

Brief report 2010 and plan 2011 of the Working Group on Domestic Biogas under the Energy for All Partnership

1. Introduction

This paper provides a brief report on the activities of the Working Group on Domestic Biogas under the Energy for All Partnership (E4ALL)¹ in 2010 and a brief plan of its proposed activities in 2011. In 2009, SNV Netherlands Development Organisation was invited by the Steering Committee of the Energy for All Partnership initiated by the Asian Development Bank (ADB) to lead a Working Group on Domestic Biogas. The objective of this Working Group is the innovative dissemination of 1 (one) million domestic biogas plants in about 15 ADB member countries by 2016, providing access to sustainable energy to about 5 million people. In addition, the Working Group aims to make an important contribution to the development of sustainable, market-based biogas sectors in these countries. SNV will actively pursue the achievements of these objectives as a follow-up of the ongoing biogas practice in the region through networking and partnering involving all relevant existing and new parties.

2. Activities in 2010

In 2010, the following activities have been taking place:

- **Vietnam:** In 2009, a loan agreement was concluded between ADB and the Vietnam Ministry of Agriculture & Rural Development (MARD) on the Quality and Safety Enhancement of Agricultural Products and Biogas Development Project (QSEAP). This Project contains a component on biogas development with a budget of USD 22.25 million up to 2014 including support to the installation of 20,000 domestic biogas plants. Through Vietnam Bank for Agriculture and Rural Development (VBARD) and Central Credit Fund (CCF) credit will be provided to a total of 40,000 households. By the end on 2010, 2,200 units were installed under QSEAP. As per the inception report of ADB financed Technical Assistance (TA)², a follow-up programme on domestic biogas has been designed targeting the installation of an additional 100,000 units over a five years period. In 2010, ADB, MARD and SNV discussed the harmonisation and alignment of the implementation mechanisms between this Project and the Biogas Programme (BPII) being implemented by MARD and SNV already since 2003. It was so far proposed to harmonise the subsidy rates of QSEAP with these of BPII and to provide the National Biogas Steering Committee with the policy mandate to overlook all biogas activities in the country³.
- **Lao PDR:** In 2010 proposals were re-formulated and submitted for possible funding under the ADB financed Sustainable Natural Resource Management and Productivity Enhancement Project (SNRMPEP) to finance the construction of 1,600 digesters in two provinces (one new) over three years time. In addition, a proposal was formulated for a national biogas programme aiming to install 14,350 biogas plants over a five years period under the Greater Mekong Sub-region (GMS) climate friendly bio-energy program of the ADB. Unfortunately, no funding could be mobilised in 2010 for the implementation of the Lao biogas proposals.
- **Bhutan:** The preparatory studies executed in 2009 resulted in the inclusion of a small biogas programme (1,600 units) in the Rural Renewable Energy Development Project⁴. This project was approved by the ADB in October 2010 and implementation is planned to start of 2011 involving the Department of Energy (DoE), Department of Livestock

¹ For more information on E4ALL, see www.energyforall.info

² "ADB TA 7251-VIE Strengthening Project Management and Developing Strategies and Options for Biogas Development Program Expansion". Inception Report submitted for the Inception Workshop, GFA Consulting Group, GmbH, Germany, October 2010

³ Also the World Bank will start supporting biogas development in Vietnam in the framework of the Livestock Competitiveness and Food Safety project (LIFSAP)

⁴ "Proposed Grant Kingdom of Bhutan: Rural Renewable Energy Development Project. Report and Recommendation of the President to the Board of Directors". ADB, Project Number: 42252, October 2010

(DoL), the Bhutan Development Finance Corporation (BDFC) and SNV for the biogas component. The available budget for this component amounts to USD 2.2 million.

