Food Systems for Poverty Reduction: Concepts and Themes
IARD 6040/AEM 6040
Fall 2012 (revised 1 October 2012)

When and Where: Tuesdays and Thursdays, 2:55 – 4:10, 145 Warren Hall

Lead Instructors: Address all general inquiries, including requests for permission to join the course, to:

Chris Barrett, Charles H. Dyson School of Applied Economics and Management, 435 Warren Hall, 255-4489, cbb2@cornell.edu. Office hours: Tuesdays 1:00-2:30 PM and Thursdays 10:30 AM-12:00 PM.

Rebecca Nelson, Departments of Plant Pathology and Plant-Microbe Biology and Plant Breeding & Genetics; 303A Plant Science; 254-7475; rjn7@cornell.edu; Office hours: by appointment.

Co-Instructors:

Rachel Bezner Kerr, Department of Development Sociology, 607-255-3213; rnb5@cornell.edu. Office hours: by appointment.

Carol J. Pierce Colfer, Cornell International Institute for Food, Agriculture and Development (CIIFAD); Mann Library basement; 607-291-4058 (home), 607-379-9977 (cell); cjc59@cornell.edu. Office hours: by appointment.

Andrew Jones, Division of Nutritional Sciences, 313 Savage Hall, 607-254-1289; adj23@cornell.edu. Office hours: by appointment.

Karim-Aly Kassam, Department of Natural Resources, 8A Fernow Hall; (607) 255-9757; ksk28@cornell.edu. Office hours: Wednesdays 1-2 pm or by appointment.

Johannes Lehmann, Department of Crop and Soil Sciences; 909 Bradfield Hall; 254-1236; CL273@cornell.edu Office hours: Wednesdays 11-12 and by appointment.

Beth Medvecky, Cornell International Institute for Food, Agriculture and Development; 31 Warren Hall; 254-6558; bam44@cornell.edu; Office hours: Wednesdays 9 am – noon or by appointment.

Alice Pell, Department of Animal Science, 115 Day Hall; 255-7993; ap19@cornell.edu Office hours: by appointment. Please contact Linda Schmidt (lms10@cornell.edu) for an appointment.

Per Pinstrup-Andersen, Division of Nutritional Sciences, 305 Savage Hall; 255-9429; pp94@cornell.edu Office hours: Tuesdays and Wednesdays 2:00-4:00 PM

Alison Power, Department of Ecology & Evolutionary Biology; 331 Corson Hall; 254-2333; agp4@cornell.edu Office hours: by appointment.

Tammo Steenhuis, Dept. of Biological and Environmental Engineering; 206 Riley Robb Hall; 255-2489; tss1@cornell.edu Office hours: By appointment.

Alex Travis, Department of Reproductive Biology; 120 Baker Institute West Wing; 256-5613; ajt32@cornell.edu. Office hours: by appointment.
**Course overview:** This course, which is part of the Food Systems and Poverty Reduction IGERT course and seminar sequence, will introduce concepts, empirical evidence and theories and methods from multiple disciplines. The objective in this first semester is to provide all IGERT Trainees and Associates with a common base knowledge across the whole food system, drawing on multiple disciplines. The course consists of eight modules, each focused on a different aspect of the food system. Necessarily, most of the material will push most students well outside their comfort zone; this is to be expected, indeed embraced. The objective is to familiarize students with basic concepts and terms in disciplines with which they will likely need to interact in due time, and to help students find the connections among the concepts, methods and themes of the various disciplines engaged in the study of food systems and poverty reduction. Given this orientation, most classes are instructor-led, but typically with substantial student engagement in discussion of key readings and identification of key research topics sparked by readings and concepts. The syllabus is punctuated by two sessions of student-led discussion of the integration of material presented to that point in the course. Cross-cutting themes will include gender issues, spatially explicit analysis, and the complementary roles of modern scientific research and development and of community-based institutions.

The course is three credits. IGERT trainees and associates must take it for a letter grade. Others can take course S/U with lead instructors’ permission.

We strongly recommend all students faithfully attend the CIIFAD weekly seminar, which is an excellent complement to this course. The schedule is available at [http://ciifad.cornell.edu/seminars.cfm](http://ciifad.cornell.edu/seminars.cfm).

**Assignments:**

Readings will be posted to the course Blackboard (Bb) site, which students should consult regularly for announcements as well. A couple of longer, book-length readings are on reserve at Mann Library.

Grades will be based on the following:

- **Class participation.** The course requires active student engagement in discussing the assigned readings in class, and in helping each other understand the theories, methods, empirical evidence and traditions of their various disciplines. Active student engagement requires doing the required readings prior to the class meeting. Toward that end, all co-instructors are encouraged to call on all students individually to answer questions and discuss concepts, not just on volunteer respondents. So be prepared! Class participation counts for 20% of the final grade.

