

# Visit to the proposed national programme on domestic biogas in Tanzania

Final report



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## Acknowledgement

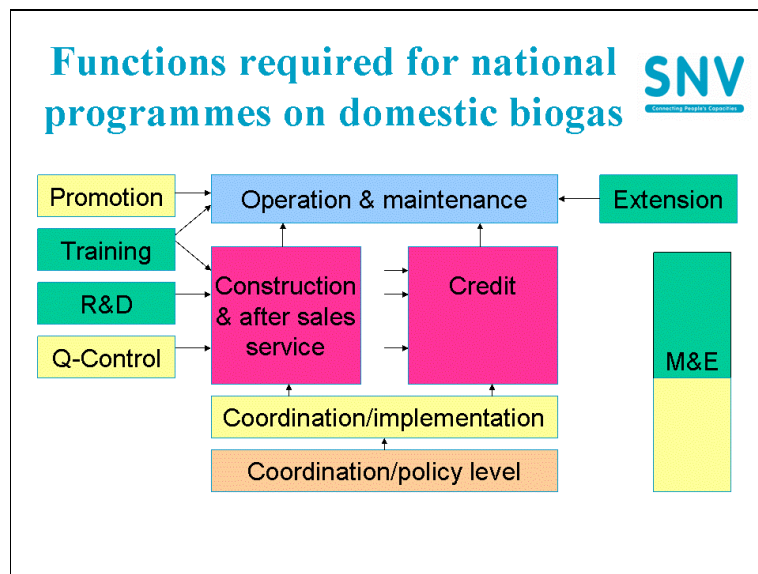
It was a real pleasure to engage for a couple of days in the ongoing preparations for a national programme on domestic biogas in Tanzania. The time was short, but nevertheless I was provided with a lot of valuable opinions and knowledge. My gratitude goes to all respondents and informants for their constructive contributions and I sincerely hope the conclusions and recommendations of this report will serve their purpose. A special word of thanks goes to Mr. Peter Bos of SNV/Tanzania for arranging the required logistics and providing me with relevant background information.

# Summary

This report presents the findings of a visit paid by the Biogas Practice Leader of SNV Netherlands Development Organisation to the proposed programme on domestic biogas in Tanzania. This visit took place from 8 to 12 April 2008, aiming to:

- To inform the Tanzanian stakeholders on the state of affairs of the “Biogas for Better Life: an African Initiative;
- To discuss the recently elaborated draft Terms of Reference (ToR) for the formulation of a detailed Programme Implementation Document (PID) on a national domestic biogas programme, and to jointly explore its possible funding; and
- To discuss the possible roles of the various (groups of) Tanzanian actors in the programme.

To achieve these objectives, the Biogas Practice Leader held meetings with a number of relevant stakeholders and participated in a meeting of the Task-Force established in Tanzania on behalf of the stakeholders to prepare the ground for a national biogas programme. To facilitate the discussion about possible roles of the various (groups of) Tanzanian actors in the programme, the following function model was presented:



All meetings made clear that the proposed national programme on domestic biogas in Tanzania is felt relevant for the country. The feasibility study, stakeholder meetings (4x) and Task-Force meetings (9x) have raised a lot of interest, and time has come to embark on the next step: the formulation of the PID. The final version of the ToR for this assignment will be ready by April 2008 and requires a budget of USD 50,000. The execution of this ToR is scheduled for the period from June to September 2008. It is recommended to both CAMARTEC and SNV to avail the required manpower, to look into possibilities for co-funding and to enter in May 2008 into a Memorandum of Understanding (MoU) on the formulation of the PID.

The visited ministries (Ministry of Energy and Minerals, Ministry of Livestock Development and Fisheries, and Ministry of Industry, Trade & Marketing) showed a lot of

interest to assume a role in the preparation and implementation of the national programme. It is recommended that each of these ministries will formally appoint a contact person to ensure continuity of the activities.

