



PREMIER DEBATE

Main Session
July 25 - August 7



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Premier Debate

March/April 2015 Briefs



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This is the fourth major installment of the free Premier Debate Briefs for the 2014-15 season. The cards enclosed address the March/April LD topic, "Resolved: Just governments ought to ensure food security for their citizens."

All of our cards are tagged, organized thematically, and lined-down. These blocks are ready to read. Best practice for brief use is to re-cut the original articles to ensure that you have a good grasp of the material. Second, you should highlight any cards you plan on using. This gives you a better handle on the evidence and ensures you only read the parts you need in round. You should also re-tag the evidence based on how you are using it. Briefs can be a tremendous resource as long as you familiarize yourself with the underlying material.

We have received a huge amount of feedback from debaters thanking us for distributing these briefs for free. Not everyone has the resources to pay for briefs and this is one important way to level the playing field. If you use these briefs please help us and direct other debaters to PremierDebate.com/Briefs. The more people that are aware of the service, the more likely it is that those who need it most will be able to use this product.

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Aff

Topicality Notes

This topic is kind of an odd one because of its wording. What does it mean for the aff to *ensure* food security? That the government should give food to every person? That if the aff can't get food to one person, the aff is not topical? Those interpretations seem kind of odd and not really debate-able. Of course, if the aff gets to defend that **EVERYONE GETS FOOD**, the neg will have a really tough time. The only real disadvantages would be tax/spending based, which is really quite silly. Why shouldn't everyone get to eat?

Literature exists on U.S. food stamp policies, SNAP and the like, but they don't *ensure* everyone gets food if we think that ensuring requires that everyone gets food. There are solvency problems for any policy that will prevent the total "ensuring" of food.

I prefer an interpretation of the literature that interprets the topic of government action for food security in terms of policies that would *help ensure* food security. If we can read ensuring as increasing quantity and quality of food or increasing access to food, then a lot more things become topical: subsidies, technological investments, import tariffs, etc. The following definition supports this view:

Keatinge and Nicholls 14

Dyno Keatinge, Director General of AVRDC, the World Vegetable Center, and Trevor Nicholls, chief executive officer of CABI, a steering committee member of the Association of International Research and Development Centers for Agriculture, "5 things we can do to better ensure food security" 10-16-14 <https://www.devex.com/news/5-things-we-can-do-to-better-ensure-food-security-84565> [PDI]

With this in mind, here are five things we can do better to ensure food security. **1. Balance food and nutritional security.** Until recently, attention has been focused on investment in research of the traditional staple crops — maize, rice and wheat — to tackle hunger. But it is now widely accepted that we must go beyond calorie intake and look at the nutritional balance of the crops grown and consumed. A better balance between the research and development of staple crops and horticultural crops — fruit, legumes and vegetables — is the obvious key to alleviating malnutrition. Neglected or underutilized local varieties of fruit and vegetables often offer a good source of nutrition. We need to support farmers in growing new varieties and different crop mixes, giving them the information they need to manage the unfamiliar pests and diseases that may attack their plants. Animals, fish and poultry are also valuable sources of protein, vitamins and fatty acids. The development of a more diverse and competitive private seed sector, as well as capacity building efforts to help farmers improve soil health, are also crucial, since better quality seeds and soil lead to better quality produce. **2. Embrace new technology for knowledge transfer.** A greater commitment to understanding and improving knowledge transfer among rural farmers is urgently needed, as is a more effective approach to using modern ICT. Agricultural advice delivered by mobile phone is one of the most effective methods of sharing information. It takes advantage of the explosion in mobile technologies used in developing countries. Those working in development must embrace it. For example, agricultural advisory services delivered through voice messages can help overcome literacy and language barriers. Innovative provision of these services helps address the fact that there are too few extension workers to support the world's farmers. The knowledge delivered must cover the full food production cycle, from pre- to post-harvest — 40 percent of global food produced is lost to plant pests and diseases — and even beyond. Mobile technologies can be used to link smallholders to local and regional markets, where they can more easily generate regular incomes. Mobile services can also be expanded to include market information like what to charge per crop and how to access microfinance. **3. Take a balanced 'landscape' approach to agriculture.** As the Sustainable Development Goals take shape, we can see that certain goals focus on the environment, while others focus on food security. In most countries, however, it will not be possible to make a clean separation between the two. Finding a solution is difficult: Should farmers preserve their land for the sake of food production, or focus on generating income from tourism? Agriculture is a huge part of making landscapes profitable, but so too are other industries. How can people in developing countries achieve the right balance? AIRCA

is committed to tackling these problems at the “landscape” level. This approach requires creating solutions that take into account the diversity of interactions among people and the environment, agricultural and nonagricultural systems, and other factors that represent the entire context of agriculture. It also takes into account the transnational aspects of landscapes where they cross national boundaries, making concerted efforts to find solutions to sustainable agriculture more pressing. As the implementation of the SDGs unfolds, finding this balance will become increasingly important. **4. Stop the spread of non-native invasive species.** The spread of non-native invasive species has been largely positioned as a threat to biodiversity, and has received relatively little attention in relation to food production. This is a mistake. The introduction of invasives poses a threat to agriculture: With no natural enemies to control them, non-native species like animals, insects and weeds can overrun vast areas of pastureland, infest crops, poison and kill livestock and, in some cases, force farmers from their land altogether. But we can take action. Preventing the arrival of invasive species in the first place is obviously important: Having better plant biosecurity and proper pest risk analysis is essential. Where invasive species have already been introduced, and are widespread, their control through natural, biological means can rectify the problem. By introducing invasive species’ natural enemies — for example, the co-evolved fungus or insects that attack them — their spread can be controlled. Invasive species cost the world economy around \$1 trillion every year and must be tackled at an international level if we are to address food security effectively. **5. Create careers in agriculture for young people and women.** Supporting young people and women in agriculture is not a new challenge, but does need reinvigorated attention. In developing countries, many young people are leaving villages to work in cities, believing there is no future in farming and that there are better prospects in urban areas, yet quite the opposite is true. By 2050, global food demand is predicted to grow by 60 percent based on 2005 levels. Nurturing young people’s careers in agriculture so that they become part of an effective, efficient and sustainable food production system is a much needed part of safeguarding long-term food security. Supporting women is also central to safeguarding food production. The challenge is finding the means to get the right information to women, as in some cultures they are not always as easy to reach as men. Creating an environment that lets them put information into practice and establish livelihoods in agriculture is important. For this reason, tackling food security must be seen in a much wider context and be treated in a truly concerted manner.

Here’s another example of “ensure” in the context of food security used to mean many different kinds of policies:

Dupont n.d.

“Food Solutions” <http://www.dupont.com/corporate-functions/our-approach/global-challenges/food.html> [PDI]

Ensuring Food Security through Partnerships Together we can feed the world. Food security around the globe becomes vitally important as our population increases. One in seven people on earth goes to bed hungry each night. Ensuring that enough healthy, nutritious food is available for people everywhere is one of the most critical challenges facing mankind. **We commit 60% of our research and development dollars to ensuring** that the world’s growing population has enough to eat. From advancing the **nutritional content of crops**, to helping farmers and growers around the world increase **food productivity**, to finding better ways to ensure **food security** and safety, we’re working every day to get more good food to more people in every corner of the world.

In the topicality section, you can find more definitions such as Mustapha and Culas 12.

To argue the other side would be to say that these affs are effects topical, which is to say that they only affirm because they eventually guarantee food security through their impacts. I think this interpretation is a little unreasonable because it’s very difficult to distinguish between what constitutes a policy OF ensuring food security vs. a policy that LEADS TO food security.

Alternatively, if you are worried about engaging this T debate, a lot of the aff cards would make great advantage counterplans. An advantage CP is designed to solve an aff advantage while avoiding some disadvantage. E.g. the patents aff could be a CP with the biofuels disad if the aff leads to an increase in land use for food, e.g. through agricultural subsidies.



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Potential Plan Areas

Africa

Africa Plan

Plan: African countries ought to ensure food security by subsidizing advertisements for agribusiness, opening free trade with India and China, and imposing tariffs on agricultural imports.

Plan increases agricultural development in Africa and solves economic decline by partially integrating African and Asian economies

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

As has been highlighted earlier, **the Asian policies on agriculture and trade** are a true **empowerment** to the **farmers** in the continent. If adopted by African countries, there are chances of experiencing growth in this sector. Asian countries have embarked on aggressive marketing activities for their products both locally and internationally. **If African countries would take this as their initiative, there would be increased demand for its products nationally and even internationally.** This policy would mean bargaining or selling product to the customer with the highest bid. In African countries, there is very little effort on creating awareness especially of the farm products. **The government would be in a better position to enhance this by regulation advertisement costs for agricultural activities.** This can be done in several ways for example installing a media station specifically meant to promote agriculture as viable business. **Many Africa countries like Nigeria, Ghana, Kenya and Zambia are cooperating with India and China in the area of agricultural trade.** They share crucial ideas such as gradually improving agricultural tools and international market support for agricultural products. Nigeria has a vested interest since its agricultural sector makes up 9 percent of GDP and the nation has vast agricultural resources (Bosede, 2010). Additionally, the agricultural sectors of Ghana, Kenya and many other African countries accounts for 20 percent or more of the labour force (Haggblade, 2007). The U.S. Department of State reported that "agribusiness... accounts for about one-third of Nigeria's GDP" (Rezek, et al, 2011, p7). The agribusiness sector becomes even more important when it is considered that it makes up 50 percent of the many African countries' exports (emnodu,2039). The varying natural and human resources of Africa should be exploited as it is done in Asia in order to create the greatest possible benefit for all agricultural firms including small holder farmer participating in open trade. Trade regulations are common in international markets. However, trade agreements have also seen an increase in frequency and depth. **Agriculture has historically been an area greatly protected by both developed and developing nations. The increasing need for free trade is indicated by the increasing depth and breadth of free trade agreements. The trade agreement between the US and Europe are all representative of the possible benefits Africa and Asia could receive if trade were opened between Africa and other selected nations like China and India in the Asian continent.** Although it can be argued that open markets increase a nation's susceptibility to world-wide economic volatility, Africa's relatively isolated past has not saved it from these troubles. In fact, **Africa's historical instability can partially be combated by economic integration with Asia and other stable international markets that will support its agricultural development.** This could be achieved through inflow of foreign investments. Again, **imposition of tariffs and restricting imports of agricultural products will ensure that farmers concentrate on the local production and sale. This will also ensure that the prices of local products are competitive which will in turn be very beneficial to farmers and the country at large. They will experience more returns. This is one of the policies that the Asian countries have adopted and is going a long way in ensuring that the farmers get good returns, remain motivated and prices are competitive in the international market.** This together with preferential market access if adopted should put African farmers at a better position (Katungi et al, 2011; Chalmin, 1999).

African countries should subsidize agricultural developments and research

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Another challenge that hinders the policy implementation in Africa is the limited high potential agricultural land and overreliance on rain-fed agriculture (Suliaman, 2010). With serious fluctuations and change in weather patterns caused by global warming, this has posed a major challenge for African countries. **Irrigation** which **could be a solution** to this problem has not been exploited to the maximum (You et al, 2011). For agricultural trade in Africa, **there has been limited exploitation of the regional market potential. This is a failure that can be attributed to the governments** of African countries. If this were to be taken up by the respective governments then trade in agricultural products would experience increased income (Anderson and Nelgen, 2010). **There has been lack of research in the agricultural field in most African countries. This as a result has led to slow growth. If the African countries could invest in research, then this could be a sure way out of underproduction. Research comes with it new technology, which is the key to agricultural problems in the continent at large** (Buah et al, 2011). **The government needs to take the initiative which may come in the form of subsidizing tax on technological oriented agriculture, sponsoring agricultural research activities, inviting or employing expertise from agriculturally successful countries to drive the agricultural agenda.**

Trade Good

South Africa and other African nations have benefited from global trade and improving the flow of products – brings in revenue while growing their agricultural industry

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Another development in South Africa agricultural sector is the access to agricultural financing

by smallholder farmers. A specific example is the Standard Bank —South Africa that won the development initiative of the year award in the African investor agribusiness award. The bank came up with a funding scheme that involved availing finances for agriculture for smallholder farmers (Gumisai, 2003). Major agricultural products exported in this country include maize, grapes, sugar etc. The **sophisticated**

banking structure together with other policies enhanced trade in this country making the agricultural products export to hit 24% in the year 2010. **These policies attracted international**

trading partners for example China. Germany. United States of America **and Japan** among others. The policy makers have concentrated in key areas of this sector to improve its productivity. Being a major source of income both to governments and the respective citizens, different governmental organizations, non-governmental organizations and the individual citizens in Africa as a continent have played a major role in the development and implementation of the various agricultural policies on production and trade.

Another major driving force for policy development in most African countries is to guard against further deaths caused by lack of food and reduce the level of dependency on other international sources for food supply (Denning et al, 2009). Some of the major developments in this industry include integrated and sustainable rural development. Since most agricultural products come from the rural areas, **there has**

been intensive infrastructural development in terms of road construction, investing in irrigation to avoid losses occasioned by inaccessible market and harsh weather conditions (You

et al, 2011). **This ensures continuous flow of the products.** Improved governance in the African countries has led to increased allocation of fund during budgeting (Anderson and Nelsen, 2010). Good governance has also influenced the development of major policy documents that put agricultural activities in the forefront. An example of these documents would be the 'Kenyan Vision 2030 policy document' which has elaborate projections for the agricultural sector. Again, an **increase in access and participation in**

the global market which is more competitive with good returns have led to growth in the agricultural industry (Dorosh. et 31.2009).

AT CPs

Perm empirically solves best – subsidies work with other policies

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Notably, the impact of subsidies on farmers has major similarity in the two continents with a slight difference on technological advances in the Asian countries and the same should be embraced by African countries. The aspect of combining the policy of subsidy and other policies for example offering financial support has also ensured success in agriculture in Asia (Carmody, 2009). The intentions to review the policy on subsidies in Asia should be done in a manner in which it will not affect the level of production. If it were to affect the level of production; this could be the start of problems related to food insecurity.

China

Empirical Solvency

Chinese agriculture subsidies and tariffs on imports boost domestic food security

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Asia as a continent with a specific example of **China has created a very friendly trading environment for agricultural products.** In China, **the government has totally given a tax holiday on agriculture.** **There are no taxes or fees imposed on agricultural activities. This has seen this sector move up the ladder and hence food security, increased income and eradication of poverty** among other benefits (Pauw and Thurlow, 2011; Naylor and Falcon 2010). **The friendly environment has also attracted foreign investors who bring with them better technology. Asian continent being a major producer and exporter of agricultural products enjoys various low tariffs from the countries with which it trades.** This has gone a long way in ensuring profitability of Asian agricultural products (Chu and Lee, 2000). **Asian countries** have major exports across the world and they ensure that they **protect their products by imposing tariff and other restrictions on imports. This discourages importation and more emphasis is placed on local production.** Developments in trade have also involved investing in agricultural assets that are more robust, effective and efficient in production hence giving them a competitive advantage for the products. This normally has an impact on competitive prices of Asian products in the world market. The continent also has preferential market access and ensures that it chooses the most viable, sustainable and profitable markets for its products (Katungi et al, 2011).

Subsidies solved food security in Asia

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

The subsidies created a very conducive agricultural environment both to local and international farmers. They were encouraged to work harder by the brighter future in this sector. They could see higher returns, this motivated their morale. As the returns increased, **many people joined** the sector. **The impact** of subsidy on farmers in Asia **has seen success** in this sector **and even influenced** the level of **technology**. The subsidy has seen **farmers' income levels rising and in result reduced poverty levels** (Bahigwa et al, 2005). **Increased farming activities** due to subsidies **have led to improved infrastructural development** and farmers are able to access the local and international market more easily. The **farmers have also benefited from increased research. Subsidies** led to increased farming activities which in turn **led to more research on better ways of farming.** The China government for example, took up the research on agriculture by opening several institutions. As many investors were attracted by the good policies adopted and a supportive government, **many people got involved in agricultural activities and this finally led to food security in the country.** Globally, **subsidies have seen the farmers in Asia getting international recognition.**

Econ Impact

Agriculture is key to the Chinese economy

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Asia as a continent has a very large population which stood at 4.14 billion as at end of 2011 and China alone had a population of approximately 1.34 billion (UN, 2011). China is a major exporter of agricultural products trading with Brazil, Russia, and United States of America, among others. The policies of the Chinese government have made the country to be a key player in the world's agricultural sector. Cooper (2006) outlined that **agriculture is a vital economic sector in China, whereby it employees more than 300 million farmers** (Mandere et al. 2011). This is a high figure showing the role of agriculture in providing employment to the Chinese people. **China has also been ranked the first in world farm output**. The country has embarked on the production of wheat, rice, maize, tea, pork, barley, fish, potatoes, cotton, and oilseed. In recent years, **the country has** demonstrated an **increased presence in the international agricultural arena** (Dewbre and Brooks, 2006). This has been evident **through the overwhelming exports China is making now**. Chinese agricultural products are finding ready markets in America, Europe, Africa and other parts of Asia. Since the year 1978, numerous developments in the agricultural sector have been realized in China. This is associated with the government initiatives to support agriculture as well as the establishment of efficient policies on land. Most of the land is currently under public ownership thus boosting sustainable exploitation of the land resources. As reported by Deal and Current (2009), China has not only concentrated in feeding its people, but it has been offering diverse agricultural products to the world population. This is despite the various challenges facing agriculture in the country. Such challenges include low percentage of arable land and series of disasters like floods. China has been identified to have a steady increase in annual surplus of agricultural commodities since 1978. **The production of grain in China** has recorded a steady annual increase of 2.6% and this increase **is twice the population growth rate**, thus demonstrating the level of food security in the country. Also, the production of fishery products, meat, cotton, and oil seeds have been observed to multiply at a high rate (Deal and Current. 2009). Based on this phenomenon. **China is able to feed its population and have surplus to reach the global markets**. The increased presence of China in the international agricultural arena is a result of the various factors. To begin with government policies and support to farmers has been a vital factor leading to excellence in the agricultural sector (Stockbridge, 2007). In this case, the government offers sufficient support in form of subsidies and policy regulations to agriculture. Adoption of modern technology in farming has also been of great importance in facilitating agriculture in China (Buah et al, 2011). This has been adequately adopted in commercial agriculture, whereby intensive and extensive commercial agriculture is undertaken. The presence of cheap and adequate labour and market has also been of great importance in boosting agriculture in China. This is provided by the large population. Cheap and environmentally friendly farming methods have also been adopted in China. The big population of the Asian continent together with trade competition calls for a very urgent need for massive investment in agricultural activities across the continent (Haggblade, 2007). The continent has put its agricultural activities in the list of its priorities and a top agenda in its major economic discussions. This has seen the continent self-sustaining in its food needs and is even involved in the provision of food aid, exportation of agricultural implements and food to some African countries (Del Ninno et al, 2007). **The agricultural sector in China** for example **contributes to more than half of the country's Gross Domestic Product**. Asia as a continent is very wide with vast disparity existing in the various countries. Generally, the continent has vast and rich agricultural land.

Cash 4 Food Plan

If you read this, read impacts about LDC food insecurity (lower developed countries)

Plan: The United States governments should end requirements that food aid be in the form of food produced, processed, bagged, and shipped in and from the United States.

The United States should increase cash-based food aid, prioritizing nations most affected by food insecurity, and increasing assistance for the production of food and agriculture research and development to nations most affected by food insecurity.

Solves high prices— makes food aid cost-effective and stimulates regional agricultural production, increasing lower developed nations food security

Institute for Agriculture and Trade Policy '07 ["Food versus Fuel in the United States: Can Both Win in an Era of Ethanol?"]

<http://se1.isn.ch/serviceengine/FileContent?serviceID=PublishingHouse&fileid=33A3FCB3-36FE-BDDB-87B8-754EB385B846&lng=en>] [PDI]

The most compelling argument against using U.S. corn for ethanol is if that corn would otherwise provide nutrition to the hungry. Indeed, underlying much of the food versus fuel debate seems to be a perception that the U.S. exports a large quantity of corn to countries where hunger is prevalent. **An analysis of data from the Food and Agriculture Organization of the United Nations (FAO), however, demonstrates that U.S. corn does not feed the hungry of the world. The ten countries with the highest percentage of undernourished people receive less than one-hundredth of one percent (.01 percent) of U.S. corn exports. The 24 countries in which at least a third of the population is undernourished receive less than 0.1 percent. In contrast, 55 percent of U.S. corn exports are directed to other wealthy countries** in the OECD (Organization for Economic Cooperation and Development). Japan imported 33 percent of U.S. corn exports in 2005.⁹ As would be expected, **U.S. corn exports are traded to countries that have the ability to buy them. Ethanol production has also raised concerns about U.S. food aid—namely that rising commodity prices due to ethanol demand will decrease the quantities of food aid delivered by the U.S.**¹⁰ But recent declines in food aid deliveries are in part the result of bigger problems with the U.S. Food Aid program. **Rather than contributing cash that can be used by recipient countries to purchase food from nearby sources and thereby stimulate agricultural production in hunger-prone regions, the U.S. requires that the majority of its food aid be in the form of food produced and processed in the U.S. itself.** A recent report from the U.S. Government Accountability Office (GAO) found that **nearly two-thirds (65 percent) of U.S. food aid expenditures are spent on transportation and business costs—not food**—and that **increases in these costs have contributed to the declines in food aid shipments.**¹¹ Food aid **Most countries that provide food aid donate cash with which recipient countries can purchase food from local or nearby sources. Food purchased from local sources not only reduces or eliminates shipping costs and transportation times, but can also stimulate much-needed agricultural production and economic activity in hunger-prone regions.**¹² **The U.S., on the other hand, requires that at least 75 percent of its food aid be procured, processed, bagged and shipped in and from the U.S., by U.S. firms.** An OECD study found **that in-kind food aid such as that from the U.S. is at least 30 percent more costly per metric ton than food aid purchased by the recipient countries**

through cash donations.¹³ The U.S. also is one of only two countries that sells some of its food aid—a practice known as monetization— another practice that can undermine local farmers and food production in other countries.¹⁴ The U.S. Food Aid program has been widely criticized for both of these practices.

Intellectual Property

Inherency

Crop biodiversity is declining globally – causes huge risks to food security

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, “Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security” in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

As referred above, about **one half** (52%) **of** the total number of **vegetables cultivated** in the world **receive commercial breeding attention by seed companies** and, of those, **only 17% are in large scale breeding programs, fostering a need for serious attention to** maintenance of **vegetable** crop **biodiversity. There has been a severe decline in the vegetable variety genetic base**, as evidenced by the significant reduction, especially within the last 50 years, in the number and range of vegetable varieties grown. During this **period vegetable genetic biodiversity has been eroding all over the world and vegetable genetic resources are disappearing, on a global scale, at an unprecedented rate of 1.5-2% per annum.**

Widespread adoption of **simplified vegetable systems** with low genetic biodiversity carries a variety of **risks** including **food insecurity**. In the short term, **such systems risk potential crop failure. In the longer term, they encourage the reduction of the broad genetic base that contributes to high yields, quality traits, disease and pest resistance, etc.** This compromises the future genetic health of vegetables.

Especially prominent among the "enemies" of genetic biodiversity are the **commercial markets and economic social pressures** that **have practiced breeding methods that promote uniformity, encouraging** extensive cultivation of preferred improved and hybrid **vegetable varieties with insufficient biodiversity**. In addition, **globalization has stimulated the consolidation of vegetable seed companies into huge corporations and the decline of small seed companies that serve local and regional markets**. In consequence some vegetable breeding programs have been merged or eliminated to reduce costs. Thus **fewer and fewer companies/corporations are making critical decisions about the vegetable research agenda**, and the future of vegetables worldwide. Inevitably, two things will happen. **There will be fewer vegetable breeders in the future and growers will be dependent on a narrower genetic background that could contribute in the near future to food insecurity for poor growers and consumers**. Also, with the advent of genetic engineering, these huge seed corporations are also assuming ownership of a vast array of living organisms and biological processes. Of equal concern are expanded uses of **legal mechanisms, such as patents and plant breeder's rights** that are removing vegetable plant germplasm from general public use [28]. Intellectual property rights for plants were intended as a defensive mechanism to prevent the loss of invented varieties to competitors. However, with the more stringent enforcement of plant breeding rights, and particularly with the application of the utility patent law in the United States **to protect all forms of an innovation**, this **has become an offensive weapon to stifle competition and inhibit the flow of germplasm and information. This can have serious implications** for the future conservation of vegetable genetic resources and **for world food security**.

Developing countries in the squo are pressured into accepting patent and breeders' rights agreements that harm their own food security

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, "Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Food security exists when all people, at all times have access to sufficient, safe and nutritious food to meet their dietary needs and preferences for an active and healthy life.

Breeding of vegetables in developing countries is reduced and focused on a very limited number of crops. It is strongly dependent on public investments in the centres of the Consultative Group on International Agricultural Research (CGIAR). The general lack of private investment in developing countries can be explained by the dominance of the public sector on the one hand and the low purchasing power of the majority of the farmers. Besides in some of these developing countries the market is too small to generate the interest of the international breeding companies for specific programmes. Those CGIAR centres, e.g. AVRDC, provide varieties or half-bred materials to national public institutes, universities and to the private seed sector particularly in Asia. As plant genetics and breeding are long-term enterprises requiring dedicated expertise and infrastructure, substantial and stable funding sources are needed to support public research and germplasm development programs. A positive recent development is a partnership between NSF and the Bill and Melinda Gates Foundation to boost agricultural productivity in developing countries, with each program providing \$24 million over 5 years to support competitive research [37]. In addition, the Alliance for a Green Revolution in Africa (AGRA) is investing \$150 million through its Program for Africa's Seed Systems to improve the availability, variety and quality of seeds for African farmers [38]. Another interesting exception it is the recent partnership for new vegetable varieties between Rijk Zwaan international breeding company and Tanzania Government which aim is jointly to develop new vegetable varieties with high quality standards for the African farmers and consumers. This program will be strongly supported by technology, facilities and know-how of Rijk Zwaan in collaboration with local Tanzania partners. While still relatively short term, these programs have the potential to engage new partners in the development of seed systems for rural farmers and lead to more stable sources of support and can contribute to decrease food insecurity. **A major concern in developing countries is that under UPOV, farmers are not allowed to exchange seed of protected varieties, and that only for specific crops farmers may be allowed to reuse their own seed.** This is opposed to traditional seed handling practices by farmers in these countries, and **exchange is an important tool to maintain biodiversity and in preventing seed shortages among poor farmers.** During the Green Revolution, the local exchange of seed was stimulated in order to increase access to better varieties. The level of implementation of breeder's rights (UPOV) legislation differs widely within developing countries. Most Latin American countries responded by joining UPOV under its 1978 or 1991 Acts. Most Asian countries developed systems that are closed to UPOV (but didn't join) or combine breeder's rights with aspects of politically important farmer's rights because these are considered insufficiently protected by UPOV. In Africa, few countries are members of UPOV (South Africa, Kenya, and Tanzania have applied). **Developing countries are sometimes asked to become a member of UPOV in exchange for trade agreements and sometimes they are asked to introduce patent rights for plants and even plant varieties.** This puts developing country policy makers, who are aware of the importance of local seed exchange among farmers for basic vegetable crops in a difficult position. UPOV recognises an exemption for private and non-commercial use, but this is interpreted by many as to be valid only for farmers who consumed all of their crop within the family. Since almost all farmers take some surplus vegetables to the local market, this strict interpretation does not help much and is not likely to lead to UPOV membership least developed countries. Nearly **half of the world's vegetable farmers are poor and cannot afford to buy hybrid seed every growing season. What are the prospects for these growers since they produce 15- 20% of the world's vegetables and they directly feed almost one billion people in Asia, Latin America, and Africa?** Capital and risk factors are the key constraints that limit the adoption of improved vegetable varieties by small and poor farmers, because these vegetables generally are much more costly to produce per hectare than traditional landrace varieties [39,40,41], and most farmers require credit to finance their production. While landraces are usually cultivated using a level of input intensity appropriate to the financial resources available within a household, improved vegetable varieties often require an intensive input regime, including large labor inputs for planting and harvest that cannot be met with family labor alone [42]. For small and poor farmers improved vegetable varieties also tend to be riskier than landraces, since the higher costs associated with seeds and production impose a greater income risk. Small farmers may have lower production costs with landraces, because they achieve adequate yields with fewer inputs. The lack of capital available to small and poor farmers denies them the opportunity to invest in vegetable production inputs. Without collateral help these farmers are usually unable to secure a loan from a bank or money lender. For those who can get a loan, rates are often unmanageably high, with strict penalties for late repayments. Similarly, a lack of education, resources, skill training, and support prevent these farmers from using improved varieties and then to generate a stable income from their production. In addition, governments usually do not regulate the price of vegetable crops or even provide market information, unlike for field crops. Improving market information systems for vegetable crops and facilitating farmers' access to credit are then essential components of a strategy to enable poor farmers to grow improved vegetable varieties and to overcome the insecurity of their food supplies. The problem of food insecurity in this situation, like that of poverty, is thus frequently traceable to macroeconomic conditions and market failures due to actions of exploitative intermediaries, including landowners, moneylenders, and traders. As pointed by HKI [43] **low cost quality seeds are essential for these farmers.** Credit facilities and other inputs must be also part of these vegetable production systems, so that the use of improved vegetable varieties can help subsistence vegetable growers to overcome their poverty and food insecurity.

Text & Solvency

Just governments should eliminate plant breeder's rights and patent rights on plant varieties to ensure domestic food security.

The plan stops transnational corporations from crowding out smaller vegetable breeders that are key to vegetable biodiversity and longterm food security

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, "Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Vegetable breeding has to address and satisfy the needs of both the consumer and the producer. **Innovation in vegetable breeding is dependent on specific knowledge, the development and application of new technologies, access to genetic resources, and capital** to utilise those factors. Access to technology, as well as biodiversity, is essential for the development of new vegetable cultivars. **Vegetable plant breeding is characterised by continuous innovations and the ever ongoing development of new cultivars that ever better meet the requirements of producers and consumers. The driving force behind this innovation is acquiring or increasing market share.** Molecular breeding has strong effects on the sector through the introduction of marker-assisted breeding and the development of genetic modification. **The plant breeder's rights system is a specifically designed legal system for the protection of plant cultivars. Plant breeder's rights give the developer of a new cultivar the right to exclude others from commercialization. Two intellectual property rights are relevant** for the protection of innovations in this sector: **plant breeder's rights and patent rights**. Some exemptions play an important role in plant breeding, such as the "breeder's exemption". The breeder's exemption, that is not considered in patent rights, ensures that other breeders may in a sort of "open innovation" use such a protected cultivar in their own breeding programme, making the best properties of these cultivars available to the breeding programmes of competitors. Great emphasis on protection of cultivars by seed companies, including development of F1 hybrids, plant cultivar protection and patenting have been done. The **patent rights in combination with technological developments in molecular biology have in recent decades led to a large consolidation move among seed companies.** Plant breeder's rights and patent rights may be conflicting in plant breeding. **Specific liberties of breeders and farmers are lost with the patentability of plant-related inventions. The global seed trade is now dominated by international corporations whose vast economic power has effectively marginalized the role of public sector plant breeding and local, small and even medium-scale seed companies.** Some of these companies belong to worldwide corporations that are also involved with pesticides and biotechnology. **For most vegetable crops only a few multinational seed companies are controlling large part of the world market. This makes a growing part of the global vegetable supply dependent on a few seed companies. The multinational seed companies concentration in huge corporations have merged or canceled some vegetable breeding programs to reduce costs. Then there will be fewer vegetable breeders** in the future and the producers will be dependent on a narrower genetic background, that **could contribute** in a near future, for **biodiversity reduction and food insecurity**. A clear distinction must be made between intellectual property rights on technology for use in plant breeding and intellectual property rights on genetic traits of vegetables. The conflict between plant breeder's rights and patent rights is in fact restricted to rights on and the availability of plant traits. **Patents on genetic material**, the way in which these are granted, and the way in which rights are handled **are important causes of the decrease in biodiversity of breeding companies**

and **threaten to obstruct innovation** in vegetable breeding. **The intellectual property protection laws for plants must be made less restrictive to encourage research and free flow of materials and information.** Patent policy should contribute to a proper balance between the rights and obligations of patent holder and society. **Access to "advanced" genetic resources is an important condition for a healthy and innovative plant breeding sector and food security.** Active and positive connections between the private and public breeding sectors and large-scale gene banks are required to avoid a possible conflict involving breeders' rights, gene preservation, erosion, and food security.

Poor growers are key to vegetable biodiversity

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, "Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Vegetable growers have an important role in conserving and using vegetable biodiversity. The future of world food security depends not just on stored vegetable genes, but also **on** the people who use and **maintain[ing] crop genetic biodiversity** on a daily basis. In the long run, the conservation of plant genetic **biodiversity depends** not only on a small number of institutional plant breeders and seed banks, but also **on the vast number of growers who select, improve, and use vegetable biodiversity, especially in marginal farming environments.** That is why we should be also alerted and particularly alarmed by the current trend to use improved and hybrid vegetable varieties exclusively. **Growers** do not just save seeds, they **are plant breeders who are constantly adapting their vegetable crops to specific farming conditions and needs.** For many generations, **vegetable growers have been selecting seeds and adapting their plants for local use. This genetic biodiversity is the key to maintaining and improving the world's food security and nutrition. No plant breeder** or genetic engineer **starts from scratch** when developing a new variety of tomato, pepper, cabbage or lettuce. **They build on the accumulated success of generations of growers,** who have selected and improved vegetable seeds **for thousands of years. If poor small-scale growers in marginal areas stop saving seeds, we will lose genetic biodiversity. Growers will lose the means to select and adapt vegetable crops to their unique farming conditions,** which are characterized by low external inputs. Hybrid seed technology is designed to prevent growers from saving seed from their harvest, thus forcing them to return to the commercial seed market every year. Hybrid vegetable seeds alone, and used globally, can be a dead-end to biodiversity. **If growers abandon completely their traditional vegetable landraces in the process of adopting only hybrids, crop genetic biodiversity achieved over centuries will be lost forever.** Many agronomic benefits will be lost to worldwide growers and thus to consumers. The exclusive adoption of hybrid varieties in marginal areas may restrict the vegetable producing capacity of growers. **It will also destroy biodiversity, and it may contribute in the long-term to food insecurity.** For example, a study by Daunay et al. [29] points out that the release of **F1 hybrids** (in Europe and some Asian countries like China and Japan) **displaying higher productivity, but** with **poor phenotypic variability,** has **contributed to the losses of eggplant landraces,** thus inevitably **leading to genetic erosion** of *S. melongena*. Moreover, some African cultivated eggplants have been lost following social, economic, and political changes [30]. **Therefore, the cultivated eggplant has been considered a priority vegetable species for the preservation of genetic resources since 1977.** Several studies have been carried out in Asia and Africa [30, 31], and collections built up [32], particularly in China [33].

Patents bad

Patents kill innovation and crop biodiversity, putting profit motives of big companies above food security

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, "Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Patent for plant varieties is considered the ultimate protector of breeder's rights, affording the opportunity to control as many aspects of the invention as possible, thereby **strangling the innovative capacity of the competition. The patent is a means to slow the flow of progress of plant breeding research, except within the company holding the patent.** While obviously benefiting that company, **it is a big step backwards for the plant breeding community and by extension, for agriculture itself.** Theoretically, if each seed company could obtain a patent on a new variety with certain favorable traits, each would do further breeding only with its own protected variety. So there would be parallel lines of research without the enrichment to each program that comes from crossing those lines with varieties in other programs. The owner of a patented variety can share it by licensing its use in breeding to other companies. The cost of the license, in outright payment or in royalty fees, may be quite steep. This would certainly limit the interest in using that variety, since the cost may negate any profit from a new variety. **Patents allow elevation of the profit motive far above the good-of-society,**

food security, and biodiversity requirements. There are two major products of plant biotechnology: traits and methods. Traits such as a disease resistance or product quality (e.g. increase antioxidant content) create value in the process of vegetable breeding. For vegetable breeding companies, specialized in plant breeding biotechnology that have based their business model on the development and marketing of traits or marker platforms (cf. 4.3) the protection through patents is essential. For them patent system is the only way to create freedom to operate for further innovation. Patents are also necessary to enter into public-private partnerships, to maintain freedom to operate for scientists, assist in the downstream utilisation of public inventions, and to obtain cash benefits for the institute facing increasing difficulties to secure public financing.

Miscellaneous Mechanisms

Fisheries

Fisheries/aquaculture solve.

Beddington 10, (John Beddington, Government Office for Science, Kingsgate House, London, "Food security: contributions from science to a new and greener revolution," Phil. Trans. R. Soc. B (2010) 365, 61–71, <http://classic.rstb.royalsocietypublishing.org/content/365/1537/61.full>) [PDI]

Sustainable fisheries are a priority for global food security, with fish comprising half the dietary protein for 400 million people in the world's poorest countries, and a fifth of protein nutrition in developing countries as a whole. Both capture fisheries and, increasingly, aquaculture are important, with the latter averaging an annual growth of 8.7 per cent per year since 1970 (FAO 2006b,d). However, the significant threat to fisheries from over-fishing, climate change and ocean acidification is well acknowledged.¶ As is the case for land-based agriculture, **maximizing the contribution of rivers, seas and oceans to sustainable food production will require both effective policies and the judicious use of technologies.** Greater consideration of the impact of fishing at the ecosystem level, and not only on individual species, will be an important part of improving fisheries management (Pikitch et al. 2004; FAO 2008d). **Many of the tools for better management, such as tested and enforceable harvest strategies and rights-based management, are already available but need to be implemented** (Beddington et al. 2007).¶ **Technological innovations are already making an important contribution to achieving both economic and environmental goals, for example in capture fisheries enabling greater selectivity in fishing gear to minimize harmful impacts on the environment** (FAO 2006b).¶ While much of the technology used in aquaculture remains relatively simple, more advanced technologies are also being applied. For example, the WorldFish centre has developed genetically improved strains of Nile tilapia for on-farm production and extended these to farmers in six Asian countries. An assessment of on-farm trials showed yield gains of 78 per cent in Bangladesh, achieved with no increase in production costs, and an internal rate of return of 70 per cent taking account of the costs of both research and dissemination (Deb & Dey 2005).

GMOs

Crop improvement via genetic modification and biofortification solves

Beddington 10, (John Beddington, Government Office for Science, Kingsgate House, London, "Food security: contributions from science to a new and greener revolution," Phil. Trans. R. Soc. B (2010) 365, 61–71, <http://classic.rstb.royalsocietypublishing.org/content/365/1537/61.full>) [PDI]

Crop improvement through breeding has been key to the past successes of agriculture. Much of the growth in major crop yields in developing countries (21% between 1961 and 1980 and 50% between 1981 and 2000) has been attributed to the use of improved crop varieties (Evenson & Gollin 2003). New varieties can present a win – win for yields and environmental impact, especially if the focus is on improving the resource use efficiency of crops. For instance, conventional breeding using selection for transpiration efficiency has been used to develop drought-resistant wheat (Rebetzke et al. 2002).¶ The introduction of improved crop varieties has been most successful for the major crops in favourable agro-ecological areas (Evenson & Gollin 2003). While there have also been successes in less favoured areas and for minor crops, for example cassava, there is a need for enhanced research particularly for the subsistence crops of sub-Saharan Africa, such as sorghum and millet. Research to develop improved crops that are appropriate for local conditions is vital to their widespread adoption, and schemes to promote greater participation of local farmers in research have accelerated both development and adoption (Walker 2007; Somado et al. 2008).¶

New genomic techniques, such as marker assisted breeding, allow greater selectivity and reduce the element of chance in plant breeding. These techniques have been used to promote a range of qualities such as submergence tolerance in rice and increased resistance to pests and diseases (Collard & Mackill 2008). Successes to date using genomics have included the development of more disease-resistant cassava, now distributed to smallholders in Burundi, the Democratic Republic of Congo, Rwanda and Uganda (Okogbenin et al. 2007). Looking ahead, genomic techniques have strong potential as one of the key technologies to offer solutions, accelerating our ability to develop varieties with characteristics of drought, heat and saline resistance, as well as resistance to pests and disease, although environmental and food safety conditions will need to be met (Møller et al. 2009).¶ A current challenge is the re-emergence of stem rust as a major threat to global wheat production, with a new variety identified in Uganda in 1999, dubbed Ug99 (Pretorius et al. 2000). Stem rust has historically been one of the most damaging and widespread of wheat diseases, controlled for decades by international collaboration to breed for genetic resistance and through a programme of cultivar releases. The re-emergence of stem rust now threatens 20 per cent of the world's wheat in Central and North Africa, the Middle East and Asia. One study suggested potential losses in these areas of 9 – 60 million tonnes, depending on the scenario used, in the region of 1–10% of global wheat production (Hodson et al. 2005; Singh et al. 2006).¶ This is now being addressed through the Global Rust Initiative, a major research initiative under the umbrella of the International Maize and Wheat Improvement Center (CIMMYT) and the International Center for Agricultural Research in Dry Areas (ICARDA), which has led to new resistant, high yielding strains being identified, which are now being distributed globally.¶ Biofortification through crop breeding and changes in production to add micro-nutrients to staple crops may become increasingly important as means to address malnutrition in developing countries. The World Health Organization estimates that vitamin A deficiency alone is responsible for causing blindness in up to half a million children each year. Increased levels of nutrients including vitamin A, iron and zinc have already been demonstrated in staples such as rice and sweet potato (Nestel et al. 2006; Gilani & Nasim 2007).

