

Biogas sector development in Asia and Vietnam



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In quantity and quality

Netherlands

Development

Organisation

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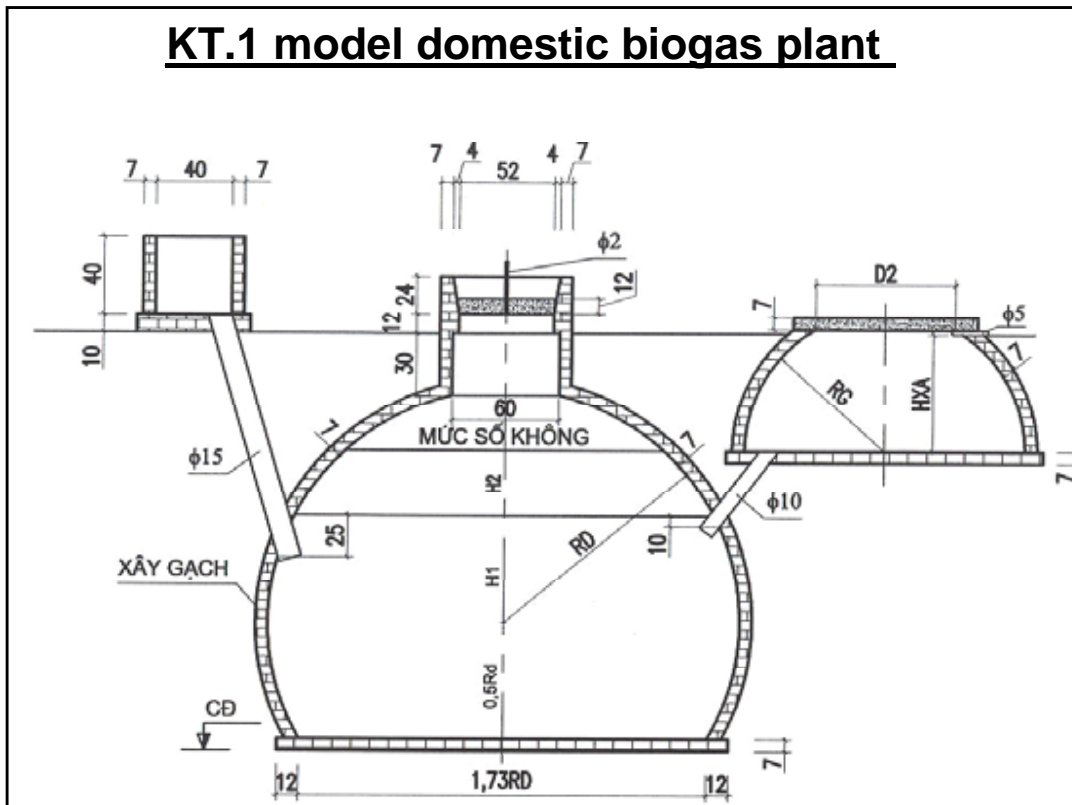


Connecting People's Capacities

Topics

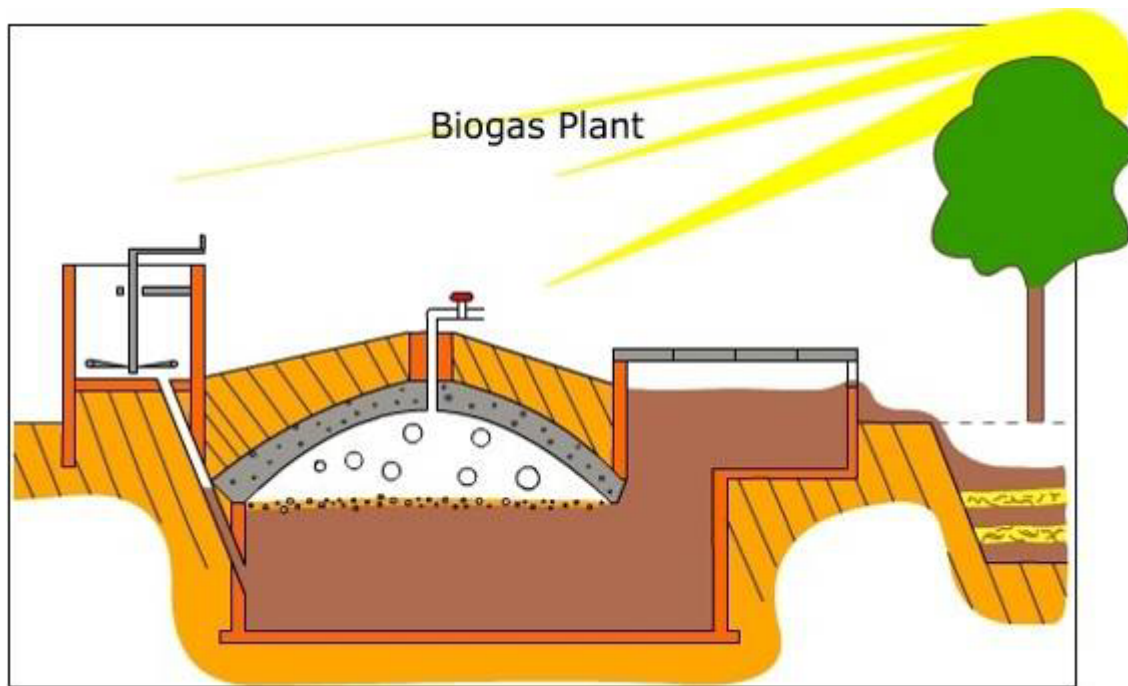
1. **Biogas technology and benefits**
2. **The Asian biogas programme and SNV's sector approach**
3. **Sector development in practice**
4. **Lessons from SNV's experiences**

