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### **Infrastructure: A Source of Poverty in Sudan**

Sudan; recently named the most unstable country in our world according to the Failed States Index. The conflict in Sudan is a topic of international news broadcasts. Our current world remains continually concerned with this serious problem. Due the twenty-two year civil conflict, progress of infrastructure in Sudan had screeched to a halt, and is only now starting to pick up slack for its years of stagnation. As a result, many rural families in Sudan, largely including subsistence farmers, have little or no access to health care, clean water, education, or income opportunities such as marketing and loans. It is very difficult for a small subsistence farmer in Sudan to turn around the cycle of low income and productivity rates because of their isolation, and as a result astronomical amounts of rural Sudanese are living in extreme poverty. Children face malaria, tuberculosis, and acute malnutrition because of the lack of food, drinking water, sanitation, and access to health care in rural Sudan. Parents have little way to raise themselves and their children out of the situation. They look to casual labor outside of the growing season, but the very low pay in addition to frequent crop failures in Sudan because of lack of irrigation as well as rainfall makes efforts to improve income frequently fail. Inequalities by region throughout Sudan are enormous. Parts of Sudan are currently enjoying the fastest growing economy in the world because of oil finds within the last decade, yet rural farmers have yet to see any improvements as a result. In Sudan's very near past there have been inequalities like unfair land allocations, neglect of the agricultural sector, and extreme unbalanced access to resources throughout the country. Because of these issues and others, millions of people have been displaced throughout the country, putting infrastructure and other developments on the back burner. However, since the signing of the Comprehensive Peace Agreement in January 2005, the Government of Sudan has been working to reform its infrastructure and opportunities for rural farmers will hopefully improve. Until then, Sudan has huge infrastructural barriers to overcome, and international aid will be a necessity. Infrastructure will remain a key factor to be dealt with in order to solve rampant poverty in Sudan.

The average Sudanese family is composed of a mother, father, and 4-5 children. In subsistence farming families, children are seen as an important source of labor on the farm and are even viewed as a way to improve income on small farms. Even so, out of the 19 million Sudanese people living in extreme poverty and living on less than 1 US dollar per day, 85% are of Sudan's rural farming population. Therefore, because of this uneven distribution of wealth in Sudan, many rural families struggle to even feed their families, leaving 22% of rural Southern Sudanese children suffering from acute malnutrition, and leaving mothers with an 18% child mortality rate. In 2006, 5.5 million people in rural and southern areas of Sudan required food assistance, and many families look to outside labor such as firewood gathering and making charcoal to subsidize their very small amount of income from the farm. The situation is very hard for rural farmers to turn around. Irrigation and infrastructure are not a part of many rural areas, and educational opportunities are sometimes non-existent. Although the national average of educated men in Sudan is 63%, most of these men reside in Northern Sudan and Urban areas where there are many more resources, leaving many rural farmers uneducated. Because of these hardships, many families try to squeeze every last crop from their yields to improve income. As a result, they feed their families foraged food such as a diet of wild plants and fish from nearby rivers, as well as rain-fed livestock.

Common Sudanese crops include sorghum, maize, sesame, cotton, millet, rice, and

ground nuts. Although crop prices are rising and are a benefit to subsistence farmers, current crop failures are frequent in Sudan because of lack of rainfall and irrigation in Sudan. Farmers are victims of erosion, loss of soil fertility and damage to water sheds. There is little access to any agricultural aid in Sudan and many farmers are subject to common pests and diseases with no way to fight back. Farmers also have little if any access to education on modern farming practices, sustainable farming and marketing strategies. Infrastructure in Southern Sudan is poor and has grown worse during the recent civil conflict that only ended by peace agreement in January 2005. Land allocation also started during the 1970s by the Sudanese government. Previous to this, traditional communally owned farms prevented local conflict, but they were forcefully broken up, leaving many without a livelihood. Because of this and other issues, 2-4 million people fled their homes and were displaced throughout the country and outside of it, causing any previous infrastructural or educational opportunities to be put on long-term hold.

Infrastructure is one of the key challenges facing Sudanese subsistence farmers today. Isolation is a huge barrier for rural farmers to make income. It is currently very difficult for a rural Sudanese subsistence farmer to break the cycle of low productivity and income because there are little resources available in rural Sudan. There are little if any loan or credit opportunities, distribution and marketing channels are few, and the farmers themselves have little education in sustainable agriculture due to the lack of educational availability. Settlements established away from main thoroughways have little access to social services including health care and markets. In fact, only 25% of Southern Sudanese people have access to any health care at all. There are severe inequalities throughout the country in respect to clean water access and sanitation tools. As a result, disease is common in rural parts of Sudan. A main barrier affecting rural livelihoods is simply infrastructure.

