

South Sudan: The Birth of an Economy

One can learn a lot about the economy of South Sudan just by watching the roads. The first thing one notices on the streets of Juba, the capital, is the abundance of white Toyota Land Cruisers. There are fewer than 100 kilometers of tarmac roads in the entire 240,000-square-mile country; one cannot move around without a four-wheel-drive vehicle. A closer look at the Land Cruisers reveals that most have special license plates: UN for United Nations vehicles, and GOSS for those owned by the government of South Sudan.

Apart from the Land Cruisers, one notices a large number of water and fuel tankers on the roads. Publicly supplied electricity in Juba, a city of one million, is very limited, public water nonexistent. As a result, almost all workplaces and the wealthier private residences rely on generator power and water delivered by truck. The road traffic also reveals how waste is managed in Juba. Whereas some aid agencies and hotels have contracts with garbage collectors, most waste is piled in the streets and burned.

As in the big cities of many developing countries, driving in Juba is a daunting experience. There are essentially no road signs or traffic lights, and only one street has streetlights. What's more, although traffic travels on the right side of the road, most drivers sit on the right-hand side of the car, as most vehicles are imported from Kenya, where right-hand driving is standard.

When we turn our attention to the people traveling on these highly informative roads, other issues become apparent. For one thing, there is no formal taxi network in Juba. Instead, a few enterprising Kenyans and Ugandans have established themselves as private taxi drivers. And foreigners do not dominate only low-skilled service jobs; most heavy machinery on South Sudan's roads is also operated by for-

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eigners, particularly Asians. Indeed, the largest firms in most of the booming sectors of the economy are foreign owned and operated.

Venturing outside Juba, one gets an idea of what the roads were like before the recent bout of postwar reconstruction. First of all, South Sudan has few roads linking small villages with larger towns, which leaves a large percentage of the population completely isolated from the modern economy. Even where roads do exist, they are unpaved, unevenly surfaced, and poorly marked. Traveling from the northern border to the capital in the South, a journey of less than 1,000 miles, can take three weeks in a land vehicle, compared to two hours by plane. During the rainy season, many places are completely cut off from road traffic. Malakal, for example, South Sudan's third largest city, with a population of 125,000, essentially grinds to a halt for three months of each year when its roads turn to sticky mud. During this time, people travel about in the same slow, tiring way they have for hundreds of years: by foot or mule.

Navigating South Sudan's roads between cities and across borders is also rather expensive, due to the numerous points where travelers are subject to extortion. A committee recently formed by the country's president found 44 authorized and 65 unauthorized tax collection points in just two states, Eastern Equatoria and Central Equatoria.¹

From its poor infrastructure and lack of regulation to skill shortages and corruption, doing business in South Sudan is not easy. Furthermore, the South Sudanese do not produce any export goods. However, this observation overlooks one major factor: despite the difficult conditions in South Sudan, the country is experiencing a significant amount of economic activity. In this article, we discuss the birth of a new economy in a society that has only recently emerged from a 22-year civil war. The pace of growth so far has been fast but uneven: aid and oil money is flowing rapidly into certain sectors, while other areas of the economy that could generate jobs, particularly agriculture, have barely changed in centuries. As a result, the recent windfall of wealth has yet to translate into tangible benefits for the majority of the population. In order to achieve growth in these other sectors, far more innovation is needed in both government policy and business strategy.

This article is based on the findings of a study conducted from June through August 2011 by seven graduate students at Harvard's Kennedy School of Government, including two of the coauthors, on the emergence of entrepreneurs and the private sector in South Sudan. Our team interviewed more than 200 people across South Sudan, including officials at six government ministries, two states' agriculture departments, the UN Food and Agriculture Organization and World Food Program, the managing directors of the country's eight local banks, four cell phone providers, and several hotels, restaurants, and supermarkets. We also visited five of the country's ten states, where we interviewed farmers, retailers, wholesalers, and traders and conducted informal observation. Unless otherwise indicated, the information on challenges in the specific sectors is drawn from this research.

OUT OF CONFLICT, A NEW NATION

South Sudan achieved independence from Sudan on July 9, 2011, marking the end of two civil wars that date back to 1955. The root causes of these conflicts can be interpreted from many different angles, including race, religion, and postcolonialism, but the primary cause is clear: compared to the North of Sudan, where the various ruling governments have historically based their power, the South was significantly underdeveloped and its people marginalized—socially, politically, and economically.