1 Biogas technology and benefits



How does the biogas plant work?

Provides gas for cooking and lighting for rural farmers

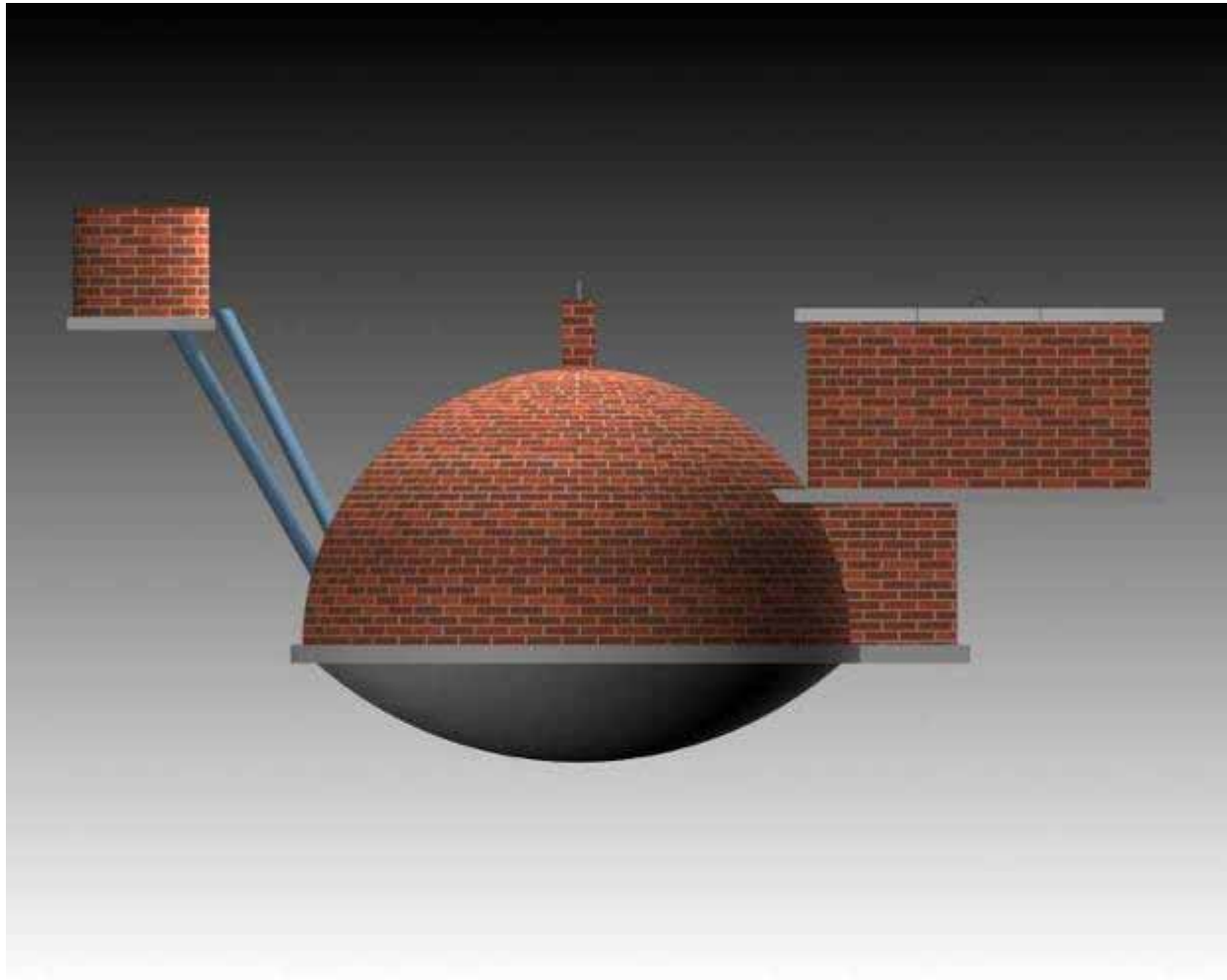


