



Renewable Energy - Journey

Jane Tawina Joseph Kopa

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Prepared by the Youth Employment Summit (YES) Campaign
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A project of Education Development Center
55 Chapel Street
Newton, MA 02458

Application for
Renewable Energy
Fellowship 2003

Youth Employment Summit – GYSD Renewable Energy Project

A project of Education Development Center

FOR OFFICIAL USE
DATE STATUS

Funded by the Global Environment Facility and the World Bank

Deadline for Applications: Feb. 28, 2003
Winners will be announced on: April 12,
2003

Date: _____, 2003

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15. Legal Status and date of establishment:	Established by an Act of Parliament in 1998		
16. Technical Expertise:	Renewable Energy Engineering		
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33. Telephone: +265 1 788 145

Please answer the following questions, use additional sheets where needed

34. What is the potential of Renewable Energy in your community?

The community is endowed with several sources of renewable energy sources. However the application of renewable energy technologies (including solar home systems – SHS, biogas, wind energy plants, mini and micro-hydros) have so far made little contribution because the technologies are new. This low uptake has prompted the Malawi Government to make and promote policies leading to increased access to affordable, modern renewable energy technologies for households. Now with the policies in place, coupled with promotion campaigns being done there is a good market for renewable energy technologies (RETs) in the community.

35. Describe 2 practical applications of Renewable Energy that can be implemented in your community.

(a) Solar Photovoltaic (PV) Systems for Community Water Supply

There is high solar irradiation (estimated at 21.1 MJ/m²/day). This is good for photovoltaic (PV) applications that include lighting, water pumping, refrigeration, radio communication etc. It has been demonstrated that it is economically viable to use PV systems for community water supply for low-volume applications. The community, with a population of about 1000 requires about 25 m³ of water per day. This can be economically achieved by a Solar water pumping system comprising of solar modules to convert sunlight into electricity, a solar pump, a borehole, and a tank among other items. This technology has a high potential of replacing hand pumps in the community. The water will be sold at a profit to the community in buckets of about 20 litres at an affordable price.

(b) Wind Energy for water pumping

The community is endowed with wind energy with wind speeds averaging 2-7 m/second. This can be used for water pumping and other minor applications. The system requires a windmill that propels a turbine. The turbine generates electricity that drives a water pump. The water can be sold at a profit to the community in buckets of about 20 litres at an affordable price.

36. Is your Government a signatory to the Kyoto Protocol? If so, has your Government ratified it? If so, when was it ratified? If not, then what are the reasons? What is the national energy policy in your country? Is it conducive to promoting Renewable Energy?

The Malawi Government is a signatory to the Kyoto Protocol and ratified it in 2001.

The Malawi Energy Policy is to make the energy sector sufficiently robust and efficient to support adequately Government of Malawi's socio-economic agenda of poverty reduction, sustainable economic development and enhanced productivity; and to catalyse the establishment of a more liberalized, private sector driven energy supply industry in which pricing will reflect the competition and efficiency that will develop in the reformed process.

The policy is conducive to promoting renewable energy as the Government has, through the energy policy, put in place measures that will consolidate market priming activities as a prelude to establishing a vibrant, reliable and sustainable private sector driven renewable energy technologies industry.

37. What institutional support is available to you and your co-applicants for developing and implementing your business plan? Please provide names and contact information.

There is a project called Barrier Removal to Renewable Energy in Malawi (BARREM) under the Department of Energy Affairs, in the Ministry of Natural Resources and Environmental Affairs that is giving support to renewable energy technologies in form of loan facilities and technical expertise. This is a UNDP/GEF Supported Project.

The contact address is:

The Project Manager
Barrier Removal to Renewable Energy in Malawi
Private Bag B514
Lilongwe 3
MALAWI.

Tel.: 265 1 766558/500

Fax: 265 1 766 531

E-mail: renewable-energy@sdpn.org.mw

38. In the past 3 years, what renewable energy projects or ventures have you participated in?

I have participated in Biogas Energy Technology using wastes from domesticated animals.

