

## Panel on upcoming elections in Nicaragua

- ▶ Victor Hugo Tinoco will represent the MRS/ Sandinista Renewal Movement Alliance Katherine Hoyt will present the record of the FSLN (Sandinista National Liberation Front) government. Prof. Brad Roth, WSU, Moderator
- ▶ Wednesday, 12 October (today!) at 7:00 PM
- ▶ Life Sciences 113

<http://goo.gl/iKFwF>

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References

# Occupy Detroit

- ▶ Friday, 14 October
- ▶ Begins gathering at the Spirit of Detroit at 4:00 PM
- ▶ “Street walk” begins at 6:00 PM
- ▶ Long-term occupation planned at Grand Circus Park

<http://occupydetroit.us/>

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References

# Food, Agriculture, and Soil Conservation

## Commodity production and the agrifood industry

Dr. Brian M. Napoletano

University of Detroit Mercy  
Department of Biology  
Biology 1030

12 October 2011

# Types of agriculture

- ▶ Permanent cropping
  - ▶ Industrial agriculture
  - ▶ Contract farming (Key and Runsten, 1999)
  - ▶ Smallholder
  - ▶ Subsistence agriculture
- ▶ Shifting cultivation
  - ▶ Slash-and-burn
  - ▶ Swidden-fallow
- ▶ Cattle ranching

After Geist and Lambin (2001)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References

# Hunger and poverty worldwide

- ▶ 850 million do not have enough to eat
- ▶ 2 billion face intermittent food insecurity
- ▶ 6 million children under 5 die annually due to malnutrition
- ▶ More than 3 billion people live on less than \$2.50 per day
- ▶ 86 countries considered low-income and food-deficient
- ▶ 5%–10% of hungry people due to famine, remainder is chronic

[Agriculture](#)[Napoletano](#)[Food production](#)[Hunger](#)[Causes of hunger](#)[Sustainable agriculture](#)[References](#)

## Hunger and poverty in the United States

- ▶ 37 million people live in poverty (poverty threshold at half the estimated income required for economic self-sufficiency)
- ▶ 13 million children under 18 and 5 million children under 6
- ▶ 35 million people in food-insecure households
- ▶ 12.4 million in food-insecure households are children under 18
- ▶ 10.8 million people in households with hunger
- ▶ 38.5% of people below poverty line also food insecure
- ▶ 125 million people overweight (<http://goo.gl/so1Xj>)

From Cook and Frank (2008)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

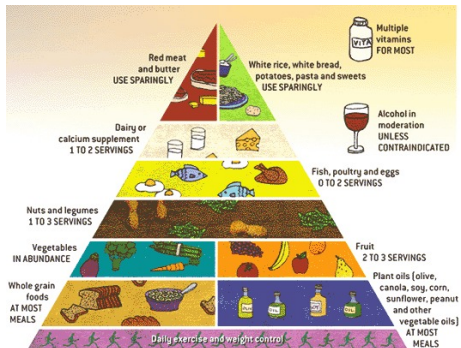
References

# Types of hunger

- ▶ Caloric hunger — most overt
- ▶ “Hidden hunger” (after de Castro, 1952) affects 3 billion
  - ▶ Protein hunger (amino acids)
  - ▶ Mineral hunger
    - ▶ Iron
    - ▶ Calcium
    - ▶ Sodium
    - ▶ Iodine
  - ▶ Vitamin hunger
    - ▶ A
    - ▶ B-1
    - ▶ B-2
    - ▶ C
    - ▶ D
    - ▶ G

[Agriculture](#)[Napoletano](#)[Food production](#)[Hunger](#)[Causes of hunger](#)[Sustainable agriculture](#)[References](#)

# A balanced diet



## NEW FOOD PYRAMID

outlined by the authors distinguishes between healthy and unhealthy types of fat and carbohydrates. Fruits and vegetables are still recommended, but the consumption of dairy products should be limited.