Input: animal dung

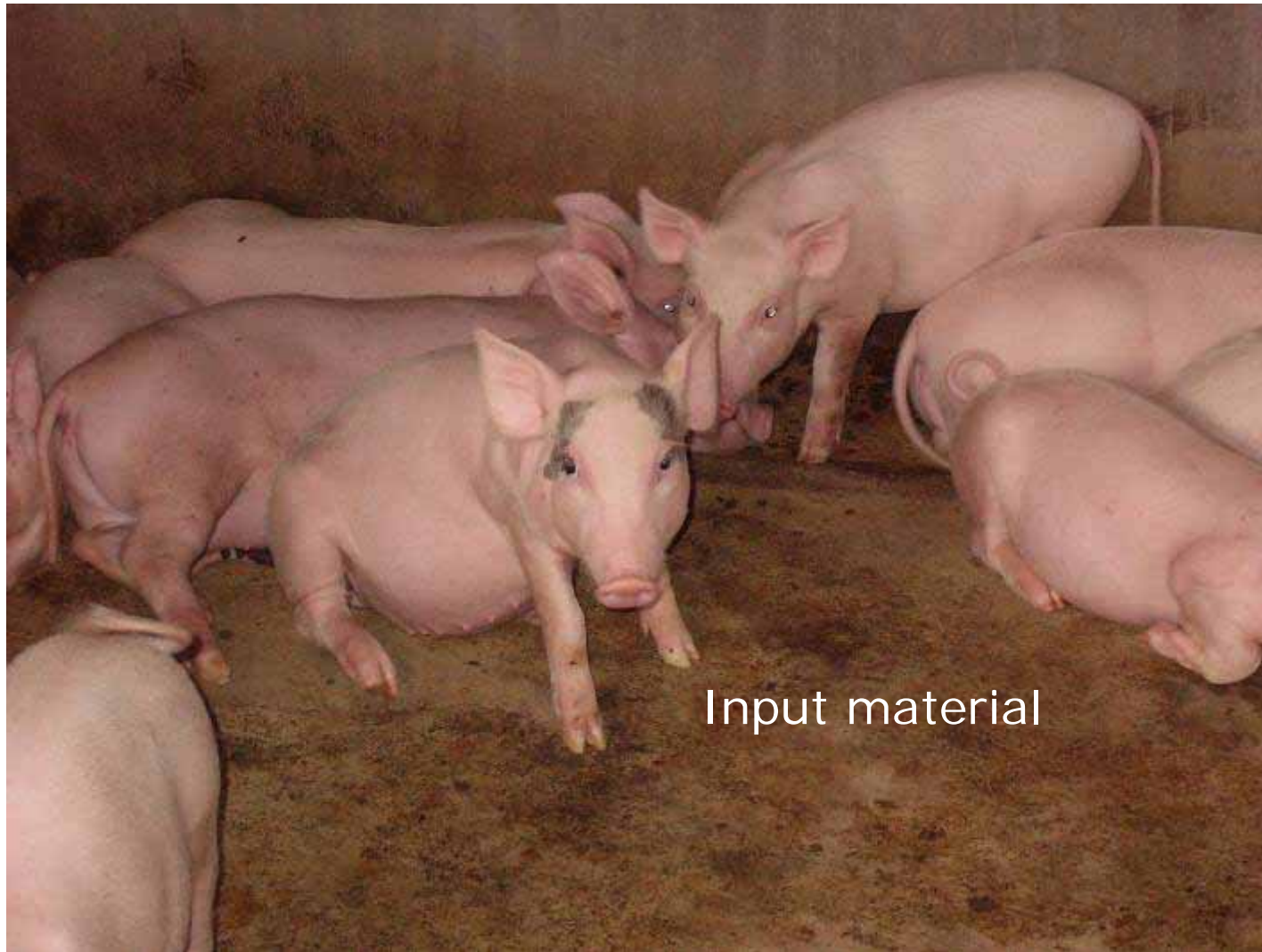
Fermentation process

Output: gas and slurry

Model



Good droppings!!!