Better protecting crops from diseases increases food production by 40%.

Beddington 10, (John Beddington, Government Office for Science, Kingsgate House, London, "Food security: contributions from science to a new and greener revolution," Phil. Trans. R. Soc. B (2010) 365, 61–71, <http://classic.rstb.royalsocietypublishing.org/content/365/1537/61.full>) [PDI]

Crops are attacked by a great variety of pests, diseases and weeds. **A key challenge to the protection of current production is the emergence of new pests and diseases, in addition to the spread of current diseases**

(OSI 2006). **The growing, rapid global movement of people and agricultural materials has brought a constant stream of new crop diseases and pests, and allowed more rapid mixing and evolution of virulent new disease strains**, such as Ug99 referred to above (Levine & D'Antonio 2003).¶ Crop protection through pesticides has made a significant contribution to growth in productivity since the 1950s. However, **losses due to pests globally are still high**. The figures vary between countries and crops, but **one estimate suggests an overall loss of around 40 per cent** (Yudelman et al. 1998). **Another more recent assessment suggests losses of 26 – 29% for soyabean and wheat, and 30 – 40% for maize, rice and potatoes** (Oerke 2006). The same study suggests that **losses for wheat could be as high as 50 per cent without effective plant protection, and even higher for other crops**.¶ Improved crop protection in the face of new pests and diseases, as well as resistant strains of current diseases, will rely on a variety of approaches. **The well-managed use of conventional pesticides must continue to play a key role, set in the context of the major losses noted above. However, there are also opportunities for greater use of integrated pest management techniques, the stimulation of plants' natural defences and the use of 'semiochemicals' including insect pheromones to dissuade insects from attacking crops** (Cook et al. 2007; Pickett et al. 2007; Khan et al. 2008; Hassanali et al. 2008).¶ Crop losses **after harvesting** are also significant. Most susceptible are fruits, vegetables and root crops, but cereal staples are also vulnerable. Losses arise from pests and diseases, physiological deterioration from high temperatures or low atmospheric humidity, and physical damage.¶ **Solutions range from careful harvesting and pack-aging to more advanced storage technologies and use of pesticides and fumigants**. The need to research new technologies and approaches has been given new impetus by the banning of the fumigant methyl bromide in many countries due to its ozone-depleting effects. For example, inert dusts to protect against insect storage pests have proved successful in southern and eastern Africa (Morris et al. 2006).

Sustainable livestock farming via animal genetic monitoring and disease prevention solves.

Beddington 10, (John Beddington, Government Office for Science, Kingsgate House, London, "Food security: contributions from science to a new and greener revolution," Phil. Trans. R. Soc. B (2010) 365, 61–71, <http://classic.rstb.royalsocietypublishing.org/content/365/1537/61.full>) [PDI]

Demand for meat is projected to increase by 85 per cent by 2030 (World Bank 2008a). In terms of energy conversion, **the production of meat is an inherently inefficient process**. Figures vary for the ratio of conversion of animal feed to meat, but recent figures are 1.8 : 1 for chicken and between 5 : 1 and 10 : 1 for beef, depending on the production system (Garnett 2008; Trostle 2008). **Around a third of the global production of cereals is used for animal feed** (FAO 2006a).¶ **Livestock farming also makes a significant contribution to climate change. It has been estimated that the sector is currently responsible for around a quarter of global anthropogenic methane emissions, and 14 per cent of anthropogenic nitrous oxide emissions. Total methane and nitrous oxide emissions from livestock are expected to grow by 50–60% by 2030** (FAO 2003).¶ Although there are strong arguments, including that linked to health considerations in developed countries, for efforts to reduce demand for meat, it is clear that the new greener revolution will need to address livestock as well as crops. The same issues of genetic improvement, efficient use of resources and protection from disease need to be tackled.¶ Particular constraints to the genetic improvement of livestock are their genetic complexity, the relatively long life cycle of livestock, particularly cattle, and the need to protect animal welfare and genetic diversity. **Advances in areas such as molecular genetics, genome sequencing and reproductive technologies, dubbed 'precision animal breeding' attempt to overcome these difficulties**. Marker assisted selection has been used, for example, to increase the litter size of pigs. **There is undoubtedly much potential left to be exploited, for example through the use of information from across the genome for selection, rather than just individual genes or sections of DNA** (Flint & Woolliams 2008).¶ It has been noted that the genetic diversity in livestock in intensive production systems is low, and that diversity has been lost as farmers switch to 'industrial' breeds from native lines, particularly in developed countries. **Efforts to maintain diversity will need a mix of solutions, including protection of rare breeds and wild relatives, ensuring the genetic diversity of industrial breeds through selection programmes and cryoconservation of genetic information in gene banks** (Taberlet 2007; Flint & Woolliams 2008).¶ **A key limitation to animal productivity is**

disease. The scale of cost of animal diseases is starkly high- lighted by the impact of outbreaks such as the Foot and Mouth Disease epidemics in the UK in 2001 and 2007 and bovine spongiform encephalopathy, and bovine tuberculosis in Botswana in the mid- 1990s. **The overall impact of animal disease on the UK has been estimated at 17 per cent of production, compared with 35 – 50% in developing countries** (Flint & Woolliams 2008).¶ Increasing global temperatures will extend the range of certain animal disease spreading vectors such as mosquitoes, ticks and midges, and could bring the threat of animal diseases such as African Horse Sickness and West Nile Virus to areas where they have not historically been present, such as northern Europe (Bayliss & Githeko 2006).¶ **A priority in combating animal disease is the development of vaccines. There are great hopes that recent genome sequencing of strains of African swine fever may lead to a vaccine for this disease.** African swine fever has caused severe losses to pig production in many African countries over the past decade. Research has also produced quick diagnostic tests for diseases such as rinderpest, a fatal disease primarily affecting cattle in the Somali ecosystem in eastern Africa (BBSRC 2005). **Rapid diagnosis in conjunction with vaccination programmes has led to the almost complete eradication of the rinderpest virus, which would make it only the second virus ever to be eradicated, after smallpox in 1979** (Normile 2008).

Genetic modification protects crops against disease and improves nutritional status

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, “Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security” in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Another important tool for improving vegetable varieties is through genetically modified technology. Transgenic crops, commonly referred to as **genetically modified (GM) crops enable plant breeders to bring favorable genes, often previously inaccessible, into already elite cultivars, improving their value** considerably and offer unique opportunities **for controlling insects, viruses and other pathogens, as well as nutritional quality.** Conventional plant breeding that utilizes non-transgenic approaches will remain the backbone of vegetable genetic improvement strategies. However, **transgenic crop cultivars should not be excluded as products capable of contributing to more nutritious and healthy food. Many vegetable crops have been genetically modified to include resistance to insects, other pathogens (including viruses), and herbicides and for improved features, such as slow ripening, higher nutritional status, seedless fruit, and increased sweetness.** Recently, Dias and Ortiz [18] did an analysis of the status (until 2010) of transgenic tomato, eggplant, potato, cucurbits, brassicas, lettuce, alliums, sweet corn, cowpea, cassava, sweet potato, and carrots. The most promising traits to reach vegetable growers seem to be host plant resistances to insects and other pathogens, especially for tomato, potato, eggplant, summer squash and sweet corn. **Genetic engineering has the potential to address some of the most challenging biotic and abiotic constraints faced by vegetable growers, which are not easily addressed through conventional plant breeding alone.** However, horticulture remains in its infancy regarding the use of transgenic crop technology because vegetables are considered minor crops (compared to field crops), due to the lower resources invested (especially by the multinational private seed corporations), and derived of the high costs for deregulation. Most biotech research is done in field crops because multinational seed corporations expect the highest rate of return to their investment. While it is becoming less expensive to create transgenic crops for pest management, developing a marketable product and a regulatory package remains costly. According to a recent COGEM (The Netherlands Commission on Genetic Modification) publication the total costs associated with the market introduction of one transgenic plant with one transgenic event is between 6 and 10 million euros. Biotechnology products will be successful if clear advantages and safety are demonstrated to consumers. Development and regulatory costs can be recouped more readily if the product is grown on an extensive area (as happens with field crops), which is not generally the case for individual vegetable crops. The large multinational seed corporations have, for the most part, abandoned the development of transgenic vegetable crops because of the high costs associated with product development and deregulation.

Hemp

Hemp independently solves yields – rotationally it increases output for other crops.

Ranalli 4

Paolo, Research Institute for Industrial Crops and Gianpietro Venturi, Department of Agroenvironmental Science and Technology, “Hemp as Raw Material for Industrial Applications,” EUPHYTICA v. 140, 2004, pp. 1-6, p. 3. [PDI]

The most important aspect is that for each of these destinations there now exists knowledge and techniques that were not even thinkable a few years ago. This means that each end product can be obtained at a lower cost using technologies that are safer and more environmentally friendly, **and the product characteristics can reflect the demands of the consumers who are then willing to pay higher prices. Besides, hemp has the capacity to grow fast (i.e. no need for early herbicide treatments), to remove significant quantities of heavy metals from the soil (bioremediation), to develop a long tap root, up to 2.5 m (preventing soil erosion), and to increase the yield of the succeeding crop in rotation cycle up to 10–15%.**

Hemp solves ag collapse – revitalizes unsustainable practices.

Dwyer 98

Susan David, J.D. Candidate, “The Hemp Controversy: Can Industrial Hemp Save Kentucky?” KENTUCKY LAW JOURNAL v. 86, Summer 1997/1998, p. 1152. [PDI]

Hemp is also helpful to farmers in growing other crops. Because hemp's resistance to weeds can help clear a field of unwanted growth, hemp is beneficial in a crop rotation, clearing fields for other crops that are more susceptible to weeds and pests. n74 In addition, if retting and breaking is done in the fields, hemp returns its nutrients to the soil when retted, leaving it rich for the next crop. n75When the United States hemp industry died out in the mid-twentieth century, environmental concerns were few. Petroleum-based plastics were seen as the products of the future, and forests seemed endless. Forty years after the last commercial crop of hemp was grown in the United States, **we are far more concerned about the impact that our production and use of goods has on the natural world. Deforestation, oil spills, pollution, and greenhouse gases trouble the consciences of many. We are at least marginally aware that we must find sustainable resources if we are to continue to live as we do. One commentator has noted that n1 weaning out sic society from fossil fuels and pulpwood will require utilizing several plant species which are well-adapted to each specific production area. Hemp alone will not save the planet. But hemp, used in combination with many other plant species, such as sugarcane, sorghum, and flax, may play a vital role in saving our planet from catastrophe. n76**

Hemp also revitalizes small farms

Fine 14

(Doug, Staff at the LA Times, “A tip for American farmers: Grow hemp, make money” June 25, <http://www.latimes.com/opinion/op-ed/la-oe-fine-hemp-marijuana-legalize-20140626-story.html>, [PDI]

Canada's windfall has been largely due to the American demand for omega-balanced hempseed oil. **But hemp is also a go-to material for dozens of applications all over the world.** In a Dutch factory recently, I held the stronger-than-steel hemp fiber that's used in Mercedes door panels, and Britain's Marks and Spencer department store chain used hemp fiber insulation in a new flagship outlet. **"Hempcrete" outperforms fiberglass insulation. n1 Farmers I've interviewed from Oregon to Ohio have gotten the memo.** In a Kansas-abutting corner of eastern Colorado, in the town of Springfield, 41-year-old Ryan Loflin wants to save his family farm with hemp. **"It takes half the water that wheat does,"** Loflin told me, scooping up a handful of drought-scarred soil so parched it evoked the Sahara, **"and provides four times the income. Hemp is going to revive farming families in the climate-change era."** From an agronomic perspective, **American farmers need to start by importing dozens of hemp varieties (known as cultivars) from seed stock worldwide. This is vital**

because our own hemp seed stock, once the envy of the world, was lost to prohibition. This requires diversity and quantity because North Dakota's soil and climate are different from Kentucky's, which are different from California's. Also, the broad variety of hemp applications requires distinct cultivars.¶ Legally, farmers and researchers doing pilot programs in the 15 states that have their own hemp legislation (including California) now have the right to import those seeds. The point of the research authorization in the farm bill is explicitly to rebuild our seed stock. Such research is how the modern Canadian hemp industry was kick-started in 1998.¶ **But one final hurdle has been placed in front of American hemp entrepreneurs.** In Kentucky, **U.S. Customs officials**, at the behest of the Drug Enforcement Administration, in May seized a 286-pound shipment of Italian hemp seed bound for the state's agriculture department. **After a weeklong standoff, a federal agency had to be reminded by the federal courts that the law had changed and Kentucky's seed imports were legal.**¶ **The problem is as much an entrenched bureaucratic mind-set as the ink drying on the new federal hemp policy.** DEA Administrator Michele Leonhart told a law enforcement group last month that the hoisting of a hemp flag above the U.S. Capitol last July 4 was "the low point in my career."¶ It should have been a high point. **Hemp's economic potential is too big to ignore. When he was China's president, Hu Jintao visited that nation's hemp fiber processors in 2009 to demand that farmers cultivate 2 million acres to replace pesticide-heavy cotton. Canada funded its cultivar research for farmers, with today's huge payoff.**

Sustainable small farms prevent extinction.

Freudenberger 2003

(PhD Agronomy, expert on global agriculture, Professor Emeritus @ Luther Seminary, Consultant at Oberlin College for the Environmental Ethics Program, Journal of Lutheran Ethics, March 20) [PDI]

The predominant land ethic operative in our nation at this time can be defined as an ethic of profit-taking. "The good" is commonly understood in our contemporary society to be related to wealth accumulation. A good farmer is a wealthy and prosperous farmer. A "bad" farmer is a bankrupt

farmer. A good agricultural system is a wealth-generating system. Within such an ethical frame of reference, efficiency in crop production is the standard for evaluation. For many years, even up to the present, agricultural research has been devoted primarily to this standard. Such an ethic and measure of progress is mechanistic, materialistic, reductionistic, dualistic and anthropocentric. Within the construct of this measure the value of private land ownership provides license to allow the "owner" of the land to do as he or she pleases. [3] **In contrast to this outcome, dominion ethics offers an idea of regenerative agriculture that restores, sustains, preserves.**

What a challenge this is in the context of seven thousand years of human destruction of the land.

What a challenge this is to our sophisticated science and technology to invent, with new biological, physical, and social tools, an agricultural or food system, that restores and preserves the elements essential for the long-term maintenance of a global food system... a regenerative agriculture.

Such an agriculture, moving in a radically different direction from our presently exhaustive and environmentally destructive global food system, is coherent and consistent with the tradition of "dominion ethics." Such an ethic requires that our relationship to the land be restorative and preservationist. Such an agriculture will be solar and biologically intensive. **Farmers will be understood as "managers of micro-biotic communities of life" of which there are thousands. We will call this type of agriculture an "agro-ecology." The design of this type of agriculture of biologically complex, not truncated as are today's monocropping systems.**

Farms and farming systems will be designed as analogues or original biotic community ecosystems. Agricultural colleges need to be understood as schools of agroecology, or schools of biotic community management. Farming must be site-specific, and should harmonize and enhance the massive diversity of ecological niches. Zero tillage, or permaculture, must become the rule, as perennial grasses, trees, and indigenous animal species are integrated into the system. There are twenty thousand presently identified edible plants to be explored as food sources—today 85% of all food consumed by humanity comes from fourteen plants. An agroecology works symbiotically with creatures that have evolved within their habitats for tens of thousands of years and have contributed to the health and balance of plant communities of their natural environment.¶ [4] The values incorporated into a regenerative and therefore sustainable agriculture (an agroecology) or food system involve six principles: health of the land, welfare of future generations, social and interspecies justice, integrity in meaningful work and relationships, caring for every aspect of the ecosystem in which we live, and reverence or respect for life. Consequently, **"good" agriculture ultimately enhances the health and maintains the integrity and stability of the natural system within which it operates... systems upon which all life, including human life, are totally dependent. As Aldo Leopold wrote in A Sand County**

Almanac, "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it goes the other way." (Leopold, Aldo. A Sand County Almanac. New York: Oxford University Press, 1949, p. 217) [5] From the Old Testament theological understanding of "having dominion," good agriculture preserves species rather than driving them into extinction or modifying their gene structure to such a degree that they become an entirely new species introduced into ecosystems that have no history of these modified species. **Good agriculture assessed the health and fertility of the land from generation to generation. Such an agriculture maintains ecological integrities and justice in personal and community relationships. Its technologies are self-reliant and regenerative.** An agriculture functioning within guidelines of a dominion ethic would seek to improve ecological integrity by increasing symbiotic relationships of land, agriculture, and society, and would seek to improve the economic and social health of the whole community of life. [6] In summary of this brief reflection, one can suggest that **the idea of dominion ethics requires regenerative relationships with the land. Abusive relations with the land are ultimately as hazardous as the threat of nuclear weaponry. The end result can be the conversion of the earth to another lifeless planet in the galaxy.** Time is running short for making the transition to a post-modern world in which our theological understandings about creation and the human place within it are renewed and returned to Old Testament understandings. In a time in which many are recognizing that humanity is on a collision course with planetary pollution and resource exhaustion, we need to shift to a food system which is creation-centered, not human-centered. The theological task before us is awesome, promising, and transforming. ¶

Liberalize international food trade

Food trade in global markets creates a level playing field that boosts agricultural developments

Hanjra and Qureshi 10, (Munir A. Hanjra, International Centre of Water for Food Security, Charles Sturt University, M. Ejaz Qureshi, Fenner School of Environment and Society, The Australian National University, "Global water crisis and future food security in an era of climate change," Food Policy 35 (2010) 365–377,

<http://www3.dogus.edu.tr/cerdem/images/Environment/Global%20water%20crisis%20and%20ofuture%20food%20security%20in%20an%20era%20of%20climate%20change.pdf>) [PDI]

Food trade in global markets helps match food supply to food demand, and optimise the productivity of technology, land and water resources globally. Economic and trade policies that boost agricultural productivity and contribute to better functioning and more open markets for agriculture and food products are a key factor to improve global food security (Diao et al., 2003). International food trade is vital to food security as only few countries can realistically be entirely self-sufficient (Wichelns, 2001). **Even advanced nations with no known food security issues and a very small population such as Australia can suffer from droughts and crop failure, causing a surge in local food prices. The liberalization of world food markets can reallocate resources towards more efficient uses thus boosting productivity and global output but may adversely impact small producers in developing countries** (Anderson et al., 2004). **International trade reforms must create a level playing field for all actors, including developing countries, through multilateral trade agreements and comprehensive global trade reforms to genuinely liberalize across all sectors including food and agriculture. Harmonized policies for trade must deliver on easing phytosanitary trade barriers, significant cuts to overall trade distorting domestic support (farm support ceiling), cuts to import tariffs, the elimination of export subsidies, and new disciplines on export credits. In particular they must strengthen the incentives for developing countries to boost investments in their agricultural and food systems, to increase their share of global food output and trade.**

NANOTECHNOLOGY

Nanotech improves crop production

Beddington 10, (John Beddington, Government Office for Science, Kingsgate House, London, "Food security: contributions from science to a new and greener revolution," Phil. Trans. R. Soc. B (2010) 365, 61–71, <http://classic.rstb.royalsocietypublishing.org/content/365/1537/61.full>) [PDI]

In the coming years, **the maturing field of nanotechnology is likely to bring radical new products and approaches to assist crop production. Exploiting a convergence of nanotechnologies, genomics and micro-electronics, new diagnostic tools for animal and plant diseases are dramatically improving our capacity to detect and monitor the spread of plant and animal diseases** (OSI 2006). Already today, **nanotechnologies have delivered improvements to pesticide delivery through encapsulation and controlled release methods. Capsules can be inert until in contact with leaves or insect digestive tracts, at which point they release the pesticide** (Green & Beestman 2007). In combination with the use of nanoemulsions, pesticides can be applied more easily and safely. **Smart, nanotechnology-based, sensors, applied to the field, may in future allow early detection of disease and monitoring of soil conditions to improve application of water, fertilizers and pesticides** (Joseph & Morrison 2006). However, as with any new technology, the potential risks must be investigated and weighed against the benefits.

Subsidies General

Subsidies are key to lower prices – they make it possible for farmers to charge less and still earn the profit

Baker 8 [Dean is co-director of the Center for Economic and Policy Research in Washington, DC. He is a frequent guest on National Public Radio, Marketplace, CNN, CNBC and other news programs. He is the author of several books, including *The Conservative Nanny State: How the Wealthy Use the Government to Stay Rich and Get Richer* and *The United States Since 1980*. He received his Ph.D in economics from the University of Michigan. ““The NYT Takes Back Its Harsh Criticism of Farm Subsidies”

http://www.prospect.org/csnc/blogs/beat_the_press_archive?month=04&year=2008&base_name=the_nyt_takes_back_its_harsh_c [PDI]

Well, they didn't actually acknowledge that they had been wrong, but the NYT today complained that high food prices (partly the result of biofuel subsidies) are having a devastating impact on the developing world. The NYT used to run editorials on a regular basis that complained that farm subsidies "harvest poverty" in the developing world. Okay, here's the problem. **Subsidies lower prices.** Let's say that again (I know it seems simple, but many highly credentialed people get it wrong), subsidies lower prices. **The farm subsidies that the NYT harshly condemns lead to lower worldwide food prices.** The NYT can complain about high food prices leading to hunger for people who can't afford food. **It can also complain about low food prices stifling agricultural development in poor countries. But, it cannot complain about both high and low food prices and expect anyone to take its views seriously. The reality is that rich country agricultural subsidies have a mixed impact on the developing world. Their elimination would benefit producers and provide a net benefit to some countries,** but this would not be the boon the NYT, along with the World Bank and some NGOs, implied. It would be a great step forward if this issue could be discussed more seriously in the future.

Cutting subsidies increases food prices.

Sundaram 8, [Jomo Kwame Sundaram “Harvests of hunger.” The Guardian.

<http://www.guardian.co.uk/commentisfree/2008/jun/03/harvestsofhunger>] June 2008 [PDI]

Meanwhile, rich countries' agricultural subsidies and tariffs have undoubtedly undermined food production in developing countries. However, **cutting farm subsidies will increase food prices, at least initially, while reducing agricultural tariffs alone will not necessarily lead to an increase in food production in poor countries without complementary support.**



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Non-Utilitarian ACs

Human Rights/International Law

There is an international human right to food security. Possible “Ratify the Optional Protocol to the ICESCR” plan.

Beuchelt and Virchow 12, (Tina D. Beuchelt, International Maize and Wheat Improvement Center, Mexico, Detlef Virchow, Food Security Center, University of Hohenheim, Germany, “Food sovereignty or the human right to adequate food: which concept serves better as international development policy for global hunger and poverty reduction?” Agric Hum Values (2012) 29:259–273, https://ew.uni-hohenheim.de/fileadmin/einrichtungen/fsc/Research_publications/Beuchelt_and_Virchow_Agric_Human_Values_2012.pdf) [PDI]

The Universal Declaration of Human Rights in 1948 **contains in Article 25 the right to food**, the first time the RtAF experienced major international recognition. **The International Covenant on Economic, Social and Cultural Rights** (ICESCR) of 1966 **is a more detailed covenant regarding the right to adequate food and entered into force in 1976, 2 years after the Universal Declaration on the Eradication of Hunger and Malnutrition was adopted at the UN World Food Conference** (De Schutter 2010). **It has been ratified by 160 countries**, i.e. it was adopted by their national parliaments. **Thus, the right to food is internationally and nationally acknowledged; its normative content is binding** (Mechlem 2004).[¶] **Article 11 of the ICESCR explicitly refers to the right to adequate food. Article 11(2) contains precise suggestions for measures and policies to be implemented by governments in order to guarantee the right to adequate food.** The interpretation and understanding of Article 11 was defined in General Comment 12 of the UN Committee on Economic, Social and Cultural Rights in 1999 (UN-CESCR 1999). **The right to adequate food** should not be seen as restrictive or limited to the right to a minimum daily consumption of calories, proteins and micronutrients (Cotula et al. 2008; UN-CESCR 1999). It **is realized only when each individual has physical and economic access to adequate food or to the means to procure such food** (UN-CESCR 1999). **Access can be achieved through people’s own production of food, through income-generating activities (within or outside agriculture) or through a mix of both, but must be achieved in ways that are sustainable and with dignity** (General Comment 12, §12 and §13).[¶] In the last decades, **efforts have led to the human right to adequate food becoming increasingly established in national constitutions. The RtAF is currently enshrined in the national constitutions in 40 countries and, according to FAO estimates, there are 54 countries where rights related to food are justiciable, or likely to be justiciable**, meaning that courts can enforce the right (McClain-Nhlapo 2004). If the RtAF is not explicitly integrated in the national constitution or legislation, it is hardly possible for a citizen of that country to make a claim at the national level for her or his rights as granted in the covenant. In this case the right is not justiciable at a national level (Bundeszentrale für politische Bildung 1995). For this reason, **the UN adopted an Optional Protocol to the International Covenant of Economic, Social and Cultural Rights** (ICESCR) **in 2009. The Optional Protocol enables individuals to bring concrete cases of violations of any rights set forth in the Covenant— including the right to adequate food—before the Committee on Economic, Social and Cultural Rights.** Thus individuals living in ratifying countries will have direct access to a quasi judicial system at the international level when their national legal system fails. **The protocol is not yet in force, as only three countries have ratified it as yet** (United Nations 2010).

International law mandates state cooperation to ensure food security.

Narula 11, (Smita Narula, NYU School of Law, "Reclaiming the Right to Food as a Normative Response to the Global Food Crisis," YALE HUMAN RIGHTS & DEVELOPMENT L.J., Vol. 13, 1-1-2011, http://lsr.nellco.org/cgi/viewcontent.cgi?article=1261&context=nyu_plltwp) [PDI]

As shown above, **the right to food is being undermined on an unprecedented scale and across borders by a variety of global actors, none of whom are held to account for the impact of their individual or collective actions. The existing human rights legal framework is ill-equipped to deal with these actors and the effects of their policies abroad**: it limits states' obligations to respecting, protecting, and fulfilling the rights of individuals in their territory or under their jurisdiction, and it does not directly address the obligations of IFIs and TNCs. These jurisdictional and state-centric constraints have, to date, undermined effective implementation of the right to food and lead to **two doctrinal challenges** that **are critical to reclaiming the relevance of the right to food as a normative framework in an era of economic globalization. These are: 1) conceptualizing the extraterritorial application of states' human rights obligations vis-à-vis economic, social and cultural (ESC) rights; and 2) establishing means by which IFIs and TNCs may be held accountable via their relationship to powerful states.**⁶⁹ With regard to the first challenge, **the language of international cooperation, as found in ICESCR 2(1) on States' Parties obligations**,⁶⁹ and also in **Article 11 on the right to food**,⁷⁰ has been read to assert that states have **obligations that extend beyond their territory or jurisdiction**. In its own guidance on the interpretation of the obligation of international cooperation, **the CESCR provides that "States parties should take steps to respect the enjoyment of the right to food in other countries, to protect that right, to facilitate access to food and to provide the necessary aid when required."**⁷¹ **In international agreements, where relevant, States Parties should ensure that the right to adequate food is given due attention.**⁷² **The Committee looks to the "spirit" of Article 56 of the Charter of the United Nations**,⁷³ **specific provisions contained in Articles 11, 21, and 2374 of the ICESCR, and the Rome Declaration of the World Food Summit**⁷⁵ **in reaching its conclusions.**⁷⁶

Power Structures

Food security is a measure of power structures—social, economic, and physical conditions that reach beyond mere food supply.

Patel 12, (Rajeev C. Patel, School of Development Studies, University of KwaZulu-Natal, Durban, KwaZulu-Natal, South Africa, “Food Sovereignty: Power, Gender, and the Right to Food,” PLoS Med 9(6), 2012,

<http://www.plosmedicine.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pmed.1001223&representation=PDF>) [PDI]

One of the most enduring misconceptions about hunger is that it is primarily the result of a deficit in global food production. If this were so, we might expect food to be absent at times and in places where people die of hunger. Yet economist Amartya Sen has shown that **in the majority of cases of widespread famine-related death since WWII, food has been available within the famine-affected area. People have died not for want of food, but for want of the entitlement to eat it** [1]. **Questions about hunger** and its attendant pathologies, therefore, **ought to begin with questions about social and political configurations around power over food, rather than about the mere presence or absence of food in the vicinity of a hungry individual.** Although no single commonly agreed definition of hunger exists, two common standards prevail: “undernourishment” and “food security.” The former refers to the number of people “whose dietary energy consumption is continuously below a minimum dietary energy requirement for maintaining a healthy life and carrying out a light physical activity” [2]. Undernourishment is a condition suffered by individuals. It is, however, usually established not through individual surveys but through an analysis of a country’s food availability, household purchasing power, and entitlements [3,4]. Current estimates put the worldwide number of undernourished people at nearly one billion [3]. **The concept of “food security” attempts to capture the notion of hunger as a deficit not of calories, but as a violation of a broader set of social, economic, and physical conditions.** In 1996, **the Food and Agriculture Organization of the United Nations (FAO) established** at its World Food Summit **the most widely agreed definition** [5] **that “Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”** By definition, more people are food insecure than are undernourished, and food insecurity precedes undernourishment. Although there are few people in the United States whose calorie intake is continuously below the threshold of a maintaining healthy life, there are many who, at some point during any given year, are unable to meet their food needs. According to the United States Department of Agriculture (USDA), in 2010 there were 48.8 million US citizens living in food-insecure households. **The distribution of food insecurity is uneven. In the US, 21.6 million children lived in food-insecure households, and 35.1% of all female-headed households were food insecure in 2010, compared to 25.4% of male-headed households** [6]. Since food insecurity is a broader measure than that of undernourishment, it has been correlated both with hunger and obesity, particularly among women [7]. **If hunger is a symptom of a lack of control over the socioeconomic context in which one attempts to eat, it is not unreasonable to understand that lack of control as correlated with factors associated with obesity too.** It is possible to have sufficient calories, but insufficiently nutritious food for a healthy life. **Armed with this understanding, and with persistent evidence across countries of women and girls’ disempowerment compared to men and boys [8], it becomes easier to appreciate the systematically higher rates of food insecurity among women.**

A discussion of women’s empowerment is essential to ensuring food security.

Patel 12, (Rajeev C. Patel, School of Development Studies, University of KwaZulu-Natal, Durban, KwaZulu-Natal, South Africa, “Food Sovereignty: Power, Gender, and the Right to Food,” PLoS Med 9(6), 2012,

<http://www.plosmedicine.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pmed.1001223&representation=PDF> [PDI]

The main demand in food sovereignty is that, for the first time, decisions about the shape of the food system ought to be in the hands not of powerful corporations or geopolitically dominant governments [11], but up to the people who depend on the food system. For the discussion to be representative of the community's desires, however, **a non-negotiable element of food sovereignty is women's rights. In order for a democratic conversation about food and agriculture policy to happen, women need to be able to participate in the discussion as freely as men.** Peasant movements, and those who support them, have been castigated as romantics pining for an unattainable past [12]. **An insistence of women's rights places food sovereignty firmly in the twenty-first century.** This has a practical purpose. **Of those undernourished, 60% are women or girls [13]. It is hard to conceive a discussion about hunger with- out connecting the epidemiology of hun- ger to women's disempowerment.** On the production side of the food system, **women constitute 43% of the agricultural workforce, more often in- volved in producing food for domestic consumption than export. They are dis- criminated against in issues ranging from land tenure to wages, from government support to access to technology.** The FAO notes that **"if women had the same access to productive resources as men, they could increase yields on their farms by 20–30 percent. This could raise total agricultural output in developing countries by 2.5–4 percent, which could in turn reduce the number of hungry people in the world by 12–17 percent"** [14].

Key to challenging existing power structures of the food system.

Patel 12, (Rajeev C. Patel, School of Development Studies, University of KwaZulu-Natal, Durban, KwaZulu-Natal, South Africa, "Food Sovereignty: Power, Gender, and the Right to Food," PLoS Med 9(6), 2012,

<http://www.plosmedicine.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pmed.1001223&representation=PDF> [PDI]

Within the food system, power is concentrated in the hands of a few corporations. In 2008, the top ten agro- chemical corporations controlled almost 90% of the global sales of pesticides. Of the US\$22 billion global proprietary seed market, only ten corporations controlled 67% [21]. In 2005, the top four beef packing firms controlled 83.5% of the market in the US [22], and **worldwide, 40% of all groceries were sold by only 100 retailers [21]. These trends across the food industry have been on an almost-steady climb since they were recorded first in the 1970s.** As the US government recently found, "for example, in the pork sector, the market share of the largest four hog slaughtering firms increased from 36 percent in 1982 to 63 percent in 2006. **In addition, at the retail level, the share of grocery store sales held by the largest four firms more than doubled, from 16 percent in 1982 to 36 percent in 2005"** [23]. **This concentration of power has gen- dered consequences. In contexts where women perform the majority of horticultural and agronomic innovation, they can find their agroecological knowledge supplanted by the technologies of industrial agriculture. Pesticide companies own the largest seed companies, and their agricultural model, dependent on purchased supplies of hybrid seeds and chemical inputs, favors larger, more capital-intensive farms. Women have systematically less access to both land and capital than men, and despite an often sophisticated level of knowledge about farming systems, women's views seldom matter in the shaping of choices around agricultural technologies and food policy [24].** In addition, **employment within agri- culture consistently pays women around 25% less than men. When food is accessed through market mechanisms, this increases women's systemic risk of hunger [25]. It is for these reasons that women leaders within peasant movements have taken strong stands against multinational corpo- rations such as Monsanto and Cargill [26].** To be sure, concentration of agricultural power is not

new. At the turn of the nineteenth century, four firms—Dreyfus, Cargill, Continental, and Bunge—dominated global grain trading [27]. Today, however, the extent to which food markets matter is far greater. Agricultural market concentration is evident not only in international trade, but across domestic production, distribution, and consumption. **This concentration matters more when there are fewer alternatives to the markets in which concentration occurs.**

Failure to structurally change the food system allows the worst impacts of neoliberal globalization to go unchecked—causes famine and environmental destruction.

Wittman et al. 10, (Hannah Wittman, Associate Professor, Food, Nutrition and Health, University of British Columbia, Annette Desmarais, Associate Professor, Canada Research Chair in Human Rights, Social Justice and Food Sovereignty, Department of Sociology, University of Manitoba, Nettie Wiebe, Professor of Church and Society, St. Andrew's College, <http://fernwoodpublishing.ca/files/foodsovereignty.pdf>) [PDI]

Some **proponents of neoliberal globalization would have us believe that the crisis is the result of shortages and market failures. They assure us that the best way to keep up with a growing population is to prevent national governments from intervening in the market, focus on scientific high-tech approaches, increase production with the adoption of genetically modified seeds (gmOs) and further liberalize agriculture and food.** But despite having powerful advocates and enforcers, such as the World Bank, the International Monetary Fund (imf) and the World Trade Organization (wto) on side, **these solutions reveal a spectacular failure when it comes to reducing poverty and eradicating hunger. The most recent figures from the Food and Agriculture Organization (fao) of the United Nations indicate that the ranks of the hungry are continuing to swell and now encompass more than one billion people, an increase of over 25 percent in the number of people without enough food since the mid 1990s (fao 1999, 2009), when the neoliberal development project was in a phase of full implementation.**¶ As an alternative to the neoliberal model, **peasants, small-scale farmers, farm workers and indigenous communities** organized in the transnational agrarian movement La Vía Campesina (2008a) **argue that the current, and linked, food, economic and environmental crises are in fact the direct result of decades of destructive economic policies based on the globalization of a neoliberal, industrial, capital-intensive and corporate-led model of agriculture. La Vía Campesina, formed in 1993 and now representing 148 organizations from sixty-nine countries, has become one of the strongest voices of radical opposition to the globalization of an industrial and neoliberal model of agriculture, claiming that “the time for food sovereignty has come.”**¶ **Peasant movements, urban-based social movements, non-governmental organizations (ngos) and indigenous peoples have been instrumental in putting food sovereignty on the agenda, and consequently, they have succeeded in shifting the terms of the debate around food, agriculture and rural development at the local, national and international levels. Because food sovereignty aims to transform dominant forces, including those related to politics, economics, gender, the environment and social organization** there will, no doubt, be a long and hard struggle to see food sovereignty become the standard model for food production and rural development. This book contributes to this struggle by engaging in a conversation that identifies and expands the meanings, understandings and implications of food sovereignty in an international context.

Rawls

The difference principle demands a right to food.

