









REPÚBLICA DE INOÇAMBIQUE MINISTÉRIO DE CIÊNCIA ÉTECNOLOGIA



BIOMASS BUENGY TECHNOLOGIES (6 - 24 August 2007) Course on

FINAL REPORT

COURSE ON BIOMASS ENERGY TECHNOLOGIES

1. Introduction

problems of the SADC region. The courses fall into three broad distinct groups based appropriate energy technology systems, human resources and appropriate energy the physical, social and economic environment found in rural areas. Local resources, should be the starting point, and that they should be analysed within the context of policies can then be identified. All courses are specifically designed to be used in the energy planning and environmental management are to be effective, energy needs links the different planning elements in a systematic way. It shows that if rura oriented. The methodology of the courses is based on an overall framework, which problems, and to help them to produce effective solutions. The training is joband technical people to the concepts and skills required for analysis of rural energy The aim of the courses within the programme is to introduce planners, managers management was designed and its implementation started during the past decade comprising eleven separate courses in rural energy planning and environmental Development Group of the University of Twente (TDG-UT), from the Netherlands. As contracted to undertake this activity, supported by the Technology and Southern African Management Institute (ESAMI), based in Arusha, Tanzania, was and skills required for an analysis of rural energy problems. The Eastern training programme aiming at introducing planners and managers to the concepts Netherlands Ministry of Foreign Affairs (DGIS) in order to support the design of a Sector of the SADC community, based in Luanda, Angola, sought funding from the In support of this objective the Technical Administrative Unit (TAU) of the Energy capabilities to plan, implement, monitor and evaluate wood fuel projects effectively. priority on rural energy planning and also on strengthening of local institutional fuel supply. Having these facts in mind the SADC energy Ministers have placed high effectiveness and efficiency of energy use, in conjunction with the optimisation of should be systems. The solution to the shortages of rural energy represent a challenge which of new and intensified production processes aggravate the degradation of ecological environmental degradation impede rural development. The environmental impacts processing industries require substantial amounts of wood. Resource depletion and in the SADC region depend on wood fuel for domestic use, and also many agropressure on land, biomass and other limited resources. About 80% of the population shortages of traditional fuels, such as wood, are due to increased population The countries of the Southern African Development Community (SADC) region are result of the work carried out a core curriculum and a training programme oriented to improve demand-side management and enhance the and interrelated problems of energy and environment. They address the particular rural energy and environmental

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governmental organisations (NGO's) and private sector. foresters, trainers in rural energy planning and environmental management- 3 weeks). The planning target group for the courses are professionals working in the broad field of energy courses (communication planning and mass awareness - 2 weeks -, training of energy planning and environmental management - 2 weeks) and (iii) communication energy planning and environmental management - 2 weeks -, gender analysis in environmental management - 2 weeks -, data survey methods and applications for environmental management - 3 weeks -, social and agro-forestry for energy and and environmental management - 3 weeks -, rural energy project planning and technology assessment - 3 weeks); (ii) management courses (rural energy planning solar energy technologies - 2 weeks -, wind energy technologies - 2 weeks -, energy on their content: (i) technical courses (biomass energy technologies - 3 weeks -, and environmental management, including agriculturalists, economists, engineers, planners and policy makers from government, non-

capacity for effective decision making in the fields of better use of biomass energy specialists in the region the opportunity to acquire skills which will increase their resources. "Biomass Energy Technologies" attempts to address these aspects by offering that lack of skilled manpower is a factor contributing to this problem. This course on countries was made above. Surveys carried out by different organisations indicate Reference on general problems of energy and environment faced by the SADC

experience in appropriate disciplines. qualified academically with a degree and should have several years of work of engineering and natural sciences involved in implementing biomass rural energy projects from government, NGOs and the private sector. Participants should be The target group for this specific course are technical professionals from the areas

SADC region, namely Angola and Mozambique. order to enable a full participation of the two Portuguese-speaking countries in the (EMU) has the responsibility to organise the course in Maputo in Portuguese in ESAMI and by Mananga Centre, from Swaziland. The Eduardo Mondlane University This course has been implemented in English language since the past decade by

2. Contents of the Course

the course manual. The course is arranged into five modules, which are linked together as explained in

Module 1: Introduction to Biomass Energy Systems and Technologies;

Module 2: Resources of Biomass Energy;

Module 3: Conversion Systems of Biomass Energy;

Module 4: Planning of Biomass Energy Systems;

Module 5: Environmental Management.