It is difficult to provide a narrative of the conflict in simple cultural terms because there is no "single people" in either the North or the South. Sudan as a whole has a population of nearly 30 million, with Arabic and Dinka speakers representing the largest language cohorts. Other Sudanese speak 14 minor languages,

which are further divided into roughly 100 dialects, about 50 of which are spoken in the South alone. South Sudan's complex society can be broadly divided into two regional groups: the agro-pastoral and pastoral communities in the northern states of Greater Upper Nile and Greater Bahr al-Ghazal, which have traditionally relied on raising cattle as their main livelihood, and the sedentary agricultural communities found mainly in the equatorial southern states. The tribes that oversee these communities have a wide range of governance structures. Two groups—the Azande in Western Equatoria State and the Shilluk in Upper Nile State—are governed as formal kingdoms. The large pastoral societies that make up the majority of South Sudan's population, including the Dinka, Nuer, Murle, and Mundari, have a decentralized structure that consists of numerous independent but interlinked clans and chiefdoms.

Until the 19th century, South Sudan's economy was largely insulated from outside influences, due to the country's impenetrable geography. Although Arab traders from earlier Sudanic kingdoms in the north trafficked in gold and slaves captured in the south, the south was generally unaffected by northern kingdoms and resisted their expansion southward. Southern societies relied primarily on subsistence agriculture and animal husbandry, and almost no efforts were made to commercialize these activities. Many pastoral communities did not trade in cattle or sell them for meat because of their symbolic role in defining kinship relations. Even today, cows are the primary currency in establishing the price of brides, and exchanges of cattle occur primarily at marriages and other celebrations.²

South Sudan's political economy changed dramatically in 1820 with the conquest of Sudan by Muhammad Ali of Egypt, which led the way for further exploitation by outside forces and increased marginalization. Slave raids increased on a massive scale, and Sudan's new rulers demanded tribute in the form of slaves, cattle, and ivory. Not only were slaves employed in the army, as they had been in earlier kingdoms, but for the first time, domestic slavery became widespread in the North. The Anglo-Egyptian Condominium, which governed Sudan until 1956, further contributed to inequalities between the North and South. The northern and southern states were managed separately under different institutional arrangements, as British administrators wanted to govern the South under an "African" rather than an "Arab" model. Education was actually discouraged in some areas of the South, particularly among pastoral communities, because British administrators believed it distanced students from their tribal customs. Sudan achieved independence in 1956 under a new government that, in theory, represented both northern and southern citizens. However, southerners were significantly under-represented in the new state: of the 800 government positions that had been vacated by the British, only four were allocated to southerners. In 1955, aggrieved southern army officers mutinied against the new government and started Sudan's first civil war, which lasted until 1972.

Sudan's second civil war, which lasted from 1983 to 2005, was fought almost entirely in the South. It caused significant civilian casualties and displacement and destroyed nearly all social and physical infrastructure in the region. The discovery

of oil in the South in the late 1970s played a pivotal role in igniting the second civil war and complicated peace negotiations throughout the conflict, as both North and South aimed to gain control over oil resources. Immediately after Chevron discovered oil in Bentiu in 1979, the central government took a range of actions, including changing the border so that Bentiu was in a northern state. It offered concessions to Chevron and Total in the South and designed pipelines and refineries that were to be built in the North. Southern leaders interpreted these actions as attempts by the North to seize control of Sudan's oil wealth. The southern rebel army, the Sudanese People's Liberation Army, aimed many of its initial campaigns at the oil fields, which forced the foreign companies to suspend operations. Government forces regained control of the area in 1991 and began exporting oil in 1999; this provided the government with additional revenues, which it used to modernize its army and thus prolong the fighting.

On the ground, the fight for control of oil led the northern armies and militias to use brutal scorched-earth tactics to clear out nearby populations. Fighting within various factions of the Sudanese People's Liberation Army also contributed to the death toll. Out of a total population of ten million in the South, an estimated two million people died directly due to the conflict or from the resulting famine and disease; another four million were displaced. The second civil war ended with the signing of the Comprehensive Peace Agreement in 2005, under which the South was to be governed as an autonomous region for six years and oil revenues were to be split evenly between the two sides. In a January 2011 referendum, nearly 98 percent of the population of the South voted in favor of secession, which resulted in their officially gaining independence in July that year.