39. Describe your business proposal in 400 – 600 words.

LUMBADZI RENEWABLE ENERGY PROJECT (A Business Proposal)

Wind energy technology is the type of RET (Renewable Energy Technology) that will be used for our business. The technology will be used to draw water from a well in stead of installing a borehole. But then a structure will have to be erected that will protect the well from animals and human beings. People that will be drawing water from the well will be paying MK2. 00 per 5litre pail. Thus it will be an income generating activity. Just nearby, a vegetable garden will be established so that as people come to draw water they will also be buying vegetables. That is, it will be an integration of some sort. The place will also be used as a training ground where youths will be convening to learn how to use wind as a renewable energy and how to manage a garden. They will be paying MK25.00 (US\$0.25) per day for the training. This figure is affordable for a poor rural youth. In addition to promoting RETs, youths will gain expertise in the field and they will be able to use it for income generation.

The project will be implemented in Lumbadzi in the outskirts of Lilongwe in Malawi. The main goal is to reduce unemployment through promotion of wind energy as a RET in the area. The specific objectives include:

1. Provide people with clean water.
2. Promote the use of renewable energy in Malawi- wind energy
3. Create employment to the youths of Lumbadzi.
4. Increase in number of income generating activities in Lumbadzi.

More than 100 people will participate in the project and the target group are the rural youth in Lumbadzi. The business will be established at Mkukula village, Traditional Authority Mkukula in Lumbadzi. This location was selected because it is one of impact areas of Malai YES Network and it was found that among the impact areas, Mkukula is the poorest and has the largest number of youths that are idling. And the renewable thectnology that will be used is wind energy.

Among the outputs and impacts will be:

1. Increase in number of youths participating in RETs (Renewable Energy Technologies).
2. Number of people drinking clean water will increase by 10% in the area.
3. There will be an improvement in livelihoods on people in the area.
4. Unemployment rate among youths in the area will decrease by 5%.

BUDGET

ITEM	RATE	QUANTITY	COST
RENOVATING THE WELL			
Clearing ground	US\$15.00/man day	100 man days	US\$ 1500.00
Cementing	US\$10/bag	7bags	US\$ 70.00
Actual flooring and erecting			
Structure	US\$100.00/man day	7 man days	US\$ 700.00
INSTALLATION OF THE 'RET'	-	-	US\$ 2000.00
ESTABLISHMENT OF VEGETABLE GARDEN			
Making beds		7 man days	US\$ 200. 00
Transplanting seedlings	US\$50/day	2 days	US\$ 100. 00
STATIONERY (Paper, pen, photocopying etc)			US\$ 400

TOTAL

US\$4970. 00

40. Please write any additional comments that you deem important when considering your application.

In Malawi access to portable water and efficient, sustainable modern energy technologies is very low. Most of the people use untreated water from rivers and wells. If this project is implemented then it will go a long way in addressing these problems and stimulate socio-economic development and rural transformation for poverty reduction as stipulated in the Malawi *Vision 2020* and the Malawi Poverty Reduction Strategy Paper (PRSP).

Supporting Documents Required to be Submitted along with this Application are:

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1. Resume/ CV/ Bio-data.
2. Two Recommendations from either an academic or professional institution.
3. Documentation indicating co-applicants legal status.

Please send the completed hard copy application form with all supporting documents to:

Mr Nugzar Meladze

4v Mazniashvili St.

Tbilisi 380002, Georgia

Email. nugzar@youthemploymentsummit.org

Deadline for receiving application form with all necessary documentation is 28th February 2003

For more information, visit www.youthemploymentsummit.org

APPLICATION INSTRUCTIONS

Questions

- 1 – 10 Indicate youth applicant's name, address, telephone, fax, and email.
- 11 – 13 Indicate alternative contact person, including telephone and email
- 14 – 23 Information relates to the first co-applicant. Co-applicant must be a legally recognized institution.
- 24 – 33 Information relates to the second co-applicant. Co-applicant must be a legally recognized institution.
34. Describe what market demands could be met with renewable energy technologies.
35. Of the opportunities described in your previous answer, which two have the most potential for meeting the goals of this project: develop employment opportunities for youth, while reducing and ameliorating environmental degradation.
36. Describe the current efforts being made by your government, if any, to improve energy production and energy supply to off-grid areas, and by what means, with special focus on renewable energy policy and projects that will be implemented through 2005.
37. Describe what additional support you would be able to receive for your business plan. In other words, are there potential partners or investors?
38. Provide information regarding experience in renewable energy projects or businesses such name, duration, participants, your position and role, and a description of results or outcomes for beneficiaries.
39. Describe your business proposal, e.g., project name, goals, how many people will participate and from what segment of society, what is the current situation, and where will the business be established, what renewable technology will be used, what will be the outputs and impact on the community. Also include a short budget, not to exceed \$5000.
40. Open

