



# UPDATES FROM CSAM

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## Tractor Operated Cassava Harvester

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Cassava is a staple food crop cultivated in several developing countries. India acquires significance in the global cassava scenario due to its highest productivity of 28 t/ha. There is a need of an equipment for easy harvest and transport of cassava so that farmers can directly sell the product to the mill and get considerably higher monetary benefit. As a result, a tractor operated cassava harvester was developed at TNAU, Coimbatore centre of All India Coordinated Research Project (AICRP) on Farm Implements and Machinery.

The harvester consists of main frame, shanks, digging blade, hitching frame, and depth adjustment wheels. It is designed for both two rows and one row operation (Fig. 1). The blades are mounted on three standards. The centre standard is designed to carry a pair of digger blades assembly. The standards are attached to the main frame by means of clamping plates and the position of each standard could be adjusted separately. During two row digging, the centre, right and left bottoms are used while for single row operation, right and left bottoms are used. The spacing between the bottoms could be adjusted as per the requirement of crop and soil conditions. The shank was designed as a bent leg plough with an angle of 150° to accommodate the dug cassava tubers. The blade angle of 20° is designed for easy penetration into the soil. The row spacing could be altered by moving the shanks on the main frame. The depth wheels are provided to adjust the depth of operation.

### Performance of the Machine

The tractor operated one row and two rows cassava harvesters were evaluated in red sandy loam soils. All the trials were conducted with Mulluvadi (MVD) variety of cassava cultivated prominently in Tamil Nadu. The field trials (Fig.2) were conducted at farmer's fields near Anthiyur. The effective field capacity and field efficiency of one row cassava harvester were 0.07-0.09 ha/h and 80-85%, respectively. The percent damage varied from 0.08 to 0.12% and cost of operation was Rs. 6415/ha for one row cassava harvesting unit. The effective field capacity and cost of harvesting with two row unit were 0.12 ha/h and Rs. 4472/ha, respectively.

The tractor drawn cassava harvester was released by the State Variety Release Committee of Tamil Nadu in 2014. The equipment is commercially available and is being manufactured by M/s. Greenfield Equipments India Private Limited, Coimbatore - 641 021, India

Source: This article was extracted from Success Stories...2016 published by All India Coordinated Research Project (AICRP) on Farm Implements and Machinery (FIM), Central institute of Agricultural Engineering, India (ICAR) in 2016. To learn more about machinery developed by AICRP on FIM, ICAR-CIAE, Bhopal visit: <http://aicrp.icar.gov.in/fim/success-stories/>



*Fig. 1. Tractor operated single and two row cassava harvesters*

*Fig. 2. Operating of single row and two row cassava harvester in field*

# Development Trends

## At China's Belt and Road Forum, UN chief Guterres stresses shared development goals

On 14 May 2017, speaking at a major international conference in Beijing, United Nations Secretary-General António Guterres drew comparisons between China's 'One Belt, One Road' initiative and the Sustainable Development Goals, saying both are rooted in a shared vision for global development.

"Both strive to create opportunities, global public goods and win-win cooperation. And both aim to deepen 'connectivity' across countries and regions: connectivity in infrastructure, trade, finance, policies and, perhaps most important of all, among peoples," the Secretary-General said addressing Chinese President Xi Jinping and dozens of other state leaders at the Belt and Road Forum.

"In order for the participating countries along the Belt and Road to fully benefit from the potential of enhanced connectivity, it is crucial to strengthen the links between the Initiative and the Sustainable Development Goals," Mr. Guterres noted, adding that the 17 Goals can guide the policies and actions under the Belt and Road towards true sustainable development.

He also urged donor countries to continue investing in development projects through Official Development Assistance (ODA), and urged them to fulfil their commitments under the Addis Ababa Plan of Action, which finances projects related to the Sustainable Development Goals (SDGs).

Source:  
<http://www.un.org/apps/news/story.asp?NewsID=56751#.WT4zaxOG Ou5>



*Secretary-General António Guterres addresses the opening of the Belt and Road Forum in Beijing, China.  
Photo: UN/Zhao Yun*

## UN Food and Agricultural Organization and World Bank reinforce partnership to end hunger and poverty

11 May 2017 – The UN Food and Agricultural Organization (FAO) and the World Bank have opened a new chapter in their longstanding partnership by further strengthening their cooperation to end hunger and poverty at global and national levels.

The two organizations have signed a new agreement to work closely together supporting the member countries in meeting the Sustainable Development Goals (SDGs), improve rural livelihoods, enhance efficiency of food production and distribution, and ensure sustainable management of natural resources worldwide.

