



---

**Economic and Social Commission for Asia and the Pacific**

Committee on Macroeconomic Policy, Poverty Reduction and Inclusive Development

**Second session**

Bangkok, 7-9 December 2011

Item 8 of the provisional agenda

**Capacity-building for poverty reduction through sustainable agriculture****Capacity-building for poverty reduction through sustainable agriculture****Note by the secretariat***Summary*

Agricultural growth in the past four decades or so has enabled millions of poor people to escape hunger and poverty. Recent literature, however, suggests that its impact in less-favoured environments and among the vulnerable groups has been low, partly owing to the underperformance of smallholder agriculture. There is a growing recognition of the smallholder agriculture potential in increasing agricultural production, raising rural incomes, and, thus, ensuring food security and poverty alleviation. Utilizing the full potential of smallholder agriculture will require increasing the pace of innovations and transfer of agricultural technologies, promoting the use of economies of scale, enhancing efficiency of value chains and consolidation of supply channels, improving communication between technology innovators and farmers, supporting public-private partnerships and improving efficiency of markets for technology.

In addition to highlighting the areas where further improvements are desired, the document shows the critical capacity-building requirements for improving the efficiency of existing agricultural innovation systems and modalities for the transfer of technology, with an emphasis on developing a better policy environment and enhancing awareness of regulatory systems and new modalities that facilitate agricultural innovations and transfer of technology.

Member countries may wish to share their views on issues raised in the present document, and the Committee may wish to provide guidance on further work in this area.

## Contents

	<i>Page</i>
I. Introduction.....	2
II. Overview.....	2
III. Challenges to agricultural innovation systems in Asia and the Pacific.....	3
A. Low investment in the agriculture sector .....	3
B. Low diffusion of technologies.....	4
C. Inefficiency of value chains .....	4
IV. Ways forward.....	5
A. Viewing the innovation process within a supply chain context .....	5
B. Addressing gender gaps.....	6
C. Facilitating South-South exchange.....	6
V. Conclusions and recommendations.....	7

### **I. Introduction**

1. The agricultural sector has reappeared on the development agenda and is receiving renewed attention from policymakers and donors. In part, this is attributable to recent increases in food prices that have driven millions of people back into poverty and highlighted the fact that the region's food supply system is more fragile and imbalanced than was previously believed.

2. The present document highlights a number of areas that deserve priority attention in order to support the agricultural sector in Asia and the Pacific, focusing on capacity-building for sustainable agricultural innovation and technology transfer. The document discusses key constraints, and identifies a number of cross-cutting issues that deserve attention in order to strengthen innovation systems. It concludes with a recommendation that the Centre for the Alleviation of Poverty through Sustainable Agriculture (CAPSA) facilitate the creation of a network that would focus on disseminating technologies and facilitating market access for poor farmers.

### **II. Overview**

3. Developing countries in Asia and the Pacific still account for the majority of the world's poor and have the highest proportion of undernourished people. Poverty remains predominantly a rural phenomenon and the poor are often concentrated in marginal lands, where soil and weather conditions, topography, and distance from trade nodes and urban centres make local economic development difficult. The agricultural sector is the backbone of the economies of many developing countries, in particular countries with special needs, but, over the past decade, growth in agricultural productivity has been sluggish and has usually been slower than population growth. Not only has agricultural growth been slow, but also the region is characterized by unsustainable production practices that have contributed to environmental degradation, including reduced soil fertility and soil acidification, loss of water quantity and quality, and loss of

biodiversity. The problem of poverty in such countries cannot be tackled without closer attention being paid to problems in the agricultural sector and the overall policy environment, including the way in which macroeconomic policies affect the nature and scope of sustainable agricultural development and food security in the region.

