SNV

Connecting People's Capacities

Renewable Energy and Biogas

Clean farms
Clean kitchens
Clean energy

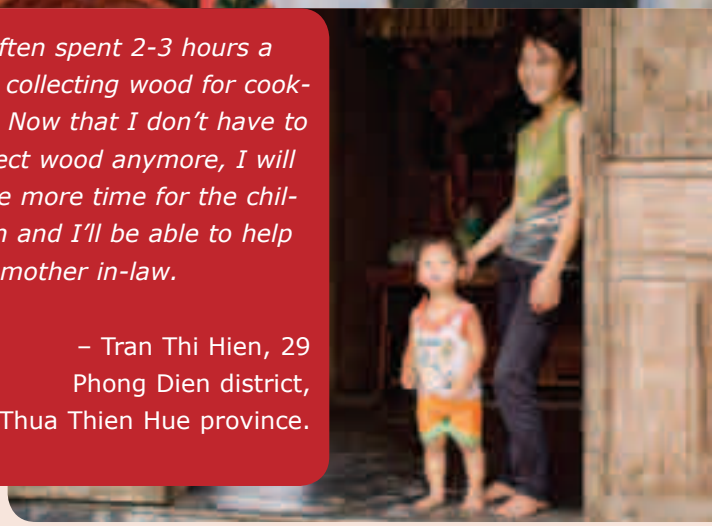
promote sustainable growth

From 2003-2008, the Biogas Programme in Vietnam, with technical assistance from SNV, contributed to the construction of **57,000 biogas plants** and provided training for about **500 technicians, 700 biogas mason teams** and nearly **all owners** of biogas plants. Currently, **99%** of the plants installed are fully operational and **48%** of the plants have toilets attached.

By 2011, the Biogas Programme aims to have built **164,000 biogas plants**, reaching **800,000 people**. By this time, women will have their workload reduced by **110 million** hours per year, and biogas households will have their energy costs **reduced by 65%**. On average, **67%** of households will **increase their number of livestock** because of the sanitary solution to animal manure that biogas plants provide.

Renewable Energy and Biogas

In 2006, this programme was presented with the **Energy Globe Award** for its significant contribution to the reduction of "global warming". The programme continues to be instrumental in reducing poverty as well as aiding and sustaining the development of animal husbandry in Vietnam.



"I often spent 2-3 hours a day collecting wood for cooking. Now that I don't have to collect wood anymore, I will have more time for the children and I'll be able to help my mother in-law.

– Tran Thi Hien, 29
Phong Dien district,
Thua Thien Hue province.

Current Challenges

People in developing countries are facing increasing problems with energy supply. Their access to traditional cooking fuels such as wood, agricultural waste, dried dung, and charcoal is declining, while commercial fuels are too expensive and their availability unreliable.

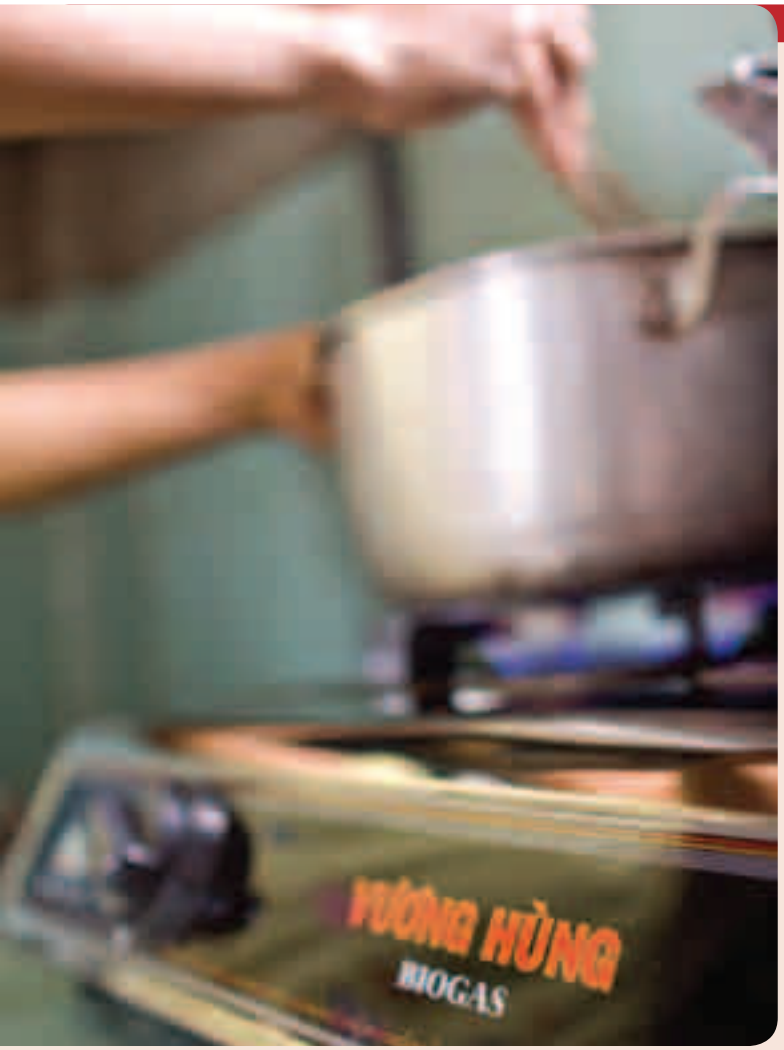
For women and small children in particular, collection of traditional fuels devours time that could have been spent in productive activities or at school. When burning the fuels, these people are exposed to smoke and prone to respiratory illnesses and eye ailments. Often, the same households additionally suffer from a lack of hygiene and proper sanitation, resulting in water-borne diseases affecting mainly women and children. Moreover, in many locations, the collection of traditional fuels and the production of charcoal deplete natural resources and damage the environment on which the people heavily rely.