Construction site





Garden with biodigester



Benefits of Biogas

Social- and health perspective

- Creation of jobs in rural areas
- Less hard work for women and children
 - Reduction cooking/cleaning time: 4 days/month
 - Reduction time on fuel collection: 1 day/month
- Prevention of eye and lung diseases because of less indoor air pollution
- Better sanitation (connection to toilet)



Benefits of Biogas

Economical perspective

- Business development, job creation (masons), income generation
- Energy costs savings: 4,000 to 24,000 VND/Day
- Saves expenses on chemical fertilizer
- High quality fertilizer (20% yield increase)
- Reduction in GHG emissions 2.5-5.0 kT CO2 eq per plant/year
- Potential CDM revenues \$ 6-12 per kT CO2 eq.



Benefits of Biogas

Environmental perspective

- Improvement in sanitation of farm and HH
- Prevention water pollution from farming
- Provision of potent organic fertiliser, improved soils
- Reduction in use of fossil fuel
- Reduced need for biomass: forest protection
- Green house gas emission reduction
- BOD5 reduced



Biogas benefits

“clean farm, clean kitchen, clean energy”

2 DGIS/SNV biogas practice in Asia sustainable energy for 1,300,000 people



Targets in quantities

Biogas plants ¹⁰	2005	2006	2007	2008	2009	2010	2011
(Nepal)	(153,000)	(184,000)	(218,000)	(256,000)	(311,000)		
Vietnam	(12,000)	12,500	43,750	86,250	125,000	145,000	150,000
Bangladesh		2,100	6,300	18,500	36,500		
Cambodia		1,000	4,000	9,500	17,500		
Lao PDR		900	2,000	4,200	6,600		
Total	0	16,500	56,050	118,450	185,600	205,600	210,600