OIL AND AID MONEY GIVE BIRTH TO A NEW ECONOMY

South Sudan emerged surprisingly wealthy from its vicious civil war. Initial estimates from the South Sudan's National Bureau of Statistics (SSNBS) put per capita gross domestic product at \$1,546 in 2010.³ However, 71 percent of this wealth, or \$9.5 billion, came from oil exports, and because foreign investors and the northern region received a large portion of the oil revenues, the per capita gross domestic product for each southerner was significantly lower, just \$984. The remaining revenues accrued to the southern government, so that oil money made up 98 percent of the government's 2010 budget.⁴

South Sudan's other key source of wealth is foreign aid. Since the signing of the Comprehensive Peace Agreement, the country has been flooded with aid money, including \$524 million dispersed by the Multi-Donor Trust Fund, which is administered by the World Bank.⁵ Donor agencies spent more than \$1.1 billion in 2010 on 395 separate projects in South Sudan,⁶ half of which were related to health, social development, or humanitarian assistance, although the most expensive were infrastructure projects. The total aid spent was equivalent to \$134 per person, or roughly 14 percent of the average per capita income of \$984. This is more than double the average amount of per capita aid for the rest of sub-Saharan Africa.⁷

However, this windfall of oil and aid money has not come without a price. Whereas most economies develop and grow over a long period of time, the rapid inflows of wealth have meant that, in little more than a decade, South Sudan has transitioned from an agro-pastoral society to being part of the modern global economy. As a result, its economic growth has been haphazard and highly concentrated in a few sectors.

The private enterprises that have arisen in South Sudan exist almost solely to serve those with oil or aid money—that is, the government and NGO sectors. Companies active in Juba’s construction and service sectors are booming as result of this spending, and with demand from these external sources outstripping supply, existing firms can earn extremely high profits. In contrast, with more than 50 percent of the population living on less than \$1 a day, private demand from the local population is almost nonexistent.⁸ As a result, firms have little to gain by tending to the needs of the majority of the population.

South Sudan’s economy is also starting to exhibit the symptoms and challenges associated with the “natural resources curse,”⁹ which are exacerbated by the large aid inflows. These problems include macroeconomic volatility, crowding out other industries, poor institutions, and civil war. Each deserves brief consideration.

Macroeconomic volatility

South Sudan is extremely dependent on two volatile income streams: oil and aid. Oil prices are historically uncertain, as is the South’s ability to export oil using northern pipelines and processing facilities. Aid income is not guaranteed to continue indefinitely, and it may decline as the glow of independence begins to fade in the face of allegations of corruption and income mismanagement. Moreover, as aid and oil are the only real sources of hard currency, their volatility leads to uncertainty in the exchange rate. Before independence, this uncertainty played out in the black market for U.S. dollars. The black market price for dollars averaged around 30 percent higher and was more volatile than the official exchange rate.¹⁰ The price swings reflected rapid changes in sentiment, as well as the central bank’s ad hoc dispersion of dollars. For example, fear of civil unrest drove up the black market price of dollars dramatically in both the lead up to the referendum and at the time independence was secured.¹¹

Crowding out other industries

The large inflows of oil and aid money are putting pressure on South Sudan’s exchange rate and domestic prices. Scarce supplies of human, physical, and financial capital are drawn toward the few industries that have access to new money, which leads to higher prices. Demand from employees of aid organizations, for example, has led to higher prices for amenities such as hotels, restaurants, and taxis; basic goods such as fuel and clean water; and business-related needs such as skilled labor and office facilities. Indeed, prices are higher in Juba than in any neighboring country, and they continue to rise. The SSNBS recently published an

inflation estimate of 80 percent for the year ending May 2012. Inflation is also related to the closure of the North-South border. Imports from Kenya and Uganda must now travel farther and pass through multiple taxation points at the international border. Furthermore, input prices are high and output prices are uncompetitive on world markets, due to the appreciating exchange rate. This phenomenon means that there are few incentives to invest in South Sudan's other industries.

Poor institutions

South Sudan's oil wealth is hampering institutional development. The key reason for this is that the potential to earn high profits by exploiting resources creates a political contest for ownership of these resources. Public organizations therefore tend to concentrate on capturing existing rents rather than on motivating people to create wealth, promoting equality, and fostering a civil society.¹² Oil money in particular is contributing to weak macroeconomic institutions. For example, poor management of government oil revenues has contributed to procyclical fiscal spending. As oil revenues have risen in recent years, so too has fiscal spending. Oil revenues doubled between the setting of the provisional and revised budgets for 2008, but rather than saving this windfall, the government simply revised the budget to allow for a similar increase in spending.¹³ In fact, we learned through our interviews that the process of public budgeting is simply a formality and that money is spent as soon as it comes in.

Volatile oil revenues also hamper monetary policy. Before independence, oil revenues numerated in U.S. dollars were sold to banks and foreign exchange bureaus at the official fixed rate, which provided multiple opportunities for corruption. We observed that at least a dozen foreign exchange bureaus are located within two blocks of the central bank in Juba, yet none of them ever seemed to be selling dollars to the public. We were told that money was instead recycled to black market sellers, who were conveniently located within the same two-block radius. The scope of corruption has recently declined, as the central bank has issued a new currency and now uses a managed-float exchange rate and competitive auctioning of foreign exchange. However, the central bank does not have sufficient reserves to counter any significant decline in oil revenues. Indeed, one informant told us that in July 2011, these limited reserves were being used to pay government salaries.

