



Nam O II Village, Hoa Hiep Precinct, Da Nang

GENERAL INFORMATION

Nam O II village had Green Productivity (GP) implemented during 2000 and 2001 under the GP Integrated Community Development Program.

Hoa Hiep precinct in Lien Chieu district is located north of Da Nang and is the gateway to the city. National Highway 1A and the North-South railroad run through Hoa Hiep from the Hai Van mountain pass to Xuan Thieu resort. Hoa Hiep is a coastal precinct. It has a 20-km coastline that forms the precinct's eastern border. The northern boundary of Hoa Hiep is Da Nang Bay, the western boundary is Hoa Lien and Hoa Bac precincts, and the southern boundary is the Hoa Khanh industrial zone. Although Hoa Hiep precinct is an administrative unit of Da Nang, the living conditions of the villagers in Nam O II village of Hoa Hiep are more similar to those of many rural villages than an urban village.

Some characteristics of the village are as follows:

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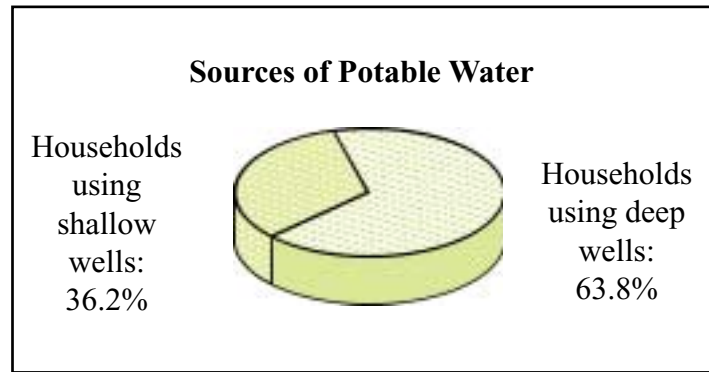
Population: 3,534 people within 710 households.
Average income: 2,800,000 VND/person/year.
Main production activities
Production: Firecrackers and Nam O fish sauce.



Fish sauce production came to an end sometime prior to 1995 as the firecracker trade was more lucrative at that time. However, in 1995 the Vietnamese government banned firecracker production, and as a result the villagers of Nam O II resumed fish sauce production. Their techniques, however, need modifications.

MAIN ISSUES

- The village lacked adequate drainage system. Wastewater from breeding cattle collected in the village and polluted the well water, despite the well being 7-15 m deep. Given that all households use groundwater for their domestic needs, this pollution was a big problem as 88% of households used well water without treatment.
- Human and animal waste disposal methods were inappropriate. Given that 88% of households did not have latrines, the villagers disposed of waste along the coast or in gardens. Animal waste mainly comprised pig excreta.
- Only 11.3% of the households separated their solid waste according to the type of material used (e.g., metal, paper, glass, etc.). The local environment company had established a solid waste collection team, yet only 40% of the total village waste was collected. People were not willing to pay money for solid waste collection. In addition, some roads within the village were too narrow for the collection van to reach all the households. Nam O village had one solid waste drop-off and collection point. The Urban Environment Company collected solid waste twice or thrice daily from there. Any remaining solid waste was burned or disposed of in gardens and along the coast.
- Fuel wood is available abundantly as the village is located by the coast. However, the use of traditional stoves led to excessive wood consumption.
- The traditional and main income source for the villagers is the production of firecrackers and fish sauce. Firecracker production has been banned, while fish sauce production needed further development. Many households produced fish sauce incorrectly and production was not organized.



GP OPTIONS

A GP team was established consisting of 10 members including representatives from local authorities and village associations. The GP team worked with experts to identify and select the following GP options.

- (1) Conduct training courses on GP methodology, potable water supplies, solid waste management, and sewage management.
- (2) Increase the awareness of the villagers of environmental protection issues and wastewater management through an awareness campaign and by establishing village rules. Rules can include fines for noncompliance and rewards for compliance. An administration team can be set up to implement environmental protection tasks.
- (3) Modify the public well to prevent pollution. This will involve constructing a container around the well and building a drainage system to divert wastewater away from the well.
- (4) Install a drainage system to minimize the amount of flooding during the wet season.



- (5) Construct hygienic two-compartment latrines.
- (6) Construct Vietnamese biogas plants and model Thailand-German biogas plants, each with a capacity of 6-8 m³. These model biogas plants can decompose sewage.
- (7) Organize a clean-up day for the entire village once every two months. This clean-up should focus on coastal areas.
- (8) Improve the solid waste collection system; this includes expanding and improving the road system so that vans for rubbish collection can access the village. Facilities and manual labor for solid waste collection need to be increased and a schedule for solid waste collection needs to be established. This schedule is to be organized between the village and the Urban Environment Company that collects waste.
- (9) Construct energy-efficient stoves. These stoves reduce fuel consumption by 30-50%. They also reduce the smoke output, money spent on fuel, and the time needed for cooking.
- (10) Hold a training course on new technologies available for producing fish sauce. This training should consider the quality of fish sauce as well as safety and hygiene aspects of food preparation.
- (11) Establish a fish sauce production team. This team will teach individual households how to improve their production process.

IMPLEMENTATION AND RESULTS

- A training course on GP concepts and methodology was held within the village.
- Three training courses on managing solid waste, sewage, potable water, and wastewater were held. These training courses increased the environmental awareness among the villagers. They are now aware of health problems associated with poor environmental practices like discharging sewage into the sea.
- The villagers established village-specific regulations for environmental protection.
- A 500-m stormwater drainage system was constructed to link with the main drainage system of Da Nang.
- Eight biogas plants were established, each with 6 to 8 m³ capacity. These plants are capable of treating both human and animal sewage.
- Twenty-six latrines were built with financial help of the local government and 50 latrines were built with the villagers' money. Within three years, 90% of houses should have latrines. This will reduce the amount of sewage being disposed of along the coast. The construction of hygienic latrines will be a community project. Each household will contribute 50,000 VND per month toward the construction of latrines. All households requiring latrines will continue monthly payments until all houses contributing have latrines.
- Six clean-up campaigns were organized in the village; the largest event was on the World Environment Day. Coastline clean-up was organized on this day and over 400 people participated in this event. In order to keep the coastline green and clean, two notice boards were also constructed to raise the awareness of people using the coastline.

- The solid waste collection system was improved by extending the road system throughout the village by approximately 3 km and constructing a 400-m concrete road. These new roads are adequate for solid waste collection vans to access the entire village. These improvements have increased waste collection from 40% to 80%.
- Five energy-efficient stoves were constructed.
- One training course on fish sauce production was conducted. This training course taught the villagers about improvements in traditional technology and how to produce fish sauce hygienically.



Energy Efficient Stoves

technology and how to produce fish sauce