MISHRA 12, (SRIJIT MISHRA, Associate Professor, Indira Gandhi Institute of Development Research, "Hunger, ethics and the right to food," Indian Journal of Medical Ethics Vol IX No 1 January - March 2012, <http://www.academia.edu/download/29494941/20-1-IJMEJan-Mar2012.pdf#page=34>)

The problem of hunger arises, more often than not, not from the non-availability of food; but from the inaccessibility of the available food (1:1). **Again, provisioning of food for the hungry is not just to ensure that people eat. It is also important to know how much, and what food, people eat** - an adequate, balanced and nutritious diet is vital. **The recent global food crisis brought into focus** spiralling prices and **some reduction in availability** (2-3), **but these cannot be separated from accessibility and nutritional adequacy** (4-5). Bringing together these divergent issues is a challenge for economic thinking, public policy and ethics. It is in this context that this paper proposes to raise issues concerning the food security of vulnerable sections of the population, the crisis in Indian agriculture, inadequate storage and rotting of food grains procured by the public agencies, a national food security bill, updating of the poverty line for 2004-05 by the Planning Commission based on a new method, and some concomitant ethical challenges. The last will be an issue cutting across other themes, which needs some independent discussion focusing on the predicament of who should get the fruit to begin with. ¶ Who should get the fruit? ¶ **There are three children who want a fruit**, say an apple, which according to the old adage, if consumed every day will keep the doctor away. **The first child**, Kwo, **has a special liking for the apple and enjoys eating it the most** (the other two children accept this); **the second child**, Dhu, **is the one who put in the effort into nurturing and tending the plant** of which this is the first fruit (the other two children do not deny this); **and the third child**, Rae, is **undernourished and without access to enough food** (the other two concede that they are well supplied with food). Now the question is: **who should get the fruit?** This is similar to the situation indicated by Amartya Sen where three children were quarrelling over a lute – the first child knew how to play it, the second child had made it and the third child did not have any amenities to engage with. **A classic philosophical question with at least three possibilities – the utilitarian position favouring the first child, the libertarian argument linking property rights with effort favouring the second child, and the egalitarian point of view favouring the third child** (6). ¶ In different forums and discussions where the fruit question has been raised by this author, **there has been a convergence of opinion in favour of** Rae, **the malnourished child, getting the fruit. This position seems to be egalitarian, but the agreement could have a different reasoning for different individuals. Some taking the philanthropic position of giving food to the needy, and others arguing from the rights perspective that every individual has a right to food.** The latter differ from the former in stating that it is not a dole that is being given to the poor and needy out of sympathy; it is their right. ¶ **A libertarian perspective could say that the person who put in the effort should own the fruit, has a property right, and should be compensated for this in some form. If the compensation has a public policy provisioning and the fruit is given to Rae then this does not contradict the right to food perspective.** ¶ **There are utilitarian arguments in favour of Kwo being given the apple**, who then, gives some other food to Rae. This may not violate the right to food, but it could lead to Rae consuming some unhealthy food with adverse implications for bodily health. **This, in a sense, still violates Rae's right to food, with reference to health and nutrition.** Independent of the health implications, compensation with some other food means that Rae will have to make do with a second-best preference, a compromise. ¶ **The argument in favour of Rae's right to food can also be viewed from a Rawlsian "difference principle" perspective, that is, it should be of the greatest benefit to the least advantaged members of society** (7: 42-3). **This emanates from an 'original position' where people are under a "veil of ignorance", an abstract position where people representing different stakeholders come together to frame rules but they do not know which group they belong to, and hence, all of them agree to rules that are in line with the 'difference principle'.** . It is akin to the 'maxmin' outcome of game theory where the players first find out the minimum possible value in each of the strategies then choose the strategy that gives the maximum from all these minimum values, which indicates that at least this much is assured. . However, the Rawlsian 'difference principle' is much more than "maxmin" because it is based on mutuality and trust. More importantly, the difference principle is the concluding part of Rawls' second principle of justice. It is preceded in priority by the first

part which refers to fair equal opportunities for all to choose the most suitable person(s) to positions of power and authority. These are preceded by the first principle, which has an overarching priority and refers to equal liberties for all. ¶ **A similar, but much more profound social thought echoes from Mahatma Gandhi's talisman: when in doubt, recall the face of the most vulnerable person and contemplate the implications of your actions on that person and you will find your answers.** This can be applied as a test for any intervention that one plans, public policy or otherwise. Its advantage over Rawls lies in two aspects. First, one need not be under a veil to be in the original position, one can be oneself. Second, one need not be in the realm of abstract thought, one can be grounded in practical reality. **There will then be no doubt about Rae's right to food.**



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Impact Work

General

Food scarcity is threatening the entire globe – food production is decreasing, not increasing, and it's becoming increasingly unaffordable, preventing access for the people who need it most

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

As postulated by Pinstруп-Andersen et al (2007), the past four decades have been characterized by severe decline in agricultural productivity.

This is in contrast to the ever increasing demand on food products. **This situation has brought the global food situation to a crossroad thus threatening human life**. Orke et al (2004) observed that **lack of swift action**

on the agricultural sector would worsen the situation in future. This can only be achieved through a wholesale re-investment in agriculture through massive research and development

(Hagglblade. 2007). Advancement in the use of modern and sustainable technology can also be used to address the situation. From another perspective, improvement in infrastructure and training programmes for farmers can also help in curbing the crisis. Hagglblade (2011) indicated that **the global food basket is rapidly being worn out thus creating doubts and anxiety**

concerning human survival. A **research** by FAO (2009) **has shown a drastic decline in food availability over the last three decades. The prices of food commodities have also been in a**

rapid increase thus making it unaffordable for a big proportion of the population. It is worth mentioning that food producers have always been dynamic and they have also been overwhelmed by commercialization of agriculture (Pinstруп-Andersen et al. 2007). This leads to production of more income earning products at the expense of food products for feeding the poor and in return led to food insecurity for majority of the poor communities. It has been evident that most of the government and private sector agencies concerned with agriculture have been not been very proactive for sometime according Feder et al (2011). This has led to the deterioration of agricultural productivity. In response to this situation, there is a great need for comprehensive analysis and interpretation of the recent situation so as to provide policy makers with adequate information for addressing the situation. Some key food cereals have been identified to be in decline in terms of their global production in many parts of the world (FAO. 2011). As outlined by Betru and Kawashima (2010). **the global yield**

growth rate of rice has been dropping annually by an average of over 1% in recent years in many African countries. **In contrast, the projected income, population and consumption of the same commodity are expected to rise by over 2.5%**

in the year 2020 (Muhammad et al. 2011). Also, the production of maize and wheat in some parts of the world has been identified to decline. This phenomenon has been witnessed in many of the sub-Saharan countries which can not sustain their annual grain demands (Chuku and Okoye, 2009). As a result global food basket is being drained each day. A report by the Food and Agriculture Organization (FAO) has shown that **the price of basic food commodities has sky rocketed in recent**

years. This has made it unaffordable to many of the poor populations. According to the report, the number of hungry people across the globe is increasing at 75 million annually. This

has reached an alarming figure of 925 million people across the globe. As noted by Pinstруп-Andersen et al (2007) **these high figures of hungry people is jeopardizing the UN Millennium Development Goals of reducing poverty and hunger by 50% in the year 2015.** It has been unfortunate to note that the **world population is at a rapid**

increase despite the decline in agricultural production. In regard to the above discussions, **it is explicit that the global food situation is at jeopardy.** **The supply of food has been in a rapid decline in recent years thus jeopardizing the global food security** (Naylor and Falcon 2010). A point worth of consideration is that efficient policies and structures to guide agricultural products and demographic trends has been missing (Betru and Kawashima, 2010).

This is very evident in many developing nations, whereby an inverse relationship is witnessed between population growth and food production (Orke et al, 2004). This scenario leads to an overwhelming deficit which is hard to curb overnight, thus the need for efficient policy structures in order to run away from food insecurity. To achieve this, there is

the need to fully understand what constitutes the main aspects of global food security and what are the major threats to food security in the two continents under study?

A sudden fall in food availability could instantly kill 3 million people

Brown 06

Lester, Ecology Editor of USA Today, is president of Earth Policy Institute, "Is the food scarcity scare for real." [PDI]

World food security is a far more complex issue today than it was a generation ago. In earlier times, if world grain supplies tightened, the U.S. simply returned some of its idled cropland to production, quickly expanding the harvest and reestablishing price stability. That commodity set-aside program was phased out in 1995, depriving the world of this ready reserve of cropland that could be brought into production quickly. Today, food security--once the exclusive province of agricultural ministers--is far more involved. It is perhaps a commentary on the tenor of our times that decisions made in ministries of energy can have a greater effect on future food security than those reached in ministries of agriculture. Policies formulated by ministries of water resources also directly can affect food production and prices. Moreover, with irrigation water availability per person shrinking for the world as a whole, ministries of health and family planning also may have a greater effect on future food security. **The three principal steps needed to secure future food supplies are worldwide efforts to raise water productivity, cut carbon emissions, and stabilize population. If the global community does not act quickly to raise water productivity, falling tables soon could translate into rising food prices.** Given the effect of higher temperatures on crop yields, the urgency of cutting carbon emissions sharply cannot easily be overstated. The good news is that we have the technologies to do this. For example, if, over the next decade, the U.S. was to shift its entire automobile fleet to gas-electric hybrid engines with efficiencies comparable to today's Toyota Prius, the country easily could slice gasoline use in half. On the supply side, the potential for cutting coal use and carbon emissions by developing wind resources to generate electricity has enormous potential. In Europe, which is leading the world into the wind era, and where coal mines are closing, some 40,000,000 residents receive electricity from wind farms. By 2020, half of Europe's 400,000,000 people are projected to get their residential electricity from wind. These are but two of the hundreds of steps that can be taken to cut carbon emissions and stabilize climate. Ironically, given the role of automobiles in raising the atmospheric carbon dioxide levels that drive climate change, the fuel efficiency of the vehicle we drive to the supermarket may affect the price of the foodstuffs inside that very same store. Many Americans see terrorism as the principal threat to security but, for much of humanity, **the effects of water shortages and rising temperatures on food availability are far more important issues. For the 3,000,000,000 people who live on two dollars a day or less and who spend up to 70% of their income on food, even a modest rise in prices quickly can become life-threatening. For them, it is the next meal that is the overriding concern.**

Laundry List

Food insecurity is inextricably tied to economic decline, democratic breakdown, civil conflict, and global insecurity

Daniel Speckhard 14, former U.S. Ambassador to Greece and Belarus, "From Food Security to National Security" October 16 2014, www.worldfooddayusa.org/daniel_speckhard [PDI]

"Hunger," says Kenyan farmer Sevu Kanyasya, "is like this: if you're hungry, you can't sleep at night. If you have hunger, you can't plan ahead for your life. You can't think about anything except the hunger that you have. Hunger. It creates conflict in the family, and can tear it apart. We used to be so hungry." Is hunger related to security? "Security" is an interesting word. Depending on the context, it can have different connotations – from a child's security blanket, to a battalion of armed troops defending a national border. Over my nearly 30 years in federal government in the United States, I saw the definition of security evolve. Early in my career, discussions about national security often revolved around the nuclear threat and the Cold War. With the rise of Al Qaeda, and especially after 9/11, national security meant fighting back against terrorism. Weaponry and terrorism are still around, of course, and we continue to defend against them, but today security means more than that. Even if his country was at peace, was Mr. Kanyasya secure when his family didn't have enough food to go around? How do we consider

the plight of families like his when we think about global security? Economic insecurity, and **food insecurity, can be a significant threat to personal, community and national security.** At times, these links are direct and obvious, such as **in 2008 when a spike in food prices led to riots and unrest in various countries. At other times, the impact is more indirect, such as the multi-year drought in Syria that turned more than half of the nation into desert and, according to the United Nations, resulted in more than 800,000 Syrians losing their entire livelihoods. The subsequent dislocation laid the ground for** the spark in Dara'a that caused the uprising against an

oppressive dictatorship and led the country into a **full scale civil war.** Closer to home, we've been seeing Central American children coming in droves to the U.S. border, many of them sent by their parents in an attempt to escape deadly gang violence in their home cities. But it is not the violence alone that has created such an intractable problem that families risk so much and travel so far in search of a better life.

Already in 2010, a UN High Level Task Force on Global Food Security was warning that **food insecurity was accompanied by increasing violence around land tenure, water access, and higher levels of rural poverty in Honduras.**

According to a 2011 study by the World Food Program, **"Food insecurity ... heightens the risk of democratic breakdown, civil conflict, protest, rioting, and communal conflict."** **Food security, economic security, national security, global security – they are all intertwined.**

The more that we in the development community can do to support smallholder farmers like Mr. Kanyasya, who provide more than four fifths of the food in the developing world, the more we will be doing to ensure a safe and secure world for our children and grandchildren.

Middle East/Terrorism

[Insert card on insecurity -> high food prices or how you solve high food prices]

High food prices creates anti-American sentiment in Middle East – causes state collapse and Al Qaeda takeover

Los Angeles Times, Borzou Daragahi 8, 05/18/08, "Islamists gain from food crisis,"

<http://articles.latimes.com/2008/may/18/world/fg-food18> [PDI]

But **the global food crisis has carved out new opportunities for** the Brotherhood and other **hard-line groups across the Muslim world. Increasingly unaffordable prices underscore criticism of autocratic governments and drive** more **people toward fundamentalist groups.** Though **the Brotherhood** fared poorly last year in municipal elections, it **has been steadily gaining ground in recent months**, sweeping votes for the leadership of Jordan's professional associations. "We used to win some and lose some. Now, we win all of them," said Zaki Bani Arshid, leader of the Islamic Action Front, the political party of the Muslim Brotherhood in Jordan. "The government which tried to marginalize us politically for years has now given us a big gift." **The increase in food prices has challenged America's goals in the Middle East at a critical juncture**, when it is attempting to win support from friendly governments for an Israeli- Palestinian peace initiative and for confronting Iran and Al Qaeda. Analysts and officials worry that the crisis could result in food riots. **The anger has taken on an increasingly anti-U.S.** tone, even among elected officials. Egyptian lawmakers, for example, have accused the United States of causing the crisis by conspiring to keep their country dependent on wheat imports. **"If we look at the** ^{se} **main factors behind the increase in world food prices** and the specter of famine and political turbulence, **we will easily reach the conclusion that** [the] **Bush** administration and the bunch of neoconservatives and their foolish policies in waging external wars ... **are**, in practice, **behind this deep crisis,**" said an April column in the pro-government daily newspaper Al Watan in Oman, a staunch U.S. ally. "America is being held responsible for what is happening," said Arshid, of Jordan's Islamic Action Front. "It's supporting these corrupt regimes." **The frustration is** potentially **more explosive here than in more democratic parts** of the developing world. **"People can tolerate anything except when it comes to food,"** said Labib Kamhawi, a Jordanian economist and critic of the government. **The security establishment cannot open a file for the hungry like you can for the political activists. One day you'll wake up and see havoc."** Officials throughout the Middle East have begun importing food, implementing price controls, slashing import duties for foodstuffs and locking in prices for future purchases of wheat and rice. They've also begun preparing local fields for wheat production and making monetary reforms. Morocco has decided to spend \$2 billion to raise public-sector wages. In Egypt, where subsidized bread is synonymous with the people's bond to the state, deadly riots broke out during the 1970s when then-President Anwar Sadat considered slashing the subsidies. President Hosni Mubarak is working to calm an explosive atmosphere marked by a rising inflation rate, labor unrest, strikes and fears that long bread lines may again appear. Both Jordan and Egypt have raised government salaries and pensions by more than 20%. And Lebanon's Ministry of Social Affairs plans to increase by eightfold the number of people it aids. Jordanian government officials consider the economic situation their highest priority, a grave, snowballing threat, analysts said. Officials remember the riots that erupted in 1971 when the price of sugar went up and in 1996 when bread prices jumped. "The government understands the severity of the situation," said Fahd Khitan, a columnist and editor for the independent Amman daily Arab Today. But awareness has not been enough to forestall the economic repercussions in a country where per-capita annual income is about \$5,500 and 60% of workers earn fixed wages as public-sector employees. Meat and chicken prices have risen 30% since October. The price of a dozen eggs has nearly doubled, to \$2.30. And produce has climbed at an even higher rate, with squash soaring from 25 cents a pound to 80 cents and tomatoes from 9 cents a pound to 45 cents. Jordanians say they've seen able-bodied men sifting through garbage bins. Middle-class families have begun selling off personal belongings to maintain their lifestyle or forgoing fruit or lamb for weeks. Mohammed Hadid, a leader of a tribe from which the armed forces draw recruits, was shocked when a retired soldier from his tribe told him he had not eaten meat in five months. (CONTINUED) "It's still sinking in," Hadid said. Despite the global nature of the price increases, governments across the Arab world have come under particularly harsh criticism. **Public service employees, especially those who've served in the security forces, cling to the vision of the state as a caretaker. But policies adopted in recent years have decreased official control of prices.** Privatization efforts and free-market slogans have only fueled perceptions of corruption, giving teeth to claims that the region's pro-U.S. governments are corrupt lackeys serving only the elite. "The economic team doesn't believe in the poor," said economist Kamhawi, who often confers with ranking Jordanian officials. "They only care about the rich. They say, 'The poor are failures. We have no interest in helping failures.'" **Opponents of the U.S.-backed governments in the Middle East have been locking on to the food crisis.** "Let the Workers Eat Cake," blared a headline on the front page of the April 30 edition of Al

Akhbar, a Lebanese daily newspaper allied with the Shiite militia Hezbollah. The headline accompanied an article about how the government has delayed a decision to increase the minimum wage. Other than Islamic charities and social wings of militant groups such as Hezbollah or Hamas, there is no tradition of charitable giving to alleviate pressures on the poor. In Pakistan, parents increasingly send children to religious madrasas instead of public schools, lured by the free lunches. Madrasas have been prime recruiting grounds for militants. In Lebanon, Saudi-funded Sunni Muslim charities and political parties, as well as Hezbollah, shield their followers from the worst effects of the rising food prices. "This system of financially helping the poor by political groups has created a great deal of ... allegiance to politicians and not to state institutions," said analyst Ziad Ayoubi. In Jordan, the Islamic Action Front has ramped up its charity programs, offering food baskets and financial help to 32,000 families. Requests for help have jumped 30% this year, said Murad Adaileh, who oversees the group's social services programs. Applications for free bread have jumped 50% since the beginning of the year. On some days, the line outside the food distribution outlet stretches into the streets. The poor come in droves. Wafa Mansour, 39, a cherub-faced mother of two, visits every other day for bread. "Everything is very expensive," she says. "I can't buy vegetables or meat." Opposition elements led by the Islamic Action Front have called for strikes to protest the prices and the government's privatization plan and are convening a workshop this month to discuss the situation. **"The [Islamists] will reap the benefits" of the crisis, said economist Kamhawi. "They will win by default."** Analysts and officials worry that the middle class will be sapped of its purchasing power and that more young Muslim men will be driven toward extremist groups. Arab states are considering the creation of an emergency fund to help alleviate spiraling food prices, according to the Jordanian news agency, Petra. Many Jordanians say members of the army, the pillar of the regime, are being struck hardest by the crisis, unable to make ends meet on salaries of less than \$10 per day. "When you talk to the police officers and the army they're more and more complaining about everything," said Mohammed Masri, an analyst at the Center for Strategic Studies at the University of Jordan. Hadid, the tribal leader, recently received reports of security forces selling weapons. "In the days to come, **Al Qaeda won't need to bring weapons and bombs** from outside Jordan," Hadid said. **"They'll get it from here. The circumstances will allow Al Qaeda to penetrate the security apparatus."** He paused. **"There will be explosions."**

Pakistan

High food prices cause instability – only bringing them down prevents extremist takeover in Pakistan

The **Herald 8**, Staff Writer, 08/21/08, "Pakistan Moves On,"

http://www.theherald.co.uk/features/editorial/display.var.2428152.0.Pakistan_moves_on.php
[PDI]

What now for Pakistan? For many of his compatriots, the removal of President Pervez Musharraf has so long been seen as an objective in itself that they have failed to look beyond it. Yet **the former general's belated realisation** yesterday that **he had long overstayed his welcome leaves the country with a political vacuum and two intractable interlocking problems: an economy in crisis and unchecked extremism.** When he seized power in a military coup in 1999, General Musharraf promised prosperity and stability. He has delivered neither and his resignation yesterday - to avoid impeachment proceedings - leaves a deeply divided country. Inflation is close to 25%, investors are fleeing and, uniquely in Asia, the number living on less than \$1 a day is rising. Poverty fuels fanaticism, especially in the lawless tribal areas bordering Afghanistan. Separatist and Islamist groups find willing recruits among those with nothing to lose. **The US and UK governments both turned a blind eye to the president's lack of democratic credentials** and abuses of power because he was such a willing recruit in the so-called war on terror. But **although he periodically handed over al Qaeda suspects** and took steps to clear foreign militants from the madrassas, ultimately Mr **Musharraf did little to blunt the Taliban** and many believe Osama bin Laden continues to be holed up somewhere in Pakistan's remote border region. The military's murky Inter-Services Intelligence (ISI) is implicated in fomenting Islamic extremism and making deals with militants. advertisement Mr Musharaff's rule has been characterised by the encroachment of the military into many areas of life and the weakening of civilian institutions, including the judiciary, following the sacking last year of the independently-minded chief justice. Yet **it is hard to exaggerate the importance of restoring stability to Pakistan. No country is more pivotal in the quest for global peace and security**, and Britain has a particular interest. **It is from Pakistan that militants are slipping across the border into Afghanistan's Helmand province to ambush British troops and it is in al Qaeda training camps in Pakistan that British-born Muslims receive instruction. It is now incumbent on the uneasy ruling coalition** of the Pakistan People's Party under Benazir Bhutto's widower Asif Zardari, and Nawaz Sharif's Muslim League, **that they sink their differences and quickly pick a new leader, then work at bolstering civilian institutions. It is in the interests of the US and the UK that the coalition is capable of delivering on its promises to the electorate. That is why American offers of help to bring down food prices must be more than warm rhetoric. Whatever its weaknesses, an elected government is a better basis for future security than a weakened and discredited military junta.** In the long run, democracy is a better bulwark against extremism than military strongmen.

Vegetables

Vegetables are really good for you

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, "Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Vegetables are grown worldwide in almost 200 countries and **make up a major portion of the diet of humans** in many parts of the world. **They are considered essential for well-balanced diets since they supply vitamins, minerals, dietary fiber, and phytochemicals. Vegetables in the daily diet have been strongly associated with improvement of gastrointestinal health, good vision, and reduced risk of heart disease, stroke, chronic diseases such as diabetes, and some forms of cancer** [2].

"Hidden hunger" or micronutrient deficiency is a pernicious problem that is caused by a lack of vitamins and minerals such as vitamin A, iodine and iron in the human diet and **affects the health of between 2 and 3.5 billion people in the developing world** [3]. **The consequences** of micronutrient deficiency **are: higher mortality, higher morbidity, lower cognitive ability and work productivity, and impaired growth and reproduction. Vegetables**, due to their biodiversity, **with increased** available **iron, zinc, and caroten, and enhanced protein quality could greatly improve the nutrition, health, and quality of life of these people. Diversifying diets with vegetables is a potent weapon in the current global battle against malnutrition.** Food security and nutrition is not only about solving the urgency in the short-term; it must also address the long-term issue of poverty alleviation and economic growth. Greater investment in agriculture, including breeding and variety development, more effective development aid, and reforms to trade and domestic policies are all part of the solution.

War

Turns war --- causes food nationalism

Brown, 9 – founder of the Worldwatch Institute and the Earth Policy Institute (Lester R, “Can Food Shortages Bring Down Civilization?” Scientific American, May) [PDI]

The biggest threat to global stability is the potential for food crises in poor countries **to cause government collapse. Those crises are brought on by ever worsening environmental degradation** One of the toughest things for people to do is to anticipate sudden change. Typically we project the future by extrapolating from trends in the past. Much of the time this approach works well. But sometimes it fails spectacularly, and people are simply blindsided by events such as today's economic crisis. For most of us, **the idea that civilization** itself **could disintegrate** probably **seems preposterous**. Who would not find it hard to think seriously about such a complete departure from what we expect of ordinary life? What evidence could make us heed a warning so dire--and how would we go about responding to it? We are so inured to a long list of highly unlikely catastrophes that we are virtually programmed to dismiss them all with a wave of the hand: Sure, our civilization might devolve into chaos--and Earth might collide with an asteroid, too! For many years I have studied global agricultural, population, environmental and economic trends and their interactions. **The combined effects of those trends and the political tensions they generate point to the breakdown of governments and societies**. Yet I, too, have resisted the idea that food shortages could bring down not only individual governments but also our global civilization. I can no longer ignore that risk. **Our continuing failure to deal with the environmental declines that are undermining the world food economy--most important, falling water tables, eroding soils and rising temperatures--forces me to conclude that such a collapse is possible**. The Problem of Failed States

Even a cursory look at the vital signs of our current world order lends unwelcome support to my conclusion. And those of us in the environmental field are well into our third decade of charting trends of environmental decline without seeing any significant effort to reverse a single one. In six of the past nine years world grain production has fallen short of consumption, forcing a steady drawdown in stocks. When the 2008 harvest began, world carryover stocks of grain (the amount in the bin when the new harvest begins) were at 62 days of consumption, a near record low. In response, world grain prices in the spring and summer of last year climbed to the highest level ever. **As demand for food rises faster than supplies are growing, the resulting food-price inflation puts severe stress on the governments of countries already teetering on the edge of chaos**. Unable to buy grain or grow their own, hungry people take to the streets. Indeed, even before the steep climb in grain prices in 2008, the number of failing states was expanding [see sidebar at left]. Many of their problem's stem from a failure to slow the growth of their populations. But **if the food situation continues to deteriorate, entire nations will break down at an ever increasing rate**. We have entered a new era in geopolitics. **In the 20th century the main threat to international security was superpower conflict; today it is failing states**. It is not the concentration of power but its absence that puts us at risk. States fail when national governments can no longer provide personal security, food security and basic social services such as education and health care. They often lose control of part or all of their territory. When governments lose their monopoly on power, law and order begin to disintegrate. After a point, countries can become so dangerous that food relief workers are no longer safe and their programs are halted; in Somalia and Afghanistan, deteriorating conditions have already put such programs in jeopardy. **Failing states are of international concern because they are a source of terrorists, drugs, weapons and refugees, threatening political stability everywhere**. Somalia, number one on the 2008 list of failing states, has become a base for piracy. Iraq, number five, is a hotbed for terrorist training. Afghanistan, number seven, is the world's leading supplier of heroin. Following the massive genocide of 1994 in Rwanda, refugees from that troubled state, thousands of armed soldiers among them, helped to destabilize neighboring Democratic Republic of the Congo (number six). **Our global civilization depends on a functioning network of politically healthy nation-states** to control the spread of infectious disease, to manage the international monetary system, to control international terrorism and to reach scores of other common goals. **If the system for controlling infectious diseases--such as polio, SARS or avian flu--breaks down, humanity will be in trouble**. **Once states fail**, no one assumes responsibility for their debt to outside lenders. If enough states disintegrate, **their fall will threaten the stability of global civilization itself**.

Extinction

Cribb 10 (Julian is a science communicator and author of The Coming Famine: the global food crisis and what we can do to avoid it. He is a member of On Line Opinion's Editorial Advisory Board. “The Coming Famine,” August 24, 2010,

<http://www.nytimes.com/2010/08/25/books/excerpt-the-coming-famine.html?pagewanted=all>, Accessed Date: 3-6-13 y2) [PDI]

Despite the global food crisis of 2007–8, the coming famine hasn't happened yet. It is a looming

planetary emergency whose interlocked causes and deeper ramifications the world has barely begun to absorb, let alone come to grips with. **Experts predict** that the crisis will **peak** by the middle of the twenty-first century; **it is arriving even faster than climate change**. Yet **there is** still time **to forestall**

catastrophe. The first foreshocks were discernible soon after the turn of the millennium. In the years from 2001 to 2008 the world steadily consumed more grain than it produced, triggering rising prices, growing shortages, and even rationing and famine in poorer countries. The global stockpile of grain shrank from more than a hundred days' supply of food to less than fifty days'. It was the difference between a comfortable surplus and alarming shortages in some countries; it was accompanied by soaring prices — and the resulting fury of ordinary citizens. It was mainly this simple fact of each year consuming slightly more than we grew that panicked the long-quiescent grain markets, triggering a cycle of price increases that sent shockwaves through consumers in all countries, governments, and global institutions such as the United Nations, its FAO, and the World Bank. All of a sudden food security, having been off the political menu for decades, was heading the bill of fare — not even to be entirely eclipsed by the spectacular crash of the world's financial markets that followed soon afterward. That the world was suddenly short of food — after almost a half century of abundance, extravagant variety, year-round availability, and the cheapest real food prices enjoyed by many consumers in the whole of human history — seemed unimaginable. On television celebrity chefs extolled the virtue of devouring animals and plants increasingly rare in the wild; magazines larded their pages with mouth-watering recipes to tempt their overfed readers' jaded appetites; food corporations churned out novel concoctions of salt, sugar, fat, emulsifier, extender, and dye; fast-food outlets disgorged floods of dubious nutrition to fatten an already overweight 1.4 billion people. And, in the third world, nearly fifteen thousand children continued to die quietly and painfully each day from hunger-related disease. **"A brutal convergence of events** has **hit** an

unprepared **global market**, and **grain prices are sky high**. **The world's poor suffer most**," stated the

Washington Post. **"The food price shock** now **roiling world markets is** **destabilizing governments**, **igniting**

street **riots and threatening to send** **a new wave of hunger** rippling through the world's poorest nations. It is outpacing even the Soviet grain emergency of 1972–75, when world food prices rose 78 percent." Between 2005 and 2008 food prices rose on average by 80 percent, according to the FAO. "Rocketing food prices — some of which have more than doubled in two years — have sparked riots in numerous countries recently," Time magazine reported. **"Millions are reeling . . . and governments are scrambling to**

staunch a fast-moving crisis **before** **it spins out of control**. **From Mexico to Pakistan**, **protests** have

turned violent. **Time attributed events to booming demand from** newly affluent **Chinese** and **Indian**

consumers, freak weather events that had reduced harvests, the spike in oil prices, and growth in the production of farm biofuels. In early 2007, thousands of Mexicans turned out on the streets in protest over the "tortilla crisis" — savage increases in the cost of maize flour. Over the ensuing months food riots or public unrest over food prices were reported by media in Haiti, Malaysia, Indonesia, the Philippines, Bangladesh, India, Burkina Faso, Senegal, Cameroon, Morocco, Mauritania, Somalia, Ethiopia, Madagascar, Kenya, Egypt, Ivory Coast, Yemen, the United Arab Emirates, Mexico, and Zimbabwe. In Haiti riots forced the resignation of the prime minister and obliged the United Nations World Food Programme to provide emergency aid to 2.3 million people. The new government of Nepal tottered. Mexico announced plans to freeze the prices of 150 staple foods. The U.K. Guardian reported riots in fifteen countries; the New York Times and the World Bank both said thirty. The FAO declared that thirty-seven countries faced food crises due to conflict or disaster at the start of 2008, adding that 1.5 billion people living in degraded lands were at risk of starvation. The Economist magazine succinctly labeled it a "silent tsunami." The rhetoric

reflected the sudden, adventitious nature of the crisis. **"It is an apocalyptic warning**," pronounced Tim Costello, the Australian

head of the aid agency World Vision. "Until recently we had plenty of food: the question was distribution. The truth is because of rising oil prices, global warming and the loss of arable land, all countries that can produce food now desperately need to produce more." **"What we**

are witnessing is not a natural disaster — a silent tsunami or a perfect storm. **It is a man-made catastrophe**,"

the World Bank group president Robert Zoellick advised the G8 leaders feasting in Japan. Major rice-growing countries, including India, Vietnam, China, and Cambodia, imposed export restrictions to curb rice price inflation at home. Malaysia, Singapore, Sri Lanka, and the Philippines began stockpiling grain while Pakistan and Russia raised wheat export taxes and Brazil, Indonesia, and Argentina imposed export restrictions. Guinea banned all food exports. The panic reached a peak in Asia, where rice prices soared by almost 150 percent in barely a year. "Nobody has ever seen such a jump in the price of rice," said sixty-eight-year-old Kwanchai Gomez, the executive director of the Thai Rice Foundation. Filipino fast-food outlets voluntarily reduced customer portions by half. In Thailand, thieves secretly stripped rice paddies by night to make a fast profit. India banned the export of all non-basmati rice, and Vietnam embargoed rice exports, period, sending Thai rice prices spiraling upward by 30 percent. The giant U.S. retailer Wal-Mart rationed rice sales to customers of its Sam's Club chain, as did some British retailers. Such measures did little to quell the panic, which was originally touched off by a 50 percent drop in surplus rice stocks over the previous seven years. The International Rice Research Institute attributed the crisis to loss of land to industrialization and city sprawl, the growing demand for meat in China and India, and floods or bad weather in Indonesia, Bangladesh, Vietnam, China, and Burma. By mid-2009,

accelerated by the worldwide financial crash, thirtythree countries around the world were facing either “alarming” or “extremely alarming” food shortages, a billion people were eating less each day — and most of Earth’s citizens were feeling the pinch. Though food prices fell, alongside prices of stocks and most other commodities, in the subsequent months, they fell only a little — and then began to rise again. **What**

happened in 2008 wasn’t the coming famine of the twenty-first century, merely a premonition of

what lies ahead This will not be a single event, affecting all nations and peoples equally at all times, but in one way or another it will leave no person in the world untouched. The reemergence of food scarcity occurs after decades of plenty, accompanied by the lowest real food prices for consumers in history. These bounteous years were the consequence of a food production miracle achieved by the world’s farmers and agricultural scientists from the 1960s on — a miracle of which the urbanized world of today seems largely oblivious and which we have forgotten to renew. By the early twenty-first century, signs of complacency were in evidence. In 2003, a conference of the Consultative Group on International Agricultural Research in Nairobi was told, “According to the Food and Agriculture Organization of the United Nations, the number of foodinsecure people in developing countries fell from 920 million in 1980 to 799 million in 1999.” Even in the immediate aftermath of the 2008 food price spike, the FAO itself, along with the Organization for Economic Cooperation and Development, remarked, “the underlying forces that drive agricultural product supply (by and large productivity gains) will eventually outweigh the forces that determine stronger demand, both for food and feed as well as for industrial demand, most notably for biofuel production. Consequently, prices will resume their decline in real terms, though possibly not by quite as much as in the past.” For some years, reassuring statements such as these had been repeatedly aired in the food policy, overseas aid, and research worlds. Unintentionally, food scientists and policy makers were sending a signal to governments and aid donors around the world that implied, “Relax. It’s under control. We’ve fixed the problem. Food is no longer critical.” Not surprisingly, aid donors rechanneled scarce funds to other urgent priorities — and growth in crop yields sagged as the world’s foot came off the scientific accelerator. Many found the new crisis all the more mysterious for its apparent lack of an obvious trigger. Various culprits were pilloried by blame-seeking politicians and media. Biofuels, after being talked up as one of the great hopes for combating climate change, quickly became a villain accused of “burning the food of the poor” and, from China to Britain, countries slammed the brakes on policies intended to encourage farmers to grow more “green fuel” from grain. According to the World Bank, biofuels could have caused as much as three-quarters of the hike in food prices. Equally to blame, according to other commentators, were oil prices, which had soared sixfold in the five years from mid-2003 to mid-2008 (although they fell again sharply as the global recession bit deep) with severe consequences for the cost of producing food, through their impact on farmer’s fuel, fertilizer, pesticide, and transportation costs. In developed countries the financial pain was high, but in developing nations it was agony: farmers simply could not afford to buy fertilizer and crop yields began to slip. In Thailand rice farmers quietly parked their new but unaffordable tractors in their sheds and went back to plowing with buffalo; buffalo breeders experienced a bonanza. “Energy and agricultural prices have become increasingly intertwined,” commented Joachim von Braun, the head of the International Food Policy Research Institute. “High energy prices have made agricultural production more expensive by raising the cost of cultivation, inputs — especially fertilizers and irrigation — and transportation of inputs and outputs. In poor countries, this hinders production response to high output prices. The main new link between energy and agricultural prices, however, is the competition of grain and oilseed land for feed and food, versus their use for bio energy.” Speculators, fleeing crumbling financial markets and discovering an unlikely haven in booming agricultural commodities, were a favorite target of media ire: “Food was becoming the new gold. Investors fleeing Wall Street’s mortgage-related strife plowed hundreds of millions of dollars into grain futures, driving prices up even more. By Christmas (2007), a global panic was building,” reported the Washington Post. In developing nations, traders and grain dealers were accused of buying up surplus stocks and hoarding them to drive the prices higher still. In the Philippines the government threatened hoarders with charges of economic sabotage and sent armed soldiers to supervise the distribution of subsidized grain. Retirement and hedge funds, casting about for something to invest in that wasn’t going to hell in a handbasket, also jumped on farm commodities and even agribusiness enterprises — areas such investors traditionally shun. Many saw the crisis as simply a result of the growth of human population, the inexorable climb from 3 billion people in 1960 to 6.8 billion by 2008 — the hundred million more mouths we have to feed in each succeeding year. Others ascribed it chiefly to burgeoning appetites in China and India, which had in a matter of five years or so together added the consumer equivalent of Europe to global demand for food as their emergent middle classes indulged in the delights of diets containing far more meat, poultry, dairy, and fish than ever before. In China, meat consumption trebled in less than fifteen years, requiring a tenfold increase in the grain needed to feed the animals and fish. One way to visualize the issue is that growth in global food production of 1–1.5 percent a year has more or less kept pace with growth in population — but has fallen short of meeting the growth in demand. One explanation for this is that farmers around the world have not responded by increasing the area of land they plant and harvest or raising their crop yields so rapidly as in the past. The big question is: why? Some blamed the weather. Portentously, many were quick to discern the looming shadow of climate change in the run of droughts, floods, and other natural mishaps that had disrupted global farm production across most continents in recent years. In eastern Australia a ten-year drought slashed grain production and all but obliterated the rice industry; the unprecedented draining of Australia’s food bowl, the Murray-Darling Basin, threatened to eliminate fruit, vegetable, and livestock industries reliant on irrigation. Similar hardship faced producers across sub-Saharan Africa. Floods in China and along the Mississippi River wreaked local havoc with grain production. In Burma, Cyclone Nargis flattened the Irawaddy Delta rice crop, propelling Asian prices into a fresh spiral. Heat waves in California and torrential rains in India added to perceptions — heightened by media reportage — that the climate was running amok. Other commentators sought villains among the world’s governments, blaming protectionism and hidden trade barriers, farm subsidies, food price controls or taxes, environmental and health restrictions, the ensnaring of farmers in snarls of red tape, along with the perennial failure of trade negotiators to open up global trade in agricultural products. Supermarkets and globalization of the food trade came in for flak, especially from the political left and from farmers themselves, for driving down farm commodity prices and thus discouraging growers from increasing production. Economic observers read the crisis as primarily due to weaker growth in food production at a time of strong growth in consumer demand, especially in China and India and among affluent populations worldwide. The Green Revolution, whose technologies had delivered the last great surge in global food production in the 1970s and 1980s seemed to be fizzling out, a view supported by the disturbing slide in crop yield advances. Yields of the major crops of wheat, maize, and rice had once increased by as much as 5 and even 10 percent a year — now they were increasing by 1 percent or nothing at all. In the overheated economy of the early twenty-first century, farm costs had soared along with oil prices, hindering farmers from adopting newer, but costlier and more energyintensive, technologies. In advanced countries, some scientists whispered, we might actually be approaching the

physical limits of the ability of plants to turn sunlight into edible food. **In the general hunt for someone to blame for the short-term food crisis, a more profound truth was being obscured** — that **the challenge is far deeper**, longer-term, and more intractable than most people, and certainly most governments, understand. **It stems from the magnifying and interacting constraints on food production generated as civilization presses harder against the finite bounds of the planet's natural resources**, combined with human appetites that seem to know no bounds. This challenge is more pressing even than climate change. A climate crisis may emerge over decades. A food crisis can explode within weeks — and kill within days. But the two are also interlocked. “If the world were to experience a year of bad weather similar to that experienced in 1972, the current ‘food crisis’ would pale in comparison to the crisis that would arise as a result. This should be taken as a warning that advance planning ought to be done if total chaos is to be avoided,” observes the resource analyst Bruce Sundquist. **The character of human conflict has also changed: since the early 1990s, more wars have been triggered by disputes over food**, land, and water than **over mere political or ethnic differences**. This should not surprise us: **people have fought over the means of survival for most of history**. But **in the abbreviated reports on the nightly media, and even in the rarefied realms of government policy, the focus is almost invariably on the players — the warring national, ethnic, or religious factions — rather than on the play, the deeper subplots building the tensions that ignite conflict**. Caught up in these are groups of ordinary, **desperate people fearful that there is no longer sufficient food**, land, and water to feed their children — **and believing that they must fight “the others” to secure them**. At the same time, the number of refugees in the world doubled, many of them escaping from conflicts and famines precipitated by food and resource shortages. Governments in troubled regions tottered and fell. **The coming famine is planetary** because **it involves both the immediate effects of hunger** on directly affected populations in heavily populated regions of the world in the next forty years — **and also the impacts of war, government failure, refugee crises**, shortages, and food price spikes that **will affect all human beings**, no matter who they are or where they live. It is an emergency because unless it is solved, billions will experience great hardship, and not only in the poorer regions. Mike Murphy, one of the world's most progressive dairy farmers, with operations in Ireland, New Zealand, and North and South America, succinctly summed it all up: “Global warming gets all the publicity but the real imminent threat to the human race is starvation on a massive scale. Taking a 10–30 year view, I believe that food shortages, famine and huge social unrest are probably the greatest threat the human race has ever faced. I believe future food shortages are a far bigger world threat than global warming.” The coming famine is also complex, because it is driven not by one or two, or even a half dozen, factors but rather by the confluence of many large and profoundly intractable causes that tend to amplify one another. This means that it cannot easily be remedied by “silver bullets” in the form of technology, subsidies, or single-country policy changes, because of the synergetic character of the things that power it. To see where the answers may lie, we need to explore each of the main drivers. On the demand side the chief drivers are: Population. Although the rate of growth in human numbers is slowing, the present upward trend of 1.5 percent (one hundred million more people) per year points to a population of around 9.2 billion in 2050 — 3 billion more than in 2000. Most of this expansion will take place in poorer countries and in tropical/subtropical regions. In countries where birth rates are falling, governments are bribing their citizens with subsidies to have more babies in an effort to address the age imbalance. Consumer demand. The first thing people do as they climb out of poverty is to improve their diet. Demand for protein foods such as meat, milk, fish, and eggs from consumers with better incomes, mainly in India and China but also in Southeast Asia and Latin America, is rising rapidly. This in turn requires vastly more grain to feed the animals and fish. Overfed rich societies continue to gain weight. The average citizen of Planet Earth eats one-fifth more calories than he or she did in the 1960s — a “food footprint” growing larger by the day. Population and demand. This combination of population growth with expansion in consumer demand indicates a global requirement for food by 2050 that will be around 70–100 percent larger than it is today. Population and demand are together rising at about 2 percent a year, whereas food output is now increasing at only about 1 percent a year. These demand-side factors could probably be satisfied by the world adopting tactics similar to those of the 1960s, when the Green Revolution in farming technology was launched, were it not for the many constraints on the supply side that are now emerging to hinder or prevent such a solution: Water crisis. Put simply, civilization is running out of freshwater. Farmers presently use about 70 percent of the world's readily available freshwater to grow food. However, increasingly megacities, with their huge thirst for water for use in homes, industry, and waste disposal, are competing with farmers for this finite resource and, by 2050, these uses could swallow half or more of the world's available freshwater at a time when many rivers, lakes, and aquifers will be drying up. Unless major new sources or savings are found, farmers will have about half of the world's currently available freshwater with which to grow twice the food. Land scarcity. The world is running out of good farmland. A quarter of all land is now so degraded that it is scarcely capable of yielding food. At the same time, cities are sprawling, smothering the world's most fertile soil in concrete and asphalt, while their occupants fan out in search of cheap land for recreation that diverts the best food-producing areas from agriculture. A third category of land is poisoned by toxic industrial pollution. Much former urban food production has now ceased. The emerging global dearth of good farmland represents another severe limit on increasing food production. Nutrient losses. Civilization is hemorrhaging nutrients — substances essential to all life. Annual losses in soil

erosion alone probably exceed all the nutrients applied as fertilizer worldwide. The world's finite nutrient supplies may already have peaked. Half the fertilizer being used is wasted. In most societies, up to half the food produced is trashed or lost; so too are most of the nutrients in urban waste streams. The global nutrient cycle, which has sustained humanity throughout our history, has broken down. Energy dilemma. Advanced farming depends entirely on fossil fuels, which are likely to become very scarce and costly within a generation. At present farmers have few alternative means of producing food other than to grow fuel on their farms — which will reduce food output by 10–20 percent. Many farmers respond to higher costs simply by using less fertilizer or fuel — and so cutting yields. Driven by high energy prices and concerns about climate change, the world is likely to burn around 400 million tonnes (441 million U.S. tons) of grain as biofuels by 2020 — the equivalent of the entire global rice harvest. Oceans. Marine scientists have warned that ocean fish catches could collapse by the 2040s due to overexploitation of wild stocks. Coral reefs — whose fish help feed about five hundred million people — face decimation under global warming. The world's oceans are slowly acidifying as carbon dioxide from the burning of fossil fuels dissolves out of the atmosphere, threatening ocean food chains. Fish farms are struggling with pollution and sediment runoff from the land. The inability of the fish sector to meet its share of a doubling in world food demand will throw a heavier burden onto land-based meat industries. Technology. For three decades the main engine of the modern food miracle, the international scientific research that boosted crop yields, has been neglected, leading to a decline in productivity gains. Farmers worldwide are heading into a major technology pothole, with less new knowledge available in the medium run to help them to increase output. Climate. The climate is changing: up to half the planet may face regular drought by the end of the century. "Unnatural disasters" — storms, floods, droughts, and sea-level rise — are predicted to become more frequent and intense, with adventitious impacts on food security, refugee waves, and conflict. Economics, politics, and trade. Trade barriers and farm subsidies continue to distort world markets, sending the wrong price signals to farmers and discouraging investment in agriculture and its science. The globalization of food has helped drive down prices received by farmers. Speculators have destabilized commodity markets, making it riskier for farmers to make production decisions. Some countries discourage or ban food exports and others tax them, adding to food insecurity. Others pay their farmers to grow fuel instead of food. A sprawling web of health, labor, and environmental regulation is limiting farmers' freedom to farm. The collapse in world economic conditions in late 2008 and 2009 has changed the prices of many things, including land, food, fuel, and fertilizer — but has not altered the fact that demand for food continues to grow while limits on its production multiply. Indeed, the economic crash exacerbated hunger among the world's poor, and has not altered the fundamentals of climate change, water scarcity, population growth, land degradation, or nutrient or oil depletion. In early 2009 a report by Chatham House, a think tank focused on international affairs, observed that a lower food price "does not mean that policy-makers around the world can start to breathe a sigh of relief. . . . [E]ven at their somewhat diminished levels current prices remain acutely problematic for low-income import-dependent countries and for poor people all over the world. The World Bank estimates that higher food prices have increased the number of undernourished people by as much as 100 million from its pre-price-spike level of 850 million." In the medium and longer term, the report warned, food prices were poised to rise again. "Although many policy-makers have taken a degree of comfort from a recent OECD-FAO report on the world's agricultural outlook to 2017 . . . the report largely overlooked the potential impact of long-term resource scarcity trends, notably climate change, energy security and falling water availability."

