

**Seventh Meeting of Network of Experts
on
Biogas and Bio-manure Training under the
framework of Domestic Biogas Programmes**
April 8-9, 2009
Hanoi, Vietnam



**A Brief Overview of Activities and Outcome of
Discussions**

August, 2009

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Abbreviations

ABP	:	Asia Biogas Programme
AEPC	:	Alternative Energy Promotion Centre (Nepal)
ASS	:	After-Sale-Services
BC	:	Biogas Company
BDS	:	Business Development Services
BPD	:	Biogas Project Division (Vietnam)
BPP	:	Biogas Pilot Programme (Lao PDR)
BSP	:	Biogas Sector Partnership (Nepal)
CBO	:	Community-based Organisation
CO	:	Carbon Monoxide
CTEVT	:	Council of Technical Education and Vocational Training (Nepal)
DAHP	:	Department of Animal Health and Production (Cambodia)
DBP	:	Domestic Biogas Programme (Pakistan)
DTW	:	Development Technology Workshop (Cambodia)
IDCOL	:	Infrastructure Development Company Ltd. (Bangladesh)
Lao PDR	:	Lao Peoples' Democratic Republic
MAF	:	Ministry of Agriculture and Fisheries (Lao PDR)
MARD	:	Ministry of Agriculture and Rural Development (Vietnam)
MFI	:	Micro-Finance Institutions
MOA	:	Ministry of Agriculture
NBP	:	National Biodigester Programme (Cambodia)
NBPA	:	Nepal Biogas Promotion Association
NGO	:	Non-governmental Organisation
NDBMP	:	National Domestic Biogas and Manure Programme (Bangladesh)
O&M	:	Operation and Maintenance
PBPD	:	Provincial Biogas Project Division (Vietnam)
PBPO	:	Provincial Biogas Programme Office (Cambodia)
QC	:	Quality Control
R&D	:	Research and Development
SNV	:	Netherlands Development Organisation
TOT	:	Training of Trainers

1. Introduction

Asia Biogas Programme of SNV (ABP/SNV) has instituted a regional network of experts working in the field of domestic biogas technology. With a view to share experience and learn from each other; SNV has been organising bi-annual meetings of the experts since the onset of ABP in 2006. The first, second, third, fourth, fifth and sixth meetings of the network members were held in Hanoi, Vietnam; Bangkok, Thailand; Dhaka, Bangladesh; Phnom Penh, Cambodia; Vientiane, Lao PDR and Bangkok, Thailand respectively in April 2006, September 2006, March 2007, November 2007, April 2008 and October 2008. The seventh meeting of network of experts was organised in Hanoi, Vietnam, during the period April 8-9, 2009. This meeting of experts followed the internal Biogas/Renewable Energy Team Meeting of SNV Asia Region.

This external network meeting on domestic biogas consisted of a field visit to provincial biogas office and biogas households in Ha Tay Province near Hanoi, on 8th April and a working meeting on biogas training activities on 9th April 2009. This brief report summarises the purpose, schedule, presentations and outcome of discussions related to the Seventh Meeting of Network of Experts on Domestic Biogas.

2. Objective of the Meeting

The overall objective of the meeting of the network of experts was to share lessons and discuss possibilities for the improvements on the training activities related to domestic biogas programmes. The discussion focussed particularly on the weaknesses/problems or evident successes of the training activities conducted so far by different biogas programmes, and the possible solutions to overcome the problems as well as prospects to share the success. The key question was: how to increase the effectiveness and efficiency of all biogas and bio-manure related training activities?

3. Key Agenda

Mr. Wim van Nes, Biogas Practice Team Leader, prepared the detailed schedule of the meeting and circulated it among the potential participants. He also prepared the guidelines for the preparation of country presentations on biogas and bio-manure training (Annex). The tentative schedule and key agenda of the 7th Meeting was agreed upon during the 6th meeting of experts in Bangkok in October 2008.

Training was considered to be the key agenda as it is a very crucial function to be undertaken in any national programme on domestic biogas. Different training activities focussing on different target groups are planned and executed under the framework of domestic biogas programme. Among them are:

- Users/prospective customers and customers: pre-installation training and/or exchange visits, users' training, bio-slurry training;
- Constructors: new mason training (theoretical/practical), mason refresher training, on-the-job training of masons and supervisors during QC visits by technical programme staff, new supervisor training, supervisor refresher training, bio-slurry training, management training, business and entrepreneurship training;
- Technicians (like in Vietnam provinces and districts): new supervisor training, supervisor refresher training, management training, bio-slurry training;
- Credit providers (MFIs, banks): loan officers' training; and
- Stakeholders (government/NGOs) and service providers: promotion training, bio-slurry training.

It is therefore important and beneficial that the lessons learnt is shared among the network members to increase the effectiveness and efficiency of all these activities. The key agenda was decided accordingly.

4. Schedule

The meeting was conducted for two days. The following tables show the schedule of activities during the meeting.

Wednesday, 8 April 2009: Field visit

08.00-14.30	Field visit to Ha Tay
14.30-15:00	Short stop in BPD office
17.00-20.30	Welcome dinner in Hai San Ngon restaurant in Hanoi

Thursday, 9 April 2009: Workshop on Increasing the effectiveness and efficiency of biogas and bio-manure related training activities

08.00-08.30	Opening, welcome and introduction
08.30-09.20	How to organise quality training?
09.20-09.40	Overview and evaluation of training activities in China
09.40-10.00	Overview and evaluation of training activities under the Biogas Support Programme in Nepal
10.00-10.20	Overview and evaluation of training activities under the Biogas Programme in Vietnam
10.20-10.40	Overview and evaluation of training activities under the National Biodigester Programme in Cambodia
10.40-11.00	Overview and evaluation of training activities under the National Domestic Biogas and Manure Programme in Bangladesh
11.00-11.30	Coffee/tea break
11.30-11.45	Introduction to the group discussions
11.45-12.30	Group discussions
12.30-13.30	Lunch
13.30-16.00	Continuation of group discussions, presentations and plenary discussion
16.00-16.30	Coffee/tea break
16.30-17.00	Other issues related to the Network
17.00-17.30	Evaluation and closure of the meeting
17.30-19.00	Snacks and drinks

5. Participants

Participants from China, Pakistan, Indonesia, Nepal, Vietnam, Bangladesh, Cambodia, Laos, and The Netherlands took part in the meeting. The following table shows the details of the participants.

List of Participants

SN	Name	Organisation/function	E-mail address
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1	Mr. Sundar Bajgain	SNV/Bangladesh, Biogas Advisor	sbajgain@snvworld.org
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		Cooperation, Managing Director	
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40	Mr. Tom Derksen	SNV/Vietnam, Country Director	tderksen@snvworld.org

6. Events and Outcome of Day-1: Field Visit

The 7th meeting of the network of experts commenced with a field visit to Ha Tay province near Hanoi, the capital city of Vietnam. The participants took part in the Biogas user's training session facilitated by the provincial biogas programme coordinator.



Upon the completion of the formal Biogas Users' Training session, the participants were divided into two groups to observe the construction of biogas plant as well as to visit biogas households. The participants were provided with an explanatory note on the field visit programme prepared by BPD/MARD. The staff members of BPD/MARD and provincial biogas staff members facilitated the visit to the selected biogas households. In the households with biogas plant under-construction, the participants collected information on various aspects of the installation from the supervisors, masons and the owners. The participants observed the physical status and functioning of operational biogas plants and collected related information from the owners. The participants were happy to see the use of biogas for cooking, lighting and running a dual fuel engine. The participants enthusiastically observed the use of biogas to generate electricity.



Following the visits to biogas households, the participants attended lunch. The informal interaction during the lunch was beneficial for the participants in sharing their views on the field findings and clarifying their queries.

The field visit has been useful for the participants to learn various aspects of biogas technology dissemination. Observations of the biogas plants, under-construction and operational, as well as discussions with the masons and owners of the biogas plants; have been beneficial for the participants in getting acquainted with the technology dissemination practices in Vietnam. The Biogas Users' Training session in PBPD and the interactive discussions helped the participants to learn more about the ongoing practice in training the users.

7. Events Of Day-2: Workshop on Training Activities under Biogas Programmes

7.1. Opening and Introduction

The meeting of the second day, the workshop on Biogas related training activities, started with the welcome remarks from Mr. Tom Derksen, Country Director of SNV Vietnam. Welcoming all the participants in the event, he highlighted the importance of 'training' as one of the important components of biogas programme. Referring to the field visit in the previous day where all the participants attended a biogas users' training session, he asserted that all the participants are now 'good biogas users'. He suggested the participants to effectively apply the lessons learnt from this workshop in the field situations.

