



UPDATES FROM CSAM

December 2016

System of Rice Intensification (SRI) of Power Weeder for Rice

India is the second largest rice producing country in the world and represents about 10% (225 million) of the total world workforce in agriculture. System of Rice Intensification (SRI) has emerged as an alternative in paddy cultivation technique based on the core principles of reducing the use of seeds, water, and fertilizer. The weeding by cono-weeder is one of the main practices that ensures the success of the SRI technique. However, the use of manually operated weeders like cono-weeder or rotary weeder requires considerable labour of more than 20 man-days/ha. The increased labour requirement and the drudgery associated with the operation of these weeders are considered primary bottlenecks in the popularization of the SRI technique.

Features of power weeder

A two row power weeder was developed by Tamil Nadu Agricultural University (TNAU) of Coimbatore centre of AICRP on Farm Implements and Machinery to reduce labour requirement and drudgery involved in the operation of the manual weeders.



The new machinery is suitable for timely weeding operations on all soil conditions in line sown rice and SRI rice. It is a self-propelled, compact and light weight power weeder. It weighs 17 kg and consists of 1.30 kW engine, float and rotary cutting blades. There are four high speed rotating blades (300 rpm) on either side, which weed two rows at a time. The weeding width is 150 mm. It is easily maneuverable between the crop rows at speed due to compactness and less weight. The average forward speed of operation of power weeder is about 30 m/min as compared to 15 m/min with cono-weeder. The average fuel consumption is 0.40-0.65 l/h. The field capacity of the power weeder is 0.09 ha/h at 78% field efficiency and is about 4 times higher than the cono-weeder. Due to its light weight and large float, the weeder performed well under all field conditions. The approximate cost of the weeder is INR 45,000 (USD 665). The cost of operation in single pass is Rs 1100/ha (USD 16/ha).

Benefits to farmers

The operation of cono-weeder and rotary weeder in puddled field falls under the category of a heavy work. The use of SRI power weeder helped in reducing labour requirement to 1.4 man-days/ha as compared to 20 man-days/ha with the use of manually operated cono weeder or rotary weeder.

The equipment not only reduced labour requirement by about 90% but also reduced drudgery of agricultural workers. The timely weeding also helped in increasing paddy yield by about 15-20%. Compared to conventional manual method, the machine weeding saved Rs 6530/ha (USD 96/ha) in two passes.

Status of the technology

The weeder was released by the State Variety Release Committee of Tamil Nadu state of India. The prototypes were supplied to centres of TNAU and 13 cooperating centres of AICRP on FIM for feasibility testing. The memorandum of understanding was signed between TNAU, Coimbatore and M/s. Premier Power Equipments Ltd., Coimbatore for commercialization of SRI power weeder. The firm is manufacturing SRI power weeder under the brand name of Garuda and supplied more than 500 weeders to farmers and government institutions during the last three years.

IT IS TIME TO RESIST CLIMATE CHANGE

Due to its geographic position the Asia-Pacific region is highly susceptible to climate change impact, therefore. In this context, several agricultural adaptation techniques have already started to be implemented, such as changes in sowing dates, switching to drought-tolerant or flood-resistant crops, and adoption of salinity-tolerant varieties of rice.



Governments should step up their efforts in protecting the vulnerable and empower them to better adapt to climate alterations. Governments have to work with smallholders to build their capacity by providing finance schemes and social safety nets.



To know more visit:

<http://www.unescap.org/sites/default/files/The%20Economics%20of%20Climate%20Change%20in%20the%20Asia-Pacific%20region.pdf>

COP22 LAUNCHED THE WORLD BIOGAS ASSOCIATION

The World Biogas Association (WBA) was launched at the United Nations Convention on Climate Change (UNFCCC) COP 22 on the basis of plan to transform lives by 2030 through the Sustainable Development Goals in Marrakesh, Morocco. The main purpose of the initiative is to attract attention on the biogas and anaerobic digestion issue, to and spread globally relevant technologies.



Companies, associations, universities and experts are welcome to join the biggest global alliance to support important contribution to:

- Reduce global greenhouse gas emissions by around 20%
- Deliver flexible, storable baseload green gas
- Fuelled HGVs, buses, tractors and other vehicles
- Reduce and recycle food waste
- Recycle sewage and waste water
- Return carbon to the farm
- Keep farmers farming sustainably
- Restore our depleted soils
- Provide energy and biofertiliser to communities and villages in developing countries
- Reduce poverty and hunger

Massimo Centemero, the Managing Director of the Italian Compost and Biogas Consortium expressed his hopes that new created body "can make a huge contribution to meeting each country's Climate Change Commitments."

