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*Ending Injustices That Cause Hunger and Environmental Destruction*

## **Policy Brief No. 18**

### **Why the Lugar-Casey Global Food Security Act will Fail to Curb Hunger**

by Annie Shattuck and Eric Holt-Giménez

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**TABLE OF CONTENTS**

Introduction	1
The New Food Security Paradigm	1
Box: Lessons from the first Green Revolution	2
What is being ignored?	2
Box: GMO's and Food Security	4
Public-private partnerships deliver markets, but fail to deliver solutions for farmers	5
Who benefits? Rhetoric vs. reality	6
Conclusions	7
Endnotes	8

## Introduction

A new bill before the U.S. Senate stands to completely overhaul the way the U.S. offers agricultural development and food aid to the developing world. This bill, the Lugar-Casey Global Food Security Act, aims to reform aid programs to include a stronger focus on long-term agricultural development and the restructuring of aid agencies to better respond to crises. While this renewed focus is commendable, the Lugar-Casey bill also mandates funding for genetically modified crop research as a major underpinning of its food security strategy. Just as food aid expands markets for U.S. grain even as it destroys markets and farm livelihoods abroad, the agricultural development aid in the Lugar-Casey Global Food Security Act will open markets in Africa and elsewhere to the U.S. biotechnology industry. This is likely to result in a windfall for northern seed and chemical companies, but will increase risk and dependency among small farmers across the developing world.

This bill is not an isolated piece of legislation, but a coordinated roll-out of the “new Green Revolution,”—a project that includes the Gates Foundation's multi-billion dollar Alliance for a Green Revolution in Africa (AGRA), and a move by the biotechnology industry from basic commodity crops into other sectors of the global food system. In fact, the legislation is based on a report funded by the Gates Foundation. Initiated by the Chicago Council on Global Affairs in fall of 2008 and drafted before the new year,<sup>1</sup> the hastily prepared report “Renewing American Leadership in the Fight Against Global Hunger and Poverty” has been severely criticized for its narrow technological focus.<sup>2</sup> In contrast, a recent four-year study conducted by the World Bank and the FAO, in consultation with more than 400 scientists, reached the opposite conclusions; it called for agro-ecological approaches, participatory breeding, local control of seeds, and improving small farmers’ access to land.<sup>3</sup>

The technology-centered focus of the Gates Foundation and the Chicago Council dominates the Global Food Security Act. Lugar-Casey's renewed focus on agricultural development and hunger is necessary now more than ever, but depending on genetic modification for possible production gains risks repeating the same failings of the first Green Revolution—as well as introducing new risks. As it stands, Lugar-Casey will do much for American agribusiness interests, but may actually do more harm than good for small farmers.

## The new food security paradigm

The Lugar-Casey Global Food Security Act<sup>4</sup> is essentially a compromise proposal that reflects a renewed commitment to agricultural development and food security. With language welcomed by aid and farm groups, the bill includes a provision that allows food aid to be locally purchased—at least in part. The bill also funds emergency relief, agricultural development and nutrition programs (up to \$2.5 billion a year by 2014), higher education programs in the developing world, and increases funding for agricultural research at U.S. universities. The bill will consolidate an emergency relief fund and create a “food czar” charged with U.S. food security projects in the developing world.

Lugar-Casey also has a strong focus on technological development, from funding for USAID research partnerships to earmarks for the Consultative Group for International Agricultural Research, the umbrella group for the research centers that developed the first Green Revolution's hybrid seeds. The bill also repeatedly calls on “public-private partnerships” and private sector participation in rural development.

But one provision in the bill undermines the positive language and calls into question the intentions behind all references to technology, research funding, and partnerships with the private sector. The provision will amend the 1961 Foreign Assistance Act to read:

Sec. 103A.18 Agricultural Research.—Agricultural research carried out under this Act shall (1) take account of the special needs of small farmers in the determination of research priorities, (2) include research on the interrelationships among technology, institutions, and economic, social, environmental, and cultural factors affecting small-farm agriculture, and (3) make extensive use of field testing to adapt basic research to local conditions and (4) include research on biotechnological advances appropriate to local ecological conditions, including genetically modified technology.