The function model was found useful to discuss and clarify the possible roles of various stakeholders. CAMARTEC has been accepted by all interviewed stakeholders to become the lead organisation in the biogas programme. Indeed, one may expect that the knowledge, experience and reputation of CAMARTEC could be an advantage in assuming this role. However, the weaknesses of the Centre need to be addressed to become an effective, efficient, responsive, dedicated, accountable, professional and market-oriented lead organisation. It is recommended to include an organisational assessment of CAMARTEC in the above mentioned MoU.

# Table of Contents

<b>ACKNOWLEDGEMENT .....</b>	<b>II</b>
<b>SUMMARY .....</b>	<b>III</b>
<b>TABLE OF CONTENTS .....</b>	<b>V</b>
<b>ABBREVIATIONS .....</b>	<b>VI</b>
<b>CHAPTER 1: INTRODUCTION.....</b>	<b>1</b>
1.1 BACKGROUND .....	1
1.2 OBJECTIVES .....	1
1.3 ACTIVITIES, METHODOLOGY AND LIMITATIONS .....	1
1.4 STRUCTURE OF THE REPORT .....	3
<b>CHAPTER 2: MEETINGS WITH STAKEHOLDERS.....</b>	<b>4</b>
2.1 MINISTRIES.....	4
2.2 CAMARTEC .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
2.3 PRIVATE SECTOR.....	6
2.4 (I)NGOS.....	7
<b>CHAPTER 3: TASK-FORCE MEETING.....</b>	<b>8</b>
<b>CHAPTER 4: MAIN CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>9</b>
<b>ANNEX 1: PROGRAMME OF THE VISIT .....</b>	<b>10</b>
<b>ANNEX 2: LIST OF TASK-FORCE MEMBERS.....</b>	<b>11</b>
<b>ANNEX 3: ORGANISATIONAL STRUCTURE OF THE “BIOGAS FOR BETTER LIFE; AN AFRICAN INITIATIVE” .....</b>	<b>12</b>

## Abbreviations

ABC	Arusha Biocontractors Company Limited
BSP	Biogas Support Programme (Nepal)
CAMARTEC	Centre for Agricultural Mechanisation and Rural Technology
CDM	Clean Development Mechanism (under the Kyoto protocol)
DG	Director-General
DGIS	Directorate General for International Cooperation (Netherlands)
EIRR	Economic Internal Rate of Return
ELCT	Evangelical Lutheran Church in Tanzania
ESAMI	Eastern and Southern African Management Institute
FIDE	Friends in Development
FIRR	Financial Internal Rate of Return
GoT	Government of Tanzania
GTZ	German Technical Cooperation
ID	Implementation Document
MEM	Ministry of Energy and Minerals (GoT)
MIGESADO	NGO in Dodoma disseminating biogas plants
MITM	Ministry of Industries, Trade and Marketing (GoT)
MLDF	Ministry of Livestock Development and Fisheries (GoT)
MoF	Ministry of Finance (GoT)
MoU	Memorandum of Understanding
NGO	Non Governmental Organisation
NBSC	National Biogas Steering Committee
PID	Programme Implementation Document
PMO-RALG	Prime Minister's Office - Regional Administration & Local Government
RE	Renewable Energy
REA	Renewable Energy Agency (GoT)
REF	Rural Energy Fund (GoT)
ROSA	Resource Oriented Sanitation Concept in Peri-Urban Areas of Africa
SACCO	Savings and Credit Cooperative Societies
SIDO	Small Industries Development Organisation
SNV	Netherlands Development Organisation
SUDERETA	Sustainable Development and Renewable Energies in Tanzania
SURUDE	Foundation for Sustainable Rural Development
TA	Technical Assistance
TNCDD	Tanzania National Plan to Combat Desertification and Drought
ToR	Terms of Reference
TZS	Tanzanian Shilling
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organisation
USD	United States Dollar
VETA	Vocational and Educational Training Authority
WODSTA	Women Development for Science and Technology Association
WB	World Bank

