

# COMMENTS AND DISCUSSION

*Chaired by Kunio Tsubota\* and Kenji Iiyama†*

## **Comment by Mihoko Tamamura‡:**

I hear lots of interesting issues raised by UNDP colleagues, FAO colleagues, and other experts in Japan. Something that wasn't quite clearly indicated was that the reduction in the rate of malnutrition or hunger is in fact attributable to the greater improvements in China and Southeast Asian countries.

Recently, Vietnam, a country that used to receive food aid, has started food aid to other countries. We are hoping that China will follow suit by giving food aid itself.

In Sub-Saharan Africa, where we still see food availability roadblocks, the problem is basically attributed to the gap between the food production and the requirements. Unfortunately, this gap was really widened in the 1990s and we are very worried about the future. No doubt we have to invest more in agricultural sectors such as irrigation, especially small irrigation at the community level, and we need to have more crop varieties. To this end, research and analysis activities are very important.

UNDP has been doing lots of research for NERICA rice production. However, we really have to take a more comprehensive approach. For instance, we have to pay more attention to nutrition, health, and access to education. I saw many children suffering from various diseases. They were losing energy even though there was enough food. Food availability alone is not enough to address these problems. Development and food aid programs such as food-for-work and school feeding programs will be very useful instruments, particularly in Africa.

Farmers should be encouraged to produce more food on their own. To do so, we have to have proper trade systems in place. There is a huge amount of agricultural subsidies given to farmers in developed countries. One week of such subsidies could really get proper food aid to those who need it.

Lastly, I would like to make a point on the HIV problem in Africa. To date, 7 million farmers in Africa have lost their lives to HIV/AIDS. In some villages there is no one to cultivate. The other sectors like education and health are equally affected. The HIV/AIDS pandemic is virtually wiping out one productive generation. This is the new threat to food production.

In the world, 14 million children are orphaned by HIV/AIDS. In Africa, HIV orphans are kept in the families of relatives and so on. There used to be no concept of "orphan" in Africa. Now orphans are sometimes in the street trying to find food. This is a deep problem. In addition, the children have lost the opportunity to learn basic agricultural skills from the family members.

## **Comment by Osamu Koyama§:**

Many speakers stressed the regional differences and disparities in the existence of food availability, resource availability, income disparity, and so on. The main issue we should face in the future will be regional problems—how to deal with these regional differences. In order to deal with such a difficult task, we may need to introduce new measures, for example, an international taxation system or something going beyond a voluntary-based cooperation system in the international community.

Agricultural research and technology development will help increase productivity in agriculture and then

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achieve food security, poverty alleviation, and our ultimate development goal of enhancing the quality of life. But these are not so easy things to accomplish. Sometimes we spend a huge amount of money in agricultural research systems for commodities that the people do not like anymore. That makes it a waste of money. We need to know the real needs of agricultural research and research priorities. Sometimes farmers themselves can give ideas to agricultural researchers, and researchers can learn what should be done by considering a market mechanism.

There are many other complex relationships between agricultural and development goals. We should also consider other industries, as well as historical paths. So I would like to stress the importance of the following studies.

- Prospective studies
- Macro-base resource analyses for prioritizing agricultural resources, and
- Development studies for ascertaining the mechanism by which agriculture can contribute to poverty reduction and food security.

These studies are part of agricultural research in some countries, but they are sometimes outside agricultural research. We should connect these two research fields and get better results.

Moreover, any goals should have clear targets. For example, the goal of food security has targeted nutrient values, dietary values, and so on. For poverty alleviation, we should measure income, income distribution, or per capita income. For sustainability, on the other hand, we have no clear indicators. The Millennium Development Goals contains a stability index, an index on research productivity, and so on, but they are not probably enough.

#### **Tsubota:**

Let me very briefly summarize the last four presentations by posing four questions. First, can the world meet the Millennium Development Goals for hunger reduction? Second, can the world meet rising food demand and unexpected climate changes? All speakers seem to suggest that the answers to these two questions are yes. So, the third question is: What are the major questions remaining? If the world can really meet its food demand and if the climate changes occur gradually, how can agricultural scientists contribute and what sort of things should be addressed? Finally, what can agricultural sciences contribute to social and environment goals?

I would like to invite several questions on these points, specifically from supply-demand perspectives.

#### **K. Takase (International Development Center, Japan):**

African countries have a lot of difficulties. The participants at TICADIII last September discussed the Millennium Development Goal of halving hunger in Africa. To achieve such a goal, they concluded that a tenfold increase in the FAO budget would be required. Dr. Schmidhuber, are you confident in achieving the goal?