4. As the agriculture sector in Asia and the Pacific is facing many challenges, enhancing the dissemination and adoption of available technologies and market options is urgently required. Stakeholders in the region need to work together more effectively to focus on transforming research outputs into policy recommendations and development outcomes. Rural development policies need to be well embedded in overall macroeconomic policy design while simultaneously facilitating investment into environmentally sound technologies, production patterns and marketing.

### **III. Challenges to agricultural innovation systems in Asia and the Pacific**

#### **A. Low investment in the agriculture sector**

5. The agricultural sector has been suffering from low levels of public and private investment. Available estimates suggest that agricultural investment must be roughly doubled to meet the growing demand for food for the estimated 9.2 billion people expected to inhabit the world by 2050. The reasons for the low levels of investment in agriculture are as follows: (a) low commodity prices; (b) reduced public financing by the Governments of developing countries, which are working under structural adjustment programmes and are faced with fiscal crises; (c) poor rural infrastructure, including roads, storage and market facilities, which discourages farmers from investing; and (d) reduced official development assistance (ODA). Although there is renewed interest in agricultural investment, much work remains to be done. The low levels of investment have resulted in inadequate attention to the technological needs of small-scale farmers and producers in remote and marginal areas. In a recent report, the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security recommended that Governments “prioritize investment in the small farm sector and in alternative food systems that are socially inclusive and just as well as environmentally sustainable, using agro-ecological principles”.<sup>1</sup> It also recommended exploring new business models, involving small-scale farmers in large investment projects, and managing them.

6. Inadequate attention has been given to raising the productivity levels of the sector in relation to land and water. In addition, progress has also been too slow in adequately addressing the increasing pressure farmers in the region are facing as a result of intensified volatility of extreme climatic events. New technologies and practices are required in order to facilitate climate change adaptation and mitigation. Approaches regarding adaptation include the development of new crop varieties that are resistant to flooding and drought or soil salinity and acidity. Approaches regarding mitigation

---

<sup>1</sup> High Level Panel of Experts of Food Security and Nutrition, *Land Tenure and International Investments in Agriculture* (Committee on World Food Security, Rome, July 2011), p. 11. Available from <http://www.fao.org/cfs/cfs-hlpe/report-2-land-tenure-and-intl-investments-in-agriculture/en/>.

include the implementation of new cropping patterns and more efficient use of water.

## **B. Low diffusion of technologies**

7. Where technologies are available, there is a low rate of adaptation and slow diffusion. Slow diffusion of technology is a result of a complex set of factors. It is partly explained by risk-taking behaviour on the part of farmers, lack of access to the kind of inputs required by farmers and to financial resources. Farmers also lack access to information and the skills to access such information within their reach. These factors are often compounded by weak and underfunded extension services.

8. Governments in Asia and the Pacific have taken significant steps to ameliorate these conditions, especially with respect to widening access to information on technologies through the provision of information and communication facilities. In addition, Governments have attempted to shift away from prescribing technologies and instead are making information available to farmers and enabling them to choose the most appropriate solution. These efforts need to be expanded and up-scaled for the benefit of other farmers within and outside these countries.

## **C. Inefficiency of value chains**

9. Farmers across the region face difficulties in acquiring the high-quality inputs required for their operations, such as seeds and fertilizers. Often, the private sector does not address the input needs of small farmers because markets are too small. A major limitation to the production of coarse cereals, pulses, vegetables and other minor crops in many Asian countries is the availability of good quality seeds. The public sector in developing countries frequently does not have sufficient capacity to supply adequate quantities of good quality seeds, and, at present, there are few private sector seed companies adapting varieties to local environments, especially in poorer countries. Farmers often produce seeds for locally preferred or traditional varieties, as the individual markets are too small to attract the interest of the private sector.

