RETHINKING THE RUSH TO AGROFUELS:

Lessons from Ghana, Senegal and Mozambique on the Unintended Consequences of Agrofuels Production for Food Security

ActionAid International
Report June 2009

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COVER PHOTO: Bintu Haruna gathers shea nuts outside the village of Changolnaa kuna in northern Ghana.
All photos by **ActionAid**.

SUMMARY

Are agrofuels the bright new hope for homegrown renewable energy? Or are they a dangerous threat to food security and the environment? **ActionAid** has carried out consultations with farmers and consumers in Ghana, Senegal and Mozambique to better understand their perspectives on this controversial new form of agricultural production. While the research revealed some mixed views on the potential economic benefits of agrofuel cultivation, there was widespread concern about the dangers an excessive focus on fuel production could pose for food security and rural livelihoods. Over the past year, previously ambitious plans for agrofuels expansion have slowed a bit due to declining global demand. This slowing of the agrofuels juggernaut offers an important opportunity for a full public debate of the social, environmental, and economic implications of agrofuels policies for developing countries. The study concludes with specific recommendations for the Obama Administration and the U.S. Congress.

INTRODUCTION

Over the past few years, agrofuels have gone on a wild rollercoaster ride. U.S. and European governments jumpstarted the ascent by dramatically increasing targets for agrofuel consumption as a share of their total fuel consumption. Markets reacted with dizzying optimism and new investments in fuel crops skyrocketed around the world.

Visions of an ethanol boom drove corn prices from less than $2 a bushel in 2006 to well over $7 a bushel by July 2008, enabling U.S. farmers to meet and even exceed production costs for the first time in decades.

Governments in many developing countries, seeking potential export opportunities and solutions to crushing energy prices, began considering plans to expand agrofuel production. Landowners and investors in countries as diverse as Ghana and Guatemala began to scale up production of sugar, palm oil, jatropha[1] and other feedstocks in anticipation of meeting the apparently insatiable demand for renewable energy in the United States and Europe.

And then the descent began. Rising food costs around the world were blamed, at least in part, on agrofuels expansion. In the United States, soaring corn prices led to shifts in production and price increases for other food crops, as well as beef and chicken. Farmlands in many developing countries that had been devoted to food production were diverted to fuel crops. Prolonged droughts in some countries and neglect of public support for agriculture in many others exacerbated the crisis. According to the U.N. Food and Agriculture Organization, the number of people facing hunger increased from 923 million in 2007 to 968 million by the end of 2008.[2] Consumers in country after country took to the streets in protest.

Scientists and environmentalists also began to challenge the idea that agrofuels would actually reduce greenhouse gas emissions. Some scientists assert that if all input costs are included, along with the environmental consequences of land being diverted from forests or other forms of carbon sequestration of plant materials in the land, then agrofuels would actually contribute more greenhouse

[1] Jatropha is a native plant in many countries, often used in hedge rows. While it grows naturally on poor soils, its cultivation as an oilseed crop for agrofuels is very new.

[2] "Number of hungry people rises to 963 million: High food prices to blame – economic crisis could compound woes," FAO, Dec. 9, 2008.

gas emissions than they resolve.[3] Environmentalists also reported alarming cases of agrofuels crops encroaching on rainforests and other sensitive ecosystems.[4]

Then finally came the steep plunge, as the financial crisis hit U.S. agrofuels refineries hard. As oil prices fell from $137 a barrel in July to $36 by December 2008, agrofuels became a less competitive alternative.[5] Corn prices also dropped, and the combination of price instability, lower demand, and decreasing credit created new problems for the industry. Soon refineries across the country began to report plummeting stock prices and even bankruptcy.[6] In developing countries too, what had once seemed to be a headlong rush into agrofuels production slowed considerably. Many new plans to increase production were put on hold.