#### **Schmidhuber:**

A number of things need to be looked at here. There are two different goals: the Millennium Development Goal and the World Food Summit Goal. The World Food Summit Goal is defined in absolute terms and essentially suggests that hunger has to be halved from 820 million people in 1990-1992 to about 410 million people in 2015. This is of course a different thing from the Millennium Development Goal, which is essentially defined it as a percentage reduction. The latter of course is much less ambitious because it considers population growth that takes place at the same time.

We see that the World Food Summit Goal—a much more ambitious goal since we also have to feed the additional population that comes in with population growth—will not be met. In fact, our baseline projections suggest that, by 2015, we will still have 610 million undernourished, putting us considerably

above the World Food Summit Goal. In terms of percentages, it is a reduction from 20% in 1990-1992 to 11% in 2015, which comes close to the Millennium Development Goal.

The second big point is that this global average masks enormous regional differences. Much progress is essentially concentrated on East Asia and increasingly on South Asia. As far as Sub-Saharan Africa is concerned—and I've tried to stress this point many times—we see very little progress. In some areas in what I call the draught-AIDS-civil-war-belt of Southern Africa, there will be essentially no progress. In fact, we will see the opposite.

At the FAO we have calculated what is necessary for the world as a total to meet the World Food Summit Goal and we have come up with a figure of additional investment of about \$20-22 billion per year in agriculture that should be split evenly between developing and developed countries. This, in turn, could have a multiplier effect of about five, which stimulate additional investment in agriculture to the tune of \$100 billion. This would be enough not only to eradicate hunger, but also to bring the figure down from 610 million as the baseline result to 410 to 415 million, as suggested by the World Food Summit Goal.

**Doken:**

From the MDG perspective, we are indeed advocating doubling world official development assistance. If we want to meet the Millennium Development Goals, we need to increase ODA budget, and that is what we are working on. What is important is that the MDG is not only monitoring accountability but also advocacy to get the world's attention to the issue of poverty and then mobilize action. In that sense, rather than thinking whether we can achieve the goals with the resources available, we need to think in terms of what it will take to meet the goals. How much is necessary? What is the gap that has to be filled to meet these goals? This is a way of thinking to achieve the MDGs.

**Noguchi:**

I have a question concerning the aging of the farmer population in China. China has a huge population, and because of population control within a short period they have biased population density together with an aging population. How can they maintain their agricultural productivity? Dr. Schmidhuber, does your simulation consider this issue?

**Schmidhuber:**

China is a very big problem because we do not only see a rapid aging of the population but we also see a massive urbanization even much faster for the world as a total. In fact, we will see a considerable reduction of the rural populations in the future—not only stagnation but also about 200 million people less—and a massive increase in urban population. But the impacts on productivity and agriculture will not necessarily be negative. In fact, with this structural change we expect a massive increase in the farm size (which is extremely small at the moment). This does not necessarily mean that both land and labor productivity will have to go down, but it will have major upheavals for rural areas; there is no doubt about that. There is also significant danger that we normally refer to as “premature urbanization.” Too many people are coming too quickly to urban areas and creating urban poverty. In China, we may actually see a gradual urbanization of poverty.

**Oh:**

The climate change is quite scary. I would like to have some information about the actual probability of the predictions for temperature change and precipitation.

**K. Okamoto:**

Prediction of climate change is very uncertain and difficult. Climate change is very slow, not rapid, so I

doubt there will be a critical impact on agricultural production in a short period. But we must study to improve new varieties suitable for changing climate.

**Mel Mooch (The World Vegetable Center (AVRDC), Tanzania):**

I just wanted to ask whether the research on climate change on draught-resistant crops to cope with erratic rainfall distribution and changing temperatures could help meet the rising food demand.

**Masumoto:**

We still do not clearly know how climate change affects productivity. We need to develop an effective procedure to clear this matter up and increase the productivity even under climate change.

**Gunter V. Sabarao (JIRCAS):**

Crop intensification would invariably involve applications of much higher levels of nitrogen in the future. If that is the case, what kind of impact do you see from nitrate pollution in 30 to 40 years down the road? We already know that in some parts of the world, particularly in Europe, nitrate pollution is a major problem. Do you expect this kind of problem to become more prevalent in other parts of the world, for example, Southeast Asia? If so, what kind of long-term strategies should one develop?

**K. Okamoto:**

In Southeast Asia, both temperatures and precipitation are high. Though farmers purchase more nitrogen fertilizer as they earn more money, the increased consumption of the nitrogen fertilizer will hardly create a risk. Denitrification is so rapid that we do not have major concern about the deterioration of the environment.