The revision of the Foreign Assistance Act says “shall” not “may,” which makes genetically modified crop research a federal mandate.

Lugar-Casey does not specify how much of the agricultural development funding—a total of \$5.7 billion dollars—will go to genetically modified crop research, nor does it specify who the final patent holder on any end products will be. But the bill’s heavy focus on technology—if read to fit the newly minted definition to specifically include biotechnology—indicates more than just a mandate for research, but a whole development strategy based on opening opportunities for the biotech industry.

### Lessons from the first Green Revolution

The Lugar-Casey Act represents the biggest project in agriculture since the original Green Revolution in the 1950’s and 1960’s. Fifty years ago, developing countries had yearly agricultural trade surpluses of over \$1 billion. Today the Southern food deficit has grown to over \$11 billion per year,<sup>1</sup> helping create dependency on the volatile international markets that led to the 2008 food crisis.<sup>2</sup> The first Green Revolution increased global food production by 11% in a very short time, but per capita hunger also increased equally as much.<sup>3</sup> How could this be? Green Revolution technologies are expensive. The fertilizers, seeds, pesticides, and machinery needed to cash in on productive gains put the technology out of reach of most small farmers, increasing the divide between rich and poor in the developing world. Poor farmers were driven out of business and into poverty-stricken urban slums.<sup>4</sup> The new Green Revolution highlighted in the Lugar-Casey Bill suffers from all these same problems. This time, however, the genetically-engineered seeds will be under patent and privately owned by the biotechnology corporations that monopolize the seed industry. Poor farmers who count on saving seed will now be forced to buy new seed each year.

### What is being ignored

“Simply cranking up the fertilizer and pesticide-led production methods of the 20th Century is unlikely to address the challenge (of the food crisis). It will increasingly undermine the critical natural inputs and nature-based services for agriculture.”

- Achim Steiner, UN Under-Secretary General and Executive Director, UNEP<sup>5</sup>

The plan for a new Green Revolution for Africa is remarkable given that the CGIAR—which brings together the key Green Revolution research institutions—has invested 47% of their \$350 million/yr budget in Africa.<sup>6</sup> If these funds were spent on the Green Revolution, then why does Africa (and the rest of the developing

world) need another one? Either the Green Revolution's institutions don't work, or the Green Revolution itself doesn't work—or both. The Green Revolution did not “bypass” Africa. It failed.

Because these new top-down efforts ignore, misinterpret, and misrepresent the harsh lessons of the first Green Revolution, initiatives like Lugar-Casey will likely exacerbate the problem.

This top-down approach is embodied in the bill's creation of an American “Food Czar” charged with increasing food production in the developing world. The United Nations already has an office with the directive of eliminating hunger, which has advocated for a very different approach to agriculture. Olivier de Schutter, the U.N. Special Rapporteur on the Right to Food, recently held a conference on the new Green Revolution in Africa. In his statement Dr. de Schutter advocates for alternatives, including agroecological approaches and policies based on the human right to food. “Failing to consider the diversity of models that can be supported could lead to missing great opportunities. The potential of other models had been clearly established, such as conservation agriculture or agro-ecological approaches.”<sup>7</sup> According to the Special Rapporteur, “national strategies for the realization of the right to food are important because they explicitly aim at improving accessibility of and access to, food for the poor and the marginalized, and not solely at increasing food production.”<sup>8</sup>

International support for the alternatives he outlines is growing. In April of 2008, 61 nations met in Johannesburg, South Africa in to adopt a groundbreaking United Nations report on agriculture.<sup>9</sup> A joint initiative of the World Bank; the UNDP; the FAO; and other institutions, the International Assessment of Agricultural Knowledge Science, and Technology for Development (IAASTD) was designed as a hybrid consultation model based on the Intergovernmental Panel on Climate Change and the Millennium Ecosystem Assessment. The report took four years and consultations with over 400 scientists and development experts to complete.<sup>10</sup> In contrast to the Chicago Council Report, which counted on some 25 experts and was drafted in a few short months,<sup>11</sup> the IAASTD is the most comprehensive assessment of agriculture and food security ever undertaken.