As wild expectations gave way to sober reality, governments should have begun to rethink agrofuels policies. And yet thus far, U.S. and European agrofuels targets that have propelled the rollercoaster ride remain unaltered. There have been no changes in the 2007 Energy Bill, which calls for increasing U.S. production from 9 billion gallons in 2008 to 36 billion gallons by 2022 (of which 21 billion gallons must be from "advanced" agrofuels made from crops other than corn). Despite a heated debate in the EU Parliament at the end of 2008, Europe maintains its plan to replace 10 percent of its transport fuel consumption with renewable fuels by 2020. As a result, what seems now to be a rational retreat from unrealistic market expectations may well turn out to be merely a lull in the rush to expand agrofuels production around the world.

Policy makers in the United States, European Union (EU) and developing countries should also take a careful look at the balance between food and fuel production. They should consider new methodologies being developed to measure the indirect consequences of agrofuels production on land use in developing countries. This would support an informed public debate in the United States and overseas on the best ways to balance new energy sources and farmers' incomes, while avoiding the excesses of the past year's market volatility.

ACTIONAID'S CASE STUDY RESEARCH

During 2008, **ActionAid** carried out a series of consultations with farmers and consumers in Ghana, Senegal, and Mozambique to better understand their perspectives on this new form of production. Researchers looked at the structure of agricultural production and land use in each country, as well as at government plans to increase agrofuels production. They interviewed farmers in communities across each country to gain a deeper understanding of their expectations, concerns and proposals for food and fuel crop production.

In each country, similar themes emerged. Many community members challenged the idea that the land being used for agrofuels production was actually "marginal." In Ghana, for example, shea nut trees grow on supposedly idle lands. But women have traditionally harvested the nuts from those trees to sell for cosmetic and soap production. Shea nuts have therefore been an important source of supplementary income for poor rural women. In some cases, the shea trees have been plowed under to make way for jatropha production for biodiesel.

In Mozambique, initial reports that agrofuels production would engulf the country now appear overblown. As of June 2008, the government was considering 21 new projects for investment in sugarcane for ethanol and jatropha for biodiesel. By February 2009, only two of those projects had been approved. Farmers were cautiously optimistic about promises to increase their incomes from jatropha production, but also concerned that fuel crops would be grown at the expense of food production.

Similarly, in Senegal, land in apparently unused marshlands has been designated for agrofuels production. Local community members are unsure about whether this new production could help to diversify their sources of income, but they do know that the wetlands and fertile soils being considered

[3] "Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land-Use Change," Timothy Searchinger, et al,, *Science Magazine,* February 29, 2008.
[4] See, for example, Fueling Destruction in Latin America, the Real Price of the Drive for Agrofuels, Friends of the Earth International, September 2008.
[5] US Energy Information Administration, http://tonto.eia.doe.gov/dnav/pet/hist/wtotworldw.htm
[6] "VeraSun Files for Protection," Justin Baer, *Financial Times,* November 2, 2008.

for agrofuels projects are also vital to local food and fish production.

In each of these cases, the consultation process sparked important national debates on the expansion of agrofuels production. Government officials, along with community members and nongovernmental organizations (NGOs), entered into new dialogues on appropriate land use, the need for public support for food production and the uncertainties of this very new form of production.

The following sections provide more detailed findings from **ActionAid's** research in Ghana, Mozambique and Senegal.

GHANA

There are parallels between agrofuels development in Ghana and the United States. In both countries, initial discussions centered on small-scale experiments to generate local energy supplies. As the ambitions to scale up production accelerated, so did the concerns about the environmental and social costs.

Discussions on a national agrofuels program began in 2003 in response to rising oil costs. In October 2006, the Ministry of Lands, Forestry and Mines hosted an UNCTAD-Economic Community of West African States Bank for Investment and Development regional workshop on financing mechanisms and jatropha production, involving participants from 16 West African countries. By the end of that year, the Ministry of Food and Agriculture, and the Ministry of Local Government, Rural Development and Environment, working with Anuanom Industrial Projects Limited, formed a Jatropha Plantation Development Committee to promote development of the crop. The government also considered plans to incorporate agrofuels into the Ghanaian transportation system.