For further clarification contact

Mr Nugzar Meladze
4v Mazniashvili St.
Tbilisi 380002, Georgia
Email. nugzar@youthemploymentsummit.org

Curriculum Vitae

Personal information:

Surname: Kopa
First name: Jane
Middle names Tawina Joseph
Date of birth: 07 July 1979
Marital status: Single
Nationality: Malawian

Contact address:

Department of irrigation
P.O. Box 30797
Lilongwe.

Computer knowledge:

Microsoft word and Microsoft Excel
Microsoft power point
Internet.

Education background:

University of Malawi – Bunda College of Agriculture
Bachelor of Science degree in Agriculture (Crop Science).

Academic projects undertaken:

Estimation of biomass yield and litter quality of *Sesbania sesban*, *Tephrosia vogelii* and *Tithonia diversifolia* under a short term improved fallow system.
Crop Science Research farm- Bunda College of Agriculture

Activities done in the projects:

Data collection and analysis
Making necessary recommendations
Report writing
Typing and binding

Secondary Education

St. Mary's Secondary School (1992-1996)
Malawi School Certificate of Education
Junior Certificate

Work Experience

Employer: Ministry of Agriculture and Irrigation, Department of Irrigation (November 2001 to present)

Irrigation Officer

Duties: Planning and implementation of irrigation activities
Designing, implementation of bills of quantities and cost estimates
Training of both farmers and staff in the implementation of irrigation programmes
Attending various meetings and producing reports
Supervision of fieldwork

Employer: Eastern Produce Limited (July 2001). Mulanje, Malawi

Assistant Estate manager Trainee

Duties: Signing accountable documents
Assigning duties to personnel under my authority
Field supervision
Attending management and other meetings and producing minutes
Checking flow and use of funds of the division under the estate

Employer: Ulemu Kwa Atate Pvt Secondary School (April-June 2001)

Lilongwe, Malawi

Teacher

Duties: Teaching Geography and English
Attending meetings and writing reports
Supervising preparatory studies

Employer: Chitedze Agricultural Research Station -Plant Pathology Section (March 2000). Lilongwe, Malawi

Research assistant.

Duties: Planning data collection schedules, data collection and analysis
Interpretation of results

Employer: European Community Aids Project (November 1998) Lilongwe, Malawi

Research assistant (Behavioral Surveillance Survey)

Duties: Administering questionnaires
Data collection, analysis and summarizing
Production of survey report

Employer: Department of Agricultural Engineering (June - Sept 1998)

Bunda College of Agriculture, Lilongwe, Malawi

Research Assistant (National Irrigation Energy Survey)

Duties: Collecting data from irrigation farmers
Collecting climate data from meteorological stations

Employer: Ministry of Education, Science and Technology. Lilongwe, Malawi

Accounts Clerk.

Duties: Ledger and bank reconciliation and filling ledger cards.

Positions held

St. Mary's Secondary: Tuck shop prefect, Presidential Award Scheme chairperson, Society of Anglican Students (SAS) chairperson, and Hockey club Secretary.

Bunda College: Students for Rural Youth in Development Secretary, Aids Awareness Club Committee member, Hockey club Secretary and Student Technical Committee on Grade Point Average Secretary.

Community: Lumbadzi YES Network Chair, Anglican Youth Organization Chair and Youth on the Move (YOM) Organisation Publicity Secretary.

Achievements

- Youth Representative at Youth Employment Summit (YES2002) in Egypt.
- Won US\$8000. 00 for project implementation in Mchinji as part of SRYD projects.
- Regularly support financially by UNICEF-Malawi to carry out activities for YOM.

Extra Curricular Activities

Reading books, playing hockey, writing short stories and poems and listening to gospel music.

