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South Africa: Sustainable Agriculture to Ensure Food Security

Introduction

“In a world of plenty, no one, not a single person, should go hungry. But almost one billion still do not have enough to eat. I want to see an end to hunger everywhere within my lifetime.” – Ban Ki-moon, current United Nations Secretary-General. While it is true that many people, especially Americans, have never faced severe hunger or poverty because of sustainable agricultural practices, others in the world have not been so fortunate. Food security and world hunger issues should not be understood as only local or national problems, but as international problems with international political and socio-economic consequences. Many international organizations, for instance, the United Nations, have been fighting, and still are fighting, the problem of food security and world hunger. The problem of food security, while multifaceted in its origins, can be narrowed down on the most basic level to the problem of sustainable agriculture.

Sustainable agriculture

Sustainable agriculture is defined by The United States Department of Agriculture as “an integrated system of plant and animal production practices having a site-specific application that will over the long-term: satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agriculture economy depends; make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; enhance the quality of life for farmers and society as a whole.” (The United States Department of Agriculture, “Sustainable Agriculture”). Sustainable agriculture is key to helping a country produce food, but many countries currently do not have sustainable agriculture.

South Africa is an example of a racially divided country that has been struggling to develop agriculturally with very uneven results. In past years, they have experienced agricultural reform, but more is needed in order for them to become agriculturally sustainable, especially among subsistence farmers. This paper will address sustainable agriculture issues directly related to the country of South Africa, the reason why sustainable agriculture is lacking, and then, finally, what the international, national, and local communities can do to improve South Africa’s food security situation as it relates to subsistence farming.

Family

The typical South African subsistence farm family is, on average, 3.4 people in size (Health Systems Trust, 2011 South Africa Census). The family usually consists of a mother, father, and one or two children. For the general population, the normal diet for South Africans consists of seafood (especially if they live near the ocean), biltong (similar to beef jerky), vegetables, and a kind of porridge that they make from cornmeal, sometimes called “pap”, (Food in Every Country, “South Africa”). Despite the fact that we know some about what South Africans eat, an article in Capetown Magazine points out that many of the poor Africans just eat what they can get and little data has actually been collected about the South Africans’ diet, adding to the difficulty of assessing their food situation (Backeberg, “Poor and Hungry”).

Education

Combined with current agricultural difficulties, the education system in South Africa is also in need of reform. While they invest a great deal of money into the system, the results have not been favorable. People who go to school are required to attend school at least 7 years. Even with these standards, the testing in South African schools has demonstrated that 75% of people score far below average (University

of South Africa, “South African education: unequal, inefficient and underperforming”). The rates of illiteracy in South Africa remain high, with about one fifth of the population (19.1%) being illiterate (South African Info, “South Africa: fast facts – education”).

Health

Along with the poor educational outcomes, the health care system in South Africa is also in a state of degradation. While the wealthy receive first-class healthcare, the poor are suffering because they are unable to afford privatized healthcare and many of the public hospitals have closed (Norris, “Health Care Access for Poor in South Africa Still Lags Behind”). Unstable nutrition also contributes to the low health outcomes for the poor.

Typical farm size and what is planted

According to Frikkie Liebenberg, an agricultural economist in the Economic Services Unit of the South African Agricultural Research Council, the typical commercial farm size in South Africa is about 1,400 hectares. (Liebenberg, “South African Agricultural Production and Productivity Patterns”). The commercial farms are owned by the white farmers. In contrast, subsistence farmers, the black farmers, have about 3.5 hectares each to farm. (International Food Policy Research Institute). Keep in mind that the subsistence farmers often do communal farming. According to South Africa Info, a large share of the farmland is used to cultivate grain crops. “The grain industry is one of the largest in South Africa, producing between 25% and 33% of the country's total gross agricultural production. The largest area of farmland is planted with maize, followed by wheat and, to a lesser extent, sugarcane and sunflowers. Maize is the largest locally produced field crop, and the most important source of carbohydrates in the southern African region. South Africa is the main maize producer in the Southern African Development Community (SADC).” South Africa also markets sugar, “South Africa is the world's 13th largest sugar producer. Sugarcane is grown in 15 areas extending from northern Pondoland in the Eastern Cape through the coastal belt and Midlands of KwaZulu-Natal to the Mpumalanga Lowveld. An estimated 2.5mt (metric tons) of sugar is produced each season. Some 50% is marketed in southern Africa, with the rest exported to Africa, the Middle East, North America and Asia.” South Africa also produces fruit: deciduous fruit, citrus, avocados, mangoes, bananas, litchis, guavas, pawpaws, granadillas, and macadamia and pecan nuts. Wine, vegetables, cotton, tea, tobacco, and ornamental plants and flowers are also grown (South Africa Info, “South Africa’s farming sectors”).