The IAASTD grew from discussions initiated by the World Bank with agribusiness, civil society, and governments. The report's findings are surprisingly radical, calling for a thorough, bottom-up transformation of the global food system. The report finds that reliance on resource-extractive industrial agriculture is unsustainable, particularly in the face of worsening climate, energy, and water crises; it concludes that expensive, short-term technical fixes—including GM crops—do not adequately address the complex challenges of the agricultural sector and often exacerbate social and environmental harms. The IAASTD calls for land reform, agro-ecological techniques (proven to enhance farmers' adaptive capacity and resilience to environmental stresses such as climate change and water scarcity), and the building of local economies and farmer-led participatory breeding programs.<sup>12</sup>

The IAASTD finds that achieving food security and sustainable livelihoods for people now in chronic poverty requires ensuring access to and control of resources by small-scale farmers.<sup>13</sup> This is where the Lugar-Casey Bill runs into dangerous territory. Instead of a bottom-up, locally controlled, agroecological approach that draws on both modern science and local farming knowledge as recommended by IAASTD, the Lugar-Casey prescription for development prescribes technology from the top-down.

In Africa, the struggle to eliminate hunger is the struggle for the future of agriculture. Social movements in Africa (and other regions) are vital and active, working on practical solutions in the fields, and concrete policy changes for governments, to bring about food sovereignty. There has been no lack of agroecological success stories in Africa.<sup>14</sup> The System of Rice Intensification (SRI) developed in Madagascar has raised yields as high as 8/T/ha and has spread to a million farmers in more than two dozen countries.<sup>15</sup> A survey of 45 sustainable agriculture projects in 17 African countries covering some 730,000 households revealed that agroecological approaches substantially improved food production and household food security. In 95 percent of these projects, cereal yields improved by 50 to 100 percent.<sup>16</sup>

In 2008 the United Nations Conference on Trade and Development (UNCTAD) in conjunction with the United Nations Environment Programme (UNEP) released a study entitled *Organic Agriculture and Food Security in Africa*. The study analyses 15 programs promoting and implementing the transition to sustainable organic farming in East Africa. In the words of Supachai Panitchpakdi, Secretary-General of UNCTAD and Achim Steiner, Executive Director of UNEP, “organic agriculture can be more conducive to food security in Africa than most conventional production systems, and... it is more likely to be sustainable in the long term.”<sup>17</sup>

### **GMO's and Food Security**

In terms of poverty alleviation and delivering food, the focus on genetic modification is bound to fail. Current genetic modifications have nothing to do with food security. Most GM crops are engineered to be resistant to the herbicide glyphosate (Roundup) —a modification which reduces labor needs and streamlines production. The other common GM crop produces a pesticide in the stem, as seen in some strains of corn or cotton. The GM crops are almost exclusively commodity crops—corn, soy, canola, and cotton, destined for industrial processes, animal feed, and biofuels—grown by large-scale mechanized farms.

