Session 4

Panel Discussion

Moderators:

Kunihiro Doi, JIRCAS

Satoshi Tobita, JIRCAS

Panelists:

David Bergvinson, ICRISAT

Robert Abaidoo, KNUST, Ghana

Gretchen Neisler, Michigan State University, USA

Moderators: Kunihiro Doi and Satoshi Tobita

Panelists: David Bergvinson, Robert Abaidoo, Gretchen Neisler

Scene on the stage (1)

Scene on the stage (2)

Panel discussion

Panelists

Dr. David Bergvinson, ICRISAT
Dr. Gretchen Neisler, MSU, USA
Dr. Robert Abaidoo, KNUST, Ghana

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Summary of the previous sessions

- Long-mutual history of legumes and human
  - Domestication & food culture
- Power of legumes/pulses
  - Nutritional value
  - Important roles for sustainable environment
- Research efforts: Potential of legumes/pulses
  - Breeding & genetic enhancement
  - Agronomy & systems diversification
  - Symbiotic N fixation
  - Processing and value addition

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How legumes and pulses can contribute to SDGs?

3

How research on legumes and pulses can contribute to SDGs?

4

How research on legumes and pulses can contribute to SDGs?

- Impacts (potential contributions to goals)
  - Food and nutrient security → 2, 3
  - Soil health and land sustainability → 12, 13
  - Biodiversity and cropping systems → 15
  - Value addition and poverty alleviation → 1, 8
- Approaches to SDGs
  - Science-based and demand-driven technology innovation
  - Inclusive approach for different regions and societies = Partnership of stakeholders

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Moderator Doi
Welcome to the panel discussion, final session of this symposium. I will introduce the panelists on the stage, but they have already introduced them, David Bergvinson, Director General of ICRISAT, and Dr. Gretchen Neisler from Michigan University and Robert Abaidoo from Kwame Nkrumah University. And maybe the audience will be afraid about there are no Japanese scientists, don't afraid Dr. Tobita is one of the best legume scientists. He will manage this session. Dr. Tobita, it's yours.

Moderator Tobita
Okay, thank you. Before going in the panel discussion, I want to summarize today's symposium previous sessions. Previous sessions, we had already revisited long and mutual history of legumes and human. This is about domestication and food culture. We have known the power of legumes and pulses like nutritional value and important roles for sustainable environment. We have learned in the previous sessions about research efforts, describing about the potential of legumes and pulses. For example, breeding and genetic enhancement and agronomy and systems diversification and symbiotic nitrogen fixation and processing and value addition.

Today, we would like to propose the theme of the panel discussion as to be Sustainable Development Goals and legumes and pulses. So, it seems a little bit stiff theme but it needs to be discussed here because this year, 2016 is International Year of Pulses, so that's why we are organizing this symposium.

Also, 2016 is also the starting year of efforts of SDGs toward the attainment in 2030. So, in this session, we will discuss about the role of legumes, pulses in SDGs. In other words, how legumes and pulses can contribute to SDGs. JIRCAS is a research institute, so we should be more focused on the research. So, this is a new theme, now the theme is how research on legumes and pulses can contribute to SDGs?

I think these are keys for discussion. One is about impacts. That means potential contribution to global goals. It's something like food and nutrient security. It's contribute to goal 2 and 3. And soil health and land sustainability contributing to the goal 12, 13, and biodiversity and cropping systems is to 15. Value addition and poverty alleviation is number 1 and number 8. Also, we are conscious about the key of this discussion is approaches. I picked up some approaches to SDGs. One is science-based and demand-driven technology innovation, and second is inclusive approach for different regions and different societies, which means the partnership of stakeholders is very, very important.

Sorry for my long introduction. Then, from the panelists, I think all of the panelists are authorities of research and development. So, we would like to have recommendations and ideas of this theme, how research on legumes and pulses can contribute to SDGs. Who will start? David?

Dr. David Bergvinson
Okay. Thank you very much. Contribute towards 11 out of the 17 SDGs if I run through the list. You have mentioned many of them. One I think that's really key and this meeting supports is Goal 17 around partnerships that I think is, we look at the Sustainable Development Goals, they will only be realized country by country, and so we need a roadmap to achieve, one, grain legume self-sufficiency, realizing value addition, and by so doing we bring in women and youth into the agenda for achieving the Sustainable Development Goals, and we articulate, as you mentioned, the demand-driven approach or what are the needs of the country and the farmers within it and if we do that, our research will enjoy higher rates of adoption and impact. So, I think a good list here but I think we can even go farther as far as other Sustainable Development Goals that grain legumes can contribute towards.

