LOCAL ORGANIZING COMMITTEE
(LOC)

Conference Concept Note

20th March 2011
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1. Overview of the Conference

Eduardo Mondlane University is hosting, from 10th to 13th of October 2011, in Maputo, Mozambique, the 10th African Crop Science Society Conference. This is the biennial conference of The African Crop Science Society (ACSS), an organization established by African agricultural researchers to encourage crop production and food security in the Africa continent. It is expected that more than 500 scientists, producers and other stakeholders involved along the commodities chains of the most important crops in Africa will attend this Conference.

The overall goal of the conference is to facilitate active exchange of information among scientists and other stakeholders, on crop science research and technology innovation aimed at providing for new and improved livelihood opportunities for farmers in Africa, which will impact on their income generation and food security.

The theme of the Conference “From Soil to Soul – Crop production for improved African livelihoods and a better environment for future generations” expresses the broad range of issues that the Conference will focus on, from crop scientific knowledge and technology development for increased productivity to technology adoption and commodity value chain approaches, environment management and change risks and adaptation strategies. All those issues are crucial and need to be integrated and considered in crop research and development to reach increased farmers’ income and contribute to the well being of farmers and their families in the present and for the future.

To accomplish this goal the Conference will facilitate learning, dynamic and interactive environment where opportunities will be created to share research results as well as for discussions, sharing of experiences and drawing of proposals and recommendations on common issues and problems in Africa crop production.

The conference will consist of a four-day program of events (Figure 1), which will include:

a) A keynote address by Prof. Monty Jones, FARA director and 2004 World Food Prize co-winner for his discovery of the genetic process to create the New Rice for Africa (NERICA) that has increased rice production all over Africa. The keynote address will set the tone of this Conference, from a successful experience of the impact of research and technology development on farmers’ lives and well being to the opportunities and challenges of the green revolution in Africa.

b) Several scientific and technical thematic oral paper presentations and poster parallel sessions, where all scientists are invited to present their research results (oral paper presentations and posters will be selected by Conference Scientific Committee). Thematic areas will include: agronomy, crop physiology and cropping systems, horticulture, crop genetics and improvement, crop protection, post harvest and food sciences, biotechnology, integrated crop and livestock systems, soil and water management, agricultural extension and education, agricultural economics and environmental management and climate change in agriculture.

c) Two symposia where experts will be invited to present their insights followed by a general discussion in a plenary session. Themes of the symposia include: (1) Impacts and adaptation to climate change in African agriculture and (2) Linking crop science research to policy, practice and people

d) Several workshops where interested participants will be involved in learning from different experiences reaching something in particular such as a proposal, plan of action, recommendations on a common issue/concern. Workshops themes include:
Workshop # 1 – Research advances in seed health: contributing to robust seed systems of main staple foods in Africa

Workshop # 2 – Advances in the research, utilization and commercialization of neglected and underutilized species: a new push to bring them to the center stage

Workshop # 3 – Management of invasive pests: lessons from the recent accidental introduction of fruit flies in Africa

Workshop # 4 – The livestock revolution: how policies can enhance the sustainability of mixed crop-livestock systems

Workshop # 5 – Advancing research on weed science research in Africa

Workshop # 6 – Responding to the demand for high value commodities in fast growing urban areas in Africa: opportunities and challenges for urban and peri-urban agriculture

Workshop # 7 – Women in agriculture: strategies for promoting empowerment of rural women

Workshop # 8 – Biomass and energy agriculture: opportunities and challenges for African agriculture

Workshop # 9 – Positioning Nematology in Africa – Now and the Future

Workshop # 10 – Pesticidal plants

e) Short courses will be accommodated upon request

f) Exhibitors will be accommodated and organized upon request

g) Field visits to crop production areas in the vicinity of Maputo city

h) Cultural and social events

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**Conference Tentative Program**