Civil war

Finally, as mentioned earlier, oil wealth no doubt played a key role in the recent civil war. Perhaps this was the most damaging aspect of the natural resource curse for South Sudan. Going forward, the lure of oil wealth is unlikely to reduce the potential for conflict. Indeed, history suggests that where a valuable natural resource such as oil or diamonds is there for the taking, it will more likely inspire factions to fight than encourage a substantial influx of labor and capital investment.¹⁴ As demonstrated in Sudan's second civil war, oil wealth may lead to more

intense fighting, as factions now have the financial resources to procure more weapons and sustain the fighting for longer periods.

THE DEVELOPMENT OF THE PRIVATE SECTOR: A CHRONOLOGY

Firms in South Sudan are rapidly developing to meet the new demand created by oil and aid money. While only 300 firms were founded in the entire decade of the 1990s, more than 2,000 were formed in the first six months of 2010. However, the majority of these are micro-enterprises that employ fewer than five people. If we focus on larger enterprises—those with more than 20 employees—we find that most formal employment is generated by a handful of industries.¹⁵ So far, money has been flowing into firms that produce the goods and services most needed by foreign aid and oil companies: new roads, hotels, and other accommodations; imports of popular consumer and capital goods; and telecommunications services. Profits are so high in these sectors that firms are able to overcome the numerous constraints to doing business in South Sudan. On the other hand, the combination of political uncertainty, high and volatile prices, and a lack of basic infrastructure means there is little incentive to invest in other areas of the economy. This is particularly true for agriculture, which employs around 80 percent of the population. As a result, the recent inflow of money has yet to translate into broad-based growth in employment and the economy. In the following sections, we provide more details on the five most important sectors for the current and future growth of South Sudan's new economy.

Construction

Construction is one of the main industries to benefit from the recent influx of aid and oil money, making it one of the fastest growing and most profitable sectors in South Sudan. Given the dearth of any public investment in infrastructure during the civil wars, the country currently has fewer than 100 kilometers of paved roads. Therefore, infrastructure development has been a top priority for the new government and major aid donors. All public infrastructure projects such as roads and power plants are currently funded with government and donor money, with road construction the primary focus. For example, AMBC, a large joint venture between Thai and South Sudanese partners, was recently awarded a contract for \$280 million to build roads and bridges in the municipality of Juba on a build-operate-transfer model. Work is now spreading beyond the city center to link downtown Juba to outlying areas such as Jebel Mountain and Gudele. The central government's annual budget for transport and roads alone has increased from roughly \$42 million in 2006 to \$150 million in 2010, not including funds transferred to individual states. Donor spending also increased: in 2007, the SSNBS counted 11 donor infrastructure projects valued at \$17 million; in 2010 it counted 32 such projects valued at \$284 million.¹⁶

Private investment in residential housing and hotel construction has increased as well, although no official figures exist as yet. Walking around the Tong Ping dis-

trict of Juba, our team members could not help but notice the thick plumes of dust rising from the construction sites of multistoried hotels and private mansions, which have completely transformed Tong Ping from the cattle market it once was.

Evidence from interviews suggests that most of the hotel projects are commissioned by private enterprises, such as those owned by Chinese, Ethiopians, and Eritreans, and primarily serve expatriate aid workers and government officials. The private residences are being built for wealthy South Sudanese, mostly military or government personnel.

Thus far, construction is the sector most able to support businesses, which range in size from large firms such as the joint venture AMBC, the North Sudanese conglomerate Eyat Oilfield Services, and others owned by foreign contractors, to midsize companies that focus on residential housing, to small local enterprises such as brickmakers and welders. Major public contracts are awarded to the large foreign-owned or joint-venture firms like AMBC, and the profits from these projects end up in the firms' home countries. On the other hand, smaller housing and hotel construction projects are typically commissioned by private enterprises, such as the foreign-owned hotels mentioned above, and are carried out by a mix of foreign-owned and local construction companies.