To sum it all up, the challenge facing the world's 1.8 billion women and men who grow our food is to double their output of food — using far less water, less land, less energy, and less fertilizer. They must accomplish this on low and uncertain returns, with less new technology available, amid more red tape, economic disincentives, and corrupted markets, and in the teeth of spreading drought. Achieving this will require something not far short of a miracle. Yet humans have done it before and, resilient species that we are, we can do it

again. This time, however, it won't just be a problem for farmers, scientists, and policy makers. **It will be a challenge involving every single one of us, in our daily lives, our habits, and our influence at the ballot box and at the supermarket. It will be the greatest test of our global humanity** and our wisdom we have yet faced

Food insecurity causes resource wars and WW3

Calvin 98, Theoretical Neurophysiologist at the University of Washington, 98 (William, "The Great Climate Flip-Flop," The Atlantic Monthly, January, Volume 281, Number 1) [PDI]

The population-crash scenario is surely the most appalling. **Plummeting crop yields would cause some powerful countries to try to take over their neighbors or distant lands -- if only because their armies, unpaid and lacking food, would go marauding, both at home and across the borders. The better-organized countries would attempt to use their armies, before they fell apart entirely, to take over countries with significant remaining resources, driving out or starving their inhabitants if not using modern weapons to accomplish the same end: eliminating competitors for the remaining food. This would be a worldwide problem -- and could lead to a Third World War** -- but Europe's vulnerability is particularly easy to analyze. The last abrupt cooling, the Younger Dryas, drastically altered Europe's climate as far east as Ukraine. Present-day Europe has more than 650 million people. It has excellent soils, and largely grows its own food. It could no longer do so if it lost the extra warming from the North Atlantic.



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AT Biofuels

Comprehensive studies prove – biofuels increase CO2 emissions 17% above current levels

Science Daily 11

Tara W. Hudiburg, Beverly E. Law, Christian Wirth, Sebastiaan Luyssaert, Science Daily
"Production of Biofuel from Forests Will Increase Greenhouse Gas Emissions, Study Finds" Oct. 23, 2011 <http://www.sciencedaily.com/releases/2011/10/111023135657.htm> [PDI]

The largest and most comprehensive study yet done on the effect of biofuel production from West Coast forests has **concluded that an emphasis on bioenergy would increase carbon dioxide emissions** from these forests at least 14 percent, if the efficiency of such operations is optimal. The findings are contrary to assumptions and some previous studies that suggest biofuels from this source would be carbon-neutral or even reduce greenhouse gas emissions. In this research, that wasn't true in any scenario. **The study was published in Nature Climate Change, by scientists** from the College of Forestry **at Oregon State University** and other institutions in **Germany and France**. It was **supported by the U.S. Department of Energy**. During the past four years, **the study examined 80 forest types in 19 eco-regions** in Oregon, Washington and California, ranging from temperate rainforests to semi-arid woodlands. It included both public and private lands and different forest management approaches. "On the West Coast, we found that projected **forest biomass removal and use for bioenergy in any form will release more carbon dioxide to the atmosphere** than current forest management practices," said Tara Hudiburg, a doctoral candidate at OSU and lead author on the study. "Most people assume that wood bioenergy will be carbon-neutral, because the forest re-grows and there's also the chance of protecting forests from carbon emissions due to wildfire," Hudiburg said. "However, **our research showed that the emissions from these activities proved to be more than the savings**." The only exception to this, the researchers said, was if forests in high fire-risk zones become weakened due to insect outbreaks or drought, which impairs their growth and carbon sequestration, as well as setting the stage for major fires. It's possible some thinning for bioenergy production might result in lower emissions in such cases if several specific criteria are met, they said. "Until now **there have been a lot of misconceptions about impacts of forest thinning, fire prevention and biofuels** production as it relates to carbon emissions from forests," said Beverly Law, a professor in the OSU Department of Forest Ecosystems and Society and co-author of this study. "**If our ultimate goal is to reduce greenhouse gas emissions, producing bioenergy from forests will be counterproductive**," Law said. "Some of these forest management practices may also have negative impacts on soils, biodiversity and habitat. These issues have not been thought out very fully." The study examined thousands of forest plots with detailed data and observations, considering 27 parameters, including the role of forest fire, emissions savings from bioenergy use, wood product substitution, insect infestations, forest thinning, energy and processes needed to produce biofuels, and many others. It looked at four basic scenarios: "business as usual"; forest management primarily for fire prevention purposes; additional levels of harvest to prevent fire but also make such operations more economically feasible; and significant bioenergy production while contributing to fire reduction. Compared to "business as usual" or current forest management approaches, all of the other approaches increased carbon emissions, the study found. Under the most optimal levels of efficiency, management just for fire prevention increased it 2 percent; for better economic return, 6 percent; and for higher bioenergy production, 14 percent. "However, we don't believe that an optimal efficiency of production is actually possible in real-world conditions," Hudiburg said. "With levels of efficiency that are more realistic, we project that **the use of these forests for high bioenergy production would increase carbon emissions 17 percent from their current level**." About 98 percent of the forests in this region are now estimated to be a carbon sink, meaning that even with existing management approaches they sequester more carbon than they release to the atmosphere. Plans for greenhouse gas reduction call for up to 10 percent lower emissions by 2020, and forest-derived fuels are now seen as a carbon-neutral solution to reducing energy emissions, the researchers note. However, this study suggests that increases in harvest volume on the West Coast, for any reason, will instead result in average increases in emissions above current levels. Forests capture a large portion of the carbon emitted worldwide, and some of this carbon is stored in pools such as wood and soil that can last hundreds to thousands of years, the scientists said. "**Energy policy implemented without full carbon accounting and an understanding of the underlying processes risks increasing rather than decreasing emissions**," the researchers wrote in their report.

**75% food price increase caused by biofuels – best studies from experts at the World Bank prove
WSJ '8**

Wall Street Journal, "Biofuels Really Are Bad for Food Prices, World Bank Says" September 5, 2008, <http://blogs.wsj.com/environmentalcapital/2008/09/05/bad-juice-iii-biofuels-really-are-bad-for-food-prices-world-bank-says/> [PDI]

The Journal's Bob Davis reports: In July, **the Guardian newspaper breathlessly reported that a leaked copy of a World Bank report blamed biofuels for 75% of the steep increase in food prices. What made the report even juicier was that the report was supposedly "suppressed" by the World Bank, headed by former Bush administration Deputy Secretary of State Robert Zoellick. The blogosphere went to town on the story.** A little reporting showed there wasn't a lot of there, there, as Gertrude Stein might have remarked. I spoke to the report's author, Donald Mitchell, who said the April report was a draft and hadn't been released because it wasn't ready for publication. Nobody at the World Bank had pressured him, he said. The World Bank put out a release quoting Mr. Zoellick saying the Mitchell estimate of the effect of biofuels on food prices was at the "far end. You see other people talk about ranges of 20 percent, 25 percent." **Well, it turns out that Mr. Mitchell finished his report at the end of July and came up with a conclusion that was essentially the same as his April paper. "Most of the remaining 70-75 percent increase in food commodities prices was due to biofuels," he reported. Contacted by phone, Mr. Mitchell, a 25-year veteran of the World Bank, said "I updated all the umbers, expanded the analysis of the dollar impact and came up with the same numbers."**

AT Food Sovereignty

Food sovereignty is not a unifying framework that can work at the global level.

Beuchelt and Virchow 12, (Tina D. Beuchelt, International Maize and Wheat Improvement Center, Mexico, Detlef Virchow, Food Security Center, University of Hohenheim, Germany, “Food sovereignty or the human right to adequate food: which concept serves better as international development policy for global hunger and poverty reduction?” *Agric Hum Values* (2012) 29:259–273, https://ew.uni-hohenheim.de/fileadmin/einrichtungen/fsc/Research_publications/Beuchelt_and_Virchow_Agric_Human_Values_2012.pdf) [PDI]

The concept of food sovereignty is currently being further developed, and some elements are **undergoing changes** (German watch and AbL 2007; Patel 2009; Windfuhr and Jonse n 2005). **For example, La Via Campesina adjusted its 1996 definition of food sovereignty several times before eventually deciding to use the Nye’ le’ ni definition**, which was elaborated together with other civil society movements (La Via Campesina 2009). Therefore, some of the below mentioned unresolved issues and challenges are likely to be addressed in the future.¶ Until now, **there is no universal agreement on who exactly is the target group—individuals, communities, peoples and/or nations** (Haugen 2009)—**or on whether “migrants”, “consumers” and “urban movements” should be integrated in the definitions, or indeed on what exactly constitutes a peasant or a family farmer**. Patel (2009) points out that **the theoretic unification of farm workers and farm owners within one concept will not be easy in practice. Further, the emphasis on ‘new social relations’ in the Nye’ le’ ni definition, focusing on gender equality, contradicts the typical patriarchal patterns of farming families** (Patel 2009). If the concept of food sovereignty is seen as a unifying force for civil society, then this flexibility can be an advantage to bring together social and peasant movements with different objectives. Yet, as Boyer (2010) stated, **food sovereignty is a very complex concept and could lead to a situation in which not all farmers’ movements—** which are the core target group of the concept—**accept the concept with its holistic approach in the long term**. For public policy directed toward international development, **the lack of specificity can be of disadvantage as without a fixed (international) agreement about the concept, it is in danger of being diluted by different interests** (Haugen 2009; Pimbert 2008).¶ Conceptions of food sovereignty tend not to deal with the issue of consumers in any great detail, but they do advocate consumers’ rights to safe, healthy and locally produced food which respects cultural preferences.¶ According to La Via Campesina (2009), **food sovereignty includes the right of consumers to decide what they want to eat, and how and by whom it is produced. This results in an inherent conflict between the right of consumers to freely choose their food, including food not produced locally, and the call to localize food production, trade and consumption**. If imported food could be readily replaced by local food, this conflict would be lessened; yet for food consumed out of season it can become complicated. **Another unresolved issue concerns the call for sustainable, agroecological food production based on smallholder agriculture. An individual consumer’s right to choose products from conventional, industrialized agriculture, maybe coming along with different standards in food quality and appearance, could be restricted. The abandonment or non-use of GMOs in agricultural and food production also limits consumers’ as well as agricultural producers’ rights—** be they small or large. **This would affect those countries in particular which currently utilize GMOs in their agricultural food production, such as the USA, China, and India.**

Food sovereignty shuts down international food markets—leads to price spikes, widespread famine, and poverty.

Beuchelt and Virchow 12, (Tina D. Beuchelt, International Maize and Wheat Improvement Center, Mexico, Detlef Virchow, Food Security Center, University of Hohenheim, Germany,

“Food sovereignty or the human right to adequate food: which concept serves better as international development policy for global hunger and poverty reduction?” Agric Hum Values (2012) 29:259–273, https://ew.uni-hohenheim.de/fileadmin/einrichtungen/fsc/Research_publications/Beuchelt_and_Virchow_Agric_Human_Values_2012.pdf [PDI]

Civil society movements increasingly push the concept of food sovereignty to an international level; so far, **there seems a lack of clarity in how to implement global food sovereignty as an international policy and the consequences of implementing such a policy.** If the concept of food sovereignty, as described in section “Definition and conceptualization of food sovereignty”, is to be applied internationally, ex-ante models are necessary to predict the policy effects. A lot of attention is required when designing these models as the global impact of food sovereignty on food security and poverty reduction is difficult to predict.¹³ The impacts depend (a) on how the concept of food sovereignty is implemented in individual countries and globally; (b) on the ratio of production factors (land, labor, capital) to household income and on changes in the prices of production factors due to factor substitution, factor intensity and mobility; and (c) on other political measures and policies which might be implemented in parallel. For example, **an international policy integrating the concept of food sovereignty needs to consider especially the effects on national and international food prices.** In the following we try to highlight some possible relative effects on food prices that a global introduction of the concept of food sovereignty would have on peasant producers versus non-producers. **If food sovereignty became the dominant policy worldwide in food and agriculture, it is likely that industrialized countries, in line with their current behavior at the WTO negotiation rounds, would close off their agricultural markets to most foreign imports and continue to subsidize their own agriculture. The net food importing countries, including the low-income food deficit countries,¹⁴ which are not able to expand their own food production sufficiently, would face much higher costs for their food imports. A reduction or shortfall in exports due to market foreclosure or reduction of export crops due to increase of food crops could lead to a loss of foreign currency which is for many developing countries necessary for the purchase of production inputs and consumer goods not produced in their own country. Another challenge may be the reduction of global food surpluses. If world agricultural production were limited mainly to production for individual countries’ domestic markets, harvest losses could not be adequately covered by purchasing food on the world market. Especially if covariate harvest losses occurred (e.g. due to droughts or floods, climate change, or regional conflicts), less food would be available to ensure adequate global food supplies and would lead to higher prices for non-agricultural consumers.**[¶] A major unresolved aspect of the concept of **food sovereignty is** that it is **not a comprehensive concept for hunger and poverty reduction. It neglects the poor urban population and unemployed workers, which together make up around 40% of hungry people worldwide. It is not clear how price increases for agricultural producers would translate into the final product prices and how this could affect the urban population and rural workers. Food price increases will negatively affect the rest of the population, and may even hurt the peasants who need to additionally buy some food. Even if peasants benefited and became less poor, poverty among urban populations might increase.** In developing countries, the middle-income group spends around 35–65% of their income on food, while the poor spend 50–80% (WFP 2009), so there is not much leeway for both groups to absorb further price increases. Currently, **it remains unclear whether food sovereignty will contribute to worldwide food security and poverty reduction or whether it will simply lead to a shift in the population groups affected.**

AT Politics

The aff conserves political capital – increased agricultural production is in line with what powerful agriculture companies in the U.S. want, subsidies prove [the CP links more than the aff if it reduces subsidies]

Bruce and Cunnigen 10

Marino Anton Bruce and Donald Cunnigen, author and prof at University of Rhode Island, Race in the Age of Obama, 2010 [PDI]

This problem, which was rooted in US domestic politics, **could be solved only** if Congress were willing to **[by]** **oppos[ing] powerful agricultural interests in the United States**. **Obama** was certainly aware of this problem, but **said nothing** in the speech **that suggested he would fight to eliminate agricultural subsidies, a fight that would entail the expenditure of substantial political capital**. In fact, **nothing Obama said** in his speech **obliged him to spend domestic political capital** to alleviate Africa's trade disadvantages.



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Theory

Plans Good

If we are to take food security seriously, we need to come up with better and better policies. The consequences are real and our research needs to be specific to combat the harms

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

In the examining some of the threats to food security in Asia, the findings reveal that that threats to food security in Asia is minimal compared to Africa. But since **food security is a global concern and thus** it still **requires continuous research** to be undertaken in various research and development institutions **to come up with better** farming methods and **policies**. **There is an alarming need** for countries to come up with better farming methods to guard against food insecurity. From the above mentioned threats, there is an urgent need **to engage in corrective measures which should be very constructive and realistic by both Asia and Africa to avoid future consequences of such threats**.

Neg

Non-Utilitarian NCs

Autonomy NC

Tax Contention

Subsidies increase taxes on everybody

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

One of the objectives of subsidy is to ensure that farmers get good returns from the farming activities. This happens by **subsidy on farm implements, seed, fertilizer and other agricultural inputs** reducing the cost. This will lead to overall reduced cost of production hence more profits to the farmers. Coincidentally, the introduction of subsidy has led to overproduction of agricultural produce. From economics' law of demand and supply, when supply is higher than demand, prices will always go down (Johnson, 1975). This has led to farmers panic and being desperate with their harvest hence selling at a price that cannot even cover the costs of production for fear that the produce may as well go bad before selling. This is against the major objective of subsidy and the farmers will not be able to get the expected returns. Finally, subsidy most of the time **means tax is diverted to the other bases of taxation, in most cases, abolishing of one tax normally leads to imposition of a new tax on a different item or increasing the tax rate on some item. This will result into a high tax burden for both the farmers and the citizens.**

All you need for the rest of the contention is a card from some libertarian or anarchist who says that taxes are inherently coercive

You could also read the card from the spending DA to show that taxes will have to increase hugely to offset increased government spending

Cultural Tolerance NC

Contention

Aff imposes one kind of commercialized agricultural model that violates traditional African practices

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

The **diversity of African culture and social orientation has been identified to have strong influence on agriculture**. In this case, the **different cultural groups have their own ways of life, which is closely tied to agricultural practices. Most of the African communities view agriculture as a way of living** (Atehnkeng, 2007). In this case, people only engage in agriculture for the sake of sustaining life. In this phenomenon, the commercial aspect of agriculture is in absence in the minds of many African societies. This situation has led to the dominance of subsistence farming in many social setups. **With this form of philosophy and ideology, the African societies have failed to accept change and commercialise agriculture**. Nkala et al (2011) observed that **this traditional ideology of agriculture as a way of life rather than a source of better livelihood is the main obstacle** to efficient agriculture. Salih (2009) also outlined that the traditional ideologies and practices undertaken by the African communities have obstructed them from adopting change. This makes **people to gain pleasure in undertaking the very traditional means of producing food**.



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Counterplans

Recall that many of the aff mechanisms can be read as counterplans on the neg.

Sequestration Advantage CP

Carbon sequestration solves food security, climate effects, alt causes.

Lal 10, (Rattan Lal, Carbon Management and Sequestration Center, Ohio State University, “Beyond Copenhagen: mitigating climate change and achieving food security through soil carbon sequestration,” Food Sec. (2010) 2:169–177, <http://tinread.usarb.md:8888/tinread/fulltext/lal/beyond.pdf>) [PDI]

The trilemma of **food insecurity, climate change, and soil/ environmental degradation can be addressed by restoring the SOC pool in degraded/depleted cropland soils of the world. An SOC concentration above a critical concentration of about 1.1% in the root zone is essential for the creation of optimal edaphic/agronomic conditions. Principal benefits include favorable soil structure and aggregation, increase in plant available water capacity, improvement in nutrient retention and use efficiency, increase in microbial biomass C and activity of earthworms and other soil biota, etc. Thus, there is a strong correlation between concentration (pool) of SOC in the root zone and grain/straw yields of grain crops and other food staples** (root crops). The technical potential of C sequestration is 0.6–1.2 Pg/yr in cropland soils, and about 3 Pg/yr in soils of all ecosystems (e.g., cropland, grazing land, forest lands, degraded lands, wetlands, etc.). **This natural process of C sequestration in soils is also cost-effective and has numerous co-benefits. Important among these are increases in crop yields, improvement in use- efficiency of inputs (e.g., fertilizer, irrigation), decrease in erosion and sedimentation, reduction in non-point source pollution, decline in hypoxia/anoxia (dead zone) of coastal waters, increase in soil biodiversity, and mitigation of climate change through reduction in net CO₂ levels. Rewarding farmers/land managers for providing ecosystem services would be a strong incentive towards adoption of recommended management practices for sustainable man- agement of soils and natural resources. Such a long-term strategy of addressing the issues of climate change and food security would also reduce the perpetual crises of aid, subsidies and ad hoc approaches to providing the basic necessities to resource-poor and small landholders dependent on low crop yields and uncertain rains in a changing climate. Farming soil C and trading C credits would potentially create another income stream for farmers.** This is a truly win-win strategy, and a bridge to the future until low-C or no-C fuel sources take effect.



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Disadvantages

Biofuels DA

Uniqueness & Link

Investment in biofuels in countries like Africa is on the rise because it's lucrative right now – it's displacing food production, but aff subsidies on food would reverse the trend by making food more profitable in the short term. But long-term collapse of agriculture is inevitable unless we find a way to stop global warming

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Tepe et al (2011) observed that **bio-energy is rapidly replacing the use of fossil fuel, which is associated with atmospheric destruction**. In this case, **the production of bio-energy includes the use of varied forms of organic matter**. This includes charcoal, **manure, wood, energy crops, and agricultural forestry and waste**. The major forms of bio-fuels include bio-ethanol, bio-diesel, bio-gas, bio-methanol, and bio-hydrogen. All these forms of bio-fuels are produced from different agricultural commodities. **Some of the commonly used agricultural commodities for producing bio-fuels include wheat, sugarcane, sorghum, cassava, maize, soybeans, corn, algae, jatropha, and oil palm (Atehnkeng, 2007)**. **In regards to agriculture and the production of food, bio-fuel production has been a serious challenge**. As postulated by Callahan (2002), **the production of bio-fuels in Africa has threatened food production**. This has been very evident **in most of the African states**, whereby the **production of feedstock related with the production of bio-fuels has been on the increase** (Tepe et al, 2011). It has been noticed that the production of feedstock for bio-fuel production in Africa is conducted mainly by foreign farms. **This has led to huge investments** in the participating countries thus **diverting farmers from the production of other food crops**. As argued by Macaskill (2009) **the production of feedstock to support bio-fuels is threatening food production**. This is so because **a lot of land that was under food crops is being replaced by feedstock for production of bio-fuels** (Hadjor, 2000). Based on this phenomenon **the production of food is in a rapid decline due to the large acreage under feedstock for bio-fuel production**. Despite that the production of feedstock is undertaken across the globe, **Africa has been the most threatened** in terms of food production. This is so because there has been an historical deficit in food production thus showing the need for more attention on the production of food crops (Mitchell, 2010). In this regard, the **increased attention on production of bio-fuels in Africa is jeopardizing food production. Since most of the agricultural activities related with production of food crops are unprofitable, people are shifting to the lucrative production of bio-fuels. This is in turn worsening the food security and price variability of food commodities in Africa** (Mitchell, 2010). Despite that many **countries** in Africa **like Senegal, Mozambique, Tanzania, Zambia, Mali, and Kenya have copious amounts of unused land**; the production of feedstock is being undertaken on the currently used land (Mitchell, 2010). This has been witnessed in the focus on producing jatropha, sugarcane, and sorghum on lands that were under other forms of food crops like wheat, millet and maize (Hadjor, 2000). Without regulation and proper strategizing on the production of feedstock, the production of food commodities will come to a stand still. It is of great importance to note that the total acreage under food crops is under rapid decline. This poses a series threat on agriculture and food production (Sage, 2010). In regard to the above analysis on the issue of climate change, it is evident that serious challenges come up that obstruct agriculture. **Climate change has also led to the development of unfavourable conditions for conducting agriculture** (Murad et al, 2010). This in turn adds on to the cost of agricultural operations thus reducing the profit margin. **Immense destruction on agricultural commodities as a result of climate change** also **adds on to losses and cost of undertaking agriculture. In reference to these situations, most of the agricultural producers in Africa quit**

agriculture and look for other ventures (Simms et al, 2004). **This** in turn **leads to a decrease in food production and deterioration of the entire agricultural sector.**

Impact – Displaces Fossil Fuels

Second generation biofuels are cost competitive with current diesel and gas prices Tan and Lee 08

Kok Tat Tan, Keat Teong Lee, School of Chemical Engineering, Engineering Campus, Universiti Sains Malaysia, September 2008, Energy Policy, pp. 3360-3365 [PDI]

However, even though there is an extra processing step in the hydrolysis of lignocellulose to glucose, **lignocellulose is highly abundant and diverse in terms of availability.** Besides, it does not require agriculture intensification as in first-generation bioethanol where the productivity of crops is maximized to cater to the growing demand of feedstock for biofuels. On top of that, **the cost of feedstock is lower for lignocellulose compared to agricultural crops, which contributes up to 70% of the total production cost for first-generation bioethanol** (Mann, 2004).

This in turn will make the price of bioethanol more competitive compared to fossil fuels such as gasoline or diesel. On the other hand, Ryan et al. (2006) reported that lignocellulosic ethanol, whether from crops such as miscanthus or residues like straw, has a higher CO₂-equivalent (CO₂eq.) emission savings compared to bioethanol from sugar or starch as shown in Table 2. For instance, utilization of every 1000 l of lignocellulosic ethanol from crops or residues contributed 2.5 and 2.6 tonnes of CO₂eq. emission savings, respectively, while a mere 0.4 tonnes of CO₂eq. savings is reported for bioethanol from starch. The CO₂eq. calculation takes into account the full life cycle of emission or 'well-to-wheel' of the biofuel. This shows the potential of cellulose-based ethanol in reducing GHGs emissions and subsequently mitigates climate change and pollution.

Subsidies for algae biofuel production can displace oil dependence Walsh 10

Brian Walsh, Senior writer for TIME magazine, covering energy and the environment "Top 20 Green Tech Ideas" Algae Biofuel Bryan Walsh Monday, Dec. 06, 2010
http://www.time.com/time/specials/packages/article/0,28804,2030137_2030135_2021648,00.html [PDI]

It's a dirty secret: **the biggest renewable energy business in the U.S. isn't solar or wind or electric cars. It's plain old corn ethanol. Thanks largely to generous government subsidies, the U.S. produced 10.6 billion gallons of ethanol** in 2009. **That was enough to displace the need for 364 million barrels of oil,** but study after study has shown that high levels of corn ethanol production simply aren't sustainable. Corn that could go to feed the world instead feeds our cars — and not very efficiently. The growth of corn ethanol has more to do with political realities in the U.S. (think Iowa, home of both corn and the first Presidential caucus) than it does with environmental ones. But **that doesn't mean biofuels can't play a major role in a greener U.S. energy policy — they just have to be the right kind. One of the best options on the horizon is biofuel made from algae, which counters a lot of the problems with corn ethanol. (The right strains of algae secrete oils that can be used to make fuel.)** Algae do not need farmland to grow: tanks will do the job just fine anywhere there is spare land and a decent amount of sunshine. Algae also grow much faster than traditional crops, and the micro-organisms may be able to use wastewater or even saline water during their development, rather than fresh water. Startups like Sapphire Energy and Algenol in California and Florida are passing the pilot phase and nearing commercial development; **they just need a little government help.**

Turns case – the a move to biofuels is key to avoid oil and gas price fluctuations that hurt food development

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Instability in the energy sector has in the recent led to a serious calamity in all the sectors of government. In this regard, the agricultural sector has not been exempted. **The recent price movements of oil and gas have negatively impacted on the agricultural sector in Africa.** To begin with, the **fluctuations and increase in oil and gas prices have led to an increase in the cost of doing agriculture.** Hadjor (2000) depicted that, **increase in oil price leads to higher costs of acquiring agricultural inputs and machinery.** Most of the agricultural machinery is dependent on petroleum oil. This leads to doubling of the cost of agricultural operations. The overall effect of this phenomenon is a reduction in the profit margin as well as losses in the agricultural sector (Sage, 2010). This phenomenon leads to exit of many potential farmers thus leaving a deficit in agricultural production. **Fluctuations in oil and gas prices have also created uncertainty in calculation of the cost of doing agriculture. This situation increases anxiety among farmers** thus influencing decisions on taking agricultural risks. In response to this situation, **many potential investors in agriculture divert their resources and capital to other sectors thus leaving the agricultural sector under utilised** (Salih, 2009). From another perspective, the issue of petroleum oil and gas prices movements have led to the commitment in the production of bio-fuels. This has led to a serious threat in agriculture. As observed by Tetey et al (2003), the concentration on bio- fuels has led to shifting of agriculture of food products to the production of feedstock to support manufacture of bio-fuels. This is related to the high returns from the farming of feedstock required for bio-fuel manufacture. Based on this scenario, agriculture of food commodities has ended up being abandoned.

Impact – Global Warming

Biofuels reduce carbon monoxide and greenhouse gas emissions

Department of Energy 05

DoE, Clean Cities is the U.S. Department of Energy's (DOE) flagship alternative-transportation deployment initiative, "Low-Level Ethanol Fuel Blends" April 2005

www.afdc.energy.gov/afdc/pdfs/37135.pdf [PDI]

Ethanol has been used in vehicles since the early 1990s to promote more complete combustion of the fuel, **thereby reducing emissions of carbon monoxide** (CO), a regulated pollutant that is dangerous to human health. Particularly in cold weather with older or poorly maintained vehicles, **the reduction of CO can be significant** (20% to 30%). **Emissions of NOx are not increased through the use of low-level blends because the 3-way catalytic converter ensures that tailpipe emissions comply with NOx standards.** In addition, by displacing gasoline, **ethanol reduces exposure to toxic pollutants** found in gasoline. **E10 has** a higher vapor pressure than does gasoline, which gives the fuel a **higher volatility.** **This** increased volatility can cause higher evaporative emissions of light hydrocarbon from the fuel. However, state and federal regulations control the volatility of the blended fuel. Higher vapor pressure can also cause permeation through fuel system components, although this is expected to decrease as fuel systems continue to meet new standards for evaporative emissions. **The use of ethanol blends significantly reduces the emission of greenhouse gases.** In the United States, **ethanol is made from agricultural crops**, predominantly corn. As it grows, **the corn plant captures carbon dioxide from the atmosphere, converting it to sugars** and starches through photosynthesis. **These** sugars and starches **are** then **fermented** to produce ethanol, **transforming the building blocks of a potent greenhouse gas to a renewable fuel.**

Cellulose ethanol environmentally friendly – 85% less GHGs than gasoline – solves soil and food interference

Scatena 09

Jenna Scatena, AlterNet, January 12, 2009, Ethanol Is a Disaster, But What About Other Biofuels?, <http://www.alternet.org/story/118436/> [PDI]

"We're not hung up on [only] cellulosic material," Walker explained. But **you do get a "better carbon footprint** with perennial grasses **than with corn. Nitrogen** usage is less **and water usage is less.** He pointed out that, **"when you work with cellulosic materials you get two sugars instead of one," making the biofuel more efficient. Cellulosic ethanol emits 82 to 85 percent fewer greenhouse gases than gasoline** (compared to 12 percent fewer with corn ethanol). **It also doesn't harm the soil or interfere with the food market** as much as corn does.

All you need is a global warming impact card to finish this disad.

Warming Turns Case

Food insecurity is inevitable until we solve global warming – Africa is experiencing droughts, crop destruction and disease that weakens the labor force for producing food. That means DA turns case

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

The issue of climate change is becoming a menace in the global community in recent days. This has been much felt in the 21st century, whereby serious climatic changes and conditions have been realised (Lybber and Stummer, 2012). The most felt aspect of climatic change has been the issue of **global warming** (Murad et al, 2010). This is characterised by rapid **increase** in the average temperatures of the land, sea and the atmosphere. Other aspects of climate change include prolonged **droughts**, increase in **tsunamis**, **variation in rain** patterns, **and shortening of rain** season (Simms et al, 2004). Despite that the menace of climate change has been felt all **across the globe, its effect has been much felt in Africa. This phenomenon is posing a serious threat to agriculture and food production in Africa.** Mongi et al (2010) postulated that **climate change is impacting strong barrier in the undertaking of agricultural activities.** Atehnkeng (2007) observed that **climate change threatens food production across the sub-Saharan region of Africa. The issue of climate change has led to a significant decline in the annual agricultural output in Africa.** This is attributed to the decrease in the land acreage under food production as well as the **massive destruction of agricultural products.** Following the issue of climatic change, **many farmers have been obstructed from optimally participating in agricultural activities** (Murad et al, 2010). This is brought about by the **changing climatic patterns, which brings uncertainty on amounts and patterns of rain.** As observed by Sage (2010), climatic change has led to a series of misfortunes in conducting agricultural activities. For instance, there has been **an increase in flooding** in most of the regions of Africa. This is associated with climatic change which cause **long dry seasons** and ultimately heavy down pours. This phenomenon **leads to massive destruction of farm produce.** As a result of this situation, the overall concept of food production in Africa is affected. In addition, **the changes in climatic conditions have been worse felt in Africa due to low technological know how** (Buah et al, 2011). This has obstructed timely forecasting and preparation for issues like floods as well as long dry spells. **Climate change has led to a drastic decline in water availability thus obstructing agricultural activities. The changes in climate have led to disappearance of rains in regions which were previously receiving rainfall** (Murad et al, 2010). In regard to this scenario, **water availability goes down thus jeopardizing agricultural activities.** Ground water which is a product of rain water is constantly diminishing in many regions. This is as a result of increased dry seasons and shortened rain seasons. As a result of this phenomenon, the whole issue of agriculture and food production is put at a state of jeopardy (Suliaman, 2010). The availability of human resources has also been negatively impacted by climate change thus deterring intensive agricultural activities. As depicted by Nelson (2009), **climate change causes manifestation of vector born diseases.** In this case, an increase in temperature and humidity induces ideal conditions for **malaria.** Sleeping sickness **among other infectious diseases** are also as a result of climate change. **These** phenomena **have a direct impact on agriculture in the sense that they affect the availability of labour** (Sage, 2010). This phenomenon is much evident **in Africa,** where **human power is the main source of labour for conducting agricultural activities.**

Climate is the main determinant of crop production in Africa Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Environmental factors have been the main threat to food and agriculture in Africa. Sage (2010)

indicated that the environmental phenomenon in most parts of Africa is not favourable for agriculture. Most of the African nations lie **in the tropics**, whereby **they experience dry and hot climate**. This is usually unfavourable for productive and profitable agriculture. To begin with, the climate in Africa has been identified to be predominantly tropical in nature. This is classified into humid temperate, humid equatorial and dry climate (Nelson, 2009). Nevertheless, localized variables and altitude usually leads to other distinct regional climates. Despite this diversity in climate, it has been identified that the dry tropical climate is dominant in most of the regions. **This is very unfavourable to agriculture following the inadequate rain as well as the high temperatures** (Sulieman, 2010). **Most of the African regions are facing long drought seasons and short rain seasons thus making it impossible for the cultivation of different crops**. These phenomena jointly threaten food production and agriculture in Africa. The unfavourable climatic conditions in Africa have led to unavailability of water for agriculture. Most of the regions are served by seasonal rivers and dams, thus making it impossible to substitute rain fed agriculture. In regard to the dry climatic conditions, most of the African regions have insufficient water supply that can be used for agriculture. The water table has also been shown to be at devastating state thus discouraging irrigation (You et al, 2011). From another perspective, the concept of irrigation has not been possible in Africa due to lack of insufficient ground water as well as poor technology (Nelson, 2009). Sage (2010) postulated that **exacerbation of drought periods** has **posed a serious threat to food production**. **Most of the African regions have been experiencing extended dry seasons. This makes it hard for many plant species to survive**. Exacerbation of drought periods causes retardation of growth to the grown crops thus leading to declining yields. Only **tropical crops** can withstand the high temperatures and the adverse climatic conditions. These crops **are** however **not highly productive, thus jeopardizing the production of adequate food** (Atehnkeng, 2007). Most of the sub-Saharan countries are unable to produce adequate food to sustain their population following the dry and hot conditions which do not favour food production (Chuku and Okoye, 2009). **The level of soil fertility in most parts of Africa has also been devastating**. As postulated by Callahan (2002), most of the regions of Africa are not favourable for agriculture due to poor soil. This is associated with the issues of soil erosion as well as poor farming methods which lead to deterioration of soil fertility. The economic and technological challenges also make it impossible for most of African farmers to adopt in-organic fertilizers and manure (Bosedo, 2010). With this in mind, food production and agriculture is inhibited in Africa.