- **Each student will submit a brief summary of the key terms (i.e., glossary) and messages for each of the seven modules, covering both the readings and the lectures. This summary (glossary and key messages in bullet form, for a total of 2-3 pages) is due by 5:00 PM one week after the close of the relevant module, submitted via email to the faculty member grading that assignment (dates and faculty are listed in the course calendar below). The seven summaries cumulatively count for 30% of the final grade.

- **A final literature review paper that takes an explicitly interdisciplinary, food systems view on a selected problem (preferably, of potential relevance to the student’s dissertation). This is due Wednesday, December 12, although extensions are permitted for students willing to receive a temporary grade of INC. This counts for 50% of the final grade.

**Academic integrity statement:** Each student in this course is expected to abide by the Cornell University Code of Academic Integrity. Any work submitted by a student in this course for academic credit will be the student’s own work. See Code of Academic Integrity [http://cuinfo.cornell.edu/Academic/AIC.html](http://cuinfo.cornell.edu/Academic/AIC.html).
Plagiarism will not be tolerated in this course (To avoid and recognize plagiarism visit the following website: http://plagiarism.arts.cornell.edu/tutorial/index.cfm).

You are encouraged to study together and to discuss information and concepts with other students. You can give "consulting" help to or receive "consulting" help from such students. However, this permissible cooperation should never involve one student having possession of a copy of all or part of a course assignment done by someone else, in the form of an e mail, an electronic file, or a hard copy.

Should copying occur, both the student who copied work from another student and the student who gave material to be copied will both automatically receive a zero for the assignment. Penalty for violation of this Code can also be extended to include failure of the course and University disciplinary action.

Lectures and Readings Calendar (required readings are listed following session objectives; supplementary readings are entirely optional for students who wish to plumb a topic in more depth)

**Thursday, August 23** (C. Barrett). Introduction I

- Objectives: To introduce course and general approach; familiarization with basic ideas of food systems and of poverty analysis and poverty traps (core concepts and measures):

**Supplementary readings:**


**Tuesday, August 28** (R. Nelson). Introduction II

- Objectives: To introduce course and general approach; familiarization with basics of food systems (core concepts and measures):

**Supplementary readings:**
Module 1: Poverty, Policy and Institutions: Macro and market scales (C. Barrett/P. Pinstrup-Andersen)

Thursday, August 30 (C. Barrett). Objective: understand the place of agriculture and food systems in poverty reduction and the importance of macro-scale phenomena to the incentives and constraints faced by the poor.


Supplementary readings:

Tuesday, September 4 (C. Barrett). Objectives: To learn about agricultural market institutions, how they function and how smallholder farmers and poor rural consumers engage with markets, with an emphasis on sub-Saharan Africa.


Supplementary readings:

**Thursday, September 6** (P. Pinstrup-Andersen). Objectives: To analyze a specific institutional case study in a role playing exercise.

- Vio, Fernando and Ricardo Uauy. The Sugar Controversy. Case 9-5 ([http://cip.cornell.edu/gfs](http://cip.cornell.edu/gfs))


**Tuesday, September 11** (C. Colfer). Objectives: To explore the relevance of gender issues in food and agricultural systems, using the example of swidden agricultural systems (common in the tropics) in SE Asia; and to consider three methodological approaches to the study of gender.


Supplementary Readings:


*Sept.13: Module 1 key terms and messages assignment due to Prof. Barrett.*

**Thursday, September 13** (K.-A. Kassam). Objectives: To appreciate the complex interconnectivity between the ecological and the socio-cultural; and, To comprehend that individual actions informed by cultural systems manifest themselves in social structures that rely on ecological foundations.

Supplementary readings:


Tuesday, September 18 (K.-A. Kassam). Objective: To illustrate the participatory and experiential basis of indigenous and local knowledge.


Supplementary readings:


Module 3: Agroecology (A. Power)

Thursday, September 20: (A. Power). Objectives: To introduce agriculture as an ecological system, with human management as a major system influence; familiarization with ecological processes that influence the productivity and environmental impacts of agricultural systems.


Sept.25: Module 2 key terms and messages assignment due to Dr. Colfer.

Tuesday, September 25: (A. Power) Objectives: To introduce major groups of organisms that influence agroecosystem function, including plant communities, soil microbial and invertebrate communities, and communities of above-ground consumers (herbivores, pathogens, and natural enemies).


Supplementary reading


Module 4: Farming systems (R. Nelson/B. Medvecky)

Tuesday, September 27 (R. Nelson). Objective: To introduce basic concepts and frameworks for understanding African farming systems. Environmental drivers and systems evolution under human management will be considered.


Supplementary readings:


Oct. 2: Module 3 key terms and messages assignment due to Prof. Power.