References

Mr. S. Maweru
Irrigation HQ
P.O Box 30797
LILONGWE 3.
Tel: 01 751 122
Fax: 10 751 459
irrigation@sdpn.org.mw

Mr. J. Kalowekamo
Department of Energy Affairs
Private Bag 309
LILONGWE 3
Tel: 01 770 688
Fax: 01 770 094
doenergy@malawi.net

Mr M. Maliro
Bunda College
P:O Box 219
LILONGWE
Tel: 01 277 222

Training Program - Malawi

RETs Training Activities for Ms. Kopa, Department of Energy Affairs

The Department of Energy Affairs views Ms. Kopa's involvement in renewable energy activities as timely. The Department, through its *Barrier Removal to Renewable Energy in Malawi (BARREM) Project* is currently promoting the use of renewable energy technologies (RETs), particularly solar PV. Ms. Kopa is likely to benefit from a series of training activities planned under the Project. The Project conducts regular trainings in various areas. These include:

DATE	ACTIVITY	FACILITATOR
19 th May - 22 nd May 2003	Understanding different types of Renewable Energy technologies (RETs)	Mr. Mhango, Department of Energy Affairs
26 th May - 30 th May 2003	Designing of RETs	Mr. Mhango, Department of Energy Affairs
2 nd June - 6 th June 2003	Installation of RETs	Mr. Mhango, Department of Energy Affairs
9 th June - 13 th June 2003	Maintenance of RETs	Mr. Chitenje, Department of Energy Affairs
16 th June - 18 th June 2003	Attending RETs Training for Policy Makers	Department of Energy Affairs
23 rd June - 27 th June 2003	A course in understanding the efficacy, costs and benefits of the technologies and advocate its use in the rural areas.	Department of Energy affairs
30 th June - 4 th July 2003	Application of RETs by community based organisations (CBOs)	Department of Energy Affairs
7 th July - 11 th July 2003	RETs Training of Trainers	Department of Energy Affairs
14 th July - 25 th July 2003	Project implementation, Monitoring and Evaluation	Project Implementation Section, Department of Energy Affairs
28 th July - 8 th August 2003	Field visits and Practicals	Mr. Mhango, Department of Energy Affairs
18 th Aug. - 23 rd Aug. 2003	Wrap-up and Examinations	Mr. J Kalowekamo. Department of Energy affairs

Content of the Training Programme:

- *RETs Technicians, Engineers and Planners* – aimed at developing local technical expertise to efficiently design, install and maintain RETs. Ms. Kopa will be one of the beneficiaries of the said training as a way of improving her technical skills in RETs. Such a training will expand her understanding and her efforts in promoting RETs as indicated in her activity proposal.

- *RETs Training for Policy Makers* – Ms. Kopa will participate in training workshops planned for policy makers. The long-term objective is to create an impetus among public sector strategic planners to include RETs in their rural development planning. This will assist Ms. Kopa interact and promote RETs at high policy level.
- *RETs Training for NGOs* – The Project is also running training sessions to popularise the utilization of RETs among NGOs by enabling them understand the efficacy, costs and benefits of the technologies and advocate its use in the rural areas. The Project will involve Ms. Kopa in these training sessions. Ms. Kopa plans to economically empower the youth by involving them in income generating agricultural activities (through wind irrigation). Her efforts are consistent with most NGOs in Malawi that work towards reducing poverty. Ms. Kopa's endeavours can only be realized through the Department by networking her with NGOs. We believe such training would largely benefit her.
- *RETs Training for CBOs* -- To enhance the uptake and application of RETs, communities should demand the services. The Project is involved in training community based organizations (CBOs) to demand such services. Ms. Kopa will be trained in the basics of explaining the principles of RETs to communities and their applications in communities.
- *RETs Training of Trainers* – Following the above trainings, Ms. Kopa will be one of the Department's resource persons responsible for RETs training. Her expertise will be drawn upon by the Department as and when necessary. The Department will also use Ms. Kopa's expertise in promoting RETs. Her placement in the Ministry of Agriculture and Irrigation (MoAI) – a key Ministry in the economy of Malawi -- provides an opportunity in promoting the use of RETs as a tool to transforming the rural economy.

From the above, the Department entirely supports initiatives and efforts shown by Ms. Kopa in RETs. We also appreciate and value the support given by your institution to her.

The trainings have already started. I Jane Tawina Kopa, really apologise for the delay but now we have touched base and things will be all right I hope. Training on Project implementation will be hands on since we are behind schedule, unless you have reservations on this.