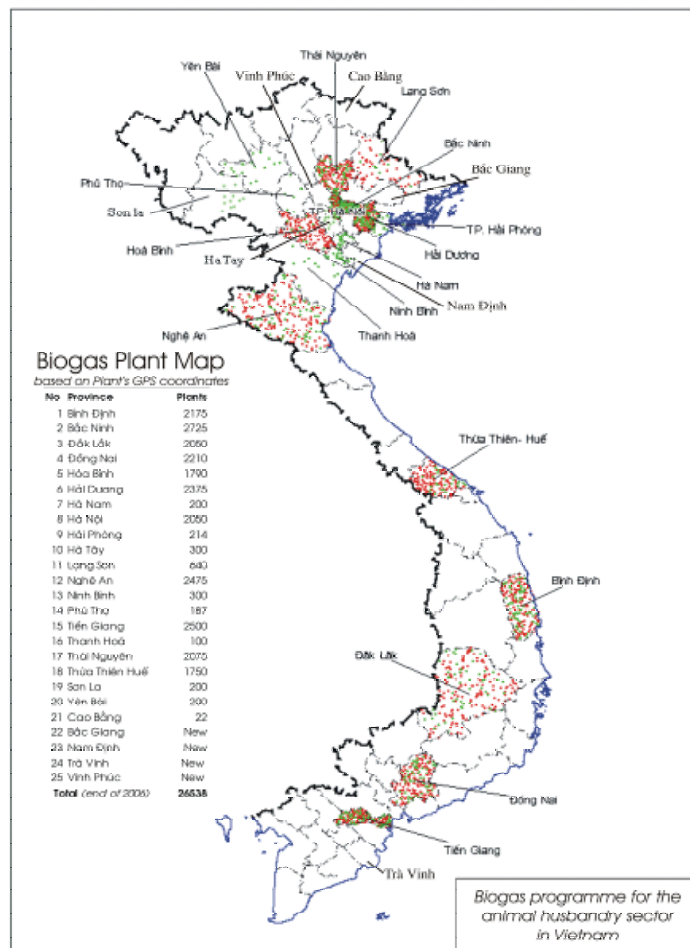


Outputs Biogas Programme Vietnam period 2003 to December 2007

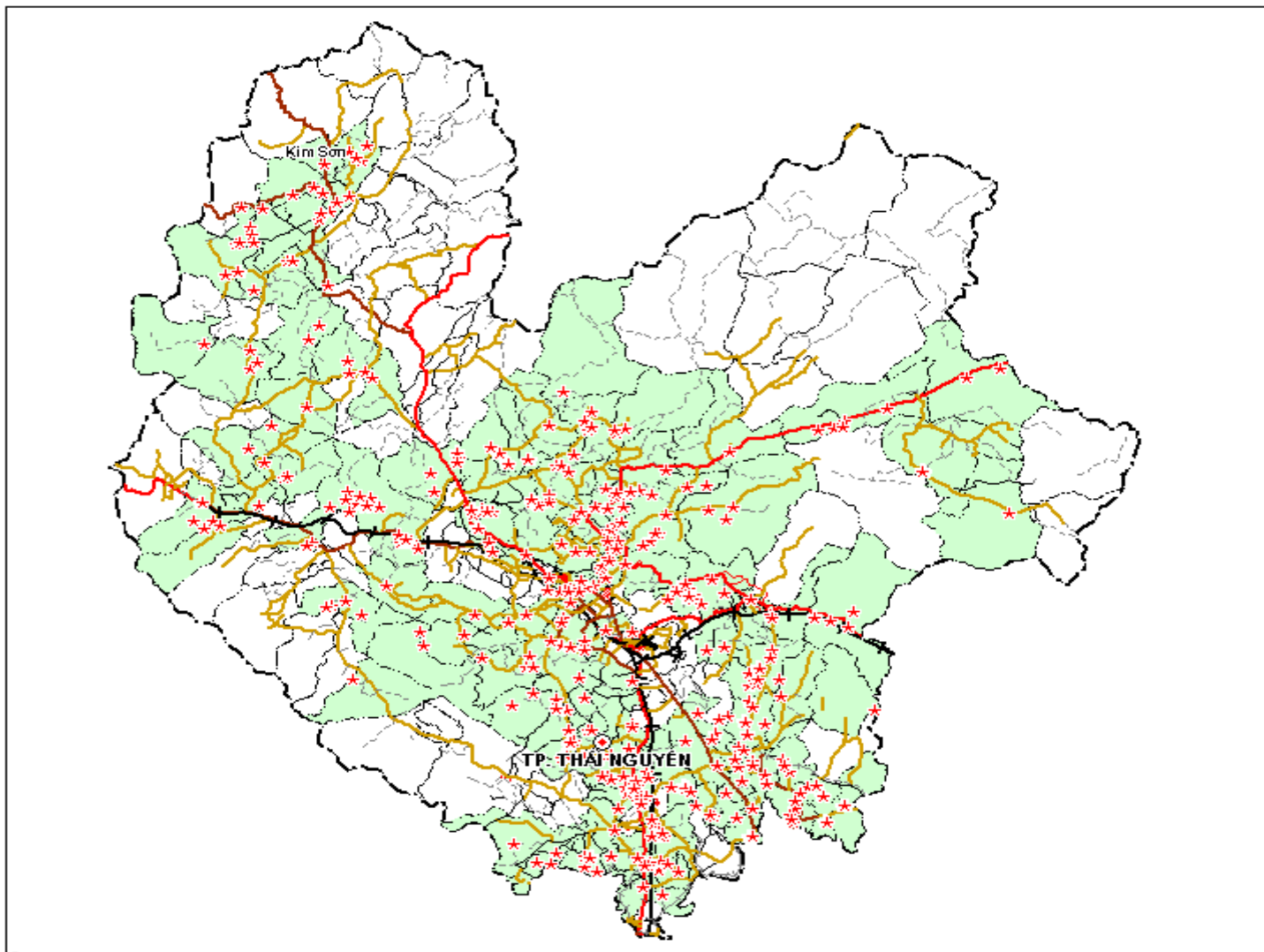
Constructed biogas plants	41,000
Number of Provinces	25 out of 64
Savings on workload household	1 to 1.5 hours per day
Savings of fuel household	5 Euro per month
Rural job creation for masons	450,000 labour days
Income masons	2,5 Euro per day
Turnover biodigester market	9 mln Euro
Sanitation	40% of toilets attached to digester

Geographic outreach in Vietnam

Vietnam MARD/Livestock Production Department **Netherlands** SNV/Netherlands Development Organisation