Even at this early stage, there were questions about the potential impacts of expanded agrofuels production on land use. A National Lands Commission study committee found that while agrofuels held promise, there were serious concerns about the risks of devoting large tracts of land to jatropha or other feedstocks. The Committee concluded that that approach would negatively affect the nation's food crop production.[7]

Nevertheless, the government, working with private agencies, advanced with cautious plans to explore small-scale production of jatropha. As of November 2006, more than 400 farmers with an average farm size of 1.5 acres had registered for various projects in the Central region.[8] In the Brong Ahafo region, some 500 farmers with an average farm size of 3.0 acres had registered and established jatropha farms.[9] Farmers involved in the project near the Atebubu and Kwame Danso communities reported that they had invested considerable labor into that production, and that jatropha had not been planted on marginal lands but rather on the lands most suitable for food crops. By 2007, disappointed by low prices and the lack of markets, many abandoned jatropha production.[10] Some farmers involved in this effort reported that even once jatropha is removed, the land cannot be used for food production for a long while.

Despite these disappointing results, public discussions on the expansion of agrofuels production accelerated in early 2008 with the new global imperative to increase production for local use and to meet increasing international demand. Investors began to approach the government about much larger tracts of land to produce jatropha, sugarcane, sorghum and cassava. Over 50,000 acres in the Brong Ahafo and Central regions are being considered for agrofuels production. In the Northern region, over 10,000 hectares involving six settlements near Kpachaa are being developed into a jatropha plantation. In the same region, large tracts of land are being developed for sugarcane production for ethanol.

While about 20 percent of agricultural lands are owned by the government or vested under control of the President, more than 80 percent are held by community chiefs or other customary leaders. Individual members of the community also have the

[7] Final Report on the Proposed Countrywide Cultivation of the Jatropha Plant, submitted by the Research and Development Committee of the National Lands Commission, 2006, National Lands Commission, Accra, Ghana.
[8] Typical smallholder farms range from one to five acres of land. Smallholders produce more than 90% of agricultural production in Ghana.
[9] Interview with MOFA Field Staff in Techiman and Atebubu, August 2008.
[10] Findings from registered survey of villages around Atebubue and Kwame Danso areas, August 2008.

right to occupy any unused lands. The principle of the customary law governing land use is that the head of the community holds the land as a trustee for ancestors, for the use of current community members, and in consideration of future generations. The chief of the community or head of the family, along with councilors or elders representing the whole community, must consent to any changes in land use. Any land grants to persons who are not members of the community must also be approved by the National Lands Commission or, in the case of public use of lands, the relevant national agency.

There are several cases in which a lack of appropriate consultation with community members has led to conflict over land use. In the Kusawgu area of the Central Gonja District, for example, many villagers first learned of a new agrofuels plantation project when bulldozers arrived to clear their lands in late 2007. The Ghanaian Environmental Protection Agency later ordered a halt to those activities because the necessary permits were not in place. Subsequently, there were a series of meetings with community members and chiefs to explain the project, but many people were already upset about the destruction of shea nut trees on the land. The lease arrangements offered by the company did not include compensation for the destruction of the trees.[11]

Negotiations with the company are continuing, but the village chief has expressed reservations about the long-term nature of the proposed lease agreement, saying:

> "The terms upon which you can stay here in the future will depend on how sweet or bitter your relationship has been with my people. I can negotiate and agree on terms with you today and perhaps for the next twenty years, but I cannot do so after that. Let the future people decide what they want at their time with you."

Residents have raised similar concerns about the lack of effective consultation on the potential consequences of new agrofuels plantation projects in Kpaachaa and Makango. Fisherfolk in Makango are worried about the impacts of proposed sugarcane expansion on local wetlands, which serve as the breeding grounds for fish during flood periods and support thriving fishing communities along the Volta Lake. Local people interviewed by **ActionAid** were unsure about the potential impacts of the proposed sugar plantation and an ethanol plant to be located along the river.

