

# Asian Productivity Organization

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## PROJECT NOTIFICATION

26 April 2012

1. **Project Code** 12-AG-23-GE-WSP-B
2. **Title** Workshop on Nanotechnology Applications for Boosting Agricultural Productivity
3. **Duration** 3–7 September 2012 (five days)
4. **Venue** Republic of China
5. **Implementing Organizations**
  - 1) Council of Agriculture, Executive Yuan (COA)  
37 Nanhai Road, Taipei 10014  
Republic of China  
Phone: (886-2) 2381-2991  
Website: <http://eng.coa.gov.tw/index.php>
  - 2) China Productivity Center (CPC)  
2F, No. 79, Sec. 1, Xintai 5th Rd., Xizhi District  
New Taipei City 221, Taiwan  
Republic of China  
Phone: (886-2) 2698-5886  
Fax: (886-2) 2698-2976  
Website: [www.cpc.org.tw](http://www.cpc.org.tw)
6. **Number of Overseas Participants** Up to 18 qualified participants from India, Indonesia, IR Iran, Japan, Republic of Korea, Malaysia, Philippines, Singapore, Sri Lanka, and Thailand  
(See 12. Qualifications of Participants)
7. **Number of Local Participants** Up to six qualified participants  
(See 12. Qualifications of Participants)
8. **Closing Date for Nominations** 8 June 2012

## **9. Objectives**

- 1) To create greater awareness of applications of and progress in nanotechnology (nanotech) in agriculture;
- 2) To review examples of actual applications of nanotech in agriculture; and
- 3) To formulate strategic recommendations for promoting safe applications of nanotech in agriculture.

## **10. Background**

The Green Revolution technologies contributed immensely to achieving food security in the Asia-Pacific region. This was accomplished by increasing reliance on farm machinery operated on fossil fuels and by the increasing use of petrochemical-based fertilizers and pesticides, among others. Inappropriate use of chemical fertilizers and pesticides has had negative impacts on human health, the safety of agrifood products, the environment, and the agricultural production base. In many cases, however, agricultural productivity has stagnated or increased too slowly. Another breakthrough in agricultural productivity is needed to ensure a sufficient food supply for the increasing global population. This will require innovative, highly productive, sustainable agricultural systems with minimal impact on the environment and natural resource base. Applications of nanotech, i.e., the manipulation of matter at the molecular and atomic levels, in agriculture could provide a solution.

Nanotech is predicted to transform food and agricultural systems radically, changing the way food is produced, processed, stored, packaged, transported, and consumed. Nanotech could increase the efficacy of plant and animal genetic engineering techniques and improve current agricultural practices through better management and conservation of inputs in crop and animal production. For example, nanotech materials for slow release and efficient dosage of fertilizers and pesticides for plants and of nutrients and medicine for livestock will help lower doses of inputs; nanosensors will enable efficient crop and animal pathogen detection and disease management; and other nano devices will ensure faster, more efficient testing of agrifood products for chemical and biological hazards, thus permitting effective monitoring of global food supply chains. Nanotech also has the potential to improve agricultural waste management and clean the soil of existing contaminants. Nanotech promises to improve the performance of modern agricultural systems such as controlled environment agriculture and precision farming through enhancing the speed and precision of technologies.

Nanotech innovation may enable the agriculture sector in Asia-Pacific countries to control as well as improve and diversify production. However, nanotech applications must comply with the requirements for public health, safety, consumer and environmental protection, and ethical considerations. The main challenges in promoting applications of nanotech in agriculture are the small size of farms, diversity of farming systems, underinvestment, limited R&D, and lack of legislation regulating nano products. Greater consumer awareness of nanotech applications in agriculture and food production is needed.

## **11. Scope and Methodology**

The workshop will consist essentially of the presentation of resource papers, case studies, field visit(s), and group work. The tentative topics to be covered are:

- a. Nanotech applications in the agriculture and food sector: an overview;
- b. Nanostructures for improving the performance of controlled environment agriculture systems and precision agriculture;
- c. Nano structures for boosting livestock productivity;
- d. Nanotech for agricultural waste management;
- e. Regulatory and institutional framework to enhance consumer confidence in the safety of nano agrifood products and attract investment in nanotech applications; and
- f. Successful examples of nanotech applications in agriculture.