Companies employed by donors such as the U.S. Agency for International Development or Japan International Cooperation Agency to build large-scale infrastructure projects are somewhat insulated from local business practices because they win these projects through competitive bids; their client organizations expressly forbid them to pay bribes when operating in South Sudan. On the other hand, firms that work on private projects or local government-funded projects must navigate a much more complicated environment. Construction projects typically involve large up-front costs and are inherently more risky, given their size and long-term nature. Nonpayment and delayed payments are frequent, and because construction companies have no legal recourse, they are forced to renegotiate with their clients when contracts are violated. In an environment without strong institutions, many firms turn to influential locals who can help connect them to trustworthy clients, help secure public contracts, and smooth out other potential difficulties. For example, the foreign project manager for a major construction company characterized his partnership with an influential local businessman as a strategic alliance: the businessman helps build relationships with potential clients, while the foreign partners supply the financing, technical know-how, and human capital. Like many other construction firms in South Sudan, this particular company employs only foreigners in its engineering and managerial positions and hires local laborers for manual work.

That said, even the most successful construction firms must overcome significant obstacles in their day-to-day business. The government is notorious for making late or irregular payment on contracts, subcontractors can also be unreliable, and access to foreign exchange is an ongoing concern, as virtually all input materials, such as cement, pipes, and steel, are imported. Although small local firms in Juba provide brick and gravel and welding services, they typically operate on a

much smaller scale and serve local clients, such as individual households. A North Sudanese businessman whose family owns several properties in Juba, including upscale hotels and warehousing facilities, explained to us that rather than relying on cheaper, locally made materials, he prefers to bring in Kenyan technicians and import all his building materials from Kenya or China in order to ensure the quality of the construction.

Trade and transport

Other sectors benefiting from the new economy are trade and transport. The demand for imports generated by aid and oil money, combined with limited competition in these sectors, means traders and transport companies often make huge profits. Although they face many constraints to doing business in South Sudan, their oligopolistic market power means they can simply pass on these constraints in the form of higher prices for the consumer.

As in other sectors, there is a divide in the trade and transport sectors between the large, formal companies that primarily serve the government and donors, and the smaller informal businesses that serve local retailers. In our interviews with the leading foreign transport companies, including the French firm SDV Logistics and two recently merged Swiss companies, Interfreight and SPEDAG, we learned that a total of seven foreign shipping companies are serving large customers, such as the government of South Sudan, UN agencies, and other NGOs. On the other hand, local businesses rely on Ugandan or Kenyan companies that specialize in specific products, such as foodstuffs produced in Uganda, and then sell the items wholesale in Juba.

While South Sudan exports crude petroleum, it imports almost everything else, including foodstuffs, consumer goods, capital goods, and construction materials. As a result, freight vehicles from Uganda and Kenya travel to Juba fully loaded but return empty, and the cost of returning empty vehicles must be added to the price of imports in South Sudan. Many other factors also add to the cost of importing goods, including poor road conditions, lack of safety in some areas, high tariffs, checkpoint delays, and illegal taxation. Our contacts at SPEDAG said that firms in Juba typically pay between \$6,500 and \$7,700 to ship a 40-foot container from the port of Mombasa to Juba via the Nimule border crossing. A recent survey by the SSNBS found that transporters must pass through an average of four checkpoints per 100 kilometers. For example, there are about six checkpoints on the 163-kilometer main trade road from the Ugandan border to Juba. Drivers usually make payments at 97 percent of the checkpoints.¹⁷

What's more, we learned that many industries in the transport sector have established private associations that behave like cartels, setting high prices to offload goods, provide fuel, and clear fees at customs stations. The result is very high consumer prices in South Sudan. Indeed, a study by the World Bank found that basic food substances were substantially more expensive in South Sudan than in nearby countries. For example, by the time a ton of beans is transported from

Kampala, Uganda, to Juba, its wholesale price almost doubles, from \$675 to \$1,075. Transport and logistics costs (\$145 per ton), as well as duties and other official charges (\$218 per ton), contribute substantially to the markup. Other regionally traded products, such as maize, water, beer, and cement, were found to have similarly large trading costs.¹⁸ However, these high prices in the trade and transport sectors are not that surprising, as in such a young economy that faces great political uncertainty and many constraints to doing business, high rents are necessary to stimulate investment.

Given that widespread demand for imported products is relatively recent, this sector has yet to build up a diversified product base. At most markets in Juba, homogenous micro-sellers offer a few basic food items, typically tomatoes, eggs, onions, okra, and, occasionally, salted fish. This lack of diversification may result from the demand side, in that consumers traditionally have required only a limited range of goods, or from the supply side, as traders lack affordable access to other products. Historically, the majority of traders and wholesalers have been Arab businessmen from the North, particularly in areas closer to the border. However, many have recently returned to the North, due to fears about political turmoil, or have deliberately kept their inventories low in anticipation of a sudden need to move, according to our informants. The result is an inexperienced trade sector and higher prices in cities like Malakal, which has historically relied on Arab traders for food imports.

