occasion for agricultural research systems in the Asian and Pacific regions to set up research priorities related to the issues of global climate change, one of the most challenging research issues that humanity is currently facing.

JIRCAS, as a governmental research organization with a mission to contribute to the improvement of agriculture technology, especially in developing countries, is very pleased to play a pivotal role in enhancing the collaboration for this research area in the Asian Pacific region.

Tsukuba City was established by the Japanese government as the first scientific center in Japan in the beginning of the 1970s. Now, it is a world-leading scientific city with more than 300 public and private research facilities and about 13,000 researchers who are about 6.5% of the total residents of Tsukuba City. About 40% of the research staff involved in governmental institutions are located in this city. The JIRCAS headquarters is located in this city, together with many national institutions affiliated with the Ministry of Agriculture, Forestry, and Fisheries. We sincerely hope that all participants will be able to obtain a useful and significant output from this symposium. Enjoy the beautiful and scenic autumn sights, as well as soak in the special scientific atmosphere in Tsukuba.

On behalf of the organizers and sponsors, I again welcome you all to this symposium. Thank you very much.

Chairman: Thank you. The next item is really brief statements coming from six different organizations which are co-sponsoring this symposium. The sequence will be GFAR, then the Science Council of CGIAR, CIMMYT, ICARDA, ICRISAT, and AVRDC. You will have about five minutes each. Thank you.

Dr. Mark Holderness, GFAR, United Kingdom: Thank you Mr. Chair, and good morning, ladies and gentlemen, honored guests. On behalf of the Global Forum of Agricultural Research, I would like to very much welcome you to this meeting. It has been one that we have been looking forward to the whole year, organizing, because climate change is such a crucial issue in agriculture.

Climate change is an agenda as we all know that the world is pricking up its ears and taking notice of, and is aware that we have to act. In agriculture we have a particular responsibility. With about 30% of the greenhouse gases arising either through agriculture itself or the deforestation that is taking place to create agricultural land, we have a prime responsibility, all of us in this room, for making a difference. This awareness is a recent awareness within the agricultural research community. This meeting is one of many that is taking place now, and one that the global forum on agriculture research in which you are all stakeholders is trying to pull together to bring a coherence and consistency to the messages that we are producing that will come to shape the way that we will tackle this crucial agenda.

I would urge you all not to just look at the agricultural production issues: climate change will affect food systems, it will affect food security, it will affect particularly the poorest of this world, those who are least able to adopt and adapt to technologies, those who are least able to change their circumstances to take account of the implication of climate change on their agricultural systems.

So I would certainly call on this meeting—it is a critical meeting for the region. We have to really make not just talk about the climate change issues, but start to act to take this up into our daily work, into our processes and priorities of our research systems, to ensuring that we link the research that we do more effectively with the societies that we serve so that they are a part of that research process, so that they recognize the value of what agricultural change is producing and achieving to help to mitigate, and adapt to the implications of climate change. And as part of this process, we have to look at the different aspects of agriculture, at water use, the amount of water used has doubled over the last century, and 70% of that is for agriculture. We have, ladies and gentlemen, a moral, an ethical and a social responsibility to really make sure that our agriculture is as good as it possibly can be in this world of uncertainty and changing climates, but we can do all we can to adopt and adapt to these very threatening and difficult circumstances ahead.

This meeting plays a critical role, and I would urge you to make full use of it in terms of what comes out of the end, how that feeds in turn into other processes that will affect both the politics of this world and the way in which we tackle this. So I would wish you every success in the deliberations over the next two days. I look forward to a very constructive and very positive outcome, and one that we can all take on board to change the way we are and the change we are in the future. Thank you very much.

Chairman: Thank you. Can we have the representative from the Science Council of CGIAR?

Dr. Simon Hearn, CGIAR: On behalf of the Chair of the Science Council, Rudy Rabbinge, we extend our thanks to the chair of APAARI and to our host, the president of JIRCAS, for being able to attend this very important symposium.

One of the main tasks for the Science Council of CGIAR is to try to set the agenda, set the direction and set the priorities, for the research conducted by all of the international centers and their partners in the CGIAR system. As you know, the mission of that system has become much more complex. It used to be fairly simple—increase the pile of rice—but recently it has moved to many more complex areas, and therefore requires much more effort in identifying the key priority areas to focus our limited resources on. The APAARI and other regional research entities have played an important part in helping the Science Council in identifying some of these priority areas, and we wish to acknowledge the important role that this symposium plays in further setting those directions.

The CGIAR has a lot of work that is engaged in the issues of climate change. We will hear about those during the week, and we need to strengthen those activities with their partners. Once of the new initiatives in the CGIAR is to bring in the global environmental scientists into the agenda that we have already undertaken in our agricultural research, and I will speak about that tomorrow as an important new initiative for the system. I look forward to this important symposium of setting the direction, setting the priorities for this important challenge that we have in this region. Again, I thank you for inviting the science council to participate in this symposium.

Chairman: Thank you. Representative from CIMMYT, Dr. Ortiz?

Dr. Rodomiro Ortiz, CIMMYT: Thank you Mr. Chairman. First, I would like to convey the greetings from the Director General of CIMMYT, Dr. Thomas Lumpkin. He asked me to convey also his apology for not being with you all here because he was coming from a trip and has just been for a few days in Mexico before he started more official trips. So that is the first message. Second, also we want to indicate that we have a long tradition of collaboration and partnership with APAARI; we have been in other events and other consultations like last year's on biofuels or two years ago on also biofuels in Delhi together with GFAR. This is part of a tradition that started many years ago and has been maintained by our Director General.

I am here today because this is an idea that we had with Dr. Paroda and Dr. Masa Iwanaga, today the Director of the National Institute of Crop Sciences here in Japan, and we decided that it was important for CIMMYT to sponsor, so that is also something that Dr. Lumpkin wanted to express here in this event. I will use this opportunity and change caps, and also bring greetings from the Chairman of the Alliance of the CGIAR Centers, Dr. Emil Cuizon, since I am the Chairman of the Alliance Deputy Executive (ADE). Tomorrow you will hear from my colleagues a flavor of what the CGIAR on climate change research, as

mentioned by Dr. Ken Fischer. We do many things, and you have Katherine Sierra, the chairwoman of the CGIAR last year in Bali and this year in Canberra that the CGIAR has a strategic initiative on climate change, it was more or less US$70 million of investment per year on climate change research, and it will be further enhanced through the recently launched climate change challenge program, or CCCP for short, that Dr. Fisher will be talking about tomorrow.

Let me finish by saying what we learned from Dr. Borlaug, one of our heroes, who is still with us and is still a mentor for international agriculture, that there will be no security in the world without starting with food security. Climate change is threatening that food security, and we have to act today to avoid having to deal with much more difficult situations than the ones that we are handling nowadays. Thank you very much, and I hope that this event goes as planned.

Chairman: Thank you. Dr. Ginkel from ICARDA?

Dr. Maarten van Ginkel, ICARDA: Thank you Mr. Chairman. In some ways, working with and discussing climate change is a bit of déjà vu for an initiative like ICARDA. We have been working since our inception in 1977 on drought tolerance, on heat, on production systems that use scarcity of water still to get some crop. Sometimes we say to people, "If you want to know what climate change is going to do in your country tomorrow, come and visit our center today."

So I will give you a presentation tomorrow on some of the research that we are doing, but the dry areas in the world cover 41% of the entire surface. They are home to 2 billion people, and a majority of the world's poor. Over 80% of the population in this region lives on US$2 or less per day, most of which is spent on food, up to 80% spent on food. Correspondingly, food insecurity exacerbated by the current food crisis and price crisis is perhaps a key challenge facing communities and governments in dry areas. Several factors, some longstanding and other fairly recent, have contributed to the food crisis in dry areas. The situation is further aggravated by the fragile nature of these environments, and many of them have range lands that have degraded for up to 80%. Also, the impacts of climate change, the extremes, both the low and high extremes of temperature and precipitation, are already felt in the dry areas that we address.

Improving food security and livelihoods of the resource-poor in these areas requires an integrated approach based on three pillars of sustainable agriculture, crop and livestock improvement, and often we forget the role of livestock in agricultural production systems, natural resource management, and the development of policies and institutional capacity. Technology options for crop and livestock improvement and natural resource management are available, but more are still needed. For these technologies to make a positive impact, supporting policies and effective technology transfers are needed, which in turn requires strong institutions, an area that we continue to see a problem in many of the developing countries.

I have been hearing quite a number of people in the last six months saying that the demise of ISNAR, for example, an institute that disappeared three or four years ago, actually that kind of a center is more needed than ever to help us build national agricultural centers. Policymakers must provide incentives to encourage farmers to invest in new technologies. To be a farmer is to be a businessman or businesswoman. Simultaneously, they must ensure long term investment in research to maintain a flow of new technologies. Continued investment in agricultural research will be the key to improving food security, cutting food prices, and developing the capacities of national research centers to help farmers cope with climate change and its effects. We believe that this investment deserves the full support of the international community. Thank you.

Chairman: Thank you. May we have Dr. Gowda from ICRISAT?

Dr. C. L. Laxmipathi Gowda, ICRISAT: Thank you Mr. Chairman. Good morning all of you. On behalf of ICRISAT, I would like to extend my welcome and greetings to all of you, especially the greetings from our Director General, Dr. William Dar, who was expected to be here but because of other commitments could not be present at this particular conference.