Following the welcome remarks, Mr. Hoang Kim Giao, Director General of Livestock Department/MARD delivered the inaugural address in which he emphasised the importance of training and capacity building activities to ensure quality construction and after-sale-services of biogas plants. Highlighting the success of the Vietnam biogas programme to install 70,000 biogas plants in less than 6 years, he pointed out the need to strengthen the capacity of the stakeholders to deliver effective services in the days to come. He thanked Dutch government, SNV and other counterparts for being instrumental in implementing the meaningful programme in Vietnam. He welcomed all the participants and wished for the success of the workshop.

Mr. Wim van Nes, Biogas Practice Team Leader, highlighted the objective of the workshop as well as the schedule of the day. He then requested the presenters to present the country papers.

7.2. Country Paper from China

7.2.1 Presentation

Presenting paper on '**Biogas Training in China – Overview and Evaluation**', Mr. Zhang Mi, Managing Director, Chengdu Energy-Environment International Corporation (CEEIC) China highlighted the following issues:

- Till the end of 2008, about 26.5 million Domestic biogas plants and 26586 large and medium size biogas plants have been installed in rural areas in China.
- The country has 30 years of history of biogas training in line with biogas R & D under MOA.
- Up to the end of 2008, more than 20,000 engineers and technicians have been trained in Sichuan and about 300,000 in China.
- The major fund for the training comes from the government, international organizations, private sectors and NGOs.
- During 1980s, National Biogas Leading Group (NBLG) of MOA, through Provincial biogas offices, Municipal biogas offices and County biogas offices in line with local biogas companies were responsible for conducting biogas related training as well as the issuance of certificates. However, since 1990, Bureau of Science and Education of MOA through Provincial offices of rural energies, Municipal offices of rural energies and County offices of rural energies in line with local new energy companies are conducting the training and the certificates are issued by Rural Energy Vocational Authority MOA integrated with MOP (Ministry of Personnel).
- Training on rural domestic biogas digesters; Training on industrial biogas plants including animal farms; and Training on domestic waste water treatment (DEWATS) are the major training programmes being conducted. Specific training programmes such as Training on integrated use of bio-slurry; Training on biogas for power generation; Training on biogas management/budgeting; Training for technicians to be sent abroad for assistance works and International training in and outside of China are also conducted periodically.
- Organized by the local rural energy offices; financed by the central and local government; theory integrated with teaching practice by trainees themselves (in and out of class); certification at different levels are some of the main features of biogas training in China.
- Demand for new training contents is increasing and more and more trainees from other fields are taking part in Biogas related training for employment and increasing income.



- Project management, application, bidding and planning; integrated use of biogas and bio-slurry; post-service system and fund management are some of the new issues included in biogas related training courses.
- Cost of a 20 day long training course in China for 30 participants at present is about US\$32,000.
- For certification purpose, there are two ways of testing – the first is theoretical test in class for all kinds of training and the second is the practical test on site especially for technicians and masons.
- For technicians, 3 grades of certificates - senior, medium and junior, are issued.

Based on experiences from various training programmes, the following were reported to be some of the lessons learnt:

- While selecting trainers, care should be given that they have good technical knowledge on subject matter enhanced by sound working experiences and teaching methodology;
- Teaching materials should be suitable for the targeted trainees like engineers, students, technicians, management staff, housewives etc.
- Classroom teaching should be simple and easy to understand with practical demonstrations
- Field visits are necessary.
- It is good not to overload the trainees with lots of issues at one time.

7.2.2 Discussions

Mr. Jam Lam from NBP Cambodia asked: How do you maintain linkages between the demands for training from the field level and the course content? Prof. Zhang replied that this issue is considered while preparing the specific training course. In majority of the cases, teaching in the class and on-the-job training in the field is combined for the best result.

Mr. Rajesh Shrestha from DBP Pakistan put forward his query on the institutional aspects of the Training Programmes. He asked: Who takes the lead role in organizing and conducting training courses? Is it the private sector or the government or the training institutes? Prof. Zhang told that the Ministry of agriculture was responsible in the beginning. However, since 1990, Bureau of Science and Education of MOA through Provincial offices of rural energies, Municipal offices of rural energies and County offices of rural energies in line with local new energy companies are conducting the training and the certificates are issued by Rural Energy Vocational Authority MOA integrated with MOP (Ministry of Personnel).

7.3 Nepal Country Paper

7.3.1 Presentation

Mr. Saroj Rai, Executive Director of BSP-N, presented the country paper on **Training Activities on Biogas Support Programme (BSP) in Nepal**. His presentation included the following main issues:

a. Major Regular Training Programmes being conducted are as follows:

- Technical Training to Companies & Workshops
 - Mason Training, including training on slurry and promotion (New Mason Trainings - 5+1 days theoretical+ 52 days OJT) and Refresher Training - 1 day theoretical)
 - Supervisor Training, including training on slurry and promotion (New Supervisor Training - 5+1 days



- theoretical) and Refresher Training -1 day theoretical)
- Skill Enhancement Training to workshops staffs (2 days)
- Slurry Use and Management Training (1 day)
- Training to Masons and Supervisors on Use of GPS (1 to 2 days).
- Annual Performance Report Presentation to Companies (2 to 5 hours).
 - Management Training to Company & Workshop Managers
 - Business counselling (1 day)
 - Business management training (2 days)
 - Salesmanship trainings (1 day)
 - Financial management training (2 day)
 - Quality management training (2 day)
- TOT (4 days) to BSP Partners (BSP-Nepal, NBPA, AEPC, GOs, NGOs, CBOs, etc.) for Technical training detailed earlier.
- General promotion & orientation
- Slurry promotion, etc.
- Orientation Training (1 to 2 days) to Banks, MFIs, etc. for linkage with credit
- Orientation and promotion training to groups under MFIs, FINGOs, Cooperatives etc.
- Female Users Training (1/2 day)
- Conducted by Biogas Companies to new biogas users after 4 months of plant construction.
- Helps solve questions that users may have in encountered in operation & maintenance.
- Mostly females participate.
- Over 95% of the users get this training.
- Companies use it also as a marketing opportunity.
- Prospective Users Training (1/2 to 1 day)
 - Through NBPA in areas where Companies have a good presence.
 - Through national or regional CBOs, NGOs, etc. where market is not yet developed and the organizations have good network.
 - Through local CBOs, NGOs, etc. where market is not yet developed but local organizations have good influence.
 - Through MFIs where market is not working well but MFIs have good presence.

b. The following table illustrates the Trainee Selection Criteria & Venue for Some Major Training Programmes:

Issue	Technical Training	Management Training	Female Users Training
Selection Criteria	Based on companies recommendation, mainly targeting people already working with Companies.	Based on Companies' recommendation, targeting people already working with Companies.	Mainly females from households with new biogas plants.
Venue	Different parts of the country.	Basically in the capital and regional centers	At village or cluster level close to the users.

c. The following table shows the Duration and Programme Cost of Some Major Training Programmes:

Technical Training	Management Training	Female Users Training
25 persons for 6 days, residential	25 persons for 3 days, residential	Ave. 30 persons for 1 day, non-residential
NPR. 87,500 (US \$1,093)= US \$44 per person.	NPR. 75,000 (US \$ 937)=US \$ 187 per person.	NPR. 125 (US \$ 1.50) per person.

- d. Mr. Rai highlighted the following facts related to the facilitation of training programme :
- o NBPA carries all of the training programmes for company staffs with support from BSP-Nepal.
 - o Special training programme on management related areas are conducted often through NBPA with support from BSP-Nepal and specialized organizations.
 - o Training to Banks and MFIs are mostly carried out by their federations or consultants specializing on capacity building in the micro-finance sector.
 - o AEPC also carries out some orientation and training programmes for banks and MFIs with support from BSP-Nepal.
 - o BSP-Nepal provides technical backstopping for improvement and implementation of technical training programmes.
 - o Masons and Supervisors Get “BSP Registration Card” after completion of training.
 - o BSP-Nepal carries out overall monitoring of the implementation.
 - o Training Effectiveness Study Carried out in 2007 (Mason Retention Ratio = 30%)

f, Table below shows the Weaknesses or Problems and Solutions in Some Major Training Programmes as presented by Mr. Rai:

Issue	Technical Training	Management Training	Female Users Training
Weaknesses or Problems	Independent certification lacking. Retention ratio rather low.	Screening of trainees is weak.	Quality control & monitoring have not been effective.
Solutions	Link with CTEVT. Create career path and improve motivation.	Increase contribution. Improve selection criteria.	Create direct linkage with company perform. evaluation.