Rounded exchange rates: 1 Euro = TZS 18,500

1 USD = TZS 12,000

# **CHAPTER 1: Introduction**

## ***1.1 Background***

In the framework of “Biogas for Better Life: An African Initiative”, a number of Tanzanian stakeholders with defined interest in the promotion of biogas aims to pursue the establishment of a national programme on domestic biogas in Tanzania. With reference to former biogas initiatives in Tanzania, the ongoing increasing need for renewable and environment-friendly energy sources and the mainly positive outcome of the feasibility study conducted in 2007 by the German Technical Cooperation (GTZ) with support of SNV Netherlands Development Organisation, these stakeholders are preparing the ground for the formulation of a detailed Programme Implementation Document (PID) for such programme in Tanzania.

Over a period of almost 20 years, SNV has developed significant experience with the development of biogas markets in developing countries. In this respect, it was found useful to invite the Biogas Practice Leader of SNV for a visit to Tanzania from 8 to 12 April 2008.

## ***1.2 Objectives***

The following objectives were set for the visit:

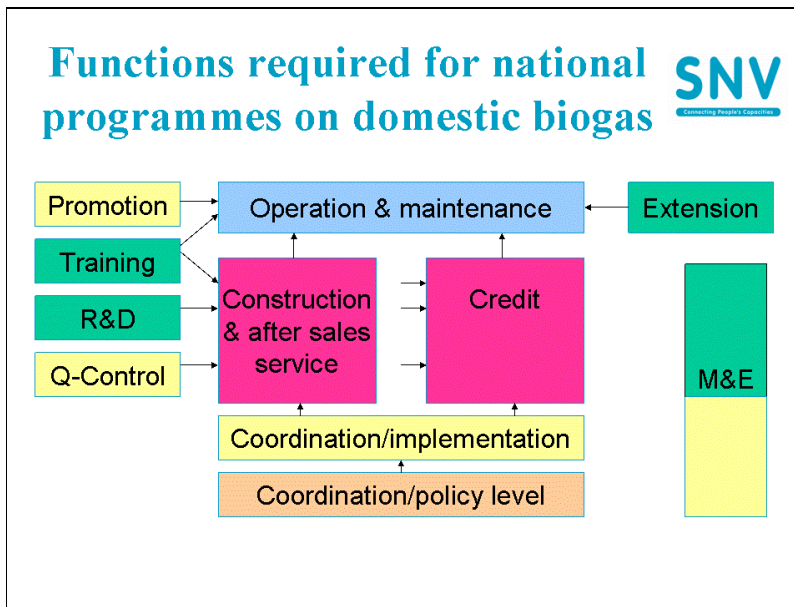
- To inform the Tanzanian stakeholders on the state of affairs of the “Biogas for Better Life: an African Initiative”;
- To discuss the recently elaborated draft Terms of Reference (ToR) for the formulation of a detailed Programme Implementation Document (PID) on a national domestic biogas programme, and to jointly explore possible funding; and
- To discuss the possible roles of the various (groups of) Tanzanian actors in the programme.

## ***1.3 Activities, methodology and limitations***

The following activities were executed to achieve the objectives of the visit:

- Meetings with a number of relevant stakeholders, see Annex 1 for an overview of the visit programme;
- Participation in a meeting with the Task-Force established in Tanzania on behalf of the stakeholders to prepare the ground for a national biogas programme, see Annex 2 for an overview of the members of this Task-Force;
- Formulation of a brief draft and final visit report.

For the discussion on the possible roles of the stakeholders, the following function model was used:



A brief explanation of this model with its depicted functions is as follows:

- The function of “operation & maintenance” relates to the biogas plant after its construction and is to be performed by the customer/user;
- The function of “construction & after sales service” is one of the key functions of a market-based biogas program. Once the potential customer has decided to invest into the installation of a biogas plant, he/she needs to have this plant constructed and serviced as per the stipulated quality standards. This function can be executed by multiple actors – all certified by the program - based on competition to ensure that the user is getting the service as quick and cheap as possible;
- The function of “credit” is another key function, especially required for those potential customers who like to invest into the installation of a biogas plant, but lack the financial resources to pay for the plant on cash-basis. Also this function can be executed by multiple actors, and based on competition to ensure that the user is getting the credit as quick and cheap as possible;
- The function of “promotion” encompasses the provision of information to potential customers, among others the benefits and costs of biogas, minimum requirements to qualify for the receipt of investment subsidy and guidelines to determine the proper size of the biogas unit. This function can be performed by many actors based on contract basis, but it is crucial that the potential customer will receive *reliable* information as a base for his/her investment decision;
- All involved manpower like users, masons, supervisors, company managers, quality controllers, promoters and loan officers in the program needs to be educated and instructed, therefore the program needs a function on “training”. This function can be contracted out on the basis of ToRs to qualified actors;
- Applied “R&D” will be required, for example to develop and test biogas appliances. Also this function can be contracted out to qualified parties based on ToRs;
- The function of “quality control” is undoubtedly a key function in every national program, related to how the biogas plants are constructed, how after sales service is provided and how biogas credit is extended. Especially at the pilot stage, it is advised that the actor for the function of “coordination/implementation” performs the Q-control function as well;



- Proper use of bio-slurry by the customers can often not be achieved by training only, but needs a long-term support. Therefore, the function of “extension” is required. This function can be contracted out on the basis of ToRs to qualified actors;
- For the sake of monitoring, the programme needs to collect different kind of data through a number of standard reports like pre-construction form, construction completion report and after sales service report. In addition, both internal and external evaluations will be required from time to time. This explains the function of “monitoring & evaluation”. Some activities under this function could be performed by the actor for the function of “coordination/implementation”, while other activities should be contracted out to independent, qualified actors;
- The function of “coordination at implementation level” refers to the daily management of the biogas program. This function includes the establishment and maintenance of the institutional arrangements between the actors in the programme. Often, it is a specialised national biogas programme office, sometimes with branch-offices at regional level that performs this function. Such office needs to be effective, efficient, responsive, dedicated, accountable, professional and market-oriented;
- As domestic biogas is linked to various sectors like energy, agriculture, livestock, health, gender, environment, employment generation and private sector development, the function of “coordination at policy level” is required to integrate the program in the related national and provincial policies, strategies and programmes. A national steering committee or board including also representatives from the private and civil society sector may fulfil this function.

It is important to mention that - to avoid conflict of interests - some functions can not be performed by one and the same actor. The functions of “construction & after sales service” and “credit” can not be executed by the actor who is fulfilling the role of “coordination at implementation level” or “quality control”. This actor should limit its role to the setting, control and enforcement of quality standards, and leave the actual construction, after sales service and credit supply to other actors in the market.

The main limitation of the visit was the limited time of the visit, not allowing longer meetings and meetings with more stakeholders.

## ***1.4 Structure of the report***

This report presents the results of the visit. Chapter 2 summarises the meetings with the stakeholders, while some highlights of the Task-Force meeting are provided in Chapter 3. Main conclusions and recommendations are included in Chapter 4.

## CHAPTER 2: Meetings with stakeholders

Meetings were held with representatives of three ministries, CAMARTEC, two private companies and three (I)NGOs.

### 2.1 Ministries

While staying in Dar es Salaam, visits were paid to representatives of three ministries being the Ministry of Energy and Minerals, Ministry of Livestock Development and Fisheries and Ministry of Industry, Trade & Marketing.

Under the Ministry of Energy and Minerals (MEM), four sections are established dealing with energy: Electricity, Petroleum & Gas, Renewable Energy, and Energy Development Policies. No offices are (yet) established at regional level. The DNA of Tanzania is part of the Department of Environment under the Vice-President's Office. The Assistant Commissioner Renewable Energy, Mr. Eng. N.C.X. Mwhava, considers domestic biogas as very relevant for Tanzania as it provides multiple benefits to the population. CAMARTEC is considered as the most appropriate organisation to coordinate and manage the proposed national biogas programme. However, for this particular initiative, they may need to make a shift in focus from R&D towards dissemination. MEM would like to chair the National Steering Committee required for the coordination at policy level including also non-governmental members from the private and civil society sector.