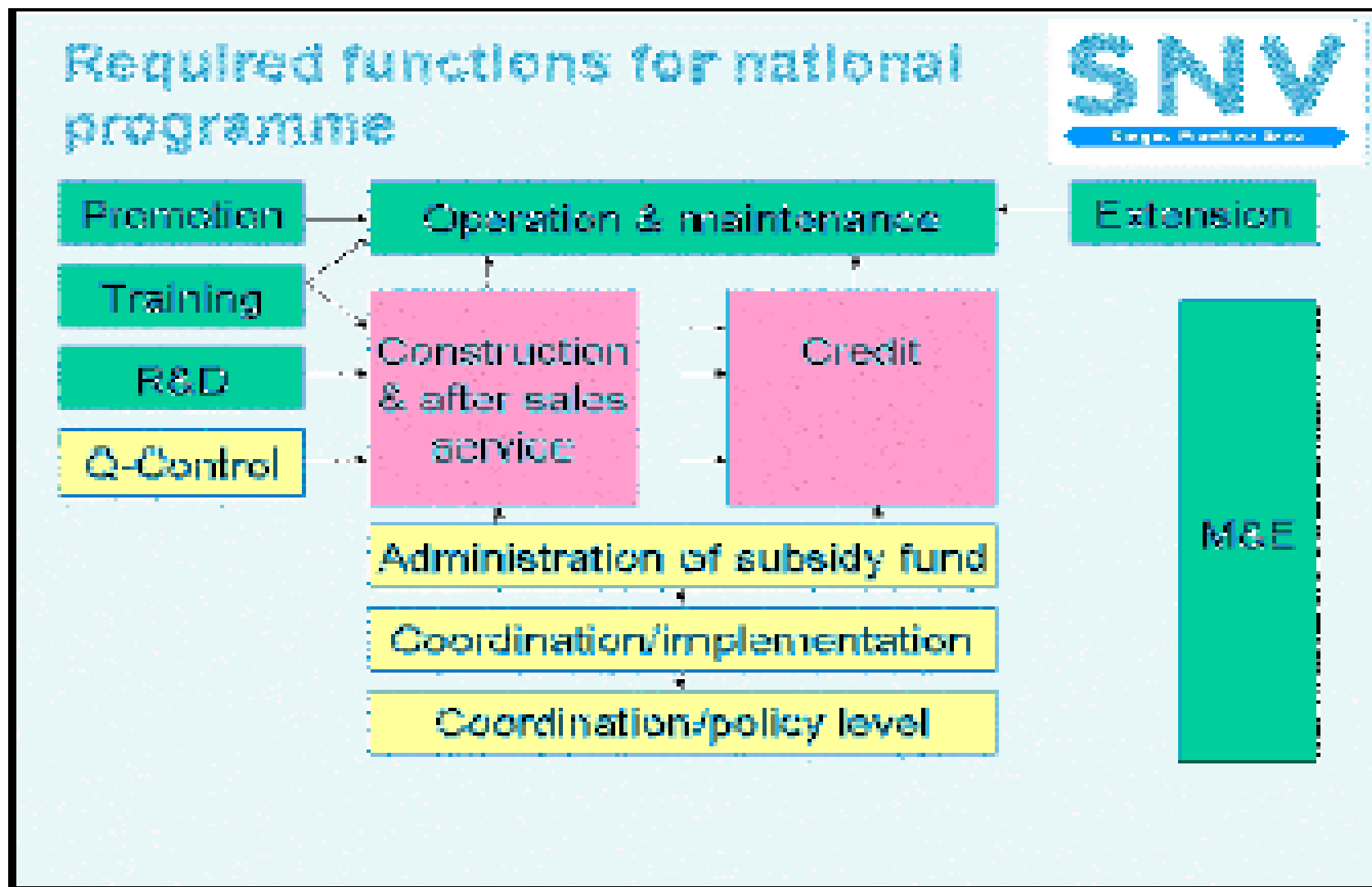
GPS plotting: Thai Nguyen Province



Targets 2011

Constructed biogas plants	140,000
Number of Provinces	55 out of 64
Establishment of a commercial viable biogas sector	

Target in qualities: Sector development



Sector development in practice in Vietnam

Construction:

150,000 constructed biodigesters.

Business training

Training services:

6,500 trainings for 200,000 participants

Vocational schools

Finance

Needed: 30 mln Euro private investment.

