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Niger: Specializing Educational Programs to Advance Economic Opportunity in Rural Areas

Niger is a landlocked West African country that is surrounded by Algeria, Libya, Nigeria, Benin, Burkina Faso, and Mali. The population is approximately 24 million, and it is expected to triple by 2050 (BBC, 2017). Of Niger's land area of 1,266,700 square kilometers, around 19% is urban and 81% is rural. Due to the rainfall patterns and climate, Niger's northern region is a desert zone, its central region is an intermediate zone where pastoral nomadic tribes reside, and the southern region is a cultivated zone with arable land. Most of the population is concentrated in the south because the majority of Niger's rural population relies on subsistence farming for food. Ideally, one-fifth of the land is fertile, but climate shocks like erratic rainfall and frequent droughts make agricultural production difficult. Niger's vulnerability to climate shocks has led to high rates of malnutrition and poverty. This vulnerability is partially due to the prevalence of subsistence farming and the lack of large-scale and efficient production in rural areas. The severity of the food shortage is compounded by Niger's extremely high birth rates, leading to a shrinking supply of food that cannot hope to feed an ever-growing population. Women in rural areas are adversely affected by food insecurity, and similarly, are faced with a lack of educational opportunities. Unfortunately, a one-size-fits-all government-run education is not effective in rural areas. To decrease the severity of the food crisis in Niger, applicable entrepreneurial and agricultural education should be provided to rural populations. Furthermore, certain educational initiatives need to exist solely for women and girls to overcome educational gender gaps. This will help diversify job opportunities, reduce the prevalence of subsistence farming, and improve low literacy rates. Each program would be specialized to specific community needs and culture.

The majority of Niger's rural population sustains themselves through subsistence farming. Subsistence farming is a farming practice where families grow just enough to feed themselves.

According to The World Bank, in 2016, around 36% of Niger's land is actively cultivated, and the average farm size is around 7.2 acres (Food and Agriculture Organization of the United Nations, 2013). In recent years, Niger has become one of the world's largest uranium producers and has invested heavily in agriculture, infrastructure, and education. Unfortunately, these industries are still struggling because Niger's economy is still widely unstable because of its vulnerability to climate shocks, commodity price fluctuations, and rapid population growth. Thus, even with this investment, Niger's economy remains in extreme poverty with the lowest HDI in the world which leads to a chronic food crisis (United Nations Human Development Report, 2019). Because of Niger's extremely high birth rate, the typical Nigeriens family is quite large, averaging 7.1 members per household (UN, 2012). Children help their families with childcare, work, and oftentimes act as a verbal communication method between families. Nigerien children are indoctrinated with cultural values that stem from Islam since around 98.6% of Niger's population follows Islam (Pew Research Center, 2009). Other than farming, there are limited jobs in the public sector in urban areas within the retail and mining industry where the household income averages around \$5,414 annually (Food and Agricultural Organization of the United Nations, 2011). Nigeriens also have poor access to clean water and proper sanitation. Water-related diseases, poor hygiene, and poor sanitation practices contribute to the high death rate amongst children under five (UNICEF). According to UNICEF, in 2015, only 51% of Nigeriens have access to drinking water, 13% have access to basic sanitation services, and around 3/4 of the population practices open defecation. The lack of access to proper water and sanitation disproportionately affects rural populations. Furthermore, due to the low

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population density, only 14.3% of Nigeriens have access to electricity. Even those living in urban areas with access to electricity suffer from frequent blackouts and brownouts (World Bank Group). While these problems are complicated and caused by a multitude of factors, there is one solution that could eventually lead to the improvement of the economy, sanitation systems, energy systems, and job opportunities. That solution is effective and felicitous education.

Over the last couple of decades, Niger's education system improved greatly. Niger's government has taken a proactive stance to invest money in education and pass policies requiring primary and secondary schooling for children from the age of seven to fifteen. Furthermore, Niger's government has worked with external organizations to help ameliorate the education system. It has expanded some schools to include multilingual education which is especially important in rural areas to help increase retention rates. But even after this improvement, Niger is ranked last on the United Nations Development Programme's Education Index. Niger has one of the lowest literacy rates in Western Africa. Only 30% of the population is literate, but the rate is higher amongst teenagers and young adults (UNESCO). This is particularly troubling because many children who attend primary school still end up illiterate.