Agriculture

Napoleiano

Food production

Hunger

Causes of hunger

Sustainable agriculture

References



*Long before the DDT sets in, the “teeming masses” discovering that there is now too much food and too few people who can afford to buy it. The reason is simple: the green revolutionaries are not growing food for people, they are producing commodities for profit. The Rockefeller and Ford foundations produce seeds which require costly applications of fertilizer and pesticide; the petro-chemical companies (like the Rockefellers’ Standard Oil) produce the fertilizer and pesticides to sell at a profit; the larger farmers find it easier to afford the new methods if they displace already underemployed farmhands and tenants with new machinery; the “excess farm populations,” many of them now in the cities, have no money to buy bread. Let them eat cake?*

– Weissman (1971)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Chronic hunger and  
the food crisis

Sustainable  
agriculture

References

## Causes of “hidden hunger”

- ▶ Restriction of food types (from 3,000 to 16 species of food crops)
- ▶ Use of processed foods  
“It almost always happens that when these aborigines come into contact with white people, their diet, far from improving, grows worse”
- ▶ Inability to recognize hidden hunger

After de Castro (1952)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Chronic hunger and  
the food crisis

Sustainable  
agriculture

References

## A “perfect storm”

- ▶ Financial speculation
- ▶ Disinvestment in agriculture
- ▶ Non-food demands

After UNDESA (2009)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Chronic hunger and  
the food crisis

Sustainable  
agriculture

References

## Orthodox account

- ▶ Failure to promote commercial agriculture
- ▶ Rejection of GM crops (in Europe and Africa)
- ▶ Diversion to biofuels

After Collier (2008)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Chronic hunger and  
the food crisis

Sustainable  
agriculture

References

# Political economy account

- ▶ Depeasantization (i.e., primitive accumulation; Marx, 1867)
- ▶ “Structural Adjustment Programs” (SAPs)
  - ▶ Deregulation
  - ▶ Privatization
  - ▶ Trade liberalization

After Bello (2009)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Chronic hunger and  
the food crisis

Sustainable  
agriculture

References

## Contribution from the agrifood industry

- ▶ Use market power to drain wealth from poor communities
- ▶ Pay low prices and capture resulting value
- ▶ Marginalize poor farmers and rural workers
- ▶ Lack of accountability for effects on human rights and the environment
- ▶ Corporate social responsibility (CSR) optional and inefficient
- ▶ Victims denied access to justice

From ActionAid (2005)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Chronic hunger and  
the food crisis

Sustainable  
agriculture

References

# Orthodox solutions

- ▶ Increase production
- ▶ Market expansion
- ▶ “Comparative advantage”
- ▶ Case-in-point: 2000 Africa Growth and Opportunity Act, Presidential Initiative to End Hunger in Africa, African Global Competitiveness Initiative (USAID, 2007, 2010; CCGA, 2011; Brookings Institution, 2011)

[Agriculture](#)[Napoletano](#)[Food production](#)[Hunger](#)[Causes of hunger](#)[Sustainable agriculture](#)[References](#)

## Strategic interests in Sub-Saharan Africa

*Through The Chicago Initiative, America can strengthen its moral standing, renew ties and relationships in regions of heightened strategic concern, increase its political influence and improve its competitive position, hedge against the serious future danger of failed states, open the door to increased trade and cultural exchange, and strengthen American institutions.*

–CCGA (2009)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References



# Shocking wastefulness

- ▶ Nitrogen waste: 25%–75% recovery rates (geographic/climatic variation)
- ▶ Harvest waste: 10%–35%
- ▶ Post-harvest waste: 10%–15% (Lundqvist et al., 2008)
- ▶ Excessive meat consumption (Smil, 2002)

*Instead, I will focus on waste: its prevalence throughout the entire food system and its extent are truly astonishing, its perpetuation is among the most offensive demonstrations of human irrationality, and its reduction would obviously go a long way toward improving the productivity of the modern food system while reducing its environmental impacts.*

(Smil, 2004)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References

# Soil conservation

- ▶ Reduced tillage
  - ▶ Minimum till
  - ▶ Conservation-till
  - ▶ No-till
- ▶ Contour plowing
- ▶ Strip-farming
- ▶ Terracing
- ▶ Perennial cropping

[Agriculture](#)[Napoletano](#)[Food production](#)[Hunger](#)[Causes of hunger](#)[Sustainable agriculture](#)[References](#)

## Food sovereignty and localization of production

*Food sovereignty is a right of communities and countries to self-define their agricultural and food policies in a way that caters best to the needs and expectations of people, and enables them to reach sustainable development goals without having a negative impact on other communities at the same time. . . . The foundation of food sovereignty is based on the necessity of democratic participation in shaping agricultural and food policies by everyone affected, especially people living in rural areas.*

– Gerwin (2011)

[Agriculture](#)[Napoletano](#)[Food production](#)[Hunger](#)[Causes of hunger](#)[Sustainable agriculture](#)[References](#)