Submitted for your approval,

Jane Tawina Kopa

Training Report

List Of Acronyms

BARREM	Barrier Removal
CAYO	Counselling of Adolescent Youth Organization
DoE	Department of Energy Affairs
GEF	Global Environment Facility
MEET	Malawi Environment Endowment Trust
NYCOM	National Youth Council of Malawi
RETs	Renewable Energy Technologies
UNICEF	United Nations Children's Education Fund
UNIMA	University of Malawi
'WEEDO	Young Women Empowerment for Economic Development Organization
YES	Youth Employment Summit
YOMAAC	Youth on the Move Aids Awareness Campaign

Acknowledgements

I am very grateful to the World Bank and Global Environment Facility for their generous financial support towards the decade long global campaign of action on youth employment through provision of renewable energy fellowship funds. On this note, special thanks should go to the executive of YES Campaign that is working tirelessly towards fulfillment of the UN Millennium Development Goals.

I also acknowledge the support rendered by the Department of Energy Affairs in the Ministry of Natural Resources and Environmental Affairs that made a day long training workshop a success. Many thanks should go to Mr. Louis Mhango, Divisional Head in the Department of Energy Affairs,

Mr. Joseph Kalowekamo, Renewable Energy Expert, Dr. Charles Kafumba, Director of Department of Energy Affairs, and Mrs Grace Mangwere, Secretary to the Director of Energy Affairs, for both technical and moral support.

Sincere thanks are due to Mr. Chitenje, the Deputy Director of Energy Affairs who officially opened the training workshop, and Ms Stella Atupele Masangano whose contribution led to successful implementation of the training workshop. Her contribution will always be remembered.

I feel indebted to the youth organizations that sent their members for the workshop and vis-à-vis: CAYO, WEEDO, Lilongwe Young Voices and YOMAAC. I would like to appreciate very much the participants of the workshop for their enthusiastic response to the workshop.

Thanks should also go to individuals too numerous to mention that rendered support moral or otherwise towards successful implementation of the three months training and a day long training workshop. Special thanks should go to Ms Chinsinsi Kopa, my sister who supported me morally and spiritually.

The guidance and support of National Youth Council Director, Mr. Alex S. Mseka cannot go without commending. I am really thankful to the entire management of National Youth Council of Malawi for supporting YES Malawi Network since its inception. Here I must say that together we can make it, together we must make it, and together we will make it.

Above all else I thank God the Almighty whose powers we draw upon for everyday renewal of our strength and sustainability of our lives. 1Thes. 4 vs 11-12 encourages me to live a quiet life, mind my own business and earn my own living so that I win the respect of those who are not believers and I do not have to depend on anyone for what I need.

Training Report

1.0 INTRODUCTION

The Renewable Energy Fellowship programme was introduced in February 2003 with an ultimate aim to develop increased employment opportunities for youth while supporting the promotion of renewable energy technologies in rural areas. Thus, the project seeks creative and innovative ideas in renewable energy field to promote community based micro-enterprises. The programme is being jointly funded by the World Bank and Global Environment Facility through the YES Campaign (Global Youth Action Network).

Five youths from countries including India, Peru, Malawi, Ghana and Georgia were selected in a business proposal writing competition. Now these countries are operating as pilot project sites and the five youths are referred to as Renewable Energy Fellows. In Malawi, the project site is Mkukula Village in Lumbadzi, one of remote areas in the capital city of Malawi, selected because of its high number of youths that are just idling.

The Renewable Energy Fellowship programme has three components and vis-à-vis:

- a) Renewable Energy Fellow three months training;
- b) A day long training of twenty youths by the Fellow and co-applicant institution; and
- c) Implementation of the business plan also referred to as project.

In Malawi, the co-applicant institution that was identified to provide training and technical support is the Department of Energy Affairs in the Ministry of Natural Resources and Environmental Affairs.

As of now, only two components have been accomplished, namely component a) and b). Three months training of renewable energy fellow ran from 19th May 2003 to 6th September 2003, while a day long training workshop was conducted on 3rd October 2003. This paper serves to report on the challenges met during implementation of the training, achievements made and recommendations drawn.

A) Renewable Energy Fellow three months training

A three-months training course was arranged between the Renewable Energy Youth Fellow and the Department of Energy Affairs in the Ministry of Natural Resources and Environmental Affairs. The DoE was expected to train the fellow in business management and project implementation.

Training activities during the three months included understanding of different types of renewable energy technologies, design, installation and maintenance of RET projects, and RETs training for policy makers. A course in understanding the efficacy, costs and benefits of the technologies was also incorporated in the training programme. Techniques for advocating for use of RETs and promotion of community based micro-enterprises in renewable energy in rural areas were introduced to the Renewable Energy Fellow.

The 7th week of the training covered application of RETs by community based organisations (CBOs) and the last four weeks included RETs training of trainers and project implementation, monitoring and evaluation. Field visits, practicals and examinations were also included in the programme though they never materialised.

A-a) Objectives

The ultimate objective of the training was to equip the renewable energy fellow with knowledge in renewable energy technologies and development of business plans. The training also served to prepare the fellow for implementation of the wind energy youth project.

A-b) Challenges and achievements

Despite the arrangement that the fellow should acquire training through the Department of Energy, most of the training was through studying and reading books on renewable energy from libraries and other resource centres, observing and consultations with other stakeholders, and utilising the material I got from Egypt. This was a great challenge to me for it meant a lot of travelling and desk work. Worse still, there was limited support in terms of technical expertise from the Department of Energy presumably because they are understaffed and individuals who were assigned to assist were rarely available.

The other challenge was on disbursement of funds. The colleague I had assigned to assist me with preparations for the day long training workshop really did not do a good job. I delegated her to conduct some transactions and she ended up being irresponsible. This had implications on allocation of funds for other activities. On the same, the funds for training arrived when I was long into the training programme and to access money from the Department for reimbursements and

continuation of the training proved difficult. In stead, all their focus was on the one day training workshop, claiming that their understanding was that US\$1875.00 was meant for the workshop alone.

The costs for transferring money from Georgia were born by the project when initially it was indicated that this would not be the case. This reduced the money for training by US\$25.00.

The syndrome that youths are just beneficiaries and can not be partners and let alone be involved in decision making processes made my life tough, for each contribution I made was brushed off outright for no reason at all. And when it came to decisions regarding finances, I was told the department knew better so either I let them lead or I do it on my own. This poised as a great challenge to me.

Another setback was the camera man who was sourced from within the department. It was realised upon production that the quality of pictures that were coming out was very poor and the voice was not as clear.

Nonetheless a head way has been made which I would view as an achievement. Through consultations and help of Mr Joseph Kalowekamo, Department of Energy Affairs staff member, I have learnt a lot about renewable energy use, application and advocacy. I am also aware of organizations, besides the government institution, that are directly involved in promotion of renewable energy technologies. Actually, the Malawi Environment Endowment Trust through Fresh Waters Project is one such organization working on a project that will install about five wind mill pumps across Malawi.

B) A day long training workshop of twenty youths

A day long training workshop was held at the conclusion of the three-month training period of renewable energy fellow, as part of the requirements of the fellowship grant. The training workshop included the following:

- Talk from coordinators of training institution;
- Talk by the Renewable Energy Fellow on the state of youth employment in Malawi and the role of government, private sector and other stakeholders in curbing youth unemployment in Malawi;
- Speech by Deputy Director of Energy Affairs;
- Footage of the Renewable Energy Fellow speaking into the camera;
- Training of twenty youths in briquette and cont stove production; and
- Debate on the impact of youth organizations in Malawi towards youth employment.

B-a) Objectives

The aims of the workshop included the following:

- To fulfill section 2.2.3 of the agreement form signed between the YES Campaign and co-applicant institution;
- To bring stakeholders such as training institution, YES Malawi Network, donors and youth together;
- To provide a platform for the renewable energy fellow to give a talk on her thoughts about the three months training and renewable energy fellowship as a whole;

- To give the youth community a chance to interact and discuss challenges and future prospects with respect to youth employment; and
- To encourage networking among youth organizations in Malawi.

B-b) Challenges and achievements

The major challenge was inflexibility of the Department of Energy Affairs when it came to drawing up of the programme and budget for the workshop. For instance, when I had proposed to leave out one of the two activities that were time consuming (biomas briquette production and cont-stove production), I was threatened to shut up or else they would pull out. To avoid conflicts, I just sealed my mouth and brain and like a sheep led to slaughter, opted to agree with their suggestions.

