TRANSFORMING RURAL AREAS IN VIETNAM THROUGH WASTE MANAGEMENT

Linh Dinh '25 | Colby College | Vietnam | Summer 2022

Introduction

More than 60 million people, equivalent to approximately 73 percent of Vietnam's population, live in rural areas. In recent years, environmental pollution in many rural areas has grown at an alarming rate. A report from the Ministry of Natural Resources and Environment discloses that only 40 to 55 percent of solid domestic waste is systematically managed; most solid waste is buried by unhygienic methods, causing pollution in underground water reservoirs, the main source of water for most local households. Despite the ongoing problem of accumulated domestic solid waste in rural areas, there have not been any legislative solutions created. Many villages and communes do not have the specialized units required to collect this type of waste. Some localities have applied measures such as using medium-sized trucks to collect domestic waste and send them to landfills, but these measures are small-scale, unstructured, and rudimentary.

To me, peace does not only mean the absence of war. It also means the presence of an equitable and safe environment in which members of society can develop to their fullest potential. Therefore, peace can neither be achieved nor sustained when a large segment of society is exposed to hazardous conditions and faces health risks that hinder their ability to self-actualization. By creating a circular system of waste management that is both economically viable and sustainable, I hope to transform the living conditions of rural communities in Vietnam.

Motivation

Turning organic waste into fertilizer decreases the amount of domestic waste and discourages the burial of unmanageable waste, therefore reducing the ecological footprint and costs in agricultural production. The practice has been implemented in many developed countries, most impressively Sweden with 99% of household waste repurposed. However, this practice is not suited for Vietnam's local waste management systems for several reasons. To begin with, the solid waste classification at the local level is subpar, while investment and operating costs are much more expensive than burying or burning the waste. Most fertilizer businesses are uninterested in using organic waste as a material source for their fertilizer. In addition, the vast majority of farmers are unaware of organic fertilizer due to its high market price, but the practice of making organic fertilizer is inexpensive and hardly complicated. The products made from this method can also be sold at a competitive price to create profits that will assist in offsetting potential costs. If this method is popularized, it would not only solve the problem of waste pollution and improve the living conditions of rural inhabitants but also benefit farmers in these areas.

Understanding that the popularization of this practice cannot happen by itself, I aim to implement a project that starts small, but has the potential to spread once the citizens are aware of the benefits it can bring. Short-term, the project would reduce the amount of organic waste by turning them into fertilizers, hence protecting the local environment. Long-term, the project would raise awareness of the health hazards caused by poor management of organic waste, uplift the lives of farmers and trash collectors, and show how small steps can be taken to create a healthy, sustainable living environment.

Proposal

With the aforementioned goals in mind, my approach is as follows. Firstly, I would collaborate with the People's Committee of Quynh Phu District to launch a program that local households can sign up to be a part of. Households that are part of the program would be provided with tools and instructions to classify their domestic waste and when completed successfully, families will be eligible to buy fertilizers at a competitive price. Secondly, the local waste collectors would come and pick up their sorted waste and deliver it to designated areas for processing. Thirdly, the collected organic waste would be handled within 30-45 days. Finally, the fertilizers would be sold back to households in the program.

In terms of scale, I will carry out this project in my hometown, An Le Village, Quynh Phu District, Thai Binh Province. The population is 8,000 people with 2,000 households. According to a local report,

domestic waste generated per day in the village is estimated at 4,000 kg, in which organic waste accounts for three-fourths. The project can generate 25.000-30.000 kg of fertilizer each month and make 20,000,000 Vietnam Dong (roughly $877), more than enough to compensate 5 workers and the maintenance of protection gear equipment. From calculations, a participating rate of only 30% is required for the project to be successful.

Provisional Timeline

Phase 1 — Preparation (June 2022)

Purchase and transportation of equipment to An Le Village (waste-collecting vehicles, compost bins, microbial products, and protective clothing for workers); Launch the program (getting households to sign up, distributing tools and giving instructions on waste classification, and more)

Phase 2 — Household Waste Collection and Categorization (July-August 2022)

Instruct households to sort their domestic waste into 3 types (organic waste, inorganic waste, and toxic waste). Inorganic waste and toxic waste would be managed in regular means according to the legislation of the District. Organic waste such as leftovers, tea grounds, cotton fibers, and plant parts would be collected and composted into fertilizer.

Phase 3 — Processing (July-August 2022)

Once collected and classified by a professional team, organic waste would be put into compost bins until it reaches a thickness of 20-30cm. Then, Sumitri microbial products would be mixed with water to irrigate the compost, minimizing pathogens and odors of the waste while rapidly decomposing and turning it into fertilizer.

Phase 4 — Closing the cycle (Beginning of August 2022)

These fertilizers would be sold to farmers in these areas for one-fifth of the market price.
All the profits would be put into a fund to purchase more microbial products, compensate workers, and propaganda the program to other villages.

Phase 5 — Looking towards Systemic Transformation (August 2022)

Survey and visit the participating families to discuss challenges they face in adapting to the program and how the program can be improved to better fit their circumstances; Document the results of these surveys in a report; present to the People's Committee of Quynh Phu District and Thai Binh's Department of Natural Resources and Environment.

Sustainability

The project is easily sustainable and requires little oversight as the process repeats because the hardest and most expensive part, which is the purchase of equipment, has been covered. After the summer, I would pass on the overseeing of the project to the local government, who are happy to take over once I go back to Colby. Once handed over, the equipment will be owned, managed, and used by the local government. The organic waste collection and transportation vehicle can be used for up to 10 years while stainless steel compost bins can be used for up to 3 years.

To avert possible future financial constraints, I intend to ask for help from volunteers from local youth unions. I also plan to find more sponsors in Vietnam. The local government with meager revenues and many other liabilities will have difficulty in spending the extra money to sustain the project. What they can offer is promotion, human resources, and a centralized garbage disposal area.

There might be a concern that the project would face pushbacks from fertilizer companies. However, I expect little to none since bio-fertilizers are usually produced and distributed by state-owned companies, where public utility is more important than profit, and the market is mainly in mountainous provinces. Thai Binh is a delta province; people have a habit of using chemical fertilizers. Most people here and even chemical fertilizer manufacturing companies find that the excessive use of chemical fertilizers and pesticides will make the soil lose richness, affect the quality of the products, and, over time, will reduce the cultivated area, indirectly affecting the revenue of fertilizer companies. I believe that these companies will not raise any objections if the project sells the products at a cheaper price but significantly improve the land in the long run. In addition, I must admit that the project scale is quite small, so I cannot become a direct competitor with these fertilizer companies.

Projects for Peace Budget Template

Name: Dinh Khanh Linh
Project Name: Transforming Rural Areas in Vietnam through Waste Management
School: Colby College

Total Additional Funding:		

TOTAL FUNDS REMAINING:
$0

TOTAL EXPENDITURES:
$10,000

Student Expenses					**Project Expenses**				
Travel (Including Airfare)	**Lodging**	**Communications**	**Food (Biweekly)**	**Miscellaneous**	**Non-Student Travel and Lodging**	**Direct Equipment and Supplies**	**Marketing and Event Support**	**Staffing Costs**	**Miscellaneous**
$582						4400			880
						2640			
						442			
						704			
						352			
Total	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**
$582	0	**0**	0	**0**	0	**8538**	0	**0**	880

Total Student Expenses:
$582

Total Project Expenses:
9418

This form should be used to prepare your final budget and submitted with your project's final report.