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Day 2</th>
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| **Morning 1**<br>8:30 – 10:30 | **Opening session**<br>**Keynote address** | **Symposium I**<br>**Oral papers III**<br>**Workshop parallel session III**<br>**Oral papers IV**<br>**Workshop parallel session II**<br>**Oral papers V**<br>**Workshop parallel session III**<br>**Oral papers VI** | **Field visits**<br>**Closing session**<br>**ACSS General Assembly**
| **Morning 2**<br>11:00 – 13:00 | **Oral paper presentations I**<br>**Exhibition opening** | **Oral paper presentations II**<br>**Poster session II**<br>**Maputo city tour** | **Symposium II**<br>**Oral papers**
| **Afternoon 1**<br>14:00 – 16:00 | **Poster session I**<br>**Oral paper presentations II**<br>**Maputo by night**<br>**Cultural Gala**<br>**Dinner Gala** | | |
| **Afternoon 2**<br>16:30 – 17:30 | | | |
| **Evening** | | | |

**Figure 1.** ACCS Conference 2011 Tentative Program
2. Symposium # 1 - Impact and adaptation to Climate Change in Agriculture

2.1. Importance and objectives of symposium

Global warming is projected to have significant impacts on conditions affecting agriculture, including temperature, carbon dioxide, precipitation and the interaction of elements. In its Fourth Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) indicates that climate change will have considerable impact on crop production and water management systems in coming decades. On the other hand, agriculture has been shown to produce significant effects on climate change, primarily through the production and release of greenhouse gases (carbon dioxide, methane and nitrous oxide), but also by altering the Earth's land cover. Thus a critical analysis of the effects of global climate changes on agriculture might help to properly anticipate and adapt farming to maximize agriculture production.

Climate change will superimpose itself by modifying and increasing future risk and vulnerability of crop production in terms of water supply and its availability in so called “critical regions”. These regions include the developing countries which rely on agriculture and are vulnerable to climate change. Addressing climate change in agriculture is an integrative issue. In fact, dealing with climate change in agriculture means not only adjusting agronomic techniques, but also the look into the value chain of the main products, agro-processing techniques and alternative and diverse farming systems.

The symposium on Impact and Adaptation to Climate Change in Agriculture intends to provide a platform of experts to discuss and share the on-going research results and challenges in this field. It will address the different angles of climate change in agriculture such as: the interactive feedback of agriculture and climate change, the importance of alternative livelihood systems to deal with uncertainty in agriculture, challenges of dealing with risky and uncertain conditions, ways of adapting and mitigating the effects of climate change to agriculture, capacity building of smallholder farmers to deal with new challenges and improving ways of monitoring environmental changes to agricultural systems.

2.2. Organization of the symposium

The session will have a keynote speaker giving a 20 minutes presentation about the interaction between climate change and agriculture (issues, trends, challenges and predicted modifications/risks). Then three respondents to the key note speaker will address:

1. Challenges of dealing with uncertainty/risk in developing countries.
2. Challenges of adaptation and mitigation to climate change (capacity building included).
3. Turn policy into practice: achieving an adequate response to climate change at all levels.

2.3. Outputs of the symposium

1. Identification of risks and uncertainties to deal with climate change and ways of cope with those in Africa.
2. Discussion of strategic ways of putting policy into practiced.
3. Share experiences and perspectives about adaptation and mitigation.
4. Define strategic approaches to identify and implement mitigation and adaptation measures for different situations in Africa.
3. Symposium # 2 – Linking crop science research to policy, practice and people

3.1. Importance

Crop science research plays a critical role in shaping global and national policies as well as in informing the livelihoods of people at local levels around the world. On one hand, crop science research provides knowledge and best practices to increase agrarian production and productivity, while on the other, it informs key decision makers and producers on how to attain a sustainable production. Policy makers and producers on their turn shape the research agenda through financing policies and practices or, in case of producers, by dictating what is of their best interest for research. A smooth and well coordinated link between these different actors allows agrarian markets stability, social order and the development of nations. It is mainly though a well conceived link between those actors that most of the Millennium Development Goals, with particular focus on 1 and 7, can be attained.

Recent trends on food shortages, increases in food prices, instability in agrarian markets and the overall findings that most of the poor countries in Africa are unlike to achieve the Millennium Development Goals related to crop science, reveals that the link between crop science research, policy makers and producers needs to be critically re-addressed. The 10th Conference of the African Crop Science Society (ACSS) to be held in Maputo offers a good ground to discuss the issue. The aim of the symposium is, then, to discuss issues hampering the link and to address ways forward to improve the interconnection between those actors. By bringing together actors from those different areas, the conference in general and the symposium in particular, provide a platform for a deep interaction and analysis of the strengths, weaknesses and challenges of the current linkages.