Dr. Robert Abaidoo
Thank you David. I want to be a bit more siloed, let me start off, and then just say that for all what we heard today, it's all about legume growth, use, and to be able to grow, produce, and use, the source of the nourishment has to be looked at very critically. So, if I should pick one of these, I will go for issues on soil health and land sustainability. That's the issue with 12 and 13, which by extension what will be the basis for all the rest actually. So, if we don't have a healthy soil, there's no way we are going to have a healthy plant and there's no way you have a use of what has been done. It is unfortunate that in many cases, we look at the above ground product, nice plants, nice seeds, nice colors, but where have these come from, we don't sort of really appreciate it. It is also possible that it's more difficult to carry out soil health research. It takes longer to bring it into the fore. In addition, even growing legumes, it's only recently that we're trying to make additional external inputs. We've always said that grow legumes without fertilizer, grow legumes without nitrogen. Now, we all learned that for legumes to be nutritious, they have to provide all the nutrients, both primary, secondary, and even the

micronutrients. So, we may ask the question, where do these come from? Yes, mother soil will give, but for how long? So, for real sustainability, we need to look at how we replenish what's the legumes stick out. It may take us a very long time, but I can say for sure, if we ignore this totally, then none of these issues are going to be achieved, because if we don't have the nutrients in the soil that needs to be taken up by the plant where legumes grow, then after a point, we deprive ourselves of life, because in the ancient Rubrica times we said that all life began from the soil. Do we still believe in that?

Dr. Gretchen Neisler
Thank you very much for the opportunity to participate in this panel. My comments are going to come from a development intervention implementer and also someone who sits within the higher education framework of international development and research, which is in most days a very interesting intersection to be sitting in. I think the first thing that I want to say about how research on legumes and pulses can contribute to Sustainable Development Goals is that we've got to coordinate our efforts better. I cannot say strongly or emphatically enough how important it is that we are not duplicating efforts in this front. And so often we run into each other in the field and we realize that we have been working on some of the same work and toward some of the same end goals. So, I would like my colleagues who are representing funding agencies or part of large institutional systems to please help us to come up with a way to coordinate our work better so that it is more efficient and more effective.

Next, I would like to say that from a research standpoint, it's really important that prior to conducting the science, you know what your end game is and in order to make an impact, a positive impact on Sustainable Development Goals, your science must be relevant, it must be contextual, and it must be reasonable. To measure the scale of your impact or of our work, researchers must have a benchmark to compare their output. This is what we share with our researchers at Michigan State University and we encourage them to do the frontend work to be able to have that comparative metric. Effectiveness of legume research depends on being able to deliver end products that are adopted. You should know going in that sustainable change takes a long time, and sometimes those of us that are implementing interventions are caught in a cycle of a 3-to 5-year project funding window, which is very difficult to impart change in that timeframe.

Scientists cannot stigmatize impact evaluation. They must be willing to use possible failure and setbacks as a driving force for their research development. And I would also include here that it is not a good idea to stigmatize scientists for their failure, but rather how do we fail forward and learn from what it is that we failed on.

Impact assessments allow us to see beyond a single objective and see the whole picture. For example, priorities have long been increased on crop yield, but in some areas, this is not the most valuable feature to farmers. Once there is a realization that the science might have strayed from the end goal, we must redirect and we must be able to redirect in an efficient and effective manner in order for this impact to be realized.

Moderator Tobita
Okay, thank you for the panelists. In the first round, we had recommendations and ideas about our efforts for the SDGs in terms of the legumes and pulses research. So, from the floor, do you have any questions or comments in these recommendations? If any? Okay. Next, I emphasize the approaches of SDGs. One is inclusive approach. Do you have any ideas on the inclusiveness of our research activities to contribute to the SDGs?

Dr. David Bergvinson
As I mentioned, inclusive at multiple levels. First is the government having ownership of the goals. I would remind us that we still don't have the indicators for these goals approved yet, which a year into it is a bit concerning, but having the commitment of the leadership but also as we do our research, as mentioned, making sure it's relevant and contextualized, demand-driven approach, so engaging farmers in the design of technology so it's appropriate for both men and women farmers, also engaging the value chain actors, especially the industry that will create the market for pulses, and I think the other area of inclusiveness is creating awareness among consumers of the environmental footprint our modern food system has, and for us to manage our modern food system in a sustainable manner, especially with regards to water. And clearly, grain legumes will play a very important role for enabling us to live within the ecological boundaries of our planet, which we all share.

Dr. Robert Abaidoo
Yeah, let me guess out that if we consider the fact that the pulses and the grain legumes as old or even older than the human life, which means that the other ones are speaking a particular language, and the language keeps changing, especially the scientists. In what way are we going to speak the language that the farmer on the sand speaks so as to encourage or motivate the adoption. If we include them in identifying the problems, then becomes the problem-based research we've been talking about, but we need to speak to them their language that they understand. So, it's not simply including them, but making them appreciate and understand why you do such a thing, what's the impacts are going to be, why is it that they must adopt what you are sharing with them. If we show them sufficient evidence, why is adoption so low even though the scientists keep publishing, very flourishing, and interesting detail if they understand what we do, you have to modify, come up with soft science language and not sequestrations at all so that they can pick these things easily and run with it.

Moderator Tobita
Robert, is that some specialized, especially for African case, that's the universal case, how do you think this language?

