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South Africa, Factor 6: Sustainable Agriculture

### **Sustainable Agriculture in South Africa**

For many years now South Africa has been facing a food problem. Although there are many ways to go about helping the natives of the land, sustainable agriculture has come to the forefront of the discussion. To describe sustainable agriculture, I find that “Sustainable Agriculture - The Basics” written by Grace Communications Foundation describes it best; In simplest terms, sustainable agriculture is the production of food, fiber, or other plant or animal products using farming techniques that protect the environment, public health, human communities, and animal welfare. (“Sustainable Agriculture - The Basics” 1). Through Sustainable Agriculture, South Africa can provide a substantial amount of food for the people of their country as well as economically growing in the world.

Typical farm families in South Africa generally consist of 6.5 people according to “One in Five African Adults Work on Farms,” written by Bob Tortora. As Tortora continues, these farming families have many more people living in them, compared to non-farming households, but live on exponentially smaller incomes when compared to the households of many non-farm workers. Farming households on average annually receive a household income of \$2,989 (international dollars), about half that of non-farming households, which average \$4,991 annually. (“One in Five African Adults Work on Farms” 1). These statistics show that in South Africa it is not financially a question of where to find a job to fully support a family. As “One in Five African Adults Work on Farms,” states, half of all employment growth in the sub-Saharan Africa region between 1999 and 2009 transpired within agriculture, according to FAO. The 20% of people who reported their job description as being agriculture related in 2012 means that the South African agriculture industry encompasses at least 85 million adults. This population will need to grow to support more sustainable agriculture methods, such as conservation practices that can be more labor-intensive. (“One in Five African Adults Work on Farms” 1). “Industrial Agriculture and Small-scale Farming,” written by Global Agriculture says that the average farm size in South Africa is 1.3 acres. This statistic shows that it is not very easy for startup farmers to become involved in agriculture. This is a barrier for young farmers in the region.

According to “South Africa,” written by Food in Every Country, a typical diet of a South African family always includes seafood. It is considered a staple in South African culture. Most families eat a variety of fruits and vegetables such as, potatoes, cabbage, corn, sunflower, peppers, and green beans. Many tropical fruits are available because the northern tip of the country gets a bountiful supply of rain. South Africa also provides great education benefits. “Education in South Africa,” written by SouthAfrica.info provides a great explanation. According to the Bill of Rights in South Africa’s Constitution, all South Africans have the right to a basic education, including adult basic education and the access to further educate yourself. South Africa lacks at the health care level and many citizens do not receive health care benefits. The constitution of South Africa gives all people the right to health care, but funding is just not available for the many people that live in the country.

The Government has made it harder on farmers to trade their goods. “Non-tariff barriers frustrating South African agricultural exports”, written by Willemien Viljoen says that The situation of Non-Tariff Barriers is especially challenging for the agricultural and food sector with the number of NTBs (Non-Tariff Barriers) applicable and the nature of the sector. Trading goods through these NTBs takes a long time, something that agricultural and food products don’t have time for; given agricultural and food products are very perishable and are generally subject to numerous sanitary and spoiling constraints. Any delay in the export process is more costly than for any other category of products due to the perishability resulting

in the loss of merchandise. NTBs in the agricultural and food sectors are of grave concern for many African countries due to the importance of this sector for economic growth, development and employment. Agricultural production and trade forms the basis for export earnings for many countries on the African continent. (Non-tariff barriers frustrating South African agricultural exports 1)

In South Africa, some of the natural resources that were once in great bounty are now slowly declining in farm ability and are not viable for big Industrial Agriculture techniques. Though Industrial Agriculture produces many more crops per acre, the sustainable agriculture initiative is a much safer way for the African people to improve economically. Many people believe that sustainable agriculture is the solution to the problem in South Africa. Like every farmer in the world will tell you, his neighbor will not be able to use the same agricultural practices that he does. Every farm is different. Whether it is soil, water management, weeds native to areas, etc. I believe not all the concepts of sustainable agriculture will work for South Africa. I do believe that there are some practices of sustainable agriculture will work beneficially to feed its nation. Here are a few.

One idea for sustainable agriculture in South Africa is more livestock. Since South Africa does not have fertile ground, livestock is a better option as opposed to crops, which depend directly on ground conditions. As “Agricultural Development,” written by The Bill and Melinda Gates Foundation states, Livestock is a critical part of farming in developing countries which is crucial to the livelihoods of more than 900 million people in Sub-Saharan Africa and South Asia. (“Agricultural Development” 1). “Sustainable Agriculture - The Basics,” written by Grace Communications Foundation continues saying, that by implementing livestock husbandry practices, farmers are protecting the animals' health and wellbeing. When farmers raise their livestock on pasture, they enable their livestock to move about freely as well as the freedom for them to engage in instinctive behaviors, and eat a healthy natural diet, along with avoiding the stress and illnesses associated with tight confinement spaces (“Sustainable Agriculture - The Basics” 1”). There are a few risks that the farmer takes by going completely to sustainable agriculture. Modern farmers in United States call a veterinarian when an animal gets sick. The veterinarian prescribes medicine and the animal heals. In South Africa many farmers do not the access to these helpful medicines. This is one more helpful way that sustainable agriculture is the right form of agriculture to do the job.

Another thing I suggest that South Africa should do is to support global efforts to produce an outlet for South African farmers to buy new, appropriate tools and discover different farming practices into the hands of these farmers so that the country may become more financially independent. This idea includes improved seed technology and the access for farmers to improve soil, water, and livestock management solutions. Encompassed in this idea is looking for ways to strengthen the knowledge of the crop exchange through technology, such as mobile phone service and radio stations throughout the country.

