## Summary of Session 3: EVOLUTION OF FARMER-RESEARCHER-EXTENSION-PRIVATE SECTOR PARTNERSHIPS FOR TECHNOLOGY DEVELOPMENT AND DISSEMINATION

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Session 3 was held this morning. The first half was focused on the farming systems approach, with three presentations. The first was by Dr. Caldwell from JIRCAS, titled: "The Evolution of Concepts and Approaches of Systems-Oriented, Farmer Participatory Agricultural Research." Then we moved to the second presentation by Dr. Mc Arthur, titled: "Contributions of Farmer Knowledge to Agricultural Technology Development." The first half concluded with the third presentation, by Professor Norman, titled: "The Institutionalization of Technology Development."

After these presentations, in the latter half of the session there were another three presentations made from the perspective of users of technology. The first was given by Dr. Samejima of the Japan International Cooperation Agency (JICA), titled: "Developing Sustainable Agricultural Systems." He presented case study examples, determinants of future approaches, and roles of different partners as viewed from the experience of JICA. JICA is striving to introduce new approaches including the farming systems approach. Then, Dr. Fagi presented an Indonesian case study with the same title. Finally, Dr. Carrão-Panizzi presented a Brazilian case study focused on the development of sustainable agricultural system and resources management for soybean production.

Now I will summarize the key issues raised in these presentations. The first issue is, what are farmers' contributions to research. This was a topic raised by all the three speakers in the first half. Closely related to this is the question of how enhancement of farmer contributions can improve the research process and its output.

The second major issue is who are the owners of research and its results. This involves questions both of who should participate in research evaluation, and what criteria are relevant to different owners of research. The third issue is how to scale up both strategic and participatory research to obtain a wider impact.

The last issue posed the question of what types of research we can undertake to understand better how farmers evaluate technology and how can they adopt new farming systems. This last issue included the question of how JIRCAS could contribute to more effective links between its more "upstream" strategic and comprehensive programs, and the more "downstream" (user-focused) adaptive research and development carried out in its partner countries.

In addition to these key issues raised in the course of the discussion, the session also examined several case studies presented by JICA and the experiences of national research institutes in Indonesia and Brazil.

To close my summary, I would like to add some comments on the approaches considered in this session. Today we have focused on the regional level in a specific country. However, from a socio-economic point of view, there is another set of key issues involving national agricultural policy and structural problems like farm size or effectiveness. Does globalization mean that all the farmers must now confront the global market, and if so, what results should we expect? These kinds of macro-level problems are also very critical. We did not have time to focus on these macro- policy problems, nor on the so-called structural problems such as farming scale or how to make the farming systems more effective. While we were not able to address these issues, we cannot forget nor ignore them.

Finally, I would like to thank you for your participation in the session, and I would like to thank Dr. Caldwell for his help with this summary.