Agriculture and Sustainable Development Course Calendar, please hit refresh to get the latest version

See the <u>syllabus</u> for more information and/or <u>www.darrylmcleod.com</u> (easy for me to remember). HWs are 10-15 points each, please email to <u>mcleodassign@gmail.com</u> by midnight of the due date. Please put ECON 6460 in the subject line. Do send questions or appointment requests to mcleod@fordham,edu which is checked more frequently, Make sure your answers follow each question, single spaced in a different font (one font/color for all answers great). Use author, date references, with references pasted at the end (most should be available on the web pages or this calendar. There is also a <u>google drive</u> with some readings for this course. Urls for most readings start with <u>www.gdsnet.org/</u> or <u>www.povertylectures.com/</u> often you can fix a broken url youself, if not send me an email immediately, I can usual get them fixed within a few hours.

May 2nd and 9th Presentations and final exam

April 20th 2017 Midterm Part I due, please see course web page for latest version and answer template.

April 18th **2017** 9:30AM to 11AM (web cast) Demonetization, <u>Digital Identity and Universal Basic Income</u> – How Big Ideas Are Changing India and What it Means for the World, Arvind Subramanian, Chief Economic Adviser, Government of India Martin Ravallion, Moderator: Annie Lowrey, Contributing Editor, The Atlantic

Guest Lecture on Agricultural Price Dynamics Professor Sophie Mitra before class, please see A Simple Model of Endogenous Agricultural Commodity Price Fluctuations and read pages 7-9 "Understanding Commodity Prices" in Angus Deaton, Understanding the Mechanisms of Economic Development, JEP Vol 24:3 3-16. On page Deaton says "Few students of economic development will learn much about measurement in their graduate courses, which is a pity."

News: <u>PBS Newshour: Somalia Drought worsens</u> <u>China land reform opens door to corporate farming China Quest for Food Security</u>: close to purchasing Syngenta <u>Esther Duflo Ely Lecture Economist as Plumber...</u>

MIT ECON 14.73 Course notes (thanks to Tess and Maggie) updated weekly here, let me know if this works for you.

WESS Climate Change Lecture Notes Migration and Climate change notes Lean Season Malnutrition and Famine

Figure 1: A simple conceptualization of vulnerability, resilience and adaptation

Vulnerability Resilience

Adaptation: The process of taking deliberate actions to become more resilient (or less vulnerable) in the face of adverse shocks or stresses.

Source: Andersen et al. (2014).

Midterm readings: Pitt, Mark M., Mark R. Rosenzweig, and Mohammad Nazmul Hassan (PRH, 2012) "Human capital investment and the gender division of labor in a brawn-based economy." The American economic review 102, no. 7 (2012): 3531-3560. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4140409/ Climate change in the Sahel: Ethiopia an example of successful ADLI? Is it best for women to work and live in rural areas, or move the city? Briefly compare the approaches of Naila Kabeer, NARI, BRAC (or Landesa) and Mobarak Lean Season Famine and malnutrition coping with lean seasons: coping with chronic and acute hunger... This debate over chronic and acute malnutrition and its causes. with a narrow focus (poverty traps and elasticities that may or may not add up to one) and a broad focus: is malnutrition a serious problem and can we fix it. Focus on the role of family networks and "hungry seasons" Mobarak's

and Suri's papers (as well as Abu and his family and the Hassans: how did they get into trouble?) How can they be helped, or have they been helped? Please read this short paper carefully **Banerjee**, **2016 Policies for a better fed world**

Lecture and class notes that may be helpful:

Banerjee, Abhijit V. and Esther Duflo Lecture 3, Gender Discrimination, Edx MIT 14.73

Banerjee, & Duflo Lecture 5: Is there a nutrition-based poverty trap? Edx MIT 14.73

Banerjee, Abhijit V. and Esther Duflo Lecture 6, Nutrition Hidden Traps, Edx MIT 14.73

Banerjee, Abhijit V. and Esther Duflo Lecture 15, Risk and Insurance, Edx MIT 14.73

Tuesday March 7th: <u>ADLI with Ethiopia Case Study</u> <u>Women's Agency and Malnutrition</u>

China at a Lewis Turning Point?