Dr. Robert Abaidoo
Well, I can give you an example. We now call something farmer suffering fatigue. Every one of us will go knock on your doors can you answer some few questions for me, and now some farmers are even more likely to ask you to pay them for their time before they answer your questions. Is that a communication that we should have, is that a collaboration that we should have? So, probably, each one of us is going there at a different time, which they are really tired of us and I believe the same for many other areas as well. Farmers now think that, oh the scientists are just living on us, they get to their project, they come and use us for the – they take statements or they leave for a month and they live better. We go there in our fancy cars and fancy land cruisers rather than in a way probably they look like. So, I think that we need to change the approach, look at better ways of including them in the research process, because if they become tired of the service, we can never trust the answer they give you.

Moderator Tobita
Okay, Gretchen-san, maybe you have experienced in Africa and Latin America or many places. Do you have any different ideas or reasons for societies? How do you think?

Dr. Gretchen Neisler
I think one of the most important things that I have learned is that each place that we go in to, it's important to understand and really wrap your head around what the stakeholder groups look like, what is the historical, political nature around those stakeholders and how have they historically come together and worked together or not. And I think oftentimes what we need to remember is that most of the stakeholders that we are working with do not feel empowered to be change agents in their own context, in their own country. And that is something that needs to begin happening upfront in the work that we're doing with them.

I think the other thing that I have really come to appreciate is how scientists message their work and is that message appropriate for the stakeholder audiences that we are working with. And I can tell you from my experience in doing faculty development work with our researchers that most scientists have an enormous struggle to be able to message their work in a way that's compelling to a multitude of audiences, and this is why we need to lean on structures of cross-disciplinary teams in doing this work, because it cannot just be message and information coming from technical experts. There's got to be a cross-disciplinarity of what it is that we are trying to convey to the stakeholders that we're working with.

Moderator Tobita
Okay. Do we have any comments from the floor? Yes.

Questioner (Dr. Satoru Muranaka)
Thank you very much Chair. My name is Satoru Muranaka from JIRCAS. Let me take this opportunity to thank all speakers to give us comprehensive speeches and presentations, and we really learned a lot. So, just Dr. Neisler mentioned multidisciplinary approaches. We always use, we as scientists, about who is we, we need to really complement and understand everything what the people really need and then we need provide information to convince the users or the beneficiaries to adapt those technology that we can deliver to them like in my experience, in cowpea, there is a bunch of varieties, improved varieties of cowpea is developed but

it's not accepted by the consumers because they are lacking of this necessary preference trait like taste, like seed color, size. Those are really the factors we breeder or scientists didn't have the clear understanding of what the consumer is really liking. Then, the socioeconomic or because of this traditional, historical issues of the beans with the people, we need to have some people who really understand these historical issues to give breeders the information to build a strategy for the breeding. Then, if we work as a team with the multidisciplinary people, then we can have some kind of a comprehensive things we can deliver. So, it might be little bit slightly different from the inclusive but we also need to be inclusive for all of these different regions of this science areas. Thank you.

Moderator Tobita
Any response from the panelists? No? Okay. So, finally, I would like to ask the panelists very shortly about what are the most prioritized research issues to achieve the SDGs in the research of the legumes and pulses. That's the final question to the panelists.

Dr. David Bergvinson
In my mind, it's really around the science of delivering adoption that considers the decision-making process for smallholder farmers in the production of grain legumes, and I think as scientists we often neglect the whole delivery of technology thinking that someone else will do it, and I think if we were to achieve the SDGs in less than 14 years, we better accelerate the delivery and adoption of our technology.

Dr. Gretchen Neisler
I think that my comments are very connected to what was just said. I think it's important to recognize how much has already been accomplished in terms of science and technology in the development of that good work. But I think that what we need to do is spend a little bit of time really focused on how do we take what we currently have at our disposal and bring that to the people, to the end user, and do that in coordination with what it is we are continuing to develop in our labs and through our research programming, because all of us need a little shot in the arm of some positive reinforcement that what we're doing is actually making a difference. And I totally agree with David's comment that if we are going to achieve these goals in 14 years, we need to light a fire under our feet or perhaps other pieces of our anatomy.

Dr. Robert Abaidoo
Let me ask something to David, what have we really done right and what have we really done wrong in the many years that we have done this? Do we have to continue the same way or is this something that we need to do a reevaluation to identify the best direction to go? That's also research entity, and I believe that if we don't get the research path right, then it will be very difficult to achieve this in the 14 years, if we are unable to achieve those earlier ones as indicated.

Moderator Tobita
Okay. Thank you very much. It's almost time to close the panel discussion. We think we had a productive discussion with the panelists and the audience. Now, we recognize that research can enhance the potential of legumes and pulses and this science-based innovation and inclusive approach that is an important key to achieve the SDGs. From the panelists, this path is raised. So, how do we make the environment for the inclusive approach for the scientists' side, that is also a very important key for researchers. Thank you for your cooperation indeed.

Moderator Doi
I should say the words for closing the symposium. We are aware that the legumes have an important role in quality development for human beings. That word "Quality" was last year's symposium theme. So, we eat more legumes for our health and we research more legumes for achievement of SDGs. Then, please join us with a big applause to our excellent panelists. Thank you very much.

Questioner