Failure of the invited guests to turn up for the workshop was another drawback. Letters of invitation were sent to organizations such as UNICEF, World Bank, National Youth Council of Malawi, Ministry of Agriculture, YES Malawi Network, American Embassy and several individuals of high profile. Some confirmed their attendance but never showed up. I suppose it is because they are yet to appreciate the importance of youth training workshops to them as stakeholders and Malawi as a whole.

Amidst these challenges, the workshop can still be labeled as a success for it achieved its intended purpose. The caliber of the youth we had made it possible for facilitators to rush through the programme confidently enough that youth would grasp the material. In fact, by the end of the training almost all the youths were able to:

- Appreciate the role of youths in promoting renewable energy use;
- Use a briquette presser and produce briquettes;
- Produce a cont stove or follow procedure in cont stove production.

Of paramount importance remains the fact that most of the objectives were met. For instance, the video shooting was done, which has since been sent to India. It is unfortunate that the leadership of YES Malawi Network could not show up. Arrangements have been made to have future plans of the network sent to the Renewable Energy Project Coordinator, Mr. Nugzar Maledze by e-mail.

2.0 CONCLUSION

Despite the limited support from the Department of Energy Affairs, my training has been a success in that now I know what RETs are all about, their use and application. I have benefited a lot through the renewable energy fellowship training in that I have gained an in-depth understanding of renewable energy in addition to developing relations with different organizations. I have improved my skills in business management and project implementation. My capability in youth training and engagement in youth development initiatives has also since improved. As regards, training of twenty youths, it enabled me to interact with youths from different organizations learn how we can put our forces together to curb youth unemployment. All in all, the three months training and training of twenty youths have been a success.

3.0 RECOMMENDATIONS

Based on experience gained and challenges met during the three month training and a day training of twenty youths, I recommend the following:

- Government institutions should not be entirely relied upon to provide training services and offer support to Renewable Energy Fellows due to lack of commitment presumably because they are understaffed and always busy. Instead, Non-governmental organizations or consultants should be a priority to ensure successful training of Renewable Energy Fellows.

On this note, with the consent of the Renewable Energy Project Coordinator, I propose that a new account be identified for money transfer. The Malawi Environment Endowment Trust (MEET) through Fresh Waters project will provide technical expertise during implementation in form of consultancy. This will lessen the burden of chasing experts from the government to assist in the implementation of the project.

The Malawi Environment Endowment Trust is based in Blantyre in the southern region of Malawi, about 320 km from Lilongwe, the capital city of Malawi. I will be visiting the site where they have already installed a windmill pump for irrigation development. If involvement of a different institution does not conflict with your interests I would be comfortable to work with MEET for the benefit of the Renewable Energy Fellowship and the youth community at large.

- I also suggest that to determine the need for an institution to get involved in the renewable energy fellow, the prospective renewable energy fellowship should be assessed in terms of their capability to handle project funds. For instance, you could look at whether they have ever managed project funds. You could also consider their level of education (literacy levels), background knowledge in RETs, involvement in youth activities, or better still just call for curriculum vitae. Other wise if the fellow is capable the best is to entrust them with the responsibilities ranging from management of funds to project implementation. This approach will lessen the pressure on the fellow and will ensure successful implementation of the project.
- I also recommend that in future the selected Renewable Energy Fellows should be camped somewhere during the first three weeks of the three months training, for intensive training in RETs, planning, design, implementation and management of RET projects, and business planning and management . This will enable them to concentrate and gain in-depth understanding of RETs, project implementation and business management. From the forth week to the end of training, the fellows can be left to local experts to complete their training.
- I also recommend that renewable energy project coordination unit should in future provide information to the co-applicant institution besides the agreement form itself, so that they are guided thoroughly on what is expected of the institution.
- And my last recommendation is that contract agreement form, upon being signed by one side (co-applicant institution), the Executive Director for YES Campaign should sign and the completed document should be sent back to respective Renewable Energy Fellows for filing for future references.