3.2. Organization of the symposium

The symposium will involve two keynote speakers, each of them providing 15 minutes presentation on the issue. The keynote speakers should, preferably, have academic and policy making experience. Following the presentation, there will be an open flow for discussions involving invited guests from the three domains: producers, policy makers and academics that will be requested to comment, question and share their experience on the topic. A moderator might also open the flow for the remaining audience. Of particular interest, the presentations and discussions should address the following questions:

1. How the current linkage is organized and operates?
2. What have we, so far, achieved from that linkage?
3. What are the strengths, weaknesses and challenges of the current set up?
4. Can we devise a more proactive and strong link between the actors involved? If so,
5. What are the (re)new tasks to be performed by crop science researchers, policy makers and producers?

3.3. Outputs of the symposium

From the symposium the following outcomes will expected:

1. An understanding of the current stage of the interaction between crop science research, policy makers and producers;
2. Identification of the milestone hampering a smooth and strong interaction between those actors;
3. Indication of good practices around Africa and the world on the link;
4. Clear recommendations and new or innovative approaches addressing the linkages between the actors.
4. Workshops

4.1. Workshop # 1 – Research advances on Seed health: contributing to robust seed systems of main staple food in Africa

Importance

The use of healthy and improved seed is a key factor to increase of crop productivity and food security in Africa. However, most farmers in Africa depend mainly on their own seed for planting and have no access to good quality seed of high yielding varieties, either because of the high price of available improved seed or the limited range of cultivars and varieties produced by the seed system, which not always meet the needs of the farmers.

Several initiatives and programs in most African countries are being implemented to increase capacity to develop varieties that meet farmers’ needs, produce and make available good quality seed, acting across the seed value chain. These initiatives are resulting in an increase in commercial seed production companies, seed marketing systems and increased use of improved seeds by small scale farmers across the continent. However, these advances and the sustainability in good quality seed in many African countries are threatened by pests and diseases. These pests and diseases continue to be a major threat to crop production and seed marketing in many countries in Africa.

Seed health is a key aspect in the seed production chain and not enough efforts in education, research and development of quality control systems is being made, in the African continent, to address problems such as inefficient seed quality assurance and regulatory systems and the limited trained manpower and facilities for seed health testing. Also, different African countries have different seed regulatory systems that constrain regional disease management approaches and create barriers for seed trade among the countries. The 10th African Crop Science Society Conference offers a unique opportunity for scientists and stakeholders in the seed production value chain from different African countries to exchange views, research results, experiences and regulations on how to improve seed health across the seed production value chain to achieve maximum potential yield.

Objectives

The general objective of the workshop is to draw attention to and discuss common seed health issues in the context of the seed production value chain. Specifically the workshop is designed to:

1. Share recent research results on management, diagnostic tools and seed health testing methods of important seed-borne and seed transmitted diseases of most important staple foods in Africa;
2. Share regulatory mechanisms in place in different countries and their impacts on seed health and production, marketing and availability of good quality seed;
3. Discuss the constraints to ensure healthy seeds and recommend possible solutions.

Outputs

1. Published papers in proceedings (innovative and relevant research results) available to all conference participants and wide audience in Africa and the world;
2. Constraints identified and recommendations produced to address problems of seed health across the seed value chain.

Workshop format

The workshop will be a ½ day event and will include two sessions:
1. An initial session devoted to presentations on 3 topics (1) innovative management of most common pest or seed-borne diseases, (2) New and improved diagnosis tools for seed-borne diseases, (3) Seed health regulatory systems, quarantine and certification.

2. A final panel session dedicated to the discussion of current constraints and problems and to the drawing of recommendations and future evolutions.

Participants in the workshop are invited to submit abstracts, related to the objectives of the workshop, to the organizer of the workshop with 300-400 words (please, see the instructions to the authors for the 10th African Crop Science Conference). Abstracts will be internally reviewed by the workshop organizers and a scientific committee for quality and appropriateness. All interested participants are invited to attend, but there will be specific registration, during the conference preparation.

