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Angola, Factor 7: Animal Agriculture

Angola: The Benefits of Improved Aquaculture and Stopping Overfishing

Angola is a unique African country that displays two contrasting sides of the hunger spectrum. Ravaged by a brutal civil war decades ago, Angola is rebuilding itself by making efforts to improve its food security for its inhabitants. The unique situation in Angola is prevalent mostly in the capital, Luanda. In Luanda, oil and construction companies are attempting to revitalize the city to attract foreign workers who possess more skills than the locals. This is due to Angola's extremely profitable oil industry. With over 1.6 million barrels of oil being produced a day and "estimated reserves of over 13 billion barrels", Angola has the potential to grow into a much stronger country overall ("Economy & Industry"). Despite all of the potential for economic growth, around 55% of Angolans live below the poverty line, surviving on less than a dollar a day. In addition to this, the sobering reality of poverty is that millions of Angolans live in vast slums. The average family gets their food primarily through markets or supermarkets, the latter being more common in major cities like Luanda. While their methods of getting food are slightly more modern and safe than other neighboring countries, there is a vital problem: a lack of proper nutrients and protein. Part of this problem is because Angola is a net-import country, meaning they import more food than they make on their own. This causes massive inflation on their food pricing and the costs prove to be extremely unrealistic for the majority of Angolans. One of the primary agricultural outputs of Angola is fish, which many eat to fulfill their animal protein needs. Targeting the sector of the economy which focuses on agricultural output, specifically animal agriculture, could allow for food to be created more efficiently. Arguably one of the most important aspects of Angola's animal agriculture is fish. However, with increased barriers to food and overfishing being a constant threat, the future of fish as a natural resource is bleak. Angola and its people can, however, take steps to fight this threat by implementing fish farms and laws to stop overfishing, along with possibly introducing more fish to the coasts of Angola.

Angolan Families can be found on both sides of the financial spectrum, each with their own problems. A family living in a city like Luanda would have access to commercial areas and supermarkets. However, other families live in poverty and reside in slums with terrible sanitary conditions and little access to food. Family size has been shown to be decreasing, with the recorded average being 8.63 in 2012, along with a downward trend. This is a great sign for the future of Angola, as a downward trend in family size almost always indicates a country becoming more developed. Food for families is unrealistically expensive, due to 80% of the food in Angola being imported. This causes massive inflation in prices of seemingly simple and accessible foods. The staple food of Angola is a starch, called funge. This food is similar to polenta, and is responsible for a large amount of the typical meal. For more diversity in meals, Angolans turn to basic additions similar to other countries. They supplement their calories with palm oil, which is relatively accessible in the region of Angola. For sides with their rice-centered meals, Angolans turn to beans and vegetables, which offer protein and other essential vitamins. The primary protein in the Angolan diet is fish, which accounts for a large portion of meals. The most prevalent fish eaten as food in Angola is the Cunene horse mackerel, and has been found to be severely overexploited ("Part I Overview and Main Indicators."). Other common sources of animal protein include prawns and tilapia. Education is improving in Angola, due to the constitution providing a free education for both boys and girls from the age of seven. However, schools have a critical lack of facilities, teachers, and materials. While the government is trying to address by building schools and training teachers, the problem is still quite pronounced ("Education & Jobs"). Health care is also a prevalent problem in Angola with health conditions being extremely poor for anyone other than the wealthy. After the civil war, many citizens fell into poverty and lost their homes. Therefore the slums are plentiful and widespread. In fact, according to

the World Health Organization, there was one doctor for every 10,000 people in Angola from 2000-2010. As with many other African countries there is always the risk of dangerous diseases. However, in contrast to other countries, HIV and AIDS isn't as widespread due to isolation of people after the war. There is the constant threat of malaria hovering over the heads of Angolans, and sickle cell disease is notoriously common. In fact, every one in five Angolan citizens is a carrier of this genetic disease, which can cause both pain and frequent exhaustion. These factors, accompanied by many other important aspects, can determine the life and food security of Angolan families.

There are many other factors that can dictate the wellbeing of an urban family. In terms of employment and wages, the majority of Angola's economy is oil. Therefore, Angola often attracts the attention of international oil companies. Along with this, this can bring the potential for good jobs. However, these oil companies often disregard the locals, and instead invite people from other countries with more specialized knowledge. After the war, the government has begun to rebuild many cities to offer more shelter for Angolans. This has invited more employment, however the locals are often turned away in favor of international workers with specialized experience. Therefore, many of the poorer Angolan citizens with less educational or specialized experience gain income through agriculture or fishing. It is important to note, however, that there is an increase in locals getting jobs due to people returning after the civil war. As previously stated, the majority of Angolans get their food from supermarkets. In many cases in the slums or poorer areas, Angolans will set up supermarkets to sell their food and buy other staples. Also, there is no access to private or community gardens in Angola, mostly due to lack of funding for such luxuries. Along with these additional factors, there is a slew of barriers facing the typical Angolan family, keeping them from reaching food security.

