Asian and Pacific Network for Testing of Agricultural Machinery

The development of harmonized regional standards for testing agricultural machinery

Challenge

Ensuring food and nutrition security continues to be one of the key challenges facing the Asia-Pacific region. Out of the one billion hungry people in the world, two-thirds live in this region. Much of the burden of addressing this challenge falls on the agriculture sector. Factors such as large-scale urban migration are leading to substantive changes in the rural workforce that drives agriculture, while the environmental degradation caused by traditional agriculture is imposing enormous challenges to the region's productive capacity. Sustainable agricultural mechanization has the potential to raise yields while limiting the environmental impact of agriculture. Nonetheless, farmers are reluctant to invest in unknown products and tend to buy only inexpensive machines that rely on outdated technology and invest in chemical inputs. While the production of agricultural machinery is concentrated only in a few countries, the lack of a regional agreement on trade of agricultural machinery results in lengthy procedures for imports and raises the price for end users.

The development of mutually recognized regional standards for testing of agricultural machinery, such as those under the Asian and Pacific Network for Testing of Agricultural Machinery (ANTAM) initiative, simplifies trade procedures and increases farmers' confidence in technology by enhancing the safety and quality of machinery traded and used.

Towards a Solution

ANTAM develops harmonized regional standards for testing of agricultural machinery, mutually recognized among participating countries, to facilitate the trade and use of safe, efficient and environmentally sound agricultural machinery. ANTAM also supports the transformative approach promoted by the 2030 Agenda for Sustainable Development by integrating local needs with international standards and builds on stakeholder partnerships to find cross-sectoral solutions.

ANTAM works on two parallel tracks:

- The technical work, which focuses on drafting the standards, conducting international negotiations among participating countries, assisting member countries in developing testing facilitates and training local engineers;
- The strategic work where Focal Points in each participating country work to rally institutional support, develop testing facilities and integrate the ANTAM standards into national laws and regulations.

In support of SDG 2, ANTAM leverages the Economic and Social Commission for Asia and the Pacific's (ESCAP) role as the primary regional forum for development cooperation in order to mobilize resources, upgrade rural infrastructure and promote technology development so as to enhance agricultural productivity in the region. The promotion of agricultural equipment that has been tested according to international standards on safety and efficiency supports the productive activities of farmers by enabling better returns on investment and increased yields generated by the use of quality inputs. Moreover, the emphasis given to addressing the environmental impact of the machines contributes to SDG 13 by promoting machines that have minimum acceptable standards. Moreover, in relation to SDG 8, ANTAM enables

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higher levels of productivity by promoting technological upgrades and innovation, and in line with SDG 12, supports developing countries' scientific and technological capacity to move toward more sustainable patterns of production and consumption.

The ANTAM standards (Codes) are written through a unique regional effort, which involves international technical negotiations and coordination across various players in the field of agricultural machinery. The writing of the Codes and the negotiation process are carried out by a pool of international experts nominated by ESCAP member countries (currently 15), in consultation with representatives from national governments, research and testing institutes, the private sector and manufacturers' representatives. During the negotiation process, best practices applied in the region are harmonized based on the specific agricultural conditions of participating countries.

By leveraging member countries' national knowledge on the testing of agricultural machinery, the initiative promotes improved coordination among mechanisms while disseminating environmentally sound technologies to developing countries. Moreover, by involving the agricultural machinery manufacturers throughout the ANTAM process, emphasis is placed on public-private partnerships to ensure that the private sector can design equipment able to pass the environmental, safety and efficiency tests promoted by ANTAM. The mutual recognition agreement among countries, currently under development, will enable a rule-based, open and multilateral trading arrangement to significantly increase the exports of agricultural machinery produced in developing countries. Moreover, in the future, as certified ANTAM testing stations, member countries will be able to generate revenue from carrying out testing and actively contribute to the sustainability of the initiative. Currently, some participating countries including least developed countries are considering integrating the ANTAM requirements into their national laws and regulations regarding agricultural machinery.

To date, **19 participating countries have developed and adopted, in principle, three ANTAM standards concerning power tillers, powered knapsack misters-cum-dusters and paddy transplanters**. The methodologies in the standards have been applied for conducting tests on a voluntary basis in several ESCAP member countries, including China, India, Malaysia, Philippines, the Russian Federation, Sri Lanka and Turkey. ESCAP-Centre for Sustainable Agricultural Mechanization (CSAM) has intensively promoted capacity-building activities both for human resources and infrastructure development. To date, in China, Nepal, and the Philippines, over 60 testing engineers have been trained in the correct application of the standards and national capacity-building strategies to support the development of modern testing facilities that have been developed or that are in the process of development.

The ANTAM initiative has attracted significant interest and support from member countries. A cooperation project with the Government of Japan is underway, which supports the technical work of the Network and collaboration has also been established with some key international organizations involved in agricultural engineering and testing, including the Italian National Agency for Agricultural Mechanization/ European Network for Testing of Agricultural Machinery (ENAMA/ENTAM), the Organisation for Economic Co-operation and Development (OECD) and Food and Agriculture Organization of the United Nations (FAO), which is a member of ANTAM's advisory panel and assists in the development of the network.

Mutually recognized standards are a unique tool to support the international community's efforts in establishing minimum requirements on safety, efficiency and environmental impact. Standards that are developed through international negotiations can reduce technical and procedural barriers, and minimize the cost of trade for machinery.

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Countries/Regions: Armenia, Bangladesh, Cambodia, China, France, India, Indonesia, Japan, Malaysia, Nepal, Pakistan, the Philippines, Russian Federation, the Republic of Korea, Sri Lanka, Thailand, Turkey, Viet Nam
Nominated by: United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
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