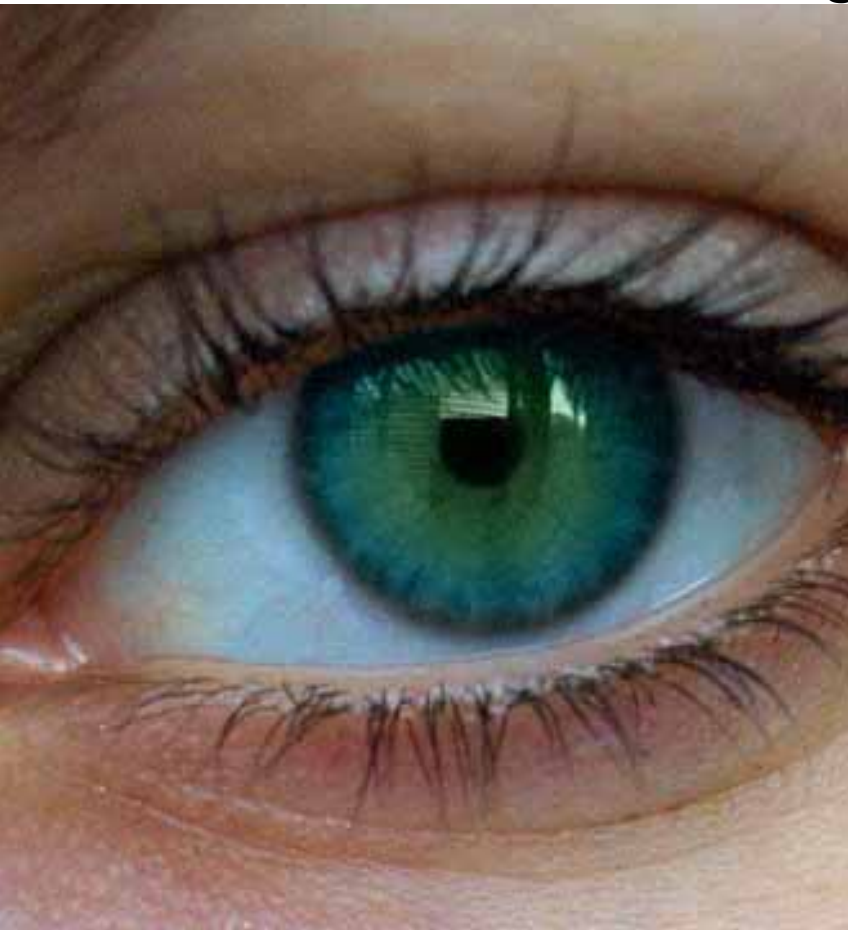
Micro finance

Governmental support

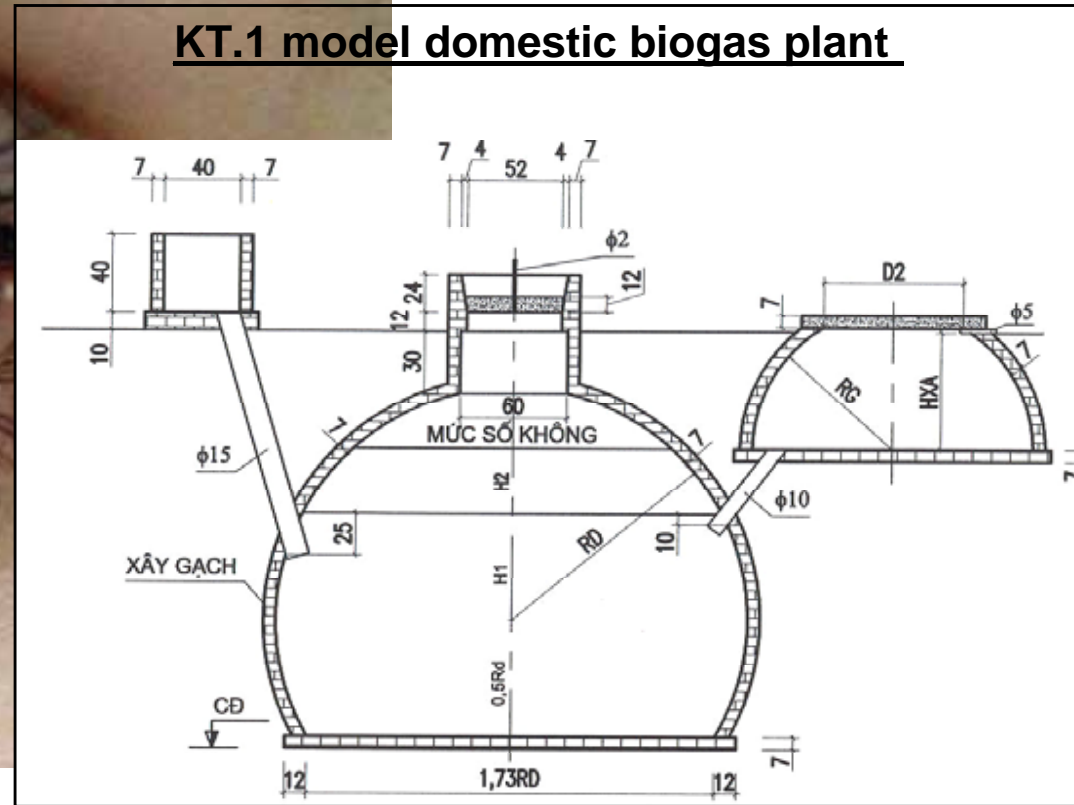
Lobby for favorable policies and regulations, finance and in kind