- g. Some recent initiatives to improve biogas training programmes were reported to be the following:
- o Collaboration with CTEVT for Skill Standardization and Certification
 - New curriculum and skill standard for Biogas Mason, Level I are being developed with Council for Technical Education & Vocation Training (CTEVT) for certification.
 - This can gradually lead to Level II, III and IV.
 - o BSP-Nepal has established new programme wing named 'Biogas Training Centre (BTC)' for production of middle to high level biogas technicians and getting skill tested and certified from CTEVT in Level III and IV. This part of the training will be hopefully conducted without any subsidy and the activities are aimed to complement the efforts made from BSP training activities discussed earlier.

7.3.2 Discussions

Mr. Murad Chadda from DBP Pakistan wanted to know why the users' training is conducted only after 4 months of the installation of biogas plant. Mr. Rai told that the company personnel provide basic orientation on operation and maintenance of biogas plant to the users immediately after the installation, however, with a view to allow some time for the users to experience problems and share them in a wider group, the users training is organized only after 4 months.

Mrs. Lam Saoleng from NBP Cambodia asked the reason(s) behind the selection of only the female members for the users' training. She also wanted to know the mechanisms to monitor the effectiveness of the Female Users' Training programmes. Mr. Rai told that despite the name being Female Users' training, males also are included in the training if they are responsible for carrying out biogas related activities. According to him, there is not a structured mechanism for monitoring the effectiveness of the training, however, periodic surveys, formal and informal discussions with the users are conducted from time to time. Moreover, the annual biogas users' surveys also incorporate a major part related with this training programme.

7.4 Vietnam Country Paper

7.4.1 Presentation

Presenting country paper, Mr. Bastiaan Teune from BDP Vietnam described the key parameters related to biogas training (actors, training needs and costs), outsourcing of training (justification, approach, experiences) and lessons learned as well as the way forward. His presentation highlighted the following issues:

- a. The following three different levels of training are being organised and conducted:
 - Households: user O&M and slurry use: **user training**
 - Masons: construction, technology, slurry; and business: **mason training and business training**
 - Technicians provincial and district level: promotion, slurry, user training and QC: **technical training**
- b. Conservative training needs estimate for the coming 4 years under BP II (2009-2012) are as follows:
 - 110,000 households 1 user training pre construction, 4,000 sessions (4 hours)
 - 110,000 households 1 user training post construction, 4,000 sessions (4 hours)
 - 722 masons, 33 trainings sessions masons (6 days)
 - 8 training sessions on mason business training (5 days)
 - 488 technicians, 24 trainings sessions technicians (6 days)
- c. In general, the costs of training are:
 - User training pre and post construction: 20 participants, half day, Total costs 90 USD, 4.5 USD per person
 - Mason or technician training, 25 participants, 6 days, total costs 8,250 USD (before outsourcing 11,000 USD); 330 USD per pax, without travel and DSA 150 USD per pax
- d. Drop out rate of technicians is ~20% per year and that of masons is ~25% per year.



- e During the period 2003-2006, the technical training activities were conducted by consultants with the logistic support from BPD and PBPD.
- f BPD is preparing to outsource the training activities. The following are the justifications for outsourcing of training programme:
 - Management (Increased training capacity under BPII, Quality standards, Manageable, Efficient, Cost effective and Flexible)
 - Sustainability (BPD overloaded with work, biogas in curriculum school, Open to non-programme participants,- outreach, Institutionalize biogas training capacity in Vietnam)
- g. Approach for outsourcing:
 - Pre selection of institutions
 - Feasibility visit to assess criteria
 - Technical and mason training arranged at new school
 - Teachers (4 per school) participate to get certification
 - Teachers receive ToT
 - Pilot training at school with support of BPD
 - Semi independent training under supervision
 - Independent training (under external supervision)
 - Action plan to promote biogas training
 - Biogas as part of curriculum: accreditation
- h. The following are some of the positive and negative experiences with outsourcing:
 - At times management not focussed on quality
 - Teachers providing poor lessons
 - Unsatisfied participants by poor logistical preparations
 - Two schools stopped (one by us, one had other priorities)
 - One school in centre in full operation
 - Promising school in the South
 - Two schools in North are in progress
- i. The following are some of the lessons learnt in terms of outsourcing:
 - Outsourcing of training is possible
 - It is effective, saves costs and allows to set quality standards
 - However it takes attention
 - Schools specialised in construction is better than those on agriculture
 - Proper selection does prevent, not guarantee success
 - Management key to success

7.4.2 Discussions

Initiating the discussion on the paper, Mr. Uttam Jha from SNV Nepal wanted to know about the reason(s) why teachers are selected as the main agents for trainings and what is the needed educational/academic background of the teachers. Mr. Teune explained the need to go through careful pre-selection process to assess the genuine interest of the organization as a whole and the teachers/instructors in particular. The educational background for the instructors/ teachers is mainly agriculture, however, skill and knowledge on construction is preferred.

Mr. Sameer Thapa from AEPC Nepal had a query on the distinction between 'masons' and 'technicians'. Mr. Teune clarified that masons are responsible for biogas plant construction and technicians are basically a term given for supervisors and technology promoters.

Answering to a query of Mr. Murad Chadda from DBP Pakistan on possible ways to decrease the dropout rates of trainees, Bastiaan highlighted the importance of ensuring profitable job markets for masons.

7.5 Cambodia Country Report

7.5.1 Presentation

Mrs. Lam Saoleng, NBP Programme Coordinator, highlighted the current training initiatives being conducted under the framework of NBP Cambodia. Based upon her presentation, brief information on training topics, number of persons trained till date, duration, costs and partners to conduct such training programmes has been given in the following table:

No	Training topic	# of trained	Duration	Cost/p	Organizers
1	National workshop (2)	180	1 day	50\$	NBP
2	Provincial workshop (8)	495	1 day	15\$	PBPO
3	Pre-construction training (100)	4025	½ day	6\$	PBPO
4	ToT training (1)	14	50 days	500\$?	NBP
5	Supervisors & Coordinators	54	12 days	300\$	NBP/PPI
6	Supervisor Refreshing	54	2 days	60\$	NBP
7	Masons training (18)	338	10 days	200\$	NBP/PPI
8	Mason refreshing training (10)	210	1 day	10\$	PBPO
9	Mason Practical training	338	2 plants	50\$	PBPO
10	Business & Entrepreneur training		4 days		CIEDC
11	Promoter & VAHW training (22)	600	½ day	10\$	PBPO
12	Financial & mgt. training (5)	20	2 days	60\$	NBP
13	Biodigester credit training (10)	600	½ day	10\$	PBPO&PRASAC
14	User training (35)	1400	½ day	6\$	PBPO
15	Bio slurry training for coordinators (1)	8	2 days	70\$	NBP
16	EW training on Bio slurry	40	1/2	6\$	PBPO
17	Bio slurry training (92)	2050	½ day	5\$	PBPO

According to Mrs. Saoleng, the following are some of the problems related to the functioning of masons:

- High drop out rate, ±40%
- Low experience/education of new masons
- Careless attitude, not always eager to learn and practice new techniques
- Short cutting of construction protocol to earn more money (less days per plant)
- Not client oriented
- Lack of promotion and extension skills
- Poor delivery of ASS



Presenting the following reasons for the alarming drop out rates of trained masons, Mrs. Saoleng stressed the need to select right participants for the training.

- Incorrect screening of candidate masons during the recruitment - some masons even didn't know what they get into;
- Masons do not get enough work after the training,
- Seasonal character of the construction work
- Some farmers want a particular mason which makes the market for new masons limited;
- Masons are attracted by the booming construction sector in the cities. The certificate issued after the mason's training facilitate them to get job in this sector.
- Poor mason management by the PBPOs, (related also to point 2).
- Construction job, especially the plaster inside the dome is difficult
- Warranty provision of 2 years and compulsory after-sale-service make mason hesitate to build plants.

According to her, the following are some potential solutions to the problem of higher drop out rate of masons:

- Formulation of masons selection criteria and compliance of the same by the PBPOs while selecting participants. For example, the selected participants should have been a helper to a skilled mason for building at least 5 plants
- Generate demand and ensure that the masons have plants to build
- Ensure regular contact with mason
- Review the ASS procedure and make it more effective and mason friendly
- Share cost between PBPO & NBP for mason training
- Deliver the task of management of masons to private companies

Mrs. Saoleng stressed the need to provide effective users' training to the right person (male or female) depending upon their roles. In closing she put forward the following questions.

- How to correctly monitor the impact of user training?
- The tasks of plant operation and maintenance is shared by husband and wife, however it is not practical for both of them to attend users' training. In this case, whom to invite?
- Is it better to work on enhancing the training skills of masons and supervisors or organise more users' group trainings?

7.5.2 Discussion

Mr. Samir Thapa of AEPC Nepal wanted to know more about the issue of 'management of masons' by private companies. Clarifying the issue, Mrs. Saoleng and Mr. Jan Lam, NBP Advisor, told that the trained masons currently are working under the framework of PBPOs as there were no private companies taking the role of construction of biogas plant. With the private sector development initiatives instigated by the programme, new biogas companies are taking up the role and the programme is hopeful that the masons will be accommodated in these companies.