Encouraging farmer organizations to help local farmers vastly improve their business management skills, gain greater purchasing power and marketing leverage, as well as helping to improve their crop and resource management skills. Additional techniques include helping farmers to improve their storage and post-harvest activities, meet quality and quantity commitments, link to large-scale and reliable markets, and establish partnerships with buyers, processors, and farmers' organizations.

These are some of the things that I believe that South Africa should incorporate into their farming society. I believe that these techniques can help South Africa's farmers grow and prosper. While these techniques will take time to fully show the effects of growth and “Sustainability”. South Africa will receive many benefits. South Africa cannot take a wrong choice in methods, but there are some things slowing them down and holding them back.

As “South Africa”, written by Tony Palmer and Andrew Ainslie says, In South Africa geological time, several occurrences of erosion and deposition have occurred (“South Africa” 1). This obstacle can be prevented from happening again by the sustainable agriculture “no till” idea. When a farmer no tills’ his crops, he leaves leftover plant material from the previous harvest for compost. This leftover plant material creates a great compost and also prevents erosion. By no till farming, farmers are shown to have cut their expenses significantly. In contrast there is a bad side to no till farming in the South African region. As “No-Till Farming: What’s the Deal?” written by Jesse Hirsch states, seeding equipment specialized for no-till can cost more than \$100,000. Another result of no-till farming is that fungal diseases occur when moisture levels are higher in the soil. These conditions promote fungal diseases that are normally prevented with conventional tillage of soil. No-till also means more herbicides are needed. As a matter of fact, no-till farmers report an increase in herbicide usage, as conventional plowing prevented weed disruption. This creates greater reliance on herbicide-resistant GMO crops, which are not usually readily available in countries such as South Africa. In areas with low moisture levels, no-till farming can significantly increase crop yields. An example that Jesse Hirsch gives is a farmer who farms wheat in Clay Center, Kansas. This farmer says he’s been reporting up to 50 percent larger harvests since he stopped the conventional plowing methods. That being said, these gains don’t happen in short periods of time, it can take many years for the effects of no-till to financially pay off. Overall I believe that this method will not produce like many hope it will. As I have stated before, the no-till technique requires many more chemicals than traditional plowing does. These chemicals are not readily available in South Africa as they are in the U.S., but as U.S. farmers will tell you, the application cost and the chemical price itself is not a cheap bill to pay. With the average income/week of South African farmers being so low, many average farm workers will not successfully be able to provide for the farm and the family.

I believe that the problem in South Africa starts at the top. As South Africa may be the most advanced country in Africa, they still have major problems, starting with the economy. Much of South Africa is living in poverty, and the government does not have the required jobs and time needed. The government is not promoting sustainable agriculture as a good place for major corporations to expand to. These corporations could provide economic stability in the farming industry as well as the entire country.

Who support efforts to get new and appropriate tools and farming practices into the hands of farmers? This includes improved seeds and access to better soil, water, and livestock solutions. We look for ways to strengthen knowledge exchange through technologies such as mobile phones and radio. We also work with farmers’ organizations to help farmers hone their business management skills, gain greater purchasing power and marketing leverage, and improve their crop and resource management skills. Additional priorities include helping farmers improve their storage and post-harvest activities, meet quality and quantity commitments, link to large-scale and reliable markets, and establish partnerships with buyers, processors, and farmers’ organizations.

According to “South African Agriculture” written by SouthAfrica.info.com states, South Africa has a dual agricultural economy, including a well-developed commercial farming network and more subsistence-based production in the deeper rural areas. South Africa covers 1.2-million square kilometers of land, South Africa is one-eighth the size of the United States. South Africa has seven climatic regions, ranging from Mediterranean to subtropical to semi-desert. This biodiversity, together with a coastline 3,000 kilometers long is served by eight commercial ports. All of this favors the cultivation of a highly diverse range of marine and agricultural products, from deciduous, citrus and subtropical fruit to grain, wool, cut flowers, livestock and game. While 12% of South Africa’s land can be used for crop production, only 22% of this is high-potential arable land. The greatest limitation on South African agriculture is the availability of water. Uneven and unreliable rainfall proves to be a great challenge. Around 1.3-million hectares are under irrigation, and around 50% of South Africa’s water is used for agriculture (South African Agriculture 1). Though the general idea of a sustainable agriculture based South Africa would be a good one, success will depend on the given climatic region. Therefore it is crucial to educate local

farmers on how the new technologies can greatly improve yields and success rate. With new technologies changing the face of agriculture, it is important to ensure that all agriculturists have access and knowledge of these technologies. Now I ask myself how to go about educating these farmers that are so far away from me. I am so far removed from the situation that it is impossible for me to understand the challenges that any education program will face. However I am a big supporter of extension services. I find myself going to the local University of Missouri Extension office for many things year round. They are continually educating me on the new practices that are being put in place by other farmers and how it will apply to my farm. It is absolutely necessary that these services begin and remain as strictly an educational resource that helps farmers to become independent of the extension service. I believe that organizations such as the Bill and Melinda Gates foundation could be huge in the beginnings of an idea like this.

Research will play a crucial role in the introduction of sustainable agriculture in South Africa. This is an area where I believe the South African government can play a huge role in this transition. "Toward Sustainable Agriculture Systems" written by The National Academies Press says, furthermore, many sub-Saharan African countries do not invest much in agricultural research and development (Morgan and Solarz, 1994), so that they lack the capacity to adapt modern agricultural practices to local conditions (Toward Sustainable Agriculture Systems 1). A government that is thoroughly involved and active in the search for ways to help their farmers achieve better yields and better return will go a long way in showing native farmers of the country that sustainable agriculture is a great way to proceed. The South African Government would better help their farmer by becoming much more committed to the agriculture sector, beginning with doing extensive research for farmers.

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