ActionAid, the Food Security Policy Advocacy Network (FoodSPAN, a network of 30 Ghanaian farm, environment and community organizations) and many other Ghanaian organizations have raised these concerns in local and national forums. While the initial flurry of interest resulted in several draft policy documents, there is no comprehensive or legally binding policy framework to guide agrofuels production in Ghana.

In a series of public events held to disseminate the results of community level consultations, **ActionAid** and FoodSPAN have called for an informed public debate on the impacts of agrofuels production on human rights, especially the rights to food, water and a clean environment. They insist that these issues, as well as the impacts on local livelihoods, should be explored in a collaborative effort involving businesses, scientists, government and civil society to develop appropriate and enforceable local standards for any

[11] For more details on this case, see "Biofuel land grabbing in Northern Ghana" by Bakari Nyari, available at http://www.wrm.org.uy/subjects/agrofuels/Biofuel_Northern_Ghana.pdf

such production. National regulations should include provisions requiring companies investing in agrofuels production to make full disclosure of their plans for the use of lands and other natural resources so that local communities can make informed decisions on the best ways to balance the use of their lands for food, fuel and livelihoods.

MOZAMBIQUE

The agricultural sector in Mozambique presents both challenges and possibilities. Nearly 75 percent of the population works in agriculture, but productivity is low. The share of agriculture in GDP has fallen from 31 percent in 1996 to just 25 percent today. Malnutrition levels are among the highest in the world, with 41 percent of children under 5 years old suffering from chronic hunger. In addition, unpredictable cycles of droughts and flooding resulting from climate change present ever increasing difficulties for farmers around the country.

At the same time, the country has enormous possibilities. Mozambique has extensive agricultural lands with the potential to significantly increase agricultural production. The government also plays an essential role in determining appropriate land use and resources devoted to agriculture. Land is held in trust by the state, and the 1997 Land Law requires community participation in any decisions on land use. Women, who constitute 80 percent of the labor force in agriculture, are guaranteed equal access to land.

As in Ghana, initial talks on the expansion of agrofuels began in 2004 with cautious discussions of the possibility of increasing production of feedstocks by smallholder farmers. Those plans accelerated after Brazilian President Luiz Inacio Lula da Silva's visit in 2005, which focused in large part on bilateral cooperation on agrofuels. Those programs were patterned after Brazilian biodiesel initiatives in which companies would then purchase feedstocks from those farmers in order to increase rural incomes. The central stated objectives were to reduce domestic dependence on fuel imports for transportation, to increase production of gel fuels based on ethanol for cooking to ease pressures on national forests, and to increase local job creation on farms and in processing plants.

Over the next few years, proposals to increase private investment in the sector increased dramatically. As of June 2008, a total of 21 new agrofuel production projects had been presented to the government for approval, including several new investment projects from Italy, Brazil and South Africa. While some projects call for extensive production of sugarcane and other crops, others promote smaller-scale initiatives in a variety of settings.

ActionAid and ROSA (the Mozambican Network of NGOs in Support of Agriculture and Food Security) surveyed farmers and their families in Sussundenga, Massinger, and Panda who had been approached to participate in new jatropha initiatives. In most cases, farmers had received seeds and technical assistance and had been encouraged to plant small amounts of the fuel crop near or alongside their food crops. These farmers, while still awaiting the results of the crop cycle, were enthusiastic about the prospects for income generation and job creation.

At the same time, 30 percent of those surveyed expressed concerns that the agrofuels crops were displacing food production. More than 90 percent reported that they did not plant jatropha on marginal lands, but rather on the most fertile land available in

order to maximize potential yields. In the Manica community, farmers reported that they had converted some community forests currently used for firewood and other income generation to jatropha production. These activities could lead to significant problems in the future if those plans are expanded to the point that they compete with food production or jeopardize local ecosystems.

In fact, two of the three provinces identified by the government as having the most land available for agrofuels expansion also have some of the highest rates of food insecurity in the country. While the farmers surveyed by **ActionAid** were generally positive about agrofuels, this enthusiasm was mostly based on projections of good prices for the new crops. New production decisions should be based on complete consultations that include a variety of perspectives, as well as the concrete results of existing projects on farmers' livelihoods and food security.