3. Preparation of the Course

involvement of Angola. The Ministry of Energy in Mozambique, through the National e-mail and telephone but without success. Director of New and Renewable Energies made many contacts with Angola, through postponing the training course from April to August, it was not possible to get provide participants. It is to regret that despite all the efforts made, including the the link with the national directorates of Angola and Mozambique in order to identify and invite facilitators to give their inputs into the course and also to make commission had the task to identify a suitable place for running the course, to commission has been set up in order to prepare the training activity. The organising into Portuguese and (ii) the organisation of the training activity. Then an organising of the manual on "Biomass Energy Technologies" elaborated by ESAMI from English The preparation of the course comprised basically two activities: (i) the translation

4. Funding of the Course

training activity. This enabled the participation of two more people. DGIS, the Ministry of Science and Technology provided an additional funding for this The course was scheduled for 10 participants. Apart from the grant provided by

5. Participants

participation of women was achieved. they are responsible for providing fuel for domestic use. A target of 40% of involvement of female participants, as according to the traditional division of work One important objective to be achieved in this training activity is

Energies himself sent many e-mail messages and made many phone calls to his without participants from Angola. The National Director of New and renewable did not provide participants. This means that the training activity had to take part did not provide participants it was then postponed to August 2007. Even so Angola activity was scheduled initially to take part in April 2007. Due to the fact that Angola Directorate of Energy in the Ministry of Energy and Water in Angola. The training Renewable Energies in Mozambique, which in its turn, contacted the National The task of identifying participants was given to the National Directorate of New and

presented in the tables below. counterpart in Angola but without success. The final statistics of participation is

Table 1 - List of Participants

2	Name	Sex	Institution	Contact	llem-3
1	Julieta Cuanda	Female	MICOA	+258 825287293	Julieta cuanda@yahoo.com.br
2	João Cipriano	Male	MICOA	+258 827032440	oocipriano@yahoo.com.br
3	Júlio Tshipo	Male	ЭW	+258 827247860	otsimpho@yahoo.com.br
4	Isabel Natália João	emale	ME	+258 827318178	ni@me.gov.mz
5	António Matsena	Male	ME	+258 827298491	dipremaputo@tvcabo.co.mz
6	lnês Chalufo	Female	ME	+258 823911850	ec@me.gov.mz
7	Osvaldo Manso	Male	MA	+258 823032890	omanso@yahoo.com.br
8	Argentina Cossa	Female	MA	+258 823212830	argentinacossa@hotmail.com
9	Antonio Uaissone	Male	MCT	+258 822425530	antonio.uaissone@mct.gov.mz
10	Custódio Dimande	Male	MCT	+258 828995090	custodio.dimande@mct.gov.mz
11	Sérgio Sangarote	Male	GED	+258 826195199	sanganazia@yahoo.com.br
12	Rosa Chambisse	Female	MDN	+258 823999460	rosaguambe@yahoo.com.br

Table 2 - General Statistics of Participants

Total Number of Participants 12 100.00% Female 05 41.67% Male 07 58.33%		Number	Percentage
lle 05 07 07	Total Number of Participants	12	100.00%
07	Female	05	41.67%
	Male	07	58.33%

6. Facilitators and Speakers

Environmental Affairs was used. The table below gives the list of the facilitators in Mondlane University. Also a facilitator from the Ministry for Coordination of institutions like the Faculty of Agronomy and Forestry Engineering, the Faculty of facilitators and speakers was of 9, representing and/or originating from several facilitators from different backgrounds had to be identified. The total number of Engineering, the Faculty of Sciences, the Centre for Africa Studies, all at the Eduardo In order to cover the different subject matters involved in the training activity,