Wednesday March 8th International Women's Day! #WomensDay 5:30pm Swanstrom-Baerwald Award 2017

Project Progress Reports due Friday March 10th if you have my feedback (Topics great so far, see tips below and my comments on Hillary and Grace's excellent Progress Report Women in Agricultural Development

News and Events: <u>UN Chief and Somalia famine</u> <u>History Repeats itself in Ethiopia</u> <u>USAID sends DART Team</u>



Vistoria Carte and Capture and and

to Ethiopia Aljazeera and BBC discuss famine in Africa. What is causing this famine? Referring to the Aljazeera video on refugees moving into Uganda, about how many refugees are there. Looking at the houses, what poverty line is most relevant? How are refugees being housed and fed? **Econ 14.74x Problem Set #1**

Midterm Review Material and Topics Lykke Andersen, INESAD <u>Building Resilience</u> <u>NBEW</u>
and Famine Lecture notes <u>Ahmed Mushfiq Mobarak</u> World Bank <u>Bank NARI program</u>
DeJanvry and Sadoulet Chapt 8 Pp 341-354 MIT Course

Change of due date: Please hand in answers to RDQ 2.1 Feb 12th using this word template and following the single space format, with answers following each question mark (if possible). The tragic and sudden death of Hans Rosling led me to day RDQ 2.2 I will add his greatest hits to assignment and it will be due separately next week. Some of you now have shared google drives, all of you by February 9th but everyone should email their case study proposals and they should be in your google drive with comments by end of day Sunday Feb 12th I will let you know by email too ... on way it may not be good raise children in remote rural areas see the UNDP Vida Gas video How far does the mother walk carrying her children to them vaccinated? What happens when she gets there? This may be a dramatization, but in fact it is often accurate. Vida Gas example

Feb 14th Professor Andrew Simons, guest lecture: Adoption of Cookstoves in Uganda Google Scholar

Levine, David I., Theresa Beltramo, Garrick Blalock, Carolyn Cotterman and Andrew Simons (2016) "What impedes efficient adoption of products? Evidence from randomized variation in sales offers for improved cookstoves in Uganda." Center for Effective global action, CEGA UC Berkeley

Beltramo, Theresa, Garrick Blalock, David I. Levine, and Andrew M. Simons. "The effect of marketing messages and payment over time on <u>willingness to pay for fuel-efficient cookstoves."</u> *Journal of Economic Behavior & Organization* 118 (2015): 333-345.

Notes and readings for January 31st Satellite Images map poverty... Malnutrition Driven Poverty Traps

Notes and Readings January 24th 2017: ECON 6460 Notes on Methods Intro Lecture: 5 Nobel Prizes (updated) A Billion Hungry People? Agricultural Led Growth

Please read this short paper carefully <u>Banerjee</u>, <u>2016 Policies for a better fed world</u> note evolution of his/their thinking from Poor Economics, a good sign in fact, as many PE arguments were needlessly contrarian, if not incorrect. See also

this important paper Suri, Tavneet, and William Jack (2016) "The long-run poverty and gender impacts of mobile money." *Science* 354, #6317,1288-1292. **Jack and Suri 2012 Slides MIT News FAO Themes**

Notes and Readings January 17th: FT lunch with Esther Duflo Annie Duflo 2016 was a good year and Icow McArthur & Rasmussen Full Paper Brookings summary: How successful were the MDGs?