The global slowdown in markets provides some breathing room to expand the public debate on the risks and opportunities involved in the expansion of agrofuels production and the measures needed to ensure that it does not compromise food security. ROSA and **ActionAid** are engaging in a series of public events and discussions with the government on the development of a national agrofuels strategy. They insist that any such plans include the following elements:

- Attention to the consequences of agrofuels production on land concentration, water use, and the use of chemical fertilizers.
- Measures to increase effective community level participation—especially that of women—in decisions on land use.
- The establishment of a permanent platform for debate on agrofuels that includes the active participation of affected communities, NGOs, the private sector and government.
- The development of a comprehensive framework on food security that could include production of energy crops, but only as a complement to food production and as one element of a comprehensive package of to ensure sustainable livelihoods.

SENEGAL

As in other countries, the expansion of agrofuels production in Senegal has highlighted both the risks of excessive agrofuels production and the tremendous need to strengthen food security and rural livelihoods through a consultative process that fully engages local farmers. Plans to expand agrofuels production that appeared to be racing forward last year have slowed somewhat, providing a new opportunity to reconcile these competing demands.

The agricultural sector in Senegal is confronting a series of inter-connected dilemmas. Expectations and needs are high, as some 70 percent of the population is employed in agriculture. Productivity and public investment in agriculture, on the other hand, are low, and the country is compelled to import some 60 percent of its food products. The introduction of agrofuels production into that equation raises new issues that need to be resolved if food security and rural livelihoods are to advance.

The appropriate balance of land use among food, fuel, and other cash crops is central to that dilemma. Land ownership in Senegal falls into three categories: privately owned land, primarily in urban areas; publicly owned lands, especially those designated for public utilities, which are managed by the government; and rural lands that are under the public domain but are managed by rural councils and local authorities. Within that context, nearly all agricultural production is carried out by smallholder farmers. According to the 1998 National Agricultural Census, 99 percent of farms were less than 20 hectares in size, and 82 percent were less than five hectares.

The introduction of new plans to increase agrofuels production has created new challenges for decision-making on land use. Encouraged by the prospect of developing local energy supplies and new export opportunities, the government began the Jatropha National Production Program in 2007. Among the goals of that program was a target to increase the land used for jatropha production for biodiesel by 321,000 hectares by 2012.

Numerous local agricultural, forestry and rural development services consulted by **ActionAid** reported considerable pressure from the central government to allocate land for agrofuels production, in some cases with very little knowledge of the real impacts on communities. Some local authorities had been advised that investors had requested approval for land allocations amounting to as much as 100,000 hectares.

In the Tambacounda region, for example, land allocations are taking place within the GOANA Program, an initiative launched by President Wade in April 2008. While the program is intended to ensure national food security, nearly 70 percent of the lands involved in Tambacounda are designated for jatropha production. Some 23,500 hectares have been allocated for jatropha, compared to 7,200 hectares for other agricultural production.[12]

Farm organizations are divided on the issue of energy crop production expansion, but there is a strong consensus that achieving food security must be the primary goal of any program for the agricultural sector. The leaders of milk producers' organizations were concerned that the agrofuels initiative could displace small-scale farmers from their lands in favor of agribusinesses. They also questioned why land was being designated for energy crops when food security is such a pressing national issue. On the other hand, the National Structure for Rural People's Consultation and Cooperation (CNCR) expressed optimism that small-scale jatropha farms could benefit local farmers if plans were developed to integrate that production into overall agricultural production. That would require technical assistance, as well as investments in small-scale processing facilities to ensure that much of the value added from such production remains in local communities.

Unfortunately, the rush to expand agrofuels production to meet international demand may be overtaking this prudent approach. Adbou Tall, a member of the federation of producers of Anambé, stated:

> "I clearly refused all of the initial propositions that I received for starting to grow jatropha because I do not want us to become farm workers at the mercy of a few companies. I prefer to continue to increase my production of rice and corn. Imagine what would happen if the world demand falls and the price of agrofuels collapses, after we have concentrated all our efforts on it. Our situation would be even worse than now and there would be famine. We can't eat jatropha, but we can eat rice."

