# Biogas Technology in Nepal

- Fast Dissemination,
- Addressing Rural Poor,
- Sustainable Approach

**For BORDA: Boosting Basic Needs Services in Africa, tapping on Asian Best Practices, Bremen December 2005**

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# For those who don't know

- BSP = Biogas Sector Partnership – Nepal
  Biogas Support Program
- SNV = Netherlands Development Organization

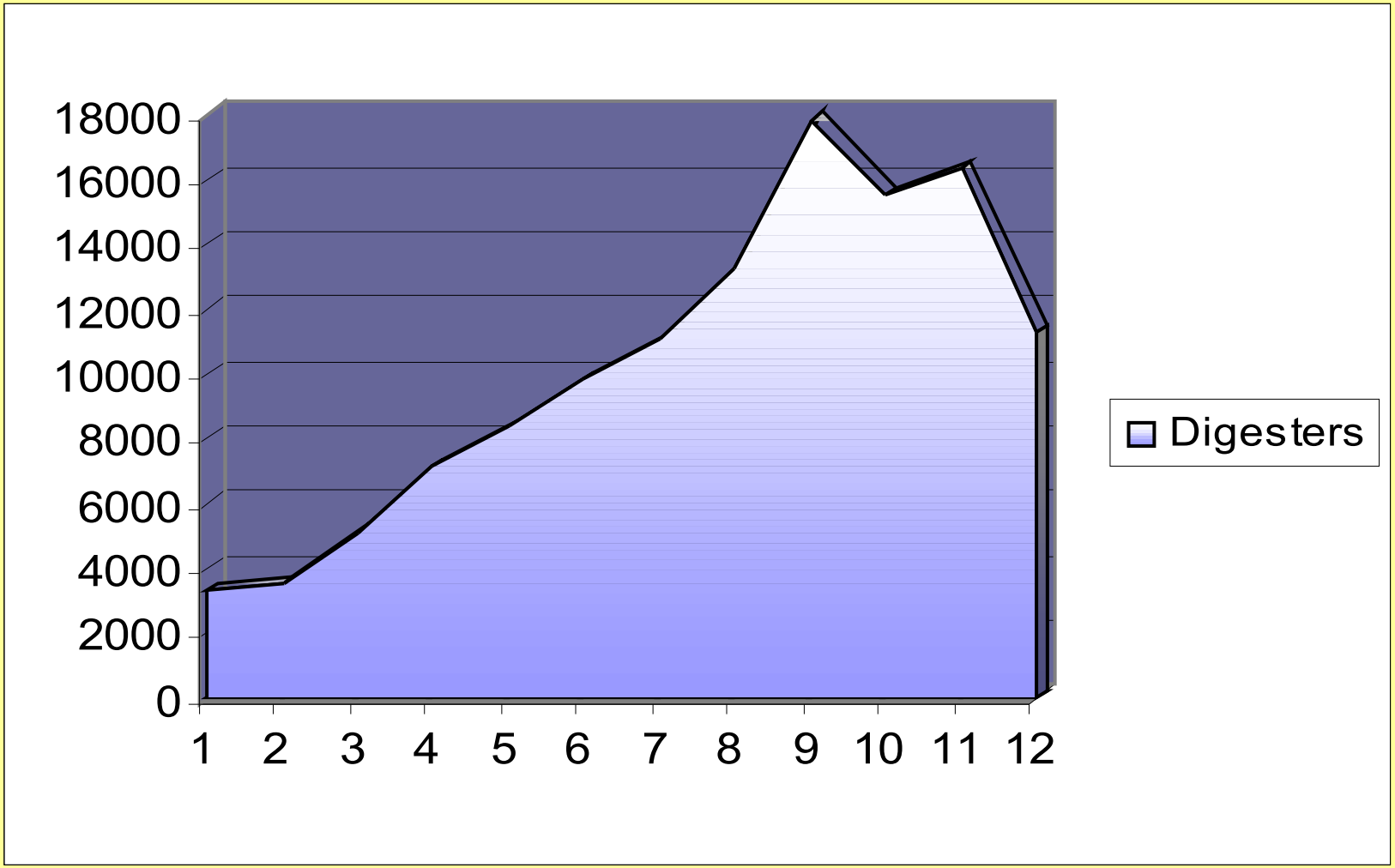
# Biogas Support Program

- Started in 1992
- Financially supported by
  - * Government of Nepal
  - * Government of Germany
  - * Government of the Netherlands
- Technically supported by SNV
- Currently running in IV phase
  (July 2003 to June 2009)

# Technology Adopted

- Fixed dome
- Cattle dung based
- 4 – 10 $m^3$ capacity
- Domestic use (cooking and lighting)

# Digester Construction



# Current Status

- 140,457 domestic size plants installed
- 97 percent are in operation
- 72 percent are connected with toilets
- 66 out of 75 districts are reached
- 1 million persons are getting benefits
- About 11,000 persons are employed
- 1 million tones/year GHG emission reduction

# Fast Dissemination

- Governmental commitment and support
- KFW subsidy support
- Subsidies and credit scheme
- Consequent standardization
- Rigid design
- Limitation to household  design only
- Consequent private sector involvement
- Penalty including quality control (subsidy for quality)
- Excellent advisory backing by SNV

# Private Sector Involvement

- 62 Biogas Construction Companies
- 15 Appliances Manufacturers
- Umbrella organization for producers, NBPG
  (Nepal Biogas Production Group)
- 140 Micro Finance Institutes

# Standardization and Mass Production

# Addressing Rural Poor
## (just a perspective)

Precondition : Parallel program with higher subsidy proportion

- Low cost designs
- Other feeding material
- Digester size limitation
  (e.g. 4m³ digesters only)
- Cluster approach
- Self-help approach

- One-cow-or-less approach
- Remote area tailored approach
- Cold area tailored approach

# Sustainable Approach
## Commercialization

- Target group: any waste producer