Tuesday, October 2 (B. Medvecky). Objective: To illustrate how interaction among biophysical and socioeconomic factors can contribute to poverty and food insecurity in African cropping systems, using cassava as an example.


Supplementary reading

Thursday, October 4 (B. Medvecky). Objective: To explore the consequences of staple crop domination and the potential (and obstacles) of leguminous crops to enhance ecosystems services in cereal-based, small-holder production systems


Supplementary readings:


Tuesday, October 9: Fall Break (Enjoy!)

Thursday, October 11 (R. Nelson). Objectives: To become familiar with issues and methods related to plant breeding as related to current and past efforts to address food insecurity in the developing world; consider the biological and institutional issues surrounding improvement of staple crops. (R. Nelson)


Supplementary readings

  - Chapter 4: Breeding – Between and Art and a Science
  - Chapter 5: Biotechnology: Expanded Possibilities
Tuesday, October 16. Synthesis Discussion 1: Discussion on linking social and technical innovation processes.

Module 5: Microeconomics; Agriculture and Nutrition (C. Barrett / A. Jones / R. Bezner Kerr)

Thursday, October 18 (C. Barrett): Objectives: To understand the microeconomic behaviors of agricultural households.


Supplementary readings:


Oct. 23: Module 4 key terms and messages assignment due to Prof. Nelson.

Tuesday, October 23 (A. Jones): Objective: To understand the linkages between the food systems and nutrition from a policy perspective


Supplementary readings:

- Per Pinstrup-Andersen (forthcoming), Guiding Food System Policies for Better Nutrition. Background paper prepared for FAO’s SOFA 2013

Thursday, October 25 (R. Bezner Kerr): A case study – links between agriculture and nutrition in rural Malawi.


Tuesday, October 30: Discussion of issues to date.

Module 6: Livestock (A. Pell/A. Travis)

Thursday, November 1 (A. Pell). Objectives: To introduce the important roles of livestock in rural and agricultural development. To provide overviews of the social and public health benefits, systems of production, constraints on production, and environmental tradeoffs associated with livestock. To introduce household and national-scale economic issues and policy aspects of livestock production.


Supplementary reading:

- Livestock’s Long Shadow, Food and Agriculture Organization of the United Nations, 2006

Nov. 6: Module 5 key terms and messages assignment due to Dr. Jones.

Tuesday, November 6 (A. Travis). Objectives: To describe and contrast pastoral and integrated cattle production systems.


**Supplementary reading:**

**Thursday, November 8 (A. Travis).** Objectives: To present an overview of the production, constraints on production, and environmental tradeoffs associated with other livestock species, including chickens, goats, and fish.

- Harrison, J. L. and Alder, R. G. As assessment of chicken husbandry including NewCastle disease control in rural areas of Chibuto, Mozambique, Trop Anim Health Prod 42;729-736 (2010)

**Supplementary reading:**
- Wambwa, E., Diseases of Importance at the Wildlife/livestock Interface in Kenya, Ch. 3

**Module 7: Soil and Water (J. Lehmann/T. Steenhuis/B. Medvecky)**

**Tuesday, November 13 (J. Lehmann).** Objectives: To convey key concepts regarding soils and soil productivity. To identify constraints to soil nutrient fertility in tropical soil with focus on eastern Africa. To provide an overview of current approaches to address constraints: mineral fertilizers; agroforestry.


**Supplementary readings:**
Nov.15: Module 6 key terms and messages assignment due to Prof. Pell

Thursday, November 15: (J. Lehmann): Objectives: To understand the potential and limitations of conservation agriculture.


Supplementary readings:


Tuesday, November 20: (T. Steenhuis): Objectives: Become familiar with various forms of water (green, blue, grey and virtual) and how this is linked with food production, public health and hence economic well-being. In addition, an overview will be given of the movement of water in the landscape with a focus on the Ethiopian highlands, underscoring that steep slopes are not necessarily the source of all surface runoff. Discussion of the success and failures of different management approaches to conserve soil and water.


Please read the following sections: Section 1.4 p 24-25; sections 2.4 and 2.5, p39-50; section 9.1 p 164.165; sections 9.4 - 9.6 p 173-179; sections 10.1 and 10.2, p181-191.
Thursday, November 22: Happy Thanksgiving!

Wrap-up: Linking subsystems (C. Barrett/R. Nelson)

Tuesday, November 27 (R. Nelson): Objective: Student-led discussion of integration of concepts discussed in course, with an emphasis on farm-level natural resources management issues, especially concerning soil fertility, pests and pathogens.


Nov. 27: Module 7 key terms and messages assignment due to Dr. Medvecky.

Thursday, November 29 (C. Barrett): Objective: Student-led discussion of integration of concepts discussed in course, with an emphasis on health, food security and nutrition issues.


Dec. 12: Term paper due to Profs. Barrett and Nelson (extensions permissible by prior arrangement)