



International Symposium on Managing Soils for Food Security and Climate Change Adaptation and Mitigation

23-26 July 2012

Vienna, Austria

Announcement and Call for Papers

A. Introduction

Agriculture is important for food security in two ways: it produces the food people eat; and it provides the primary source of livelihood for 36% of the world's total workforce. In the heavily populated countries of Asia and the Pacific, this share ranges from 40-50% and in sub-Saharan Africa, 67% of the working population still make their living from agriculture. The focus of this symposium is to highlight the importance of soil management in enhancing food security within the context of climate change. Climate change can impact directly on food security through food system stability.

Agriculture can adapt to climate change by adopting farm management practices that minimise the adverse effects of increasing or decreasing rainfall and temperatures or other extreme weather conditions. Many management-level adaptation options are available to attenuate the effects of climate change on crop production, including zero tillage, retaining crop residues, extending fallows, increasing the diversity of production, altering amounts and timing of external inputs (fertilizers, water), as well as broader agronomic management strategies (e.g. altering planting density, row spacing, planting time; introducing new germplasm resistant to heat or drought stress).

Agriculture can contribute to climate change mitigation through farm management practices that reduce greenhouse gas emissions (carbon dioxide, nitrous oxide, methane) and enhance soil carbon sequestration. Emissions of carbon dioxide can be reduced through reduced biomass burning and more efficient energy use. Emissions of methane can be reduced through improved farm management practices that include improved management of livestock waste and water in rice paddies. Nitrous

oxide emissions can be reduced through improved management of N fertilizers including appropriate type, rate and method of application and soil management (avoidance of soil compaction).

Various farm management practices can enhance soil carbon stocks and encourage soil functional stability. Conservation agriculture technologies (minimum soil disturbance, cover crops and crop rotations including legumes), soil conservation measures (e.g. contour farming) and nutrient replenishment strategies can restore soil organic matter by providing a protective soil cover and an environment conducive to vigorous plant growth. In some cases, however, a change in the agricultural production system may be required. e.g. continuous cereal cropping being replaced by ley farming or by the introduction of agroforestry systems.

Significant advances have been made in recent years in our understanding of soil carbon sequestration, soil nutrient transformation as influenced by different fertilizers and cropping-land use systems, and soil water storage and movement in agro-ecosystems. Nuclear techniques, especially stable isotope tracers, have played a unique role in generating new knowledge and quantitative data on key processes in integrated crop and livestock systems. A few examples are the use of ^{15}N to quantify legume biological N_2 fixation and N fertilizer use efficiency; ^{13}C to measure soil carbon sequestration, to identify erosion hotspots using compound specific markers, and to select crop cultivars resistant to drought and salinity stress; ^2H and ^{18}O to identify sources of water used by plants and to partition evaporation and transpiration. This new information is being used to improve farm management practices to increase productivity, on-farm and area-wide ecosystem service efficiency and to protect the soil resource from erosion. Hand-in-hand with these developments has been major advances in instrumentation and methodologies for measuring stable isotope tracers in real time in the field.

The objective of this International Symposium is to communicate these exciting scientific and technological developments, to identify current gaps in knowledge and to discuss ways in which soils can be better managed to meet the challenge of protecting food security through the dual approach of climate change adaptation and mitigation.

B. List of Topics

Topics (Themes) with sub-themes to be addressed at the symposium:

- Managing soils for increased productivity and on-farm and area-wide ecosystem service efficiency;
- Managing nutrient resources for increased efficiency;
 - External input management
 - Internal recycling of crop residues and agricultural wastes
- Preserving and protecting soil resources;
 - Assessment and control of soil degradation and on-farm and off-farm soil and nutrient losses
 - Remediation and restoration of degraded soils in agricultural landscapes
- Managing soils for climate change adaptation;
- Managing soils for climate change mitigation;
 - Enhancing soil carbon stocks (C sequestration)
 - Reducing greenhouse gas emissions
- Applications of isotopic tracers for measuring soil organic matter, nutrient and water dynamics in agro-ecosystems (identifying sources and sinks and quantifying fluxes), including agroforestry, conservation agriculture, integrated cropping-livestock enterprises and food-biofuel production systems;

- Advances in the development of nuclear-based instrumental and analytical techniques for application in soil management research.

C. Target Audience

The global community of people concerned or related to soils, their management and respective policies such as:

- Scientists from developing and developed countries;
- Policy makers – governmental and international organizations;
- Donor agencies – international, regional or national organizations, foundations and trusts;
- Potential partners at the international, regional or national level.

D. Programme Structure

- Opening statements;
- Keynote speakers;
- Contributed papers (oral and poster presentations) for different topics/themes;
- General discussion Session at the end of each major topic/theme;
- Rapporteurs' summaries for all major topics/themes.

E. Extended Synopses and Papers

Concise papers on issues falling within the topics outlined in Section B above may be submitted as contributions to the symposium.