10. On the other side, farmers also face difficulties in accessing markets. Domestic and international markets are changing rapidly, partially fuelled by the spread of supermarkets. The proliferation of supermarkets in Asia creates both challenges and opportunities for rural producers. Supermarkets increase expectations of quality, safety and presentation, but they exclude small producers. The growing importance of convenience outlets has implications of its own, which stem from the purchasing methods used and the quality standards applied by supermarkets. The level of difficulty for farmers is reflected in fairly rapid declines in the numbers involved, as small-scale farmers can find it difficult to produce and deliver according to the standards dictated to them by supermarket chains, and companies tend to de-list suppliers that do not meet expectations in terms of volume, quality and delivery.

11. Successful production and marketing of food crops requires an understanding of the fundamentals of market structure and function. Success for growers will depend on their ability to access diverse markets and respond promptly to changes in market conditions.

12. Poor people in rural and urban areas participate in food value chains not only as farmers but also as consumers. Only by reducing the difference

between the retail price and price when sold by the farm can food value chains simultaneously decrease food costs for poor consumers and increase earnings for poor farmers and farm workers via increased demand and employment. This requires cost-efficient market intermediation, including product aggregation, storage, processing and distribution. It is otherwise difficult to avoid the “food price dilemma” whereby higher prices help and incentivize net-seller farmers but also hurt consumers, especially the poor. Interventions are needed on how to reduce market intermediation costs in an equitable and environmentally sustainable manner.

#### **IV. Ways forward**

13. To address the Millennium Development Goals related to poverty reduction and food security, sustainable productivity increases are urgently required both for the areas where the poor live, often under adverse growing conditions, such as marginal lands and rain-fed areas, and for the food, which is critical for the poor. The widespread adoption of sustainable agricultural technologies and enhanced market linkages are a crucial component for achieving the Millennium Development Goals.

14. Speeding up the diffusion and adoption process will require a change in the agricultural research for development system. Stakeholders need to work together more effectively, both within countries and across the region, to focus on transforming the outputs of the research into development outcomes and to involve smallholder and resource-poor value chain actors in the innovation and capacity-building process right from the outset.

15. The need to promote and strengthen local, national and regional networks ensuring South-South collaboration has been realized by leaders across the region. In March 2009, the heads of State or Government of the member States of the Association of Southeast Asian Nations (ASEAN) adopted the ASEAN Integrated Food Security Framework and the Strategic Plan of Action on Food Security in the ASEAN Region,<sup>2</sup> which stresses the need for enhanced ASEAN cooperation as a means to ensure food security through sustainable food production, post-harvest practices and loss reduction, marketing and trade. One of the action programmes under the Strategic Plan of Action involves promoting closer collaboration to accelerate the transfer and adoption of new technologies. The Colombo Statement on Food Security,<sup>3</sup> issued by Heads of State or Government during the Fifteenth Summit of the South Asian Association for Regional Cooperation (Colombo, 2-3 August 2008), called for an evolving regional strategy and collaborative projects that would lead, among other things, to an increase in food production and investment in agriculture and agro-based industries.

##### **A. Viewing the innovation process within a supply chain context**

16. The innovation process in agricultural research for development systems in Asia and the Pacific includes many actors, such as: (a) all members of value chains and food systems for agricultural products, from farmers to food processors, intermediaries and retailers; (b) scientists and

---

<sup>2</sup> ASEAN Integrated Food Security Framework and Strategic Plan of Action on Food Security in the ASEAN Region 2009-2013, available at <http://www.aseansec.org/22338.pdf>.

<sup>3</sup> A/63/355, enclosure.

extension workers; (c) civil society at large, especially non-governmental organizations and private-sector entities involved in sustainable agriculture; and (d) policymakers.

17. Experience around the world shows that successfully translating agricultural findings into practice requires the support of various actors along the farm-to-fork continuum. Research has to pay close attention to the expectations of users and can often take place on farmers' fields. This implies that scientists and extension workers need to attach increasing importance to farmers' organizations or interprofessional bodies that can serve as effective mediators. Knowledge on communication methods that permit true exchanges between researchers and development partners are of major importance.