While education is free, many communities just don't have access to schools at all. Primary and secondary schools are government-run, but the technical schools and universities have minimal enrollment rates, especially for women. Culturally, education is not a priority in the majority of rural areas, particularly for girls. Girls are discouraged from pursuing education past primary school. Instead, they have to help with childcare due to the large family size. In many nomadic communities, there is strong opposition to secular education that stems from the fear of cultural change, government control, and historic colonial education policies. Girls, nomadic children, and children with disabilities have very limited educational opportunities.

Women, legally, are not considered equal to men. Therefore, they are not entitled to the same benefits, rights, jobs, and educational opportunities. Niger ranks 151 out of 189 on the Human Development Reports' Gender Inequality Index. Gender inequality is unsurprisingly ubiquitous in the schooling system. In Niger, 22.5% of women older than 15 are literate which is disproportionately less than 39% of men who are literate (UNESCO, 2012). Since 2012, there has been a 35% increase in primary school enrollment, which is in part due to government policies requiring primary education but is mainly because of population growth. The gross primary enrollment rate has stayed at a constant 71% (UNICEF). In rural areas, more than 50% of children from the ages of 7 to 16 do not attend school, even though it is mandatory. But even those who attend school do not end up literate for retention rates are extremely low Niger's quality of education is poor. Furthermore, recent government educational policies have widened the inequities between rural and urban school enrollment rates. In rural areas, child marriages, safety concerns, and lack of access to schools act as barriers to Niger's educational and economic development. The low school enrollment and literacy rates for women are largely due to cultural factors that result in one-third of girls getting married before they turn 15 and the precedence of childcare for younger siblings takes over education for girls. But once these girls are married, raising children takes precedence over their education. Sadly, it could take years to significantly decrease the practice of child marriages because of religious and historical traditions.

The low school enrollment and literacy rates in Niger stem from and contribute to food scarcity. Due to the lack of education in Niger, families are forced to rely on subsistence farming to feed themselves. Sometimes they must their children must help farm the land or take care of children while the parents are doing so. These families end up living, quite literally, harvest-to-harvest. One bad drought can lead to months of food uncertainty. The lack of education around sustainable agricultural practices has led to the wide-use of primitive and inefficient farming practices that leave Nigeriens vulnerable to climate shocks and thus, food scarcity. This creates an endless cycle where poor education results in the predominance of subsistence farming, but the inefficiency and unpredictable nature of subsistence farming leads to lower school enrollment rates and food scarcity. Poor education is causing limited access to healthcare,

electricity, sanitation, water, food, and perversely, schooling. Niger desperately needs higher enrollment rates in secondary and tertiary schooling from individuals in rural areas so Nigeriens can develop and engineer solutions to their problems, instead of relying on foreign aid to do it for them. Currently, Niger is almost entirely dependent upon foreign aid to improve sanitary, food, and electricity conditions because the majority of Nigeriens are not educated in the skills needed to do so. Since rural areas have low literacy rates, it is difficult to communicate effectively with urban areas. This lack of communication can be detrimental as rural populations need access to food and medical supplies that are only available in urban areas.

To reduce educational inequities and improve the overall literacy rate, government and foreign aid should be utilized to create specialized programs for rural and nomadic populations. Specifically, these programs should be targeted towards nomadic children, young mothers, teenage girls, and young adults from rural areas. These programs should cover basic literacy skills, agricultural, engineering, and entrepreneurial education. These programs must overcome the barriers that block Nigeriens receiving a high-quality education. Thus, they must be accessible to rural areas and acceptable to nomadic tribes. These programs should also help reduce the education inequalities between women and men. Finally, these programs must be effective; students must be able to pass literacy tests by the end of the program.