The framework agreement – which enables FAO to provide technical expertise to governments for projects funded by the World Bank -- was signed yesterday in Rome by Daniel Gustafson, FAO Deputy Director-General for Operations, and Hartwig Schafer, the Vice-President of the World Bank's Operations Policy and Country Services.

The new agreement will go beyond FAO and World Bank investment programmes, says Mr. Schafer in a video interview. Through the FAO Investment Centre both international bodies have been working together for over 50 years providing development support to invest in agriculture and rural development. The Centre has contributed to over \$100 billion worth of investments worldwide.

source:

<http://www.un.org/apps/news/story.asp?NewsID=56728#.WT4zsROGOu4>



*A farmer picks vegetables from a greenhouse in rural Jordan.*

*Photo: IFAD/Ivor Prickett/Panos*

# Development Trends

## UN Food and Agricultural Organization links food security and climate change in new guidelines

On 12 May 2017, the UN Food and Agricultural Organization (FAO) unveiled guidelines to help Governments balance the needs of farming and climate change when making decisions, such as whether to refill a dried up lake or focus instead on sustainably using the forest on its shore.

Agriculture – including fisheries and forestry – plays an important role in keep global temperatures from rising more than two degrees Celsius above the pre-industrial levels.

The industry is a major source of greenhouse gas emissions. At the same time, to meet the food demand of a larger population, food production would need to be 60 per cent higher in 2050 than it was in 2006, said FAO.

The FAO's new guidelines “are geared to address the specific challenges that adaptation and mitigation efforts pose in the agricultural arena – steering change at a bearable pace for those who depend on related activities for incomes, livelihoods and food security.”

The guidelines are expected to help countries achieve the climate pledges made in December 2015 when the Paris Climate Accord was agreed to in France.

source:

<http://www.un.org/apps/news/story.asp?NewsID=56740#.WT4zsROGOu4>



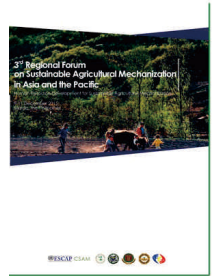
*Tending paddy fields in Laos. Photo: FAO*

# Publications

## 1. Proceedings of 3rd Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific

The Proceedings of the 3rd Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific was published and shared with the stakeholders of the Centre for Sustainable Agricultural Mechanization (CSAM). This synthesis report comprises of the country papers presented by participating countries and summaries of presentations of peer organizations at the 3rd Regional Forum of CSAM, held on 9-11 December 2015 in Manila, the Philippines. It proposes to establish a cooperation mechanism for research and academic institutions working on agricultural mechanization in ESCAP member countries in support of sustainable agriculture, food security and poverty alleviation in the region.

Link: [http://un-csam.org/publication/Pub\\_RF15.htm](http://un-csam.org/publication/Pub_RF15.htm)



## 2. Case Study: Stakeholder Mapping for Custom Hiring of Agricultural Machines in the Dry Zone of Myanmar

This study aims to map the stakeholders involved in custom hiring of agricultural machinery in the Dry Zone of Myanmar, including the areas of Sagaing, Magway and Mandalay Regions. The purpose of the mapping exercise is to assess the status of custom hiring in the Dry Zone, evaluate the strengths and gaps with regard to stakeholders' interventions, and formulate policy and programmatic recommendations to enable the full potential of custom hiring to be realized.

Link: [http://un-csam.org/Publication/csam\\_case\\_study\\_stakeholder\\_mapping\\_for\\_custom\\_hiring\\_0.pdf](http://un-csam.org/Publication/csam_case_study_stakeholder_mapping_for_custom_hiring_0.pdf)



# Meeting New People



### Ms. Xinyi ZHANG

Xinyi joined CSAM on June 1, 2017 as an intern. She graduated from Emory University with a bachelor degree in Business Administration. Her majors are Finance and Art History. In the fall of 2017 she will start her Master degree studies at the University of Cambridge. She will study Real Estate Finance, under the Department of Land Economy. Her research interest includes Chinese sustainable development of land and agriculture.

## *CSAM Activities in Focus*

### **Asian and Pacific Cooperation Network of Research and Academic Institutions on Sustainable Agricultural Mechanization (ANRAIM)**

On 14th April 2017 in Nanjing, China, the “Asian and Pacific Cooperation Network of Research and Academic Institutions on Sustainable Agricultural Mechanization (ANRAIM)” was established at the 'Regional Workshop for Research and Academic Institutions on Establishing a Cooperation Mechanism for Human Resource Development on Sustainable Agricultural Mechanization'.