## 12. Qualifications of Participants

The participants in this workshop are expected to possess the following qualifications:

- (a) Age : Preferably between 35 and 55 years.
- (b) Education : University degree or equivalent qualification from a recognized institution.
- (c) Present Position : Government and private-sector professionals and experts in charge of nanotech applications in agriculture. Candidates are expected to be from national nanotech institutes or similar other institutes directly engaged in nanotech R&D for agriculture.
- (d) Experience : At least three years of experience in the position described in (c) above.
- (e) Language : All proceedings of the workshop are conducted in English, and participants are frequently required to make oral and written presentations. They must therefore be proficient in spoken and written English. Those who are not proficient in English need not apply.
- (f) Health : Physically and mentally fit to attend an intensive workshop requiring participants to complete a number of individual and group activities and strenuous fieldwork (it is therefore recommended that member countries refrain from nominating candidates likely to suffer from physical and mental strain).
- (g) Attendance : Participants must attend all five days of the workshop to qualify for the certificate of attendance.

## 13. Financial Arrangements

### a) To be borne by the APO:

- i) All assignment costs of overseas resource persons.
- ii) Round-trip economy-class international airfare by the most direct route between the international airport nearest to the participant's place of work and the international

airport nearest to the project venue in the Republic of China. As far as practicable, all participants should purchase discount tickets. Please note that the arrangements for the purchase of air tickets should be in accordance with the "Guide on Purchases of Air Tickets for APO Participants," which will be sent to the selected participants and is available on the APO website and from APO Liaison Officers in member countries.

**b) To be borne by participants or participating countries:**

*For all participants*

- 1) *Participants' insurance premiums:* All participants should be fully insured against accident and illness (including hospitalization and death) for a principal sum equivalent to US\$10,000.00 for the entire duration of the project and travel and must submit to the APO Secretariat a copy of the comprehensive travel insurance certificate before participation.

*Such insurance should be valid in the Republic of China.* This insurance requirement is **in addition to** existing government insurance coverage in some member countries. If any participant is unable to insure himself/herself as stipulated above, he/she should secure this insurance in the host country at the commencement of the project and pay the premium himself/herself, if necessary, from the per diem allowance provided. Neither the APO nor the implementing organizations will be responsible for any eventuality arising from accident or illness.

- 2) All expenses related to visa fees and airport taxes.
- 3) Any expenses incurred by participants for stopovers on the way to and from the project venue as well as for extra stay at the project venue before and/or after the official project period on account of early arrival or late departure, for example, due to either limited available flights or any other reason whatsoever.

**c) To be borne by the host country (Republic of China):**

- i) Per diem allowances and hotel accommodation for up to 18 overseas participants for up to six days at the rate to be specified later.
- ii) All local implementation costs.

**14. Actions by Member Countries**

*Nominations*

- (a) Each selected country is requested to nominate **two or more candidates** for selection in the order of preference. Please ensure that candidates nominated meet the qualifications specified above.
- (b) Please note that when a candidate is nominated it does not follow that he/she is considered selected. Selection is at the discretion of the Screening Committee. A basic criterion for selection is the homogeneity of the participants in terms of qualifications and work experience. Nonselection therefore does not mean that the candidates

concerned are not competent enough. Sometimes candidates are not selected because they are overqualified for the given project.

- (c) APO Liaison Officers/NPOs are reminded to make clear in their search for the most appropriate participants that only the APO Liaison Officer/NPO in their country may send nominations to the APO Secretariat. This should eliminate the mistake of various government/public institutions making nominations directly to the APO Secretariat.