Warming T/Case—accesses their internal links and assumes their CO2 Ag turns

Hanjra and Quereshi 10, (Munir A. Hanjra, International Centre of Water for Food Security, Charles Sturt University, M. Ejaz Qureshi, Fenner School of Environment and Society, The Australian National University, "Global water crisis and future food security in an era of climate change," Food Policy 35 (2010) 365–377, <http://www3.dogus.edu.tr/cerdem/images/Environment/Global%20water%20crisis%20and%20ofuture%20food%20security%20in%20an%20era%20of%20climate%20change.pdf>) [PDI]

Climate change poses significant threats to global food security and peace due to changes in water supply and demand (Alcamo et al., 2007; Barnett et al., 2005; Döll and Siebert, 2002; Spash, 2008a), **impacts on crop productivity** (Droogers, 2004; Droogers and Aerts, 2005), **impacts on food supply** (Arnell et al., 2004; Rosenzweig and Parry, 1994), **and high costs of adaptation to climate change** (Kandlikar and Risbey, 2000). **Climate change may affect agriculture and food security by altering the spatial and temporal distribution of rainfall, and the availability of water, land, capital, biodiversity and terrestrial resources. It may heighten**

uncertainties throughout the food chain, from farm to fork and yield to trade dynamics, and ultimately impact on the global economy, food security and the ability to feed nine billion people by 2050. Modelling by IIASA (Fischer et al., 2007) shows that future socioeconomic development and climate change may impact on regional and global irrigation requirements and thus on agricultural water withdrawals. Net irrigation requirements may increase by 45% by 2080. Even with improvements in irrigation efficiency, gross water withdrawals may increase by 20%. Global irrigation requirements with climate change will increase by 20% above the reference base case scenario (without climate change). The simulation shows that the global impacts of climate change on irrigation water requirements could be as large as the projected increase in irrigation due to socioeconomic development. ¶ **The impacts of climate change on global food production are small but geographically very unevenly distributed, with losses felt mostly in arid and sub-humid tropics in Africa and South Asia (Parry et al., 2001) and particularly in poor countries with low capacity for adaptation (Kurukulasuriya et al., 2006). Some fairly robust conclusions that emerge from climate change analysis on agriculture and food availability (Parry et al., 2001; Tubiello and Fischer, 2007) show that: (a) there will be food shortages due to decrease in net global agricultural production and disrupted access to water and energy; (b) a likely increase in the number of people at risk of hunger; (c) the impact on undernourishment will depend mainly on the level of economic development and poverty reduction achieved in the future and its positive effects on distribution, and human responses to climate change; (d) mitigation of climate change can have significant positive effects on agricultural productivity and food security; and (e) current production and consumption gaps between developed and developing countries will deepen; and unmitigated climate change and the small risk of abrupt climate change may cause “human carrying capacity deficit”, suggesting insufficient resources leading to economic menace, global conflict and population contraction (Alley et al., 2005). ¶ Climate change will impact on crop productivity, with implications for food security (Spash, 2008a,b). **Global warming has been speculated to increase yields due to the “fertilizer effect” of rising atmospheric carbon, but the impacts are likely to be net negative for poor countries.** For example, global warming will reduce food production in countries closer to the equator (Droogers and Aerts, 2005). **African countries will experience prolonged droughts and further food shortages. It is likely that the Pacific Islands and Indonesia will be more dependent on imports and face more poverty and other social problems.** A recent IWMI study (de Fraiture et al., 2008) anticipates a 50% decline in South Asian wheat production by 2050 – equal to about 7% of the global crop production. The Peterson Institute (Cline, 2007) states that **agricultural production in developing countries may fall between 10% and 25%, and if global warming is unabated, India’s agricultural capacity could fall by as much as 40%. ¶ Climate change could impact on rainfall and runoff and the availability of water for irrigation in many regions and countries in the world. A decline in rainfall along with an increase in temperature will increase crop water requirement due to high evapotranspiration while less rainfall will increase crop net irrigation water requirements. As a result, the already existing water scarcity problem will exacerbate in many regions and countries, and affect food production. The hardest hit will be the areas with intense water scarcity and food security issues, such as the arid countries of sub-Saharan Africa and parts of South Asia, which are already prone to malnutrition, poverty, and even episodes of hunger (Brown and Lall, 2006; Brown and Funk, 2008; Funk et al., 2008).****

Warming T/Case: Availability

Wheeler and von Braun 13, (Tim Wheeler, Walker Institute for Climate System Research, Department of Agriculture, University of Reading, Joachim von Braun, Center for Development Research, Department of Economic and Technical Change, University of Bonn, “Climate Change Impacts on Global Food Security,” 2 AUGUST 2013, VOL 341, SCIENCE MAGAZINE, http://izt.ciens.ucv.ve/ecologia/Archivos/ECO_POB%202013/ECOPO2_2013/Wheeler%20y%20von%20Braun%202013.pdf) [PDI]

Since 1994, knowledge of the effects of climate on crop plant physiology has improved, the skill of simulation methods for climate change impact studies has increased, and better computing power

and data sets to run global simulations have become available. Landmark studies since 1994 include those by Parry and colleagues (25), Cline (26), and, most recently, the World Bank (27) (Fig. 2). Specific projections vary with the climate model scenario used, the simulation methods, and the time scale over which the projections are done. However, **the broad-scale pattern of climate change impacts on crop productivity and production has remained consistent across all of these global studies spanning almost 20 years of research. Crop yields are more negatively affected across most tropical areas than at higher latitudes, and impacts become more severe with an increasing degree of climate change. Furthermore, large parts of the world where crop productivity is expected to decline under climate change** (Fig. 2) **coincide with countries that currently have a high burden of hunger** (Fig. 1). We conclude that **there is a robust and coherent pattern on a global scale** of the impacts of climate change on crop productivity and, hence, on food availability and **that climate change will exacerbate food insecurity in areas that already currently have a high prevalence of hunger and undernutrition.** **A recent systematic review of** changes in the yields of the major crops grown across **Africa and South Asia under climate change found that average crop yields may decline across both regions by 8% by the 2050s** (28). Across Africa, yields are predicted to change by -17% (wheat), -5% (maize), -15% (sorghum), and -10% (millet) and, across South Asia, by -16% (maize) and -11% (sorghum) under climate change. No mean change in yield was detected for rice. Knox et al. (28) concluded that evidence for the impact of climate change on crop productivity in Africa and South Asia is robust for wheat, maize, sorghum, and millet, and inconclusive, absent, or contradictory for rice, cassava, and sugarcane.

Warming T/Case: Access

Wheeler and von Braun 13, (Tim Wheeler, Walker Institute for Climate System Research, Department of Agriculture, University of Reading, Joachim von Braun, Center for Development Research, Department of Economic and Technical Change, University of Bonn, "Climate Change Impacts on Global Food Security," 2 AUGUST 2013, VOL 341, SCIENCE MAGAZINE, http://izt.ciens.ucv.ve/ecologia/Archivos/ECO_POB%202013/ECOPO2_2013/Wheeler%20y%20von%20Braun%202013.pdf) [PDI]

A host of studies is emerging that analyzes what happens to communities and households when they are exposed to climate shocks (34–37). These approaches tend to capture more adaptation capabilities than macro-models, such as asset draw-down, job-switching, migration, social policy responses, and collective action for adaptation and assistance. But it is difficult to appropriately capture with micro-level studies the covariate risks of climate change that cut across broad regions. **Climate change could transform the ability to produce certain products at regional and international levels.** If it turns out, for example, that the geography of biomass production shifts at a global scale (38), this will have production implications for all bio-based products—whether food, feed, fuels, or fiber—and will impinge on food trade flows, with implications for (farm) incomes and access to food (39). Similar changes have been observed in the geography and relative productivity of certain ocean species, such as shifts between anchovy and sardine regimes in the Pacific Ocean (40). Thus, macro-modeling and micro-level analyses of climate change linkages to food security are complementary. **The prices of the basic resources, such as land and water, are formed by long-term expectations** (41, 42), **and these prices encompass expectations of climate change, such as revaluation of land with access to water. Structural consequences can emerge, particularly when property rights are lacking and traditional land and water rights are not protected, as is the case in many developing countries with food security problems** (43–45); **these structural problems lead to erosion of the assets of the poor, as seen during "land grabbing" by external and foreign interests** (46).

Warming T/Case: Utilization

Wheeler and von Braun 13, (Tim Wheeler, Walker Institute for Climate System Research, Department of Agriculture, University of Reading, Joachim von Braun, Center for Development Research, Department of Economic and Technical Change, University of Bonn, "Climate Change Impacts on Global Food Security," 2 AUGUST 2013, VOL 341, SCIENCE MAGAZINE,

http://izt.ciens.ucv.ve/ecologia/Archivos/ECO_POB%202013/ECOPO2_2013/Wheeler%20y%20von%20Braun%202013.pdf [PDI]

Food utilization, to attain nutritional well-being, depends upon water and sanitation and will be affected by any impact of climate change on the health environment. Little research has been done on this dimension of food and nutrition security. **Links with drinking water may be obvious, when climate variability stresses clean drinking water availability** (47, 48). **Hygiene may also be affected by extreme weather events causing flooding or drought in environments where sound sanitation is absent** (49–51). In addition, **uptake of micronutrients is adversely affected by the prevalence of diarrheal diseases, which in turn is strongly correlated with temperature** (52). **Climate change can also impinge on diet quality, and increased costs may result from measures required to avoid food contamination stemming from ecological shifts of pests and diseases of stored crops or food** (53, 54). Science and innovation have a role to play here, and in recent years there has been good progress made in improving food utilization through fortification and biofortification (55, 56). Vulnerability to food security shocks needs further research, as do ways to strengthen adaptive capacities under climate change, (57) as public policy responses depend on such insights. For example, appropriate design of programs transferring income to the poor, employment-related transfer programs, and early childhood nutrition actions (58–60) may all need expanding to respond to climate-related volatilities. **New nutritional stresses are emerging, and the most striking example has been the recent “nutrition transition,” i.e., the process by which globalization, urbanization, and changes in life-style are linked to excess caloric intake, poor-quality diets, and low physical activity. Together, these factors have led to rapid rises in the incidence of obesity and chronic diseases, even among the poor, in developing countries** (61). The nutrition transition will unfold in parallel with climate change in coming decades, but very little research on the potentially reinforcing effects of these phenomena has been done.

Warming T/Case: policy choices

Wheeler and von Braun 13, (Tim Wheeler, Walker Institute for Climate System Research, Department of Agriculture, University of Reading, Joachim von Braun, Center for Development Research, Department of Economic and Technical Change, University of Bonn, “Climate Change Impacts on Global Food Security,” 2 AUGUST 2013, VOL 341, SCIENCE MAGAZINE, http://izt.ciens.ucv.ve/ecologia/Archivos/ECO_POB%202013/ECOPO2_2013/Wheeler%20y%20von%20Braun%202013.pdf) [PDI]

The stability of whole food systems may be at risk under climate change, as climate can be an important determinant for future price trends (32), **as well as the short-term variability of prices.** Since 2007, the world food equation has been at a precariously low level and, consequently, **even small shocks on the supply or demand side of the equation will have large impacts on prices, as experienced in 2008** (62). Food security of the poor is strongly affected by staple food prices, as a large part of an impoverished family’s income has to be spent on staple foods. **Climate change is likely to increase food market volatility for both production and supply** [see (63) for the supply side]. **Food system stability can also be endangered by demand shocks, for instance, when aggressive bioenergy subsidies and quota policies were applied by the political economy** (64). **These sorts of policy shifts, made in the past decade by the United States and the European Union, have been motivated in part by energy security concerns and partly by climate mitigation objectives** (65–67). **The resulting destabilization of food markets, which contributed to major food security problems, was therefore partly related to climate change (policy).**

Frontline – No Long-term Food Tradeoff

Extra Link Evidence

More agricultural development trades off with biofuels

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

The environmental factors refer to the relationship between human beings and other living things and the air, soil and water that support them (Calcott and Walls, 2000). Threats to our life supporting ecology caused principally by human activity in an industrial society are commonly referred to as pollution. Specific concerns include global warming, loss of habitat and biodiversity as well as air, water and land pollution. In Asia, **the use of alternative source of energy for example the bio-fuel production has posed challenges** on the environment. **Bio-fuel refers to renewable or alternative source of energy that is produced from biological material. The resources required to produce this product are normally planted, this has a very negative impact on the land. The popularization of this source of energy in Asia has led to the need for more and more land to plant the resources for such production to be sustained. The biggest challenge is that these plants exhaust soil to the extent that it may not be fit for growing food crops in the long run. This is a major cause for panic, if an alternative or a corrective measure is not taken soonest, then Asia is likely to have a situation where there is no land for food production hence food insecurity in the years to come.**

And, long-term, biofuels solve food competition. We just need investment now to make it competitive

Tan and Lee 08

Kok Tat Tan, Keat Teong Lee, School of Chemical Engineering, Engineering Campus, Universiti Sains Malaysia, September 2008, Energy Policy, pp. 3360-3365 [PDI]

With all the hotly debated issues surrounding first-generation biofuels, it is deemed unsuitable to be the main source of energy supply. Instead, second-generation biofuels, particularly bioethanol, emerged to be the best option available currently. This **second-generation bioethanol only requires inexpensive cellulosic biomass as feedstock, which is plentiful and easily obtainable throughout the world. Hence, agricultural intensification is not needed as in first-generation biofuels, where valuable agricultural crops such as sugarcane and corn are used as feedstock. Consequently, food-fuel dispute will not arise and with this cheap biomass as feedstock, the price of bioethanol can become competitive with gasoline.**

Malthus DA

The aff increases population that wreaks havoc on food production

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

The population growth of Africa has been termed as the highest in the world. The population of Africa is projected to double by the year 2050 if measures to regulate population are not undertaken. Current statistics indicate that **Africa will soon pass one billion people** and this may have already been

reached at present days (Sage, 2010). **Despite the various health, social, political, environmental and economical challenges, the growth rate of Africa remains in the high.** This is not only good to the economy but also bad if not properly planned. In the side of agriculture, the **rapid population growth is creating a lot of**

havoc. This has been explicitly explained by different scholars who have profoundly analysed the phenomenon. Despite that high population offers labour and knowhow in enhancing agricultural activity, **the current population trends in Africa are devastating** (Simms et al, 2004). This is so because **the increase in population is threatening agriculture and food production instead of facilitating them.** To begin with, **increase in population is leading to immense pressure on the available agricultural land.** Potential agricultural land is currently being used for human settlement (Nelson, 2009). This phenomenon is rapidly reducing the total acreage under agriculture. In most of the African nations, **the rate of replacing agricultural land with human settlement has been at a very high rate.** This is not only influenced by rapid population growth but also due to poor government planning on settlement. As observed by Callahan (2002), **the rate of population growth has not been controlled.** In this case, family planning strategies have not been optimally put in place. This has led to the high population increase thus leading to pressure on agricultural land. **Rapid increase in population is associated with destruction of environment in Africa thus threatening agriculture.** For instance, **many forested areas, swampy land and water lands are currently being destroyed for human settlement and other economic activities.** These phenomenons have led to the alteration of climate thus affecting agriculture. As observed by Hadjor (2000) **destruction of forests lead to rapid decline in the amount of rain.** The issue of soil erosion and soil temperatures is also depended on forest cover. In light with this situation, the normal agricultural activities are obstructed. Tetley et al (2003) noted that alteration of soil moisture, fertility as well as the prevailing climatic conditions inhibits the survival of crops and animals. **This phenomenon leads to a decline of the overall yield expected from the**

specific region. A report by Salih (2009) has outlined that rapid increase in population leads to over utilisation of food reserves. This has led to the adoption of generically modified (GM) species in order to enhance production. These species have ended up failing to withstand the in order to enhance production. These species have ended up failing to withstand the prevailing climatic conditions in Africa thus reducing the agricultural output. On the other hand, increase in population has induced the importation of cheap food products from the international market so as to supplement the locally produced food products (Macaskill, 2009). The over importation of the foreign products have ended up creating unfair competition to the local products thus worsening agricultural activities.

Population boom turns the aff

Brown 06

Lester, Ecology Editor of USA Today, is president of Earth Policy Institute, "Is the food scarcity scare for real." [PDI]

The **growth in population since 1950 exceeds that during the preceding 4,000,000 years.** **Perhaps more striking, the world economy has expanded sixfold since 1950. As the economy grows, its demands are outstripping the Earth, exceeding many of the planet's natural capacities to provide food, water, and the basic needs of daily living.** Evidence of these excessive demands can be seen in **collapsing fisheries, shrinking forests, expanding deserts, escalating C[O.sub.2] levels, eroding soils, elevated temperatures, disappearing species, falling water tables, melting glaciers, deteriorating grasslands, rising seas, and rivers that are running dry. Nearly all these environmental trends affect world food security.** Two of the newer trends--falling water tables and rising temperatures--are making it far more difficult for the world's farmers to feed the 76,000,000 people added to our numbers each year. Humans drink nearly four quarts of water a day in one form or another, but the food we consume on a daily basis requires 2,000 quarts of water to produce. Agriculture is the most water-intensive sector of the economy: 70% of all water pumped from underground or diverted from rivers is used for irrigation; 20% is employed by industry; and 10% goes to residences. Water tables currently are falling in countries that contain over half the world's people. The vast majority of the nearly 3,000,000,000 individuals to be added to world population by mid-century will come in nations where water tables already are falling and wells are going dry. Historically, it was the supply of land that constrained the growth in food production. Today, though, the shortage of water is the most formidable barrier. Rising temperatures are the second big threat to future food security. During the last few years, crop ecologists focusing on the precise relationship between temperature and crop yields have found that each 1[degrees]C rise in temperature during the growing season reduces the yield of grain--wheat, rice, and corn--by 10%. Since 1970, the Earth's average temperature has risen nearly 0.7[degrees]C (1[degrees]F). The five warmest years during 124 seasons of record-keeping occurred in the last seven calendar turns.

Spending DA

The aff causes massive government spending

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

In recent days, the developing countries have been opposing **the extravagant subsidy offered in the developed nations.** This is accused of causing unfair competition of agricultural products in the global markets. As indicated by Dewbre and Brooks (2006), subsidising agricultural products leads to the lowering of the final prices of the products. This usually comes as a competitive advantage to the farmers in the developed nations as compared to those from the developing world. As a result of these phenomenon. agricultural products from the developing nations are not in a position to compete perfectly with those from developing nations (Stockbridge, 2007). This is so because of the price and quality differences, where in this case products from developed nations are at lower prices and higher quality (Fischer, 2010). Based on this phenomenon, unfair competition arises thus increasing the negative politics concerning agricultural subsidy. On the other hand, the politics on agricultural subsidy is strongly influenced by the increased expenditure on the governments. Support on agriculture has been termed as very costly as compared to support on other sectors like industry. For instance, **the US is identified to be spending more than \$20 billion annually to farmers** (Josling, 2003). **This is a very high expense thus puts unnecessary pressure on the treasury. The European Union has also been identified to spend over 39 billion pounds in the year 2010 on agricultural subsidy** (Strauss et al, 2010). This extravagant spending in agriculture is what is adding on to the negative politics regarding agricultural subsidy.

Turns Case

Economic collapse turns famine – tech innovations

Mahder 8 (Ethiopian Development Website, “Addressing the root cause of famine and poverty in Ethiopia,” September 27, 2008,

http://mahder.com/pdf/Addressing_the_root_cause_of_famine_and_poverty_in_Ethiopia..pdf, AD: 7-6-9) [PDI]

It is well established that **there is a strong correlation between famine and economic development or growth. Economic growth leads to development and reduction in poverty and famine. Real economic growth embracing and benefiting all the citizens of a country produces safety mechanisms which are of vital importance in alleviating or avoiding displacements and live destruction emanating from famine.** The suffering and significant loss of lives resulting from persistent **famines which are hitting Ethiopia could not be avoided or even mitigated owing to the shrinking economy** or increasing poverty in the country. On the other hand, one can can not avoid but face the irony of Ethiopia failing to be self sufficient and feed its population despite possessing all the potential to do so. Thus a critical examination of the major stumbling block or factor acting as a bottleneck and preventing the country from eradicating or even coping with famine is necessary.

Subsidies/Tariffs DA

Increased Production in Developed Nations Harms Africa

Africa is improving its agricultural output, but improving agricultural production in developed nations like the U.S. reverses the trend by exporting food to Africa that kills local production

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

The agricultural policy adopted by the United States (US) has widely impacted on the global agricultural sector. Africa's agricultural sector is the most hit by the agricultural policy adopted by the US.

The policy of extensive subsidies on agriculture in the US has contributed to overproduction of agricultural commodities (Josling, 2003). This has led to agriculture prices going too low, thus making farmers to stay out of business. Agricultural exports from the US are very cheap thus creating unfair competition on highly priced local commodities in African nations. This phenomenon has led to diversion of demand of locally produced products to imported products from the use. For instance, rice, wheat, corn, tobacco, peanut and dairy products from the US are lowly priced. This has led to African consumers to abandon the consumption of local products in preference of those imported from the US. As a result of this scenario, agriculture in Africa is adversely affected. Moves by the African nations to enhance agriculture have been strongly influenced by the American agricultural policy. As outlined by Liapis (2007). African nations have been experiencing tremendous pressure from the American agricultural sector thus the need for change. In response to the situation, most of the African nations have taken a positive move in enhancing agricultural sector in their nations (Pali et al, 2011). In this regard, some of the African nations are taking a considerable proportion of their national income to support agriculture. This is done through high budgetary allocation for the agricultural sector to support direct and indirect subsidy (Josling, 2003). Regular incentives are in the recent being provided to farmers in an effort to boost agriculture (Anderson, 2009). By so doing, the cost of agriculture in Africa is gradually being reduced thus enhancing agricultural activity.

The aff advantages farmers in developed nations by harming those in developing nations

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

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prices and higher quality (Fischer, 2010). Based on this phenomenon, unfair competition arises thus increasing the negative politics concerning agricultural subsidy. On the other hand, the politics on agricultural subsidy is strongly influenced by the increased expenditure on the governments. Support on agriculture has been termed as very costly as compared to support on other sectors like industry. For instance, the US is identified to be spending more than \$20 billion annually to farmers (Josling, 2003). This is a very high expense thus puts unnecessary pressure on the treasury. The European Union has also been identified to spend over 39 billion pounds in the year 2010 on agricultural subsidy (Strauss et al, 2010). This extravagant spending in agriculture is what is adding on to the negative politics regarding agricultural subsidy.

Long-run Decrease in Production

Ag subsidies harm production in the long run by deflating the price, which discourages farmers from entering the market

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

The policy on subsidies should also be reviewed based on its implementation challenges and possible impacts on inter countries trading. The aspect of **overproduction caused by subsidy needs to be attended to so that markets are not oversaturated.** Generally, **overproduction has a negative impact on the price levels of agricultural products because it lowers the returns which may in the long run discourage farmers and cause distortions in the level of trade.** Though, there have been proposals to withdraw policy on agricultural subsidy, the pros and cons of this action should be critically analyzed before such an action is taken. This is because **it can bring food production or generally agricultural activities to a standstill, which may result into food insecurity.** Secondly, the current market structure for some agricultural products is still facing challenges of continuous fluctuation in prices, high production costs, etc. and as a result, some farmers may not be able to continue operations should the subsidy be withdrawn.

Farmers get scared of decreasing prices and sell at absurdly low prices, harming their own profits. Also subsidies increase taxes on everybody

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

One of the objectives of subsidy is to ensure that farmers get good returns from the farming activities. This happens by **subsidy on farm implements, seed, fertilizer and other agricultural inputs** reducing the cost. This **will lead to** overall reduced cost of production hence **more profits** to the farmers. Coincidentally, the introduction of subsidy **has led to overproduction of agricultural produce.** From economics' law of demand and supply, when supply is higher than demand, **prices** will always **go down** (Johnson, 1975). **This has led to farmers panic and being desperate with their harvest hence selling at a price that cannot even cover the costs of production for fear that the produce may as well go bad before selling.** This is against the major objective of subsidy and the farmers **will not be able to get the expected returns.** Finally, subsidy most of the time **means tax is diverted to the other bases of taxation**, in most cases, abolishing of one tax normally leads to imposition of a new tax on a different item or increasing the tax rate on some item. **This will result into a high tax burden for both the farmers and the citizens.**

Subsidies empirically show only short term increases in grain production – crowd out small farmers who have little to gain

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Most Asian countries for example Pakistan are a major rice exporter. This success can be attributed to government subsidy and domestic support in the form of financing agricultural projects at favourable financing terms. This in turn has given the government revenue for foreign trade, the citizens have more food security and income is enhanced (Chu and Lee, 2000). Farmers have achieved economic empowerment from foreign trade of their produce. There has also been new technology being embraced by the farmers to improve on their agricultural skills and production efficiency (Buah et al, 2011). **Most Asian countries are** however **contemplating** reviewing **their** policies on **subsidy due to some ineffectiveness** in line with the major objectives of these policies. These objectives included increased in grains production and food production and hence food security, eradication of poverty, increasing the income of small holder farmers etc. **Since the implementation of this policy, there has been a declining trend in grain production save for the first few years** of implementation of this policy. **The small holder farmers who were to benefit from the policy on subsidy so that they could improve their income are not the major beneficiaries. The large commercial farmers took up this opportunity; the policy indicated that subsidy was to be given based on the area of cultivation. Most of these small holder farmers operate in small pieces of land and hence the amount given was also relatively low. These small holder farmers could not compete with the large agribusiness firms at the same level hence there was very slight progress. They could not do farming large scale as they could not afford to buy land** (Mbote et al, 2008)

Increases Poverty

Farmers in developing nations are net buyers of food because they don't produce very much – so tariffs hurt them more than help them, increasing poverty. Empirics prove.

Rae and Pardey 14

Allan and Philip, pf @ Massey, pf @ Minnesota, "Global Food Security – Introduction"
Australian Journal of Agricultural and Resource Economics, 58, p. 499-503

A theme running through some of the papers in this issue is that **policies, while implemented** inter alia **to lessen food insecurity, may actually work in the opposite direction**. Ivanic and Martin explore a specific example of this — **the quantity-based special safeguard proposed during the Doha Round of global trade negotiations**, wherein an import duty may be applied when imports increase above baseline. The argument for such an approach might be to protect domestic producers and encourage local food production. While safeguard mechanisms **were initially designed to protect farmers in industrial countries**, who by and large are net sellers of food, **such policies may produce different outcomes in developing countries where many farmers may be net purchasers of food**. **Using CGE modelling and data** on crop yield variability along with household data from a sample of low- and middle-income countries, **they conclude** that such **a volume-based safeguard would likely be implemented frequently, raising consumer food prices. As a result, the global poverty headcount would increase due to the importance of food in the expenditure patterns of the poor and the tendency of low-income farmers to be net buyers of food. Hence, a protectionist policy** designed to help farmers **may** in fact **increase poverty**.

Monopolies / Small Farmer Crowd-out

Tariffs and subsidies crowd out small farmers

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Agricultural Policies and Environmental, Political, Economic, Social and Technological Threats for Food Security in Africa: Present Knowledge and Future Expectations" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

In the United States, the **agricultural tariffs are relatively high**er compared to those of developing countries and there have been complaints that it should be reduced (Haggblade, 2011). **The big agribusiness firms are benefiting from the subsidy and as a result have dominated the market; they set prices that would be unfavourable to small holder farmers, this discourages them and keeps them out of business** (FAO, 2009). The other negative effect on small scale farmer in Asia, Africa and United States is the poor land tenure laws, uncoordinated agrarian structure and the land reforms which never seem to be implemented by the respective governments. The **small scale farmers cannot afford to buy land whose value is very high and this has stopped them from increasing their level of operation, they will remain to be in the category of small scale farmers.**

Free Trade Turns Case

Free trade is an essential factor for food security

USDA, 11 United States Department of Agriculture, July 2011, "INTERNATIONAL FOOD SECURITY ASSESSMENT, 2011-21," <http://www.ers.usda.gov/media/123436/gfa22.pdf>
Accessed 7/5/12 [PDI]

Food Imports Depend on Foreign Exchange Earnings Based on International Monetary Fund (IMF) projections, we assumed positive export growth for all regions. Political changes in NA, however, create significant uncertainty and downward risk for export earnings. For trade-dependent countries, trade stability can be seen in the comparison of global food prices with prices of other commodities during 2010 and 2011 (fig. 3). As figure 3 illustrates, relative to food prices, the prices of most commodities began to stabilize toward the end of 2009, meaning that the purchasing power of food-importing countries did not deteriorate. The prices of nonfood commodities (metals, agricultural, beverage, and industrial) have risen faster than food prices since August 2009. The only exception to this trend is fuel prices, which declined more than food prices after the peak in July 2008. Since June 2009, fuel prices have remained 20-40 percent lower than food prices. In the short-term, food imports have been relatively more expensive for countries that export fuel since the height of the 2008 price crisis. **For countries that export other commodities** (metal, industrial, high-value agricultural products, etc.) **and import food, however, food has been relatively less expensive—terms of trade are in their favor** with respect to food. Given the tension that developed in the Middle East in 2011, rising fuel prices could cause terms of trade to deteriorate and increase pressure on the import capacity of the oil-importing countries. The political instability in the region could also impact remittances as workers are forced to leave several of the NA countries. Remittances from the Middle East are important sources of foreign exchange earnings for many countries in Asia and SSA. According to the IMF monthly food price index, global food prices (in nominal terms) were stable during the first half of 2010, but increased steadily in the second half of 2010 through the first 3 months of 2011. A combination of weather-related food production declines in major exporting countries and strong food demand in emerging countries contributed to increasing food prices. Higher fuel prices also amplified the rise in food prices. As a result, FAO estimates that the global cost of food imports exceeded \$1 trillion in 2010, marking a 15-percent increase from 2009 (Blas, 2011). Although uncertainty persists, our analysis was based on USDA Agricultural Projections to 2020 which show a 15-percent increase in grain prices between 2010 and 2011. This increase, in turn, leads to price increases for other commodities, such as feed and meat. In contrast, World Bank grain prices and aggregate food price projections for 2011 show a decline of about 4 percent from 2010 (table 2). Both USDA and the World Bank, however, project declining prices through 2020. IMF analysts argue that as consumption of high-protein foods increases in the emerging countries, a downturn in food prices is unlikely (IMF Finance and Development, March 2011). Trostle (2011) reviews the factors behind the price surge and indicates that **the long-term trends in agricultural production and consumption** that contributed to 2002-08 price increases, such as growth in global population and income, rising demand for energy (including biofuels), and increasing food demand (meat in particular), **will continue to impact the trend toward higher food prices at least in the midterm**. Prices also could spike in the short term due to weather-related production shortfalls in an environment of relatively low global commodity stocks. Government policy options, such as expediting imports as opposed to imposing export restrictions, could reduce the degree of these price increases, especially for such commodities as rice, where the trade market is thin. The 2010 IMF projections for NA countries indicated faster export earnings growth in 2010 and 2011 than in 2009 in nearly all countries, ranging from 5 to 6 percent (IMF, 2010a). Political instability within the North Africa/ Middle East region could have negative implications for these countries, altering current positive projections. In SSA, where chronic food insecurity persists, trade prospects are projected to improve from 2010 (IMF, October 2010a). Economic growth for the region is projected to improve modestly to 5.5 percent from 5 percent in 2010. **Trade is a critical factor for projected growth** and depends on the strength of demand of trading partners. According to the latest World Bank data, SSA's trade with developing countries, particularly Latin America and Asia has increased substantially. China's share of SSA's trade increased from 3.4 percent in 2000 to 13.9 percent in 2009 (World Bank). The most significant exports to these regions include oil, iron ore, diamonds, copper, and cobalt. Within the LAC region, mineral commodity-exporting countries, particularly Peru, are projected to have the strongest trade performance (IMF, October 2010b). Of the study countries in 2010, Peru had the highest export growth in the region of about 8 percent. Export growth in Central American countries, such as Honduras, Guatemala, and Nicaragua, is projected at 4-5 percent. The financial performance of Central American countries depends heavily on the state of the U.S. economy, particularly in terms of exports and remittances. Slow economic growth in the United States can mean few gains for remittances and export earnings. While these countries have benefited from the global commodity price boom, they also depend highly on imports of both oil and food. Therefore, a slow U.S. economic recovery and higher food and/or crude oil prices could increase pressure on their import capacity. Of all regions included in this study, Asia shows the strongest and most sustainable export growth. Most countries in the region have diversified economies, and both production and exports benefit from growing investment in the region (IMF, April 2010). Projected export growth is the strongest for India and Indonesia. However, **the lower income countries in the region like Bangladesh, Cambodia, and Vietnam benefit from strong external demand for commodities** (e.g., textiles) and People's Democratic Republic of Laos and Mongolia will gain from brisk demand for minerals.

Pesticides Impact (Big Ag Companies)

Pesticide Use is at an all-time high – warmer temps cause destructive pests proliferation

Verma et al 14 (Jay Prakash Verma, Durgesh Kumar Jaiswal and R. Sagar, Institute of Environment and Sustainable Development, Banaras Hindu University, Pesticide relevance and their microbial degradation: a-state-of-art, http://download.springer.com/static/pdf/909/art%253A10.1007%252Fs11157-014-9341-7.pdf?auth66=1405635667_59fea3f8e839a78f434b5b842bc7b828&ext=.pdf) [PDI]

The increase in the demand for agro-products and changing regional climate has resulted in an increase in consumption and application rate of pesticide (Shetty et al. 2008).

The rates of pesticides consumption in various countries depend on agricultural land. Some country showed higher consumption of total pesticide according to agricultural area. The Worldwide top ten higher pesticide using countries are Italy (63,305 tone/y), Turkey (60,792.4 tone/y), Colombia (48,618.47 tone/y), India (40,379.24 tone/y), Japan (36,557 tone/y), Bolivia (31,566.76 tone/y), Ecuador (31,203.1 tone/y), Germany (27,585.49 tone/y), Romania (26,506.74 tone/y) and Chile (18,032 tone/ y) (Table 1). The Worldwide top ten higher agricultural land are: India (1,797,590 sq.km), Ecuador (749,770 sq.km), Colombia (425,030 sq.km), Ukraine (412,670 sq.km), Turkey (390,120 sq.km), Bolivia (369,650 sq.km), Peru (214,700 sq.km), United Kingdom (172,240 sq.km), Germany (167,000 sq.km) and Chile (157,430 sq.km). Total annual pesticide consumption was depend on the total agricultural lands e.g. Turkey, Colombia, India, Bolivia, Ecuador, Germany and Chile showed higher pesticide consumption as well as agricultural area (Table 1). Pesticides can be classified as either being readily degradable (non-persistent), or as being persistent. The non-persistent pesticides are: insecticides (methoxychlor, sevin, malathion), herbicides (paraquat, dalapon, dacthal, treflan) and fungicides (benlate, mancozeb, zineb, captan), and persistent pesticides are: insecticides (DDT, aldrin, dieldrin and chlordane), herbicides (simazine, turbacil, tordon) fungicides (PMAS, calo-clor, cadmium compounds) (Vargas 1975). rgnochlorine (OC) insecticides (DDT, hexachlorocyclohexane, aldrin and dieldrin, etc.) and organophosphate insecticides (chlorpyrifos, acephate, diazinon, malathion and disulfoton etc.) are most commonly used pesticides in developing countries of Asia because of their low cost and broad control spectrum and versatility against various pests (FAO 2005).

The intense and frequent use of these chemicals has led to the persistence in soil due to lack of their timely degradation (Odukkathil and Vasudevan 2013).

For example; metribuzin was in practice because of its easy transfer as a water soluble compound (Hernandez et al. 1998), and linuron for its persistence in the soil (Guzzella et al. 2006), and fluazinam due to its persistence and wide taxonomic range to inhibit phytopathogenic fungi (Kimyoji et al. 1995). Metribuzin (4-amino-6-tert-butyl-4,5-dihydro-3-methylthio-1,2,4-triazin-5-one) and linuron (3-(3,4-dichlorophenyl)-1-methoxy-1-methylurea) inhibit electron transport at the photosystem II receptor site, were used to control weeds in several crops, including potato (Tomlin 2002). Metribuzin is biodegraded rapidly in soil and its photodecomposition is also efficient in the soil surface as well as in water. Fluazinam (3-chloro-N-(3-chloro-5-trifluoromethyl-2-pyridyl)-a,a,a-trifluoro-2,6-dinitro-p-toluidine) has an uncoupling activity on mitochondrial oxidative phosphorylation and is used as a fungicide to protect the crops. The World Health Organization (WHO 2004) provides an internationally accepted standard for hazard classification. Depending upon their intensity expressed in LD50 value those were (1) IA (Extremely), (2) IB (Highly hazardous), (3) II (Moderately hazardous) and (4) III (slightly hazardous). Currently, in India, there are registered 234 pesticides; among these, four belongs to WHO Class IA, 15 to WHO class IB and 76 to WHO Class II. They constituted 40 % of the registered pesticides. During 2005–2006 and 2009–2010, out of 15 pesticides; sulfur (fungicide, 16,424 mt), endosulfan (insecticide, 15,537 mt), moncojebo (provides, 11,067 mt) and phorate (insecticide, 10,763 mt) are highly used (Table 2) and the total consumption amounted 210,600 mt. According to the Directorate of Plant Protection, Quarantine and Storage, Government of India (2010); during 2005 to 2010, the highest use of pesticide (39,948 mt) has been reported in Uttar Pradesh as compared to other top six pesticide-consuming states of India during 2005 to 2010

(Fig. 1). In India, the average consumption of pesticide is lesser as compared to other developed countries, but **the** problem of pesticide residue in India is comparatively higher. Presently, the yearly pesticide consumption in India is increasing due to rapid agricultural production (FAO 2010).

