JIRCAS International Symposium 2009

Role of Social Sciences in the International Agricultural R&D

Session III Impact Assessment of Agricultural Technology

5 November 2009
University of Tokyo, Tokyo

Technology for whom?

The poor population, major target of agricultural technology development, is concentrated in the developing regions, unfavorable areas in particular. The areas are characterized as poor resource endowments, harsh production environments, adverse market access and strong location-specificity, making the problems complex and difficult to solve them.

Recently, moreover, natural and economic environments surrounding farmers, exemplifying increasing occurrence of extreme weather events and fluctuating world markets of oil and cereals, has been changing in unpredictable manner. Therefore, farmers' technology needs changes and diversifies accordingly.

Who concern what?

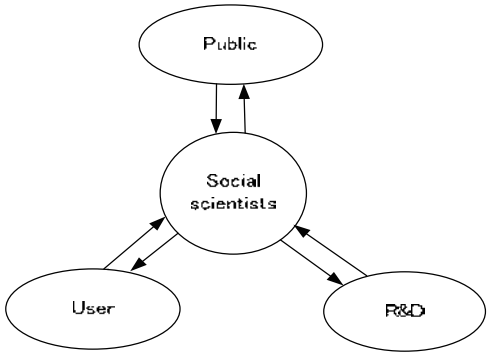
Public concern for agricultural technology is also heightened. On the scarcing fresh water resource, water saving technology is urgently needed for agriculture as the largest water consuming sector. GHG emissions from rice farming and ruminants raise concern over the impact of agricultural practices on global warming.

Various actors in the world, from their own interest and value, argue and take actions on various issues such as competing food and fuel crop production over limited resources, deforestation, biodiversity, GMO, animal welfare, and so forth. Their voices and actions have unignorable impacts on agricultural policies.

Process of Technology Acceptance

Public acceptance
↑
Ethical legitimacy
↑
Environmental harmonization
↑
Local institutional adaptation
(Community, Culture, Custom)
↑
Farm level economic rationality
(Subjective Equilibrium)
↑
Technical advantage

Role of Social Sciences



Impact of Rice Research

In rural Asia, growth engine shifted from agriculture to non-agricultural sectors. On the other hand, there is an increasing expectation for rice to alleviate chronicle food shortage in Sub-Sahara Africa. Under the changing situation surrounding rice as such, IRRI conducts research and development covering from basic science to policy research.

Dr. Pandey provides an overview of the magnitude of the past impact, strategies for increasing impact in the future, and methodological challenges in assessing the future impact as other indicators such as environmental and poverty impacts are also considered in addition to the usual production gains.

Farmer acceptance and innovation

Primary beneficiaries of research and development are farmers in developing regions. No technology diffuses unless being well evaluated by farmers. Instead, new technology may even cause harmful impacts if it's promoted by distorted policy. Prof. Nishimura, Ryukyu Univ., argues impact assessment from farmers' view point, titled "Learning sustainability of agricultural and rural development from a project in Indonesia."

To disseminate technology, not only fulfilling technical feasibility and farm level economic rationality, but also it must be suited to local cultures and institutions. Once the technology took root in, farmers renovate it while it affects local socio-economy on the other way, then they coevolve continuously. Prof. Nishimura has been engaged in the JICA project as a leading member from the beginning, thereafter its completion he has been conducting follow-up studies. Experiencing interaction between outsiders and local people, he brings the vivid messages form the fields.

Public participation in R&D decision making

Agricultural technology is a global public goods. In addition to substantive impacts of technologies upon natural environment, due attention needs to be paid to social and ethical dimensions of those technologies such as animal welfare, social justice, rights of minor tribe, preservation of local food culture, and so forth. Globalization of social activism has way on. Role of mass media can not be ignored as well. Dr. Tomiko Yamaguchi, International Christian University, will give a talk on "Social challenges in technical decision-making," featuring GM controversy.

While the scientific development in the area of agriculture and food has brought a range of benefits to us, it has also given us new challenges. Biotechnology is a case in point. The public grew skeptical of the present practice where societal decisions are made only by experts, excluding citizens. Dr. Yamaguchi, once worked as a mediator between scientists and citizens, shares her analysis on democratization and agricultural biotechnology.

Issues for Further Discussion

- Market failure in resource allocation and technology adoption.
- Project evaluation: (Un)expected outcome?
- Who is "public"? Activist vs Silent majority