CAPSA
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Agricultural Research-Extension Linkages in Asia and the Pacific

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What are the key challenges facing Asia-Pacific agriculture today?

- **Demographic challenges** – The region's population is estimated at over 4.2 billion and is growing, increasing the demand for agricultural products. Its ageing population is largely affecting agricultural workforce. The number of persons above the age of 65 in the region is estimated to increase from 420 million in 2010 to almost 1.3 billion by 2050. Asia-Pacific agriculture is also undergoing feminization as growing male rural out migration is leading to increasing participation by women in the sector. This calls for gender equality to ensure sustainable agricultural growth.
- **Changing food consumption patterns** – A growing middle class in the region demands less grains and more meat, dairy, fruit and vegetable products. Rising incomes have led to increasing growth of supermarkets and fast food chains.
- **Climate change** – The changing climate, manifesting itself in higher average temperatures, an increase in extreme weather events and more precipitation in some places while less in others, has accelerated the decline of agricultural productivity growth.
- **Threats to natural resources and health** – Water exploitation, soil salinization, erosion and pollution, desertification and toxic pesticide residues, pose major threats to already diminishing natural resources and are affecting people's health.
- **Global economic uncertainty** – The recent global financial crisis brought about price fluctuations in agriculture-based commodities, affecting both producers and consumers.

What are the key concepts?

- Sustainable agricultural development fundamentally depends on innovation, knowledge and capacity-building. Effective knowledge transfer requires continuous advancement of capacities and skills.
- Traditionally, improvement of yields has been the main focus of agricultural knowledge systems. In light of the above challenges, research focus areas have changed. Much research now concentrates on sustainability and environmental integrity, climate change adaptation and mitigation as well as improving the productivity, profitability, sustainability and resilience of entire farming systems along the food chain. More attention is now given to non-technological innovations, such as institutional, policy and marketing innovations.
- Agricultural extension is the function of providing knowledge in agronomic techniques and skills to rural communities in a systematic manner with the objective of improving their productivity, income and quality of life.
- For food systems to perform in a sustainable manner, it is important that technologies developed through research are transferred to users. Hence, the interface between research and technology transfer/extension determines the performance of the whole system.

What is the current status of research-extension linkages?

- **Government-led systems –** Generally, governments have played an important role in leading agricultural research and extension. Funding for agricultural research and extension at the national level is still predominantly through government allocations. Public R&D in agriculture mainly takes place in research institutes under the ministry in charge of agriculture or in charge of science, technology and innovation, as well as in universities and agencies attached to fields such as environment and health. A number of non-government and private sector players bridge the gap through the creation and adoption of new agricultural technologies. However, even when agricultural research and extension is led by non-government actors, government must be concerned with production, the impact of agricultural practices on the environment, regulations governing quality standards, food safety and people's well-being.
- **Budgets** – Budget deficits have forced many governments to reduce expenditure on public services such as agricultural extension. Privatization of agricultural extension services is emerging as governments increasingly delegate this responsibility to organizations which raise their own budgets, e.g. farmers' associations or commercial companies.
- **Decentralization** – Transferring governance, administration and management to the local level enhances the ability to respond to local problems and opportunities, increases accountability to clients as well as efficiency and facilitates participation of diverse stakeholders. Such decentralization has been carried out for extension services in some countries. However, effective decentralization of extension services requires coordination and a comprehensive strategy to ensure service quality, capacities at all levels and clear roles and responsibilities of local and national governments and user groups.
- **Information and communications technologies (ICTs) –** Timely communication between diverse stakeholders would not be possible without access to ICTs. Information services, facilitated through telecommunications and Internet, channel messages to improve the efficiency of rural service delivery. With their use rising, ICTs enable stakeholders to make informed decisions about livelihood strategies and enhance their reach to policymakers to influence policies and processes that directly impact them.
- **Capacity gaps** – Despite numerous capacity development initiatives, significant gaps still exist in capacities of farmers, fishers, herders and foresters that keep them from enhancing agricultural productivity as well as processing and marketing. There is a strong need to address these gaps.
- **Complexity versus practicality –** Too much focus on the technical aspects of technology generation rather than its practicality has contributed to misunderstanding between researchers and development practitioners. 'Translational development' has been emphasized to help translate research findings into practical language while also translating the needs of farmers into issues that researchers can address.

What is the current contribution of non-governmental organizations (NGOs) and the private sector to strengthening existing research-extension systems?

- **Emergence of new stakeholders** – Farmers' groups, civil society organizations and the private sector, including ICT service providers, have emerged in some countries to complement government research and extension systems. Yet, their full integration in research-extension systems remains limited with opportunities for new linkages.

- **Some successful examples**:
  - Through its Cross-Border Technology Transfer Project in Bangladesh and India, **Concern Universal** – an international NGO – is promoting provision of rural services and development of local service providers and their associations. This has resulted in an increased pool of trained service providers at the community level, provision of accessible, affordable and quality services on agricultural technology, marketing and business development to small farmers, triggering improved farm production and marketing.
  - To help Cambodian farmers grow and market their products, **iDE UK** has established a franchised network of Farm Business Advisors (FBAs) that bundle high-quality agricultural inputs with sound technical advice and a strong focus on customer service. The FBAs are recruited, trained and supported by a central franchisor that provides a range of services to the FBAs including bulk purchasing of products.
  - With every market having its own preference, **East-West Seed** – a private company working with small vegetable producers in developing countries such as Myanmar – focuses on research that assures the development of varieties aligned to the demands of consumers and the agronomic needs of farmers. Such market-driven solutions are resulting in higher yields of better quality vegetables and higher incomes.
  - **Lal Teer**, the first private seed company in Bangladesh with an own breeding programme, has developed 136 vegetable varieties in 18 years. The company conducts trials in multiple locations across the country to assess adaptability of new varieties. Farmers participate in large-scale demonstrations of new products from sowing to harvest that build their capacity to produce and handle new varieties.

How to support the strengthening of research-extension linkages?

- Increase public investment to strengthen and expand the capabilities of national agricultural research systems and of extension and advisory services to intensify sustainable production.
- Enhance capacities of policymakers to contribute to a more supportive environment for research and market institutions that are able to attract private investment needed to further incentivize the delivery of agricultural research.
- Find opportunities for more interaction between research and extension. For example, consider coordinating committees and meetings across agencies, communication units or liaison departments, staff exchanges and cooperation between universities' research programmes and extension organizations.
- Train a new generation of agricultural specialists, scientists and service providers, both in technical and professional skills through more attractive and modern university and vocational school curricula to enable them to provide farmers and rural small and medium enterprises with the skills, understanding and innovative capacity required to address today's challenges.
- Utilize opportunities provided by modern information and communications technologies to facilitate demand-driven extension, especially for channeling farmers' demands and addressing their needs.
- Improve the decision-making power of private sector and civil society organizations in extension and advisory services at the national level to enable them to better complement government-led research-extension systems.
- Guide efforts in enhancing research-extension partnerships in the Asia-Pacific region by developing an Action Framework with key stakeholders to generate commitment for working

together in advancing research and disseminating research findings tailored to local needs of farmers.

- Together, these actions would link research to practice and thus contribute to more sustainable food systems, improved food security and increased farm productivity.
- Capitalize on existing regional networks such as the Network for Knowledge Transfer on Sustainable Agricultural Technologies and Improved Market Linkages in South and South-East Asia (SATNET Asia) – a project funded by the European Union (EU) to better facilitate linkages and interactions between national governments, regional and international organizations, NGOs and other civil society organizations and private sector actors involved in rural advisory services, regulatory actions, ICT applications and other extension services.

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