ASIAN PRODUCTIVITY ORGANIZATION

PROJECT IMPLEMENTATION PLAN

15 July 2015

1. Project Code	15-AG-23-GE-TRC-A
2. Project Title	Self-learning e-Course on Waste Management in Agribusiness
3. Reference	Project Notification 13-AG-23-GE-TRC-A dated 24 April 2015
4. Timing and Duration	14 December 2015–13 May 2016 (five months)
5. Implementing Organizations	APO Secretariat and National Productivity Organizations (NPOs)
6. Number of Participants	Minimum of 400 participants
7. Self-registration	Self-registration opens from 10:00 AM Japan Standard Time on 14 December 2015 on the APO's e-learning web portal: http://www.apo-elearning.org/ Note: Participants can register directly from this portal on the APO website. Those who are already registered can access the course by using the assigned username and password. If you have forgotten your username and password, please refer to the FAQs on the home page of the portal.

8. Objectives

a. To enhance participants' knowledge and understanding of the concepts of and approaches to waste management in agricultural systems and businesses; and

b. To trigger economic development initiatives by raising awareness of waste minimization and transformation of agricultural waste into useful products.

9. Background

The agriculture sector generates huge amounts of organic and nonorganic waste during food and agricultural production, handling, processing, packaging, storage, transportation, and marketing. Such waste accounts for about 30% of worldwide agricultural production. It

pollutes soil and water resources, contaminates air, degrades landscapes, and contributes to greenhouse gas emissions, among others. Waste management can not only reduce waste generation but also promote its reuse and recycling. Organic waste can be transformed into valuable products such as compost, biofuel, and bioenergy. Effective, efficient waste management is an essential element for promoting sustainable consumption and production. The situation of agricultural and agribusiness waste management in many developing countries of Asia and the Pacific is, however, far from satisfactory.

In general, agribusiness enterprises are concerned about waste management. However, micro, small, and medium enterprises (MSMEs) are constrained in the adoption of proper waste management strategies due to a lack of knowledge and awareness of potential co-benefits of waste management, limited financial resources for investment in technologies, lack of R&D, unsupportive legal and policy frameworks, and lack of policy incentives. There is an urgent need to build the capacity of MSME managers and entrepreneurs, professionals, consultants, and academics involved in agricultural waste management.

This course is being organized to train a critical mass of stakeholders in APO member countries in the basic knowledge and skills of waste management in agricultural systems and agribusinesses.

10. Scope and Methodology

Scope

The tentative course structure is as follows:

Module 1: **Introduction to waste management in agribusiness**

Definitions of waste and waste management; Understanding waste products, by-products, and products; Why undertake waste management: Challenges in waste management; and Global scenario of waste management.

Module 2: **Agricultural waste generation and characterization**

Types of waste; Sources of waste origin; Physical, chemical, and biological characteristics of waste; Hazardous waste; and Waste management operations and implications for the environment and sustainability.

Quiz 1 (for self-assessment based on questions from Modules 1 and 2)

Module 3: **Waste management strategies in agribusinesses**

Management strategies for biodegradable, nonbiodegradable, and hazardous waste; Basics of waste management in agribusiness in terms of planning, staffing, organizing, and controlling; and Incorporating innovations and indigenous know-how in managing agribusiness waste.

Module 4: **Resource recovery from waste: technological aspects**

3R concepts; Source reduction, zero waste, and closed-cycle waste stream concepts; Recycling procedures for selected waste; Biological processes such as composting and biogas generation; and Energy recovery from waste through a variety of processes, including combustion, gasification, pyrolization, anaerobic digestion, and landfill gas (LFG) recovery.

Quiz 2 (for self-assessment based on questions from Modules 3 and 4)

***Module 5:* Life cycle assessment and financing**

Life cycle assessment (LCA) and examples; and Economics of waste, international financing mechanisms (e.g., carbon-trading), and macro- and microfinancing mechanisms and schemes.

***Model 6:* Legal and institutional arrangements**

Protocol, policies, regulations, and institutional arrangements for waste management at global, regional, and local levels; Public–private partnerships (PPPs); Stakeholder participation (local authorities, community-based organizations, NGOs, researchers, investors, regulators and policymakers, etc.; and Absence of regulatory interventions in agribusiness waste management.

Quiz 3 (for self-assessment based on questions from Modules 5 and 6)

***Module 7:* Waste management as a business**

Different types of waste utilization and value addition to agribusiness waste; Converting waste into organic fertilizer, renewable energy, and other suitable outputs for farming and human consumption; Social norms, values, attitudes, and cultures and their interactions with waste generation, collection, and management; Capacity building in waste management; and Awareness-building among stakeholders on the need for, benefits of, and mechanisms for cleaner agribusiness.

***Module 8:* Agribusiness waste management: real-life stories**

Waste management practices in agribusiness and the extent of their success vary from country to country. The best cases of agribusiness waste management are discussed.

Module 9:

Final Examination

Methodology

Self-learning e-modules, additional study materials for participants, intermittent quizzes for self-assessment, assignments, and a final examination to qualify for the APO e-certificate.

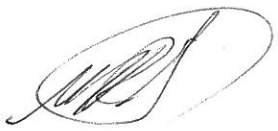
11. Qualifications of Candidates

The target participants include CEOs, managers and officers of agribusiness companies, officers of government and NGOs, academics, extension officers, consultants, and other technical personnel engaged in agriculture, food and agribusiness planning, training, extension, and/or promotion of agricultural waste management.

12. Eligibility for e-Certificate

A minimum score of 70% on the final examination is required to qualify for the APO e-certificate.

Note: Participants from nonmember countries are welcome to take the course for self-development, although APO e-certificates will not be provided.



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Secretary-General