A fund for the promotion of rural energy has been established, called the "Rural Energy Fund" (REF). This Fund is governed by a Board consisting of eight members, and aims to provide access to modern energy<sup>1</sup> through the provision of capital subsidy to energy technologies that are affordable, reliable and environmental benign. The Board appoints a trust agent responsible for the administration of the fund. As far as possible, fund disbursement takes place on the basis of tendering introducing an element of competition between suppliers. Based on the Rural Energy Act, the possible sources of income for the REF are including a levy of maximum 5% on the price of electricity, budgetary allocations by the GoT, and funds from donors. A Rural Energy Agency (REA) is also established under this Act, with the purpose of facilitating the provision of modern energy services in rural areas of Mainland Tanzania. On the basis of a proper justification, CAMARTEC would be able to present the PID on a national biogas programme to the REF Board with a request for co-funding.

MEM will positively consider an active role in the execution of the ToR on the formulation of a PID for the national biogas programme, for example through adding a staff-member to the team or through commenting on a draft version of the PID. In this respect, Mr. Mwhava requested for a formal letter attaching the ToR.

The Ministry of Livestock Development and Fisheries (MLDF) employs manpower down to district and ward level, but not (yet) at village level. The dissemination of domestic biogas is relevant for the country to provide an alternative to the use of traditional biomass fuels for cooking. More and more pastoralists like the Masai and the Sukumi (Singida) are adapting a

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<sup>1</sup> As per the Act dated 6 June 2005, modern energy means "energy that is based on petroleum, electricity or any other energy forms that have commercialized market channels, a higher heating or energy content value than traditional biomass fuel, and that which may be easily transported, stored and utilized"

sedentary way of livestock keeping. The Ministry could play a useful role at policy level by becoming a member of the National Biogas Steering Committee (NBSC) for the programme as well as in promotion, training and extension. The Ministry as well as the Ministry of Agriculture have manpower close to the prospective customers that could be involved in promotion and raising of awareness. The past approach in domestic biogas failed, as it did not involve the various stakeholders. CAMARTEC could become the lead organisation for the national programme, but they need to get a firm go-ahead from their related ministry. Mr. Msangi of MLDF has experience with the biogas technology. While formulation the PID, it would be beneficial to also include the local governments (PMO-RALG), as they employ the manpower at district and lower levels. The sector ministries only control the professionalism element.

The third and last Ministry visited was the Ministry for Industry, Trade & Marketing (MITM). Though CAMARTEC has been operating mainly as a R&D institute, they will also be able to act as the lead organisation for the proposed national biogas programme, as they have - based on the Act of 1981 - also a mandate to promote the use of rural technology. Links with private sector are definitely required to arrive at the desired commercialisation. The Acting Director of the Department of Industry, Ms. Eline S. Sikazwe, emphasised that cost reduction of biogas plants will be required to successfully disseminate the technology.

## 2.2 CAMARTEC

Based on the function model, most of the discussion was focussed on the roles and responsibilities of CAMARTEC in the proposed national programme. The Centre being a parastatal institution under the Ministry of Industry, Trade & Marketing, currently employs about 100 people. The running of the Centre is directed by the Board of Directors under a Chairman appointed by the President of the United Republic of Tanzania. The day to day management is executed by the Director-General (DG), also appointed by the President. There are three directorates: Production & Testing, Technology Transfer, and Research & Development. Though other, more market-oriented functions are mentioned in the Act of CAMARTEC as well, they are known mainly as a R&D institute. Recently, CAMARTEC embarked on an incubation programme to off-load developed knowledge and products like solar technology and stoves. Since May 2007, discussions are going on whether the Centre should leave its current location and move to Arusha.