- **Philippines:** A study commenced in November 2009 to assess the feasibility to set up and implement a national program on domestic biogas in the Philippines concluded that in specific provinces a modest biodigester programme for a few thousand biodigesters may be possible⁵. It was recommended to assess the demand in these provinces more precisely. Intensive hog keeping in areas with better-off households is resulting in severe environmental pressure. To mitigate this pressure, (medium scale) biogas technology could be an option.
- **Timor Leste:** A first study on the feasibility of a domestic biogas programme in Timor Leste⁶ was reported in September. A small biogas programme looks feasible, but the study pointed to substantial challenges as well. Free grazing practice with cattle and buffalos is reducing the technical market potential, while access to water is limited in quite some areas. More detailed surveys are required to further determine the market potential to set-up a sizeable programme.
- **Innovative programmes in China:** From 12 to 17 April, a mission was undertaken to China to explore the possibilities for cooperation⁷. A total of 10 organisations were visited by the mission and showed a medium to strong interest to be associated to the Working Group, especially related to networking, learning, innovation and R&D. In addition, some (implementing) organisations requested for financial support to better implement their programmes. Against the background of the huge size of the domestic biogas programme in China and the large budgets being made available by the national and provincial governments, it is not relevant for the Working Group to mobilise resources for the construction of additional biogas plants in China and add to 'business as usual'. However, support to selected programmes in China with innovative approaches would be very useful. Such approaches could for example focus on effective and efficient post-installation service networks, re-installation of dysfunctional biogas plants, and on comprehensive use of bio-slurry. It is proposed that the Working Group provides technical support to the formulation of such innovative programmes and also assists the respective implementing organisation to mobilise financial resources required for the implementation of such programmes.
- **Innovative programmes in India:** From 26 to 30 April, a mission was undertaken to India to explore the possibilities for cooperation⁸. A total of six organisations and one expert were visited by the mission. Also the Indian parties showed a medium to strong interest to be associated to the Working Group, especially related to networking, learning, innovation and R&D. In addition, some (implementing) organisations requested for financial support to better implement their programmes. However, the mission observed differences in terms of willingness, ability and likely available financial resources to actively participate in the Working Group. Like in China, it is proposed that the Working Group provides technical support to the formulation of innovative programmes in India like the introduction of biogas plants with more daily gas storage capacity and comprehensive use of bio-slurry. The respective implementing organisation could be supported to mobilise financial resources required for the implementation of such programmes.
- **Expert Group on technical innovation of biogas plants:** A Terms of Reference was developed for the establishment of an Expert Group on technical innovation of domestic biogas plants. The objective of this Expert Group is to provide with informed recommendations by June 2011 on technical innovation on domestic biogas plants to

⁵ Bastiaan Teune et al, "Feasibility Study of a National Biogas Programme on Domestic Biogas in the Philippines." SNV Netherlands Development Organisation and Winrock International, April 2010

⁶ S. Bajgain and E. Lemos, "Feasibility of a Domestic Biogas Programme in Timor Leste". Hivos and SNV, September 2010

⁷ Wim J. van Nes and Zuzhang Xia, "Identification of Knowledge Institutes and Implementing Partner Organisations on Domestic Biogas in PR China in the framework of the Energy for All Partnership". August 2010

⁸ Govind R. Pokharel and Wim J. van Nes, "Identification of Knowledge Institutes and Implementing Partner Organisations on Domestic Biogas in India in the framework of the Energy for All Partnership". August 2010

reduce costs, to increase reliability and to meet untapped market demands. A total of eight experts from the region including China and India have been selected to become a member of the Group. The first meeting took place on 18 December in Jakarta.