The myth that these seeds boost yields is persistent. But GM crops do not boost yield; under the right conditions, management, and herbicide applications, however, they can reduce labor and crop losses, as can many other techniques. According to Margaret Mellon, a microbiologist with the Union of Concerned Scientists, “After more than 3,000 field trials, only two types of engineered genes are in widespread use, and they haven't helped raise the ceiling on potential yields. This record does not inspire confidence in the future of the technology.”<sup>1</sup> A recent report by the Union of Concerned Scientists distinguished between potential, or intrinsic yield and operational yield, or the output under real circumstances. While the first Green Revolution increased the intrinsic yield of major grain crops, GM crops have not increased intrinsic yield at all. Only one variety – Bt corn – has shown gains in operational yield, resulting from reduced losses under periods of heavy pest infestation.<sup>2</sup> But conventional and organic pest control, and agroecological management protect crops as well—at a lower cost—and in many cases are better suited to the needs of small farmers.<sup>3</sup> In fact, the UCS study concluded that yield gains in the past 15 years were not due to GM crops at all, but to advances in conventional breeding. A study by the European Commission also found no significant yield difference between GM and conventional hybrids, and that economically, there was no clear-cut benefit for adoption of GM crops.<sup>4</sup>

While current GM crops deal with one gene that codes for one trait (for example, a gene that codes for production of the pesticide Bt), the promised gains in yield and stress tolerance have to do with a whole suite of genes, gene by environment interactions, and what scientists call the “pleiotropic effect,” a ripple effect where altering one gene can affect a whole suite of other traits.<sup>5</sup> No successful examples of significant GM yield gains or stress tolerance yet exist.

Even if framed as a technical problem, hunger will not be solved by productivity gains or GM crops. Operational yield increases from GM are marginal at best and negative in many instance.<sup>6</sup> But framing hunger as a technical problem obscures the fact that poverty, not scarcity, is the modern cause of hunger. Any solution to hunger must address the inequality and poor access to resources—like land, water, and fair markets—that lies at the root of the food crisis.

### **Public-private partnerships deliver markets, but fail to deliver solutions for farmers**

Funding from Lugar-Casey may greatly expand current government-biotech partnerships, but it certainly does not re-invent them. The U.S. government already funds genetically modified crop research through public-private partnerships with USAID, but these partnerships can often be one-sided. For example, USAID recently gave a \$3.6 million dollar grant to Arcadia Biosciences to develop nitrogen-use efficient, water-use efficient, and salt-tolerant rice and wheat with its partner in India, Mahyco Seed Co.<sup>18</sup> Mahyco is a subsidiary of Monsanto Corporation, who also has exclusive licensing agreements with Arcadia. So while any alleged improvements in seed are paid for with public funds, the results of that investment will be under private patent.

Patented seeds can be up to 35% more expensive than traditional and hybrid varieties.<sup>19</sup> Genetically modified crops are also increasingly “stacked” with multiple patented traits, like in-stem pesticide production *and* tolerance to herbicides (which is sold by the same companies that provide the seed). Unlike the high-yielding—and high-nitrogen consuming—hybrids of the first Green Revolution, today’s genetically-modified crops do not actually increase yields. While USAID’s funding is intended to help poor farmers, in this case the benefits will almost certainly accrue to agribusiness at the expense of poor farmers. And that is if the project succeeds at all.

Past public-private partnerships have been colossal failures. One example is the fourteen-year project to engineer a virus-resistant sweet potato in Kenya. Beginning in 1990, Monsanto Corporation, USAID, and the Kenyan Agricultural Research Institute began research into a genetically modified version of this major African food crop to resist a pest, the feathery mottle virus. Monsanto hired Dr. Florence Wambugu, a recent Kenyan PhD from the University of Bath, who spent the next few years at Monsanto headquarters in St. Louis working on the project. USAID, the World Bank, and Monsanto poured more than \$6 million dollars into the project.<sup>20</sup> Monsanto donated its proprietary technology to the project, and Dr. Wambugu began touring the world touting the project as an African solution to hunger.<sup>21</sup>

Fourteen years later, the GM sweet potato failed to show any resistance to the virus whatsoever. Local varieties actually outperformed the GM variety in field trials. Meanwhile in neighboring Uganda, researchers

developed a virus-resistant hybrid through conventional breeding techniques in just a few years at a tiny fraction of the cost of Kenya's disaster.<sup>22</sup>