Mr. Ramesh K. Gautam of SNV Nepal wanted to know if the masons have enough knowledge/skills to work as extension workers. He also asked if the idea of mobilizing masons as extension worker is sustainable. Mrs. Saoleng and Mr. Jan Lam told that the masons are the first persons to be contacted by the users if they have anything to ask about and that is why it is important that the masons are trained not only for constructing biogas plants but also carrying out promotion and extension works.

7.6 Country Paper from Bangladesh

7.6.1 Presentation

Following the presentation of the country paper from Cambodia, Mr. Md. Nazmul Haque from NDBMP Bangladesh, presented a paper entitled 'Biogas Training in Bangladesh'. He highlighted the biogas training cycle, types of training programmes and costs, selection of trainees, training delivery practices, training evaluation and follow up mechanisms, current status of training including strengths and weaknesses, as well as potential solutions to overcome the existing weaknesses. According to him, at present training programmes are conducted for the masons, supervisors, company managers, motivators, users and slurry extension workers. The basic requirements for selecting participants were reported to be:



- Masons' Training : brick laying experience, literate and local person
- Supervisors' Training: High school graduate and company staff
- Managers' Training: Bachelors degree education, company staff
- Training of Trainers: Supervisor or manager of company
- Motivators' Training: Local female, high school graduate and interested on biogas
- Slurry extension workers' Training: Agriculture graduates and company supervisors
- Users' Training: Biogas household, mainly female

Mr. Haque highlighted the exiting practices of training delivery as follows:

- Training activities are conducted in local areas as much as possible
- NDBMP staff together with company staff conduct training- till now
- Training will be outsourced to Government Polytechnic Institutes (soon)
- Both theoretical and practical (2-4 days) sessions are conducted
- Certification by NDBMP and later by Polytechnic Institutes
- Evaluation carried out at the end of the training
- Training impact assessment conducted through biogas users' survey
- Training quality assessment done through the results of regular quality control (mason and supervisor)
- Regular feedback given to all trainees based on their performance during QC visits, monthly meetings (Operation Committee Meeting) and upon complains from Users
- Refresher training provided for technically-weaker staff

According to Mr. Haque, the following are the outcome till date of various training programme conducted under the framework of NDBMP:

- 1050 masons and supervisors are trained among which 465 persons are actively working and 15% are working on on-call basis
- 63 managers trained
- 169 trainers prepared (Including O&M Trainers)
- 49 female motivators trained
- 122 slurry extension workers trained
- 1826 users are trained
- 33% of the women reached by users training
- Outsourcing to Polytechnic is in process

The following problems are being faced by the programme:

- Trained staff's retention in biogas sector is low. Mason retention rate is 30%.
- Out sourcing process is taking longer time than expected.
- QC work gets hampered sometimes due to engagement of staff in training.
- Trainees participate the training without knowing the nature of job.
- Costs of training are high due to high drop-outs.
- Companies are interested more on allowances rather than quality of training.
- Master masons who can guide the new mason after training are not available everywhere.
- Practical exercise is less than the requirements (mason).
- Plumbing part is not done by masons and therefore there is need of other local plumbers for pipe fittings.

Mr. Haque highlighted the following as some of the potential solutions for the existing problems related to the training programme:

- New trainees have to work few days with biogas companies and later join the training programme. This may help to decide the participants whether biogas is appropriate job for them or not.
- Masons should not have higher academic qualification.
- Training should be outsourced to capable local training institutes. Trainers of these institutes will be trained by biogas programme office. This will help to develop training capacities within local level and programme office can concentrate on quality control.
- Company should be encouraged to appoint at least one permanent mason in each branch office.
- Reward and recognition to the best masons/ supervisors/ managers will help to keep the staff's motivation high.
- Refresher training to all staff (mainly the weak ones) will help to increase their skills and performance.
- ID card must be issued to each trained staff with unique number which shall be recorded with plant report.
- A regular follow-up will be required even for them who are not working any more in biogas sector.
- Masons and supervisors should receive maintenance training as well.

7.6.2 Discussion

Mr. Jahangir Alam, Project Officer, DTE Bangladesh talked about the ongoing process and development on outsourcing of training to vocational institutes.

Mr. Mohan R. Sharma from NBPA Nepal had a query on the roles and responsibilities of biogas construction companies/construction partner organisations in planning and conducting technical training programmes. Mr. Haque told that construction partner organisations select participants to participate in the training, select training venues and sometimes conduct training.

Replying a query of Mr. Uttam K. Jha from SNV Nepal on the mechanisms to ensure the quality of the training programmes, Mr. Haque told that the programme ensures that the resource persons have enough technical knowledge as well as facilitation skills. He also pointed out the need to carefully select right participants for the training.

7.7 Paper of Organising and Conducting Quality Training

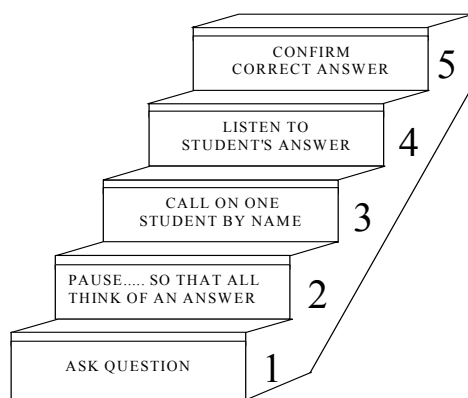
7.7.1 Presentation

Ms. Melanie Stallen, Coordinator of TTP/ ETC, The Netherlands, presented a paper on 'How to organise and conduct a quality training programme'. She started her presentation with the percentage of budget spent on biogas training under the framework of biogas programmes in Nepal, Bangladesh, Cambodia, China and Vietnam. Such budget which ranged from 3% to 16% is in increasing trend in all the countries except Cambodia during last three years (2006-08). The reason for the decrease in budget in Cambodia can be attributed to the need of more training during the initial two years of the programme. According to her, Bangladesh has the highest expenditures where as China has the lowest in terms of % of biogas fund used in training. She pointed out the need for more budgets to be spent for training and capacity building activities.

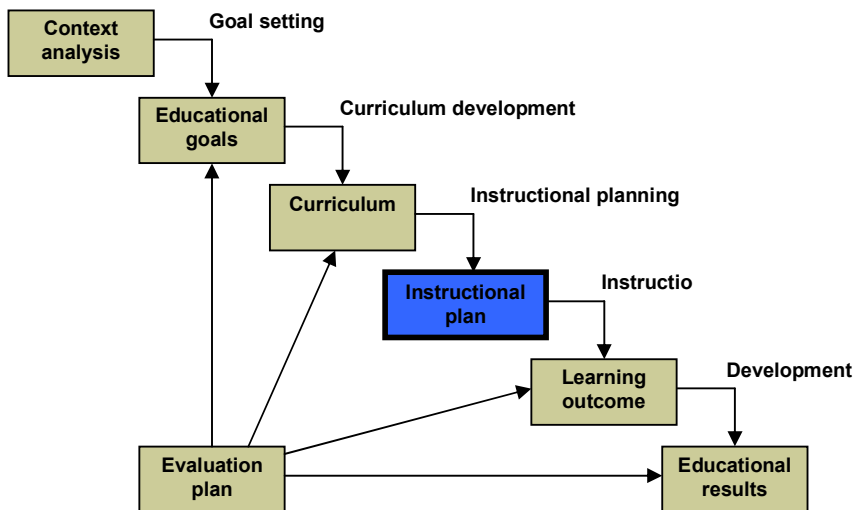


Ms. Stallen pointed out that high turnover of masons/technicians/staff; trade off between cost and quality of training; low intake levels; difficulty in realizing infrastructure for training; standardisation of training; and careless attitude in quality control to be major problems in biogas training. Pointing out the need to feed correct input to get anticipated output, she stressed that innovations are the true measure for acceptance of a technology and training is a very hands-on experience. She highlighted the need to see, hear and practice the learning to retain it properly.

Ms. Stallen pointed out the need of effective communication and teaching skills to impart quality training. She presented the following ladder to illustrate what is needed for effective teaching.



She also emphasised the need for biogas syllabus, training module, teaching plans, competency-building initiatives, result measurement and accreditation to ensure effective training programme. She presented the following model for curriculum instruction.



She pointed out the need to ensure the quality of training when it is outsourced to third party. According to her the following factors should be given due care in this case:

- good initial party-assessment
- clear tasking (TOR/ contract)
- monitoring mechanism in place (as QC visit)
- use of good formats for teaching, trainee evaluation, course evaluation
- certification by branch/ industry, by national institute
- as with any licensing of business: after-sales service/ trainer support
- pay per quality of (training) output

The following table illustrates the example of a model of lesson plan as presented by Ms. Stallen.

