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Nepal, Food Insecurity

### **Nepal: A Troublesome Environment Causing Food Insecurities**

Nepal is an isolated country that is home to the world's tallest mountain, Mt. Everest. Much of this isolation is caused by the fact that Nepal's crippling infrastructure makes it difficult to interact with the world. Unable to receive the food that it needs, Nepal faces a devastating food security crisis. Ranked 79th out of 113 countries in the Global Food Security Index, it is evident that Nepal must find a solution to its food problem (Economist Intelligence Unit). Developing sustainable housing and transportation infrastructure is imperative to solve Nepal's food crisis.

Nepal is a very mountainous country surrounded by two of the world's most populated Asian countries, India and China. 30 million people inhabit Nepal, with 80% of them living in rural regions of the country (World Bank). Prime Minister Khadga Prasad's party has majority lead in both houses of the Nepal government, giving him a lot of power to create positive change in the country. Nepal also received its first stable government in its recent history, when in 2015 their new constitution went into effect. Although the government faces criticism, Nepal's government is less corrupt than many other countries facing similar problems as Nepal and has the potential to do a lot of good for the Nepalese people.

The geography of Nepal can be divided into three diverse geological regions making it difficult to build infrastructure. The mountainous northern region contains the massive Himalayan mountains and is always covered in snow. The hills region is in the middle, containing hills and valleys. Then, the Terai region in the south of Nepal is made of up dense forest. Agriculture practices are a large part of Nepal's lifestyle with 11,340,000 or 71.74% of Nepal's economically active population working in or with agriculture (World Bank). However, the rough terrain makes producing crops very difficult outside of Nepal's less treacherous southern region. Additionally, Nepalese farmers do not have access to advanced technology that helps farmers and increase crop yields such as tractors and more efficient seeds to plant. Many difficulties mean that even though Nepal has a lot of farmers working the production is not enough to feed everyone, especially in rural areas where farming is difficult. Nepal's geography allows it to produce a variety of crops including rice, maize, millet, wheat, barley, and buckwheat. Livestock is also a large source of Nepal farmers income because of the difficult farming geography. Even Though Nepal has an economy based on agriculture, the food produced is not capable of feeding everyone.

The average Nepal family of 4.6 people makes about 322,730 Nepalese Rupees (about \$4,500 USD) a year, a majority 53.8% of that is spent on food (Nepal). Even with the majority of a family's income being spent on food, many children are stunted due to a lack of nutrition. According to USAID, 36% of Nepalese children under the age of five experience stunting in growth and 27% are underweight, because of their inadequate nutrition. Malnutrition, especially at a young age, will result in lifelong medical problems affecting the future of Nepal for years to come.

In 2015 a devastating earthquake tore apart Nepal. With a magnitude of 7.8 and various other aftershocks striking the vulnerable region, nine thousand people were killed and almost 17,000 people were injured from the disaster. Additionally, the UN estimates that almost 8 million people were affected in some way by the earthquake. Nepal's infrastructure was, and still is not equipped to handle the devastation of earthquakes that frequently affect the region. 49% of rural Nepal houses are made of insecure mud bonded brick, and 54% have a mud foundation (USAID). These buildings are not constructed for stability but rather for the cheap cost and easy to access resources. Additionally, after the earthquakes, Nepal's little to none transportation networks made it difficult for rescue teams to deliver aid to Nepal.

Nepal's extremely high poverty rate causes low-cost development rather than long term sustainable development. The Asian Development Bank reports that 25.2% of Nepalese people live below the national poverty line. With no money to live daily life, Nepalese people do not have the funds to invest in infrastructure. This causes a poverty cycle that repeats generation to generation as families do not have the opportunity to save money. Therefore, it is important that the government intervenes to break the cycle. However, making matters worse, frequent changes in government make long term infrastructure projects difficult, causing many of them to go unfinished wasting taxpayer money.

Climate change greatly impacts Nepal, a challenge that will require major changes by the Nepalese people to adapt to their environment. Experts consider Nepal to be one of the most vulnerable countries to climate change in the world. Nepal faces landslides, forest fires, changes in water distribution, and even changes in precipitation patterns. These problems continue to worsen as time continues on. Water distribution throughout Nepal causes problems disturbing the farmland of Nepal. If crops do not receive the water they need then they will die. However, landslides and forest fires kill trees that help conserve water to support the crops. When the crops can not get the water supply that they need they are unable to feed the population. Therefore, unless the Nepalese people intervene their habitat will continue to become more difficult to live in.