As a coordinator and manager of the proposed biogas programme, CAMARTEC will need to become an institutional player. Also, in order to avoid a conflict of interest, the Centre will have to completely abstain from construction activities in the field of biogas. Existing expertise on R&D and technical training still could be applied. For local promotion, CAMARTEC will need to engage with other actors like the extension wings of related ministries (livestock development, community development), the local governments, and strong NGOs with a wide network like ELCT. For the initial phase of the programme, CAMARTEC could also execute the function of (external) quality control (QC), especially related to the quality of the construction and after sales service of the biogas plant constructors. In case the

programme will be extended to other regions in the country, CAMARTEC would also need to station QC inspectors in these regions. It was suggested that such manpower could be provided with working space at offices of the Small Industries Development Organisation (SIDO) and/or Vocational and Educational Training Authority (VETA).

Stakeholders have selected CAMARTEC as the most appropriate institute to act as a lead organisation in the proposed biogas programme. Indeed, one may expect that the knowledge, experience and reputation of CAMARTEC could be an advantage in this respect. However, as also mentioned by the stakeholders, current weaknesses need to be addressed to become an effective, efficient, responsive, dedicated, accountable, professional and market-oriented lead organisation. It is therefore proposed that a participatory organisational assessment will be undertaken by SNV. This assessment should also investigate the required positioning of the national biogas programme office within CAMARTEC: Could such office can make use of the operational, financial and administrative procedures currently applied by the Centre or is a more autonomous position required?

### 2.3 Private sector

Visits were paid to “ABC Limited” and “Biogas and Solar Limited”, both based in Arusha. The Directors of both companies, respectively Mr. Sanford Kombe and Mr. Ainea Kimaro, have been employed by CAMARTEC in the past, but left the Centre and started their own business in respectively 1990 and 1994. GTZ ended their cooperation with CAMARTEC in 1994. The capital costs of a 12 or 16 m<sup>3</sup> biogas plants have been increased nowadays to TZS 2 million<sup>2</sup> including an overhead charge of TZS 0.5 million which makes that the current market is very small. The available trained manpower has also become very limited. Current activities of the companies are more geared towards the installation of institutional biogas plants addressing the issue of sanitation; rainwater harvesting, and; solar water heaters<sup>3</sup>. Based on an evaluation of existing biogas models, it should be possible to promote a uniform, cheaper but still reliable biogas model in the proposed programme, offering also smaller-sized plants.

CAMARTEC is perhaps the best organisation to be selected as a lead organisation for the proposed biogas programme, as they have the experience, knowledge and infrastructure, and are also well-known. However, weaknesses need to be addressed and changes will be required including the recruitment of professional, energetic (female) staff. It is very crucial to get in CAMARTEC the right people at the right place.



Both companies are eager to participate in the further preparation and implementation of the national programme, taking the role of construction and after sales service. Private sector needs to be facilitated, while the role of government should remain limited. With reference to Nepal, it could be useful to establish an association of biogas companies in Tanzania. It is hoped that the implementation of the national programme can start in 2009.

<sup>2</sup> Reference was made to the cost of a cow being roughly TZS 0.5 million

<sup>3</sup> Mr. Kimaro stayed for a number of years in Rwanda to design and supervise the construction of biogas plants for institutions, especially prisons

## 2.4 (I)NGOs

Meetings were held with representatives of Evangelical Lutheran Church of Tanzania (ELCT), Friends in Development (FIDE), and with the Director of SNV/Tanzania.

In the late eighties, early nineties, the ELCT has been quite active in the training of manpower (masons) and promotion of biogas plants in other regions of Tanzania than Arusha. In addition to the CAMARTEC model, the Indian fixed dome technology was introduced. Many of the plants are not in operation any longer as systems for after sales service did not remain and appliances were not available nearby. In the wake of the initial efforts of ELCT, other organisations got involved like SUDERETA, INADES Formation and MIGESADO. Mr. Mollé of ELCT explained that while selecting the technology, one should also take into account socio-cultural issues<sup>4</sup>. The role of ELCT would be in promotion. Based on a huge network, influence can be used to further the dissemination of domestic biogas. Also the Christian Social Services Commission could be approached and requested for cooperation.