The trade sector could clearly benefit from innovation and competition. For example, some entrepreneurs have recently established successful, diversified retail outlets that cater primarily to the aid community. These firms are typically owned by Westerners who leverage their networks to import European and North American food products and basic consumer goods. However, we found little evidence of traders supplying diversified products to the local market.

The high potential to make a profit in the transport sector means there is also room for innovation. One particular area, using the river to transport both passengers and goods, has not been fully exploited. River transport remains the only practical and cost-effective way to reach communities along the White Nile and its tributaries, particularly during the rainy season, when the dirt roads in the states of Jonglei and Upper Nile are virtually impassable. However, many North Sudanese-owned river transport companies have stopped operating since independence, leaving a void for domestic companies to fill.

Telecommunications

While they represent only a small sector of South Sudan's economy, telecommunications companies are capitalizing on the rapidly growing demand for their services. From aid workers and foreign businessmen to government officials and local traders, more than one million people in this new economy are moving around with a domestically serviced cell phone in their pocket. Cell phones are revolutionizing Africa, and South Sudan is no exception.

South Sudan's telecommunications industry includes five main players and a series of small ones. People at these firms estimate that the potential market is double its current size, or two million users, and could be three million in three years. With many companies and relatively few customers, it is likely that the industry will soon pass through a consolidation phase. This may not necessarily be a disadvantage: granting greater market power to a few companies may make coordination of the industry easier and actually help spur infrastructure investment. However, the sector is still very new and faces many challenges. Regulatory uncertainty in particular is deterring investment in the large-scale infrastructure required to increase the network. As a result, coverage is currently concentrated in the larger population centers.

While it is one of the most modern sectors of the economy, telecommunications still has enormous potential for innovation. As in other developing countries, firms and NGOs can capitalize on widespread cell phone coverage to bring low-cost services to large sections of the population. For example, cell phones have been used to connect underserved communities to medical services in West and East Africa. Another particularly important area for innovation is mobile phone banking. South Sudan need only look to its Kenyan neighbor to see how the introduction of M-PESA has made banking services available almost everywhere in the country. Given the highly rural population of South Sudan, a mobile banking model is the fastest and most cost-effective way to bring financial services to its people.

Agriculture

About 80 percent of South Sudan's population is currently engaged in agriculture. However, most farmers cultivate small plots and grow only enough staple crops, such as corn and cassava, to feed their families. Many do not even cultivate enough for their own consumption; the UN Food and Agriculture Organization and the World Food Program estimated that South Sudan would face a cereal production deficit of 390,000 tons in 2011, leaving 890,000 people facing a severe food shortage and an additional 2.4 million people facing a moderate shortage.¹⁹ Even in areas with food surpluses, only a small quantity of food is sold in local markets. A very small amount is sold in large urban markets, where food items ranging from basic cereals to more expensive fruits and vegetables are imported from Uganda, and nothing is exported. These observations raise two questions: Why are farmers in South Sudan not selling their products to others? Why do farmers not invest more to increase their productivity?

South Sudan is approximately the size of France and has a population of under ten million, which gives it a population density of 34 people per square mile, equivalent to that of Norway. At present, only 4 percent of the land is cultivated, mostly in the fertile "greenbelt" zone in the southern part of the country and along the Nile River and its tributaries.²⁰ The bulk of the agricultural sector in South Sudan consists of small subsistence farmers and pastoral and agro-pastoral communities.

Subsistence agriculture has always existed in South Sudan, even during the civil war, and it will continue to be the dominant method of food production unless there is significant private investment and innovation.

Private-sector investment in the form of small farmers investing in inputs, equipment, or new planting methods to increase production is currently extremely limited. Most small farmers are vulnerable to weather conditions, disruptions stemming from the resettlement of displaced peoples, and virtually no farmers have access to any form of lending, including microfinance. On average, small-holder farms are five *feddans* (about five acres) or smaller and rely on traditional farming methods and basic manual tools. As a result, production yields are extremely low. The UN Food and Agriculture Organization and World Food Program estimate that South Sudan's farmers produce an average of .38 metric tons per acre. In comparison, Ugandan farmers produce .62 metric tons per acre, despite a population density that is ten times higher.²¹

Within the past year, however, more South Sudanese businesspeople have come to own and operate commercial farms. They find this much easier than foreign investors do, as they are able to get land from their tribal communities. In some parts of the country, local governments are taking the initiative to attract and promote commercial farming. For example, Upper Nile State, which has historically had a good deal of commercial farming due to its proximity to North Sudan, is starting a local effort to survey and demarcate land on a county-by-county level. Unused land that is not reserved for the community is leased to agricultural investors for 15 years, with the stipulation that the county may take it back if it is left uncultivated for five consecutive years. Most of the South Sudanese who invest in such commercial farming schemes are entrepreneurs with backgrounds in other activities; they started investing in agriculture as a way to diversify their business portfolios. Most of these investments were made in the past year or two as pilot projects on a relatively modest scale (500 feddans). Although some commercial farms use tractors and employ managers with considerable technical expertise, they are not in fact that different from subsistence farmers; most still rely on traditional labor-intensive farming methods because machinery remains expensive and difficult to acquire. In addition, virtually all existing projects are self-financed because bank loans are unavailable.