What the USAID-Monsanto partnership in Kenya did succeed in doing, however, was to create a regulatory framework for biotech field trials, in effect opening the door to other biotech products. In 2001 Kenyan legislators passed the Industrial Property Act, which according to patent expert Robert Lettington "may actually place very little restriction on the patenting of life forms at all."<sup>23</sup> Currently field trials of GM corn and cotton are ongoing in Kenya. This year Kenya approved a biosafety law that will pave the way for commercialization of existing GM crops engineered to produce pesticide.<sup>24</sup> In terms of serving the interests of the American biotechnology industry, it did not matter that the GM sweet potato project failed Kenya's farmers. It helped pry open Kenya's market.

The Lugar-Casey Bill shares an ideological focus with another prominent public-private agricultural development project, the Gates Foundation's Alliance for a Green Revolution in Africa (AGRA). The program has been widely criticized by farmers' organizations in Africa for taking a top-down, technologist approach and for preparing the continent for the spread of genetically modified crops.<sup>25,26</sup> The Gates Foundation alone is investing more than \$2.3 billion in a new Green Revolution for Africa<sup>27</sup> (including nearly \$1 million dollars to fund the rapid report upon which Lugar-Casey is based<sup>28</sup>).

The CGIAR international agricultural research system, which under Lugar-Casey will receive an additional \$45 million, is receiving massive injections of cash from Gates for crop improvement. One example is the foundation's partnership with the African Agricultural Technology Foundation (AATF), the Center for Maize and Wheat Improvement (part of the CGIAR system), and Monsanto Corporation to develop genetically engineered "water efficient maize for Africa."<sup>29</sup> Last year, the Australian Grains Research and Development Corporation held a conference on the genomics of drought. The proceedings painted a much less optimistic picture than Gates, AGRA, and CGIAR. A summary of the conference proceedings stated "The most notable and problematic (effect) is the tendency of drought-tolerant GM lines to not perform as well under favourable conditions. This appears to be the case for CIMMYT's GM wheat and Monsanto's GM corn...The flaw is a profound one. It amounts to shifting the yield losses experienced in dry seasons onto the good years."<sup>30</sup>

In other words, the promised drought tolerant corn has yet to deliver despite investments of more than \$43 million by the Gates Foundation alone.<sup>31</sup> These initiatives are expensive gambles. No one knows if major breakthroughs will come in ten years, twenty years, or at all. What is certain is that initiatives like the AGRA/Monsanto drought tolerant corn will open markets to the current generation of GM crops and expand the global market share of U.S. agribusiness firms.

### **Who benefits? Rhetoric vs. reality**

After the G20 meeting in London, President Obama proposed a doubling of USAID's agricultural development funding. The targeted recipients include Kenya, Uganda, Zambia, Malawi, Bangladesh, Cambodia, Guatemala, and Honduras.<sup>32</sup> Many of these countries were targeted by USAID's original Agricultural Biotechnology Support Program and are countries where the biotechnology industry has made significant regulatory inroads.<sup>33</sup> So far none of these nations have commercialized GM crop varieties, meaning governments may have to remove what is left of their barriers to the biotech industry in order to

participate in new programs. Together, these targeted nations make up a sizeable agricultural market. Once opened to the biotech industry, these markets represent significant potential profit for American agribusiness.

The strategy mandated in Lugar-Casey is essentially a subsidy to private research and development. Public money will go to U.S. corporations to produce patented products, essentially subsidizing risky projects and privatizing gain in the name of ending hunger.