Introduction	Activate attention
	Give purpose of Units
	Arouse interest and give motivation for learning
	Give overview of the Unit
Body	Recall relevant prior knowledge
	Give new information (and examples)
	Focus attention on key areas
	Give learning theories to master the information
	Practice with the information
	Evaluate the practice
Conclusion	Summarize and review
	Give relations between new and existing knowledge
	Conclude with final motivation and close
Assessment	Give assessment on new information
	Evaluate the assessment and give feedback

In closing, she highlighted the importance for formulating training standards as given below:

- Realise early the importance of training
- Start search for training partners early
- Select those with 'natural assets'

- Provide hands-on and field oriented content
- Use language and understand interest of the sector
- Entrepreneur training separate from builders training
- Recruit teachers and controllers from building sector
- Ensure clarity of structure: define what is to be learnt
- Work out repetition or follow up mechanism
- Set training standards and accredit competencies
- Embed training in existing national structures
- Assess training management plus training environment
- Include training in quality control
- Involve external parties in evaluation
- Realise status and value of a certificate/ diploma

7.7.2 Discussions

Responding to the Ms. Stallen's observation on lower budget allocation for training programmes under the framework of biogas programmes, Mr. Wim van Nes told that the training budget has gone up under the framework of biogas programmes these days and it is highest in terms of expenditures.

Mr. Nazmul Haque from NDBMP Bangladesh expressed the difficulty in customisation of the training programmes as same person/trainers may not be competent enough to facilitate all the topics/subject matters related to biogas technology. Mr. Stallen pointed out need to differentiate one training from another as well as the need to make it more compact and outcome oriented. She emphasised that the 'methodology' should be appropriate and the core questions should be 'what the trainees have to know' and 'what is the learning outcome expected?'

Expressing his concern on the problem of maintaining/retaining the best persons in the field, Prof. Zhang wanted to know how to avoid the high drop out rates of the trained persons. 'It is natural and we can not stop this given the relatively lower margin of earning/profit in biogas constructions' was the answer from Ms. Stallen. She pointed out the need to make biogas business more attractive by 'smart planning' initiatives.

Mr. Saroj Rai pointed out the need to create a structured career-ladder within the biogas companies to motivate the trained and competent persons to remain in the business.

7.8 Group Discussions and Presentations

Upon the completion of plenary presentations, Mr. Wim van Nes asked the participants to recommend burning topics related to biogas training for further discussion. The following five topics were recommended:

- Users' Training
- Outsourcing of training activities
- Retaining of trained personnel
- Training tools and techniques
- Evaluation and follow-up of training outcomes

Among these five identified issues, the top four were discussed further in four groups.

7.8.1 Group-1: Users' Training

a. Presentation of Outcomes

Mr. Jan Lam presented the outcome of the group discussion on Users' training as follows:

Delivery Channels Currently Used

- On-site training (masons/supervisors informed)
- Group trainings: half-day, delivered either by companies (Nepal and Bangladesh) or provincial officers (Cambodia and Laos)
- Manuals + posters (operation and slurry)
- Slurry training days (by group, 1-day)
- Model/demonstration farmers (Cambodia) or Villages (Nepal)



Existing Problems

The core problem is that the users generally do not have enough knowledge on operation, maintenance, slurry use, and their rights + responsibilities (eg: ASS, guarantee process)

The following are some of the specific problems:

- The actual user/maintainer is not always addressed during group and on-site training
- Manuals and user posters are not always read
- Masons and supervisors are not always user-oriented, and user training is a low priority
- Group training agenda is too congested, too short and not interactive enough to be effective
- Slurry is too complex to be covered by a group or on-site training
- Slurry trainers are not always the most appropriate choice (eg: companies in Nepal that don't have the skill or interest)
- Masons + companies have the incentive to keep users in the dark about their rights and ASS procedures
- Systems require too much training - appliances are not user-friendly enough
- User training is supply-driven, so not enough awareness or demand from users
- Not enough monitoring of training impact, and thus no continual improvement of training

Solutions

Group Training

- Identification of real training needs on
 - Operation
 - Maintenance
 - Slurry
 - Rights + procedures
- Identification of the target trainee for each topic
- Split the group training on content:
 - Operations: Short (2hr) session by women for women
 - Maintenance: Short (2hr) session
 - Rights + procedures: Short (2hr)
 - Slurry: Long (1day) session

On-site Training

- Increase the awareness among companies/masons that user training is also in their interest

- Include or make more prominent the user training topic during mason training
- Include the user training duty in the construction contract
- Practice random testing of users' knowledge after construction by QC staff, with reward/penalty
- User Training Guide should be inserted in the Construction Manual for masons

Tools

- Manuals, posters, videos (etc) should be integral part of all trainings
- Manuals and posters must be accessible and effective. Need different levels for user capacities:
 - quick-start section (basic + pictorial)
 - more detailed section
 - separate manual on slurry

Monitoring

- Random testing of user skills and knowledge:
 - part of QC plant acceptance; and
 - part of annual Biogas User Surveys

b. Discussion on outcomes

Mr. Bastiaan Teune had a query on the methods to assess/monitor the effectiveness of the Users' training programme. Mr. Andrew Williamson shared the experiences from BPP Laos where some questions related to the training content are included in the operation and maintenance manual to ask with the users. However, it has not become effective as the person asking the questions supports the users in getting right answer. Mr. Jan Lam expressed his view that the users' training is not getting the required level of attention. He emphasised the need to adjust the training activities according to the requirement of the users.

Mr. Sundar Bajgain pointed out the difficulty in conducting users' training immediately after the installation of the biogas plant. According to him, as imparting training to individual user is time consuming and not very effective, the installer waits till some more plants are installed in the neighbourhood to get more training participants. According to Mr. Jan Lam, it does not matter whether the training is provided in the group or in an individual basis unless it is interactive and users can share their problems – it is not a matter of 'either' or 'or'. Ms. Stallen, supporting Jan's idea, pointed out the need to ensure back-stopping supports to enhance the effectiveness of the training.

7.8.2 Group-2: Outsourcing of Training Activities

a. Presentation of Outcomes

Mr. Rajesh B. Shrestha from DBP Pakistan presented the outcome of the group discussion on outsourcing of training activities as follows:

- What is outsourcing?
 - Implementation responsibility transfer to external party
 - Long term (no consultancy)
 - Associated with capacity building
- What to outsource?
 - Basically everything (depends on country situation)
- Why to outsource?
 - For sustainability
 - To ensure local capacity development



- To make programme manageable
- To involve more number of actors
- To reduce costs
- To transfer ownership + knowledge
- To find alternative as capacity at programme level is lacking
- How to outsource?
 - Step by step and taking patience
 - Ensuring right selection of providers for:
 - Hardware: training facilities
 - Software: trainers
 - Outreach: different levels
 - Management: efficiency
 - Willingness to adapt
 - Transparency
 - Cost sharing – gradually
 - Public-private-partnership (PPP)
 - Tender/open
 - Ownership (carrot/stick)
 - Negotiation

b. Discussions

Mr. Saroj Rai pointed out a contradiction as the presentation as it talks about avoiding consultancy in one hand and in the other proposes the outsourcing of training activities to other parties through tendering and bidding process. He wanted to know whether the present arrangement in Nepal to conduct some of the biogas related training activities by NBPA is 'outsourced'. Mr. Rajesh Shrestha expressed his view that the training being conducted by NBPA could not be termed as 'outsourced' as NBPA is part of biogas programme in Nepal.

According to Mr. Rajendra Shakya, though there were some messing ups in the past, the outsourcing activities should be awarded to the third party only through the process of tendering/bidding. Mr. Wim van Nes told that the process is to ensure that you have qualified partner. He told – once you are married, it is finished!

Mr. Uttam Jha pointed out the need to consider two issues while outsourcing – cost effectiveness and guarantee of quality. According to him, the outsourced party should be competent enough to take care of these issues.

Mr. Bastiaan Teune shared the difficulty in selecting 'competent' party to outsource the training activities in the very beginning. According to him, it may not be possible to find such agency in the beginning; therefore capacity building initiatives should be the entry point activity to outsource specialised training such as biogas mason's training. He pointed out the need to have some considerations at the beginning so that potential organisations are allowed to build their capacity to be competent enough to deliver the required service.

According to Mr. Jam Lam, the reason for outsourcing is to keep the programme as small as possible to minimise the management complexities. He pointed out the need to consider some profit-margins in the beginning for the outsourced party for sustainability citing the example of Preah Kossmak Polytechnic Institute in Cambodia.

7.8.3 Group-3: Retention of Trained Manpower

a. Presentation of Outcomes

Mr. Nazmul Haque presented the outcomes of the group discussion on retaining of trained manpower in biogas programmes. The highlights of the presentation have been given below:

Key Question: Whom to retain?