Resource:

<http://www.prnewswire.com/news-releases/launch-of-world-biogas-association-300362577.html>

<http://www.worldbiogasassociation.org/>

Member Countries Snapshot

Vietnam Institute of Agricultural Engineering and Post-Harvest Technology

VIAEP is a key national scientific and technological institution in agricultural engineering and post-harvest technology. It is immediately under the Ministry of Agriculture and Rural development and it has the following functions: research on fundamental strategy, policies, public services; applied research; post-graduate education; transfer of technology; international cooperation; production and trade in engineering and post-harvest technology for agriculture and rural development nationwide. VIAP research activities focus mainly on designs and manufacture machines and equipment for land cultivation in spheres of tilling, sowing, crop-care and irrigation in the fields and in greenhouses.



Additionally, VIAEP is assigned by the Ministry of Education and Training to train PhD Students in Mechanical Engineering and in Post-Harvest Technology.

VIAEP is the coordinating agency for Science and Technology on ASEAN food and foodstuff, a fledged member country of Asian and Pacific Center for Agricultural Engineering and Machinery (APCAEM-ESCAP) and a member of federation of the Institutes of Food Science and Technology in ASEAN (FIFSTA). In the cooperation framework with overseas and international organizations, VIAEP accomplished several remarkable projects as:

- “Village Level Processing – Empowerment through Enterprise Skill Development” financed by FAO, 2006-2007;
- “Transfer and Install System of Solar Electric Generator Sponsored by Goede Scientific Fund, Federal Republic of Germany, for 4 Island Communes of Van Don District, Quang Ninh Province” Funded by Goeg Scientific Fund, Federal Republic of Germany, 2011-2012;
- Technical cooperation project “Transfer of Agricultural Machinery for Cuban Rica Production”. Financed by Government of Vietnam to Cuba.



Meeting New People

Dr. Li Yutong

Dr. Li Yutong, Head of Centre for Sustainable Agricultural Mechanization (CSAM), United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) since 28th November 2016.



Previous work experience includes the Director of the General Affairs Division, Director of the Agricultural Trade Division and the Liaison Officer for the Agricultural Trade Office in the Ministry of Agriculture, P.R. China.

More than 24 years' experience in agricultural economics, food security, trade and investment. Previously worked with the UN, the government and the private sectors.

Holds a doctorate in Agricultural Economics Management from China Agricultural University. Professional interest lays in rural development, agriculture policy formulation, policy research and analysis, as well as international cooperation platform establishment.

Ms. Ianina Kalinich

Ms. Ianina Kalinich joined CSAM on 1st November, 2016 as an intern. She graduated from Bryansk State University with Law degree (Civil Law). She is currently completing her master degree majoring in International Trade at University of Science and Technology Beijing. Her work focuses on economics of Asian countries and development of international trade cooperation.



Mr. Anshuman Varma

Anshuman Varma joined CSAM on 23 December, 2016 as Programme Officer. Previously, he has served at another ESCAP regional institutions, namely the Centre for Alleviation of Poverty through Sustainable Agriculture (Indonesia), and the Asian and Pacific Training Centre for ICT for Development (Republic of Korea), as Knowledge Management Coordinator and Programme Officer respectively. Mr. Anshuman Varma has also served as a UN Volunteer in the area of sustainable agriculture and worked on corporate social responsibility initiatives in the private sector. He holds a Master's degree in Development Economics from the University of Sussex in the United Kingdom and brings significant experience in programme management, knowledge sharing and capacity-building.



Mr. Zhang Yufan

Mr. Zhang Yufan joined CSAM on 23 December, 2016. He graduated from Shenyang Agricultural University with a degree in agricultural mechanization and its automation. Now he is a graduate student at China Agricultural University. As a member of the Conservation Tillage Research Center his interest includes usage of sensors to detect the precise location and emergence direction of seeds in the soil.



ANTAM Codes 2016



The second version of the ANTAM Codes and related Testing Reports has been published and distributed to CSAM stakeholders. The ANTAM Codes 2016 have been developed through 15 rounds technical consultations conducted between March and May 2016. Besides other changes, the new version of the Codes, incorporated the feedbacks proposed by member countries at the 2nd Annual Meeting of ANTAM in New Delhi, India in December 2015.

