

MSU-GOFAU Partnership

Development of On-line Courses/Modules in Emerging Areas of International Agriculture

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I. Background:

The World Technology Access Program (WorldTAP) program at the Institute of International Agriculture (IIA) at Michigan State University (MSU) in collaboration with many Departments and Units at MSU has developed and offered international short courses in Intellectual Property Rights (IPR), Food Safety, Environmental Biosafety, Agricultural Biotechnology, and Integrated Pest Management (IPM). These unique courses cover the cutting edge areas of international agricultural development. These programs have been offered at MSU annually during the summer months for the past 10 years. MSU has gained an international reputation and is considered a leader in providing training and education in these cutting edge areas. MSU's unique approach in involving multiple stakeholders (academic faculty, industry, government, NGOs, Extension, international organizations) in teaching these courses has made them internationally known and popular.

Through these courses, more than 800 policy makers, scientists, administrators, program managers, regulators, industry personnel, and representatives of NGOs and international organizations from around the world have come to MSU and received training. These short courses have helped MSU in creating active linkages and an excellent global network of institutions and specialists. In addition to the international community, foreign students at U.S. Universities and working professionals from various sectors in the U.S. have also attended these courses.

II. Justification for Developing On-line Courses:

The WorldTAP at MSU proposes to collaborate with the CGIAR Global Open Food and Agriculture University (GOFAU) Program and develop online modules/courses in the following six broad areas of international agricultural development:

1. Intellectual Property Rights (IPR) and Technology Transfer
2. Food Safety
3. Environmental Biosafety
4. Agricultural Biotechnology and Applied Plant/Animal Breeding

5. Integrated Pest Management (IPM) and Technology Transfer
6. Food Processing, Food Technology and Value Addition

The need for education and training in these six areas is tremendous and is growing each year. With the new trends of globalization and biotechnology revolution, countries around the world are building their capacity to address agricultural development issues locally, regionally and globally. In this context, education and training in IPR, Food Safety, Biosafety, Agricultural Biotechnology, IPM, and Food Processing and value addition is becoming critical for accessing and managing new technologies, commercializing local technologies, accessing regional and global market, addressing environmental and human health issues, and meeting the requirements of international agreements and treaties (WTO, TRIPS, CODEX, SPS, and CBD).

The current educational capacity in many developing countries is not adequate to provide education and training that would meet challenges and opportunities posed/created by globalization. To address this growing demand, MSU's WorldTAP is looking at innovative ways to expand the horizon of education to reach out a wider community internationally. The options include, continuing current short courses at MSU and designing modules and courses that can be offered overseas and distance education through on-line courses.

The WorldTAP program would like to collaborate with the GOFAU program and develop on-line courses/modules based on the following aspects:

- Broadening access and expanding horizon of good quality education and training in IPR, Food Safety, Environmental Biosafety, Agricultural Biotechnology, IPM and Food Processing and Food Technology (beyond MSU based courses). Many universities and institutions around the world now have access to internet and have computer facilities for offering distance learning on-line courses. The on-line courses developed through MSU-GOFAU partnership would allow universities worldwide to benefit from a wealth of experience and educational resources accumulated by MSU.
- Developing a cost-effective model for offering education worldwide to a large pool of people, specially to students and in-service candidates who can not travel to the U.S due to high costs, and other constraints (job related issues and visa restrictions). MSU has been receiving many requests to offer these courses on-line so that they are accessible to large pool of students and working professionals.
- Using the philosophy of "No University Left Behind" reaching out to the universities student community worldwide and full-filling the mission of developing a second generation of leaders in these emerging areas of international agricultural development.

- Making courses truly international/global by involving international faculty based in various countries thus capturing global knowledge and experience in these areas through the existing global network.
- Buy-ins and possible sponsorships from existing international umbrella projects of USAID, World Bank, etc.

In the recent years, MSU WorldTAP program has had preliminary discussions with the following universities around the world and they have expressed a strong interest in working with MSU in offering the on-line courses.

- University of Dakar-UCAD, Senegal
- Haryana Agricultural University, India
- TERI University, India
- Kerala Agricultural University, India
- Tamil Nadu Agricultural University, India
- University of Costa Rica, Costa Rica
- University of Nairobi, Kenya
- University of Ghana-Legon, Ghana
- Makerere University, Uganda
- University of the Philippines, The Philippines
- University of Putra, Malaysia
- University of Peradeniya, Sri Lanka
- University of Ruhuna, Sri Lanka
- Cairo University, Egypt
- Tashkent Agrarian University, Uzbekistan

III. Development of On-line Courses in Intellectual Property Rights (IPR), Food Safety, Environmental Biosafety, and Integrated Pest Management (IPM)

The WorldTAP program at MSU is proposing to design and offer the following six courses/modules to the global community through a collaborative partnership with GOFAU. Each of these courses/modules will be a semester long (approx. 15 weeks), which can be taken either as a certificate course or for credits towards a degree program. The course will be managed by the MSU and taught by MSU and faculty and specialists from around the world. Each course will include about 12 to 15 sessions/modules including interactive sessions and practical exercises offered through on-line. These courses will include practical exercises based on the local issues.