Despite the challenges in rural Sudan, Sudan's economy is looking up and is looking into investing in its infrastructure with its newfound profits. The Comprehensive Peace Agreement has been signed to end Sudan's civil conflict disrupting so many lives and infrastructure investments, and many new policies and reforms have been put in place to aid the economy. In addition, globalization has been a huge boost to Sudan's economy. World Bank and some large international oil companies invested in the Chad Cameroon Pipeline and are planning to return some profits to schools and road infrastructure in Africa. Sudan began its oil drilling in 1999 and is now one of the fastest growing economies in the world; its nominal gross domestic output went from 9.9 billion US dollars in 1980 to 27 billion in 2006. Oil prices are now sky-high internationally, and Sudan is enjoying the profits. According to Sudan's Minister of Transport Elsamani Elwasila Elsamani, Sudan plans to invest 60% of its oil profits in its infrastructure programs. So why are rural families living in deep poverty in the fastest economically growing country in the world? Lack of current infrastructure, conflict, corrupt government. There is a huge gap in opportunities between urban Sudanese and rural Sudanese. Oil investment is largely concentrated in the state of Khartoum and Juba, the capital of southern Sudan. As mentioned earlier, 85% of Sudan's 19 million extreme poverty cases are in the rural areas of Sudan. Despite Sudan's profiting economy, it has much work to do in distributing the wealth amongst its people.

A lot of the blame for inequalities in Sudan lies with Sudanese conflict. Inequalities like the economy and oil investments are only some of the problems you will find in Sudan. Although the government is making efforts to improve, including the signing of the Comprehensive Peace Agreement in 2005, many of the problems that caused the conflict are still in effect. They include neglect of the agricultural sector in Sudan, unfair land allocations, unfair distribution of resources between rural irrigated and non-irrigated areas, and the exclusion of local communities in decision making. These amongst others are mistakes of the government that are sparking conflict and making major delays in terms of a successful Sudanese infrastructure. The war first started

very soon after Sudan had gained independence from Egypt and the United Kingdom in 1955. The conflict then lasted until 1972 when there was a temporary decade of peace. The conflict escalated again in 1983 and lasted 22 years. In this time, 1.5 million people died and another 2-4 million people were displaced. The war ended, at least officially, with the signing of the Comprehensive Peace Agreement in January 2005 by the Government of Sudan and the Sudan's People's Liberation Movement. The government is now making efforts to end corruption and improve the lives of the Sudanese people. Lieutenant General Acuil Tito, Head of Finance and Logistics in the Sudanese Department of Police, sums up the war's impact on Sudanese infrastructure, "Twenty-two years of conflict destroyed almost everything in Southern Sudan. The little infrastructure that used to exist is all gone."

As such, Sudan has a huge infrastructure hurdle to conquer after the war, but they are in the process of re-building, or maybe just building, themselves. To keep post-war conflict under control, one of Sudan's first projects to conquer is to develop a strong police force. There is currently a three year forty-five million dollar police and prison support project in Sudan funded by the Government of Southern Sudan and the Multi-Donor Trust Fund (consists of the donations from the World Bank and other international donors). Lieutenant General Acuil Tito reports that, "The project is supposed to rehabilitate nine state police headquarters, twenty-one county headquarters and fifty-five local police stations. If our police are not well attended to, then we will not have the rule of the law or good governance that we cherish." This is the first step in maintaining Sudan's post-conflict status and moving on with economy and infrastructure. Sudan does have some positive infrastructural investments already put in place throughout the country. The Government of Sudan currently operates about 3,000 miles of railroad line from Port Sudan on the Red Sea to most of the major production and consumption centers in Sudan except in the far south. It provides Sudan with a low-cost method of transportation for agricultural support and for the delivery of construction materials and other materials needed for Sudan's development. Also, Sudan has a very positive coastal position, and can take advantage of its current rail lines to link neighboring countries with Sudan's ports. In fact, Sudan currently has an agreement with Chad and Ethiopia to move 6 million tons of imports and exports through Sudan to and from these countries. Sudan's minister of transport is currently pushing another 3,500 miles of rail lines so that Sudan can connect all of its neighboring countries to the ports, which may very well become a profitable industry for Sudan. Sudan also boasts two ports, Port Sudan and Port Sawakin, both of which provide some modern equipment although there is still much room for improvement in both. The Sudanese National Merchant Marine owns ten cargo ships of 122,200 deadweight tons which sail to ports on the Red Sea, Mediterranean Sea, as well as some European ports. These ships connect Sudan as well as other parts of Africa with corporations on neighboring continents. Although they still have a long way to go, if Sudan is able to protect and build on its current infrastructure, it will be easier for the Sudanese to escape poverty after the war.