  - Large farms
  - Solid waste
  - Waste water
- Quality standards
- Design support on engineering level
- Capacity building for companies
- Awareness creation
- Networking, many stakeholders

# Sustainable Approach

## Carbon Finance

- Complicated procedure
- Government involvement obligatory
- Doubts if household digesters qualify
- Potentially 25 US$, per year per digester
- Partners: World Bank and KFW
- Emphasis of CDM on Asia
- Validation process will reduce the application beyond expectation

# Biogas Future in Nepal

- Technical potential - 1.9 million plants
- Commercialization - through private sector
- Self-sustain - through Carbon Financing
- Integration – with other activities (agriculture, forestry, sanitation etc.)

# Conclusion

- Domestic biogas in Nepal is technically reliable, socially acceptable and economically viable.
- One of the success factors of biogas in Nepal is involvement of private sector.
- Private sector can continue the biogas as a commercial sector but needs support and advice for few more years

# What is Applicable in Africa?

Experiences from 4 sample countries

- Tanzania (Private Sector, critical mass)
- Ethiopia (Government, informal private Sector)
- Lesotho (NGO, demand driven, commercialized)
- Rwanda SNV + financial donor Biogas extension program, started,
  target 15 000 digesters by 2010

# What is Applicable in Africa?

**The differences (generalized overview):**

- Less population density
- Less precipitation probability (water)
- Less general skills
- Less consideration for CDM so far
- Weaker NGO Sektor
- Different priority setting of Governments
- Nepal Program has a distinct energy (not sanitation) priority

# Conclusion: Can we tap on Asian Best Practices?

**Objective: Large scale extension on DEWATS technologies**

**Findings:**

- **Sanitation ranks lower (other problems: HIV, employment, school fees)**
- **Limitations to commercial approach**
- **Limitations to reaching low income target groups**
- **Financial input is required**

Greetings from the Biogas Group Lesotho. Thanks to Nepal for giving a good example.