

## Concept Note

### **UNAPCAEM and FAO Joint Roundtable on Sustainable Agricultural Mechanization in Asia Bangkok, Thailand, 8 - 9 December 2011**

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#### **Narrative summary**

Asia is experiencing rapid agricultural mechanization, yet some countries in the region lag behind in mechanization and or have suffered from inappropriate and fragmented approaches to mechanization. Agricultural production and food security, therefore, are adversely affected because of insufficient use of farm power, inappropriate use of farm machinery that negatively impacts on environmental sustainability, low labour productivity and/or labour scarcity. These inappropriate and fragmented approaches rooted in experiences during the 1960s until the early 1980s took place when large quantities of tractors were supplied to developing countries either as gifts from donors or on very advantageous loan terms. These experiences, often combined with a very narrow perception and lack of knowledge about mechanization, namely the one sided promotion of tractors and other capital-intensive mechanical power technology, caused increased trepidation of the aid community to look at projects addressing agricultural mechanization.

Rapid mechanization can also place pressure on fragile natural resources such as increased soil erosion, promote overuse of chemical inputs, and encourage farmers to open lands that currently serve as valuable forest and rangelands. Other environmental costs include contributing to changing climate conditions via adding greenhouse gas emissions.

At the same time there are many examples where agricultural mechanization has been very successful, contributing to increased food production, productivity and advancement of rural economies. Examples include privately owned shallow tube wells for irrigation in South Asia, axial flow threshers in South-East Asia, single-axle tractors in Thailand, and various forms of farm mechanization in many parts of China<sup>1</sup>.

Given the above, it is important to move toward environmentally mechanized sustainable agriculture, increase access to environmentally sound agricultural machinery that both sustains and enhances rural livelihoods and reduces pressure on natural resources that are the lifeblood for producing food.

In addition, it is now increasingly important in the Asia-Pacific region to encourage sustainable, private sector development that can offer farmers a broader range of technology (including more environmentally friendly technology) choices at the right price to increase agricultural productivity, provide food security and reduce post-harvest losses. For example, many Asia-Pacific countries can benefit from an AMS by identifying and increasing farmers access to more viable post harvest technologies such as rice dryers to reduce their losses. Also, the Roundtable is a complementary exercise toward the development of an Asia and Pacific Network for Testing of Agricultural Machinery (ANTAM).

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#### **Benefits of a sustainable Agricultural Mechanization Strategy**

<sup>1</sup> UNAPCAEM (2004), AGRICULTURAL MECHANIZATION STRATEGY, Adrianus G. Rijk., [www.unapcaem.org/publication/CIGR\\_APCAEM\\_Website.pdf](http://www.unapcaem.org/publication/CIGR_APCAEM_Website.pdf)

- Countries with a sustainable agricultural mechanization strategy in place can prepare an action plan to improve agricultural production, enhance food security and reduce post-harvest losses through proper policy measures, appropriate investments and interventions of an agricultural and/or technical nature;
- Developing a sustainable agricultural mechanization strategy would encourage member countries to take stock of their situation and analyse farmers' needs, institutional arrangements in the country and the availability of services to meet these needs;
- Additionally with the development of an Asia-Pacific network for testing agricultural machinery ("ANTAM") underway, having a sustainable agricultural mechanisation strategy in place can allow countries in the region to better benefit from networks such as an "ANTAM".

### **Institutional arrangements**

The proposed Roundtable will be implemented by UNAPCAEM and FAO. FAO has vast experience in developing appropriate Agricultural Mechanization Strategies in many countries with particular experience in Africa<sup>2</sup>. FAO has been assisting member states for over two decades to formulate strategies and implement action plans in order to develop agricultural mechanization. A recent policy document published by FAO, titled *Save and Grow*<sup>3</sup> calls for sustainable crop production and intensification while conserving resources, reducing negative environmental impacts and enhancing natural capital in the flow of ecosystem services.

UNAPCAEM provides the platform allowing groups of diverse countries to share experiences and coordinate their development activities for greater regional impact through regional cooperation. The Centre is committed to strengthen national food security programmes, promote research and development on environmentally sustainable agriculture and encourage regional cooperation when responding to food crises. UNAPCAEM can also identify and assemble the appropriate expertise, bring together key stakeholders via various meeting formats, outfit decision-makers with up-to-date information and advocacy products and suggest policy options that can enhance food security and rural livelihoods.

### **Outcomes**

The SAMS is expected to serve as the foundation to create a policy, institutional and market environment in which farmers and other end-users have the choice of farm power and equipment suited to their needs within a sustainable delivery and support system.

With a clearer picture of the current status of mechanization in the Asia region, countries, would be better informed and equipped to develop, implement or update their SAMS.

More specifically, the Roundtable is aimed:

- To serve as a first step in providing a clearer picture of agricultural mechanization in Asia, share experiences among Asian countries and identify constraints as well as best options for achieving environmentally sound sustainable agricultural mechanization in the region.
- To discuss a draft Sustainable Agricultural Mechanisation Strategy in Asia (SAMSA).

### **Outputs**

<sup>2</sup> FAO Agricultural mechanization strategy (AMS).

<http://www.fao.org/ag/aqs/agricultural-mechanization/agricultural-mechanization-strategy-ams/en/>

<sup>3</sup> Save and Grow: A policymaker's guide to the sustainable intensification of smallholder crop production  
<http://www.fao.org/ag/save-and-grow/>

1. Country status reports that outline mechanisation policies, constraints and best practices are produced and presented;
2. A Sustainable Agricultural Mechanisation Strategy for Asia (SAMSA) is elaborated and finalized on the basis of discussions;
3. A comprehensive report that reflects the outputs 1 and 2 above, as well as conclusions, recommendations and immediate and medium-term follow up actions.

## **Activities**

Implementation of a 2-day Roundtable to discuss the current status of agricultural mechanization in the Asia Region. Discussions will bring in a focus on the following:

1. A review of the agricultural mechanization policies, institutional setting and activities in participating countries;
2. A review of agricultural production and environmentally sustainable mechanization systems (agricultural production characteristics, main crops, livestock production, labour, factors of production and post-harvest, and different mechanization options, i.e. human, animal and mechanical power);
3. A Brief on supply of agricultural mechanization technology (producers, importers, distributors, availability of repair services);
4. An evaluation of the enabling environment (extension service, training institutions in agricultural mechanization, research, testing and certification of machines, basic infrastructure, fiscal policies, availability of credit, monitoring and evaluation, legislation and other services);
5. Examination of the advantages and/options for environmentally mechanized agriculture and the constraints of realizing such options
6. Sharing of the modalities of implementing a Sustainable Agricultural Mechanisation Strategy (SAMS) and identify future actions.