Nomadic tribes generally distrust government involvement and dislike secular education because they believe it fosters cultural change. For these reasons, nomadic children are either educated by a village elder, or they work and perform hard labor instead of attending school. The government-run schools in Niger are structured to fit a sedentary lifestyle, and this unsuitability results in the incredibly low rates on school enrollment. Currently, UNICEF has built around five schools. These schools are boarding schools that children stay overnight at, receive three meals a day, and attend classes while their parents are away. This schooling method has had success in the area and has been able to reach around 650 students. They have around an equal ratio of boys to girls in their classrooms, and the children are in school for four to five months a year. While this specialized schooling method helps decrease the gender inequity in education and increase literacy rates, it is not suitable to overcome every barrier preventing all nomadic children from attending school. For reference, one of the largest barriers to education for nomadic children is the distrust of the government and secular education in their tribes. A boarding school that teaches secular education may appeal to more progressive tribes, but it does not appeal to a majority of tribes. Additionally, these schools require more resources because children need to stay overnight, eat three meals a day, become literate, and be cared for. Furthermore, the parents of the children are away during these four to five months and are not involved in their education. To better suit the needs of nomadic communities, UNICEF's schooling system will need to change in two key ways. The first step is to integrate the entire tribe into the education system. Since tribes are wary of secular education, elder-taught religious classes could occur as part of the curriculum. This will overcome the barriers of distrust by inviting key tribe leaders in the education process. The

second and most important step is for the school to become mobile. This is necessary because children can learn for a longer period which will increase their retention rate. Additionally, this will decrease the amount of stress on the children because they will not have to stay away from their parents for months. Furthermore, the intent of these education programs are not to change or disrupt these tribes' nomadic lifestyle but will be aimed at expanding opportunities. This will be possible through the investment in educational tools like hand-held chalkboards, chalk, schoolbags, writing utensils, paper, and meals. Teachers must also be trained to be able to travel with these nomadic tribes. Ideally, the government would offer incentives to graduates of these programs will become trained in teaching and come back to work with their tribes. Specifically, the government would offer these incentives to girls to not only increase the percentage of women gaining a college education but also to provide young girls in these tribes with role models; educated female teachers who they could look up to. This way these children will get to retain their traditional lifestyle while still receiving an education. When teachers are traveling with the students, they can keep teaching them throughout the year, which will improve the low retention rates that educational programs in Niger

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typically struggle with. Providing at least two basic meals for children is essential as children cannot learn on an empty stomach. Finally, the ratio of boys to girls must remain equal and additional programs could help educate parents on the importance of education for girls. While the main curriculum will focus on traditional academic skills like reading and mathematics, applicable sustainability, engineering, and farming educational programs will follow secondary school education. This way tribe members can use their education to improve their situation while maintaining their nomadic lifestyle.

Next, educational programs must be shaped to fit the needs of sedentary rural communities. The largest barriers that prevent access to education include distance from schools, lack of effectiveness, and lack of interest. The increased distance from primary schools can be solved by increasing government planning and funneling aid into the construction of schools within a mile of each community. According to UNESCO, Niger spends around 13% of its budget on education. Even without increasing spending on education, there are enough allocated funds to improve access to schools if it is spent efficiently. The majority of the education funds are not used wisely and are usually spent without much planning. Plans for schools to be built in rural areas based on proximity with communities should be made. Additionally, if there is not enough education funding to build schools within one mile of each community accessible paths should be made to reach schools within 2-3 miles. Another large problem facing the educational system in Niger is the ineffectiveness of school programs. Nigerien schools have some of the lowest retention rates. In certain classrooms, 100% of students were unable to pass a literacy test at the end of the program. Foreign aid initiatives such as USAID are focused on improving educational quality, reading achievements, and community participation in schools. While this program has helped decrease the gender gap and increase test scores, it has widely been

effective in urban areas. In rural areas, the primary dialect is Hausa. In government-run schools, the teaching is done in French, which proves to be another obstacle students must overcome to pass literacy tests. To increase the effectiveness of primary programs, core subjects should be taught in Hausa. French should be taught as an additional subject in primary schools, so once the time comes for students to reach higher levels of schooling, they can access government-run programs. Furthermore, foreign aid should be invested in take-home schoolwork and books for children. Finally, foreign and government funds should be invested in teacher training programs that will instruct teachers on engaging and effective teaching methods.