FIDE is mainly operation in Babati district. This NGO installed about ten biogas plants (all 16 m<sup>3</sup>) in 1997. Since last year, new efforts have been made by training of masons and heavy involvement of customers in the collection of construction materials and actual construction of the plant. To reduce costs, the wall of the excavated pit is just plastered to form the digester wall, so no masonry wall is constructed. FIDE hopes to have constructed about 50 plants (12 m<sup>3</sup>) this year, serving a family of about 10 persons.

SNV has been supporting the feasibility study executed in 2007 and has participated since then in the stakeholders and Task-Force meetings. The Director reiterated the commitment by SNV/Tanzania in getting a comprehensive PID for the implementation of the national programme through the input of advisors and provision of a small fund.

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<sup>4</sup> While people in the North have no problem to handle manure by hand, this may pose a taboo in other regions in the country. For these regions, direct feeding would be required

## CHAPTER 3: Task-Force meeting

The 9<sup>th</sup> meeting of the Task-Force was held on 11 April 2008 in the office of SNV/Tanzania in Arusha. This Task-Force was established by the stakeholders to keep the process going and conducted its first meeting in September 2007. The meetings are held on a monthly basis and comprise of stakeholders from the Northern part of Tanzania, as there is no budget available to meet the costs of travelling and lodging for participants from Dar es Salaam, Dodoma or Morogoro.

The 9<sup>th</sup> meeting was used to provide an update on the running national biogas programmes in Asia (Nepal, Vietnam, Cambodia, Bangladesh and Lao PDR) and Rwanda. The participants were also informed on the recent developments made with respect to the organisational structure of the “Biogas for Better Life: an African Initiative”. The next conference of this Initiative is scheduled for 5-7 October 2008 in Dakar, Senegal. Questions were raised about the role of ESAMI. In addition, the need of exposure visits to more mature Asian biogas programmes was expressed.



The main part of the meeting<sup>5</sup> was focussed on the content of a Terms of Reference (ToR) for the formulation of a comprehensive Programme Implementation Document (PID). This Document will also be used to request internal and external donors for co-funding of the national biogas programme. The ToR also includes a National Biogas Stakeholders Workshop in Tanga in September 2008 to present and discuss the draft PID. It was proposed to field two teams: One main team to collect missing data, meet with stakeholders and to draft the PID including institutional set-up, institutional arrangements, planning of activities, budgeting and proposed financing. In addition, it was proposed to field a technical sub-team to arrive through consultation and discussion with the current constructors at the selection of the most appropriate technology for the national biogas programme. The total cost for the execution of this ToR is estimated to be USD 50,000. Both CAMARTEC and SNV are requested to avail the required manpower and also to look into possibilities for funding. The final version of the ToR will be ready by April 2008; its execution is planned in the period from June to September 2008.

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<sup>5</sup> The minutes of meeting will become available through a separate document, and are available through the Secretary of the Task-Force, Mr. Peter Bos of SNV/Tanzania



## **CHAPTER 4: Main conclusions and recommendations**

The meetings with the stakeholders and the participation in the Task-Force meeting made clear that the proposed national programme on domestic biogas in Tanzania is felt relevant for the country. The feasibility study, stakeholder meetings (4x) and Task-Force meetings (9x) have raised a lot of interest, and time has come to embark on the next step: the formulation of the PID. The final version of the ToR for this assignment will be ready by April 2008 and requires a budget of USD 50,000. The execution of the ToR is scheduled for the period from June to September 2008. It is recommended to both CAMARTEC and SNV to avail the required manpower, to look into possibilities for co-funding and to enter into a Memorandum of Understanding (MoU) in May 2008.

The visited ministries showed a lot of interest to assume a role in the preparation and implementation of the national programme. It is recommended that each of these ministries will formally appoint a contact person to ensure continuity of the activities.