Table 3 - List of Facilitators and Speakers

Facilitators / Speakers	Insulation	Sex
Alberto Tsamba		Male
Guilherme Banze		Male
Almeida Sitoe		Male
Mário Falcão		Male
Andrade Egas		Male
Isabel Casimiro		Female
Boaventura Cuamba	1.5.2.1	Male
Manuel Chenene		Male
Felicidade Munguambe		Female
		UEM — Engineering UEM - Engineering UEM - Agronomy & Forestry Engineering UEM — Centre for African Studies UEM — Sciences UEM — Sciences UEM — Sciences

7. Course Evaluation

7.1 Evaluation by the Participants

few remarks about the course, which they did. purpose of providing the participants an opportunity to frankly and openly make a evaluation. Additionally a meeting was convened on the last day for the sole of every week for a weekly evaluation and at the end of the course for a final in order to guarantee freedom of expression. The forms were distributed at the end participants were given evaluation forms, to be filled and surrendered anonymously, The course was evaluated both by the participants and by the organizers. The

outstanding comments were made, which are presented below: unanimously considered the course useful and well conducted. Some common and Both in the written evaluation as well as in the referred meeting the participants

- appropriate and more fruitful manner; The time was too short to deal with some of the interesting subjects in an
- The presentations of the facilitators were generally good and very good;
- few remaining misspelled words (already corrected); limited problems to be corrected, like some faint and hardly visible pages and a The manual and other supporting material were considered good, despite some
- productive, group work ¥ith sessions and respective presentations were the merit 앜 bringing the participants together positive and and

Ministério de Ciência e Tecnologia

- aspects learned during the sessions. Participants would generally like to have had at least one more field trip; The field trip was considered an excellent occasion to see on site some particular
- would like to take part in more courses on the same and related subjects; Participants were keen to implement their knowledge as soon as possible and
- participants, but could be improved. The lunch service was considered good by a substantial number o∳

7.2 Evaluation by the Organizers

the evaluation of the organizers: course, where many annotations were made. The following comments summarize for improvement in the coming courses, especially but not only on administrative aspects. For that purpose the organizers held daily and weekly meetings during the appraisal. In addition to the above referred the organizers believe that there is room organizers agree with the critics and are grateful for the generally good

- comparison to courses held before; course was well conducted, with clearly visible improvements ⊒.
- achieve the positive results; The level of the participants was good and appropriate, which helped to
- mingle and form a strong collective; The participants were enthusiastically participative and quickly managed to
- essential to the overall rating of the course; The facilitators were committed and had a professional approach, which was
- administrative setting; registered, Some weaknesses which nevertheless in the organization, particularly on the did not affect the overall catering rating 약 were
- occasions The organizers will try to at least keep a minimum desirable balance in coming The organizers made effort in order to achieve a desirable gender balance.

Budget

A detailed breakdown of the budget is attached to this report.

9. Conclusions and Recommendations

with implementation of projects on biomass energy technologies. The purpose of the course was to provide the participants sufficient skills to deal

of time in order to strengthen and update the skills of the participants. The organizers believe that these courses should be repeated after a certain period

the Portuguese courses in the SADC Training Programme. the participants with welcoming speech, gratefully underlining the importance of Technological Development in the Ministry of Science and Technology addressed opening ceremony the National Director of Research, Innovation and

by their performance and regretted the absence of Angolan participants in the praised the successful organization of the course and congratulated the participants and Technological Development in the Ministry of Science and Technology, who The closing ceremony was also led by the National Director of Research, Innovation

Maputo, September 2007

The Course Director

Soaventura Chongo Cuamba

Financial Report

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FINANCIAL REPORT

TRAINING COURSE ON BIOMASS ENERGY TECHNOLOGIES

The table below shows the essencial exercise of disbursements done in the preparation and implementation of the Course on Biomass Energy Technologies.

- Costs are presented in USD. The disbursements made in MZMs are converted into USD with the exchange rates varying from MZM 25,50/USD to MZM26,00 /USD;
- 'n referred structure; would fall beyond budget, both in terms of value as well as in context as per Many other costs were met, but are not included in the present report since they
- က While we are mailing this electronic copy we are also mailing an hard version of statement. the report, which includes all the supporting documents to the financial

We are grateful in advance for any comments on the way we can improve the report.