In tropical countries; crop loss due to plague is severe because of high temperature and humidity, which facilitates the rapid multiplication of pests (Kannan et al. 1992; Lakshmi

1993). **The** intensive use of pesticides help for the protection of crops from pests (insects, mites, nematodes and rodents), plant pathogens (fungi, viruses and bacteria), and weeds reduced 30 % crop loss (Porto et al. 2011) and increase the sufficient food grain for the need of ever increasing human population (Acharya 2006). **Among different pesticides; pyrethroids, organophosphates and chlornated compounds (DDT, hexachlorocyclohexane, aldrin and dieldrin) are the most commonly used pesticides in the developing countries because of their low cost, easy availability in local markets and versatility against various pests (Porto et al. 2011). Polycyclic aromatic hydrocarbons (PAHs) form a group of compounds composed of two or more fused aromatic rings. These hydrophobic compounds display a high affinity for organic matter and particles, and accumulate in organic rich soil and marine sediments (Amellal et al. 2001.)**

Pesticides fail – pest proliferation makes biodiversity collapse inevitable

Pimintel and Pishin 14 (Department of Entomology @ Cornell University, Division of Agricultural Extension Education, Faculty of Agriculture, Integrated Pest Management, [http://download.springer.com/static/pdf/517/bok%253A978-94-007-7796-](http://download.springer.com/static/pdf/517/bok%253A978-94-007-7796-5.pdf?auth66=1405641133_51bf5cc38117379d066a7b84e9d82050&ext=.pdf)

5.pdf?auth66=1405641133_51bf5cc38117379d066a7b84e9d82050&ext=.pdf) [PDI]

Pests contribute to shortages of food in several ways. They destroy our food and attack us personally. Combined arthropod, disease and weed pests contribute to malnourishment and death to nearly **two thirds** or more than 66 % of the total world population of 7.2 billion people. Approximately 40 % of all the world's food production is lost or destroyed by insects, diseases, and weeds. This loss occurs **despite** the application of the nearly 3 million tons of pesticides applied to our crops annually. **Once the food is harvested an additional 20 % of our food is destroyed;** in addition to pests, pesticides cause human deaths and damage our environment. Consider there are about 3 million human pesticide poisonings worldwide, with an estimated 220,000 deaths each year. The widespread use of pesticides is responsible for bird and fish deaths, destruction of many **beneficial natural enemies, pesticide residues on and in foodstuffs, loss of vital plant pollinators, ground and surface water contamination, selection for resistance in pests to pesticides, and other environmental problems.** Pesticides can be reduced to zero even in the heavily treated crops in the United States—corn and soybeans. A 22-year long experiment carried out in Pennsylvania (see Chap. 6 – this volume) demonstrates this. More research is needed to reduce pesticide use while reducing the negative environmental side-effects of pest control. The contributors to this book recognize the value of pesticides for pest control and recognize the negative impacts pesticides have on environmental quality and human health. In many instances, they suggest techniques that can be employed to reduce pesticide use while **maintaining** crop yields. Reducing pesticide use 50 % or more while improving pest control economics, public health, and the environment is possible. In fact, successful programs using various techniques in countries like Sweden and Indonesia have reduced pesticide use by close to two-thirds. Clearly we can do better to improve pest control and protect the environment and human.

Extinction

Isenring 10

(Richard, reviews science, pesticide action network Europe, Pesticides and the loss of biodiversity, March 2010. <http://www.pan-europe.info/Resources/Briefings/Pesticides_and_the_loss_of_biodiversity.pdf>, [PDI]

What is biodiversity? Charles Darwin and Alfred Wallace were among the first scientists to recognise the importance of biodiversity for ecosystems. They suggested that a diverse mixture of crop plants ought to be more productive than a monoculture (Darwin & Wallace 1858). Though there are exceptions, recent studies confirm the idea that an intact, diverse community generally performs better than one which has lost species (Chapin et al 2002). **Ecosystem stability** (resilience to disturbance) **seems to arise, from groups of connected species being able to interact in more varied positive and complimentary ways** (Tilman 2002).

Biological diversity manifests itself at different levels. It includes the diversity of ecosystems, species, populations, and individuals. In an ecosystem, interdependent populations of various species deliver 'services' such as the supply of food and soil resources, or the retention and cycling of nutrients, water and energy. Although **it seems that the average species loss can affect the functioning of a wide variety of organisms and ecosystems, the magnitude of effect depends on which particular species is becoming extinct** (Cardinale et al 2006).

Communities of different animal and plant species perform vital functions within ecosystems. In general, communities which have higher diversity tend to be more stable. Why conserve threatened species? Rachel Carson provided clear evidence of the far-reaching environmental impact of pesticides in her pioneering work 50 years ago. In 'Silent spring' she showed that organochlorines, **a large group of insecticides, accumulated in wildlife and the food chain. This had a devastating effect on many species. Only a decade after the 'green revolution' began it became obvious that large-scale spraying of pesticides was causing serious damage.** In 1963, Rachel Carson emphasised human dependence on an intact environment: "But man is a part of nature, and his war against nature is inevitably a war against himself", (CBS 1963). **Human well-being depends on the services delivered by intact ecosystems. While biodiversity loss is in itself a cause for concern, biodiversity conservation also aims to sustain humanity.** People's livelihoods ultimately depend on biological resources.

Thus lacking progress towards the target of the Convention on Biological Diversity, "to achieve by 2010 a significant reduction of the current rate of biodiversity loss" could undermine achievement of the Millennium Development Goals and poverty reduction in the long term (Sachs et al 2009). The 2010 target has inspired action but will not be fully attained. **Biodiversity loss and degradation of ecosystems have increasingly dangerous consequences for people**, and may threaten some societies' survival (IUCN 2010). When EU cereal yield was doubled it resulted in the loss of half the plant species and one-third of carabid beetles and farmland bird species. **Of the components of agricultural intensification, pesticide use, especially insecticides and fungicides, had the most consistently negative effects on species diversity, and insecticides also reduced the potential for biological pest control** (Geiger et al 2010). In the EU, up to 80% of protected habitat types and 50% of species of conservation interest now have an unfavourable conservation status. Much greater effort is needed to reverse the decline in threatened species or habitats on a larger scale (EC 2008). **A 'business-as-usual' scenario would mean that the current decline of biodiversity will continue and even accelerate, and by 2050 a further 11% of natural areas which existed in 2000 will be lost, while 40% of land currently under low-impact agriculture could be converted to intensive agricultural use** (TEEB 2008). **Human survival is inextricably linked to the survival of numerous other species on which intact ecosystems depend.**

[Extra honeybee scenario]

Excessive pesticides destroys the honeybee

Carrington 14

(Damian, journalist, "Honeybees Abandoning Hives and Dying Due to Insecticide Use, Research Finds," GUARDIAN, 5/9/14, <http://www.theguardian.com/environment/2014/may/09/honeybees-dying-insecticide-harvard-study>) [PDI]

The mysterious vanishing of honeybees from hives can be directly linked to insecticide use, according to new research from Harvard University. The scientists showed that exposure to two neonicotinoids, the world's most widely used class of insecticide, lead to half the colonies studied dying, while none of the untreated colonies saw their bees disappear. "We demonstrated that **neonicotinoids are highly likely to be responsible for triggering 'colony collapse disorder' in honeybee hives that were healthy prior to the arrival of winter,**" said Chensheng Lu, an expert on environmental exposure biology at Harvard School of Public Health and who led the work. **The loss of honeybees in many countries in the last decade has caused widespread concern because about three-quarters of the world's food crops require pollination. The decline has been linked to** loss of habitat, disease and **pesticide use**. In December 2013, the European Union banned the use of three neonicotinoids for two years. In the new Harvard study, published in the Bulletin of Insectology, the scientists studied the health of 18 bee colonies in three locations in central Massachusetts from October 2012 till April 2013. At each location, two colonies were treated with realistic doses of imidacloprid, two with clothianidin, and two were untreated control hives. **Bees from six of the 12 neonicotinoid-treated colonies had abandoned their hives and were eventually dead with symptoms resembling CCD,**" the team wrote. "However, we observed a complete opposite phenomenon in the control colonies." Only one control colony was lost, the result of infection by the parasitic fungus Nosema and in this case the dead bees remained in the hive. Previously, scientists had suggested that neonicotinoids can lead to CCD by damaging the immune systems of bees, making them more vulnerable to parasites and disease. However, the new research undermines this theory by finding that all the colonies had near-identical levels of pathogen infestation. "It is striking and perplexing to observe the empty neonicotinoid-treated colonies because honey bees normally do not abandon their hives during the winter," the scientists wrote. **This observation may suggest the impairment of honey bee neurological functions, specifically memory, cognition, or behaviour, as the results from the chronic sub-lethal neonicotinoid exposure.** Earlier research showed neonicotinoid exposure can damage the renowned ability of bees to navigate home. **The new research follows similar previous work by the same group and comparison of the two studies shows that cold winters appear to exacerbate the effects of neonicotinoids on the bees. In the cold winter of 2010-11, 94% of the insecticide-exposed colonies suffered CCD compared to 50% in the new study.** **"Sudden deaths of entire honey bee colonies is a persistent concern in North America,"** said Paul de Zylva, Friends of the Earth's senior nature campaigner. "Comprehensive research into the role pesticides play in bee decline is urgently required – including how they may compound other pressures, such as a lack of food and loss of habitat." Lu agreed: "Future research could help **elucidate the biological mechanism that is responsible for linking sub-lethal neonicotinoid exposures to CCD. Hopefully we can reverse the continuing trend of honeybee loss.**"

That causes extinction

Newitz 13

(Annalee, PhD, UC Berkeley, a policy analyst for the Electronic Frontier Foundation, editor-in-chief at io9, and contributor to Newsweek, "The Sixth Mass Extinction Is Upon Us. Can Humans Survive?" 5/6, <http://www.newsweek.com/sixth-mass-extinction-upon-us-can-humans-survive-63237>, [PDI])

OVER THE past four years, bee colonies have undergone a disturbing transformation. As helpless beekeepers looked on, **the machinelike efficiency of these communal insects devolved into inexplicable disorganization. Worker bees would fly away, never to return; adolescent bees wandered aimlessly in the hive; and the daily jobs in the colony were left undone until honey production stopped and eggs died of neglect. Colony collapse disorder, as it is known, has claimed roughly 30 percent of bee colonies every winter since 2007.** ¶ **If bees go extinct, their loss will trigger an extinction domino effect, because crops from apples to broccoli rely on these insects for pollination.** At the same time, over a third of the world's amphibian species are threatened with extinction, and Harvard evolutionary biologist and conservationist E.O. Wilson estimates that 27,000 species of all kinds go extinct per year. ¶ **Are we in the first act of a mass extinction that will end in the death of millions of plant and animal species across the planet, including us?** Proponents of the "sixth extinction" theory believe **the answer is yes. Our planet has been through five mass extinctions before.** The dinosaur extinction was the most recent, but hardly the most deadly: dinosaurs were among the 76 percent of all species on earth that were extinguished, but 185 million years before that, there was a **mass extinction so devastating that paleontologists have nicknamed it the Great Dying.** At that time, 95 percent of all species on the planet were wiped out over a span of roughly 100,000 years. The climate change that occurred during the Great Dying—most likely involving megavolcanoes that erupted for centuries in Siberia—was similar to the one our planet is undergoing right now. Regardless of whether humans are responsible, **the sixth mass extinction on earth is going to happen.** We have ample evidence that **earth is headed for disaster, from elevated rates of extinction** among birds and amphibians to superstorms and the recent Midwestern drought, corroborating the idea that we might be living through the early days of a new mass extinction. ¶ Assigning blame is less important than figuring out how to prepare for the inevitable and survive it—not just as humans alone on a world gone to hell, but along with the planet's myriad ecosystems as well. **The long-term goal for Homo sapiens as a species right now should be to survive for at least another million years.** It's not much to ask. As we know, a few species have survived for billions of years, and many have survived for tens of millions. Our ancient ancestors started exploring the world beyond Africa over a million years ago and lived through harsh conditions while another human group, the Neanderthals, did not. **This isn't just because we are lucky. It's because as a species we are extremely cunning when it comes to survival.** And so it seems fitting to pick the next million years as the first distant horizon where we'll set our sights.



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Kritiks

“Development” Rhetoric K

Don't call them “developing nations”; the term is offensive and rooted in colonial assumptions about so-called “developed” nations civilizing savage and backward Third World places

Wang, 09

Tricia Wang, Fulbright Scholar and a National Science Foundation fellow, currently conducting ethnographic work with urban migrants in China and a rural migrant sending village in Mexico May, 2009 Interrogating the “Developing” vs “Developed” Country dichotomy: Assumptions, technologies, and Americanism [PDI]

When speaking with others about my work, I **do not use the word “developing” as a label for the countries** I work in - China and Mexico (or India, where I was last year). But it's difficult when **everyone** else **insists on calling all places outside of the US and Europe “developing” (or even under-developed).** **Who has the power to define when a country is “developing” or developed?”** What do we mean by development? Is a country labeled “developing” if it is considered to be at poverty level according to the UN Human Poverty Index or World Bank poverty index? Just because a country has poor people does not mean the people are in poverty or an impoverished group. (I will write a separate post about this statement later) **Labeling a country developing or developed is a dichotomy that places the West** (Europe, US, sometimes Japan, Canada and Australia) **to be the First World—models for all aspiring nation-states. And then everywhere else outside of the “developed world” are black holes of underdevelopment** or regions in the process of developing into a “First World” nation. **This dichotomy assumes a linear trajectory with all “non-developed” or “developing” nations aiming to become more “developed.”** **The word is a politically correct post-colonial stand-in for concepts around civilizing the “other,” the “savages”, the “indians.”** So what are developing countries developing into? Is a country considered developed when it starts acting like other “First World” nations? Starts moving all its citizens into wage-labor? Pushes for people to buy on credit? Pushing countries to participate in global capitalism? Is a “developed” country one that looks like the United States? When it start exploiting neighboring countries or engages them in neo-liberal agreements that clearly provide more benefit to the “developed” nation and in the long run actually harms the “developing” nation? So I work in Mexico - let's use this as an example. Would Mexico, an OECD and NAFTA, partner become more “developed” if it transitioned from being an export economy to an import economy? Would it be more “developed” if it learned how to out-source it's economic activities to its neighbors? Would Mexico be developed if it learned how to jail 40% of a historically discriminated group? (US has the highest incarceration rate in the world! 2 million in prison, 4.9 million under supervision, 40% of black males at any given time in the US are in jail). Would Mexico be developed if they legalized the sale of hand guns? Would Mexico be developed if they started destabilizing neighboring economies, and then proceed to on one hand offer lots of low-wage labor jobs that other Mexicans won't perform and then on the other hand tell neighboring countries that it is illegal to enter Mexico to take these jobs? Would Mexico be developed if it copied the US's Patriot Act and spied on a group of citizens without due process? I ask these questions to point out the shaky definition of “developed.” In comparing the US and Mexico, the US in many ways is more progressive than Mexico, but in many other ways Mexico is way more progressive and forward thinking than the US. So we should question what we mean by “developed” and ask if that has affected our ideas about American exceptionalism.

“Transitioning” is a better term-

Wang, 09

Tricia Wang, Fulbright Scholar and a National Science Foundation fellow, currently conducting ethnographic work with urban migrants in China and a rural migrant sending village in Mexico May, 2009 Interrogating the “Developing” vs “Developed” Country dichotomy: Assumptions, technologies, and Americanism [PDI]

transitioning or transforming These two words **connote[s] change and dynamism!** like yah things are moving! **These words paint a more circular, holistic and cyclical image than the linear, 1-D images** I think of when I hear marginalized or emerging. **Transitioning is already used quite often to refer to the Chinese economy - a quasi socialist-capitalist market, hence a transitioning economy.** Transforming and **transitioning**

are both words that **could leave the power in the hands of the people** and the outsider. So a region can be transforming to us (the outsider), but also transforming to the villagers in everyday life. **For example, a village could be transitioning from one type of economic model to another, and it could just as well at the same time be under economic, social or cultural transition to the villagers themselves.** I also like these terms because it takes a more relative approach to regions - so that a so called "developed" area could contain several regions that are undergoing a lot of transformation. Or a "developed" country could be relatively stable and not experiencing a lot of transitions. **It allows us to look at countries like China with more precise terms - where one province could be experiencing a lot of economic transitioning while another is experiencing more social transitioning.** Or in Mexico we could say some states are undergoing a lot of political transformation while other states are less politically active.

Development discourse affects research and policy recommendations

Wang, 09

Tricia Wang, Fulbright Scholar and a National Science Foundation fellow, currently conducting ethnographic work with urban migrants in China and a rural migrant sending village in Mexico May, 2009 Interrogating the "Developing" vs "Developed" Country dichotomy: Assumptions, technologies, and Americanism [PDI]

So what is at stake in defining a region as developing or as something else? Why is it such a big deal to me? **What's at stake** for me **are my analyses, my ideas, and my research conclusions. The way a researcher sees, frames or defines a country or region, affects the analysis that comes out of the investigation.** For this reason, **it is critical for researchers who work with global issues to be self-reflective of how they label a country. If you think a group of people LACK something, then your research will only see what they lack and not what they have. And this could color the researcher's proposals for policy or program proposals for a region.** What I'm trying to argue is that **the term "developing" implies** the notion that a group is lacking information, knowledge, resources and etc. It implies that **developing areas need to be fixed.** I refuse to use the term "developing" on any of my groups because I just don't see them in that way! The label of "developing" contains a whole lot of assumptions about modernity, capitalism and power. **When a researcher goes into a region to study power relations and then proceeds to label the region as developing, then the analysis runs the danger of reifying the very power imbalance that is being studied in the first place.**

And **this happens quite often** and new academic fields are born out of "development" minded research and new projects are born out of "development" frameworks. For example, many "development-based" projects have emerged out of development minded research that aim to economically "develop" a country. A field that seems close to the work I do is Information Communication Technology for Development (ICT4D). I have an inherent discomfort with the entire field of ICT4D. As a young field, it is still developing its theories and models. But at the end of the day, there is an assumption that technology does good - technology is for "development." (will write more posts later on this faulty assumption)

It's one-dimensional, too broad, and otherizing

Crossley and Vulliamy 97

Michael Crossley, pf @ University of Bristol, Graham Vulliamy, pf @ University of York, Taylor & Francis, 1997 *Qualitative Educational Research in Developing Countries: Current Perspectives* [PDI]

The term developing country also deserves attention. **First, the adjective "developing" is a polite form for "poor," and often assumes a unidimensional measurement of national development: the GNP or GDP. The assumption encounters challenge when other developmental dimensions, such as those favored by UNDP, are taken into consideration.** Economic wealth is but one dimension of national development that includes health care, literacy, educational, spiritual and other social dimensions. **Second, the developed-**

developing (or north-south) dichotomy is too broad a generalization that artificially polarizes nations in the world. It has difficulties in accommodating countries such as the newly industrialized economies (NIEs) in East Asia (Cheng, 1991b) and the newly converted nations of Eastern Europe. Third, much of the literature about developing countries, including that on education, is written by people in developed countries. There is, in this subfield, often a tacit "donor-recipient" paradigm where the "wise" of the north explore the exotic south. This reflects the fact that the majority of known research projects in the south are supported by money and personnel from the north.

Transition is better than developing – the distinction doesn't even make sense when some so-called developing nations are more like the U.S. than not

WorldTeach 12

World Teach, "Reflections on Namibia: A Country In Transition" 3-9-12

I think as a westerner, **it's easy to attach the word "developing" to any country not as advanced as the United States. Advanced by [whose] standards?** In many ways, **Namibia has more commonalities than differences to the US.** For example, they were colonized by Germany in the same way that we colonized the Americas. Their culture and history is very much influenced by Germany and the Dutch. Namibians listen to US music as well as their own local and South African house music. They have water purification plants, in addition to alternative energy plants. Their cars are the same, all the same companies are represented....Toyota, Honda, Gmc, Ford, and Volkswagon and many more. **They have malls, salons, grocery stores, computers, real estate development, gas stations** (albeit full service..it's awesome, I haven't seen those in the US in years!), modern medicine, hospitals, clinics, universities...the lists go on and on. I find it interesting that we still call them a developing country. In my opinion, I think **a more appropriate word is "country in transition."** I say this **because of the development of the government.** Namibia gained its independence on March 21 1990. They have been a fully functioning, growing and adapting country for decades. Like any other newly independent country, with the independence comes a newly formed government, governing body. This is where I find the country to be "transitional". It's an amazing country with a hardworking and dedicated government. But it is new! With that, you don't find the established governmental programs that we have in the west. For example, currently there are not programs established to accommodate the homeless, the hungry or the emotionally or physically disadvantaged. That's not to say these things aren't coming, they just need the time and the money to work it all out. Kids go to school from 7am to 1pm. The government is not in a position to provide lunches for the children, so they must go home for lunch.

Otherization

The aff's development rhetoric creates divisions between us and them, enabling the otherization of people and places not like us

Pityana 09

N Barney Pityana GCOB, PhD Principal and Vice Chancellor, prof @ University of South Africa. "OPEN DISTANCE LEARNING IN THE DEVELOPING WORLD: trends, progress and challenges" Keynote speech at the M – 2009 23rd ICDE World Conference on Open Learning and Distance Education. "Flexible Education for All: Open – Global – Innovative" 7 – 10 June 2009, Maastricht, the Netherlands [PDI]

Introduction: Conceptualising the Developing World The term "Developing World" is at once evocative and deceptive and, according to Raymond Williams, even "flattering". **Intrinsic to the term are layers of meaning drawn from the ordering of the world and the power relations that distinguish between the namers and the named; the centre and the periphery**. It is redolent also of the fact that there are in reality two worlds – one steeped in privilege, power, resources and control over its destiny and the fortunes of others; the other its direct antithesis. **By virtue of naming, this 'other' world reveals the pervasive intellectual and economic hegemonies that have come to be taken for granted in contemporary political discourse.** The description suggests, according to Williams, that "economies and societies pass through predictable stages of development according to a known model."² The condition of 'underdevelopment' reflects an externally imposed set of circumstances which societies and nations may have inadequate resources to respond to. **The critique of these attitudes and processes may be expressed in terms of aid and not partnership, unequal power relations and "imposed processes of development for a world market controlled by others."** (Williams: 104). Williams concludes that In fact the pressure of what is often **the unexamined idea of development can limit and confuse virtually any generalising description of the current world economic order**, and it is in analysis of the real practices subsumed by development that more specific recognitions are necessary and possible. It is within the framework of that critical, deeper understanding of "developing" that this essay will be based. This means both that **the so-called "developing" world is not simply an undifferentiated mass, but that there are variations** and measures of 'progress', **with senses of identity and historical consciousness.** The intellectual environment, culture and resources, therefore, are such that different approaches to higher education are applicable. Distance education in the developing world, therefore, may not be the answer in all respects. Rather what it holds up is a promise to bring those on the periphery of society within the net of opportunity through enhancement of talent and capacities.

AT “It’s Useful”

The term “developing country” doesn’t even have an agreed upon definition and ignores that some countries are de-developing

GWWC 13

Giving What We Can, “Key Terms,” <http://www.givingwhatwecan.org/where-to-give/key-terms> [PDI]

A developing country is a country with a low level of material wealth, and the developing world is the collection of all such countries and consists of about 5 billion people. **There is no universally accepted way to determine exactly which countries count as developing rather than developed,** but economic measures such as GDP per capita are often used. For example, **the World Bank defines developing countries as those with a GNI per capita of less than \$12,476** (which includes several eastern european countries). **On all uses of the term, the developing world covers a wide range of countries, some of which are much poorer than others. The term 'developing country' has a number of weaknesses. For example, the term is often seen as having the connotation that Western economic life should be the goal of all countries, and the term obscures the fact that not all such countries are actually improving economically.**

Developing is a still-offensive substitute for the offensive phrase ‘Third World’ and it’s too broad to be useful

Thompson 10

Christie Thompson “Eye On: What’s In A Name? The Developing World Debate” On December 3, 2010 [PDI]

“Developing” is the most recent word to achieve that amorphous, politically correct consensus. It’s **a preferred replacement to the now-unpopular “Third World” label. Third World** was coined in 1952 by French sociologist Alfred Sauvy, as a way to classify alignment during the Cold War. As non-aligned nations were mainly new, post-colonial countries struggling to find economic stability, the term **became an oft-used synonym for ‘poor.’ Objections to the word were understandable: Does ‘first’ and ‘third’ imply a ranking or competition? Are we not all of one world?** And, so, slowly, it fell out of use. The World Bank announced last April that it would stop using the nomenclature to classify countries, only a decade or so after it dropped from the social enterprise zeitgeist. “These developing countries are now sources of growth and importers of capital goods and developed countries’ services,” said World Bank Director Robert Zoellick. In today’s international economy, the old dichotomy doesn’t fit growing nations like China, India, and Brazil. **And so it was out with the Third World, in with the “developing” nation.** Developing seemed less incendiary – there was no inherent ranking or place attached and, most importantly, it implies transition rather than an unchanging divide. But **critics today still argue that developing is an improper way to classify roughly 85% of the world’s population.** In an article critiquing the idea of design for development, D-Rev CEO Krista Donaldson asks, “What makes a society developed? Wealth? Mass consumerism? Stability? Equality?” **The word “developing” suggests these nations** are moving toward an end goal of becoming a developed nation. That they **are lagging behind. And the dichotomy is still misleadingly broad – one which places both China and Eritrea under the same adjective. First, third, developing, developed – no matter how you slice it, one group inevitably comes out on top.** The development crowd is searching for a new replacement. None seems quite apt. Some have moved to talking about the ‘Global North’ and ‘Global South’ divide, but building a regional and financial wall along the equator seems even less acceptable. Emerging, used to describe nations on their way to industrialization, is just a synonym for developing, implying the same lag. Transitioning and transforming can be used to describe countries moving to a free-market approach. But they are sterile substitutes and leave many countries unaccounted. Donaldson’s suggestion, less-industrialized economies, seems overworked and inconvenient, and again raises the question: less than what? Where do we draw the line? The difficulty in finding the proper terminology comes from its unfortunate purpose – dividing the world into two categories. It’s an awkward, potentially unnecessary separation. **It divides people and countries into an “us/them” relationship.**

Cap K

Food Security Link

Food security pays lip service to the hungry while serving as a justification for the violent expansion of global governance

Alcock 9 (Rupert, graduated with a distinction in the MSc in Development and Security from the Department of Politics, University of Bristol in 2009, MSc dissertation prize joint winner 2009, "Speaking Food: A Discourse Analytic Study of Food Security" 2009, pdf available online, p. 10-14 [PDI])

Since the 1970s, **the concept of 'food security' has been the primary lens through which the ongoing prevalence and inherent complexity of global hunger has been viewed.** The adoption of the term at the **FAO**-sanctioned World Food Conference in 1974 has led to a burgeoning literature on the subject, most of which **takes 'food security' as an unproblematic starting point from which to address the persistence of so-called 'food insecurity'** (see Gilmore & Huddleston, 1983; Maxwell, 1990; 1991; Devereux & Maxwell, 2001). A common activity pursued by academics specialising in food security is to debate the appropriate definition of the term; a study undertaken by the Institute of Development Studies cites over 200 competing definitions (Smith et al., 1992). **This pervasive predilection for empirical clarity is symptomatic of traditional positivist epistemologies** and constrains a more far-sighted understanding of the power functions of 'food security' itself, a conceptual construct now accorded considerable institutional depth.² Bradley Klein contends that **to understand the political force of organizing principles like food security, a shift of analytical focus is required:** **'Instead of presuming their existence and meaning, we ought to historicize and relativize them as sets of practices with distinct genealogical trajectories'** (1994: 10). **The forthcoming analysis traces the emergence and evolution of food security discourse in official publications and interrogates the intertextual relations which pertain between these publications and other key sites of discursive change and/or continuity.** Absent from much (if not all) of the academic literature on food security is any reflection on the governmental content of the concept of 'security' itself. **The notion of food security is received and regurgitated in numerous studies which seek to establish a better, more comprehensive food security paradigm.** Simon Maxwell has produced more work of this type than anyone else in the field and his studies are commonly referenced as foundational to food security studies (Shaw, 2005; see Maxwell, 1990; 1991; 1992; 1996; Devereux & Maxwell, 2001). Maxwell has traced the evolution in thinking on food security since the 1970s and distinguishes three paradigm shifts in its meaning: from the global/national to the household/individual, from a food first perspective to a livelihood perspective and from objective indicators to subjective perception (Maxwell, 1996; Devereux & Maxwell, 2001). There is something of value in the kind of analysis Maxwell employs and these three paradigm shifts provide a partial framework with which to compare the results of my own analysis of food security discourse. I suggest, however, that the conclusions Maxwell arrives at are severely restricted by his unwillingness to reflect on food security as a governmental mechanism of global liberal governance. As a 'development expert' he employs an epistemology infused with concepts borrowed from the modern development discourse; as such, his conclusions reflect a concern with the micro-politics of food security and a failure to reflect on **the macro-politics of 'food security' as a specific rationality of government.** In his article 'Food Security: A Post-Modern Perspective' (1996) Maxwell provides a meta-narrative which explains the discursive shifts he distinguishes. He argues that the emerging emphasis on 'flexibility, diversity and the perceptions of the people concerned' (1996: 160) in food security discourse is consistent with currents of thought in other spheres which he vaguely labels 'post-modern'. In line with 'one of the most popular words in the lexicon of post-modernism', Maxwell claims to have 'deconstructed' the term 'food security'; in so doing, 'a new construction has been proposed, a distinctively post-modern view of food security' (1996: 161-162). This, according to Maxwell, should help to sharpen programmatic policy and bring theory and knowledge closer to what he calls 'real food insecurity' (1996: 156). My own research in the forthcoming analysis contains within it an explicit critique of Maxwell's thesis, based on three main observations. First, Maxwell's **'reconstruction' of food security and re-articulation of its normative criteria reproduce precisely the kind of technical, managerial set of solutions which characterise the positivistic need for definitional certainty** that he initially seeks to avoid. Maxwell himself acknowledges 'the risk of falling into the trap of the meta-narrative' and that 'the ice is admittedly very thin' (1996: 162-163), but finally prefers to ignore these misgivings when faced with the frightening (and more accurately 'post-modern') alternative. Second, I suggest that the third shift which Maxwell distinguishes, from objective indicators to subjective perceptions, is a fabrication which stems more from his own normative beliefs than evidence from official literature. To support this part of his argument Maxwell quotes earlier publications of his own work in which his definition incorporates the 'subjective dimension' of food security (cf. Maxwell, 1988). As my own analysis reveals, **while lip-service is occasionally paid to the lives and faces of hungry people, food security analysis is constituted by increasingly extensive, technological and professedly 'objective' methods of identifying and stratifying the 'food insecure.'** This comprises another distinctly positivistic endeavour. Finally, Maxwell's emphasis on 'shifts' in thinking suggests the replacement of old with new – the global/national concern with food supply and production, for example, is replaced by a new and more enlightened concern for the household/individual level of food demand and entitlements. Discursive change, however, defies such linear boundary drawing; the trace of the old is always already present in the form of the new. I suggest that Maxwell's 'shifts' should rather be conceived as 'additions'; the implication for **food security** is an increasingly complex agenda, increasingly amorphous definitions and the establishment of new divisions of labour between 'experts' in diverse fields. This **results in a technocratic discourse which 'presents policy as if it were directly dictated by matters of fact** (thematic patterns) **and deflects consideration of values choices and the social, moral and political responsibility for such choices'** (Lemke, 1995: 58, emphasis in original). The dynamics of technocratic discourse are examined further in the forthcoming analysis. These observations inform the explicit critique of contemporary understandings of food security which runs conterminously with the findings of my analysis. **I adopt a broad perspective from which to interrogate food security as a discursive technology of global liberal governance.** **Food security is not conceived as an isolated paradigm, but as a component of overlapping discourses**

of human security and sustainable development which emerged concurrently in the 1970s. The securitisation process can be regarded in some cases as an extreme form of politicisation, while in others it can lead to a depoliticisation of the issue at hand and a replacement of the political with

technological or scientific remedies. I show how

the militaristic component of traditional security discourse is

reproduced in the wider agenda of food security, through the notions of risk, threat and

permanent emergency that constitute its governmental rationale.

Extra

Cap's the root cause of global food inequality---their reps of food crisis are just people demanding that the agricorporations that the aff props up stop destroying their local farming system

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The current global food crisis—decades in the making—is a crushing indictment against capitalist agriculture and the corporate monopolies that dominate the world's food systems. The role of the industrial agrifood complex in creating the crisis (through the monopolization of input industries, industrial farming, processing, and retailing) and the self-serving neoliberal solutions proposed by the world's multilateral institutions and leading industrial countries are being met with skepticism, disillusion, and indifference by a general public more concerned with the global economic downturn than with the food crisis. Neoliberal retrenchment has met growing resistance by those most affected by the crisis—the world's smallholder farmers. Solutions to the food crisis advanced by the World Bank, the Food and Agriculture Organization (FAO), the Consultative Group for International Agricultural Research (CGIAR), and mega-philanthropy, propose **accelerating the spread of biotechnology, reviving the Green Revolution, re-introducing the conditional lending of the World Bank** and the International Monetary Fund, **and re-centering the** now fragmented power of the World Trade Organization (**WTO**) by concluding the Doha "Development Round" of trade negotiations. **These institutions have a mandate from capital to mitigate hunger, diffuse social unrest, and reduce the overall numbers of peasant producers worldwide—without introducing any substantive changes to the structure of the world's food systems.** **Their neoliberal strategies are in stark contrast to the proposals for ecological approaches to agriculture (agroecology) and food sovereignty advanced by farmer federations and civil society organizations worldwide that instead seek to transform food systems.** Clashes and declarations of protest at recent summits in Rome, Hokkaido, and Madrid, the growing public resistance to the industrial agrifood complex, and the rise, spread, and political convergence of movements for agroecology, land reform, food justice, and food sovereignty, all indicate that the food crisis has become the focal point in a class struggle over the future of our food systems. The Food Crisis

Last year record numbers of the world's poor experienced hunger, this at a time of record harvests and record profits for the world's major agrifood corporations. The contradiction of increasing hunger in the midst of wealth and abundance sparked "food riots," not seen for many decades. Protests in Mexico, Morocco, Mauritania, Senegal, Indonesia, Burkina Faso, Cameroon, Yemen, Egypt, Haiti, and twenty other countries were sparked by skyrocketing food prices (see "Food Wars" by Walden Bello and Mara Baviera in this issue). In June 2008, the World Bank reported that global food prices had risen 83 percent over the last three years and the FAO cited a 45 percent increase in their world food price index in just nine months.¹ While commodity prices have since fallen due to the world economic downturn and speculators lessening their bets on commodities, food prices remain high and are not expected to return to pre-crisis levels. **The widespread food protests were not simply crazed "riots" by hungry masses.**

Rather, **they were angry demonstrations against high food prices in countries that formerly had food surpluses, and where government and industry were unresponsive to people's plight.** In some cases, starving people were just trying to access food from trucks or stores. Alarmed by the specter of growing social unrest, the World Bank announced that without massive, immediate injections of food aid, 100 million people in the South would join the swelling ranks of the world's hungry.² These shrill warnings immediately revived Malthusian mantras within the agrifood industry and unleashed a flurry of heroic industrial promises for new genetically engineered high-yielding, "climate-ready," and "bio-fortified" seeds. The World Bank called for a "New Deal" for Agriculture and trotted out a portfolio of \$1.2 billion in emergency loans. The FAO appealed (unsuccessfully) to OECD governments to finance a \$30 billion a year revival of developing country agriculture. Über-philanthropist Bill Gates invited multinational corporations to follow him into a new era of "creative capitalism," promising that his new Alliance for a Green Revolution in Africa (AGRA) would provide four million poor farmers with new seeds and fertilizers. But **with record grain harvests in 2007, according to the FAO, there was more than enough food in the world to feed everyone in 2008—at least 1.5 times current demand.** In fact, **over the last twenty years, food production has risen** steadily at over 2.0 percent a year, while the rate of population growth has

dropped to 1.14 percent a year. **Globally, population is not outstripping food supply. Over 90 percent of the world's hungry are simply too poor to buy enough food.** High food prices are a problem because nearly three billion people—half of the world's population—are poor and near-poor. Around half of the people in the developing world earn less than two dollars a day. Nearly 20 percent are “extremely poor” earning less than one dollar a day.³ Many of those officially classified as poor are subsistence farmers who have limited access to land and water and cannot compete in global markets.⁴ In addition, the diversion of large quantities of grains and oil crops for the growing industrial feedlots in the emerging economies, as well as the diversion of land and water for “green” agrefuels has put significant pressure on markets for many basic foods. **Unsurprisingly, the food crisis has provided the world's major agrifood monopolies with windfall profits.** In the last quarter of 2007 **as the world food crisis was breaking, Archer Daniels Midland's earnings jumped 42 percent, Monsanto's by 45 percent, and Cargill's by 86 percent. Cargill's subsidiary, Mosaic Fertilizer, saw profits rise by 1,200 percent.**⁵ The steady concentration of profits and market power in the industrial North mirrors the loss of food producing capacity and the growth of hunger in the global South. Despite the oft-cited productivity gains of the Green Revolution, and despite decades of development campaigns—most recently, the elusive Millennium Development Goals—per capita hunger is rising and the number of desperately hungry people on the planet has grown steadily from 700 million in 1986 to 800 million in 1998.⁶ Today, the number stands at over 1 billion. Fifty years ago, the developing countries had yearly agricultural trade surpluses of \$1 billion. After decades of capitalist development and the global expansion of the industrial agrifood complex, the southern food deficit has ballooned to \$11 billion a year.⁷ The cereal import bill for low-income food-deficit countries is now over \$38 billion and the FAO predicts it will grow to \$50 billion by 2030.⁸ This shift from food self-sufficiency to food dependency has been accomplished by colonizing national food systems and destroying peasant agriculture.