#### Required Documents

- (d) Each nomination should be accompanied by the documents listed below. A nomination lacking any of these documents may not be considered:
  - i) Two copies of the candidate's biodata on the **APO biodata form** together with passport-sized photograph. The biodata form can be downloaded from the APO website. Downloading information is also available from [www.apo-tokyo.org](http://www.apo-tokyo.org). We encourage submitting the biodata form to the APO Secretariat in electronic form as an attachment to a cover e-mail message from the APO Director, Alternate Director, or Liaison Officer. The nomination documents should be sent to the **Agriculture Department**, APO Secretariat (e-mail: [agr@apo-tokyo.org](mailto:agr@apo-tokyo.org), fax: 81-3-5226-3954).
  - ii) **The APO Medical and Insurance Declaration/Certification Form.** Every candidate must complete and submit a copy of the APO Medical and Insurance Declaration/Certification Form with his/her biodata at the time of nomination. Please note that self-declaration is sufficient for candidates without any of health conditions or illnesses enumerated on the reverse side of the medical form. However, for all others, medical certification by a recognized physician on the reverse side of the medical form is required.
- (e) For reasons of expediency or because of time constraints due to approaching nomination deadlines, participating countries sometimes send their candidates' biodata forms and medical certificates by fax to the APO Secretariat. While this action is very much appreciated, participating countries are requested to mail the originals of the documents to the APO Secretariat as well. They are needed for making clear, clean copies for the host country, especially with regard to the candidates' photos. If the documents are submitted electronically as mentioned in d)-i), there is no need to send the original by postal mail. If a digital photograph of a nominee is not attached to the electronic biodata form, a hard-copy photograph should be sent to the APO Secretariat by postal mail. Please specify the candidate's name and the project code on the reverse side of the photograph.

#### Nomination Deadline

- (f) Member countries are requested to abide by the ***nomination deadline of 8 June 2012***. The APO Secretariat may not consider late nominations as they have in the past resulted in considerable difficulties to the implementing organization in its preparatory work for the project.
- (g) For member countries where nominations are required to be approved by higher government authorities and hence require a longer time, APO Liaison Officers/NPOs

are urged to send the names of nominees on or before the deadline, indicating that government approval will follow.

Others

- (h) Should some candidates fail to qualify or be unable to participate after selection, or should some member countries fail to nominate any candidate, their slots may be filled by alternates from the same or another member country on a merit basis.
- (i) Member countries are requested to inform the selected participants that they are not to bring family members or to engage in any private business activities during the entire duration of the project. Further, if they become unable to attend the project, they should be requested to inform the APO promptly of their inability to participate and the reason for last-minute withdrawal through the APO Liaison Officer/NPO in member countries.
- (j) Each selected candidate is required to arrive at the venue one day before the start of the official project. Also, all candidates are expected to return home upon completion of the official project because they are visiting the host country for the specific purpose of attending this APO project.

**15. Country Case Study Preparation**

The participants are required to prepare a country case study prior to departure for the project venue for presentation during the workshop. In preparing the papers, they are expected to follow the "Guidelines for Preparation of Country Case Studies" to be provided later.

**16. Other Conditions**

Other conditions for participation are given in the *APO Guide for Participants*, which is available from APO Liaison Officers/NPOs in member countries and on the APO homepage (URL: [www.apo-tokyo.org](http://www.apo-tokyo.org)) and will also be sent to the selected participants.



Ryuichiro Yamazaki  
Secretary-General

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## PROJECT NOTIFICATION ADDENDUM

5 July 2012

1. **Project Code:** 12-AG-23-GE-WSP-B
2. **Project Title:** Workshop on Nanotechnology Applications for Boosting Agricultural Productivity
3. **Duration:** 3–7 September 2012 (five days)
4. **Venue:** Republic of China
5. **Addendum No.** 1
6. **Reference:** APO Project Notification 12-AG-23-GE-WSP-B dated 26 April 2012

7. **Details:**

7.1 Change in Item No. 4 “Venue”


The project venue will be **Yilan City**, Republic of China.

7.2 Change in Item No. 5 “Implementing Organization”

The following organization has been added to the list of implementing organizations:

National Ilan University  
1, Sec. 1, Shen-Lung Road, I-Lan, 260, Taiwan, Republic of China  
Phone: 886-3-935-7400  
Fax: 886-3-933-4290  
Website: <http://www.niu.edu.tw/private/En/index.html>

Unless otherwise modified by the APO in writing, the other provisions of the Project Notification dated 26 April 2012 remain valid.



Ryuichiro Yamazaki  
Secretary-General