Maputo, September 2007

The Administrative Director of the Course

Alberto Júlio Tsamba

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COURSE ON RURAL ENERGY PLANNING AND ENVIRONMENTAL MANAGEMENT Budget Breakdown (column F) and Real Costs (column E)

Activities	Real	Costs	Amount Available	Difference (F-E)
4.0	(MZM)	(USD)	(USD)	(USD)
1. Costs with Students		14 170.8	23 018.2	8 847.4
1.1 Travel 1.1.1 Internal air Travel		0.0	8 983 0	8 983.0
1.2 Accommodation and Meals		13 610.4	13 473.3	- 137.1
1.2.1. Accommodation at Hotel Ibis (5 people x 20 days) 1.2.2 Rent of the conference room		5 941.8 1 500.0		107,1
1.2.3 Dinner (5 peoplexUSD 17,00x20 days)		1 700.0		
 1.2.4. Coffee and Lunch Services for 21 days 1.3 Allowances for Field Visit 1.3.1. Catering Costs 1.3.2. Preparation of the Visit 1.3.3. Fuel and Other Costs 	115 067.5 12 500.0	4 468.6 560.4	561.9	⁸⁰⁰ -, : 1.5
4. Communication and Marketing Expenditures		673.3	673.3	0.0
4.1 Telecommunications -Telephone, Fax (through Faculty of Science)	·	336.6	336.6	0.0
4.2 Marketing - other expenses(through Faculty of Science)		336.6	336.6	0.0
GRAND TOTAL		14,844.11		8,847.41

List of Invoices/Receipts of the Costs

Nº .	Invoice/Receipt	Description	Item of activities	Amount in MT	Exchange rate USD/MT	Amount in USD
1	Recibo nº 7054	Hotel Ibis	1.2.1		1	5.941,84
2	Recibo nº 82/DAF/07	UEM - Faculdade de Engenharia	1.2.2	}		•
3	Recibo nº 2140	Hotel Ibis	1.2.3		i :1	1.500,00
4	Recibo nº 0162	Mimi Bolos	1.2.4	64 005 50		1.700,00
5	Recibo nº 0235	Mimi Bolos		61.205.50	1	2376,91
6	Recibo nº1896	Clube do Professsor	1.2.4	43.574,50	1	1692,21
7 .		1	1.2.4	10.287,50		399,5
8		SOGEREL	1.3.1	12.500,00	25,75	485,44
		UEM- Departamento de Geologia	1.3.3		1	50,00
9		UEM- Departamento de Geologia	1.3.3		1	25,00
10	Recibo nº29/FC/07	UEM - Faculdade de Ciências	4.1		1	336,60
11	Recibo nº30/FC/07	UEM - Faculdade de Ciencias	4.1			•
		Total	1-201			336,60
						14.844,1



1.2.1 ACOMODATION AT HOTEL IBIS

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Recibo nº 7054	Tipo de Documento
Hotel Ibis Maputo	Descrição
5.941,75	Valor em USD

Av. 25 de Setembro, 1743, Maputo, Moçambique Matriculada na Conservatória do Registo Comercial sob o N°: 1337 | Capital Social: 500.000.00 USD NUIT: 400073309



Hotel IBIS Maputo
Av. 25 de Setembro, 1743
Maputo, Moçambique
Tel: +258 21 35 22 00
Fax: +258 21 35 72 20

ACCOR

RECIBO nº 7054

UEM Faculdade de Ciências

Data de Partida	Data de Entrada	
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Moçambique

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Hotel IBIS Maputo Av. 25 de Setembro, 1743 Maputo, Moçambique Tel: +258 21 35 22 00 Fax: +258 21 35 22 20

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Rua do Licenciado Coutinho, 91 R/C Malhangalene "B" - Maputo Fax: 21 41 95 95 NUIT: **300 187 390**

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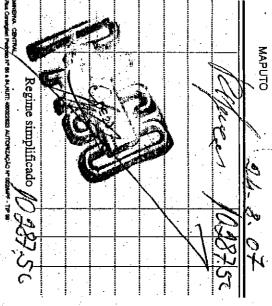
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1.3.1 CATERING COSTS

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