Conversely small farmers, the intended beneficiaries of Lugar-Casey funding, may not benefit at all. Small farmers still supply the vast majority of food in Africa and Latin America—one estimate puts 90% of Africa's food as produced by small farmers.<sup>34</sup> But industrial agriculture, with its high input costs and low margins of return, tends to push small farmers out of business.<sup>35</sup> The Gates Foundation Agricultural Development Strategy recognizes that the new Green Revolution “will require some degree of land mobility and a lower percentage of total employment involved in direct agricultural production.”<sup>36</sup> “Land mobility” is a euphemism for a large percentage of small farmers losing their land and their livelihoods. This will lead to massive migration. Agriculture is a significant source of employment. In Uganda for example, self-employment in agriculture—essentially the small farm sector—accounts for 70% of all jobs. Only 5% percent of Ugandans have permanent, formal employment.<sup>37</sup> In Malawi, 85% of the population depends on agriculture for work.<sup>38</sup> Currently, no expanding industrial sector awaits with ready jobs as people are ushered off the farm—only the informal sector, migration, and misery-filled urban slums are readily available.

Even the most lauded provision, local and regional sourcing of food aid, may not have the intended effect. The language in the Lugar-Casey bill does not specify how much food aid must be sourced locally. In fact, the text reads that sourcing for aid “may include local and regional purchase.” Despite this being a positive first step, without specific mention of small farmers, co-operatives, or marketing boards, the provision to locally source food aid may not open the agricultural value chain to poor producers at all. Lugar-Casey stands to industrialize farming methods in much of the Global South, a process which widens the income gap between rich and poor farmers.<sup>39</sup> Furthermore, profits in industrial agriculture are made by selling seed, inputs and machinery on one hand, and processing and distribution on the other, leaving farmers to absorb market risk.<sup>40</sup> By sourcing food aid from foreign farms, where a significant portion of the value chain is captured by American processors and input manufacturers, added value will continue to accrue to a handful of U.S. corporations, not cash-strapped local economies.

## Conclusions

Convinced that there are no alternatives to the mobilization of our own human resources and our own financial resources, however modest they may be, and conscious of the fact that our continent - despite the negative image of the outstretched hand, of suffering, of misery that is projected to us every day - possesses natural resources, high quality human resources, and positive values that are applicable to all of humanity, we commit ourselves, in the context of the Pan-African platform of farmers organizations, to save our lives, our families, our nations and Africa, our continent.

- from ROPPA, the largest farm federation on the African continent<sup>41</sup>

Senators Lugar and Casey's renewed focus on agriculture and food security is welcomed, but as their bill stands, the main beneficiaries will be the U.S. biotechnology industry, not poor farmers. In order to genuinely

tackle world hunger, key experts, including the U.N. Environment Programme, the U.N. Conference on Trade and Development, the IAASTD, and farmers' organizations around the world<sup>42</sup> advocate a bottom-up approach led by small farmers, using locally appropriate technologies. By ignoring this growing body of evidence in favor of the industry-friendly findings of the Chicago Council on Global Affairs, agricultural development under Lugar-Casey will likely fail to curb hunger.

Funding for agricultural research under Lugar-Casey is essentially a subsidy to corporate research and development goals, and is not targeted towards the most effective, appropriate, or cost-efficient technologies. In order to positively address the food crisis, any mandate for genetically modified crops must be stricken from the Global Food Security Act and replaced with a general strategy in line with the key findings of the IAASTD: support for agroecological research, farmer-led participatory breeding, and increased access to land for small farmers. Alongside these important shifts towards biodiverse agroecological systems, the IAASTD points to the need for even more fundamental overhaul of the global food system: the establishment of more equitable trade arrangements, stricter oversight and regulation of multinational agribusiness industry and increased democratic control of the global food system can more effectively address the root causes of global hunger, poverty and inequality, in a way that a narrow focus on increasing productivity through biotechnology simply cannot.<sup>43</sup>

Around the world, calls are growing for food sovereignty: the right to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and people's right to define their own food and agriculture systems. Food sovereignty relies on smallholder farmers—not transnational corporations—to rebuild their national and local food systems. Movements working toward food sovereignty have made significant progress towards food systems that truly work for the world's majority. Any U.S. effort to support agricultural development must work in concert with these movements, not against them.

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