Commercial sector versus subsistence sector

Despite the seemingly rich agricultural economy, unfortunately, because of a lack of financial resources, a typical farm subsistence family does not use agricultural practices that are as advanced as commercial producers. In fact, according to the International Food Policy Research Institute, “The commercial sector is the dominant form of agricultural production in South Africa. It is large-scale, commercially oriented, capital-intensive, export-led, and it accounts for 90% of total VAD (Voluntary Agricultural District) in agriculture and covers 87% of the agricultural land,” (Gbetibouo, “Mapping South African Farming Sector Vulnerability to Climate Change and Variability”). The commercial sector clearly utilizes most of the land, leaving even less for the subsistence farm families. A subsistence farm family usually will not till their land very much, probably due to the fact that family members don’t always have the technology to do as much tilling as commercial companies. Typical farm families also won’t use as much fertilizer, or, if they do use fertilizer, they use natural fertilizers which may not always work as well or be applied as effectively as commercial fertilizers.

Employment, crime, and wages

Resulting mostly from the problems of apartheid and a lack of education, many black South Africans also face the problem of unemployment and low wages. Currently, one fourth of South Africans are unemployed. This is a staggering number, according to Trading Economics in 2013, the unemployment rate in South Africa has risen to 25.2% (Trading Economics, “South Africa Unemployment Rate”). Of

those who are employed, the overall average household monthly income in South Africa is 14,000 Rand (or, in United States Dollars, that's about \$1,400 per month) (Biz Community, "Average Urban Household Income At R14000"). However, USA Today points out that white South Africans earn up to 6 times more money than black South Africans. Social problems also include things like crime throughout South Africa. The African Development Bank Group said, "South Africa's relatively sophisticated formal economy still coexists with a large informal economy on which a substantial part of the population depends for a living, through near-subsistence agriculture or dependence on the informal sector. The country further suffers from the presence of large socio-economic inequalities in incomes and wealth, mostly resulting from the apartheid regime. These manifest themselves in the form of a high unemployment rate, wide areas of poverty, a significant prevalence of crime and insecurity, and a high degree of economic informality. These disparities also reflect themselves geographically," (African Development Bank Group, "Analyzing Pro-Poor Growth in Southern Africa: Lessons from Mauritius and South Africa"). The impact of all this is that the typical black South African family members may not have jobs and even if they do have a job, they may not get enough money to support their family. Not having enough money usually means that the family will suffer from mal-nutrition or inadequate nutrition. Even those who have the means to grow food often face problems with the land, like erosion, and poor farming practices that affect the sustainability of agriculture.

Other problems not related to agriculture

The World Health Organization (WHO), in a report written about food security in South Africa, reported, "Despite the political and economic advances seen in South Africa since 1994, the country is plagued by poverty and unemployment and, following the recent global economic crisis, by steep food and fuel prices, high-energy tariffs and increasing interest rates. These adverse conditions have placed severe pressure on ordinary South Africans already struggling to meet their basic household needs. Thus, a proper definition of the term "food insecurity" and measures that are suitable for the South African context must be urgently developed," (World Health Organization, "Food security in South Africa: a review of national surveys"). It is true that something should be done about food security in South Africa, and, in particular, something needs to be done about sustainable agriculture in South Africa especially for subsistence farmers.

Problems with agriculture

The Netherlands Embassy in Pretoria, South Africa, points out even more reasons that agriculture in the subsistence farm sector is unsustainable at the moment, "The volatility of energy markets (through fuel and fertilizers) adds to the risk profile of agriculture that is already hit hard by unpredicted and ever changing weather patterns. This has, together with the increasing demand for feedstock in the biofuels industry, linked agricultural commodities with energy markets (DAFF, 2012). Declining soil health, water scarcity, and climate change are another cause for concern in an industry where such factors are critical for success. In South Africa, the soil loss due to erosion is 400 million tons a year. In addition, water pollution, loss of biodiversity and declining productivity of land make the agricultural sector rather unsustainable," (The Netherlands Embassy in Pretoria, South Africa, "Sustainable Agriculture"). These negative characteristics of the land result in subsistence farms not being able to produce enough food. If the land cannot produce food adequately and the people do not know how to care for the land responsibly, the unfortunate result is less food and inadequate nutrition which, in turn, perpetuates a vicious cycle of poverty.