There are numerous major barriers blocking the ordinary Angolan family from food and employment. One of the most prevalent topics, which will be discussed later, is overfishing and the resulting reduced stock of fish. This reduced stock of fish is mostly due to an increase in Angolans returning after the civil war, who all look to catch and sell fish. Subsistence farming is widespread in Angola, and animal agriculture is extremely hard to maintain in the poverty-filled lands. One of the most dangerous barriers is the existence of landmines on lots of land. This prohibits land use for agriculture and living purposes, heavily restricting the possibilities of life for Angolans. As previously stated, the majority of Angola's money comes from oil and petroleum engineering. In fact, Angola is the second largest producer of oil in Africa next to Nigeria. After the intervention of the United Nations, Angola has reached an unprecedented level of stability that is fostering the interest of international companies, who are looking to invest in the country. Construction is also a growing part of the economy, which is seeing an increase in employment of Angolans. The majority of the native population, however, still works in agriculture. For fishermen, the average monthly salary is a mere "35,000 ZAR" ("Salary Survey in South Africa in Gardening / Farming / Fishing"). In U.S. dollars, this equates to around 2,822 dollars. However, with the average household having more than eight people, this amount of income may not be sufficient to provide for such an entire family. A barrier of utmost importance is the price of food. Constantly importing food into Angola is extremely expensive, with the majority of the economic burden being placed on the already poor consumers. These barriers are troublesome and constantly threaten the health of Angolans. However, improving animal agriculture could alleviate a large portion of these problems.

Animal agriculture is one of the most important aspects of agriculture and food security, especially for developing countries with poverty, like Angola. Overfishing is one of the most important factors in making fish a secure and consistent food source for Angolans. "Fish provide a major source of animal protein for coastal communities, which account for around 40% of this region's population" ("Overfishing threatens food security off Africa's western and central coast as many fish species in the

region face extinction – IUCN report"). According to the Global Food Security Index, Angola's protein quality has a 23.1% score, 26.1% less than the mean score given by the GFSI. Due to many fishermen contributing to the problem of overfishing, the problem will only worsen and lead to unprecedented unemployment among fishermen. The exact severity of overfishing is very sobering, showing a trend that is only spiraling downward. In fact, 37 of the species analyzed by the IUCN were classified as threatened with extinction. In addition, 14 of these species were classified as threatened. Both of these classes of fish, however, share the quality of being important staples of food for Angolans. Overfishing also causes harmful problems to the environment. With less fish coming out of fishing, Angola and international companies are encouraged to convert natural mangroves into urbanized areas to further modernize Angola. Women and the poor are disadvantaged by this, but by the same margin of other Angolans, as this is a problem with food security. Trends for this factor continue to worsen and show no sign of improvement. The situation is a matter of concern for urban and poverty stricken families, as no laws or progress to laws has been made to prevent chronic overfishing. Other factors can also negatively affect overfishing and the loss of fish population in and around Angola. One of these factors is pollution in the water. "Lower levels of discharge may result in an accumulation of the pollutants in aquatic organisms. The end results, which may occur long after the pollutants have passed through the environment, include immunosuppression, reduced metabolism, and damage to gills and epithelia" ("The effects of pollution on fish health."). As a primary protein source, any and all steps should be taken to improve the security of fish to make sure that Angolans do not go hungry.

The steps that Angola could take are simple in concept and application, and implementation could create a positive effect very quickly. To improve animal health, laws could be implemented to prevent overfishing. Working to increase factors such as funding, infrastructure and governance for effective enforcement and conservation would help prevent overfishing in the long run. A possible route that the Angolan government could take would be to introduce an increased variety of fish. Adding new fish along with already existing species would allow for diversification in the ecosystem, along with supplementing the fish population alongside the Angolan coastline. Species like catfish, for example could be considered for being introduced into the ecosystem. For example, the Midwest in the United States currently has a problem with an invasive species of blue catfish. The species became invasive due to two major factors. Not only does the species grow extremely quick, they are also hardy and can survive in many different kinds of environments. To supplement this idea, there are already catfish living in African waters. There are numerous perks, as author Lloyd Ellman states. "Unlike blue crabs and many other native marine species, catfish have an unlimited fishing season and can provide income for fishermen year-round. Pursuing them requires little additional equipment and results in minimal bycatch– the Chesapeake's blue catfish also received the highest rating from Seafood Choices, the Blue Ocean Institute's rating system" ("These Invasive Catfish Are Destroying the Chesapeake—and They're Delicious. You Do the Math."). With the catfish averaging at 60 pounds with every catch, the fish could feed many people and help alleviate the protein deficiency in Angola if introduced to Angola. However, blatantly introducing a new species could have dire consequences. Therefore, another step the Angolan government could take is creating man made ponds to house blue catfish or other new species. This would not only allow for more control over the population of the new fish, but it would also allow for the government to document how a new species would affect the Angolan environment before further introduction of new species of fish. The cost of man made ponds can seem like a steep investment, but the more the Angolan government commits to creating a new environment for fish, the higher the benefits will become. This is because while excavating ponds in a plot of land less than 20 acres would cost $3,000 to $5,000 per acre, going over the 20 acre mark lowers the cost immensely. In fact, excavating over 20 acres of land can cause the price to be as low as $2,000 per acre (Scroppo). A more conservative approach to changing animal agriculture would be to implement fish farms. Also known as aquaculture, fish farms provide opportunities to stop overfishing and protect threatened animal species while they repopulate. With something as beneficial as aquaculture, there also comes some risk. The most notable