Specifically, the ANTAM Code for Testing of Power Tillers (001-2016) is enriched with three more tests- i.e. rotary shaft performance, vibration level and waterproof ability- to reflect the agricultural needs of participating countries and assure an enhanced level of safety and performance. While, the second version of the ANTAM Code for Powered Knapsack Mistlers-Cum-Dusters (001-2016) further refined tests such misting discharge rate, air velocity and air volume, ground deposition, vertical deposition, misting width, droplet size and droplet density, to provide the operator with necessary information on parameters adjustments and avoid over use of chemicals.

The Codes and the Test Report are available at:
<http://www.antam-network.net/2016/category/publication/antam-codes/>
<http://www.antam-network.net/2016/test-reports/>

Under the project 'An Integrated Rural Economic and Social Development Programme for Livelihoods Improvement in the Dry Zone of Myanmar' CSAM published:

1. The case study 'Policies, Institutions and Processes to Support Agricultural Mechanization Development in the Dry Zone'
2. Policy brief on 'Strengthening Policies, Institutions and Processes to Support Sustainable Agricultural Mechanization Development in the Dry Zone'

The e-versions of these two publications can be found on CSAM website.

CSAM Activities in Focus

ReCAMA Training and Study Tour for Agricultural Machinery Manufacturers and Distributors

The ReCAMA Training and Study Tour for Agricultural Machinery Manufacturers and Distributors was successfully conducted on 16-29 October 2016 in China focusing on conservation agriculture and transplanting. The Training and Study Tour was co-organized together with the Centre of International Cooperation Service of the Ministry of Agriculture of China with the support of China Agricultural Machinery Distribution Association (CAMDA), China Agricultural Mechanization Association (CAMA), and China Association of Agricultural Machinery Manufacturers (CAAMM). The Training and Study Tour included classroom lectures, group discussions, a visit to machinery manufacturers as well as the China International Agricultural Machinery Exhibition 2016 in Wuhan, China. The Training and Study Tour attracted 34 participants from 10 ReCAMA Member Countries. The Training and Study Tour did not only improve the knowledge and capacity of the participants on conservation agriculture, transplanting and pertinent machinery; but more importantly, enhanced the mutual understanding and triggered extensive cooperation and business opportunities, and so forth leading the collaboration among the ReCAMA Member Associations a new and substantive stage.



2nd Training of Trainers on the Asia and Pacific Network for Testing of Agricultural Machinery (ANTAM) Codes, 18-30 October, 2016 Nanjing, China

The two weeks training of trainers was organized to instruct Asian testing engineers on the use of safe, efficient and environmentally sound agricultural machinery. The activity was organized in collaboration with China Agricultural Machinery Testing Centre, Ministry of Agriculture (CAMTC/MOA). In order to target specific country needs the training was conducted into two parallel sections: one group worked on testing of Power Tillers and one group focused on Misters- Cum- Dusters.



The first days were dedicated to theoretical explanation and study of testing procedures. Afterwards, each participant was guided in the practical applications of the Codes. Each participant was also guided in data gathering methods necessary for the completion of the ANTAM Test Reports. To maximize the benefits of the activity and promote knowledge sharing, two training manuals were designed that can guide engineers in the application of the ANTAM Codes. The manuals are available on the ANTAM website (www.antam-network.net).

Furthermore, in order to provide a complete overview of different testing facilities and expose participating engineers to the use of advanced technology, the group was invited to visit the testing facilities utilized by Changfa Agricultural Equipment Co., Ltd. a leading machinery manufacturer in China, which provides testing services to private enterprises.

CSAM Activities in Focus

The 3rd annual meeting of the Asian and Pacific Network for Testing of Agricultural Machinery (ANTAM) was held on 8-10 December 2016, Negombo, Sri Lanka.

