

*AAEC 5154*

***International Agricultural Development and Trade***

**Fall 2008**

I. Instructors: George Norton - 205-B Hutcheson, 231-7731

II. Course Description:

This course focuses on agricultural development theories at the national, sector, and household levels, and the effects of international trade and macroeconomic policies on developing countries.

III. Course Objectives:

- A. To examine theories of economic development and the role of agriculture in those theories.
- B. To examine the interactions between population growth and agricultural development.
- C. To explore the implications of the organization of the farm-household firm for development.
- D. To describe the effects of institutional change on development.
- E. To examine the roles of research, education, extension, and technology transfer in development and on poverty.
- F. To explore the implications of trade, macroeconomic policies, and foreign aid for agricultural and economic development.

IV. Reading Assignments:

Required readings will be assigned from the reference list handed out in class, and you will purchase most of them as a packet. Smaller required readings will also be posted on Blackboard. Recommended readings can be signed out from my office. A required book used for one trade assignment is *Travels of a T-shirt in the Global Economy: An Economist Examines the Markets, Power, and Politics of World Trade* by Rivoli.

V. Grades and Grading:

There will be a mid-term exam (30%), a final exam (40%), and 4 homework assignments (30%).

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**Course Outline**

**Fall 2008**

- I. Introduction: Dimensions of World Food, Income, Population, and Trade Issues and Problems
- II. Agriculture and Economic Development
  - A. Economic Development Models and the Role of Agriculture
  - B. Growth Theories
  - C. Population Growth
- III. Farm Household Economics
  - A. Peasant Household Models
  - B. Resource Use and Sustainability
- IV. Transforming the Agricultural Sector
  - A. Theories of Agricultural Development
  - B. Land
  - C. Risk and Insurance
  - D. Credit
  - E. Technological Change: Research, Extension, Education, Technology Transfer
- V. Agricultural Trade, Macroeconomic Policy, Foreign Assistance, and Development
  - A. Comparative Advantage, the Case for Free Trade, and an Overview of World Agricultural Trade Issues and Prospects Related to Developing Countries
  - B. Partial Equilibrium Analysis of Protectionist Policies
  - C. Trade Preferences
  - D. Trade Negotiations
  - E. Macroeconomic Policy and Trade
  - F. Capital Markets and Foreign Assistance
- VI. Summary and Perspectives

**Agricultural Economics 5154**  
**International Agricultural Development and Trade Reference List**  
**Fall 2008**

(Required readings marked with a \*)

**I. Introduction**

Overview of course; Dimensions of World Food, Income, Population, and Trade Issues and Problems.

- \*1. Ray, D., *Development Economics*, 1998, Chapter 2.
- \*2. von Braun, J, M.S. Swaminathan, and M W. Rosegrant, "Agriculture, Food Security, Nutrition, and the Millennium Development Goals," Essay, IFPRI, Washington. DC, 2005
2. Sen, A., "The Concept of Development," Chapter 1 in *Handbook of Development Economics*, Vol. 1, 1988.
3. Besley, T. and R. Burgess, "Halving Global Poverty," *Journal of Economic Perspectives*, Vol 17. No 3, Summer 2003, pp. 3-22.
4. Trostle, R., "Global Agricultural Supply and Demand: Factors Contributing to the Recent Increase in Food Commodity Prices," USDA/ERS WRS-0801, May 2008, Washington, DC (**Blackboard**)
5. Von Braun, J., Supply and Demand of Agricultural Products and Inflation—How to Address the Acute and Long Run Problem," IFPRI, presented at China Development Forum, Beijing, March 22, 2008. (**Blackboard**)

**II. Agriculture and Economic Development**

A. Economic Development Models and the Role of Agriculture

- \*1. Hayami and Ruttan, Chapter 2.
- \*2. North, D., "Institutions, Transaction Costs, and Economic Growth," *Economic Inquiry*, 1987.
- \*3. Olson, M. Jr., "Big Bills Left on the Sidewalk: Why Some Nations are Rich and Others are Poor," *Journal of Economic Perspectives*, Spring 1996.
4. Landau, D. "A Simple Theory of Economic Growth," *Economic Development and Cultural Change*, Vol. 52, No 1, October 2003, pp. 217-

235.

5. Ray, D. *Development Economics*, 1998, Chapter 10, pp. 353-376.
6. Paarlberg, “Politics and Food Insecurity in Africa”, *Review of Agricultural Economics*, Vol. 21, No. 2, pp. 499-511.
7. Gollin, D, Parente, S., and R. Rogerson, “The Role of Agriculture in Development”, *American Economic Review*, Vol 92, No. 2, May 2002, pp, 160-164.

#### B. Growth Theories

- \*1. Scherer, F.M., *New Perspectives on Economic Growth and Technological Innovation*, The Brookings Institution, 1999, Chapters 2 and 3
- \*2. Easterly, William, *The Elusive Quest for Growth*, MIT Press, 2001, Chapter 3.
3. Basu, K., Chapter 3 in *Analytical Development Economics*, MIT, 1997
4. Temple, J. “Dual Economy Models: A Primer for Growth Economists,” *The Manchester School*, Vol. 74, No 4 (Special Issue, 2005): 435-478
5. Temple, J., The New Growth Evidence, *Journal of Economic Literature*, Vol. XXXVII (March 1999), pp. 112-156.
6. Aghion, P, E. Caroli, and C. Garcia-Penalosa, “Inequality and Economic Growth: The Perspective of the New Growth Theories”, *Journal of Economic Literature*, Vol. XXXVII (December 1999), pp. 1615-1660.

#### B. Population Growth

- \*1. Ray, D., *Development Economics*, 1998, Chapter 9.
2. Lee, R. “The Demographic Transition: Three Centuries of Fundamental Change,” *Journal of Economic Perspectives*, Vol. 17, No. 4, Fall 2003, pp. 167-190.
3. Cohen, J., “Human Population: The Next Half Century”, *Science*, Vol. 302, November 14, 2003, pp. 1172-1177.
4. World Bank, “Demand and Supply Factor in Fertility Transitions,” Chapter 4 in *Population and Development*, 1994.

5. Becker, G.S., E.L. Glaser, and K.M. Murphy, Population and Economic Growth, *American Economic Review*, Vol. 89, No. 2, May 1999, pp.145-149.
6. Dasgupta, P., "The Population Problem: Theory and Evidence," *Journal of Economic Literature*, December 1995.
7. Population Reference Bureau, "2007 World Population Data Sheet" **(Blackboard)**

### III. Farm-Household Economics

#### A. Peasant Household Models

- \*1. Hymer, S. and S. Resnick, "A Model of an Agricultural Economy With Non-Agricultural Activities," *American Economic Review*, September 1969.
- \*2. Singh, S. and S., *Agricultural Household Models*, John Hopkins University Press, Baltimore, 1986, Introduction and Chapter 1.
3. Udry, C., "Gender, Agricultural Production and the Theory of the Household", *Journal of Political Economy*, Vol. 105, No. 5, 1996.
4. Dyer, G.A., S. Boucher, and J.E. Taylor, "Subsistence Response to Market Shocks, *American Journal of Agricultural Economics*, Vol. 88 (may 2006): 279-291.
5. Sadoulet, E. and A. de Janvry, *Quantitative Development Policy*, Chapter 6, 1995.
6. Key, H., E. Sadoulet, and A De Janvry, Transactions Costs and Agricultural Household Supply response, *American Journal of Agricultural Economics*, 82 (May 2000) 245-259.
7. Sen, A.K., "Peasants and Dualism With and Without Surplus Labor," *Journal of Political Economy*, October 1966.
8. Barnum, H. and L. Squire, "An Econometric Application of the Theory of the Farm Household," *Journal of Development Economics*, Vol. 6, 1979, pp. 79-102.

#### B. Resource Use and Sustainability

- \*1. Thirlwall, A.P., "Development and the Environment," Chapter 9 in *Growth and Development*, 1994.
- \*2. Markandya, A., P. Harou, L.G. Bellu, and V. Cistulli, "Sustainable Development Vision in a Global Context," Chapter 2 in *Environmental Economics for Sustainable Growth*, Northampton, MA: Edward Elgar, 2002.
- 3. Hazel, P., and R.K. Pachauri, "Bioenergy and Agriculture: Promises and Challenges," IFPRI 2020 Focus 14, December 2006 (**Blackboard**).
- 4. Arrow, K., et al., "Are We Consuming Too Much?" *Journal of Economic Perspectives*, Vol 18, No 3 (Summer 2004): 147-172.
- 5. Esty, DC, "Bridging the Environment-Trade Divide," *Journal of Economic Perspectives*, Vol 15, No 3, Summer 2001, pp. 113-130.
- 6. Antle, J.M. and G. Heidebrink, "Environment and Development: Theory and Empirical Evidence," *Economic Development and Cultural Change*, April 1995.
- 7. Stern, N., "The Economics of Climate Change," *American Economic Review*, 98:2(2008): 1-37.

#### IV. Transforming the Agricultural Sector

##### A. Theories of Agricultural Development

- \*1. Hayami and Ruttan, *Agricultural Development: An international Perspective*, 1985, Chapters 4.
- 2. Hayami and Ruttan, Chapters 3.
- 3. Ruttan, V., *Productivity Growth in World Agriculture: Sources and Constraints*, *Journal of Economic Perspectives*, Vol. 16, Fall 2002, pp. 161-184.
- 3. Gardner, B.L., "Causes of Rural Economic Development," in D. Colman and N. Vink, *Reshaping Agriculture's Contributions to Society*, Oxford, UK: Blackwell Publishing, 2005, pp 21-41.
- 4. Claque, C., *Institutions and Economic Development*, 1997, Chapter 2.

## B. Land

- \*1. Otsuka, K., “Efficiency and Equity Effects of Land Markets,” Chapter 51 in R. Evenson and P. Pingali, *Handbook of Agricultural Economics*, Volume 3, 2007, pp2671 – 2703.
- \*2. Bell, C., “Reforming Property Rights in Land and Tenancy,” *The World Bank Research Observer*, July 1990.
3. Ngaido, T., “Reforming Land Rights in Africa,” IFPRI 2020 Africa Conference Brief 15, 2004. <http://www.ifpri.org/pubs/ib/ib31.pdf> **(Blackboard)**.
4. Vollrath, D., “Land Distribution and International Agricultural Productivity,” *AJAE*, February 2007, 202-216.
5. Deininger, K. and H. Binswanger, “The Evolution of the World Bank’s Land Policy: Principles, Experience, and Future Challenges”, *The World Bank Research Observer*, Vol. 14, No. 2 (August 1999) pp. 247-276.
5. Ray, D., *Development Economics*, 1998, Chapter12.
6. Otsuka, K., C. Hiroyuki, and Y. Hayami, “Land and Labor Contracts in Agrarian Economics: Theories and Facts,” *Journal of Economic Literature*, December 1992.

## C. Risk, Insurance, and Credit

- \*1. Townsend, R.M., Consumption Insurance: An Evaluation of Risk-Bearing Systems in Low Income Economies, *Journal of Economic Perspectives*, Vol 9, no. 3, Summer 1995: 83-102.
- \*2. Morduch, J., “Income Smoothing and Consumption Smoothing”, *Journal of Economic Perspectives*, Vol 9, No3, Summer 1995: 103-114
3. Besley, T., “Nonmarket Institutions for Credit and Risk Sharing in Low Income Countries”, *Journal of Economic Perspectives*, Vol 9, No3, Summer 1995: 1115-127.
- \*4. Pitt, M.M., S.R. Kandker, and J. Cartwright, Empowering women with Microfinance, *Economic Development and Cultural Change*, Vol 54, July, 2006
5. Fletschner, Diana, “Women’s Access to Credit: Does it Matter for Household Efficiency?” *American Journal of Agricultural Economics*, 90(3)(August 2008): 669-683.

6. Karlan, Dean and Jonathan Zinman, "Credit Elasticities in Less-Developed Economies: Implications for Microfinance," *American Economic Review*, 98:3(2008): 1040-1068.
7. Besley, T., "How Do Market Failures Justify Interventions in Rural Credit Markets?" *The World Bank Research Observer*, January 1994.
8. Zeller, M. and M. Sharma, "Rural Finance for Poverty Alleviation", IFPRI Food Policy Report, Wash., DC, 1998.
9. Hoff, K. and J. Stiglitz, "Imperfect Information and Rural Credit Markets: Puzzles and Perceptions," Chapter 2 in Hoff et al. *The Economics of Rural Organization*, 1993.
10. Morduch, J. The Microfinance Promise, *Journal of Economic Literature*, Vol. XXXVII (December 1999) 1569-1614.

D. Technical Change, Education, and Agricultural Development

- \*1. Binswanger, H.P. and J. von Braun, "Technological Change and Commercialization in Agriculture: The Effect on the Poor," *The World Bank Research Observer*, January 1991.
- \*2. Moyo, S., G.W. Norton, J. Alwang, M. Miah, and M. Deom, "Peanut Research and Poverty Reduction: Impacts of Variety Research to Control Peanut Viruses in Uganda," *American Journal of Agricultural Economics*, May 2007, pp.448-460.
3. Taylor, J. Edward and A. Yunez-Naude, The Returns from Schooling in a Diversified Rural Economy, *American Journal of Agricultural Economics*, Vol 82. (May 2000) pp. 287-297.
4. Anderson, J.R. and G. Feder, "Agricultural Extension," Chapter 44 in R. Evenson and P. Pingali, *Handbook of Agricultural Economics*, Volume 3, 2007, pp2344-2378.
5. Alston, J.M, G.W. Norton, and P.G. Pardey, *Science Under Scarcity: Principles and Practice for Agricultural Research Evaluation and Priority Setting*, 1995, Chapters 1, 4, and 5.
5. Meinzen-Dick, R., M. Adato, L. Haddad, and P. Hazell, "Science and Poverty: An Interdisciplinary Assessment of the Impact of Agricultural Research," IFPRI Food Policy Report, October 2004.

6. Umali, D.L., "Public and Private Sector Roles in Agricultural Research," World Bank Discussion Paper 176, 1992, Chapter 3.
7. Johnson, D.K.N., and R.E. Evenson, "How Far Away is Africa? Technological Spillovers to Agriculture and Productivity", *American Journal of Agricultural Economics*, Vol. 82 (August 2000) pp. 743-749.
8. Evenson, R and D. Gollin, "Assessing the Impact of the Green Revolution, 1960-2000," *Science*, Vol 300, May 2, 2003, pp. 758-762.
9. Foster, A. and M. Rosenweig, "Technical Change and Human-Capital Returns and Investments: Evidence from the Green Revolution", *American Economic Review*, September 1996.
10. Pardey, P, N Beitema, S. Dehmer, and S. Wood, "Agricultural Research: A Growing Global Divide, IRPRI Food Policy Report, 2006 (**Blackboard**).
11. Krueger, A.B. and M. Lindahl, "Education for Growth: Why and for Whom?" *Journal of Economic Literature*, Vol. 39, December 2001, pp. 1101-1136.
12. Alwang, Jeffrey and Paul Siegel, "Measuring the Impacts of Agricultural Research on Poverty Reduction," *Agricultural Economics*, 29 (2003):1-14.

## **V. Agricultural Trade, Macroeconomic Policy, Foreign Assistance, and Development**

- A. Comparative Advantage, the Case for Free Trade and an Overview of World Agricultural Trade Issues.
  - \*1. Ray, D., *Development Economics*, 1998, Chapter 16.
  - \*2. Thompson, R., "Globalization and the Benefits of Trade," Chicago Fed Letter 236, March 2007
  - \*3. Yotopoulos, Pan, Asymmetric Globalization, Chapter 1 in Yotopoulos and Nugent (Ed) *The Asymmetries of Globalization*, Routledge: New York, 2007.
  3. Houck, *Elements of Agricultural Trade Policies*, Chapter 2.
  4. Minot, N. and L. Daniels, "Impact of Global Cotton Markets on Rural

Poverty in Benin,” *Agricultural Economics*, Vol. 33 (2005): 453-466.

5. FAO, *State of Food and Agriculture, Part 1, Agricultural Trade and Poverty, Can Trade Work for the Poor?* Rome, 2005
6. Suranovic, S., “Why Economists Should Study Fairness”, *Challenge*, 40(September-October, 1997):109-124.
7. Rodrik, D. “Has Globalization Gone Too Far?”, *Challenge*, 41(March-April, 1998): 81-94.

#### B. Analysis of Protectionist Policies by Importers and Exporters

- \*1. Schiff, Maurice and Alberto Valdez, “Agriculture and the Macroeconomy, with emphasis on developing countries”, in B.L. Gardner and G.C. Rausser, *Handbook of Agricultural Economics*, Volume 2A, 2002, Chapter 27, pp. 1421-1454.
- \*2. Bouet, A. “How Much Will Trade Liberalization Help the Poor? Comparing Global Trade Models, IFPRI Research Brief N. 5, 2006.
- \*3. Norton Class Notes on Trade Policy Analysis
4. Houck, Chapters 4, 5, 10, 12, and 13.
5. Anderson, K., “Reducing Distortions to Agricultural Incentives: Progress, Pitfalls, and Prospects,” *American Journal of Agricultural Economics*, 88(5)(December 2006): 1135-1146.
6. Koo, W. and P.L. Kennedy, “The Impact of Agricultural Subsidies on Global Welfare,” *American Journal of Agricultural Economics*, 88:2 (December 2006): 1219-1226.
7. Krueger, Schiff, and Valdes, “Agricultural Incentives in Developing Countries: Measuring the Effects of Sectoral and Economy-Wide Policies,” *The World Bank Economic Review*, 1988, pp. 255-271.
- 8.. Anderson, K, W. Martin, and D. van der Mensbrugge, “Distortions to World Trade: Impacts on Agricultural Markets and Farm Incomes,” *Review of Agricultural Economics*, Vol. 28, 2006, pp. 168-194.

#### C. Trade Preferences

- \*1. Schiff, M. and L.A. Winters, "Regional Integration Agreements: An Overview," Chapter 1 in *Regional Integration and Development*, The World Bank, Washington DC, 2003, pp 1-30.
- \*2. Koo, W., P. Kennedy, and A. Skripnitchenko, "Regional Preferential Trade Agreements: Trade Creation and Diversion Effects," *Review of Agricultural Economics*, 28 (3) (2006): 408-415.
- 3. Grant, J. and D.M. Lambert, "Do Regional Trade Agreements Increase Members' Agricultural Trade?", *American Journal of Agricultural Economics*, 90(3): 765-782.
- 4. Jayasinghe, S. and R. Sarker, "Effects of Regional Trade Agreements on Trade in Agri-food Products: Evidence from the Gravity Modeling Using Disaggregated Data, *Review of Agricultural Economics*, 30(1): 61-81.
- 5. Houck, Chapter 14.
- 6. Krueger, A.O. Are Preferential Trading Agreements Trade-Liberalizing or Protectionist?, *Journal of Economic perspectives*, Vol 13, No 4 (Fall 1999) pp. 105-124.
- 7. Panagariya, A. "Preferential Trade Liberalization: The Traditional Theory and New Developments, *Journal of Economic Literature*, Vol. XXXVIII (June 2000) pp. 287-331.

#### D. Trade Negotiations

- \*1. Mendoza, Ronald and Chandrika Bahadur, "Toward Free and fair Trade: A Global Public Good Perspective," *Challenge*, Sept/Oct 2002, pp. 21062.
- \*2. Kelly, T., "Why Are Developing Countries Still Negotiating? The WTO's Successes at the Doha Round, *Challenge*, Vol 48, No. 3 (May/June 2005): 109-124.
- \*3. Martin, W. and K. Anderson, "The Doha Agenda Negotiations on Agriculture: What Could They Deliver?" *American Journal of Agricultural Economics*, 88 (5) (2006): 1211-1218.
- \*4. Bouet, A., S. Mevel, and D. Orden, More or Less Ambition? Modeling the Development Impact of U.S.-EU Agricultural Proposals in the Doha Round, IFPRI Brief, December, 2005.
- 5. Kenen, P.B., *The International Economy*, Cambridge U. Press, 2000,

## Chapter 11

6. Bouet, A., S. Mevel, and D. Orden, Two Opportunities to Deliver on the Doha Round Development Pledge, IFPRI, Research Brief No. 6, July 2006
7. Hertel, T.W. and M. Ivanic, "Making the Doha Development Agenda More Poverty Friendly: The Role of South-South Trade," *Review of Agricultural Economics*, 28 (3) (2006) 254-261.
8. Jensen, M. and P. Gibbon, "Africa and the Doha Round: An Overview," *Development Policy Review*, 25 (2007) 5-24.
9. Krugman, P. "What Should Trade Negotiators Negotiate About?" *Journal of Economic Literature*, March 1997.
10. Josling, T., D. Robberts, and D. Orden, Food Regulation and Trade: Toward a Safe and Open Global System, Chapter 3, Institute for International Economics, Washington DC, 2004, pp. 35-76.
11. Diao, X., T. Roe, and A. Somwaru, "Developing Country Interests in Agricultural reforms Under the World Trading Organization," *Amer. J. of Agric. Econ.*, Vol. 84, No3, August 2002: 782-790.

### D. Macroeconomic Policy and Trade

- \*1. Calvo, G and F Mishkin, "The Mirage of Exchange rate Regimes for Emerging Countries," *Journal of Economic Perspectives*, Vol. 17, No. 4, Fall 2003, pp. 99-110.
- \*2. Fischer, S., "Exchange Rate Regimes: Is the Bipolar View Correct?", *Journal of Economic Perspectives*, Vol 15, Spring, 2001, pp 3-24.
3. Mussa, "Macroeconomic Policy and Trade Liberalization: Some Guidelines," *The World Bank Research Observer*, January 1987.
4. Dornbusch, R. And L.T. Kuensler, "Exchange Rate Policies: Options and Issues," Chapter 5 in Dornbusch (ed), *Policymaking in the Open Economy*, 1993.
5. Dornbusch, R., "Fewer Monies, Better Monies", *American Economic Review*, May 2001, pp. 238-242.

### E. Capital Flows

- \*1. Arslanalp, S. and P. B. Henry, "Debt Relief," *Journal of Economic Perspectives*, Winter 2006, pp. 207-220.
- \*2. Joyce, J., "The IMF and Global Financial Crises", *Challenge*, Vol. 43 No. 4 (July-August 2000) pp. 88-107.
- \*3. Fischer, S. "Financial Crises: Review of Eichengreen and Tirole," *Journal of Economic Literature*," Vol 42 (December 2004): 1094-1097.
- 4. Basu, "Globalization and the Politics of Global Finance: The Stiglitz Verdict," *The Journal of Economic Literature*, Vol. XLI, September 2003, pp. 885-899.
- 5. Basu, K., International Debt, Chapter 6, in *Analytical Development Economics*, MIT, 1997.
- 6. Rogoff, K. "International Institutions for Reducing Global Financial Instability," *Journal of Economic Perspectives*, Vol. 13, No. 4 (Fall 1999) pp. 21-42.
- 7. Summer, L. H., "International Financial Crises: Causes, Prevention, and Cures", *American Economic Review*, Vol. 90 No. 2 (May 2000) pp. 1-16.
- 8. Stiglitz, J., "Principals of Financial Regulation: A Dynamic Portfolio Approach", *The World Bank Research Observer*, Vol. 16, Spring 2001, pp. 1-18.

#### F. Foreign Aid

- 1. Sachs, J., "A New Global Consensus on Helping the Poorest of the Poor", *Annual World Bank Conference on Development Economics 1999*, World Bank, Washington DC, 2000, pp 39-47.
- \*2. Mellor, J.W., "Foreign Aid and Agriculture-Led Development", Chapter 3 in C. Eicher and J. Staatz *International Agricultural Development*, Johns Hopkins, 1998.
- \*3. Sharma, S., "The Encouraging Truth About Foreign Aid," *Challenge*, Vol. 48 (July/August 2005): 11-25.
- 6. Gilligan, D and J. Hoddinott, "Is There Persistence in the Impact of Emergency Food Aid? Evidence on Consumption, Food Security, and Assets in Rural Ethiopia," *AJAE*, February 2007, 225-242.
- 7. Easterly, W., "Was Development Assistance a Mistake?" *American Economic Review*, May 2007, 328-332.

8. Bourguignon, F. and M. Sundberg, "Aid Effectiveness—Opening the Black Box, *American Economic Review*, May 2007 316-321.
7. Easterly, W., "Can Foreign Aid Buy Growth?" *Journal of Economic Perspectives*, Vol. 17, No 3, Summer 2003, pp. 23-48.
8. Krueger, A., "Aid in the Development Process," *The World Bank Research Observer*, January 1986.
9. CBO, *Role of Foreign Aid in Development*, May 1997, Chapter 3.
10. Ruttan, V.W., *Why Food Aid*, 1993.

## VI. Summary and Prospects

### A.

- \*1. IFPRI, *Achieving Sustainable Food Security for All by 2020*, Washington, DC, 2002
- \*2. Von Braun, J. "Agriculture for Sustainable Economic Development: A Global R&D Initiative to Avoid a Deep and Complex Crisis, Capital Hill, Forum, Washington, DC, Feb 28, 2008. (**Blackboard**)
3. Rosegrant, M and S. Cline, "Global Food Security: Challenges and Policies", *Science*, Vol, 302, December 12, 2003, pp. 1917-1919.
4. Sanchez, P and M.S. Swaminathan, "Cutting World Hunger in Half," *Science*, Vol 307, January 21, 2005, pp357-359.