- **AIT compact training course:** Discussions were held with the Asian Institute of Technology (AIT) in Bangkok on the design, planning and financing of a 5-days compact training course on domestic biogas programme development. The aim is to have a first course with 20 participants executed in the first half of 2011.
- **Regional (structured) funds:** Under the leadership of ADB and the German Development Bank (KfW) discussions have been initiated on the establishment of regional funds for the financing of the national biogas programmes. There may be a need for a structured fund for the refinancing loans of financial institutions to end-users. In this respect, ADB is undertaking a market assessment of which the results will be presented in January 2011. In addition, there is a need for a larger regional fund for the grant financing of the sector development costs (including a possible investment subsidy to accelerate demand) associated to the installation of biogas plants.
- **International workshop:** In Phnom Penh, Cambodia, an International Workshop on inclusive planning and financing of national programmes on domestic biogas in Asia was organised from 10-12 November 2009. A total of 123 persons from different organisations representing implementing agencies, knowledge institutes, possible partners and donors participated in this workshop. Countries with an existing national biogas programme demanding to be up-scaled are Bangladesh, Cambodia, Indonesia, Lao PDR, Nepal, Pakistan, Vietnam, and with effect of 2011 also Bhutan. China and India are giant biogas countries with large national programmes and very substantial local financing. The E4ALL Working Group on Domestic Biogas has proposed to focus on innovative programmes in these two countries. And finally, there is a group of potential new countries, but with a national programme on domestic biogas yet to be confirmed like Myanmar, Philippines, Sri Lanka, Thailand and Timor Leste. A total number of 1.163 million biogas plants are planned by 2016 in 15 countries: 56% in countries with an existing biogas programme; 41% in China and India within innovative programmes, and; 3% in countries with a new biogas programme. The total estimated costs for installation of the plants, sector development & innovation and international TA was estimated to be USD 753 million. Financing was proposed by households in cash or credit (55%), governments (17%), carbon financing (4%) and ODA (24%).

3. Production rate in 2010

In 2010, almost 58,000 biogas plants were installed through SNV-supported country programmes in Asia; an increase of 11% compared to 2009. The table below provides an overview of the unofficial numbers of 2010.

Country	Number of plants in 2010	Cumulative number of plants up to 2010
Nepal	20,753	225,356
Vietnam	24,936	100,767
Bangladesh	5,688	15,707
Cambodia	3,744	10,146
Lao PDR	937	1,966
Pakistan	590	690
Indonesia	1,316	1,366
Total	57.964	355.998

The Biogas Programme (BP2) in Vietnam and the Biogas Support Programme (BSP) in Nepal top the list with the most installations last year. During the year, the cumulative benchmark of 1,000 biogas plants was achieved in Indonesia, while Cambodia crossed 10,000 units and Vietnam even overshot 100,000.

Thus far, SNV supported programmes have installed almost 356,000 plants. These numbers are pretty low compared to the achievements in the leading biogas countries, China and India. In 2010, China installed another 4.9 million units arriving at a total of 40 million operational plants by the end of the year. India constructed almost 120,000 units within the Fiscal Year 2009-10 in the framework of the National Biogas and Manure Management Programme (NBMMP), making its total 4.25 million biogas plants in March 2010.

Other organisations have also installed biogas plants beyond the programmes mentioned above. The E4ALL will be grateful to receive information on such achievements to be listed in our regular reports.

4. Proposed activities in 2011

In 2011, the Working Group will continue to provide support to the activities above, but in addition a number of new activities are being proposed. Execution of the activities is subject to financing:

SN	Country	Partner Organisation	Activity (A) and intended result (IR)
1	Vietnam	GoV, MARD, ADB, WB, SNV	A: In order to avoid market distortion, alignment of the DGIS supported Biogas Programme II, the ADB supported Quality and Safety Enhancement of Agricultural Products and Biogas Development Project and the WB supported Vietnam Livestock Competitiveness and Food Safety Project. IR: Maximal alignment between the three programmes/projects achieved
2	Nepal	GoN, AEPC, BSP-N, NBPA, KfW, SNV	A: Exploration of the need and possibility to submit a request by the GoN to ADB for the continued support (including credit fund) to the biogas sector in Nepal IR: Informed decision on the need and possibility of a request by GoN to ADB to support the biogas sector in Nepal, and if positive, formulation of a detailed plan in 2011
3	Lao PDR	GoL/MAF, ADB, SNV	A: Mobilisation of fund to finance the 5-years national programme on domestic biogas comprising of 14,350 units IR: Programme financing committed in 2011
4	Bangladesh	GoB, IDCOL, ADB, SNV	A: Exploration of the need and possibility to design phase II of the National Domestic Biogas & Manure Programme (NDBMP) to be implemented from 2013 onwards IR: Informed decision on the need and possibility of NDBMP phase II, and if positive, formulation of a detailed plan in 2011
5	Bangladesh	GoB, IDCOL, ADB, SNV, GS, BCSIR, private parties	A: Study on market introduction of the fibreglass biodigester through product standardization & certification and the development of a business model IR: Study successfully conducted by June 2011
6	Cambodia	RGoC, MAFF, ADB, SNV	A: Exploration of the need and possibility to design phase II of the National Biodigester Programme (NBP) to be implemented from 2013 onwards IR: Informed decision on the need and possibility of NBP phase II, and if positive, formulation of a detailed plan in 2011
7	Indonesia	GoI, ADB, Hivos	A: Exploration of the need and possibility to design phase II of the Indonesia Domestic Biogas Programme (IDBP) to be implemented from 2013 onwards IR: Informed decision on the need and possibility of IDBP phase II, and if positive, formulation of a detailed plan in 2011
8	Pakistan	GoP, RSPN, ADB, SNV	A: Forwarding of a module proposal through GoP to ADB to install about 15,000 biogas plants in Sindh province of Pakistan IR: Implementation plan formulated in 2011 for implementation in 2012
9	China and India	Various parties	A: Formulation of four different proposals for innovative programmes on domestic biogas and submission to potential financiers IR: Four proposals finalised and submitted to potential financiers

10	Myanmar	Myanma Agriculture Service, FAO, SNV	A: Study on the feasibility of a national programme on domestic biogas IR: Informed decision on the feasibility of a national programme, and if positive, formulation of a detailed plan, both in 2011
11	Philippines	GoP, ADB, WI, SNV	A: Collection of additional data to determine the market potential of domestic biogas in specific areas of the country IR: Informed decision on the feasibility of a sub-national programme, and if positive, formulation of a detailed plan, both in 2011
12	Sri Lanka	Lanka Biogas Association, Practical Action, People in Need	A: Execution of the feasibility study on a national programme on domestic biogas IR: Informed decision on the feasibility of a national programme, and if positive, formulation of a detailed plan, both in 2011
13	Thailand	Chiang Mai University	A: Execution of the feasibility study on a national programme on domestic biogas IR: Informed decision on the feasibility of a national programme, and if positive, formulation of a detailed plan, both in 2011
14	Timor Leste	Secretary State for Energy and Policies	A: Survey to collect primary data on the market potential of domestic biogas IR: Informed decision on the feasibility of a national programme, and if positive, formulation of a detailed plan, both in 2011
15	Regional	SNV, ADB	A: Expert Group on technical innovation of domestic biogas plants to reduce costs, to increase reliability and to meet untapped market demands IR: Well-founded recommendations on technical innovation within the framework of the ToR by June 2011
16	Regional	FAO, SNV	A: Establishment of an Expert Group on Bio-Slurry Management IR: Well-founded recommendations on best practices on bio-slurry management in 2011
17	Regional	LeAF	A: Establishment of an Expert Group on biochemical processes IR: Well-founded recommendations on improved biochemical processes in 2011
18	Regional	AIT, SNV, ADB	A: Execution of a training course (5 days) on biogas sector development by AIT and SNV IR: One course conducted and evaluated in the first half of 2011
19	Regional	ADB	A: Finalisation of market assessment on biogas credit to end-users IR: Biogas credit market assessment finalised by the end of January 2011
20	Regional	ADB	A: Preparation of an overview of possible funding sourcing for biogas programmes and activities (match-making) IR: Overview of possible funding sources completed by March 2011
21	Regional	KfW, ADB, SNV	A: Further exploration of the feasibility to set-up and manage regional (structured) funds for refinancing loans of financial institutions to end-users respectively for sector development IR: Well-founded recommendation in 2011 to set up and manage specific regional funds for programme implementation from 2012 onwards
22	Regional	SNV, ADB	A: Execution of an international workshop in October/November 2011 IR: Successful workshop executed to discuss the progress of the activities of the Working Group and to jointly plan activities in 2012
23	Regional	ADB, SNV	A: Exploration of effective and feasible tools for communication by the Working Group on Domestic Biogas IR: Smooth communication between all stakeholders on relevant issues in 2011
24	Regional	ENERGIA, SNV	A: Exploration of a possible cooperation on gender issues related to national programmes on domestic biogas IR: Well-informed decision on cooperation in 2011
25	Regional	ADB, SNV	A: Preparation of a proposal for the possible formalisation of the Working Group including membership principles, also to manage expectations IR: Proposal on possible formalisation of Working Group prepared and discussed during International Workshop
26	Regional	ADB, SNV	A: Support to carbon finance development of feasible country biogas programmes