While people are consistently working to make agriculture more sustainable, there are still some big steps that need to be taken. With improved sustainable agriculture in the subsistence sector, the people in South Africa should more easily be able to raise their own food and provide for their families. Developing an effective sustainable agriculture program in South Africa is not just about helping the people take better care of the land. An effective approach to the problem must also include ways of addressing periods of drought, strategies for decreasing air pollution, sustainable energy sources, adaptable food crops, and

improved hybrids that are suitable to South Africa's growing conditions. Yes, work is being done in South Africa to improve these things, but more work needs to be done in a variety of areas in order to increase the number of people who have access to adequate nutritious food.

A solution – how the United Nations can be involved

But what exactly should be done to improve sustainable agriculture? What is the best way to improve sustainable agriculture in South Africa? Great amounts of money and time have already been invested with uneven results. The Millennium Development Goals were established in 2000 at the Millennium Summit of the United Nations. These goals have been adopted by the United Nations and at least 23 other international organizations. The organizations agreed to work towards completing these goals by 2015. The first of the Millennium Development Goals is "Eradicate extreme poverty and hunger". The United Nations agreed to work towards the Millennium Development Goals, and the International Fund for Agricultural Development (IFAD) is a specialized agency of the United Nations. The International Fund for Agricultural Development was created to finance agricultural development projects primarily for food production in the developing countries. The IFAD should finance South Africa by giving loans to people who need money to help develop their subsistence farms. The World Bank and the United Nations, two international bodies, have been working to make agricultural reform a reality.

Learning and implementing programs

The subsistence farmers of South Africa need to learn how to manage resources well and farmers need to learn how to use the resources in a sustainable manner. One of the most important aspects of agriculture reform, especially when working to make agriculture more sustainable, is farmer participation. The farmers need to learn how to be better farmers, and part of the learning process is trying it out and being taught by those who are willing to come alongside to educate and advise. The farmers need to "learn by doing" when it comes to agricultural reform.

Soil and water degradation are problems in South Africa can be fixed by creating strong institutional support structures for water use and creating better farming systems that include crop rotation that will help prevent soil degradation and erosion. Maybe youth programs like 4-H and FFA should be implemented. Another good idea would be developing and encouraging the use of rain barrels and wise water usage. Programs like this can help contribute to sustainable use of water and soil and good management of natural resources.

Other things that could help with sustainable agriculture development in South Africa would be: development of different plant hybrids and animal breeds, including native plants and animals, that grow better in the South African climate; protection of endangered agricultural species and allowing them to grow in farm systems that are economically able to support those species; efforts should be made towards creating more sustainable land use; development of a South-African specific biotechnology strategy that will help long-term; encouragement through educational outreach for people to grow agricultural products for their own health and income; consideration environmentally friendly system for production of crop management and organic farming (The Department of Agriculture, Forestry, and Fisheries of South Africa, "The Strategic Plan for South African Agriculture"). Other solutions could possibly include roof farming, hydroponic gardening, and other new agricultural practices.

Conclusion

Changing agriculture and reforming agriculture so that it can become sustainable in a subsistence farming environment is not an overnight process. It takes years to fully achieve agriculture reform. The process of making South African subsistence farms more agriculturally sustainable will require leadership on the international, national and local levels. South Africa is currently a country that struggles in many areas: poverty, education, health care, employment, and agriculture. Not every single problem can be fixed, but serious efforts should be made to help improve subsistence agriculture in South Africa. We live in a world

where people do go hungry, and when they do, the effects can become international in scope. The land in South Africa is capable of producing the needed food; however, people do not know how to care for the land properly and the technology and science is not always up-to-date. Making the necessary changes in agriculture in South Africa will help promote sustainable agriculture, it will benefit the people living there and ultimately, it will help decrease the problem of food insecurity in the world today by allowing the subsistence farmers to better feed their own families, sell surplus food that they raise, and generate a profit. Sha Zukang, the Secretary General of the Rio+20 Conference, said, “Sustainable development is not an option! It is the only path that allows all of humanity to share a decent life on this, one planet.” Agriculture development is not simply an option; it *is* the path that needs to be taken, especially in South Africa, and especially among the subsistence farmers. With the necessary changes and with many people working together to implement these changes, South African subsistence farmers should, in time, have an agriculture system that is more sustainable.

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