Though Sudan has some working infrastructure in the country, it is still very hard for rural farmers to market their products and even get them to a market. Why? The road system has much to be desired. Outside of South Africa, the entire continent, let alone the country of Sudan, has less paved roads than the country of Poland. Of Sudan's 12,500 mile roadway, only about 10% is paved. In addition, many are poorly made. Much of Sudan's paved road system is a result of foreign aid. Because there is no road paving machines in Sudan, foreign trucks must come in with foreign material to pave the roads, and by the time all of the transportation costs are added, there is little money left from aid to actually build the road. As a result, roads are often made cheaply and are only 2 inches thick. They crack in a matter of weeks. The upkeep of roads is very expensive, therefore, and there is no tax base in Sudan to keep up with them. After foreign aid organizations see the lack of upkeep in the roads, their interest in donating goes down, and

soon there is no money to support the roads anymore. It is a nasty cycle that needs to be addressed by Sudan's government so that foreign aid can have confidence in the upkeep of their donations. As a result, many of the Sudanese travel by Sudan's more than 3,000 mile network of navigable rivers, a last resort in a region with a very challenged infrastructure.

Many things can be done internally in Sudan to improve its infrastructure. First of all, Sudan's government must develop a plan to maintain donated infrastructure, as in the case of its roads. If Sudan can make a clear, detailed, transparent plan on the maintenance of infrastructure, more international organizations will be willing to donate. International organizations can help this process along by bringing in experts to develop a plan before they bring in big money. Experts can help restore Sudan's economy and organize it so that it is no longer a place to aid, but a place to invest.

Sudan also needs to work on linking its small farmers to marketing, education, water, and credit opportunities. A positive way to help the small farmer stay connected to the world markets is through small local connection centers. These centers may provide farmers with many much needed opportunities in rural areas. The centers could provide farmers with credit opportunities so that the farmer is not stuck in a cycle of never-ending low productivity because of the lack of resources. They would provide low-interest loans and advance the farmer in resources such as fertilizers, agricultural chemicals, seeds, farm implements, communication, technology, and other more basic agricultural needs. The centers could also provide education for farmers in areas of investment, sustainable farming practices and strategic marketing approaches. Other benefits of local centers could be access to health care with a small clinic in each center, access to clean drinking water with a community investment in a clean water borehole, library with internet access, and a school for children to learn to continue this improving lifestyle. Community centers may also be able to provide scholarships to the most promising students so that they will have an opportunity to further education and become a resource to the people around them. Local farmers could be provided a place to collaborate at the centers so they can develop strategies to join together and start community farming as it was before the conflict and land allocations. If farmers started community farms it would be cheaper for them to irrigate their farms adding to additional crop success. Community farming would help to keep local conflict to a minimum, keeping the improvement of infrastructure a priority. If more farmers joined together, it would also help them become a stronger voice against government corruption should they need to fight it again. These centers would also provide rolling centers so that very rural farmers can still have access to internet and marketing opportunities. They would also offer travel to the local centers. With collaboration and communication opportunities, many more rural Sudanese farmers would have the opportunity to be successful.

Sudan definitely has many challenges to overcome in order to improve the livelihoods of its rural citizens, especially subsistence farmers. However, if Sudan makes large strides to improve infrastructure as it says it will, the lives of many Sudanese will vastly improve. The issues of health care must be addressed; Sudan must end the rampant preventable diseases that plague its citizens. Sudan must seek solutions to irrigation problems, if it does so, production will greatly increase for the rural farmer. It must also provide marketing opportunities, including credit, loan, and resource availability. There must be ways for the poverty ridden rural Sudanese family to improve their productivity and income; the government can make investments to make these opportunities accessible. Sudan is currently one of the fastest growing economies in the world due to its recent oil drillings; we need to see the benefits throughout the country. The government needs to address inequalities like this and others so that life for Sudan's people will be desirable throughout the country, not just in certain regions. Sudan needs to work hard to return its displaced people and its crippled infrastructure after its civil conflict. Sudan must

distribute its resources throughout the country and build on what it already has. Sudan has a strategic coastal location, 3,000 miles of railroad already working, and also has operating ports to connect itself and other African countries to the outside world. Sudan has a good base to build on, now they just need to make their infrastructure work for everyone.

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