The affirmatives depictions of food crisis rely on crude neoliberal economism as the measure for social wellbeing (ie food prices) – this displace structural critique and legitimates colonial violence

Olivier **Jutel 11**, working on Doctoral Thesis at the University of Otago, Neo-Liberal Discourse and the Global Food Crisis, https://www.academia.edu/2572872/Neo-Liberal_Discourse_and_the_Global_Food_Crisis
Neo-liberal Discourse and the Global Food Crisis [PDI]
Economism

The ability of neo-liberal discourse to maintain coherency and predominance in the face of the global food crisis was principally achieved through the primary discursive frame of economism. Despite the food crisis, as a media event, lacking a concise timeline and being dispersed across the globe with disparate effects, the price of food allows for a unitary logic to be established. As the crisis narrative emerged in March, this framing was enunciated by Ban Ki-Moon who opened his Washington Post editorial with the stark summation that, simply, ‘The price of food is soaring’ (Ki-Moon 2008a). **The economistic rationale of food prices inevitably elevates market signifiers as a universal objective measure and enacts an urgent call for action around this immediate reality. While there is a necessary abstraction here in dealing with starving people, the market and prices serve as the default mode of abstraction.** The principle fact of food prices is of undeniable significance, however it is crucial to consider what autonomy and performative power is implied by this. Thomas **Friedman** (2008), **the archbishop of globalization discourse, positions the food price crisis as a politically epochal moment** in Egypt and more broadly in the developing world: **‘If these prices keep soaring, food and fuel costs could reshape politics around the developing world as much as nationalism and communism did in their days’.** Friedman indicates that (former) Egyptian President Mubarak wisely ‘embarked on an economic reform path [i.e. liberalization]’, however this growth is being ‘devoured by food and fuel price increases, like a plague of locusts eating through the Nile Delta’. **The co-ordinates for potential political developments foregrounded by Friedman are dictated exclusively by the market and prices. If the Egyptian people respond and rise up it will merely be a reactive response with real agency lying in the market.** Furthermore, **the specter of looming political instability is paralleled to the old foes of nationalism and communism**, a relapse to traditionalist and fundamentalist political identities. **Aside from the diminution of people as real political subjects, the crisis itself is externalized in a manner of biblical metaphor and cannot be understood in real political terms of productive and social organization.** **The centrality of the market as the principle means to remedy the food crisis has the effect of naturalizing investment and elevating investors to altruistic agents of the end of history.** Investment is presented by officials and journalists as both innocuous and a consensus priority for abating the food crisis. **The first**

challenge to this naturalization of neo-liberal international investment is reconciling the role of investors in triggering market volatility. The World Bank (2008) concedes ‘commodity investors and hedge fund activity’ has played a ‘minor’ role in the crisis and the IMF (2008a) concurs that there may be ‘some overshooting’ in the rush to food commodities. The admission of limited responsibility is flatly rejected in other instances through Milton Friedman’s principle that the injection of ‘liquidity to the market ... in theory should reduce price volatility’ (Henriques 2008a). Criticism of investors is implied as a reactionary response to surface appearance, a strangely Marxian form of argumentation: ‘Don’t blame speculators for the food crisis; it was already there when they arrived. Rather thank them for the wake-up call’ (Lerrick 2008). **The key premise is that ‘rather than speculative activity’ it is the ‘fundamentals’ of the world economy that ‘are the key drivers of food price rises’** (World Bank 2008). The activity of investors is said to have merely drawn attention to the imbalances and structural deficiencies of the current global food trade regime which require our attention and resolute action. **The naturalization of market actors, and specifically investors, as the objective measures of economic health leads the food crisis discourse to a radical re-configuration of transnational investment and agro-food production through the process of outsourcing agriculture. The article, ‘Food is Gold, so Billions Investing in Farming’ (Henriques 2008b), identifies that private equity and hedge funds are making ‘bolder’ long-term bets into the ‘owning structure’ of agricultural production such as Sub-Saharan farmland and grain elevators ‘which could bolster food production at a time when the world needs more of it’.** The article airs the restrained critiques from ‘traditional players’ (commodity brokers) who voice concern over the threat of speculation however this is not placed within the context of speculation occurring at the time of the article’s publication. From this brief internal debate between ‘traditionalists’ and the ‘bold’ avant-garde of finance the article engages in unrestrained advocacy of such investment. It is said that these ‘investments will be a plus for farming and ultimately for consumers’, ‘investment will buy more technology ... accelerate the development of infrastructure ... help bring down costs to farmers’ and ‘provide clinics and schools for local labor’ in Africa. The article concludes with an agriculture consultant and analyst claiming that ‘The new investments by big financial players could be just what global agriculture needs ... Investment funds are seeing that this brings value to them. I’m saying this brings value to everyone’. **This summation validates a perceived community of interest between investors and the world’s poor, rendering the radical transformation of property relations entailed by such neo-colonial developments as both innocuous and in fulfillment of consensus priorities.**

Fem K

Tech/Subsidies Link

The aff's investment in agriculture will be inevitably gendered – agriculture policies focus exclusively on men and the traditional work performed by women is ignored. The aff gives more control over food production to men and disproportionately gives women harder manual work

Ibnouf 12

Fatma Osman Ibnouf, prof @ University of Khartoum, "Does It Really Matter Whether Food is Produced and Provided by a Man or a Woman?" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Agriculture is at the heart of food security, it is the source of food and also because of the multiple roles it plays as a source of employment, livelihood and as one of the main motors of economic activity (Maxwell, 2001, p. 32). Sudan is an agricultural country with fertile land, plenty of water resources, livestock, forestry resources, and agricultural residues (Omer, 2008, p. 1867). Agriculture production is the important provider of national food security. Self-sufficiency in food production and food security is important and is a key element in the economic strategy of the country. In Sudan, government interventions are contentious particularly the support for male farmers. **Agricultural strategies are built on the assumption that males are the main producers; and in the formulation and implementation of any rural development project, women are always ignored and undervalued. Planners depend on the official data provided by national statistics and censuses to design their policies.** However, it should be stressed that the **official data in these sources underestimates the contribution of women to food production and household food security.**

This is because of the deficiencies inherent in the standard measures of work and only wage work is record. **Due also to the lack of the gender classification in different agricultural and household activities only the work done by men is recognised. Rural women** non-farm activities, including post-harvest activities (processing and preservation) and other income generating activities, carried out to **help to feed family members are generally ignored in the national statistics and accounts.** However, they are essential economic functions that enhance livelihood opportunities and sustain food supplies for the household's members. In addition, **rural women are particularly overlooked when it comes to the introduction of modern technologies that can be used in the farm activities.**

Although the introduction of modern agricultural technologies (**machines**) **can decrease the manual nature of works in the farms,** however **this may lead to a situation where the heavier and more repetitive farming works are performed by women.** Modern **agricultural machineries are usually assigned to men who tend to assume tasks that become mechanized and who access new skills first.**

While women works consistently remain manual, or **women may be pushed into un-mechanized farm activities where under-investment of technology is the feature.**

Link – Gender Neutral

The aff provides a gender-neutral analysis of agriculture, which ignores how gender roles play out in developing nations and gives more control of food production to men. That prevents the most efficient policies by ignoring half the labor force, turns case

Ibnouf 12

Fatma Osman Ibnouf, prof @ University of Khartoum, "Does It Really Matter Whether Food is Produced and Provided by a Man or a Woman?" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

To date, **development planners and policymaker have failed to adequately address gender issues in agricultural and rural development sector investments.** Since **none of the rural development projects mandate the collection of sex-disaggregated data,** it isn't possible to determine its investments' differential impacts on males and females. **There are gendered changes in food production** sector. However **a good gender analysis is needed to identify the details.** From the economics perspective, the increasing use of gender analysis methods provides a new challenge in measuring the sources of change (Lilja, and Dixon, 2008). **Gender analysis is a tool to diagnose the differences between women and men in regard to their specific activities, conditions, needs, access to and control over productive resources, and ability to receive development benefits and participate in decision-making.** Gender analysis is a critical step not only for identifying entry points, but also for the pursuit of sound, culturally-sensitive strategies (Osman, 2002). Gender analysis entails, first and foremost, collecting **sex-disaggregated data** and gender sensitive information about the population concerned. It **is the first step in gender-sensitive planning for promoting gender equality.** In other words, this comes back to the very old questions that feminists have asked worldwide: 'who does what, where, how and for what, who has access, and **who has the say at what level!** **The failure of many policies and interventions designed to benefit rural women may be attributed to a lack of recognition of their actual roles and responsibilities and also their needs and interests.** Most national development policies and plans are 'gender neutral', are not usually based on gender-disaggregated data for decision-making and therefore, implementation often falls short of achieving desired outcomes or impacts. Official statistical surveys generally focus on the household as the unit of measure. Gender disaggregation is done more for the purpose of differentiating, and less for analyzing and developing specific strategies and positive actions towards rural women's' empowerment. Undoubtedly, gender is an essential analytical category and gender analysis is an essential tool for understanding the local context. For policymakers and planners, **employing gender analysis can result in policies that are both more efficient in targeting the actual both genders needs and interests, and are more gender-equitable.**

Framework / Role of the Ballot

Gender analysis is key to understanding food security policy – otherwise we continually recreate gender inequality

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Assessment and analysis to determine the various roles that men and women play in the rural Sudan in terms of producing and providing food security for their family and how the aforementioned risk events affect them differently warrant immediate attention. There is a need to view household food security with a gender perspective and to generate evidence that draws the attention of policy makers for greater understanding of correlation gender with household food security.

Then policies and programs would be designed in ways that are beneficial and create a sense of equality between the sexes. This study endeavors to increase the understanding of the rural women role in household food security sequentially to assist to develop gender sensitive interventions and policies to create a space for improving women status.

Enhancing women food production and provision capacity has unquestionable a direct impact on household food security and nutrition. This paper aims to contribute to the burgeoning literature on role of women in food security in two ways. First, it aim to explore the actual role that rural women play in procuring adequate supplies of food for their households; and second valuing the potential role of women in reducing malnutrition by assessing women's contribution to their household nutrition status. It focuses on these two issues in particular as they influence the kind of interventions that can serve the prospects for increased equality and living standards for women as food producers and providers, as distinct from the larger literature on role of women in household food security. **These identified issues will help to come up with recommendations for how food producers and providers can best be supported and empowered.** The outcomes will lead to outlining

the fundamental areas of research for the food security research-based-policy solutions for the subsequent years. The **assessment of the gender role in household food security is one of the most existing and upcoming challenging issues facing researchers and policymakers alike.** Undoubtedly consistent and well-informed policies can help to address and to reduce the impact of future food security problems. **That is why new knowledge must be gathered through gender-sensitive research to better understand the complexities of gender issues in the food security in order to develop appropriate actions, programs and productive policies. A better understanding of what the inequalities and disadvantages that women as food producer and provider face would be a fruitful area for future research.** Researchers can ask a number of questions to establish a picture of the empowering women for gender equality. Some ideas follow: impact of women growing role as food producer and provider on gender equality, in terms of whether economic success results in changing the status of women i.e. results in well being of women within the household? Does it increase their role in decision-making process? Does it improve their public image tackling traditional gender stereotypes and the patriarchal mentalities of their communities? Does it mitigate the gap between the public and the private realm? Do gender relations change as a result of the women increasing role in household food security?

A gender-based framework is needed to identify, understand and address how food security is interrelated with gender inequality

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The use of gender framework in analyzing and planning development programs to promote the food security producers and providers is needed. Given the social context of rural women's lives, **women are more likely to experience more significant disadvantage consequences as a result of policies that ignore potential gender impacts. The gender framework help to identify, understand, and address food security issues such as access to resources and basic services, as they are experienced by women and men differently.** The roles, needs, responsibilities and constraints vary among men and women. Thus, sex disaggregated statistics are critical in gauging the extent to which women and men benefit or are affected by policy and practice.

Alt Solves

Alternative solves the case – we must have a gender-focused analysis of food security so that rural women can break out of the cycle of low productivity. Empirics prove output could be improved 20% by rectifying gender inequality *before* we try to ensure food security

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Fatma Osman Ibnouf, prof @ University of Khartoum, "Does It Really Matter Whether Food is Produced and Provided by a Man or a Woman?" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Women (as food producer and provider) face different constraints in many aspects, more than men. **The three main factors influence women role as food producers and providers include, resources, such as land, input and credit; access to needed knowledge and training activities; and basic services like extension, education, and health.** Adoption less cost-effective methods for farming land and lack of support services lead to decreases in the level of land productivity of women farmers (Ibnouf, 2008). **Because women access to sufficient resources and services is limited** thus they have inadequate technical knowledge and poor skills in production, **they find it difficult to break out of the cycle of low productivity**. For Burkina Faso analysis of the household panel data suggests that **farm output could be increased 6-20 percent through a more equitable allocation of productive resources between male and female farmers** (World Bank, 2001, p. 118-119). To become effective, **policy designed to address food insecurity and malnutrition problems needs to involve gender equality issues in order to enhance the role of food producer and provider** in rural Sudan. **Achieving gender equality means attain the equal opportunities and the life chances for both men and women. Improving the socio-economic status of women can contribute to changes in gender relations and promote more equitable access to productive resources, and appropriate supporting measures need to be devised and enforced. Thus, investing in rural women is needed to be considered** in order **to promote the food security** producers and providers. Rao (2006, p. 185) pointed — out that strengthening the conditions of female farmers would help improve food security at the household level. **Progress toward**s achieving **food security and reducing malnutrition requires heavy policies and programs focus on rural women.** Although some national development programs had been successful, in targeting rural women, nevertheless the achievements are far below the preset expectations or intensions. **The elimination of constraints that women face in food production will allow women to enhance their capacity and abilities to expand their output and in turn improve their household food security.** Resources for achieving food security are influenced by both policies and programs that increase food production, provide income for food purchases and establish in-kind transfer of food through formal or informal supporting mechanisms (Babu and Sanyal, 2009, p. 7). To date, **development efforts at national levels have failed to develop a set of gender-based policy which integrating gender analysis and thus are capable of reversing the current process of rural economic development and raising the standard of living of women in particular. Designing and implementing appropriate food security policies remain a challenge in developing countries** (Babu and Sanyal, 2009, p. 1) as well in Sudan.

Security K

Food security rhetoric reinforces the mentality that we need to secure and control the means of food production – allows transnational corporations and governments to meddle in poor farmers' businesses under the ruse that they know best. Increases hunger and violence

Shepherd 12

Centre for International Security Studies, University of Sydney, Australia "Thinking critically about food security" Security Dialogue 43(3) 195–212 [PDI]

A consequence of casting food security as an availability problem is that actors use food-security language to legitimize competition over increasingly scarce food-production resources. The underlying implication is that controlling or hoarding of resources must be good; however, control and hoarding by some invariably implies exclusion and deprivation for others. Food-security language has become widely employed as a way of pursuing particular agendas and legitimizing particular actions, especially those of powerful actors, but at the expense of others. Food-security language is used to legitimize the securing of rights over agricultural lands (Alshareef, 2009; People's Republic of China, 2008), **which one African scholars described as 'a dubious way to solve the food security conundrum in Ethiopia', noting that it seems paradoxical that one of the most vulnerable countries in the world is handing over vast land and water resources to foreign investors to help food security efforts of their home countries.**² **It is used by transnational agribusiness corporations in the legitimization of their profit-generating activities** (ArcherDanielsMidland, 2010; Cargill, 2010; Monsanto, 2010), which range from the corporatization and amalgamation of farmlands – **sometimes pushing small- and medium-sized landholders off their farms – to the pursuit of revenues** from patented inputs that have been argued to be detrimental to poor farmers in developing countries (Holt-Giminez, 2011; Patel, 2007; Shiva, 2002, 2005, 2007). It is used to justify the pursuit of speculative profit by wealthy investors (Emerging Asset Management, 2010). **It is also used in the pursuit of political agendas** – for example, in concert with the subsidizing of electorally sensitive rural constituencies (USDA, 2010; Philpott, 2006) or, contrarily, **providing an argument for the reduction of trade barriers in the quest for greater access to foreign markets.** For example, the official Australian food-security policy position is that developing countries must reduce trade barriers in preference to supporting local food producers.³ **This privileges Australia's major agricultural exporters over the agrarian poor in the developing countries.** In such ways, **the current paradigm of food security is used to privilege the interests of certain actors, often at the expense of others, including those at risk from the inability to access adequate food.** The commandeering of **food-security language helps explain the contradiction that, while it is ostensibly about hunger** (achieving sufficient food for 'all people at all times'), **food security has instead become a game for powerful actors competing for advantage** (profit or scarce resources such as agricultural land) **in an increasingly resource-constrained world. One response to this has been the idea of food sovereignty,** promulgated by grassroots organizations such as La Via Campesina, **which argues that people should have the right to take control of their own choices over food and its provenance.** Food sovereignty has been put forward as a central element of attempts to frame food 'as a new human and livelihood security challenge' (Spring, 2009: 471). **A core strength of the concept is its emphasis on the democratization and localization of food-producing resources and distribution of production, however a substantial weakness is that the concept is equally**

open to usurpation by powerful players in the global food regime. Governments are now starting to use food-sovereignty language to legitimize their efforts to secure control over food supplies and food-producing resources. In recent meetings with the author, for example, policymakers from several Gulf Cooperation Council member-states referred to 'food sovereignty' as the rationale behind their respective governments' efforts to pursue certain foodsecurity strategies.⁴ **Strategies to address the problem of hunger should discourage this kind of co-opting and instead attempt to challenge such actors to engage in the process of tackling the fundamental issues.** Moreover, given the rise of neo-Malthusian fears, **the inability of existing food-security strategies to address hunger should prompt a search for alternatives.** Indeed, even if the insecurity of hunger had been adequately addressed in the past, that would not mean that the same strategies would continue to be adequate for a high-population future.⁵ Commentators are already flagging stress and potential conflict as a result of increasingly tight global food supplies (IISS, 2011). It is a reasonable premise that if the world cannot overcome the problem of widespread hunger when there is surplus production capacity, then finding solutions will become increasingly fraught as constraints become tighter, **the desire to resort to competitive 'securing' of food resources increases and risks of violent conflict over food resources intensify.**



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Blocks

Biofuel Imperialism

The affs biofuels policy is imperial—its intent is to colonize the global South through land extraction

Pellizzioni 12

Associate Professor of Environmental and Political Sociology at the University of Trieste, Italy [Luigi, & Marja Ylönen, Published in, Neoliberalism and Technoscience: Critical Assessments, Ashgate, 2012, Chapter 7 “Neoliberalising technoscience and environment: EU policy for competitive, sustainable biofuels” Les Levidow, Theo Papaioannou and Kean Birch, http://oro.open.ac.uk/33379/1/LLTPKB_EU_biofuel_policy_NeoliberalismTechnoscience_2012.pdf] [PDI]

Techno-fixes for resource conflicts **The tendency towards plunder is disguised**, or even reversed, **by a hegemonic neoliberal discourse**. According to its promises, **greater productive efficiency reduces the need for resources and so helps to conserve them. In a circular logic, market competition becomes an environmental saviour** by stimulating gains in efficiency and thus sustainability. **Environmentalism has been incorporated into models of market progress: this** ‘has done far more to **smooth the “roll-out” of neoliberalizations** than attempts to dismiss or reject environmental concerns outright’ (McCarthy and Prudham 2004: 279). **To address sustainability problems, the extension of markets has been linked with a technological fix**, whose development ‘relies on the coercive powers of competition’. **This becomes so deeply embedded in entrepreneurial common sense**, however, that it becomes a fetish belief that there is a technological fix for each and every problem’ (Harvey 2005: 68). **Such expectations frame sustainability problems as a technical inefficiency, to be overcome by technoscientific innovation**. Technoscientific innovations have been celebrated for greater efficiency, which have facilitated plunder, especially in the agricultural sector. **Multinational corporations have successively colonized ‘a multitude of new spaces that could not previously be colonized** either because the technology or the legal rights were not available’ (Paul and Steinbrecher 2003: 228–9). Since the classical enclosures of the eighteenth century, **land access has been obtained by formally withdrawing traditional land rights and/or bypassing them through violence. Such enclosures have been extended by biofuel developments in the global South** (Levidow and Paul 2010). As in earlier historical periods, **technoscientific innovation is again promoted as means to alleviate competition for resources and to expand their availability, especially to avoid the conflicts around biofuels. Such conflicts are attributed to inefficiency or mis-management, thus diverting responsibility** from market competition and its policy drivers (Franco et al. 2010). By historical analogy, **new efficiencies are likely to generate further economic incentives for monocultural systems to supply biomass to centralised biorefineries**’ (Smith 2010: 120; cf. Levidow and Paul 2011). As indicated by the ‘biomass’ concept, **natural resources are always constructed in particular ways. These reorient biophysical characteristics by devising new knowledge and technologies in order to increase productivity and thereby the accumulation of capital**. For a long time, **this has meant transforming nature into resources through commodification** after extraction; this can be seen as the ‘formal subsumption of nature’, by analogy to labour exploitation (Boyd, Prudham and Schurman 2001). **Resource use also increasingly involves the ‘intensification of biological productivity** (i.e., yield, turnover time, metabolism, photosynthetic efficiency)’ — **or the ‘real subsumption of nature**’. Nature ‘is (re)made to work harder, faster and better’. Yet intensification efforts cannot assume the predictable compliance of nature, whose biophysical characteristics may prove recalcitrant to more efficient use. So there is no way to ensure predictability or control of nature prior to implementing new technologies (Boyd, Prudham and Schurman 2001: 563–4). Real subsumption of nature exemplifies a wider process of neoliberalizing nature. As politics by other means, **this process takes many forms – privatization, marketization, deregulation, reregulation**, etc. ‘For it involves the privatization and marketization of ever more aspects of biophysical reality, with the state and civil society groups facilitating this and/or regulating only its worst consequences’ (Castree 2008: 142–3). **Various ecological fixes are devised for the problem of capital accumulation – often in the eco-friendly name of conserving resources, but also in the name of remaking nature**

These logics show that **neoliberalism’ is, in environmental terms, an apparent paradox**: in giving full reign to capital accumulation **it seeks to both protect and degrade the biophysical world, while manufacturing new natures in cases where that world is physically fungible**. In short, nature’s neoliberalisation is about conservation and its two antitheses of destroying existing and creating new biophysical resources. (Castree 2008: 150) A similar contradiction arises in techno-fixes for environmental

problems: such innovations reconceptualize and redesign natural resources for more effective commoditization, while also accounting for such resources in its own market-like image.

Biofuel is popular because it is a powerful psychological palliative --- their authors are biased to hype their internal link and impact claims for money and consensus.

Giampietro and Mayumi 9 – *Professor of Environmental Science, **Professor of Arts and Sciences

Mario Giampietro and Kozo Mayumi, “The Biofuel Delusion,” Google Book [PDI]

As discussed earlier, **the interest in energy alternatives** to oil **has been primed** in this decade **by** two major issues: global **warming** associated with the green- house effect, **and peak oil**. Given these two problems, and ruling out the option that humans will consider

alternative patterns of development not based on the maximization of GDP, **it is almost unavoidable to conclude that what we**

need is a primary energy source that does not produce GHGs, and **is renewable**. For those not expert in the field of energy analysis (and in the analysis of the metabolism of complex adaptive systems) it is natural to come up with the simple sum $1 + 1 = 2$ and conclude that producing biomass for biofuel kills two birds with one stone. For those supporting this idea, the gospel is always the same: • producing biomass for biofuel will absorb the CO₂ that will be produced when using that biofuel, therefore this is a zero-emissions procedure; and • since the production of biomass uses solar energy, the supply of biofuel from

biomass is renewable. Hence, the substitution of barrels of **oil with** barrels of **biofuel means** that **we need no**

longer question the myth of **perpetual economic growth** (the maximization of GDP growth and a perpetually expanding

human population). **Unfortunately, things are not that simple and the ‘magic solution’ is** magic only in **science**

fiction and in the promises made by politicians. **But given that Western civilization is** **terrified** by the idea that it could

crumble like the great civilizations of the past, **people** **desperately need to believe** in the existence of a **silver**

bullet that can solve sustainability problems. This explains why the **myth of biofuels** is a

fantastic window of opportunity for both academic departments **looking for research funds**

and politicians looking for an **easy consensus** This point is well illustrated by fragments from a letter that US Senator Ken

Salazar sent to the Colorado Springs Gazette (Box 9.1). In this situation, **everyone has to jump on board the** **biofuel**

bandwagon to avoid being labelled as being against sustainability. It really does not seem to matter that the presumed economic benefits of biofuels, such as the creation of jobs in rural areas, completely ignore the biophysical foundations of the economic process. A larger requirement of jobs for a given activity not only provides income to families, but also increases the costs of those goods and services requiring too much labour. Suggesting that we move a big chunk of the workforce into agro-biofuel production in a developed country is similar to suggesting a return to harvesting crops manually to increase

the number of jobs in agriculture. **It is** **mistaken reasoning**, even without considering the weak analyses of agro-biofuel sustainability. But **in**

this situation of denial, scientific knowledge no longer matters. Even those who are sceptical and want to flag up the existence of serious problems with large-scale agro-biofuels must start out by confirming that agro-biofuels are the solution to our sustainability problem in order to gain the legitimacy and attention of the scientific community. This is illustrated by the following passage from a policy statement by the Ecological Society of America. The statement assumes – as did Senator Salazar – that the given target of biofuel production is a feasible one (Box 9.2).

Globalization Inevitable

Globalization of vegetable market already exists

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, "Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Globalization has also now **become increasingly important among vegetable producers** as **indicated by** the recent **massive increases in international trade of fresh and lightly processed vegetable crops**. As a result of the increased frequency of world travel, **there is a substantially greater variety of vegetable crops available worldwide in many local markets**. Worldwide the **total volume traded in vegetables has increased fivefold** from 1965 to 2005 [5]. The European Union (EU), followed by North America and Japan, are the world's most important fresh vegetable import regions. A large share of this comes from Africa, Latin America and the Caribbean, and from China, each contributing roughly one-tenth to overall vegetable exports. While more than 75% of global vegetable production takes place in Asia and in Oceania, only about 12% of the total value of exported horticultural products is generated in Asia and in Oceania regions [5]. Because of the large share that Asia and Oceania has in global population, domestic markets and their requirements are likely to continue to be more important in the near future than the attraction of export markets.

GMOs Inevitable

Squos solves GMO development

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, "Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

The **genetic improvement of vegetables through breeding has to address and satisfy the needs of both consumers and growers**. The general objectives for farmers are **good yield, disease** and **pest resistance, uniformity** and **abiotic stress resistance**. Objectives for consumers are **quality, appearance, shelf life, taste, and nutritional value**. **Vegetable product innovation is necessary for maintaining the interest of today's consumer**. Quality in vegetable crops, in contrast to field crops, is often more important than yield. For farmers to survive, varieties must be accepted by the market. Thus, color, appearance, taste, shape, are usually more important than productivity. For example, tomatoes to be used either fresh or in processing must have distinct quality characteristics. **Fresh tomatoes must have acceptable flavor, color, texture, and other taste parameters to satisfy consumer demands and handling requirements. Processing tomatoes, on the other hand, must have intrinsic rheological characteristics that make them suitable for** various processing applications, such as **juice, ketchup, or sauce** production. The final goal of vegetable breeding programs is then to release new varieties having elite combinations of many desirable horticultural characteristics.

Industrial Ag Bad

Industrial agriculture is unsustainable – collapse coming now – guarantees food conflict and extinction

Ehrlich and Ehrlich 13

(Paul R. Ehrlich (President of the Center for Conservation Biology @ Stanford University) and Anne H. Ehrlich, Professor of Biology and Senior Research Scientist in Biology @ Stanford University “Can a collapse of global civilization be avoided?,”

<http://rspb.royalsocietypublishing.org/content/280/1754/20122845.full>) [PDI]

What is **the likelihood of** this set of **interconnected predicaments** [27] **leading to a global collapse** in this century? There have been many definitions and much discussion of past ‘collapses’ [1,3,28–31], but a future global collapse does not require a careful definition. It could be triggered by anything from a ‘small’ nuclear war, whose ecological effects could quickly end civilization [32], to a more gradual breakdown **because famines, epidemics and resource shortages cause a disintegration of central control within nations, in concert with disruptions of trade and conflicts over increasingly scarce necessities**. In either case, regardless of survivors or replacement societies, **the world familiar to anyone** reading this study and the well-being of the vast majority of people **would disappear**. How likely is such a collapse to occur? **No civilization can avoid collapse if it fails to feed its population**. The world’s success so far, and the prospective ability to feed future generations at least as well, has been under relatively intensive discussion for half a century [33–40]. **Agriculture made civilization possible**, and over the last 80 years or so, **an industrial agricultural revolution has created a technology-dependent global food system. That system**, humanity’s single biggest industry, has generated miracles of food production. But it **has** also **created serious long-run vulnerabilities**, especially **in its dependence on stable climates, crop monocultures, industrially produced fertilizers and pesticides, petroleum, antibiotic feed supplements and rapid, efficient transportation**. Despite those food production miracles, today at least two billion people are hungry or poorly nourished. The Food and Agriculture Organization estimates that increasing food production by some 70 per cent would be required to feed a 35 per cent bigger and still growing human population adequately by 2050 [41]. What are the prospects that *H. sapiens* can produce and distribute sufficient food? To do so, it probably will be necessary to accomplish many or all of the following tasks: severely limit climate disruption; restrict expansion of land area for agriculture (to preserve ecosystem services); raise yields where possible; put much more effort into soil conservation [3]; increase efficiency in the use of fertilizers, water and energy; become more vegetarian; grow more food for people (not fuel for vehicles); reduce food wastage; stop degradation of the oceans and better regulate aquaculture; significantly increase investment in sustainable agricultural and aquacultural research; and move increasing equity and feeding everyone to the very top of the policy agenda. **Most of these long-recommended tasks require changes in human behaviour thus far elusive**. The problem of food wastage and the need for more and better agricultural research have been discussed for decades. So have **‘technology will save us’ schemes such as building ‘nuclear agro-industrial complexes’** [42], where energy would be so cheap that it could support a new kind of desert agriculture in ‘food factories’, where crops would be grown on desalinated water and precisely machine fertilized. Unhappily, sufficiently cheap energy **has never been produced** by nuclear power **to enable large-scale agriculture to move in that direction**. Nor has agriculture moved towards feeding people protein extracted from leaves or bacteria grown on petroleum [43, pp. 95–112]. **None of these schemes has even resulted in a coordinated development effort**. Meanwhile, growing numbers of newly well-off people have increased demand for meat [44], thereby raising global demand for feedgrains. Perhaps even more critical, **climate disruption may pose insurmountable biophysical barriers to increasing crop yields**. Indeed, if humanity is very unlucky with the climate, there may be reductions in yields of major crops [45], although near-term this may be unlikely to affect harvests globally [46]. Nonetheless, **rising temperatures already seem to be slowing previous trends of increasing yields of basic grains** [45,47], and unless **greenhouse gas emissions** are dramatically reduced, dangerous anthropogenic climate change [48] **could ravage agriculture**. Also, in addition to falling yields from many oceanic fish stocks because of widespread overfishing [49], **warming and acidification of the oceans threaten the protein supply of some of the most nutritionally vulnerable people** [50], especially those who cannot afford to purchase farmed fish. Unfortunately, **the agricultural system has complex connections with all the chief drivers of environmental deterioration. Agriculture itself is a major emitter of greenhouse gases and thus is an important cause of climate disruption as well as being exceptionally vulnerable to its consequences**. More than a millennium of change in temperature and precipitation patterns is apparently now entrained [51], with the prospect of

increasingly severe storms, droughts, heat waves and floods, all of which seem already evident and all of which threaten agricultural production.

That includes the entire Great Plains breadbasket

Ruppert 9

(Michael, a former Los Angeles Police Department officer, investigative journalist, political activist, Poli Sci UCLA, "Confronting Collapse: The Crisis of Energy and Money in a Post Peak Oil World", [PDI])

Modern intensive agriculture is unsustainable. Technologically-enhanced agriculture has augmented soil erosion, polluted and overdrawn groundwater and surface water, and even (largely due to increased pesticide use) **caused serious public health and environmental problems. Soil erosion, overtaxed cropland and water resource overdraft in turn lead to even greater use of fossil fuels and hydrocarbon products.** More hydrocarbon-based fertilizers must be applied, along with more pesticides; irrigation water requires more energy to pump; and fossil fuels are used to process polluted water. ¶ **It takes 500 years to replace 1 inch of topsoil.1* In a natural environment, topsoil is built up by decaying plant matter and weathering rock, and it is protected from erosion by growing plants. In soil made susceptible by agriculture, erosion is reducing productivity up to 65% each year."** **Former prairie lands, which constitute the bread basket of the United States, have lost one half of their topsoil after farming for about 100 years. This soil is eroding 30 times faster than the natural formation rate.'1 Food crops are much hungrier than the natural grasses that once covered the Great Plains. As a result, the remaining topsoil is increasingly depleted of nutrients. Soil erosion and mineral depletion removes about \$20 billion worth of plant nutrients from U.S. agricultural soils every year.24 Much of the soil in the Great Plains is little more than a sponge into which we must pour hydrocarbon-based fertilizers in order to produce crops.**

That causes massive food price spikes

Odland 12

Steve, Contributor at Forbes, "Why Are Food Prices So High?"

<http://www.forbes.com/sites/steveodland/2012/03/15/why-are-food-prices-so-high/>, [PDI]

Food prices have skyrocketed over the past couple years. **While overall U.S. food prices rose about 5% last year,** earlier in the year food inflation was the highest recorded in 36 years. The USDA sees food prices rising 2.5%-3.5% in 2012 but many believe that inflation could be much higher. This is concerning since the economy is not rocketing and interest rates are near zero. Why are food prices so high?¶ Historically, **food was a local issue as supply chains were short. Food supply and demand were largely functions of local crop conditions impacted by weather, growing conditions, pests, etc.**

Over the past century, **supply chains and preservation have improved so that the food trade has become international. Commodities, crops, and finished goods are traded globally. This trade has stabilized prices when local weather or growing conditions are impacted.** But rising populations, largely in Asia, have created demand for crops and finished good from other parts of the world, and have impacted prices.¶ As every student of economics knows, **price is a function of supply and demand. When demand for a commodity rises on constant supply, prices usually rise. Conversely, when demand falls at constant supply, prices usually fall.** The same thing works with supply. **Rising supply on constant demand causes a fall in prices while falling supply on constant demand causes prices to increase. So one could conclude that rising food prices have been caused by falling supply or increased demand. This is true, but there is a lot going on behind the scenes causing this.**

That independently causes nuclear war, genocide, and terrorism

FDI 12

Future Directions International, Independent, not-for-profit research institute based in Perth, "International Conflict Triggers and Potential Conflict Points Resulting from Food and Water

Insecurity” Workshop Report, May 25,

http://www.futuredirections.org.au/files/Workshop_Report_-_Intl_Conflict_Triggers_-_May_25.pdf, [PDI]

In his book, *Small Farmers Secure Food*, Lindsay Falvey, a participant in FDI’s March 2012 workshop on the issue of food and conflict, clearly expresses **the problem and why countries across the globe are starting to take note**. He writes (p.36), “...**if people are hungry, especially in cities, the state is not stable – riots, violence, breakdown of law and order and migration result.**” **“Hunger feeds anarchy.”** This view is also shared by Julian Cribb, who in his book, *The Coming Famine*, writes that if **“large regions of the world run short of food, land or water in the decades that lie ahead, then wholesale, bloody wars are liable to follow.”** He continues: **“An increasingly credible scenario for World War 3 is not so much a confrontation of super powers and their allies, as a festering, self-perpetuating chain of resource conflicts.”** He also says: **“The wars of the 21st Century are less likely to be global conflicts with sharply defined sides and huge armies, than a scrappy mass of failed states, rebellions, civil strife, insurgencies, terrorism and genocides, sparked by bloody competition over dwindling resources.”** As another workshop participant put it, people do not go to war to kill; they go to war over resources, either to protect or to gain the resources for themselves. Another observed that hunger results in passivity not conflict. Conflict is over resources, not because people are going hungry. A study by the International Peace Research Institute indicates that **where food security is an issue, it is more likely to result in some form of conflict.** Darfur, Rwanda, Eritrea and the Balkans experienced such wars. Governments, especially in developed countries, are increasingly aware of this phenomenon. The UK Ministry of Defence, the CIA, the US Center for Strategic and International Studies and the Oslo Peace Research Institute, **all identify famine as a potential trigger for conflicts and possibly even nuclear war.** While some countries are beginning to take note of the need to provide food security as the first and fundamental step towards peace and general security, many others are not aware. This paper seeks to raise awareness of the pending crises and to provide some ideas on the way forward at an international, state and local level. It looks at conflict in its different forms; from minor arguments between landowners to outright war between states. Thomas Homer-Dixon, director of the Waterloo Institute for Complexity and Innovation, has gone some way towards determining what drives conflict, using an interdisciplinary framework. In his book *Environment, Scarcity and Violence*, he explains that **environmental – and by extension - agricultural stress, by itself does not cause violence.** Page 10 of 22 **Other factors must coincide to bring about violent conflict, such as the failure of economic institutions and government.** The danger exists when several negative events work together to reach a crisis point; it is just this scenario of multi-layered stresses that countries could be confronting by 2050. **Conflicts can vary in scale and complexity, covering the full spectrum from arguments between neighbours to outright war between states.** The World Food Programme has categorised these conflicts along the following lines: civil conflict, interstate war, democratic and authoritarian breakdowns, protests and rioting, and communal violence.

Controls the root of all impacts – food prices make global instability inevitable.

Lindsay 11

Greg, "Let Them Eat... What? High Food Commodity Prices Could Cause a Global Revolution," 8/30/11 <http://www.fastcompany.com/1776907/let-them-eat-what-high-food-commodity-prices-could-cause-global-revolution>, [PDI]

New evidence suggests **the Arab Spring wasn't caused by the slow boiling of political grievances, but by a sudden rise in food prices.** Next year, **prices will soar even higher.** Letting them eat cake has always been a surefire way to spark a revolution, but did a spike in food prices, as opposed to a thirst for liberty, ignite the Arab Spring? And is that just the first of a series of much worse conflagrations? That’s the conclusion of a scientific paper submitted for publication earlier this month by researchers at the New England Complex Systems Institute, which found a causal relationship between critically high food prices and social unrest. **Using the United Nations Food and Agriculture Organization’s Food Price Index as a benchmark, the paper’s authors argued that past a certain price point for food—which was crossed shortly before the global food riots in 2008 and again in late 2010 on the cusp of the Arab Spring—citizens begin to look at their rulers differently.** To borrow the lingo of complexity science, **the relationship between food prices and the consent of the governed is “non-linear,” i.e. “widespread unrest does not arise from long-standing political failings of the system,” the authors wrote, “but rather from its sudden perceived failure to provide essential security to the population.”** All’s quiet, in other words, until a certain threshold is crossed, when all hell breaks loose. And now the bad news: If current trends continue, the authors note, prices will permanently cross that barrier as early as next July. Prepare for

a lot of angry people.¶ What's causing this run-up in prices, even as global cereals production is at an all-time high? **The stock answer is increasing prosperity; an emerging middle class wants an American middle class diet.** This dietary shift is non-linear, too--people don't simply eat more grain, but switch to eating pork, which requires six times as much grain to raise it. (That's why China has a strategic pork reserve and why Brazil has plowed under the Cerrado to feed it.) As Oxford economist Paul Collier notes in his book *The Plundered Planet*, the relationship between income elasticity and the price (in-)elasticity of food means that "quite modest increases in global income will drive food prices up alarmingly unless matched by increases in supply."¶ But that's not what the paper's authors found. In a separate, as-yet-unpublished paper, they attribute the price rise to two distinct causes: **"the price peaks are due to speculators causing price bubbles, and the background increase... is due to corn to ethanol conversion."** The latter makes perfect sense: Instead of increasing production to feed a growing population, **ethanol subsidies have the perverse effect of feeding fewer people despite more food.** But if speculators were responsible for the price spikes, **and the spikes were responsible for the Arab Spring, then who ultimately deserves the credit for deposing Mubarak and Gaddafi, and the blame for bringing millions to the brink of starvation?**¶ A year ago, in an article for *Harpers*, the journalist Frederick Kaufman laid the blame at the feet of Goldman Sachs. The bank had been the first to create an index fund pegged to commodity futures, including corn and several varieties of wheat. A hallmark of these funds is that they continually roll their positions over--and over, and over--to keep investors' money busy elsewhere.¶ **The model proved so appealing, Kaufman reported, that commodity index holdings soared from \$13 billion in 2003 to \$317 billion in 2008. By 2008, an anonymous trader told Kaufman, the mounting pressure of all that money pouring into futures had caused contango in the wheat markets.** Contango is the market phenomenon in which futures prices jump ahead of the current price, causing trading algorithms to drive up the spot prices to chase the futures prices. **"At which point the markets veered into insanity,"** Kaufman wrote.¶ In this version of events correct? The OECD Trade and Agriculture Directorate cleared speculators of any blame in its own investigation into the 2008 commodities bubbles, without fingering a culprit of its own. **With food prices once again hovering on the brink, it's incumbent to find one or the Arab Spring may transition to the Global Spring.**

AT Food Stamps

Cause obesity and inter-generational transfers rather than alleviating poverty

Glasner 12

Cash is Better Than Food Stamps in Helping Poor Originally published in Bloomberg News February 27, 2012 Edward Glaeser (Glimp Professor of Economics, Harvard University) <http://www.hks.harvard.edu/centers/rappaport/events-and-news/op-eds/cash-is-better-than-food-stamps-in-helping-poor> [PDI]

But understanding the limits of human rationality doesn't lead naturally to an increased faith in public-sector control. After all, governments are made of people and are subject to psychological quirks. I've argued that **governments**, which have only limited incentives to get things right, **may make far more mistakes than ordinary consumers. Given the prevalence of obesity among poorer Americans, it's hard to see the sense in pushing the poor to spend more on food, except that this spending satisfies agricultural advocates.** A somewhat better rationale for in-kind transfers is that we are trying to get parents to spend more on services that will help their children. **Both food stamps and housing vouchers can be seen as tools for pushing intra-household redistribution from poor parents to their children. Yet the Moving-to-Opportunity experiment, which used random trials to evaluate housing vouchers, found that such assistance made parents happier but did little to improve long-run outcomes for children. The childhood obesity problem should also make us wonder whether food stamps are really good for kids.**

Creates an incentive to be unemployed

Glasner 12

Cash is Better Than Food Stamps in Helping Poor Originally published in Bloomberg News February 27, 2012 Edward Glaeser (Glimp Professor of Economics, Harvard University) <http://www.hks.harvard.edu/centers/rappaport/events-and-news/op-eds/cash-is-better-than-food-stamps-in-helping-poor> [PDI]

Perhaps the best explanation for the rise in in-kind transfers is that taxpayers care about how aid recipients use their money. Economists can argue for the value of freedom until they are blue in the face, but there will always be a scandal when public aid, such as the debit cards issued after Hurricane Katrina, is spent at strip clubs. Vilification of welfare recipients makes it particularly hard to make the case for entrusting them with unrestricted cash, even if that is the most effective means of administering aid. But the added cost of relying on in-kind transfers is that, unlike our cash-based programs, these efforts are rarely well- designed to limit the adverse incentives that come from anti- poverty programs. Any assistance program that channels aid to people who earn less creates an incentive to work less hard. Any aid that is asset-tested destroys the incentive to accumulate capital. Well-designed programs, such as the Earned Income Tax Credit, do as much as possible to limit these negative incentives and even create some positive effects. That credit initially increases with earnings, creating an incentive to go to work; benefits taper off slowly, which limits the tendency to work too little. The design is smart, and the program seems to have encouraged employment substantially. The 1996 welfare reform that produced Temporary Aid to Needy Families was also aimed at creating better incentives for employment. By contrast, **food stamps and Medicaid (USBOMDCA) are more like old- style welfare systems that create strong incentives to earn less. To get food stamps, you typically need to have less than \$2,000 in assets, so recipients are pushed to save nothing. Although food stamps typically require recipients to be employed, every extra dollar of "net income" reduces the benefit by 30 cents. Housing vouchers require recipients to earn less than 50 percent of median income in their area, and the voucher amount also decreases by 30 cents as income increases by a dollar. A family that gets both food stamps and a housing voucher loses more than 50 percent of each extra dollar earned in the form of reduced benefits. Medicaid (USBOMDCA) benefits, likewise, disappear with significant income or assets.**

Laundry list of bad economic impacts from welfare policies

Cowen 02

Cowen, Tyler, economist at George Mason. "Does the welfare state help the poor?." Social Philosophy and Policy 19.1 (2002): 36-54. [PDI]

Casual observers frequently underestimate the effects of compounded economic growth on real income. If the annual growth rate of American gross domestic product had been one percentage point lower, between 1870 and 1990, America today would be no richer than Mexico. Similarly, if a country can grow at a rate of five percent per annum, it takes just over eighty years for it to go from a per capita income of \$500 to a per capita income of \$25,000. At a growth rate of one percent, that same improvement takes 393 years.¹⁹ It remains an open question how much the welfare state limits growth, but some negative effect appears to be present. First, **the empirical literature on economic growth suggests that non-infrastructure government spending lowers the growth rate**, although systematic data on welfare state spending per se have not been available.²⁰ Second, **a welfare state will cause some people to substitute welfare dependency for private work, thus lowering the number of individuals in the active work force or causing them to work less hard**. Welfare payments are typically withdrawn from individuals as they earn more income, and thus serve as a high marginal tax rate on the economic efforts of the poor. **The poor could be engaging in more productive exchange with other individuals in the economy, but to some extent they desist, for fear of losing welfare benefits**.²¹ Third, the **taxes used to support the welfare state discourage taxpayers from working or otherwise creating economic value**. Measures of the "excess burden" of taxation vary, but most public finance economists regard as reasonable a figure of twenty cents on the dollar raised for the United States, and more in countries with higher marginal tax rates, such as Western Europe or Canada. In other words, for each dollar raised by taxation, the resulting distortions bring twenty cents' worth of cost. **A welfare state will plausibly have a negative effect on innovation. By withdrawing individual labor from the productive sector of the economy, the rate of discovery is likely to fall**. Both the poor and the taxpaying non-poor will work less when a welfare state is in place. **If we think of research and development, broadly construed, as one kind of work, we can expect the rate of growth to decline**. Even if the poor do not participate in ideas production directly, they do so indirectly. To provide a simple example, to the extent it is harder or more costly to hire good janitors, and other forms of cheap labor, fewer research laboratories will be opened. Note that these costs are not "replaced" by an increase of labor supply or investment elsewhere in the economy. **The welfare state permanently discourages various individuals from contributing to technological development and thus lowers the rate of economic growth in lasting fashion**.²²

And growth turns poverty

Cowen 02

Cowen, Tyler, economist at George Mason. "Does the welfare state help the poor?." Social Philosophy and Policy 19.1 (2002): 36-54. [PDI]

If the welfare state damages the prospects for economic growth, it is problematic whether it benefits the poor as a general class. As shown in the early part of this paper, redistribution has only a very limited ability to make the poor better off, given the small amount that can be redistributed. As a matter of empirical fact, **it is economic growth that lifts most people out of poverty, not transfer payments. If we consider the city-state of Hong Kong, virtually all of its citizens were poor in 1950. By 1990 Hong Kong had per capita income comparable to other developed countries, even given that it absorbed a periodic influx of poor migrants from mainland China. This elimination of poverty was fueled almost completely by economic growth**. The economic growth of the West has been an effective anti-poverty mechanism in similar fashion. By modern measures, most of the individuals in the 1920s were poor. Yet the 1920s, in their time, were thought of as a highly prosperous decade. Similarly, about one-third of the American population was poor in the 1950s, by current measures, although again at the time the 1950s were regarded as wealthy without precedent. The difference, again, comes from continued economic growth.