Answer: All the programme staff members (Masons, Supervisors, Manager/Management staff, support staff)

Why retention is a problem?

In case of Masons:

- Limited/confined/ stagnant market
- Seasonal factor (no job during rainy season)
- Prospects of better job opportunities in local as well as international market for the trained personnel
- Nature of work not compelling (difficult works, scattered demands, not much profit)



For supervisors:

- Lack of clear career path
- Remuneration/facility not matching with the nature of job/performance
- Frequent transfer
- Temporary nature of job (no job guarantee)
- Too much work load with minimum external support
- Availability of opportunity in external and internal markets
- Need to wear different hats at different occasions

For managers

- Limited authority – high responsibility (too many work to do with limited authority)
- Lack of clear career path and confused reporting lines
- Remuneration/facility not matching with the nature of job/performance
- Frequent transfer
- Temporary nature of job (no job guarantee)
- Too much work load with minimum external support
- Availability of opportunity in external and internal markets

Strategy to retain masons:

- Right selection of persons for masons training (select trainees who have at least some hands on experience on masonry, plumbing or other professional works)
- Training only after the market assessment (to match demand and supply)
- Involve masons in after sales services, maintenance and promotional activities during off season
- Training to local people
- Practice reward/recognition mechanisms

Strategy to retain Supervisors and Managers:

- Create a clear career path and reporting line
- Ensure performance based remuneration

- Reduce the frequency of transfers
- Provide clear job description
- Practice reward/recognition mechanisms
- Provide timely back-stopping services

b. Discussions

Mr. Bastiaan Teune pointed out the need to 'plan' drop out during the planning phase of the training programme. He suggested training more persons than needed so that the required number is sufficient even after the drop out of some of them.

Mr. Govinda Pokharel expressed the need to diversify the activities of biogas companies to retain them by involving in one or the other activity.

Mr. Wim van Nes talked about the practical difficulty for the biogas programmes to influence the retention of manpower as they are not dealt directly by the programmes. Citing the example of Nepal, he told that the masons and supervisors are handled by biogas companies and the programme has little influence over their terms and conditions.

Mr. Jam Lam suggested estimating realistic drop out rate while planning any training activity. He also pointed out the importance to pragmatically assess the number of trained persons needed and sharing the responsibility of training with biogas companies. He expressed the need to involve the companies/partners to realistically set the target and plan the training activities accordingly.

According to Mr. Sundar Bajgain, problems arise because the masons are paid on the basis of the number of plant they built. As the masons do not get enough jobs they tend to run away and therefore there is need to encourage companies to hire masons on a long term contract basis. Mr. Uttam Jha pointed out the need to include 'some social parameters' on top of the presently used 'technical parameters' to grade the biogas companies.

7.8.4 Group-4: Training Tools and Methodology

a. Presentation of Outcomes

Mr. Uttam Jha presented the outcomes of the group discussion on training tools and methodology.

The discussion was reported to be started with every member sharing why they are in this particular group. The responses were:

- To revise the tools and methodology being used
- To test appropriateness, effectiveness, validity of the tools and methodologies
- To know more about it as it is integral part of work
- To know practices to design tailor-made training programmes.
- To share experiences on knowledge, practices and resources.

What we have in plate at resent related to training tools and methods?

Tools:

- Various manuals
- Audio/Video Documentaries/ Jingles
- Brochures/Leaflets/Posters/Pamphlets/Banners
- Trainers' guide/manual
- Lectures notes
- Demonstration sites/simulated models
- Various IEC materials specific to Biogas and bioslurry
- Photographs



- Flip charts
- Standards/Benchmarks
- Connection with experienced professionals and markets
- Well equipped training venues

Methods:

- Lecturing/teaching/facilitating
- Exposure visits
- Group discussions/exchange of views
- Brain storming
- Questions answers
- Simulations/modelling
- On-the-job exercises

What are being done?

- Pre-construction potential users' training
- Post construction Users' training
- Masons' Training
- Training of Trainers'
- Supervisors' Training
- Business/Entrepreneur development related training (BDS, OD/ID, Management, book keeping, financial management etc.)
- QC Training
- Training on Programme cycle management
- Promotional training (village workshops, training to NGOs and other stakeholders)
- Training on extension methodologies
- Users' training on bioslurry handling and application

While planning a training programme there is need to consider the following aspects:

- Length/duration of training
- Modules
- Interconnection between different training
- Interdisciplinary approach during planning the training
- Appropriate use of training tools and techniques (all Wh questions)
- Effective use of verbal and non-verbal communication means
- Updating of tools and techniques (skills, knowledge and practices)
- Sufficiency/appropriateness of the existing tools
- Quality planning and need to look from participants' eyes while planning as well as execution
- Separation between 'desire' for training and 'need' for training
- Selection of tools according to the nature of participants (different strokes from different folks)

Suggested Improvements in the present practices are as follows:

- Use more pictorial manuals
- Use of easy-to-understand medium
- Organise routine refresher trainings for trainers on teaching skills, demonstration skills and on-the-job teaching skills
- Ensure variation of training tools/methods
- Prepare and provide well compiled hand-outs
- Ensure the provision of separate facilitators for theoretical and practical sessions

b. Discussions

Initiating discussion on the outcomes of the group discussion, Mr. Mohan R. Sharma asked if there are any standards for curricula, duration and other aspects of the masons training. Mr. Wim van Nes told that it should be country specific and the programmes have to decide these issues based upon the local context. Ms. Stallen pointed out the need to prepare training manual in such a way that it can be adapted in different training contexts.

Mr. Nazmul Haque told that the context in Bangladesh is very different in the sense that it is very difficult to organise training without the provision of some financial incentives to the participants. According to him, the duration of training is minimised to compromise with the allowances to be paid to the participants.

7.9 Miscellaneous Issues

The group discussion and presentation session was followed by the reviewing of action plan agreed in the previous meetings of experts as well as other issues related to programme implementation. Mr. Wim van Nes moderated the discussions on the following issues:

a. Sharing of Information

Mr. Wim van Nes told that in the process of programme implementation, all the programmes have prepared/developed some kinds of promotion, extension as well as training materials. Therefore, there are lots of information available to share among the biogas programmes. He asked Mr. Bastiaan Teune to take responsibility of collecting such materials and prepare a database.

b. New Biogas Lamp

Mr. Wim van Nes asked Prof. Zhang Mi to share information on the newly developed biogas lamp. According to Prof. Zhang the basic characteristic of the new lamp are: better look, durability (better material) and enhanced performance. The following are some of the specifications of this new lamp as provided by Prof. Zhang:

- Luminous flux: 123
- CO emission: 0.05%
- Noise level: 43.5 db
- Ignition time: 2 sec
- Surface temperature: 60° C



Prof. Zhang told that this lamp is better than the existing lamps that are produced in China. According to him, as this is still in the development phase, the exact cost is not yet determined.

c. Stove development

Mr. Jan Lam informed the participants that DTW in Cambodia has been working to fine tune biogas stoves based upon the findings and recommendations of the laboratory analysis carried out last year.

d. Next meeting

Mr. Wim van Nes proposed the next meeting to be held in Kathmandu, Nepal in suitable time, preferably in October or early November 2009. He wished that the political as well as security conditions in Kathmandu will be favourable. This meeting will be combined with an International Workshop and will comprise of

participations from biogas programmes both in Asia and Africa. Mr. Ramesh Gautam wanted to know the theme of the workshop. Mr. Wim van Nes told that the theme will be decided in the future.

e. Miscellaneous

Mr. Saroj Rai wanted to know experiences from other country programmes related to installation of gas pressure meter. According to him, the Chinese pressure meters are not functioning properly and it has been very difficult to convince the users to install such meters. Mr. Chanvibol from NBP Cambodia shared his experience with the performance of Chinese pressure meters. According to him, there are two types of Chinese gas meters in the market – one is good and the other is problematic. In general, 5% of these meters have been found to be erroneous. He told that the Chinese company has been informed of the problem and they are asked to improve the quality.

Mr. Bounthavy from BPP Laos told that that no major problems have been encountered till date however; the plastic cover is weak and prone to damage. Mr. Jan Lam pointed out the need to set our quality standards and inform the manufacturer/supplier about the need so that they know what product to supply. Mr. Bastiaan Teune told that the users in Vietnam also complained about the performance of the Chinese gas meters and therefore the programme is installing U-tube manometers which are more reliable. Prof. Zhang told that there are more than 10 manufacturing companies in China producing devises such as pressure meters, desulphurisation and dewaterisation units in an integrated manner. Biogas programmes can choose best among these companies through tendering/bidding process.