The presented function model was found useful to discuss and clarify the possible roles of various stakeholders. CAMARTEC has been accepted by all interviewed stakeholders to become the lead organisation in the biogas programme. Indeed, one may expect that the knowledge, experience and reputation of CAMARTEC could be an advantage in assuming this role. However, the weaknesses of the Centre need to be addressed to become an effective, efficient, responsive, dedicated, accountable, professional and market-oriented lead organisation. It is therefore recommended to CAMARTEC and SNV to also include an organisational assessment in the above mentioned MoU.

## Annex 1: Programme of the visit

<b>Sunday, 6 April 2008:</b>		
13.30	Arrival in Dar es Salaam by air	
<b>Monday, 7 April 2008:</b>		
15.00-16.00	Meeting with SNV/Tanzania: -Mr. Peter Bos	-Biogas Advisor, Northern Portfolio
16.30-18.30	Meeting with SNV/Tanzania: -Mr. Tom Derksen	-Director
<b>Tuesday, 8 April 2008:</b>		
09.00-10.15	Meeting with Ministry of Energy and Minerals, Section Renewable Energy: -Mr. Eng. N.C.X. Mwiha -Mr. Paul M. Kiwele	-Assistant Commissioner -Biomass Specialist
11.00-12.00	Meeting with Ministry of Livestock Development and Fisheries: -Mr. Victor Mwrite -Mr. Reynold Emmanuel Msangi	-Assistant Director Range & Animal Feeds -Biogas Desk Officer
14.00-15.00	Meeting with Ministry of Industry, Trade & Marketing: -Ms. Eline S. Sikazwe -Ms. Margaret Ikongwe -Mr. Eng. Patrick B. Marwa	-Acting Director, Department of Industry -Statistical Officer, Department of Industry -Principal Engineer
18.00-20.30	Travel by air and bus to Arusha	
<b>Wednesday, 9 April 2008:</b>		
09.30-13.30	Meeting with CAMARTEC: -Ms. Honoratha P. Temu -Mr. Eng. Evarist Ng'wandu -Mr. Harold Z. Ngowi -Mr. Eng. Wilson Baifani -Mr. Eng. Elifariji Makongoro	-Acting DG -Director, Research & Development -Principal Technologist -Director, Production & Testing -Director, Technology Transfer
14.45-16.00	Meeting with ELCT: -Mr. Noel Reuben Mollel	-Project Secretary
<b>Thursday, 10 April 2008:</b>		
09.15-10.45	Meeting with ABC: -Mr. Sanford Kombe	-Managing Director
11.00-12.30	Meeting with Biogas and Solar Limited: -Mr. Ainea Kimaro	-Director
<b>Friday, 11 April 2008:</b>		
09.15-14.00	Biogas Task Force meeting	See Annex 2 for list of members
14.45-15.15	Brief meeting with FIDE: -Mr. Senkondo Mgalla	-Director?
<b>Saturday, 12 April 2008:</b>		
	Free day	
<b>Sunday, 13 April 2008:</b>		
09.00-10.30	Discussion with SNV/Tanzania: -Mr. Peter Bos	-Biogas Advisor, Northern Portfolio
<b>Monday, 14 April 2008:</b>		
08.00-09.00	Debriefing to SNV/Tanzania: -Mr. Joel Kalagho -Mr. Peter Bos	-Portfolio Coordinator, Northern Portfolio -Biogas Advisor, Northern Portfolio
12.15-	Departure from Arusha by air	



## Annex 2: List of Task-Force members

SN	Name	Organisation
1	Mr. Harold Z. Ngowi (CAMARTEC)	Chairman
2	Mr. Peter Bos (SNV/Tanzania)	Secretary
3	Mr. Noel Reuben Mollel (ELCT)	Member
4	Mr. Sanford Kombe (ABC)	Member
5	Mr. Gillead Kissaka (Katani Ltd.)	Member
6	Mr. Lehada Shila (TNCDD)	Member
7	Mr. Kibona (WODSTA)	Member
8	Ms. Patricia Kinyange (ROSA project)	Member

# Annex 3: Organisational structure of the “Biogas for Better Life; an African Initiative”