			IR: Effective support provided to the carbon finance development of country programmes
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4. Composition of the Working Group

Annex 1 provides the names of the organisations that have so far expressed their interest to partner with the Working Group. The Group still has to decide on some basic rules for membership of organisations based on a proposal that will be developed in 2011. For the time being, the Working Group aims to connect to every organisation that is willing and able to contribute to the achievement of the objectives of the Working Group. Hence, any organisation not yet included in Annex 1 is welcome to inform SNV on principle interest to participate in the Working Group on Domestic Biogas.

Annex 1: List of organisations associated with the Working Group on Domestic Biogas under the Energy for All Partnership

SN	Country	Organisation
Implementing Partner Organisations:		
1	Afghanistan	Ministry of Rural and Rehabilitation Development
2	Bangladesh	Infrastructure Development Company Limited NGO Affairs Bureau
3	Bhutan	Ministry of Agriculture/Department of Livestock Ministry of Economic Affairs/Department of Energy/Renewable Energy Division
4	Cambodia	Ministry of Agriculture, Forestry & Fisheries/Department of Animal Health Production
5	China	Biogas Institute of Ministry of Agriculture China Biogas Society Tsinghua University, Institute of Energy, Environment & Economy Biogas Institute under Ministry of Agriculture Yunnan Normal University/Solar Energy Research Institute China Association of Rural Energy Industry Sichuan Provincial Rural Energy Office Chongqing Rural Energy Office Yunnan Provincial Rural Energy Working Station Global Environment Institute Initiative Développement
6	India	Ministry of New and Renewable Energy Asian and Pacific Centre for Transfer of Technology The Energy and Resources Institute SKG Sangha Punjab Energy Development Agency HIM Renewable Energy & Environment Consultants Society for the Welfare of Weaker Sections (Orissa) Vivekananda Kendra Centre for Renewable Energy and Appropriate Technologies College of Technology and Engineering, Udaipur (Rajasthan)
7	Indonesia	Ministry of Energy & Mineral Resources
8	Lao PDR	Ministry of Agriculture & Forestry/Department of Livestock and Fisheries
9	Nepal	Ministry of Environment Alternative Energy Promotion Center Biogas Sector Partnership - Nepal Nepal Biogas Promotion Association
10	Pakistan	Ministry of Environment Rural Support Programmes Network
11	Philippines	Department of Energy
12	Vietnam	Ministry of Agriculture & Rural Development/Department of Livestock Production Center for Rural communities Research & Development
Supporting Partner Organisations:		
1	Cambodia	GERES
2	Germany	German Development Bank (KfW)
3	Netherlands	Hivos
4	Netherlands	Lettinga Associates Foundation
5	Netherlands	ETC Energy
6	Pakistan	World Bank
7	Pakistan	Winrock International
8	Philippines	Asian Development Bank
9	Thailand	E+Co
10	Thailand	UNESCAP/Environment and Sustainable Development Division/Energy Security Section
11	Thailand	FAO
12	Thailand	Asian Institute of Technology
13	Thailand	Nollen Group
14	USA	Arc Finance

Convening Partner Organisation:		
1	Asia	SNV Netherlands Development Organisation