# Four pillars of food sovereignty

1. Right to food
2. Access to productive resources
3. Mainstreaming agroecological production
4. Trade and local markets

From Lee (2007)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References

## A challenge to the neo-liberal project

*With the collapse of the global economy and with the deglobalization of production moving very fast, small farmer or peasant-based farming is becoming a model for the locally or regionally sustained alternative economies that people are searching for. Peasants and their allies are demonstrating how food sovereignty and other paradigms based on the same principles are relevant, and indeed crucial considerations for all sectors of society.*

–Bello (2009)

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References

# The future of agriculture. . .

How and when will the “agrarian question” be answered?

[Agriculture](#)[Napoletano](#)[Food production](#)[Hunger](#)[Causes of hunger](#)[Sustainable agriculture](#)[References](#)

# References I

- ActionAid (2005, 25 January). Power hungry: Six reasons to regulate global food corporations. Report, ActionAid International, London, United Kingdom.
- Bello, W. (2009, September). *The Food Wars*. New York, New York, United States: Verso.
- Brookings Institution (2011, May). The Africa Growth and Opportunities Act: Toward 2015 and beyond. A synthesis of stakeholders views on the future of U.S.-Africa commercial relationships, The Brookings Institution, Africa Growth Initiative, Washington, DC, United States.
- CCGA (2009). Renewing American leadership in the fight against global hunger and poverty. Global agricultural development initiative, Chicago Council on Global Affairs, Chicago, Illinois, United States.
- CCGA (2011). 2011 progress report on U.S. leadership in global agricultural development. Global agricultural development initiative, Chicago Council on Global Affairs, Chicago, Illinois, United States.
- Collier, P. (2008, November). The politics of hunger. *Foreign Affairs* 87(6), 67–79.
- Cook, J. T. and D. A. Frank (2008). Food security, poverty, and human development in the United States. *Annals of the New York Academy of Sciences* 1136(1), 193–209.
- de Castro, J. (1952). *The Geography of Hunger* (Second Impression, First ed.). Boston, Massachusetts, United States: Little, Brown & Company.
- Geist, H. J. and E. F. Lambin (2001). What drives tropical deforestation? A meta-analysis of proximate and underlying causes of deforestation based on subnational case study evidence. LUCR Report Series 4, LUCR International Project Office, Department of Geography, University of Louvain, Louvain-la Neuve, Belgium.
- Gerwin, M. (Ed.) (2011). *Food and Democracy: Introduction to Food Sovereignty*. Kraków, Poland: Polish Green Network.

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References

# References II

- Key, N. and D. Runsten (1999, February). Contract farming, smallholders, and rural development in Latin America: The organization of agroprocessing firms and the scale of outgrower production. *World Development* 27(2), 381–401.
- Lee, R. (2007, March). Food security and food sovereignty. CRE Discussion Paper 11, Centre for Rural Economy, University of Newcastle Upon Tyne, United Kingdom.
- Lundqvist, J., C. de Fraiture, and D. Molden (2008). Saving water: From field to fork — Curbing losses and wastage in the food chain. Policy brief, Stockholm International Water Institute, Huddinge, Sweden.
- Marx, K. (1867). *Capital: A Critique of Political Economy: Volume One* (1990 ed.). Penguin Classics. New York, New York, United States: Penguin Books. Translated by Ben Fowkes.
- Smil, V. (2002). *The Earth's Biosphere: Evolution, Dynamics, and Change* (First ed.). Cambridge, Massachusetts, United States: The MIT Press.
- Smil, V. (2004). Improving efficiency and reducing waste in our food system. *Environmental Sciences* 1(1), 17–26.
- UNDESA (2009). *World Economic Situation and Prospects*. New York, New York, United States: United Nations Department of Economic and Social Affairs.
- USAID (2007). Presidential initiative to end hunger in Africa. Annual report, United States Agency for International Development, Washington, DC, United States.
- USAID (2010, September). Africa's growth and competitiveness in 2009. Report, United States Agency for International Development, Washington, DC, United States.
- Weissman, S. (1971). Foreword. In R. L. Meek (Ed.), *Marx and Engels on the Population Bomb* (1971 Second ed.), pp. ix–xxii. Berkeley, California, United States: The Ramparts Press.

Agriculture

Napoletano

Food production

Hunger

Causes of hunger

Sustainable  
agriculture

References