risk of the practice is that it takes up a considerable amount of water and space. Another factor that should be considered is the price of both land and water. In addition to the previously mentioned cost of land excavation for ponds, getting a steady water supply can cost up to $3,000 per acre of water (Glebhart, Williams). The initial price is quite large, but the probative aspects would substantially outweigh the costliness of implementing aquaculture. Aquaculture would also discourage the conversions of mangroves into urbanized areas. In addition, it would stimulate growth and encourage farmers into raising fish more responsibly. For example, the previously mentioned tilapia fish would be an ideal choice in the initiation of aquaculture in Angola due to both its already prevalent role in the Angolan diet and its adaptable nature in farming.

Angola is already taking steps to prevent overfishing. For example, Angola has declared the creation of sustainable fisheries a top priority. The government also introduced a dedicated Vessel Monitoring System to further survey areas suffering from overfishing ("Part I Overview and Main Indicators."). A project already beginning to benefit the catching and selling of fish is the Artisanal Fisheries Development Project. This project promotes artisanal fishing activity and has rehabilitated fishing trade in the 3 major countries of Angola: Luanda, Namibe, and Cabinda.

There are steps that different organizations could also take to allow for safer fishing and more efficient production of fish in Angola. The United Nations has already benefitted Angola by providing post-war relief, and is one of the major factors in the newfound stability of Angola. To further develop Angola after the war, money could be offered to farmers to purchase seeds and tools. The World Bank has made great strides in providing better water safety. In addition to this, they have taken steps in improving animal agriculture. To further this process, the World Bank could offer loans to the Angolan government to encourage starting aquaculture centers. International research agencies would play a large role in improving the security and efficiency of fishing. The IUCN, or International Union of Conservation of Nature, has already done research about overfishing and its negative effects. To further this, monitoring of aquaculture and the rehabilitation of threatened fish species would be beneficial to the Angolan government to see how to improve the overall security of fish as a resource. On the non-governmental side, fishermen and farmers would have to abide laws about overfishing and be willing to improve their farms to encourage efficient output. Civic organizations could play a major role in offsetting the dietary burden many Angolans face while the rise of aquaculture and safer fishing methods begin to show positive yields. Involving urban families and rural farms as key players is extremely important, and could be done quite simply. By publicising education and showing farmers and families the perks of safer fishing, they would be much more likely to cooperate. As with many other factors in the security of a country, education is important. Giving Angolans the knowledge they require about safe fishing practice will not only inspire the current Angolan generation, but also future ones.

Angola is one of the most unique countries in the world, let alone Africa. Showing both capitalism and poverty within miles of each other, Angola is in the process of change that can be further expedited. After a civil war which raged for years and damaged the land, along with the people, the country is in a stage of rebirth. With notable oil reserves placing Angola as the second largest oil producer in Africa next to Nigeria, the economy is growing at a steady rate. However, poverty is widespread and many Angolans are under the poverty line. Living on a dollar a day or less, these families suffer from malnutrition and disease. Along with this, Angola is a country that import more products than they export. This causes food to be priced extremely high, making food even more inaccessible to the families that need it the most. On the other hand, international companies taking advantage of Angola's combination of post-war stability and booming oil reserves have placed heavy investments on only select parts of Angola. To encourage foreign workers with specialised skill, these major hubs of Angola see unprecedented urbanization in stark contrast to the slums filled with millions. The average Angolan family has to cross

multiple barriers to access food, health care, and better living conditions. One of the most efficient ways to improve the food security in Angola would be to improve animal agriculture. Fish account for a large part of protein intake in the average Angolan diet, due to their accessibility and price point. However, with these positives comes the very real risk of overfishing. Decreasing the population of fish can have catastrophic effects on fishing in the long run. Luckily there are steps that could be taken to not only slow these effects, but allow for fishing to feed more Angolans for less money. A more radical option for Angola to take would be to improve animal agriculture and commercial fishing by adding new populations of fish that are more hardy, populate faster to recuperate from overfishing, and offer larger yields per catch. A prime candidate for this can be a species such as the blue catfish. Currently considered an invasive species in the United States, a controlled introduction of the fish could allow for a boom in the fishing population to offset overfishing. The fish also can survive in the African waters with ease and average 60 pounds every fish. A more conservative option for Angola would entail implementing safe and effective aquaculture centers, or fish farms. This would create a population of fish safe from fishing and is controllable and efficient. In conclusion, Angola is a country that is being rebuilt and becoming stronger everyday. However, food security is a major issue that needs to be addressed to help the population suffering from poverty and malnutrition. With knowledge of the benefits of aquaculture and fighting the very real threat of overfishing, Angola could become a country where its residents can live full, productive, and well fed lives.

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