ActionAid has carried out 22 participatory workshops, town meetings, and public presentations on agrofuels production across the country. Ousseynou Konate, who supervises banana producers in Tambacounda region, is working with **ActionAid** to stimulate greater public debate on the issue. He summarized the concerns emerging from those meetings:

> "It is clear that, given the size of the land surfaces required by the private developers coming from Europe and elsewhere, the objective is mass production for export … I was very surprised by this rush, by the surface areas required and the lack of information given to small producers. It is crucial to develop a way of informing the communities rapidly, because the choices we make now will have a huge impact on our generation and the generations to come."[13]

[12] Statistics from Regional Directorates for Rural Development, August 2008.
[13] Interviews conducted by Alexandre Pollack, ActionAid EU, quoted in "Agrofuels: how green is the green gold rush in Senegal?" Cafebabel.com, Feb. 2, 2009.

CONCLUSION AND RECOMMENDATIONS

Decreases in oil and other commodity prices over the last few months, coupled with restrictions in credit, have contributed to a slowdown in what once seemed to be an inexorable rush to increase ethanol and biodiesel production around the world. This pause could provide the opportunity to consider new policies at the national and international levels to refocus public attention—and public spending—on the measures needed to achieve food security and strengthen rural livelihoods.

United States agrofuels policies that were developed to foster energy security and increase farmers' incomes have had unintended consequences for food prices and food security around the world. While coordinated action is also needed in Europe to moderate the global demand for energy crops, the United States should consider its own role in the wild expectations created by the renewable fuels targets.

So far, the United States has been able to meet the vast majority of the Renewable Fuels Targets with domestic production. Even that level of production has spurred considerable debate on the environmental impacts and consequences for food prices in this country. Those targets are set to increase over the next few years, rising from 11 billion gallons this year, to 13 billion gallons in 2010 and 14 billion in 2011. By 2022, they are expected to nearly triple to 36 billion gallons. A rising portion of those targets must be met by advanced agrofuels production. But the technological and economic challenges involved in developing advanced agrofuels sources like switchgrass, algae and other potential feedstocks could raise their own problems for appropriate land use and environmental sustainability. In any case, the continued rise in demand sends signals to investors around the world that this production will only increase, no matter what the consequences.

Now is the time to revise those targets, and refocus attention on lowering excessive U.S. demand for energy and finding solutions that contribute to global food security. The Obama Administration and Congress should:

- **Revise Renewable Fuels Standards targets** so that they can be met with sustainable local production that generates jobs and incomes in rural areas. Current U.S. production levels are sufficient to meet the 2009 target of 11 billion gallons a year.
- **Restrict subsidies for agrofuels** or other renewable fuels to only those that actually reduce greenhouse gas emissions. Eligibility should be based on a full life-cycle analysis that includes indirect land use changes in the United States and developing countries.
- **Increase foreign assistance for sustainable food production to achieve food security.** Funding should strengthen small-scale farmers' right to land and their ability to produce food crops to feed their nations. Support for food production to reduce hunger and increase rural incomes, whether at the international or local level, must take precedence over the unsustainable production of fuel crops for profit.

ACKNOWLEDGEMENTS

This reports was written by Karen Hansen-Kuhn (ActionAid USA) based on contributions from Anna Antwi (ActionAid Ghana), Carmen Munhequete and Filipe Pequenino (ActionAid Mozambique) and Fatou Mbaye (ActionAid Senegal).

Additional thanks to Anne Jellema and Peter O'Driscoll for their thoughtful comments, to Sarah Anderson for her careful editing, and to Lynda Jorgensen for the layout.

Support for the production of this report was provided by the William and Flora Hewlett Foundation. The analysis and conclusions in this report should be solely attributed to ActionAid International and do not necessarily reflect the views of the Foundation.

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