4.2. Workshop # 2 - Advances in the research, utilization and commercialization of neglected and underutilized species: a new push to bring them to the center stage

**Importance**

In recent times Neglected and Underutilized Species (NUS) have been subject of lively debates due to the realization of the role that they can play in the livelihoods of the African families, beyond the subsistence. In the course of the history of the humankind the NUS have been used for multiple purposes, such as food, medicine and as ornamentals. However, the visibility of this species is still low so little of their potential has been realized. There are still hurdles to be overcome, such as harmonization of criteria to define neglected or underutilized species, prioritization of research activities with regard to domestication, production, processing and commercialization in order to raise the relevance and visibility of these species.

Recently a seminar was held in Nairobi, Kenya, where participating countries from Eastern and Southern Africa reviewed the status of the research and development of the NUS. Participants drafted working plans and pledged to push for more comprehensive work on NUS.

In this workshop participants agreed to use major events to build awareness on the opportunities that the NUS offer to the researchers, development agents, businesses and the farming communities. The 10th African Crop Science Society Conference offers a unique opportunity for scientists to exchange views and to highlight the unrealized potential of NUS in agreement with the core of conference theme. Participants can also use this event to build/enlarge partnerships among scientists interested on the subject.

**Objectives**

The general objective of the workshop is to raise the profile of the NUS in the context of agriculture and livelihoods. Specifically the workshop is designed to:

1. Harmonize terminology and research procedures on NUS;
2. Allow scientists to share recent research results on domestication, production, processing and utilization of NUS;
3. Discuss the constraints to the development of NUS and recommend possible solutions.

**Outputs**

1. List of harmonized terminology and research procedures on NUS;
2. Published papers in proceedings (innovative and relevant research results) available to all conference participants and wide audience in Africa and the world;

3. Constraints identified and recommendations produced to foster development of NUS.

**Workshop format**

The workshop will be a ½ day event and will include two sessions:

1. An initial session devoted to presentations; leading scientists in the field of NUS are invited to submit papers on one of the following areas: (1) domestication, (2) production, (3) processing and (4) utilization.

2. A final panel session dedicated to discussion of current constraints and problems and the drawing of recommendations and future evolutions.

Participants in the workshop are invited to submit abstracts, related to the objectives of the workshop, to the organizer of the workshop with 300-400 words (please, see the instructions to the authors for the 10th African Crop Science Conference). Abstracts will be internally reviewed by the workshop organizers and a scientific committee for quality and appropriateness. All interested participants are invited to attend, but there will be specific registration, during the conference preparation.

### 4.3. Workshop # 3 – Management of invasive pests: lessons from the recent accidental introduction of fruit flies in Africa

**Importance**

Invasion of native habitats by non-native species (plants, arthropods, pathogens) is an important factor in agriculture and food. Many introduced species have caused extensive damage to natural resources in both natural and cultivated ecosystems.

Since 1881, biological control (the use of living organisms to control herbivores) has been considered one of the potential strategies used to control introduced pests (plants, arthropods, pathogens). Properly conducted biological control works because it uses carefully selected and tested natural enemies (insects, mites, or pathogens) of the target pest species. The strategies rely on detailed knowledge of the ecology, the life cycles, and the food chains in each system, developing highly target-specific control strategies that leave the non-target plants, insects, or other animals unharmed.

Most of the invasive species are not problematic in their area of origin. However, once in the area of invasion, free of their natural enemies that naturally limit their population growth, they can establish and spread rapidly, causing enormous losses to crops and the environment. By introducing the pest’s natural enemies from the pest’s home region the natural enemies can control the pest’s population growth and reduce their impact on crop losses (Classical Biological Control).

Classical biological control is recognized as one of the potential strategies for the control of established invasive pest species, as it has the capacity to control pests over wide areas with little economic cost once a successful program has been implemented. In Africa, biological control is viewed as a potential strategy for the control of agricultural pests, since most farmers work on very small plots and have little cash income. Thus, the use of chemical control is little or null. Thus, there is a need to develop systems that are sustainable, affordable, and easy to use or maintain.

Recent cases of accidentally introduced fruit flies (Diptera, Tephritidae) in several African countries have been causing considerable losses in commercial and wild fruits and
vegetables production, affecting farmers' income and food security. So far, four Asian species belonging to the genus *Bactrocera* invaded Africa. Two of these were introduced in recent years and the risk for other introductions is great. There is, therefore, an urgent need to draw lessons from these recent cases, discussing research and development constraints to biological control as well as the need to strengthening of the human and physical quarantine and monitoring infrastructures in Africa, in order to avoid any further unwanted introductions.