ICRISAT works for the well-being of the poor in the semi-arid tropics of the world, and as Dr. Maarten van Ginkel mentioned, in relation to the dry areas in which ICARDA works, the SAT (semi-arid tropics), are also the regions where climate change effects are also being felt, and also are one of the harshest that can happen to people who are into farming in these areas. Therefore, in order to address these issues of how people can manage and cope with climate change, ICRISAT has adopted a strategy that we call Integrated Genetic and National Resource Management, which focuses on livelihood and income opportunities for improving the well-being of the poor in the semi-arid tropics. And in order to do this ICRISAT works in a multi-disciplinary way, which includes biotechnology, crop improvement, agricultural systems management, and policy changes.

In addition to this, we also are quite heavily involved in knowledge management and sharing, where we intend to use information and communication technologies for knowledge sharing that can help people in terms of climate literacy, drought preparedness, and also best practices for dry land agriculture. Our regional focus in the semi-arid tropics includes Asia, and parts of sub-Saharan Africa, both western and central Africa as well as eastern and southern Africa. We try to address the message on contemporary global challenges. There are six of them, and among these, the major ones which we are addressing currently are climate change and vulnerability issues, drought and land degradation, bio-fuels, which we call pro-poor biofuel policy that we are adopting, agricultural diversification as a means of adapting to climate change, linking farmers to markets, and also bio-safety and health. In order to do all this, we know we cannot do it alone, so we have to have partnerships with many, including both the public and the private sector, and with everybody's help, we hope we can make a small difference in the livelihoods of the poor people in the SAT. Thank you.

Chairman: Thank you Dr. Gowda. May I request now Dr. Keatinge from AVRDC to come forward please?

Dr. John D. H. Keatinge, AVRDC: Thank you very much indeed, Mr. Chairman of APAARI, and the president of JIRCAS, my colleagues. The World Vegetable Center has a new mantra: Prosperity for the poor and health for all, and I believe that is something that all of us in climate change research would wish to endorse.

We have had a lot of talk recently about food crisis. First of all, there was a shortage of supply of basic materials, and I am happy to say that the worst of that is over, as export bans on things and rice have been lifted, and there has been world record wheat production in Russia and other parts of the world, and I believe that the level of panic which this generated has now subsided to some extent. The same has been with prices; they have been right up, and then up again to come down again.

However, there is still a food crisis, and that food crisis affects many more people than just the hungry of the world. In fact, probably two or three times as many more people are now influenced seriously in terms of their health through malnutrition than in fact people who are hungry. This food crisis in malnutrition has been with us a long time, and is still with us, and is not going away very quickly. Therefore I make a plea to you all to not necessarily throw the increased research money at single commodities, but to pay attention to the issue of crop diversification, particularly in the supply of essential minerals and vitamins to human beings, because if we wish to maintain the human development goals, particularly those that are not necessarily associated with hunger but associated with health. We need to make sure that people are fed adequate diets, and we know now that for most people is sub-Saharan Africa, and even for people in Asia, they are in fact suffering from substantial malnutrition, which is resulting in stunting in children and in reduced mental capacity. We know the answers to these questions; we just need the political will to apply the answers.

The good news is, in terms of climate change, that for vegetables, we are well ahead of the game. We have, in the last two generations, I guess, taken temperate vegetables and tropicalized them. But most of the major vegetables already have heat tolerance genes, and so that may not be such a big challenge for us. The bad news is that viruses, diseases and insects are already responding to climate change phenomena, and vegetables are just about the most effective of all he plants in terms of these things, and therefore we will have a major challenge of crop protection in the future. We need good plant breeding and everything that goes with it, IPM, etc.

From the climate change community we particularly want information. We want information on storm intensities, because if people are going to be able to protect their crops adequately, particularly for vegetables and fruits, then they need good protective structures and investment in those protective structures. We need information now on wind speeds, rainfall intensity, and various other things that

are associated with extreme climatic events. At present, though the models are able to tell us something, they do not tell us enough to be able to make those sorts of predictions.

Two more points. One is that although I have been to many of these conferences in the past and will probably attend more in the future, I make an appeal to you all to have less talk and more action. There is lots of talk about climate change, but the actual amount of research that is going on specifically for that is actually quite limited, and particularly in agricultural research. I believe that one of the reasons for that, and I make my direct appeal to the donors in the room, is that we know what we should be doing, but it is very difficult to find the money to do it. Now, if you want us to do that, then you must be able to put up money to be able to do the agricultural research that is necessary to tackle this problem. Talking about it is fine, but the next generation will blame us if we do not in fact take effective action, starting today, hopefully.

Thank you very much indeed.