There are also sanitary and pollution problems surrounding the 26.9 million pigs in Vietnam, most of which live in individual household farms with 5 to 20 head of livestock. While the majority of pig manure is re-used, mainly for fish feed and fertilizer, the un-used portion is usually deposited in waterways, seriously polluting the environment. Even when waste is deposited in more controlled open-air anaerobic ponds, the result causes the release of high volumes of methane, increasing greenhouse gas emissions and wasting a potential energy source.

Despite the clear and urgent need for alternative, more sustainable energy sources and improved sanitation, many surveys reveal a failure in sustainable dissemination of renewable energy technologies in developing countries. In these cases, services discontinue after a project ends, leaving nothing but disappointed communities. However, by simply converting animal manure and human excreta into cooking energy, biogas could fill the void.

SNV's customised solutions and services

The overall objective of the Biogas Programme is "to further develop the commercial and structural deployment of biogas, at the same time avoiding the use of fossil fuels and biomass resource depletion." The more specific objectives are to achieve economic, environmental and social sustainability, with a particular focus on the economics, as the programme must result in a commercially viable biogas sector supported by independent businesses.



One of the approaches is to enable biogas plant builders to become businesses with knowledge in marketing, planning and management. SNV's strategy is concentrating on developing the biogas sector by diversifying technologies, supplying business training, and advancing market and stakeholder communication. This ensures that the renewable energy products and services facilitated by SNV can and will be sustained.

SNV's solutions include:

Advice in implementation

The main product of SNV's biogas practice is the provision of advisory services for programme management, biogas strategy, and institutionalisation and sector building. As a result, entrepreneurs, institutions and local governments are capacitated, creating a sustainable infrastructure for a biogas sector.

Collaboration with existing organisations

SNV aims to involve all of the organisational and institutional capacities and stakeholders already available in the country, organising them into associations and other institutions as well as strengthening the capacities in cooperation with local capacity building organisations.

On-going improvements and knowledge brokering

The Vietnam Biogas Programme is part of the Asia and worldwide Biogas Programmes sponsored by SNV and the Dutch Ministry of Development Cooperation. Using this network to bolster international knowledge about innovations and experiences in Vietnam is part of SNV's efforts towards improving the technology, services and strategic direction of the Biogas Programme. SNV engages international carbon expertise, combined with international experiences and knowledge of biogas appliances, masonry techniques, slurry application and digester technology, and incorporates implementation experiences and innovations from the international network.

Our on-going and future impact

"The introduction of Biogas technology in this region has helped to mitigate the environmental problems that are related to livestock production. The smell especially is a nuisance, and therefore the people are very happy with my work. When I walk around, people call me 'Mr Clean.'"

– Mr. Ho Van Han
mason and constructor of biogas
digesters in Chuong My District, Hanoi

Renewable Energy and Biogas

Incentive-driven participation

In a sustainable situation, actors play the role to which they are most suited and do so for commercial incentives. SNV is actively searching for and developing commercial incentives, coordinating with activities of other sectors in which SNV is active, such as sanitation, cash crops and inclusive business.

Our On-going and Future Impact

The SNV Biogas Program aims to achieve these goals by 2011:

Income & employment

- **164,000 biogas plants** installed in 58 provinces. Up until 2009, the program has built **57,000 plants**
- Reduced workload for women by **109 million hours** per year (1.8 hour per day)
- Increased amount of livestock for **67%** of biogas households
- **10-14 euro** per month saved on fuel, or reduced household costs by **65%** for **164,000** households
- Increased yield of crops by **5-20%** due to the use of slurry as fertilizer, saving on chemical fertilizer cost
- **1,200 mason teams** of 5-7 people established
- **80-96 mason teams** man-hours per digester; nearly **9,000 man-hours** created
- **1.5-3** tradable emission rights per year per digester

Health & sanitation

- **Clean farms** established; no animal dung pollution, no smell
- Important health advantages in kitchen, **food safety**, and surface water established
- **75,000** toilets attached to biogas plants

Environment

- **1.5-3 ton** reduction of CO2 per year per digester
- Ecological closed farming systems that use **less fertilizer** and **chemicals** established

Outlook

Currently, SNV stakeholder dialogue about biogas in Vietnam involves ministries, institutes, NGOs, provinces, companies, schools and trainers. Future scenarios and opportunities include linking the programme to the construction of medium-scale biogas plants, institutionalising training and quality management, diversifying digester technology, furthering the use of bio slurry, and establishing cross cutting organizations such as the Biogas Association, the National Steering Committee and other biogas initiatives.

Additional support from associated international and Vietnamese capacity builders will serve to increase the scope and replication potential of our outputs, leading to the successful achievement of our objectives.

SNV
Connecting People's Capacities

Contact Information

Country Office in Hanoi
6th floor, building B, La Thanh hotel,
218 Doi Can street, Ba Dinh district,
Hanoi, Vietnam
T: (84-4) 3 846 3791, F: (84-4) 3 846 3794
E: vietnam@snvworld.org
W: www.snv.org.vn www.snvworld.org

Mr. Jeroen Kruisman
Sector Leader Renewable Energy and Biogas
jkruisman@snvworld.org