8. Evaluation

A formal evaluation of the two-days meeting of the members of the Network of Experts on Domestic Biogas was carried out at the end. The participants were provided with a semi-structured questionnaire to evaluate the effectiveness of the training. The following table summarises the outcome of the evaluation.

Evaluation Results

Issues	Very poor	Poor	Fair	Good	Very good	Remarks
Hotel Arrangements	-	10%	30%	40%	20%	<ul style="list-style-type: none"> - The room is very good but too close to main road. Lot of noise from cars, motorbikes etc. - Hotel was very far from the meeting venue. The street from hotel to meeting venue was narrow and very risky due to mannerless drivers! - The street-side room was very noisy so I changed my room – then fine! - Considering budget constraint, well appreciative. - Very adequate hotel - no complains. - Hotel accommodation was very good but dangerous walk from hotel to meeting venue. - Au Co was comfortable + very friendly. A bit too far from meeting venue but no problem. - Very good arrangement of training and eating as well.
Field visit arrangements	10%	50%	25%	10%	5%	<ul style="list-style-type: none"> - The selected households did not have all the components of biogas plant to observe. - We missed the second set of digesters. - No chance to consult with owners and masons. - The field visit schedule was not well organised and the objective too was not clear. - This was mere waste of time and resources! - Could have been done in a better way. There were lots of weaknesses. - The so called users' training was very disappointing. - The time could have been used for other activities like sharing of lessons learnt etc. - Very poor time management as it was more than 2 hours late compare to planning. - Waste of time with out any learning. - Dairy cattle were not there. Use of biogas plant for sanitation not for gas and slurry. - Great to hear first hand experiences.

						<ul style="list-style-type: none"> - Good to have time with clients – pity of much travel.. - Well organised. - Well organised despite changes to the original schedule. - Large group at the farms. The training component was absent during the farm visit. - Design was new to me. - The training session did not really go as planned but interesting and enjoyable. More time + details on the BP structure + operation + management would be good. - The plants we visited are working very good – even to run generator – also to produce electricity. - Poorly organised! I had no learning! - One of the site (generating electricity) selected was not appropriate for new members learning about domestic biogas programme. Use of biogas in generator without desulphurising and demisting is not at all good practice! - No benefit than receiving 'rain coat' and a nice hat.
Presentations on training in various countries						<ul style="list-style-type: none"> - The session on 'quality training' could have preceded the country presentations. - Quality training was at times a bit chaotic. - I have learned from experiences and problems and potential solutions by all of these. - I did not get much out of content/presentations, however, discussions with others was interesting and fruitful. - Good according to the environment and resources available. - Most of the presentation were too vague lacking the clear message (s).
China		-	30%	55%	15%	
Nepal		10%	35%	45%	10%	
Vietnam		-	25%	65%	10%	
Cambodia		-	20%	65%	15%	
Bangladesh		5%	25%	60%	10%	
On quality training		10%	25%	50%	15%	

Group discussions, presentations and plenary discussions						<ul style="list-style-type: none"> - We need more lively discussions and foster this. - Not enough time for plenary discussions. - Topics were relevant. - Most important appears to be the sharing/learning stage of development of sister programmes. - Topics were good. Advancing of points a bit weak and basic – no surprise! - Seemed very broad and general; with not many specific action points. - Very good for brain storming and sharing experiences of different countries. - Discussions were dominated by few 'vocal' people! Some peoples seems to have a habit of 'must speak'.
Group discussion		10%	25%	60%	5%	
Group presentation		10%	30%	55%	5%	
Plenary discussion		15%	25%	40%	20%	
Overall rating of the meeting	Useless -	Not useful -	Moderate 15%	Useful 45%	Very useful 40%	<ul style="list-style-type: none"> - Getting more ideas that can be implemented in our context. - It is very fruitful and practical. - It is really a reflection to oneself and appropriate forum for learning – sharing. - It helped a lot to share problems and strengths. - Full 3 day meeting (internal and external network) was good to be part of + well organised. - New programme country – many things learnt, updated! - Very full agenda given the available time - but very useful. - As an observer, quite revealing is – what similarities – differences exist with in programmes. - Since I am not technically engaged, I was not able to provide any input. - As I am training officer of very newly emerging programme, it was very useful to get answers to many of my possible questions of the present and future. - Training is not #1 priority at the moment, but still it was very useful to network + discuss + field visit. - I learnt a lot about the working in different countries and from the experienced partners.
Comments and suggestions	<ul style="list-style-type: none"> - Continue with the current setup of internal and external network meetings as I find it personally VERY useful. - If possible, need some more time to have discussions between country groups in specific issues. - Very good to share the experience among the programme countries. Keep it up! - Very good organisation of meeting. - Excellently managed and facilitated. 					

	<ul style="list-style-type: none"> - The programme has been tight. It will be more helpful if we can have more time. - Well organised! Need for consistency in future too. - Emphasise more on outsourcing the training activities. - May be we could use some ice breakers during the meeting. That will not take much time as well. - Useless to repeat again, however, I have been requesting to organise residence and meeting in the same hotel but it is not heard. Repeating in Bangladesh, Cambodia, Lao and also in Vietnam. - Good! - Selecting site for field visit and its preparation should be done in organised way. - Strong request to have workshop venue within the hotel that participants stay in. - Meeting should set up some actions and follow up points. - The meeting room was too hot. AC was not working properly. People were feeling sleepy. - Too much food served and wasted during launch and dinner. - Will provide by separate emails – content remarks. - It was well organised, timely done and something to take for future improvement. This gave opportunity to share/interact with colleagues from different countries/programmes. Congratulation to the organisers especially to WvN. - I think participants should be selected on the relevance to position. - Food was oversupplied which is wastage. - Good that exchange of files was organised (through Bastiaan) at the end of the session. Possibly individual sharing is even more precise on what a programme needs exactly. - This is an extremely well-organised and patterned workshop/management. Unfortunately I was not able to fully participate. Strategy session was great. - No list of what we have to consider; no endless details; discuss in detail the main problem; discuss experiences, weaknesses and specific best practices. - The level of organisation was much appreciated especially under difficult conditions with such a large group. Thanks! - Vietnam participants disappeared which was a pity. - Very good participation. - Not happy to note the absence of some real persons related to training such as that from Nepal in a meeting with the major theme 'training'. The training officer of BSP Nepal could not be accommodated in such a jumbo team! - Very well organised, thank you Wim! - Not really different from previous meetings of similar nature.
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9. Closing

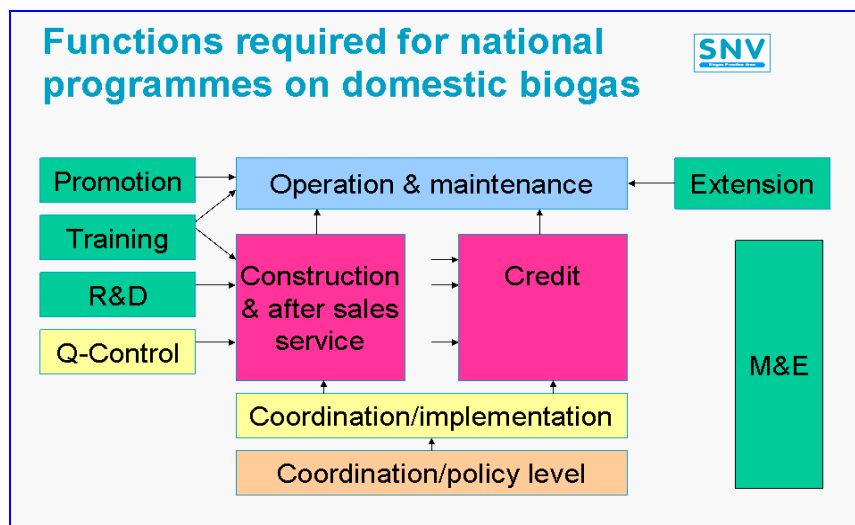
At the end, as a token of appreciation, Mr. Wim van Nes felicitated the paper presenters with bunches of flower. He thanked the organising team from BPD Vietnam and SNV Vietnam for their hard work and unflinching support to make this meeting a great success. Thanking all the participants he told that everybody deserves bunches of flower for their active participation and meaningful contributions.



Annex 1: Guidelines (draft) for the preparation of country presentations on biogas and bio-manure training

Introduction

Training is a very crucial function to be undertaken in any national programme on domestic biogas. As shown in the model below, training is supporting the performance of many other functions. All programmes spend quite some budget on training activities. How to increase the effectiveness and efficiency of all these activities? This will be the focus of the network meeting on domestic biogas to be held 8 and 9 April in Hanoi, Vietnam.