Introduction: 4 Nobel Prizes (BGD, Mexico, GTM & Kenya) Mobile Phones Transform Africa

Kenya MPES FSD Presentation Jenny C. Aker Golden Rice CGAP-Ford Testing the BRAC model

HW grading: OT: 2 FT: 2 CS: 2 QF 2 CA 2-7 points plus EC (key OT: Turned in on time: FT: format 2 points 2 CS: Citations 2; QF: quotes figures 2 correct answers 4-8 points

Key Project Ingredients (recommended):

- 1. Include 2-3 references, at least, cited in google scholar: this is your bridge to the academic literature, use Google Scholar for this include url to search on title and # of citations for 2-3 key articles cited...
- 2. In most cases, impact evaluation will be key issue, what method do they use or are you proposing cite relevant ECON 6460 readings if possible, I can help with this, see many examples, if your project involves any women in rural areas the WEIA index will also likely be relevant... see the Gates answers to RDQ 2.1 below...
- 3. RTS or Macro level model that could help promote your approach, or cite replicable research or country examples...

Optional but appreciated:

- 4. Debates and classic articles in this area...
- 5. Alternative views of prominent research institutions (UN, WB, CGAP, Gates, Ford, Rock,...)
- 6. Oxfam vs. US. AID and Raj Patel...

If possible always:

- 7. Include Figures, Tables with full credit to online or other source, including page number and urls*
- 8. Use author, date, page citations where possible, don't cite references not in your Reference list, ne
- 9. Single space 11 point Times Roman preferred (saves space) You can do this because not one will print this document...
- 10. References: a url alone is not a reference, see or Google Scholar or Office 365 Word References menu minimum citation for web pages or online documents, use GS for academic references (I like Chicago but with date moved closer to name, as in Akire, et al. (2014) Akire, Sabina, Malapit, Hazel J., Kathryn Sproule, Chiara Kovarik, Ruth Suseela Meinzen-Dick, Agnes R. Quisumbing, Farzana Ramzan, Emily Hogue, and Sabina Alkire. Measuring progress toward empowerment: Women's empowerment in agriculture index: Baseline report. IFPRI

This is how WD and other journals sometimes list citations, they put the 1st listing on a separate line, but doing it this way allows you to list all authors, then to just focus on the lead author and Date

Akire, et al. (2014) Akire, Sabina, Malapit, Hazel J., Kathryn Sproule, Chiara Kovarik, Ruth Suseela Meinzen-Dick, Agnes R. Quisumbing, Farzana Ramzan, Emily Hogue (2014) Measuring progress toward empowerment: Women's empowerment in agriculture index: Baseline report. IFPRI

AGRICULTURAL DEVELOPMENT

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STRATEGY OVERVIEW



OUR GOAL: to reduce hunger and poverty for millions of farming families in Sub-Saharar Africa and South Asia by increasing agricultural productivity in a sustainable way.

Source: 1 Gates Foundation, Agric Development Strategy Overview http://www.gatesfoundation.org/What-We-Do/Global-Development/Agricultural-Development, accessed February 2017.

Projects That Do Not Account for Gender Differences (this from the Gates Foundation web page)

We receive some grant proposals that do not account for gender differences and do not consider how agricultural initiatives may benefit or hinder women or men. We refer to such proposals as gender neutral. The foundation does not support these types of projects because women can be further marginalized if their concerns and needs are not explicitly factored into the program design. Very few programs set out to exclude women, but some inadvertently have this effect. One example is a project that aimed to breed and distribute improved varieties of staple crops. When the breeders conducted field testing, they sought opinions primarily from men, who valued yield above all other traits. The breeders selected varieties based solely on this feedback and yields improved, but the household adoption rate was lower than expected. Women farmers, whose responsibilities include land preparation, weeding, and cooking, have additional priorities in choosing which crops to grow, including pest resistance, cooking time, and taste. Because the new varieties increased the time women spent on their other tasks, they were less likely to choose those varieties.

A better approach would have been to study women's and men's responsibilities in the home and in the fields and to design a strategy that included women's preferences and involved women in farm trials. The end result might have been a higher rate of adoption and better outcomes in terms of income and family health Gates Foundation

Agricultural Development Strategy Overview

Landesa and Project References sample format: [Citation count from google scholar, or GS]

Agarwal, Bina (1994) *A field of one's own: Gender and land rights in South Asia.* Cambridge University Press, 1-50. [2249 citations as of 2/2017 recent studies?] see also by the same author in 2001,

[If you can use it, this reference is better or complimentary...]

Agarwal, Bina. "Participatory exclusions, community forestry, and gender: An analysis for South Asia and a conceptual framework." World development 29, no. 10 (2001): 1623-1648.

This seems important unless you can find another survey paper, this reminds us of the infamous 6 MFI paper...

Johnson, Nancy, C Kovarik, R Meinzen-Dick, J Njuki, A Quisumbing (2016) "Gender, assets, and agricultural development: Lessons from eight projects" World Development 83,295-311 [11 cites Open...]

Kieran, Caitlin, et al. (2015) "Examining gender inequalities in land rights indicators in Asia" *Agricultural Economics* 46.S1: 119-138.

Santos, Florence, et al. (2013) "Can Government-Allocated Land Contribute to Food Security? Intrahousehold Analysis of West Bengal's Microplot Allocation Program" IFPRI,



MEASURING PROGRESS TOWARD EMPOWERMENT WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX: BASELINE REPORT



World Bank. 2012. Gender issues in monitoring and evaluation in agriculture. Washington DC: World Bank.

http://documents.worldbank.org/curated/en/463521468183861258/Gender-issues-in-monitoring-and-evaluation-in-agriculture

Alkire, Sabina, Ruth Meinzen-Dick, Amber Peterman, Agnes Quisumbing, Greg Seymour, and Ana Vaz. "<u>The women's empowerment in agriculture index</u>." World Development 52 (2013): 71-91.

Akire, et al. (2014) Akire, Sabina, Malapit, Hazel J., Kathryn Sproule, Chiara Kovarik, Ruth Suseela Meinzen-Dick, Agnes R. Quisumbing, Farzana Ramzan, Emily Hogue, and Sabina Alkire. Measuring progress toward empowerment: Women's empowerment in agriculture index: Baseline report. IFPRI

May be of interest, but mainly for Latin America and Jessica (Ecuador).

Kabeer, Naila (2005) "Gender equality and women's empowerment: A critical analysis of the third millennium development goal " **Gender & Development**

13:1 13-24.

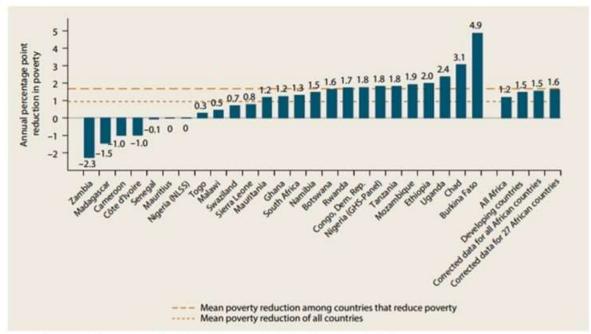
<u>Deere, Carmen Diana</u>, and Magdalena León (2003) "<u>The gender asset gap: land in Latin America.</u>" World Development 31, no. 6: 925-947. [256 citations as of 2/2017 recent studies?]

Deere, Carmen Diana, and Gina Alvarado(2016) "Asset Accumulation through International Migration: Gender, Remittances, and Decision Making in Ecuador." Latin American Research Review 51:4:249-270.

When Migration may be the best option: **Haiti Case Study materials**

Last update: 4/11/2017 7:51 PM

FIGURE 2.2 Analysis based only on comparable surveys suggests that poverty reduction in Africa was faster than previously thought



Source: Data for individual African countries are from World Bank Africa Poverty Database. Developing country data are from PovcalNet.

Note: Positive values denote a reduction in poverty, while negative values denote an increase. The survey years are as follows: Botswana (2002 and 2009), Burkina Faso (1998 and 2003), Cameroon (2001 and 2007), Chad (2003 and 2011), Democratic Republic of Congo (2004 and 2012), Cote d'Ivoire (2002 and 2008), Democratic Republic of Congo (2004 and 2012), Cote d'Ivoire (2002 and 2008), Maribia (2003 and 2010), Malayai (2004 and 2010), Malayai (2004 and 2010), Malayai (2004 and 2010), Malayai (2004 and 2010), Malayai (2005), Malayai (2006), Malayai (2006), Malayai (2006), Malayai (2006), Malayai (2006), Malayai (2008), Malayai

Introduction: reducing rural poverty and adapting to climate change

MPESA and the Green Revolution:

CGAIR News (2013) "Benefits and burdens of new rice varieties in Uganda" August 7th (see articles on NERICA-4)

Economist, The new green revolution A bigger rice bowl <u>Another green revolution is stirring in</u> the world's paddy fields May 10th 2014, Los Baños, The Philippines, And Suphan Buri, Thailand.

Emerick, Kyle, Alain de Janvry, Elisabeth Sadoulet, and Manzoor H. Dar (2016) "<u>Technological innovations, downside</u> risk, and the modernization of agriculture." *American Economic Review* 106, no. 6:1537-61.

Rice Experiment Yields Results 2015 Tavneet Suri's argued NERICA reduced the hunger season could potentially be shortened and yields increased.

WSJ, January 2017 <u>How Mobile Banking Gives a Big Boost To Kenya's Poor</u> Benefits go to women particularly; 'financial resilience

Data Sources FAO Share of Malnourished interactive

Rural Urban Development Agriculture, Urbanization and Poverty Reduction

Timmer, C. Peter. (1988). <u>The agricultural transformation</u>. Handbook of development economics, vol. 1, Chapter 8, pages 275-331.

De Janvry, Alain & Elisabeth Sadoulet- D&S (2016) *Development Economics: Theory and Practice*. Routledge, Chapter 18, see course google drive – (GD).

Timmer, C. Peter. (2017). <u>Food Security, Structural Transformation, Markets and Government Policy</u>. Asia & the Pacific Policy Studies.

Datt, Gaurav, Martin Ravallion, and Rinku Murgai. Growth, Urbanization and Poverty Reduction in India. No. w21983. National Bureau of Economic Research, 2016 (see Course GD).

Nutrition and Targeted Transfers: reducing Malnutrition in rural areas

Hoddinott, J., Gilligan, D., Hidrobo, M., Margolies, A., Roy, S., Sandström, S., ... & Upton, J. (2013). Enhancing WFP's capacity and experience to design, implement, monitor, and evaluate vouchers and cash transfer programmes: Study summary. *Washington, DC: International Food Policy Research Institute*.

Banerjee, A. V. (2016). <u>Policies for a better-fed world.</u> Review of World Economics, 152(1), 3-17 or NBER paper http://economics.mit.edu/files/11344

Banerjee, Abhijit V., Rema Hanna, Gabriel Kreindler, and Benjamin A. Olken. (2015). "Debunking the Stereotype of the Lazy Welfare Recipient: Evidence from Cash Transfer Programs Worldwide."

Alatas, Vivi, Abhijit Banerjee, Rema Hanna, Benjamin A. Olken, and Julia Tobias. (2012) "Targeting the poor: Evidence from a field experiment in Indonesia." The American economic review 102, no. 4: 1206-1240.

Microfinance and the Graduation Approach

Banerjee, Abhijit, Esther Duflo, Nathanael Goldberg, Dean Karlan, Robert Osei, William Parienté, Jeremy Shapiro, Bram Thuysbaert, and Christopher Udry. (2015) "A multifaceted program causes lasting progress for the very poor: Evidence from six countries." Science 348, no. 6236: 1260799.

Banerjee, Abhijit, Dean Karlan, and Jonathan Zinman (2015). "Six randomized evaluations of microcredit: Introduction and further steps." American Economic Journal: Applied Economics 7, no. 1: 1-21.

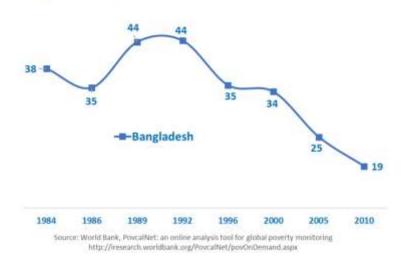
Banerjee, Abhijit Vinayak, Alice H. Amsden, Robert H. Bates, Jagdish N. Bhagwati, Angus Deaton, and Nicholas Stern. Making aid work. MIT press, 2007.

Banerjee, Abhijit V., and Esther Duflo. (2010) "Aging and Death under a Dollar a Day." In Research Findings in the Economics of Aging, pp. 169-203. University of Chicago Press.

Terms for review

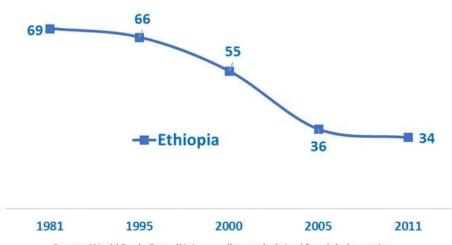
Stunting, Wasting, Anthropomorphic, Hyperbolic Discounting

Figure P-5 Bangladesh \$1.90 Day \$2011 PPP Poverty rates



Source: http://iresearch.worldbank.org/PovcalNet/povOnDemand.aspx

Figure P-6 Ethiopia \$1.90 Day \$2011 PPP Poverty rates



Source: World Bank, PovcalNet: an online analysis tool for global poverty monitoring http://iresearch.worldbank.org/PovcalNet/povOnDemand.aspx

Midterm Review Questions:

A) What is ADLI? Who invented idea, to describe what country? Contrast ADLI with the Lewis Model ELI or ISI or the Lewis Model.
 b) Did Ethiopia pursue ADLI? Did Bangladesh China, India or Indonesia?
 C) According to Rosling and Yunus what explains the Bangladesh Miracle? What would Mobarak or Gruben and McLeod probably add?

Schemm and Muluneh (2017) Washington Post, 2-22-2017 History Repeats: **Ethiopia is facing a devastating drought, and food aid may soon run out**

Moller, Lars Christian (2015) "Ethiopia's Great Run: The Growth Acceleration and How to Pace It." Washington, DC: World Bank Group. Press release

de Janvry, Alain, Kyle Emerick, Elisabeth Sadoulet, and Manzoor Dar (2016) "The Agricultural Technology Adoption Puzzle: What Can We Learn From Field Experiments?" *Development* 178 (2016).

Hans Rosling Washing Machine video

Ravallion, Martin. <u>"Famines and economics."</u> journal of Economic Literature 35, no. 3 (1997): 1205-1242.

<u>Traditional Niche Market: Urban guinea pig breeding shows promise</u> (see also <u>Nopales in Mexico</u>... class.povertylectures.com/ECON_SOCI5808_MENAandNopales2.pdf

Small animal husbandry is an important component of urban agriculture in Quito, and the species of choice is the guinea pig. The



small rodents have been part of Ecuador's culinary tradition for more than a millennium, and breeders don't have to compete with large industrial producers as they would if they raised chickens. The urban agriculture program, AGRUPAR, provides training on the care, breeding, and processing of the animals to more than 90 small guinea pig farms within the city limits. A women's association called Semillitas y Ensueños (Seeds and Dreams) has been breeding guinea pigs for more than a year. It now sells about 10 of them a month within its neighbourhood but Marlene Córdova, the association's president, dreams of one day exporting them. The idea may seem far-fetched, but César Jaramillo, the technical coordinator of the city's economic development corporation, believes there is a niche market in the export of frozen or prepared guinea pigs to the 800 000 Ecuadorians estimated to be working in Spain or the United States. For now, Semillitas y Ensueños can set its sights on local restaurants specializing in traditional Ecuadorian food. "Let's see

how far we get," Córdova says. states. For now, Semillitas y Ensueños can set its sights on local restaurants specializing in traditional Ecuadorian food. "Let's see how far we get," Córdova says.

Due now case study title, issue, authors and a few refences, see the updated Project Case Study ideas/suggestions handout for a Vida Gas (not cook stoves, exactly) See Vida gas case study at the bottom of the updated project/case study handout Mozambique VidaGas.

Gilbert Strizich On Spark MicroGrants Reshaping International Aid GoBifo Sierra Leone Ryan Barthel on GMOs in Agriculture see via Robert Paarlberg (2009) Starved for Science (google scholar citations) leads to Matin Qaim (2016) Genetically Modified Crops and Agricultural Development

Ecuador Asset Accumulation

Naila Kabeer (2005) Gender equality and women's empowerment: A critical analysis of the third millennium development goal 1, Gender & Development, 13:1, 13-24. http://dx.doi.org/10.1080/13552070512331332273 http://nailakabeer.net/wp-content/uploads/2005/09/13552070512331332273.pdf

https://www.idrc.ca/en/article/case-study-quito-ecuador-quitos-farms-produce-food-enterprise-and-hope

https://www.idrc.ca/en/article/influencing-policy-through-impact-evaluation-latin-america-and-caribbean

www.gdsnet.org/ECON_SOCI5808_MENA_MujeresEmpresasNopales.pdf

ECON_SOCI5808_MENA_MujeresEmpresasNopales.pptx

www.gdsnet.org/WaitingforADLI_AgricultureDemandLedGrowthECON6460L3.pdf

ECON_SOCI5808_MENA_MujeresEmpresasNopales

www.gdsnet.org/WomensAgencyandMalnutrion2.pdf

http://facultv.som.vale.edu/mushfiqmobarak/papers/garments.pdf

https://www.dallasfed.org/assets/documents/research/eclett/2006/el0603.pdf http://faculty.som.yale.edu/mushfigmobarak/papers/garments.pdf

http://documents.worldbank.org/curated/en/693561467988949839/pdf/99399-REVISED-PUBLIC-thiopia-Economic-Update-2-11-16-web.pdf

http://kylejemerick.wixsite.com/kemeri/research

http://www.nature.com/articles/srep03315

http://www.economist.com/news/briefing/21601815-another-green-revolution-stirring-worlds-paddy-fields-bigger-rice-bowl

http://www.cgiar.org/consortium-news/benefits-and-burdens-of-new-rice-varieties-in-uganda/

Duflo, Esther, Michael Kremer, and Jonathan Robinson. "Nudging farmers to use fertilizer: Theory and experimental evidence from Kenya." *The American Economic Review* 101, no. 6 (2011): 2350-2390.

http://www.independent.co.uk/news/world/africa/miracle-rice-gives-uganda-hope-of-its-own-green-revolution-1649557.html

Nudging farmers to use fertilizer: Theory and experimental evidence from Kenya

http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.101.6.2350

Despite Hype...

http://www.irinnews.org/news/2013/03/05/despite-hype-insurance-not-key-resilience-farmers

Gender, E

Andersen et al 2016, Andersen Lykke E., Dorte Verner, and Manfred Wiebelt. "Gender and Climate Change in Latin America: An analysis of vulnerability, adaptation and resilience based on household surveys." *Journal of International Development.*

Andersen et al 2014, Lykke E., Anna Sophia Doyle Dorte Verner, and Manfred Wiebelt. "Gender, Ethnicity and Climate Change in Mexico: An analysis of vulnerability and resilience based on household surveys." INESAD, WP series 07/2014 November, Bolivia. INESADGenderEthnicityClimateChangewp07_2014.pdf