The 3rd annual meeting of the Asian and Pacific Network for Testing of Agricultural Machinery (ANTAM) was held on 8-10 December 2016, Negombo, Sri Lanka. The meeting was co-hosted by the Department of Agriculture, of the Ministry of Agriculture of Sri Lanka. 14 UNESCAP member countries- i.e. Bangladesh, Cambodia, China, India, Indonesia, Japan, Malaysia, Nepal, Pakistan, Philippines, Russia, Sri Lanka, Thailand and Vietnam- attended the meeting, along with members of the Advisory Panel and observers from the private sector and Asian Farmers Association. Namely: the Italian Agency for Testing of Agricultural Machinery/ European Network for Testing of Agricultural Machinery (ENAMA/ ENTAM), FAO, and OECD. The Sri Lankan Mechanization Agriculture Machinery Manufacturers' and Suppliers' Association (AgMMA) was invited to represent the private sector.



The Dr. Rohan Wijekoon, Director General of Agriculture, Department of Agriculture, Sri Lanka delivered welcoming remarks and Dr. Li Yutong, Head of CSAM, delivered opening remarks. The Annual Meeting elected Sri Lanka as the Chair for 2017 and the Philippines as Vice Chair for 2017. The meeting unanimously adopted the ANTAM Standard Code 001-2016 for Testing of Power Tillers and Standard Code 002-2016 for Testing of Powered Knapsack Misters- Cum-Dusters. ENAMA/ ENTAM was reelected as ANTAM Technical Reference Unit for the triennium 2017-2019.

Member countries agreed to move forward to the second implementing stage by focusing the work of 2017 on achieving the following strategic objectives: i. Development of criteria and technical requirements for ANTAM accredited testing stations; ii. formulation of capacity building strategies for Asia Pacific testing stations; iii. revision of the current ANTAM Codes and enlargement of the number of agricultural machineries covered by ANTAM standards including standards on rice technologies.

The 4th Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific, 23-25 November 2016 Hanoi, Vietnam

The 4th Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific was held on 23-25 November 2016 in Hanoi, Vietnam, to explore approaches to advance climate-smart agriculture through mechanization and good practices in the Asia-Pacific region. The forum was co-organized by CSAM and Vietnam Institute of Agricultural Engineering and Post-Harvest Technology (VIAEP).

Around 50 participants took active part in sharing experience and ideas related to climate-smart agriculture and sustainable agricultural mechanization. Participants included government officials, agricultural and biosystems engineers, representatives from member countries as well as the representatives from international and regional organizations, research and academic agencies and the private sector.



CSAM Activities in Focus

Regional Database of Agricultural Mechanization in Asia and the Pacific

Following the inception workshop held in March this year, official request for designation of a Focal Point (FP) and a Technical Working Group (TWG) member was made from the Executive Secretary of ESCAP to all Member and associated Member States in the second half of the year. To date, 17 member countries- namely, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, Democratic People's Republic of Korea, India, Indonesia, Nepal, Northern Mariana Islands, Russia, Samoa, Sri Lanka, the Philippines, Thailand, Tonga and United Kingdom- nominated their FP and/or TWG member.



Online consultations started in November, the nominated Focal Points and TWG members found a preliminary agreement on the proposed outline for the database guideline. The guideline document, which will be developed in the following months, will comprise three main parts: i. introduction; ii. overview of database structure and classification; iii. indicators and definitions. The document is expected to serve as the common framework for the proposed regional database.

Multi-stakeholder dialogue on 'Scaling-Up Interventions for Sustainable Agricultural Development in Myanmar's Dry Zone'

On 21-22 December 2016, the Center for Alleviation of Poverty through Sustainable Agriculture (ESCAP-CAPSA), the Asian and Pacific Center for Transfer of Technologies (APCTT), the Network Activities Groups (NAG) and CSAM collaborated on the organization of the multi-stakeholder dialogue on 'Scaling-Up Interventions for Sustainable Agricultural Development in Myanmar's Dry Zone' in Nay Pyi Taw, Myanmar, under the project titled 'An Integrated Rural Economic and Social Development Programme for Livelihoods Improvement in the Dry Zone of Myanmar'. Participants included: senior-level officials from national governments, multilateral and bilateral organizations, academia, international NGOs, local civil society organizations, the private sector, and farmers' groups.



The dialogue identified key lessons and good practices to scale-up successful interventions and developed an Action Agenda to involve all stakeholders. and provided an opportunity for knowledge sharing and networking amongst public, civil society and private sector stakeholders in the area of sustainable and climate-resilient agriculture.

During the dialogue a case study and a policy brief developed by CSAM were officially presented along with publications developed by the partner institutions. The e-versions of these publications are available on CSAM website and the SATNET portal (www.satnetasia.org >> Resources).



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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.

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