**Objectives**

The main goal of the workshop is to bring together leading specialists to discuss critical issues of invasive pests including biological control approaches and issues that policy makers, regulatory and pest risk assessment specialists, and others face in avoiding and reducing invasive pest population impact.

This session will allow discussions critical factors and ways forward on issues related to the scientific and decision making processes to strengthen quarantine, monitoring and biological control actions and associated decision-making processes in Africa.

**Outputs**

1. Published papers in proceedings regarding management of invasive fruit fly species available to all conference participants and wide audience in Africa and the world;

2. Discussions conducted on how the past and current scientific knowledge, methodological approaches can improve future predictive ability and decision making for invasive species management;

3. Discussions on the ways to strengthen quarantine and monitoring systems in Africa.

**Workshop format**

The workshop will be a ½ day event and will include two sessions:

1. An initial session devoted to presentations; leading scientists in this are invited to submit papers on one of the following areas: (1) pest management, (2) pest risk assessment, (3) regulatory, quarantine and monitoring measures to prevent invasive species introduction.

2. A final panel session dedicated to discussion of current constraints and problems and to the drawing of recommendations and future developments.

Participants in the workshop are invited to submit abstracts, related to the objectives of the workshop, to the organizer of the workshop with 300-400 words (please, see the instructions to the authors for the 10th African Crop Science Conference). Abstracts will be internally reviewed by the workshop organizers and a scientific committee for quality and appropriateness. All interested participants are invited to attend, but there will be specific registration, during the conference preparation.

4.4. Workshop # 4 – The Livestock Revolution: how policies can enhance the sustainability of mixed crop-livestock systems

**Importance**

Demand for meat and milk will more than double over the next two decades in developing countries. Population growth, urbanization, and income growth in developing countries are fueling a massive global increase in demand for food of animal origin. The resulting demand comes from changes in the diets of billions of people and could provide income growth opportunities for many rural poor.
Unlike the supply-led Green Revolution, a Livestock Revolution is taking place, which is driven by demand; hence the challenge for developing countries is to ensure that poor producers benefited from the expected dramatic increase in demand for livestock products and its resultant rise in farm income (Delgado et al. 1999). The Livestock Revolution will stretch the capacity of existing production and distribution systems and exacerbate environmental and public health problems. Governments and industry must prepare for this continuing transformation with long run policies and investments that will satisfy consumer demand, improve nutrition, direct income growth opportunities to those who need them most, and alleviate environmental and public health stress.

As much of the increase in livestock production is expected to come from developing countries, mixed production systems will play an increasing role (Staal et al. 2001). However, there could be some aspects of environmental harm caused by livestock which will not easily be managed, without reducing production levels. Appropriate measures to capture the potential benefit of livestock to the environment and natural resources base, will depend on promoting the role of integrated crop-livestock production. Any shift to intensification in the production systems will also involve a greater crop-livestock interactions and integration is emerging as a promising strategy for improving agricultural production and productivity in much of the Sub Saharan Africa.

**Objectives**

- Present the context and promote a common understanding of the Livestock Revolution
- Discuss the inter-relationships over time between supply and demand for livestock and animal products in the context of the Livestock Revolution;
- Put together crop and animal scientists to discuss the challenges for multidisciplinary research to influence the development of policies required to ensure that smallholders benefit from the increased demand for livestock products;
- Discuss how to improve greater crop-livestock interactions and integration for production systems intensification in an environment where land may become a limited resource for both crop and livestock extensive farming.

**Outputs**

- The concept and context of the Livestock Revolution internalized and understood by the participants;
- Identified actions to enhance policy formulation for promoting sustainable mixed crop-livestock systems;
- Key research needs/areas to support a successful Livestock Revolution and greater production and productivity in intensified mixed farming systems identified.