AT Africa

African food security is impossible due to corrupt governments and poverty – there's no money to invest in agriculture and economic barriers prevent new farms. The aff can't create food out of nowhere

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Food production in Africa has also been closely influenced by political factors. Like in many other sectors, the issues of politics and governance are very influential on the agricultural sector in the case of Africa. According to Nelson (2009). **most of the African nations have unstable governments due to lack of political will and ethnicity conflict. This has led to a series of civil wars.** For instance, **Somalia, DRC Congo, Sudan, and Ivory Coast have been engaged in political instability. This has ended up jeopardising agriculture in the sense that farmers fear looting and destruction of products** (Simms et al, 2004). The **civil wars have also led to the fleeing of people from their land, thus leading to under utilisation of such land** suitable **for agricultural** purposes. Through this process, the **overall output from agriculture is reduced**. The aspect of politics is also strongly related with policy making and structuring of the agricultural sector. **Most of the African leaders have been identified as lacking political responsibility** (Sage. 2010). **This causes their reluctance in the formulation of policies and programmes that support and encourage agriculture.** For instance, the issue of land policy has been deliberately politicised by the governments. **This is closely influenced by corruption where many of the political leaders have been associated with grabbing of land and later leaving it under utilised** (Tettey et al, 2003). Gaps in the governments' policies have also initiated careless use of land, whereby **human settlement is creating strong pressure on agricultural land**; this is more evident **in West Africa particularly in Nigeria. Economic barriers have also been at a high level in Africa.** As depicted by Atehnkeng (2007), **most of the African nations are economically poor**, whereby poverty levels and unemployment are at an alarming rate (Pauw and Thurlow, 2011). The per capita incomes in most of the Africa countries are also low **thus obstructing investment**. The economic crisis in Africa does not only affect agriculture but all other sectors (Macaskill, 2009). In the case of agriculture, the **economic backwardness of most of the nations has led to little investment in agriculture. Most of the farmers are incapacitated from acquiring** the much needed **capital for** engaging in **extensive commercial agriculture**. For instance, **the price of buying farm machinery among other farm inputs is very high** (Simms et al, 2004). **This** phenomenon **makes** many **people** to **engage in small scale farming which does not offer the much needed output.**

AT China

Improved agricultural policy in China causes global warming and terrorism

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Through the development in agricultural policy and trade, most Asian countries are on their way to achieving economic independence, food security and poverty eradication (Bahigwa et al, 2005). **However, there are certain negative effects associated with these developments. The highly industrialized countries are already feeling the negative impacts of global warming caused by pollution from the many manufacturing industries. China being one of the countries is being challenged to cut on the level of pollution. Asia as a continent also has a very wide gap between the rich and the poor. It has also suffered from terrorism activities** making some countries like Afghanistan suffer from acute food insecurity (Molony and Smith, 2010). The parting shot for agricultural policy and trade development in Asia would be that the continent is on the right track and it should aim to ensure increase in agricultural research but at the same time monitor the level of pollution for a balanced benefit from agricultural activities. Attention should also be paid on the other line industries to ensure that not all people concentrate in agriculture leaving an imbalance in other sectors. The overall objective of agricultural policy and trade in both Africa and Asia is to ensure food security for economic growth and quality life. But what is the picture of the global food situation?

Solvency and Impact Defense

Alt Causes

Poverty is the root cause of food insecurity

Tscharntke et al. 12, (Teja Tscharntke, Agroecology, Department of Crop Sciences, Georg-August University, Yann Clough, Department of Crop Sciences, Georg-August University, Thomas C. Wanger, Centre for Conservation Biology, Department of Biology, Stanford, Louise Jackson, Department of Land, Air and Water Resources, University of California, Davis, Iris Motzke, Agroecology, Department of Crop Sciences, Georg-August University, Ivette Perfecto, School of Natural Resources and Environment, University of Michigan, John Vandermeer, Department of Ecology and Evolutionary Biology, University of Michigan, Anthony Whitbread, Crop Production Systems in the Tropics, Georg-August University, “Global food security, biodiversity conservation and the future of agricultural intensification,” *Biological Conservation* 151 (2012) 53–59, http://site.xavier.edu/Blairb/sustainable-agriculture-2/7---agriculture-and-biodive/tscharntke_biodiv-agricultu.pdf) [PDI]

Food security and food sovereignty are needed where the hungry live, which is often within a landscape matrix of ecosystems that are rich in biodiversity (Perfecto and Vandermeer, 2010). **Hunger** – somewhat counter intuitively – **is not so much linked to the quantity of food that is globally produced but to poverty** (Adams et al., 2004; Sachs et al., 2009). **The majority of poor people live in rural areas with little or no access to productive agricultural lands. Hence, hunger is linked to farm size: 90% of farmers world- wide farm on <2 ha**, producing food where it is needed – in much of the developing world. **Eighty percent** of the hungry live in developing countries with 50% being smallholders (World Bank, 2007). Therefore, smallholders rather than large-scale commercial farmers are the backbone of global food security (Horlings and Marsden, 2011; Chappell and LaValle, 2011).

Increasing production doesn't solve food security—it's a question of distribution and efficiency.

Tscharntke et al. 12, (Teja Tscharntke, Agroecology, Department of Crop Sciences, Georg-August University, Yann Clough, Department of Crop Sciences, Georg-August University, Thomas C. Wanger, Centre for Conservation Biology, Department of Biology, Stanford, Louise Jackson, Department of Land, Air and Water Resources, University of California, Davis, Iris Motzke, Agroecology, Department of Crop Sciences, Georg-August University, Ivette Perfecto, School of Natural Resources and Environment, University of Michigan, John Vandermeer, Department of Ecology and Evolutionary Biology, University of Michigan, Anthony Whitbread, Crop Production Systems in the Tropics, Georg-August University, “Global food security, biodiversity conservation and the future of agricultural intensification,” *Biological Conservation* 151 (2012) 53–59, http://site.xavier.edu/Blairb/sustainable-agriculture-2/7---agriculture-and-biodive/tscharntke_biodiv-agricultu.pdf) [PDI]

Current global food production is sufficient to feed the world, but the hungry cannot afford the food

(>1 billion of people are hungry and >2 billion malnourished today; Chappell and LaValle, 2011; FAO, 2011). **The Millennium Development Goals (UN Millennium Project, 2005) target of halving the number of hungry before 2015 is more related to food distribution than to agricultural intensification.** Hence, food security is largely independent of the land sharing vs sparing debate. The UN Special Rapporteur on the Right to Food, Olivier De Schutter (2011), highlights in his recent report that small-scale ecological farming is already very productive and can do even better (see also IAASTD, 2009). He calls for increases of food production where the hungry live and the use of agroecological methods. These methods of improving yields are more accessible and viable for poor smallholder livelihoods than high agrochemical inputs. The notion of eco-farming for food security can be expanded to include the matrix of adjacent wild land, given

the importance of landscape complexity for agroecological functions such as pest management, pollination, soil and water quality (Tscharntke et al., 2005, 2007a; Bianchi et al., 2006; Perfecto et al., 2009; Ricketts et al., 2008; Jackson et al., 2009; Blitzer et al., 2012). The huge surplus production of large commercial farms generally contrasts with the low surplus of smallholder enterprises. While increasing urbanization in the tropics necessitates high food production for regional and global markets, it often leads to cheap retail prices. However, this does not indicate eventual inefficiency of smallholdings (Barrett et al., 2009; see Badgley et al., 2007), but simply their limited importance for large-scale markets. Increasing migration from the tropical countryside into big cities is driven by poverty, hunger and income opportunities offered by industrialization of urban centres. Hence, support for more efficient, profitable and sustainable production of smallholder farming enterprises and more independence (sovereignty) from large commercial operations (at national and international levels) may help to better secure access to food of the rural poor.

2.3. **Food usage is inefficient – one third is wasted and one third fed to livestock** Why focus on increasing food production when the efficiency of food usage is low? A recent report commissioned by the FAO estimates that **globally a third of harvested food is thrown away** (Gustavsson et al., 2011; **or even half of all food is lost**, Foley et al., 2011). These food losses occur in industrialized countries as well as in developing countries, but in the latter 40% losses occur at post-harvest and processing levels, whereas in the industrialized countries, 40% occur at retail and consumer levels (Gustavsson et al., 2011). **Improving post-harvest technologies** (in particular for smallholders) **and reducing food waste is a major challenge** for our future. **Inefficient use of food stocks also occurs by feeding cereal and fodder starch to animals, which are poor converters of energy into meat. Livestock requires on average 7 kcal input (cereal grain feed) for every kcal generated** (range: 16 kcal for beef to 3 kcal for broiler chickens). Currently, cereals fed to livestock make up 30–50% of global cereal production (FAO, 2006; de Schutter, 2011). With meat consumption predicted to rise from 37 to 52kg/person/year (2000–2050; FAO, 2006) cereals are increasingly diverted to animal feed streams, a trend that should be reversed. Cereals and grain legumes convert energy into protein much more efficiently than animals do. **Shifting diets from beef to poultry or from grain-fed to pasture-fed beef would already meaningfully increase food supplies by closing a ‘diet gap’** (Foley et al., 2011). **Efforts to promote more efficient food systems** (Ericksen, 2008) **must be seriously considered before championing the widespread adoption of increasing food production with high-input agricultural intensification** (independent of the land sharing vs sparing debate).

Biofuels, land grabs are alt causes—aff no solvo

Tscharntke et al. 12, (Teja Tscharntke, Agroecology, Department of Crop Sciences, Georg-August University, Yann Clough, Department of Crop Sciences, Georg-August University, Thomas C. Wanger, Centre for Conservation Biology, Department of Biology, Stanford, Louise Jackson, Department of Land, Air and Water Resources, University of California, Davis, Iris Motzke, Agroecology, Department of Crop Sciences, Georg-August University, Ivette Perfecto, School of Natural Resources and Environment, University of Michigan, John Vandermeer, Department of Ecology and Evolutionary Biology, University of Michigan, Anthony Whitbread, Crop Production Systems in the Tropics, Georg-August University, “Global food security, biodiversity conservation and the future of agricultural intensification,” *Biological Conservation* 151 (2012) 53–59, http://site.xavier.edu/Blairb/sustainable-agriculture-2/7---agriculture-and-biodive/tscharntke_biodiv-agricultu.pdf) [PDI]

The EU biofuel directive (2008) **requires that 10% of all transport fuel should come from biofuel by 2050** (Vidal, 2010). In general, bioenergy production tripled in the last decade and **until 2020, 15% of global cereal and plant oil production as well as 30% of sugarcane production is expected to go into biofuel** (OECD-FAO, 2011). **This is a policy with unintended consequences and does not help mitigate hunger. On the contrary, this directive increases the rate of land grabs** (see the next section below) **and increases food prices**. According to a World Bank Report (2008) and many other expert opinions, **biofuels were responsible for a meaningful part of the global food price spike in 2008. Further, large-scale destruction of rainforests for oil palm plantations (mainly in Indonesia and Malaysia) results in the destruction of major global carbon and biodiversity reservoirs**. While the elimination of oilpalm-based biofuel production is unlikely, designing landscapes that integrate smallholder agroforestry systems between plantations and conservation areas may provide a more sustainable solution, especially if climate policies allow REDD credits to be traded (Koh et al., 2009; Koh, 2011).

2.5. Land grabbing and speculation on food commodities jeopardizes food security

Food security and food sovereignty is further hindered by direct and indirect “land grabbing”, because

local food security, especially in developing countries, can be undermined by the export of agricultural products. According to von Witzke and Noleppa (2011), indirect land grabbing applies, for example, to the European Union (EU), the world's largest net importer of agricultural products, which are grown on an agricultural area larger than the territory of Germany. More than half of these imported products are soybeans, mainly from South America (most of the soy is genetically modified and 50% of it is used for animal feed). Direct land grabbing refers to the fact that **international investors are increasingly leasing or buying farmland in Africa, Asia, and Latin America for food and fuel production. This is a serious threat to food self-sufficiency and food sovereignty in most cases** (La Via Campesina, 2010). Policy instruments that incorporate the views and land rights of communities of local smallholders have been difficult to design and implement (Horlings and Marsden, 2011).

Water shortages and droughts are a huge alt cause to food security.

Hanjra and Qureshi 10, (Munir A. Hanjra, International Centre of Water for Food Security, Charles Sturt University, M. Ejaz Qureshi, Fenner School of Environment and Society, The Australian National University, "Global water crisis and future food security in an era of climate change," Food Policy 35 (2010) 365–377, <http://www3.dogus.edu.tr/cerdem/images/Environment/Global%20water%20crisis%20and%20future%20food%20security%20in%20an%20era%20of%20climate%20change.pdf>) [PDI]

New investments in irrigation infrastructure and improved water management can minimise the impact of water scarcity and partially meet water demand for food production (Falkenmark and Molden, 2008). However, **in many arid or semi-arid areas and seasonally in wetter areas, water is no longer abundant.** The high economic and environmental costs of developing new water resources limit expansion in its supply (Rosegrant and Cai, 2000). **Once assumed unlimited in supply, now even in developed countries water is considered scarce.** Further, it is believed that **climate change will increase water scarcity in the coming decades** (Lobell et al., 2008). **Even if new supplies are added to existing ones, water might not be sufficient for increased food demand** (Brown and Funk, 2008). **The severity of the water crisis has prompted the United Nations (UNDP, 2007) in concluding that it is water scarcity, not a lack of arable land, that will be the major constraint to increased food production over the next few decades.** For instance, **Australia is one of the major food producing and land abundant countries but recent drought reduced its agricultural and food production substantially** (Goesch et al., 2007). According to 2001 and 2006 land use data by the ABS (2008), in the Murray–Darling Basin (MDB) of Australia, there was a decline of about 40% in rice and cereals production. **Drought in other food producing countries such as parts of the United States of America and Europe is regarded as one of the major factors that contributed to the global food price crisis of 2008** (Piesse and Thirtle, 2009). **Inequitable distribution of available food supplies, poverty, and inequality result in entitlement failure for the poor to exacerbate the food security issues because those lacking water entitlements are often food insecure** (Molden et al., 2007; Sen, 1989, 2001). The high and widening inequality and income gap between the rich and the poor is a serious concern; though it is amazing that while one billion people are hungry in the developing world (Barrett, 2010), a significant proportion of the population in the developed countries is obese (Schäfer-Elinder, 2005).

Alt causes

Eurekalert 8 2/19/08 (pg. http://www.eurekalert.org/pub_releases/2008-02/iwfp021908.php) [PDI]

World fertilizer prices rose steadily from 2004 through 2006—then soared in 2007. Food prices also rose sharply. Reasons include new demands for food crops, especially corn (or maize), for ethanol and other biofuels, increased energy and freight prices, higher demand for grain-fed meat in the emerging economies of China, India, and Brazil, and increased use of natural gas as liquefied natural gas (**LNG**), says Dr. Balu Bumb,

leader of the Policy, Trade, and Markets Program of IFDC—An International Center for Soil Fertility and Agricultural Development. “Farmers in industrialized countries are applying high levels of fertilizers to maximize harvests of grain at the highest prices ever,” Bumb says. “Those forces drive fertilizer prices higher.

AT Food Prices

Empirically denied and non-unique – food prices already at record high

The Guardian, 10-4-'12 ("Food prices are at their highest for six months. Get all the data since 1990" <http://www.guardian.co.uk/news/datablog/2012/oct/04/global-food-price-index-rise-data>) [PDI]

The real food price index today rose by 1.4% to its highest point in six months and is now 44.2% higher than it was between 2002 and 2004. The inflation-adjusted price of sugar fell by 4% but is almost twice its 2002-2004 level - the biggest multiple across all five indexed food groups - according to the monthly figures published by the United Nations Food and Agriculture Organization. Figures are calculated using price quotations for 55 products, which are split into five food groups and averaged to give the overall index. **Since 1990 the price of sugar has tended to fluctuate more wildly than any of the other four commodity** groups, and has almost invariably been the most expensive relative to 2002-2004 prices. The price of meat, while the second highest in the early 1990s relative to 2002-2004 values, has generally seen lower inflation than the other food groups in the years since. **The inflation-adjusted meat price index is now just 17% above 2002-2004 values,** the lowest across all commodity groups. Dairy products are the second lowest priced in relative terms, currently 25.5% more expensive than they were. **Oil-based foods are 50% higher priced than they were,** while cereals currently cost 75% more than they did between 2002 and 2004. Prices of all food commodities peaked in December 2010 and showed general downward trends in the following months. The latest figures suggest these **decreases have now come to an end, with relative prices rising this month in three food groups as well as overall.**

High prices encourage better ag investment

Kharas 8 (Homi, sr. fellow @ the Brookings Institute, July 29, http://www.brookings.edu/opinions/2008/0729_food_prices_kharas.aspx) [PDI]

The good news is that **higher food prices are exactly what is required to restore balance in the market.** With rising demand and constrained supply the iron law of economics permits no other response. In a market economy, when demand exceeds supply, prices rise. **Higher prices** discourage consumption, but they also **encourage more investment and enhance production.** **Anyone who doubts the link between food prices and agricultural investment should take a close look at the stock price of the world's largest producer of agricultural equipment, John Deere.** While most US shares have taken a beating, **John Deere's share price has doubled and has split two-for-one in the last two years. High food prices are encouraging farmers to invest heavily in new equipment. This pattern is being repeated across the world, with investments in equipment, storage and land improvements.**

They are key to production and productivity

Kharas 8 (Homi, sr. fellow @ the Brookings Institute, July 29, http://www.brookings.edu/opinions/2008/0729_food_prices_kharas.aspx) [PDI]

More food is already being produced in response to higher prices: forecasts for cereals production in 2008 by the Food and Agriculture Organisation **show a significant increase. This should come as no surprise. When prices fell steeply between 1997 and 2002, cereal production declined. Now that prices have risen back to the levels of the mid-1990s, cereal production has resumed its upward trend. Productivity is on the rise.**

Food prices don't affect hunger- it only affects the richest members of other countries

Paarlberg 8 (Robert, professor of political science at Wellesley College, April 22, pg. <http://www.iht.com/articles/2008/04/22/opinion/edpaarlberg.php>) [PDI]

International prices of rice, wheat and corn have risen sharply, setting off violent urban protests in roughly a dozen countries in Asia, Africa and Latin America. **But is this a "world food crisis?"** It is certainly a troubling instance of price instability in international commodity markets, leading to social unrest among urban food-buyers. But **we must be careful not to equate high crop prices with hunger around the world. Most of the world's hungry people do not use international**

food markets, and most of those who use these markets are not hungry. International food markets, like international markets for everything else, **are used primarily by the prosperous and secure, not the poor and vulnerable.** In world corn markets, the biggest importer by far is Japan. Next comes the European Union. Next comes South Korea. Citizens in these countries are not underfed.

Food prices won't threaten extinction

Doug 8 (May 4, pg. <http://www.networkeddemocracy.com/?p=92>) [PDI]

In a sharp rebuttal of the Malthusian assertion that increasing wealth inspires greater fertility, **the evidence of history is that fertility in wealthier countries approaches near zero and can even become negative.** (For example, Russia is facing population decline.) Data and estimates by the U.S. Census Bureau, shown in the graph, show that the global growth rate year over year is declining. Ultimately, world population is expected to ultimately peak and perhaps even drop off a little by 2070. Thus, world population growth is eventually limited as societies reach higher stages of development. 2. As illustrated by Julian Simon's victorious bet against Paul Erhlich, **commodity prices tend to be brought back into line by the market. While there can be dislocation of prices for an extended period of time**, and many people can suffer greatly during that time, **there will ultimately be an adjustment of the prices downward.** In fact, Simon claimed that eventually prices would be lower. 3. Moreover, while population growth is currently outstripping food supply, the Food and Agriculture Organization of the United Nations forecasts that **food supply will be more than sufficient by 2030.** This suggests that the gap between supply and demand is actually decreasing. 4. **Finally, the recent sharp rise commodity prices may significantly related to monetary policy and global commodity speculation.** The U.S. Dollar has been falling, and worries about the stock market are thought to have caused a flight of dollars into commodities, driving up the prices of oil and gold in particular. Speculative interest in these products is probably driving up the prices of other agricultural commodities. **When other investment opportunities become more favorable again, there could be a dramatic flight out of those speculative positions. So, while food insecurity is a major problem** that needs serious attention, **it is stretching the facts to call it the harbinger of the end of civilization** or a dire threat that requires the complete transformation of society. **Catastrophe theories often assume that present conditions will continue on their current trajectory unabated, when in fact the self-organizing nature of modern society means that humanity is always reacting and adjusting to present conditions.**

AT Food Prices – High Prices Good

High prices key to preventing environmental damage

Chatham House 8 [Chatham House is one of the world's leading organizations for the analysis of international issues. It is membership-based and aims to help individuals and organizations to be at the forefront of developments in an ever-changing and increasingly complex world. Thinking About the Future of Food The Chatham House Food Supply Scenarios. Page 5] [PDI]

At the same time, **high food prices permit investment in new agricultural technologies aimed at increasing production while addressing environmental issues** – soil degradation, water contamination, pest resistance, biodiversity loss and greenhouse gas emissions. Over a period of ten years and beyond, **a new eco-technological production approach emerges that includes: crop rotation, cover cropping, agro-forestry, 'green' fertilizers derived from agricultural and food waste, new varieties** (that have resilient, pest-resistant, nitrogenfixing qualities), **more efficient use of inputs through advanced information technology, and reduced water use.** **The new approach has a smaller environmental footprint,** fewer synthetic inputs, better health outcomes and higher yields. **It starts in pockets, coexisting with the old approach, and gradually takes hold as more farmers adopt the new methods.** The old approach gives way and the international food industry and trading rules gradually restructure around the new production paradigm, lifting the environmental and production constraints of the old system. **Per capita food production rises as the new approach spreads and food prices finally begin to fall.**

AT Food Shortages

No food shortages – excess grain production now

Worldwatch Institute 12

(“Global Grain Production at Record High Despite Extreme Climatic Events”

<http://www.worldwatch.org/global-grain-production-record-high-despite-extreme-climatic-events-0>) [PDI]

Global grain production is expected to reach a record high of 2.4 billion tons in 2012, an increase of 1 percent from 2011 levels, according to new research conducted by the Worldwatch Institute’s Nourishing the Planet project (www.worldwatch.org) for the Institute’s Vital Signs Online service. According to the United Nations Food and Agriculture Organization (FAO), the production of grain for animal feed is growing the fastest—a 2.1 percent increase from 2011. **Grain for direct human consumption grew 1.1 percent from 2011**, write report authors Danielle Nierenberg and Katie Spoden. In 2011, the amount of grain used for food totaled 571 million tons, with India consuming 89 million tons, China 87 million tons, and the United States 28 million tons, according to the International Grains Council. The world relies heavily on wheat, maize (corn), and rice for daily sustenance: of the 50,000 edible plants in the world, these three grains account for two-thirds of global food energy intake. Grains provide the majority of calories in diets worldwide, ranging from a 23 percent share in the United States to 60 percent in Asia and 62 percent in North Africa. **Maize production in the United States—the largest producer—was expected to reach a record 345 million tons in 2012**; however, drought in the Great Plains has altered this estimate severely. Maize yields for the 2012–13 growing season are now expected to decrease 13 percent from 2011 production, for a total production of 274.3 million tons. The reliance on grain crops for food security is threatened by more-extreme climatic events, especially droughts and floods. According to the United Nations International Strategy for Disaster Risk Reduction, the World Food Programme, and Oxfam International, some 375 million people will be affected by climate change-related disasters by 2015. By 2050, the FAO notes, 10–20 percent more people will be subject to hunger based on the changing climate’s effects on agriculture, and 24 million more children are expected to be malnourished—21 percent more than if there were no climate change. “The relationship between food security, grain production, and climate change is especially important in 2012,” said Nierenberg, a Worldwatch senior researcher and Nourishing the Planet project director. “The recent drought affecting the United States and the rest of the world show the need to reduce price volatility, move away from fossil fuel–based agriculture, and recognize the importance of women farmers to increase resilience to climate change.” The drought taking place in the Midwest and Great Plains of the United States is considered the country’s worst in 50 years, coming close to matching the late-1930s Dust Bowl. The drought is expected to cost many billions of dollars and could top the list as one of the most expensive weather-related disasters in U.S. history. The global market will be most affected by this drought, as so much of the developing world relies on U.S. corn and soybean production. Food prices have already begun to increase due to lower yields, and price fluctuations will inevitably affect food security around the globe.

AT Food Shortages – Tech/Adaptation

New tech and adaption solve food

Michaels 11 Patrick Michaels is senior fellow in environmental studies at the CATO Institute.

"Global Warming and Global Food Security," June 30, CATO,

<http://www.cato.org/publications/commentary/global-warming-global-food-security> [PDI]

While doing my dissertation I learned a few things about world crops. Serial adoption of new technologies produces a nearly constant increase in yields. Greater fertilizer application, improved response to fertilizer, better tractor technology, better tillage practices, old-fashioned genetic selection, and new-fashioned genetic engineering all conspire to raise yields, year after year.¶ Weather and climate have something to do with yields, too. Seasonal rainfall can vary a lot from year-to-year. That's "weather." If dry years become dry decades (that's "climate") farmers will switch from corn to grain sorghum, or, where possible, wheat. Breeders and scientists will continue to develop more water-efficient plants and agricultural technologies, such as no-till production.¶ Adaptation even applies to the home garden. The tomato variety "heat wave" sets fruit at higher temperatures than traditional cultivars.¶ However, Gillis claims that "[t]he rapid growth in farm output that defined the late 20th century has slowed" because of global warming.¶ His own figures show this is wrong. The increasing trend in world crop yields from 1960 to 1980 is exactly the same as from 1980 to 2010. And per capita grain production is rising, not falling.

AT Food War

No food wars

Salehyan, 8 – Department of Political Science, University of North Texas (Idean, “From Climate Change to Conflict No Consensus Yet,” Journal of Peace Research, May, [PDI])

First, the deterministic view has poor pre-dictive power as to where and when conflicts will break out. For every potential example of an environmental catastrophe or resource shortfall that leads to violence, there are many more counter-examples in which conflict never occurs. But popular accounts typically do not look at the dogs that do not bark. Darfur is frequently cited as a case where desertification led to food scarcity, water scarcity, and famine, in turn leading to civil war and ethnic cleansing.⁵ Yet, food scarcity and hunger are problems endemic to many countries – particularly in sub-Saharan Africa – but similar problems elsewhere have not led to large-scale violence. According to the Food and Agriculture Organization of the United Nations, food shortages and mal-nutrition affect more than a third of the population in Malawi, Zambia, the Comoros, North Korea, and Tanzania,⁶ although none of these countries have experienced full-blown civil war and state failure. Hurricanes, coastal flooding, and droughts – which are all likely to intensify as the climate warms – are frequent occurrences which rarely lead to violence. The Asian Tsunami of 2004, although caused by an oceanic earthquake, led to severe loss of life and property, flooding, population displacement, and resource scarcity, but it did not trigger new wars in Southeast Asia. Large-scale migration has the potential to provoke conflict in receiving areas (see Reuveny, 2007; Salehyan & Gleditsch, 2006), yet most migration flows do not lead to conflict, and, in this regard, social integration and citizenship policies are particularly important (Gleditsch, Nordås & Salehyan, 2007). In short, resource scarcity, natural disasters, and long-term climatic shifts are ubiquitous, while armed conflict is rare; therefore, environmental conditions, by themselves, cannot predict violent outbreaks. Second, even if local skirmishes over access to resources arise, these do not always escalate to open warfare and state collapse. While interpersonal violence is more or less common and may intensify under resource pressures, sustained armed conflict on a massive scale is difficult to conduct. Meier, Bond & Bond (2007) show that, under certain circumstances, environmental conditions have led to cattle raiding among pastoralists in East Africa, but these conflicts rarely escalate to sustained violence. Martin (2005) presents evidence from Ethiopia that, while a large refugee influx and population pressures led to localized conflict over natural resources, effective resource management regimes were able to ameliorate these tensions. Both of these studies emphasize the role of local dispute-resolution regimes and institutions – not just the response of central governments – in preventing resource conflicts from spinning out of control. Martin’s analysis also points to the importance of international organizations, notably the UN High Commissioner for Refugees, in implementing effective policies governing refugee camps. Therefore, local hostilities need not escalate to serious armed conflict and can be managed if there is the political will to do so.



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Topicality

See also the Topicality Notes section in the aff header.

Food Security UN Definition

Four criteria

Wheeler and von Braun 13, (Tim Wheeler, Walker Institute for Climate System Research, Department of Agriculture, University of Reading, Joachim von Braun, Center for Development Research, Department of Economic and Technical Change, University of Bonn, "Climate Change Impacts on Global Food Security," 2 AUGUST 2013, VOL 341, SCIENCE MAGAZINE, http://izt.ciens.ucv.ve/ecologia/Archivos/ECO_POB%202013/ECOPO2_2013/Wheeler%20y%20von%20Braun%202013.pdf) [PDI]

Together, climate change and food security have multiple interrelated risks and uncertainties for societies and ecologies. **The complexity of global food security is illustrated by the United Nations' Food and Agricultural Organization (FAO) (6) definition: (i) the availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports; (ii) access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet; (iii) utilization of food through adequate diet, clean water, sanitation, and health care to reach a state of nutritional well-being where all physiological needs are met; and (iv) stability, because to be food secure, a population, household or individual must have access to adequate food at all times.** It is extremely challenging to assess precisely the current status of global food security from such a broad concept. However, the big picture is clear: **About 2 billion of the global population of over 7 billion are food insecure because they fall short of one or several of FAO's dimensions of food security.** Enormous geographic differences in the prevalence of hunger exist within this global estimate, with almost all countries in the most extreme "alarming" category situated in sub-Saharan Africa or South Asia (7) (Fig. 1).

Food Security Five As

Five As of food security

Chappell and LaValle 09, (Michael Jahi Chappell, Department of Science and Technology Studies, Cornell University, Liliana A. LaValle, College of Literature, Science and the Arts, University of Michigan, "Food security and biodiversity: can we have both? An agroecological analysis," SpringerLink, 22 June 2009, <http://www.springerlink.com/openurl.asp?genre=article&id=doi:10.1007/s10460-009-9251-4>) [PDI]

We alluded a number of times to the fact that **sufficient production in no way guarantees actual food security by itself** (see Note 8). From this standpoint, we think **the best framework to use in a more complete analysis of food security is** that of Rocha's **"Five A's"** (Rocha 2003, 2007)27:¶ **• Availability refers to the sufficiency of a food supply to meet people's needs; • Accessibility refers to people's economic and physical ability to acquire food;¶ • Acceptability addresses the cultural and nutritional suitability of the available food;¶ • Appropriateness evaluates the ecological sustainability and the safety of a food supply; • Agency is the "right to knowledge, and knowledge of rights" – access to accurate,¶ information on food supply, quality, and safety in order to make informed market choices, rights to such information and to the other aspects of food security, and a competent sociopolitical system to guarantee these rights.**

Food Security = All People Have Food

Food security is defined as all people always having access to good food

Dias 12

Joao Silva Dias, Technical University of Lisbon, Instituto Superior de Agronomia, "Impact of Vegetable Breeding Industry and Intellectual Property Rights in Biodiversity and Food Security" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Food security exists when all people, at all times have access to sufficient, safe and nutritious food to meet their dietary needs and preferences for an active and healthy life.

Breeding of vegetables in developing countries is reduced and focused on a very limited number of crops. It is strongly dependent on public investments in the centres of the Consultative Group on International Agricultural Research (CGIAR). The general lack of private investment in developing countries can be explained by the dominance of the public sector on the one hand and the low purchasing power of the majority of the farmers. Besides in some of these developing countries the market is too small to generate the interest of the international breeding companies for specific programmes. Those CGIAR centres, e.g. AVRDC, provide varieties or half-bred materials to national public institutes, universities and to the private seed sector particularly in Asia.

Food Security = Adequate Supply, Accessibility, Affordability

Food security has many definitions, but all agree on the need for adequate supply, availability, accessibility, and affordability

Ibnouf 12

Fatma Osman Ibnouf, prof @ University of Khartoum, "Does It Really Matter Whether Food is Produced and Provided by a Man or a Woman?" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Food security is a concept that has evolved considerably over time. Despite the different indicators of household food security, **all have agreed on certain basic principles**. They all focus on **the need for an adequate physical availability of food supplies, food accessibility and affordability. Availability, accessibility, and affordability can be viewed as indicators** assisting in ensuring sustainability of household and individual food supplies throughout the year. **Food—secure households are those most able to meet food requirements and provide nutritionally adequate meals to each individual household member** in a setting with adequate health and care practices (FAO, 2000, p. 15-16). Household food access is defined as the ability to acquire sufficient quality and quantity of food to meet all household members' nutritional requirements for productive lives (Bilinsky and Swindale, 2005). Thus **achieving household food security requires available and adequate food supplies at all times. The seasonal field food crops, livestock products, forest trees, uncultivated wild food products and income resources represent the available resources** for household food consumption in most rural Sudan. Rural women have adopted such diverse roles as food producer and providers as well as 'managers' of household food supplies.

4 Elements – Availability, Stability, Utilization, Access

There are four components to food security: 1) availability, 2) stability, 3) utilization, 4) access

Mustapha and Culas 12

Umar M Mustapha and Richard J Culas, profs @ Charles Sturt University, Australia, "Trade and Agricultural Policy Reform for Food Security in Tomorrow's Africa and Asia" in Food Security, Ed. Jones & Hernandez, 2012 [PDI]

Availability The concept of food availability entails ease in production and supply of food commodities. This is determined by the level of production in relation with the demand.

High availability of food is a positive factor in food security. This is so because **high food availability means that all of the world's population will be secure** (Gilbert. 2010). Low production of food on the other hand leads to unavailability of the commodities, which in turn jeopardizes the security of the people (Riemenschneider. 2005).

Stability Stability in reference to food security entails the trends in production and supply of food. This is the certainty and regularity in provision of various food commodities.

With a high sense of stability in food production. food security will ultimately be in the

increase. Naylor and Falcon (2010) indicated that stability in the supply and storage of food products is a vital factor determining the state of food security. This aspect is however determined by a number of factors including climatic change. changes in price as well as changes in population (Timmer. 2011). **In order to attain food security, the supply and demand of food should be in harmony.** It is worth noting that constant supply of food commodities is inevitable in the endeavours of ensuring food stability (Zabawa et al. 2000). This will not only ensure smooth supply to the population but also ensure stable prices. thus making it affordable to the population.

Utilization Utilization in reference to food security entails the degree or extent of utilizing the available food commodities. This is usually defined by the level of supply and demand of food commodities. A high demand of the products in relation to supply will lead to over utilization. This may lead to food insecurity since no surplus will be put for future use. McCalla and Revoredo (2001) indicated that the concept of utilization also entails the scope of exploiting the available resources in food production. The utilization of land in provision of food commodities is also a vital factor influencing food security (Riemenschneider. 2005). Based on this phenomenon it is evident that the degree of utilization of the available food commodities and resources determines the state of food security.

Access Access of food commodities entails the degree of affordability. This is an element of price as well as the income levels of the population. Zabawa et al (2000) indicated that inaccessibility of food commodities by an individual or population demonstrates how the person is food insecure. This phenomenon is evident in recent years. whereby the prices of basic food commodities have sky rocketed. As a result of this situation, most of the low income earners are unable to afford the food commodities (Joshi et al. 2010). This situation leads them to be identified as food insecure. The decline in food production as well as increase in world population is leading to immense pressure and competition for the available food commodities. This leads to inaccessibility of the products to the less competitive persons and more specifically the poor. This in turn leads to food insecurity.