Finally, the last and most complex barrier that must be overcome is the lack of interest in education in rural communities. This causes low enrollment rates in primary schools, but more importantly, it causes high drop-out rates and low rates of enrollment in secondary and tertiary schools. This issue significantly impacts women because they typically will take over child-rearing responsibilities from their mothers once they're into their teens. Additionally, it's difficult for education to be a focus when the majority of families in rural areas live harvest-to-harvest. Since they are subsistence farmers, their survival depends on their harvests, thus they typically use their children to help with labor. Higher education is not given importance because rural Nigeriens do not see it as necessary or applicable to their lives. This creates a vicious cycle where the prevalence of subsistence farming causes a lack of education which exacerbates the food crisis, but subsistence farming is the only means of survival without an education. Thus educational programs aimed at teenagers and young adults should apply to their daily lives. If they do not have basic literacy skills this will be taught along with entrepreneurship, sustainability, agriculture, basic engineering, and teaching classes. Entrepreneurship courses will be aimed at commercializing products that rural Nigeriens create to earn money. This can even include commercializing certain crops, clothing, furs, handmade jewelry, or dyes. These programs will go directly into helping ease rural Nigeriens off of their reliance on subsistence farming and instead will help provide a source of income. This will also help establish stores in rural communities that currently only exist in urban Niger. Agriculture and sustainability programs will be essential and applicable to the daily lives of all rural Nigeriens. Agricultural programs, while they may not be traditional, will work to improve agricultural practices to help maximize rainfall and efficiency while decreasing vulnerability to climate shocks. Classes on irrigation techniques will be particularly helpful to decrease the vulnerability to climate shocks. Teaching

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new farming techniques is important because subsistence farming practices are inefficient and primitive. These backward practices are partially responsible for the food crisis in Niger. Basic engineering classes could use hands-on learning instead of "academic" learning to help fix the lack of access to necessities many of Niger's rural communities face. This can include helping already-existing initiatives create off-grid lighting and energy solutions to help access to

electricity. More importantly, educational programs can be taught following other initiatives to increase water quality and hygiene. Nigeriens can help create small scale water pipe systems through the implementation of WASH-resilient systems provided by foreign aid. These programs are so incredibly important as they may not provide traditional education, but they are providing meaningful and essential knowledge to rural Nigeriens. This way, Nigeriens are equipped with the education and tools needed to help solve their food crisis and increase their accessibility to essential resources. All of these programs must maintain equal men to women ration to help foster independence and equality for women. Additionally, increased educational opportunities for women after childbirth will help decrease the high birth rate that is inflating the food crisis. Entrepreneurial educational programs must be created especially for young mothers and girls. This is essential to help decrease the inequities between men and women. While academic educational programs will seek to mend educational disparities between boys and girls, career-oriented programs would help decrease overall economic disparities. Unfortunately, young mothers with children currently do not have the time or resources necessary to go back and pursue academic education. But they are still very skilled in many other areas that could include sowing, cooking, and childcare. Entrepreneurial education would teach these women to take their skills and turn them into businesses. Cooking skills could be used to create food stalls or makeshift supermarkets that could provide rural areas with a secondary source of food that currently only exists in urban areas. Childcare experience and just a little bit of foreign aid could contribute to more efficient childcare practices or technologies that could help young mothers focus on other pursuits and help young girls stay in school by decreasing the amount of childcare needed.

These programs will rely heavily on government investment, foreign aid, and other external organizations' resources. Even in the current economic situation, there are still ways Americans can help beyond aid. People can start school supply drives to collect old school supplies to send to many new Nigerien classrooms that will need to be created for this program. More pressingly, Americans can look to their skills and education. What skills entrepreneurial and agricultural skills do you have that could help Nigeriens in need? While it may not be plausible to fly out and instruct Nigeriens face-to-face in these skills, you could take the time to write down easy-to-understand instructions, create videos, or other learning materials that could be later translated and used by instructors of these courses in Niger. Americans can also reach out to their company's charitable activities leadership – especially if they specialize in agricultural, engineering, or sanitation pursuits and technologies – and ask if they could contact organizations like USAID, UNICEF, or directly contact the educational course leadership to donate technology or even some of their employees' time to help install and instruct Nigeriens in how to create and maintain these integral systems.

Ultimately, educational access can be improved to create job opportunities, lower birth rates, increase women empowerment, and decrease the severity of the food shortage. To do so, educational programs must be adapted to match the highly varied lifestyles of both rural and nomadic populations in Niger. Most importantly, useful agricultural, sexual, and entrepreneurial education should be provided to men and women in rural areas. Quality

education could help mend the deep inequities between the rural and urban populations in Niger. Furthermore, these educational programs will provide long-term relief by fostering and nurturing innovation that springs from Nigeriens to improve their economic condition and thus, Niger's food crisis

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