**Workshop format**

The workshop will consist on two main presentations of 20 minutes each followed by an interactive discussion among a panel and the participants. The two presentations will be about the trends of livestock production and demand for animal products, its implications for livestock development global strategies (the context of the Livestock revolution). The second presentation will follow, based on the challenges and main results from research on successful integrated crop-livestock systems. A facilitator will lead a panel formed to challenge the speakers/presenters and the audience in key points for discussion.
4.5. Workshop # 5 – Advancing research on weed science in Africa

**Importance**

Weeds are major biological constraints to many crops in Africa. In subsistence agriculture (by far the largest portion of land under agricultural production in Africa) weeding is mostly carried out by hand and this consumes a lot of time and energy and consequently weighs heavily on farmer households. Efficient and socially/economically acceptable weed management technologies are scarcely available to those subsistence farmers. Despite the fact that weeds often form the number one constraint in agricultural production in Africa, the continent has very few weed scientists that also lack an efficient platform and network to exchange ideas and research results and to organize/fund the necessary training for more professionals in this field of expertise. We believe that such platforms for exchange (e.g. workshops, conferences and a weed science network) would improve the efficiency and speed of finding solid and acceptable solutions to weed problems that farmers in Africa are currently facing. The current workshop would be a good first opportunity, not only to meet and exchange but also to discuss the establishment of an, currently non-existent, African Weed Science Society.

**Objectives**

Exchanging ideas and research results, establishing contacts and synergies, discussing/establishing/creating a pan-African Weed Science Society.

**Outputs**

1. Useful, high-quality papers presenting the latest insights in the field of weed science with relevance to Africa.
2. A viable African Weed Science Society

**Workshop format**

Standard sessions with one or two keynote speakers, about 10-20 oral papers and up to 50 posters. Enough time to discuss all aspects of the proposed African Weed Science Society.

Participants in the workshop are invited to submit abstracts, related to the objectives of the workshop, to the organizer of the workshop with 300-400 words (please, see the instructions to the authors for the 10th African Crop Science Conference). Abstracts will be internally reviewed by the workshop organizers and a scientific committee for quality and appropriateness. All interested participants are invited to attend, but there will be specific registration, during the conference preparation.

4.6. Workshop # 6 – Responding to the demand for high value perishable commodities in fast growing urban areas in Africa: opportunities and challenges for urban and peri-urban agriculture

**Importance**

Urban and peri-urban agriculture (UPA) is rapidly growing in Africa, corresponding to the rapidly increasing of urban population (it is projected that urban population will be more than double by 2030). UPA is becoming an important contributor to urban poverty alleviation, providing major benefits and contributing to the development of sustainable cities. It provides good access to food and a source of income and good-quality food at low cost. In most UPA areas, most commonly cultivated crops are vegetables (cabbage, lettuce, carrots, etc.) and fruits that are consumed on a daily basis. Poultry is also an important activity in urban and peri-urban settings.
Although the rapid growth and successes stories of UPA in Africa, several constraints are faced by most countries and cities including: land tenure arrangements, water management and contamination of water sources, pests and diseases, extension and marketing systems and infra-structures. Advancing UPA in Africa will require state sanctioned interventions, including the development of enabling policies, programs and relevant institutional structures.

The 10th African Crop Science Society Conference offers a unique opportunity for scientists and stakeholders from different African countries to exchange research results, information and experiences in solving common problems faced in UPA agriculture.

**Objectives**

The main goal of the workshop is to bring together leading specialists to present current research and discuss and draw recommendations on critical issues regarding the sustainable development of urban and peri-urban agriculture including crop, water and soil management, pest and disease integrated management, policies and infrastructure development.

**Outputs**

1. Published papers in proceedings regarding current and most relevant research on urban and peri-urban agriculture in Africa;
2. Discussions and recommendations regarding main constraints to UPA development.

**Workshop format**

The workshop will be a ½ day event and will include two sessions:

1. An initial session devoted to presentations; leading scientists in this are invited to submit papers on one of the following 4 areas: (1) soil and water management, (2) pest and disease integrated management, (3) marketing, and (4) enabling policies and government interventions.
2. A final panel session dedicated to discussion of current constraints and problems and to the drawing of recommendations and way forward.

Participants in the workshop are invited to submit abstracts, related to the objectives of the workshop, to the organizer of the workshop with 300-400 words (please, see the instructions to the authors for the 10th African Crop Science Conference). Abstracts will be internally reviewed by the workshop organizers and a scientific committee for quality and appropriateness. All interested participants are invited to attend, but there will be specific registration, during the conference preparation.