High production costs are a common constraint for both commercial and subsistence farmers. Given South Sudan's small population and scarcity of skilled labor, including people who are trained in modern farming and husbandry methods, the cost of labor is extremely high. For example, one farmer told us that it costs roughly SDG 200, or \$75, to hire male laborers to clear one hectare of bush, which takes ten workers about one day. This translates into a daily wage of \$7.50 for male laborers involved in preparing land, compared to \$1.15 for those performing the same task in southern Vietnam.²² Furthermore, access to markets is limited by poor road conditions and a lack of information on market pricing. For example, farmers who produce a surplus in the state of Western Equatoria find it too costly to transport their produce to Juba, which is located in the adjacent state of

Central Equatoria, despite higher market prices in the capital city. Although farmer cooperatives, such as the Yambio Agricultural Farmers' Association and the Nzara Agricultural Farmers' Association in Western Equatoria, have succeeded in selling their members' crops to large buyers such as the World Food Program, they have a much harder time finding large-scale buyers in the private sector. Anthony Ezekiel Ndukpo, the secretary general of the Yambio group, estimates that hiring a 20-ton truck for one day to transport crops from Yambio and Juba costs \$2,500, much higher than the association's break-even point of \$750. As a result, farmers in Yambio are restricted to selling their products at local markets, which are too saturated with surplus crops to generate much profit.

The experience of the farmers in Yambio suggests that South Sudan will not develop a strong agricultural sector until transportation costs drop. One way for this sector to take off is if transport costs can be reduced significantly by improved roads, less expensive fuel, and higher competition in the trucking industry. The aggregate effect of such cost reductions would be an increase in the volume of agricultural trade, which would result in greater competition and lower costs within the sector. For this to take place, however, would require a massive recycling of rents into public investment in infrastructure, along with lowered inputs costs—which is the very opposite of the current situation, where rents are distorting markets by driving up prices.

In the meantime, the lack of accessible markets discourages farmers in fertile, surplus-producing areas from investing to increase their productivity while people in other parts of the country suffer from food scarcity and much higher prices. Although agriculture has the potential to be a major source of income for South Sudan, the sector so far remains under-commercialized.

Manufacturing

Manufacturing is a nascent industry in South Sudan but it has the potential to grow. At present, only a handful of large, formal, foreign-owned manufacturing firms exist in South Sudan, clustered around Juba. These businesses, which employ between 100 and 300 workers each, produce consumer goods, such as inexpensive beer, soda, and bottled water, that are sold to domestic consumers in South Sudan. Interviews with representatives of several firms suggest that the main reason they based their operations in South Sudan was to avoid the high transportation costs involved in importing the same products from neighboring countries. On the other hand, many small firms operate informally, including the brickmakers and welders who serve local construction projects. The 2010 South Sudan Business Survey conducted by the SSNBS counted 110 such small-scale manufacturers in Juba alone.²³ Although the manufacturing sector faces many constraints, there are significant opportunities for expansion, particularly as consumer demand rises with the growing economy.

Weak infrastructure is the primary constraint facing the manufacturing sector. Virtually all businesses operating in Juba rely on their own generators, since city

power is sporadic and insufficient. Michael Beyene, general manager of the Aqua'Na Bottling Company, one of the four major suppliers of bottled water in Juba, calculates that power generation represents roughly 20 percent of the firm's operating costs. Poor road conditions also limit firms' distribution networks, both internally and for potential export markets. In addition, most manufacturing businesses require a large up-front investment in physical infrastructure, which can deter investors who cannot secure a safe, long-term land use agreement. Land is communally owned in South Sudan, so finding a community that is willing to negotiate a long-term land lease deal can take a long time—more than two years in some cases. Firms also face high labor costs because the existing labor pool has so few skilled workers.

