

Session 4 General Discussion

Chair Nakahara: In Session 4 we had three invited speakers from different backgrounds. The first speaker, Dr. Holmer, is from an international organization, and the second speaker, Dr. Warunee, is from a university, the academic sector, and the third is Dr. Shoji from the private sector. So three of them have different backgrounds and different points of view. But the common point, what they are trying to do is manage or promote food resources in Asian countries. And my presentation was about networking to compose these different types of research with different backgrounds, and networking will produce something new from these different ideas I think.

So now I will open the discussion. So do you have any questions or comments?

Dr. Noguchi: Thank you, Chairman. My question is for Dr. Holmer from AVRDC, and first I would like to say *Dankeschön* for your nice presentation. My question is about the education, how to keep the freshness of the vegetables. For example, I am so much interested in vegetable gardens but some of the products must be stored to keep their freshness and they cannot be consumed within one day I guess.

At the same time maybe we must pay some attention to the distribution in the local area. I couldn't find any such movement or activity from your organization on how to keep the freshness and also how to establish the short distribution locally.

Dr. Holmer: Thank you for your question. Post-harvest losses are really high in vegetables, about 40 to 50 percent before they reach the table. To a certain extent that is of less importance if it's for home gardens and community gardens, especially in urban areas. We did some interviews with people who came to these gardens from the neighborhood and they said they prefer to buy it from community gardens because they can buy small amounts only because they have very often no refrigerators at home, so they told me, Robert, I can only buy two pieces of eggplant because I can consume it immediately and I not have to spend time and money to go to the market, so that was also one reason why vegetable production has increased.

I have to admit that AVRDC in the past neglected post-harvest issues, but since last year we have launched a bigger post-harvest program which focuses on low-cost post-harvest technologies. One for example is evaporative cooling where you have clay bricks which are wet with water and then by evaporation you can reduce by a few degrees outside the ambient temperature so that allow short-term cooling.

But then it goes a little bit high, simplified packaging, and others are, which goes into the area that Dr. Nakahara mentioned, small-scale processing for excess products. One is fermentation where we work together. Others are for example if it is for chili for example, sun-drying. And for tomatoes for example household processing into sauces.

But the focus as I said for this environment on low-cost interventions. Some are also maybe on at what time harvest will be done to maintain the freshness. Since vegetables are mostly water, if it's harvested early in the morning, so they still fully turgid and this will also prolong freshness.

But overall this is still a big area that needs much more research investment.

Chair Nakahara: Thank you. Dr. Iwanaga, please.

Dr. Iwanaga: My question also goes to Dr. Holmer. First of all, thank you very much for your very convincing case of the importance of vegetables for nutrition. I was puzzled why you have chosen this particular topic

because you almost excluded research areas; instead, you just made a very convincing strong case of the importance of home gardens, school gardens, and community gardens. My interpretation was – maybe I was alone – because of the inherent problem of the post-harvest area of vegetables of tropical or sub-tropical areas, you are avoiding a long value chain and you'd like to have a shorter value chain. It means that production to consumption in a short time and short distance. My interpretation is correct?

Dr. Holmer: Yes, it's correct, and you pointed on maybe the lack of research areas. We have now a new project coming that especially tries to look at the indicators to see how a specific agricultural intervention has nutritional and health impacts. Though anecdotally we know from many projects, also from Helen Keller, that home-grown vegetables contribute to better health and nutrition but there is little scientific evidence because we are still, I think the international community is still struggling about the right indicators on how to measure this.

And I think it has also to do with what I mentioned in my initial slides, that there are many factors, it's multi-sectoral factors that contribute to better nutrition and health and it's very difficult to single out one commodity for example, vegetables, and their impact on health.

But I understand this is now also, we have now the CGIAR reform, we have the CRP 4, agriculture for nutrition and health, that tries to look on sound scientific strategy to look at how to measure the health impact of interventions for example as home gardens.

The second point you mentioned is definitely correct. To shorten, because we know again by evidence and some research we did, done by socio-economic studies, that home gardening or community gardening shortens, what you said, the value chain and enables direct access of families or people to more vegetables. We know that intake levels increase, and therefore for AVRDC, home gardening, community gardens, school gardening were selected as one of the interventions to increase vegetable consumption.

Chair Nakahara: Sorry, we have not enough time to discuss, so if you have some technical or some question on the research, please talk with them directly. We are going to close this session now. Thank you.