4.7. Workshop # 7 - Women in Agriculture: strategies for promoting the empowerment of rural women

**Importance**

Women are an integral part of farming households. On a global basis, nearly one-half of all farmers are women, and in most rural areas women carry out many specialized production activities, including, planting, weeding, post harvest handling and managing small animals (World Bank, 2004). In many developing countries, women bear most responsibility for household food security, and contribute to household well-being through their income-generating activities. Furthermore, Millennium Development Goals (MDGs) foresee gender equality. Yet, women's essential role in agriculture-led poverty reduction strategies and food security is still not recognized. Usually, women have more limited access to resources and opportunities, and their productivity remains low relative to their potential.
Analysis on gender differences in agricultural productivity points to the importance of empowering women; by increasing their human capital and by improving their access to, as well as the ownership of land and other physical and financial inputs.

**Objectives**

The general objective of the workshop is to provide a platform to discuss strategies for promoting the empowerment of rural women in agriculture

**Outputs**

1. Published papers in proceedings on success stories on gender equality and empowerment of women in agriculture in Africa, available to all conference participants and wide audience in Africa and the world;

2. Strategies for promoting empowerment of rural women in agriculture defined.

**Workshop format**

The workshop will begin with several presentations of successful experiences on gender equality and empowerment of women in agriculture in Africa. The presentations should focus on social, economic, political and cultural factors of women’s access to productive resources, and policy implications. The presentations will be followed by a panel session dedicated to discussion of strategies for promoting empowerment of rural women in Africa

Participants in the workshop are invited to submit abstracts, related to the objectives of the workshop, to the organizer of the workshop with 300-400 words (please, see the instructions to the authors for the 10th African Crop Science Conference). Abstracts will be internally reviewed by the workshop organizers and a scientific committee for quality and appropriateness. All interested participants are invited to attend, but there will be specific registration, during the conference preparation.

4.8. Workshop # 8 – Biomass and agriculture energy: opportunities and challenges for African agricultural

**Importance**

Energy is an important factor in the development of a country and in particular of its agricultural sector. In this sector, it is used to operate agricultural machinery and irrigation systems and also in the conservation, processing and commercialization of agricultural products. Due to the increase of oil prices, many countries are struggling to meet their energy needs and access to low cost energy is a major constraint for the development of the agricultural sector and increase of productivity in most African countries. The agricultural sector is not only an emerging important energy consumer but also a potential energy producer. The production of renewable biomass resources is seen as a way to solve global warming problems and ensure sustainable development. A range of crops produced in Africa could be used to produce bioenergy (sugar cane, jatropha, palm oil and many others). Several bio-energy production initiatives are happening in Africa today. There is a need to review and discuss these experiences in order to formulate strategies and policies that take into account the production technologies and practices as well as the socio-economic factors and environmental implications.

**Objectives**

The general objective of the workshop is to draw attention to and discuss the potential production opportunities and impacts of energy crops in Africa. Specifically the workshop is designed to:

1. Share recent research results on energy crops production technologies (type of crops, varieties, agronomic packages);
2. Discuss socio-economic and environmental impacts and implications for the development of a sustainable African agriculture;

3. Discuss constraints and research and policy development needs to advance energy crop production.

**Outputs**

1. Published papers in proceedings available to all conference participants and wide audience in Africa and the world;

2. Research priorities recommended to increase productivity of energy crops production systems.

**Workshop format**

The workshop will be a ½ day event and will include two sessions:

1. An initial session devoted to presentations on 3 topics (1) Development and research trends in energy crops production; (2) Economics and sustainability of energy crops production; (3) Opportunities and constraints of energy crops for small scale farmers in Africa.

2. A final panel session dedicated to the discussion of current constraints and problems and to the drawing of recommendations and future evolutions.

Participants in the workshop are invited to submit abstracts, related to the objectives of the workshop, to the organizer of the workshop with 300-400 words (please, see the instructions to the authors for the 10th African Crop Science Conference). Abstracts will be internally reviewed by the workshop organizers and a scientific committee for quality and appropriateness. All interested participants are invited to attend, but there will be specific registration, during the conference preparation.