18. Senior officials need to be involved early in the innovation process since existing policies and regulations are often a major constraint to technology transfer. Early involvement will enable senior officials to acquire a better understanding of the reasons why policy changes are required and will serve to improve the ability of senior officials to convince policymakers of the need for new or improved policies.

19. Downstream value chain actors can strongly influence the decisions of farmers through their requirements regarding product specifications or through credits and inputs that they provide for farmers. Thus, their interests need to be taken into account early in the innovation process.

## **B. Addressing gender gaps**

20. It is well documented that women face greater constraints than men in the agricultural sector, especially as regards access to productive resources and the level of human capital. This is of concern because not only are women the major producers of locally consumed food, but also, in the process of urbanization, there is a clear trend towards the "feminization" of the agricultural sector as men migrate.

21. In addressing these constraints, attention must be paid, in particular, to building and strengthening capacity in research and government decision-making bodies in order to contribute to the gender transformation that is unfolding in the agricultural research for development sector in Asia and the Pacific. Legalized discrimination against women must be abolished, and equal rights for women must be ensured, for instance, in relation to land ownership. Rural institutions must be strengthened and made aware of gender-related issues, including ensuring that women and men are equally served by producers' organizations, credit-granting facilities and extension services. Policymakers must be made aware that virtually all agricultural policies related to technology, infrastructure or markets will affect men and women differently.

## **C. Facilitating South-South exchange**

22. The Asian and Pacific region is characterized by high heterogeneity, wide variation in agroclimatic zones and biodiversity and different levels of social and economic development and human capacity. This has implications for the degree to which the lessons learned from agricultural research in one region can be adapted and applied to other regions, but it also provides considerable scope for identifying success factors through cross-regional research and development activities and networks.

23. Regional research coalitions should be created to exploit the comparative advantages of different actors, particularly the national agricultural research systems of developing countries, the northern research organizations and the private sector, creating considerable economies of scale.

24. A number of best practices and interventions that have successfully lifted farmers out of poverty are available across the Asia-Pacific region. Examples include: the “one village, one product” movement, which was initiated in Japan and later implemented in other countries of the region; and the practice of rice intensification, which has received government support in a number of countries. Such practices, which already exist in member countries, need to be identified and synthesized.

25. Such findings should be used in capacity-building programmes that target value chain actors, scientists, extension agents and policymakers. Corresponding extension manuals and training materials should be prepared and published. Intraregional visits can expose agents of change to successful examples from other countries. This will expand the menu of options available to policymakers and government officials, making their roles in achieving poverty reduction targets more effective, while contributing to adaptation and widespread adoption of practices and options. Experience shows that, where governments develop incentive-based regulations, productivity increases and technology is adopted rapidly and widely.

## **V. Conclusions and recommendations**

26. To address the Millennium Development Goals related to poverty reduction and food security, sustainable productivity increases are urgently needed, especially for the areas where the poor live, often under adverse growing conditions, such as marginal lands and rain-fed areas, and for the food, which is critical for the poor. The widespread adoption of sustainable agricultural technologies and enhanced market linkages are a crucial component for achieving the Millennium Development Goals, in particular those related to food security and hunger.

27. A comprehensive and coordinated approach at the national and regional levels is required in order to facilitate capacity-building for sustainable agricultural innovation and technology transfer. CAPSA proposes to facilitate the creation of a network that will focus on the dissemination of technologies and facilitation of market access for poor farmers. Such a network would support innovation by strengthening South-South dialogue and intraregional learning on sustainable agriculture technologies and trade facilitation. It is proposed that the network should bring together key stakeholder groups by subregion, by discipline and by function to open knowledge silos and to allow better information exchange among groups that have a stake in agricultural research innovations for development systems in South and South-East Asia.

28. Member countries may wish to share their experiences on agricultural innovation systems, and the Committee may wish to provide guidance on policy options to enhance the capacity of actors in agricultural innovation systems.