Nepal's houses can be more sustainable by considering environmental challenges when building them. A typical house in Nepal is built out of the materials people have available around them. These materials, however, are at a high risk of being destroyed by the environment in events such as earthquakes or landslides that frequently impact the region. A solution to Nepal's housing construction problem is teaching the local Nepalese people about how to effectively use

their resources to build stronger more sustainable homes that are less prone to destruction. For example, Ful Maya Thami, who makes plaster, was taught that by adding a few simple ingredients to her Construction concrete mix it would become maintenance free for years to come with few to none disadvantages(Adhikary). Simply informing locals about easy ways to improve the work they already do can have an immersive impact on the local community, while using little to no additional resources. Additionally, by changing the way houses are built to absorb the shaking of potential future earthquakes, Nepalese people can build stronger houses with the same supplies. Different building methods keep Nepalese culture unique while still maintaining long-lasting houses.

A way that Nepalese natives could be supported to construct sustainable houses is a program that trains and employs contractors. By using funding to train workers, Nepal is investing in its own future. Locals in areas that are most in need of sustainable housing could have experts that teach people how to properly build buildings and infrastructure that will last a long time. Training workers is a more long term solution that can help Nepal more than any other aid. For example, training a worker to build a bridge not only builds a bridge, but the same worker will likely use their skills for the rest of their life. Additionally, skilled workers can even use their trade as an occupation for a stable income. The Nepalese government should implement programs that assist the newly trained workers in founding their own local businesses that allow them to make money off of their skills and bring money into their local economy to support future projects.

Nepal's limited infrastructure makes it hard for Nepal to trade with outside economies. Due to its geological limitations, many Nepalese villages are only accessible via dirt mountain roads. It is impossible to establish trade routes if there is no way to transport goods. Therefore, it is essential that Nepal invest in better roads so that their economy can develop. Although building fancy paved roads is very expensive, especially in the mountainous regions, the money gained by the new trade routes offsets the difference. These roads will allow the Nepalese people not only to build their economy but also to import food.

Farmland is less productive and scarce in the mountainous northern region of Nepal meaning it is difficult to survive on local food. With no way to import food many of the Nepalese people do not have access to enough food. Building roads that can support transporting more goods into the mountains of Nepal make it easier to bring outside food to the Nepalese people. In spite of lowering food cost, many Nepal families will still be too impoverished to purchase food. However, the roads can also be used for locals to sell other goods and resources to generate a sustainable income that can be used to purchase food.

Even though people in the Nepalese mountains have difficulty building an economy off of agriculture, there are many resources that can produce lots of revenue with the help of more infrastructure. For example, tourism is already a large part of the Nepalese economy, and by having infrastructure that can allow more people to travel into and around the country. Tourism

makes a great opportunity for the world to experience the beauty of Nepal's landscape and culture. With an increase in tourist locals can make money by opening shops and attractions targeted to visitors. In addition to growing the tourism industry, many other industries can develop in Nepal if the proper infrastructure is in place.

With an improved system for the transportation of people, goods and ideas Nepal can develop as a country. The partnerships between government organizations and non-profit organizations can help Nepal improve infrastructure by giving a way for ideas to be shared with the locals of Nepal. Without effective communication locals deep into the hard to reach areas of Nepal would never make effective use of better infrastructure. For example, if a local village had access to a paved path partnerships can be made to help locals make effective use of it such as transporting food to feed their starving population that currently can get food.

By developing more sustainable housing and roads Nepal can ensure its people have the food security they need. Many of Nepal's difficulties are based on its geographical limitations of the region. To make matters more problematic, Nepal faces a rapidly changing environment forcing locals to adapt. However, even with many challenges, it is not impossible for Nepal to develop long term food security. By educating locals on how to build housing to withstand potential disasters, Nepal can limit setbacks on its quest to food security. Then, by investing in transportation networks and systems that can connect Nepal to trade with other economies and allow more tourists to visit, Nepal can find a path to increased food security. Although Nepal's mountainous geography poses problems, it is also part of what makes Nepal a beautiful country.

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