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4.9. Workshop #9 – Positioning Nematology in Africa – Now and the Future

**Importance**

Often a nematode problem is a warning that a farming system has become unsustainable. Losses to plant-parasitic nematodes are estimated at 5% to 12% annually worldwide. Greater losses are observed in the tropics and subtropics because the growing seasons are longer and often continuous; there is limited awareness of nematode problems in the farming communities; and soil fertility levels are low and moisture is often limiting, making plants less tolerant to nematode attack. However, Nematology in Africa is under-funded; lacks equipment and research support, and it is difficult to conduct relevant research and publish results in international journals. Besides, there is shortage of Nematologists to work on the problem. Trained Nematologists leave discipline despite demand; they rarely work full time on nematode problems; and usually work alone.

Networking, cross-learning and peer support among practising nematologists in Africa can facilitate an active and interactive support that can overcome the lack of a critical mass of nematologists in any one country and link the network to information services available in the north through partner scientist from the north. The Nematology Initiative for Eastern and Southern Africa (NIESA) was formed in 2005 as a network of nematologists from various institutions in Malawi, Kenya, Tanzania, Uganda and Zimbabwe and partner scientists from University of Reading, CABI Bioscience and Rothamsted Research in the UK with grant funding from the Gatsby Charitable Foundation. NIESA seeks to raise the profile of nematology in the region by:
Facilitating provision of peer support among nematologists in research and training;
Facilitating provision of tailor-made nematology training within the region so as to support sustainability of capacities and practices developed;
Selflessly sharing information and expertise, and developing joint research initiatives that will provide practical benefits for local communities, especially in food security;
Creating awareness among farmers and communities about the importance of nematodes as agricultural production constraints;

This workshop is the first step towards regular Nematology presence at the African Crop Science Society meetings. Participation at the ACSS meetings as a “Nematology” block will enhance Nematology visibility; provide more interaction with other scientists; and improve understanding and raise profile of nematology with the society and Africa as a whole.

Objectives
The objectives of this workshop are:
1. To highlight the importance of nematodes as agricultural production constraints requiring attention: research, training and extension and as model organisms for biological investigations
2. To improve the understanding and raise the profile of Nematology within the agricultural training, research and development arena
3. To facilitate networking, cross learning and peer support among practising nematologists in Africa

Outputs
1. Published papers in proceedings available to all conference participants and wide audience in Africa and the world;
2. Research, training and extension priorities recommended to raise profile of nematology as a model dynamic biological discipline in Africa

Workshop format
The workshop will be a ½ day event and will include two sessions:
1. An initial session devoted to 1 to 3 invited presentations
2. A final panel session dedicated to the discussion of current constraints and problems and to the drawing of recommendations and future evolutions.

Participants in the workshop are invited to submit abstracts, related to the objectives of the workshop, to the organizer of the workshop with 300-400 words (please, see the instructions to the authors for the 10th African Crop Science Conference). Abstracts will be internally reviewed by the workshop organizers and a scientific committee for quality and appropriateness. All interested participants are invited to attend, but there will be specific registration, during the conference preparation.

4.10. Workshop # 10 – Pesticidal plants

Importance

Objectives

Outputs

Workshop format
5. Short courses

5.1. Short course # 1 – Environmental effects of plant protection products and its mitigation measures

**Objectives and expected outputs of the short course**

- Understand environmental consequences of pesticide application while considering all relevant factors (e.g., types of terrain, drainage patterns, soil, presence of non-target organisms and endangered species, drift, weather, groundwater and surface water).
- Understand how to prevent pesticide drift, runoff, or loss to unintended areas of the environment.
- Know how to identify potentially sensitive areas that could be adversely affected by pesticide application, mixing and loading, storage, disposal, and equipment washing.
- Effectiveness of mitigation measures (wetlands, field margins, biobeds)

**Organizer**

ECOTRAC (Ecotoxicological Risk Assessment and Communication)

**Format of the course**

The course will use interactive learning methodologies presented by organizer. A course manual will be provided upfront. However, depending on registered delegates other presentations or interests can be included or the course. The course will take half a day

**Outline of the course**

- Impact on environment
- Case studies
- Factors influencing pesticide input
- Research on mitigation strategies
- International importance of risk reduction strategies