Despite these challenges, there are opportunities for growth. South Sudan's impassable roads in fact offer an unexpected benefit to the manufacturing sector, as high transportation costs can promote a nascent industrial policy in that they make domestically produced goods more price competitive than foreign goods. This is supported by the fact that virtually all goods produced in South Sudan to date have been fast-moving consumer products that generate profit through low margins and high volume. Although manufacturing for export may be difficult to achieve in the short run, there is significant potential for production aimed at the domestic market, which is expected to grow as household consumption increases. Other constraints, such as the lack of skilled labor and the difficulty of securing land, are also surmountable by those who are patient enough. Ian Alsworth-Elvery, managing director of South Sudan Beverages Limited, a subsidiary of the global brewing conglomerate SABMiller, says that the company initially had to spend more time and resources training its workers in South Sudan than in other developing countries. In response, the firm developed a two-pronged training approach in which it sends local staff members to train at its sister operations in Kenya, and relies on expatriate staff for on-site training in South Sudan. This strategy has been so successful that the company now hires almost all local workers, the exception being five expatriate employees. In terms of securing land, the company took roughly two years to find and negotiate a land-lease agreement with a local Bari-speaking community. It eventually leased 32.5 acres of land under an arrangement that made the community itself a financial stakeholder in the business, which pays them a royalty on each bottle of beer sold by South Sudan Beverages Limited.

CONCLUSION: FROM CONCENTRATED PROFITS TO EMPLOYMENT-GENERATING INNOVATION

The end of decades of civil war and large inflows of aid and oil money are dramatically changing the economy of South Sudan. Only a few years ago, the majority of its people were living just as they had for centuries. Now they are experiencing the birth of a modern economy. Our findings suggest that the organic development of South Sudan's economy by the invisible hand of the market will begin to produce an importing state that comes to depend on rents, with the biggest beneficiaries

operating in the few sectors that absorb aid and oil money. That said, this version of the economy will offer few tangible benefits to the majority of the people of South Sudan. This is particularly true for the agricultural sector, which is seeing little private investment in the existing business environment, precisely because it does not cater to the needs of the government officials and aid organizations whose spending is driving growth in the construction and hospitality sectors.

Far more innovation will be needed to reverse this situation, both in government policy and in the strategies of firms, to encourage the kinds of business activity that will translate into inclusive growth. We believe that relying on invisible market forces will cause South Sudan to go down the unfortunate path taken by many other states dependent on natural resources. To avoid this outcome, it is essential to have active government interventions that will support greater experimentation in policymaking and in the private sector.

We found innovation already occurring to some extent on a local level, where informal practices are filling the gaps where formal institutions and policies are nascent or nonexistent. For example, communities in Upper Nile State have initiated an effort to survey and rent out land on a county-by-county basis, rather than waiting for passage of the national Land Act. Evidence gathered in interviews suggests that community leaders were motivated to get a head start in attracting private agricultural investors, as many commercial farms owned by North Sudanese investors were sold off in the lead-up to independence.

It seems that the deficiencies in South Sudan's business environment may in fact provide the impetus for firms to adopt more innovative strategies, given that the first-best solution is often not feasible.²⁴ For example, the lack of vocational schools and technical institutions and the disruption of schooling and economic activities during the civil war are major impediments to accumulating human capital, especially business skills. Despite these hurdles, we found evidence that firms in South Sudan are implementing organizational learning and seeking out people with new skills so they can survive in the changing environment that peace has brought.

For example, of the 40 or so firms that make up the Yambio Chamber of Commerce in Western Equatoria State, almost all started as small trading companies that operated during the civil war, with traders crossing from South Sudan to the Democratic Republic of Congo or Uganda to import basic goods. Since the Comprehensive Peace Agreement was signed, these firms have been the ones most able to take advantage of the improved security situation and expand their businesses. Interviews with Chamber of Commerce members suggest that their original trading activities helped them gain essential business capabilities, such as managing large numbers of workers and negotiating contracts with suppliers and distributors. These firms also already have experience with foreign businesses, whose practices they can now emulate. Many members have recently decided to develop more specialized business models and move beyond general trading to operate restaurants, hotels, beer distributorships, and automotive parts dealerships, among others. In one case, 24 traders in Yambio have banded together to form SOMAG,

an agricultural marketing company that seeks to aggregate and purchase cereal crops from local farmers and sell them to large-scale private buyers.

Although South Sudan's new economy is currently growing rapidly and will continue to grow without more innovation, this type of growth may offer few benefits in the form of meaningful employment, higher incomes, or better nutrition for the majority of its people, who continue to rely on subsistence agriculture and are largely isolated from the developments taking place in other sectors. So far, new agricultural ventures such as SOMAG are exceptions to the norm, and it is uncertain whether these new firms will actually be profitable a few years from now. However, allowing this kind of experimentation to take place is absolutely necessary if South Sudan is to generate more innovative policy and business strategies. By doing so, South Sudan can direct the trajectory of its new economy and help to promote a truly transformational process that will improve the livelihoods of its newly independent people.

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