The way forward to sector development: 7 lessons from SNV experiences

- ✓ Focus on one technology, one sector



KT.1 model domestic biogas plant



- ✓ Quality and training is key



- ✓ Private sector stakeholders for providing services
- ✓ Private sector alone is not enough

CHƯƠNG TRÌNH XÂY DỰNG KHÍ SINH HỌC

Xuân Túc

Chuyên viên truyền giao công nghệ.

CHUYÊN: XÂY DỰNG - LẮP ĐẶT BÌNH BIOGAS THEO DỰ ÁN
BẢO HÀNH - SỬA CHỮA BẢO DƯỠNG HẦM CŨ
LẮP ĐẶT THEO YÊU CẦU CỦA GIA ĐÌNH

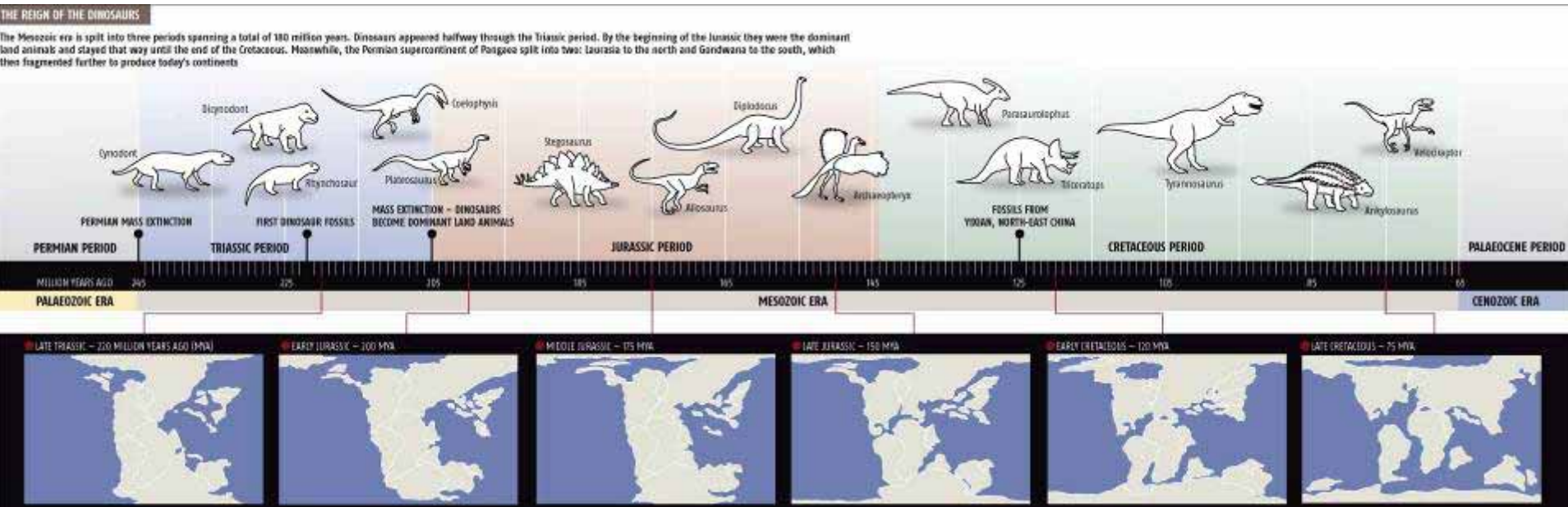
Địa chỉ : Xóm 2
Diễn Nguyên - Diễn Châu - nghệ An

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038.673.631

- ✓ Public sector: support in regulations, finance and in kind
- ✓ Public sector alone is not enough



- ✓ Long term commitment to address setbacks and adapt to changing environment



- ✓ **Critical mass needed for sector development**



✓ Interface between policies and rural realities



CAM ON RAT NHIEU!/THANK YOU VERY MUCH!