The new Cooperation Network is a follow-up action of the 3rd Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific organized by the Centre for Sustainable Agricultural Mechanization (CSAM) of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) on the theme of “human resource development for sustainable agricultural mechanization” in 2015 in the Philippines, where member countries called for such a regional cooperation mechanism.



The new initiative was launched to help meet the region's need for promoting sustainable agricultural mechanization under the circumstances of persistent poverty, reduced availability of agricultural labour, demographic changes involving larger proportion of women and aging agricultural workers in a number of countries, inefficient agricultural value chains, degradation of natural resources and the environment, and impacts of climate change. The Regional Workshop duly recognised the unique role that research and academic institutions could play in defining and leading the future direction of sustainable agricultural mechanization and the valuable outcomes that could be expected through an effective cooperation mechanism and innovative partnerships.

The mission of ANRAIM will be to promote sustainable agricultural mechanization in Asia and the Pacific by facilitating and enhancing cooperation among research and academic institutions in agricultural mechanization, thus contributing to attainment of the Sustainable Development Goals in the region including in the areas of food security, improved rural livelihoods and poverty reduction.

The identified cooperation priorities for ANRAIM include:

- 1) to establish a contact network for professors, researchers and engineers working on agricultural mechanization in the region;
- 2) to improve the dissemination and sharing of information, knowledge, technologies and research literature among research and academic institutions working on agricultural mechanization;
- 3) to facilitate joint research and innovation as well as joint development of project proposals for funding from international and domestic funding sources; and
- 4) to facilitate human resource development activities, including collaboration for visiting scholars, internships, tailored training, study tours, pilots, etc.

## *CSAM Activities in Focus*

### **3rd Meeting of the Technical Working Groups (TWGs) of the Asian and Pacific Network for Testing of Agricultural Machinery (ANTAM)**

In 31 May 2017, experts from 13 countries in Asia and the Pacific convened in Dhaka for the Asian and Pacific Network for Testing of Agricultural Machinery (ANTAM) meeting from 24 to 27 May to develop a set of standards that will help phase out the use of chemicals in rice production, and provide farmers with reliable equipment to cultivate the region's principle crop.

Despite progress made in recent years towards modernizing production, agriculture still remains one of the most hazardous employment sources in the region due to the use of unsafe and inefficient machinery. The lack of uniform safety standards has also led to major social costs, jeopardizing countries' efforts in achieving sustainable agricultural development. To address this issue, the Centre for Sustainable Agricultural Mechanization (CSAM) is implementing the ANTAM initiative which aims to develop a set of harmonized agricultural machinery testing standards across the region.

In response to the needs of participating countries in the region, participants at the meeting in Dhaka unanimously agreed on the technical content of the first edition of the ANTAM Codes for Paddy Transplanters, and updated ANTAM Codes for other machinery including Power Tillers and Misters-Cum-Dusters.

At the meeting, CSAM emphasized the crucial role played by agricultural machinery in doubling agricultural productivity and the income of small-scale farmers, as well as ensuring sustainable food production in the region as envisaged in the 2030 Agenda for Sustainable Development. In order to enable agricultural mechanization to work more effectively, farmers need to rely on the quality, efficiency and environmental sustainability of agricultural machinery. Developed by a pool of regional experts, the Codes draw upon major international standards formulated by the Food and Agriculture Organization, International Organization for Standardization and the Organisation for Economic Co-operation and Development, and relevant national standards applied in 19 member countries.

The Third Meeting of the Technical Working Groups of ANTAM was organized by CSAM, in collaboration with the Department of Agricultural Extension of the Government of Bangladesh, Bangladesh Agricultural Research Council and the Agricultural Machinery Manufacturer & Suppliers Association of Bangladesh.







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The Centre for Sustainable Agricultural Mechanization (CSAM) is a regional institution of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), based in Beijing, China. Built on the achievements of the Regional Network for Agricultural Machinery (RNAM) and the United Nations Asian and Pacific Centre for Agricultural Engineering and Machinery (UNAPCAEM) CSAM started operations in 2012.

CSAM serves the 62 members and associate members of UNESCAP. It is guided by the 2030 Agenda for Sustainable Development and other internationally agreed development goals, as well as, the resolutions and mandates adopted by UNESCAP.

The vision of CSAM is to achieve production gains, improved rural livelihood and poverty alleviation through sustainable agricultural mechanization for a more resilient, inclusive and sustainable Asia and the Pacific.

#### Disclaimer

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