E.1. Submission of extended synopses

Persons who wish to present a paper or poster at the symposium must submit an extended synopsis of two A4 format pages of single spaced typing, including any tables or diagrams and a few pertinent references, on one of the topics listed under Section B. The extended synopsis should be submitted together with the completed Form for Submission of a Paper/Poster (Form B), and the Participation Form (Form A) to the competent national authority (see Section M. Channels of Communication) for official transmission to the IAEA in time for them to be received by **15 November 2011**. In addition, the synopsis must be sent electronically to the IAEA scientific secretariat, email: SWMCN-Symposium2012@iaea.org

Authors are urged to make use of the Synopsis Template in Word format on the symposium web page (Section P). The specifications and instructions for preparing the synopsis and how to use the synopsis template are given in the attached instructions. Also attached is a sample extended synopsis.

The synopsis should give enough information on the contents of the proposed paper to enable the selection committee to evaluate it. Introductory and general matters should not be included. The synopsis — if accepted — will be reproduced in the Book of Extended Synopses; the original must therefore be submitted as a camera-ready copy.

E.2. Acceptance of Papers for Oral and Poster Presentation

Given the number of papers anticipated and the need to provide ample time for discussion, the number of papers that can be accepted for oral presentation is limited. Authors who would prefer to present their papers in a poster session are requested to indicate this preference on Form A with which they send the extended synopsis.

Authors will be informed by **mid-February 2012** whether their papers/posters have been accepted for oral or poster presentation on the basis of the extended synopsis. Guidelines for the preparation of the papers and the deadlines for their submission will be provided at that time.

The IAEA reserves the right to decline to present or publish any paper that does not meet expectations based on the information in the extended synopsis.

E.3. Symposium proceedings

The proceedings of the meeting will be published by the IAEA as soon as possible after the symposium.

F. Participation

All persons wishing to participate in the symposium are requested to register online in advance. In addition, they must send a completed Participation Form (Form A), the Paper Submission Form (Form B) (if applicable), and the Grant Application Form (Form C) (if applicable) as soon as possible to the competent official authority (Section M) for subsequent transmission to the IAEA.

A participant will be accepted only if the Participation Form is transmitted through the government of a Member State of FAO or IAEA or by an organization invited to participate.

Participants whose official designations have been received by the IAEA will receive further information on the symposium at least three months before the meeting. This information will also be available on the symposium website (Section P).

G. Expenditures

No registration fee is charged to participants.

The IAEA is generally not in a position to bear the travel and other costs of designated participants to the symposium. The IAEA has, however, limited funds at its disposal to help meet the cost of attendance of selected specialists from its Member States eligible to receive technical assistance under the IAEA's technical cooperation programme. Such assistance may be offered, upon specific request, provided that in the IAEA's view the participant will make an important contribution to the meeting. In general, not more than one grant will be awarded to any one country.

If governments wish to apply for a grant on behalf of one of their specialists, they should address specific requests to the IAEA to this effect. Governments should ensure that applications for grants are:

Submitted by **15 November 2011**;

Accompanied by a duly completed and signed Grant Application Form (Form C);

Accompanied by a completed Participation Form (Form A).

Applications that do not comply with the above conditions cannot be considered.

Approved grants will be issued in the form of a lump sum payment that usually covers **only part of the cost of attendance**.

H. Distribution of Documents

A preliminary programme of the symposium will be sent to participants in advance. The final programme and the book of extended synopses will be available free of charge upon registration at the symposium.

I. Exhibitions

Limited space will be available for commercial vendors' displays/exhibits during the symposium. Interested parties should send an email to: SWMCN-Symposium2012@iaea.org.

J. Working Language

The working language of the symposium will be English.

K. Accommodation

Detailed information on accommodation and other administrative details will be available on the symposium website well in advance of the symposium.

L. Visa

Designated participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria at least 4 weeks before entry into Austria. Please note that Austria is a Schengen State and therefore persons who require a visa will have to apply for a Schengen visa. In States where Austria has no diplomatic mission, visas can be obtained from the consular authority of a Schengen Partner State representing Austria in the country in question.

M. Channels of Communication

The Participation Form and as applicable, the Form for Submission of a Paper/Poster, and the Grant Application Form, should be sent to one of the competent national authorities for official transmission to the IAEA.- The authorities include:

- Ministry of Foreign Affairs;
- Ministry of Agriculture
- National FAO Committee (FAO County Representative, FAO Regional or Sub-regional Office);
- The National Atomic Energy Authority

N. Key Deadlines

Submission of Form B and extended synopses:	15 November 2011
Submission of Form C:	15 November 2011
Notification of acceptance of synopsis:	mid-February 2012
Submission of full paper (only upon request by the IAEA):	mid-May 2012

O. Symposium Secretariat

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Subsequent correspondence on scientific matters should be sent to the Scientific Secretary and correspondence on administrative matters to the IAEA Symposium Services Section.

P. Symposium web page

Please visit the IAEA symposium web page regularly for new information regarding this symposium:

<http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=41176>