The main training activities are focussed on the following target groups:

- Users/prospective customers and customers: pre-installation training and/or exchange visits, users' training, bio-slurry training;
- Constructors: new mason training (theoretical/practical), mason refresher training, on-the-job training of masons and supervisors during QC visits by technical programme staff, new supervisor training, supervisor refresher training, bio-slurry training, management training, business and entrepreneurship training;
- Technicians (like in Vietnam provinces and districts): new supervisor training, supervisor refresher training, management training, bio-slurry training;
- Credit providers (MFIs, banks): loan officers' training; and
- Stakeholders (government/NGOs) and service providers: promotion training, bio-slurry training.

Important aspects are the selection of the trainees (selection criteria), selection of the trainers/training institute (selection criteria), institutional development, the training content (needs assessment), theory and/or practice, training materials, duration, venue, costs & financing, monitoring & evaluation (criteria), quality standards and certification. In addition to the assurance of quality, drop out of trained manpower is one of the main challenges.

Guidelines for the presentations

The following are the guidelines to be used for the preparation of the country presentations:

- Every country with a larger biogas programme (China, India, Nepal, Vietnam, Bangladesh and Cambodia) prepares one presentation (as handout in Word and/or in Powerpoint) and if there two or more persons from one country participating, they could divide the preparatory work among themselves;
- The presentation could start with one slide providing an overview of all training activities in the programme, please select then after one or two on which you like to present more in detail;
- Please address in particular the weaknesses/problems or evident successes of the training activities conducted so far, and the possible solutions to overcome the problems;
- Include one slide on an all-inclusive cost estimate per training and per participant in USD currency;
- Limit your presentation to *maximum* 20 minutes and do not incline to present everything; make a meaningful selection;

- There will be a beamer and laptop available in Hanoi;
- Finally, it would be nice if you could bring (digital) samples/copies of training materials being used in your country as well as evaluation reports and all your BUS to Hanoi.

Hopefully, this information serves its purpose. Wishing you all success in the preparation and please do not hesitate to contact me in case of questions or lack of clarity.

Wim J. van Nes
5 March, 2009

Annex 2: Ha Tay province

Socio-economic conditions:

Ha Tay province is near to Hanoi Capital, bordering Hanoi City and provinces of Vinh Phuc, Ha Nam, Hoa Binh and Hung Yen. Since August 2008, Ha Tay province merged into Hanoi with a natural area of 219,629 ha, population of 2,525.95 thousand people (in 2005), 12 districts and 2 cities under the province, 322 communes, districts and towns. Before merging into Hanoi, Ha Tay province's total additional product value was 9,168 billion dong (at fixed price in 1994). Its average economic growth rate was 9.7%/year in 2000 - 2005 (including 13.1%/year industry and construction, 10.4%/year service and 5.5%/year agriculture).

Its economy is producing vegetables and foodstuffs and breeding pigs (Ha Tay province has the highest pork output nationwide, accounting for 6.67% of national output in 2005), concentrated poultry breeding and aquaculture farming linked with rice growing. The province's direct export value has accelerated in past years including export valuing 46.8 million USD in 2000 and 94.76 million USD in 2005, increasing twice against in 2000 (in which export agricultural products made up low rate of about 2-3 million USD/year).

Livestock situation:

Livestock is developing drastically, especially for milk cows and pork. Ha Tay province becomes a center of providing breeds of poultry, pigs, meat cows and milk cows for surrounding provinces, at the same time leads in pigs, poultry and total output of net meat.

Situation of domestic animals (x 1,000 heads) in Ha Tay province:

Lists	In 2000	In 2005	In 2006	In 2007	Average growth in 2000-2007 (%/year)
Buffalo	34.4	22.8	18.3	18.0	-8.84
Cow	90.5	140.3	161.7	162.6	8.73
Pig	896.8	1,320.2	1,134.3	1,208.7	4.36
Poultry	7,743	10,766	10,070	10,820	4.90

Source: Statistic Department of Ha Tay province in 2007

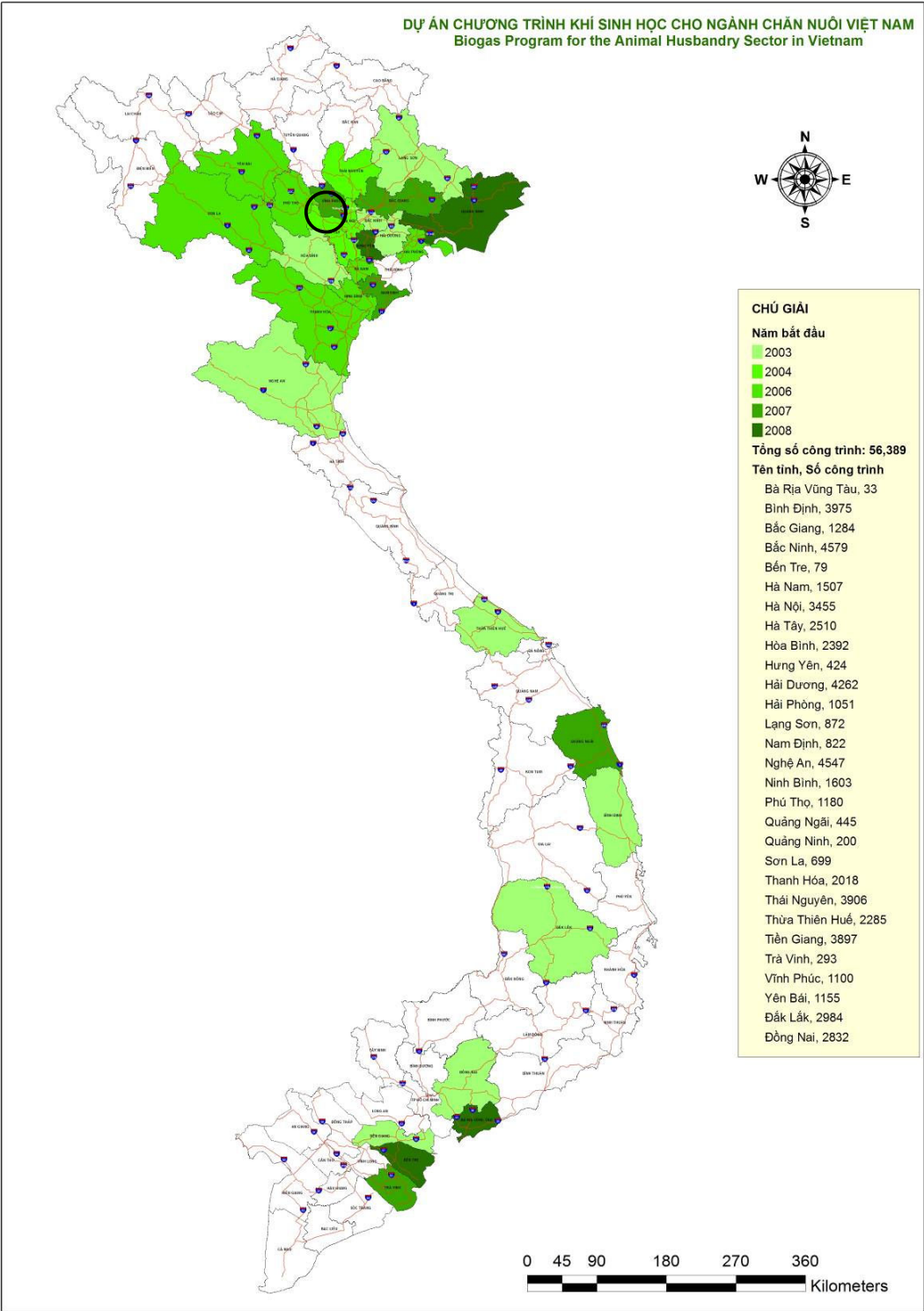
Results of sector structure transfer: In 2007, production value of Livestock was 2,986 billion VND, accounting for 45% in production value of agriculture; growth rate of 12.5%/year including 76.4% cattle breeding, 12.0% poultry breeding and 11.6% others. Production organization according to form of breeding farms is developing strongly in quantity, scale and annual production value with 217 breeding farms in the province up to 2006. Ha Tay province is assessed as one of the leading provinces nationwide in the veterinary task and prevention of epidemic diseases. The veterinary system has been strengthened from province to communes, so epidemic diseases of cattle and poultry are usually discovered and organized to prevent timely (the province was a focus of bird flu but in 2006 but it no longer appeared in the province in 2004 and early 2005).

Livestock development orientation by 2020:

The concentrated goods industrial Livestock regions will be founded with medium and big sized breeding farms and concentrated goods poultry and pig breeding accounting for 50% of total herd.

- Cattle have about 255 thousand heads including 240 thousand cows. The breeding regions focused on the hilly province and some riverside communes.
- Pigs have total herd of over 2.5 billion heads
- Poultry will be over 15 billion heads

Vietnam and biogas programme participating provinces up to 2008:



Ha Tay province: each dot represents one digester via GPS coordinates:

