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 Vietnam, Malnutrition

### **Fighting Malnutrition in Vietnam**

Vietnam is a beautiful country with a robust food culture. Unfortunately, malnutrition has dealt a devastating blow to the people of Vietnam. Various solutions have been piloted, with mixed results. By exploring the role that malnutrition plays in Vietnam, one can better comprehend the many challenges that have occurred as a result. To understand the unique challenges that malnutrition presents, it is important to look at the specific country and people who are impacted by malnutrition.

Vietnam has a population of 97.3 million, with 65.6 percent residing in rural areas. There are multiple types of government: unitary, socialist, communist, and one party. One-third of Vietnam is currently cultivated, with 20% arable, 11% permanent cropland, and 2% permanent meadow and pastureland. Major crops include rice, which makes up a major percentage, cassava, sugar and rubber (*Agriculture in Vietnam: On the Road to Development*). Major exports consist of coffee beans, rice, cotton, peanuts, sugarcane and tea, as noted by Kayla Cammarota. The average farm size is 1,560 square meters, which is less than one-third that of Thailand. Climate in Vietnam is typically a tropical monsoon. During May to September, a hot rainy season begins, with a high humidity and an average of 86°F (*Landlinks*).

A typical family size in Vietnam consists of 3 to 4 people. Most Vietnamese live in the countryside, mostly in the river regions of north and south. Recently, like most developing countries, people have moved to the focal cities such as Ho Chi Minh, with a population of 7.298 million, and Hanoi, 3.629 million (*National Geographic Kids*). Around 17.73 million Vietnamese people have worked in the agriculture, forestry, and fishing field, and an average of 6.1 million Vietnamese Dong (VND) or 277 USD per month (*What is the Average Salary in Vietnam in 2022?*)

Typically a family diet consists of “steamed rice, dipping sauce, soup, braised/deep-fried/stewed/grilled/boiled meat/chicken/fish/shrimp/seafood with vegetables, or pickles, fresh vegetables and herbs.” Rice is a major part of the Vietnamese diet, consumed almost every meal (*Scooter Saigon Tour*). For example, it is not uncommon for Vietnamese adults to consume steamed rice for all three meals each day, with side dishes ranging from ground pork and garnishes of mint or chicken. Families usually cook their meals through different techniques, such as fried, boiled, steamed, and distilled (*Ethnomed*).

Education is extremely important in Vietnam, with a high literacy rate of over 95 percent, with the first five years or primary education mandatory (*Statista*). Around 88 percent of Vietnamese people have health coverage and 97 percent of children undergo vaccinations. However the lack of water, hygiene and sanitation remains a challenge, majorly affecting those in the rural areas. Unfortunately, this situation does not merely contribute to high rates of diarrhea, pneumonia and parasitic infections (*Unicef*), but it also causes malnutrition.

What is malnutrition? Malnutrition is the lack of nutrition, vitamins, and minerals needed to maintain health as the body develops. In Vietnam, there is the dual edged sword of malnutrition and obesity. As obesity has increased, there are a number of those who have an inactive lifestyle with an excessive consumption of unhealthy foods. The diet mainly contributes to the unhealthy lifestyle of those in Vietnam.

Malnutrition severely affects those in rural areas, poor households, and the ethnic minority backgrounds,

compared to those in urban residents, who have a stable income and the majority of the Kinh population. Although there are economic advancements that have taken place, there unfortunately still are many groups and regions that are being bypassed. With those of minority backgrounds significantly more probable to malnutrition than those in urban settlements, Vietnam will lead to an unhealthy environment, with more people prone to diseases, eventually leading to a higher death rate (*National Library of Medicine*).

What exacerbates the malnutrition crisis in Vietnam is climate change, drought, and floods. Due to economic activities such as rice and aquaculture production, Vietnam is extremely vulnerable to climate change. A shift in rainfall patterns and temperature, or a rise in sea level will cause a catastrophe in their farming, perhaps even having to change plans. The export of rice is a major income profit for Vietnam, and if there is a drought for instance, not only will Vietnam suffer, but nationwide will lose 1.5 billion USD to deal with the consequences, according to the Department of Crop Production (*FFTC Agricultural Policy Platform*).

One way to ensure a steady food supply and access to food, is by inviting the government to step in, and regulate food production. As Vietnam ranks 57th out of 113 countries, the government can help with supply chain shortages that lead to low agriculture productivity. The benefit of a national food security run by the government is beneficial because the government is able to tackle multiple issues at once, such as industrialization, modernisation, poverty reduction, job creation, and income generation (*State management of the national food security in Vietnam*).

Thanks to the unfortunate consequences of climate change, Vietnam has been a victim of rises in sea level, drought, and floods that can ruin rice crops. The government's plan helps reduce agricultural production costs, and increase incomes for rice producers by encouraging farmers to keep their rice land, thereby ensuring a steady income generation and poverty alleviation. The government can also help farmers make money off the rice, by subsidizing investments in the construction of rice warehouses, which can store up to 4 million tons of food to help combat hunger (*FFTC Agricultural Policy Platform*).

A drawback to the nationalized food security program, is the heavy hand the government plays in regulating what gets planted, where, and how. This prevents farmers from having a say on how they want to cultivate their own land. Additionally, the threat of national disasters can make ripe agriculture prices fluctuate wildly. That is why the state can dictate the purchase price of rice to ensure that it does not go below a certain threshold. But this kind of control can lead to long term problems, such as crop shortages, quality, rationing, and illegal markets.

Another problem with having state control over a food program is that, in a country like Vietnam, which has many state agencies whose functions and duties overlap, it is not always clear who is the main responsible agency or told to synchronize various agencies. Any one single agency can be slow to move, and by having multiple agencies can present a clunky machinery that is slow to effect policies.

Another solution is to improve the quality to ensure that the food is safe and hygienic for the people. The government can enact an action plan to specify nutritional requirements that must be met: marketing can be regulated for food products aimed for small children, food fortification laws can be enacted, breast feeding can be promoted, and school nutrition policies can be enhanced for preschool and elementary school children. These types of government policies can combat the problem of stunting and obesity leading to chronic diseases that many children suffer as a result of malnutrition (*viendinhduong*).

Because of many years of prioritizing production volume over food safety, Vietnam farmers have made widespread use of chemicals, which have often led to unsanitary food production. Perhaps that is why in 2013 alone, there were 4710 cases of food poisoning. Having the experience in professions in nutrition

science can be instrumental in preventing disease such as obesity and nutrition related noncommunicable diseases. Moreover, the government can encourage the safe production, circulation, and distribution by investing in the Vegetation - Aquaculture - Cage for Animal husbandry (VAC) ecosystem (*FFTC Agricultural Policy Platform*).

Providing land grants is another solution the Vietnamese government can assist with. Pollution waste from chemicals emitted from factories affect the crops in Vietnamese farms. The result is that the food produced not only has fewer nutrients but can also cause cancer. By providing land to farmers that is located a safe distance away from these factories, this allows for crops to have better nutrients. Another alternative is for the government to offer financial incentives to companies who relocate their facilities away from the farms. Or, the factories could use green technology to reduce pollution in the environment that could affect crops. Japan – who had a role in supporting Thailand, Indonesia, and China with projects to reduce pollution and encourage stricter regulations regarding carbon emission – has already made an agreement with Vietnam Environment Administration (VEA) to “promote cooperation in human resources development in the field of pollution control in Vietnam” (*Japan supports Vietnam in pollution control*). To incentivize the investment in green technology, the government can enforce taxes on factories who violate the pollution regulation by dumping toxic waste into the environment, thereby emitting large amounts of unsafe carbon emission.

To support this type of legislative framework, there need to be many nutrition, nutrition and food safety professionals who have trained in post graduate, bachelors, and technician programs. To suddenly expect a large and qualified group of such professionals to help with the issue of food and nutrition is a huge endeavor. Educating people requires incentivizing them to enter the nutrition and food safety industries, but it is not certain that there is a ready and willing group of people willing to do this. Also, the financial resources required would be a heavy burden on government budgets. Ensuring equity and nutrition for all people will require heavy reliance on international aid beyond state and local state budgets (*FFTC Agricultural Policy Platform*).

A third potential solution lies in the field of biotechnology. Genetically modified crops are looked upon as having great potential to solve food security and malnutrition. GM crops, because of their genetic makeup, can yield larger and healthier harvests. One example of a genetically modified crop that has proved to have positive outcomes, is Golden Rice. Blindness in low income children is attributable to low Vitamin A deficiency. The World Health Organization noted up to 500,000 Vitamin A-deficient children every year, and half of them die within 12 months of going blind. Produced by researchers in Germany and Switzerland, Golden Rice helps to produce Vitamin A. In addition, mass production is possible for this crop production due to biotechnology companies waiving patent rights. This allows farmers to produce as much Golden Rice as they want without having to pay money to the companies who have created this genetically modified crop (*UN Chronicle*).

CRISPR-Cas9 is one type of biotechnology that can edit and delete genetic information. This results in crops becoming more resistant to climate change and relying less on chemical pesticides that make people sick (*GMOS Can Help Combat World Hunger*). CRISPR-Cas9 might also improve crops by making hypoallergenic nuts, mildew resistant wheat, or drought resistant corn. Furthermore CRISPR could be used to develop fruits and vegetables with increased nutrients and vitamins. On top of this, the Vietnamese government can also designate a separate location to invite the larger corporations to further aid in safer and environmentally friendlier GMO products. Not only will this provide the funding, but a further development for safer GMOs to the rest of the world.

Although CRISPR-Cas9 is an impressive technology with lots of potential, there are setbacks to this biotechnology. Local farming practices that traditionally yield smaller local crops, would have to transition to large industrialized yields that are required by GMO crops. Not only would the resulting

large scale monocultures still need to rely heavily on pesticides, but also require a lot of rain or some form of moisture with the limited amount of soil. Thanks to droughts induced by climate change, there is less rain. Therefore, water would have to be drained from rivers, lakes, and reservoirs leading to the depletion of natural resources with the addition of already strained aquatic ecosystems (*The Dangers of Monoculture Farming*).

There are a number of disadvantages associated with genetically modified crops. One is that herbicides are added to the GMO crops to reduce the transferring of genes to wild plants. If not, it can create more unwanted weeds. However, these herbicides can also be toxic to the native species. Furthermore, it is thought that GMOs can be deadly to some insects such as butterflies that are not dangerous to the crops. (*GreenGarage*). Also, more data is needed to see the long term effects of introducing new genetic sequences to humans or other species that feed on these crops. Currently, there are many articles stating that GMOs affect multiple organs in animals such as the liver, pancreas, kidneys and reproductive organs. These have various concerns as this may change agriculture (*Health Risks of Genetically Modified Foods*).

Another possible solution is for the government to have designated land for building a community garden, one that is easily commutable and is a safe distance from factories or toxic waste. Similar to what Costco customers do to maintain an annual membership, community residents can pay a small fee to utilize the land space for a community garden and share resources. With the new community garden, there are many benefits included, such as a closed recycled water system that can store and utilize water back to the crops especially during drought season. In addition, community gardens are able to collect and filter rainwater or moisture in the air for the crops, and make a portable self sustain ecosystem for micro gardening to the locals that are rich in nutrients and vitamins. At community gardens, educational materials or tools for the locals can help with a healthier lifestyle at an affordable cost. Moreover, recipes can be shared among each other. With the use of the internet, information can be spread throughout multiple community gardens in Vietnam or the world. One example is sharing recipes that have minimal salt intake, as well as an introduction to more vegetables and fruits. For instance, nước chấm, a Vietnamese dipping sauce with an extremely salty taste, can be made by substituting healthier ingredients, such as low sodium soy sauce or umami powder and lime juice. Other ways to achieve a salty taste without salt are the use of fresh herbs and spices (like ginger and turmeric) which add natural anti-inflammatory properties that would help people with high blood pressure. It is also possible for people to use acids like (like orange juice) or flavored vinegar (like apple cider vinegar and balsamic vinegar) to make sauces tastier. Homemade bone broth can boost flavor and nutrient content of meals, while giving a person the option to control how much salt to add (*Healthy Salt Substitute Alternatives vs. Unhealthy Options to Avoid*).

Another way is to raise awareness about the importance of breastfeeding to children (*Almost 2m Vietnamese Children Under 5 Suffer from Malnutrition: Nutrition Institute*). Breastfeeding, compared to formula, has nutrients that are better absorbed by babies. These nutrients help the baby's brain grow and develop a healthy nervous system. In addition babies who are breastfed have better vision. Breastfeeding can prevent fewer digestive, lung, and ear infections, as well as reduce the severity of those infections (*Breast Milk is Best*). American doctors can support these efforts by traveling to Vietnam to give lessons to doctors in Vietnam through organizations, such as Doctors Beyond Borders, or other medical tourism.

From factory relocations to green technology investments, from community gardens to GMOs, myriad possibilities exist to help Vietnam navigate the crisis of malnutrition. While malnutrition is not an easily solvable problem, there are steps we can take to alleviate its impact and improve the lives of our fellow global citizens. The important thing to keep in mind is that we must keep trying to fight malnutrition. What affects one person affects us all.

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