1. Intellectual Property Rights (IPR) and Technology Transfer: This on-line course will provide education in various aspects of intellectual property rights and technology transfer including patents, plant variety protection, trademarks, copyrights, and trade secrets. The emphasis will be on day-to-day handling, management and licensing of intellectual properties in various settings within the context of recent changes in the

GATT/WTO agreement, CBD and other international and regional treaties. This course will be offered in collaboration with MSU Law College and the MSU Office of Intellectual Property.

2. Food Safety: This on-line course will provide education in food safety policy development/implementation, risk analysis and program implementation to ensure a safe food supply for the global community. The course will also cover Food Safety issues associated with food products developed through biotechnology and genetic engineering. This course will be offered in collaboration with the National Food Safety and Toxicology Center at MSU.

3. Environmental Biosafety: This on-line course will cover environmental biosafety aspects associated with the use and management of emerging technologies including biotechnology products developed through genetic engineering. The course will focus on the biosafety policy development/implementation, risk assessment, risk management, and risk communication. This course will be offered in collaboration with the MSU Plant Breeding and Genetics Program (an inter-departmental program at MSU).

4. Agricultural Biotechnology and Applied Plant/Animal Breeding: This on-line course will cover the wide ranging applications of new tools of biotechnology, genomic and genetic engineering for enhancing agricultural productivity, food and nutritional security. Through real world practical case studies this e course will present a comprehensive approach to the use and management of agricultural biotechnology including biotechnology research, policy, technology transfer, commercialization and communication with various stakeholders. In addition, the course will cover the integration of new and emerging tools of biotechnology in plant and animal breeding and sustainable agriculture programs. This course will be offered in collaboration with multiple departments and colleges at MSU, industry and government regulatory agencies.

5. The Integrated Pest Management (IPM) Course: This on-line course will cover various aspects of Agroecology, IPM and Sustainable Agriculture. Emphasis will be on non-chemical and ecological approaches to pest management including cultural, mechanical, biological, biotechnological, behavioral, and other environmentally friendly approaches to pest management. The course students/participants will learn how research, teaching and extension are integrated in the design and implementation of IPM programs to reduce the use of toxic chemical pesticides. This course will be offered in collaboration with various MSU Departments, the Long Term Ecological Research (LTER) program at MSU's Kellogg Biological Station, and with the MSU IPM Program.

6. Food Processing, Food Technology and Value Addition: This on-line course will cover introduction to value-added food processing technologies. In addition to learning about processing technologies for value-added ventures, participants will also gain knowledge about related topics, such as postharvest technology, product development, sensory evaluation techniques, food packaging, processing and nutritional quality, functional foods, nutraceuticals, and value-added entrepreneurship. This course will be

offered in collaboration with the MSU Department of Food Science, School of Packaging, and National Food Safety and Toxicology Center.

IV. Work Plan:

1. Develop a detailed outline and content of the courses.
2. Develop detailed modules in collaboration with the resource faculty.
3. Develop electronic modules and instructional materials.
4. Work with MSU Global and Virtual University to develop on-line versions.
5. Marketing of these courses through CGIAR GOFAU program and MSU global network and institutional partnerships and umbrella projects.
6. Offer on-line courses in partnership with GOFAU program starting Summer/Fall 2009.

V. On-line Course Team

The following members of MSU will provide leadership and coordination of the design implementation of these on-line courses:

Dr. Karim Maredia and Dr. Cholani Weebadde will provide overall leadership and direction for all of the six on-line courses including course programs, marketing, evaluation, and management of the course programs.

Dr. Karim Maredia will serve as a Coordinator for the IPR and Technology Transfer on-line course/modules.

Dr. Sara Sarkar will serve as a Coordinator for the Food Safety on-line course/modules.

Ds. Cholani Weebade will serve as a Coordinator for the Environmental Biosafety course/modules.

Dr. Cholani Weebade and Dr. Nanada Joshi will serve as coordinators for the Agricultural Biotechnology and Applied Plant and Animal Breeding/Improvement on-line courses/modules.

Dr. Dieudonné Baributsa and Dr. Karim Maredia will serve as Coordinators for the Integrated Pest Management (IPM) on-line course/modules.

Dr. Muhammad Siddiq will serve as a Coordinator for the Food Processing, Food Technology and Value Addition on-line course/modules.