Monthly Reports

Monthly Report Form

October 2004

1. General information

Name	Ms. Jane Tawina Joseph Kopa
Co- Applicant Organization	1. Department of Energy Affairs 2. YES Malawi Country Network
Project Start Date	April 2004
Expected Completion Date	31 st October 2004
Project Location	Mvumbi Village, T/A Mkukula, Lumbadzi, Dowa, Central Region, Malawi

3. Project Progress

Targets achieved	<ul style="list-style-type: none">• Community mobilisation and sensitisation• Training of twenty youth in Renewable Energy; Entrepreneurship and Irrigation, including vegetable growing• Youth clubs established• RET advocacy
Change in projections	None
Impact of achievements	<ul style="list-style-type: none">• Stakeholders (Community) participation in implementation of the project enhanced• Sustainability of the project ensured
Impact of changes	
Factors influencing project	<ul style="list-style-type: none">• Delay in remittance of funds from EDC;

<p>progress (Positive & Negative)</p>	<ul style="list-style-type: none"> • Delay in installation of windmill by Mr. CC Mzamu; • Enthusiasm, vigor and interest that the youth have in the project; • Inadequate funds and mobility problems; • Renewable Energy sector is not much exploited and that makes the project unique, hence the drive to produce positive results; and • The passion I have for the project.
<p>Problems faced (if any)</p>	<ul style="list-style-type: none"> • Inadequate funds • Over dependence on Department of Energy for technical expertise due to lack of the same among the youth • The Renewable Energy Fellow did not get much training during the three months training period; • Low involvement of other stakeholders in the project
<p>Suggestions to overcome the problems</p>	<ul style="list-style-type: none"> • Request to EDC to consider funding the remaining US\$ 2276.50 as per project Budget; • A proposal to be written to seek more funding; • To trim activities though this may have implications on the expected outputs; • To consider training the Renewable Energy Fellow. An institution was already identified in Swaziland but sponsorship is not yet found; • To hold stakeholders meeting to bring everybody on board. Preparations for this are underway except that funds are not available so it may delay a bit until money has been sourced.

4. Work plan for the next period

JULY - OCTOBER 2004 WORK PLAN

Activity	Responsible person	Venue	Timeframe	Cost (USD)	Expected Output	Assumptions
Installation of a windmill	Project Coordinator	Mvumbi Village	July	100.00	Windmill installed	Marine and Rural

						Engineering Co. has manufactured the windmill and Mr CC Mzamu shows up to install it
Establishment of a vegetable garden	Project Coordinator	Mvumbi Village	July	400.00	A vegetable garden established	A windmill has been installed
Erection of a fence	Project Coordinator	Mvumbi Village	July	300.00	A fence erected	Money is available
Procurement of inputs (fertiliser, seed etc)	Project Coordinator		July	120.00	3 bags of fertiliser and 4 packets of mustard, rape, and tomatoes procured	Money is available
Training in preparation of business plans and Marketing	Project Coordinator	Malawi Institute of Management (MIM)	August	1600.00*	30 rural youth trained in business plan	Money is available

Skills					preparation and marketing skills	
Undertake a market survey	Project Coordinator	Lilongwe	August	600.00*	A market survey undertaken	Money is available
RETs Advocacy	Project Coordinator	Dowa and Lilongwe	September	1300.00*	10 villages in Lilongwe and Dowa including Lilongwe City reached with RETs promotion messages	UNDP funds the submitted proposal
Selling of produce from the garden	Project Coordinator	Lilongwe	October	50.00	Produce from the garden sold	Market is available
Hand over of project to Mvumbi community	Project Coordinator	Mvumbi	October	1000.00	Project run by the community from 1 st September 2004	Project is completed by October 2004
TOTAL				US\$ 5,470.00		

Note: Those proposals have been submitted to various donors including UN Agencies to source funding for implementation of activities in Asterisks (*). E.g. In collaboration with the Department of Energy Affairs we may be getting funding from UNDP for Youth participation in RETs Advocacy. However we hope you will help us US\$2 276.50 for completion of activities stipulated in initial budget.

5. Supporting documents of project progress

Attachments to be sent by post or hand delivered when we possibly meet in Mexico in October.

6. Financial report

Income and expenses for period 01/12/2003 - 30/06/2004

Beginning Balance	MK 1000.00
Incomes:	MK 311,485.28
YES Campaign, EDC Inc.	
• Others	
Total:	MK 312,485.28
Expenses:	
- Administration (Running costs, stationery, Allowances etc)	MK 48, 550.47
-Planning Meetings	MK 11, 200.25
-Orientation Workshop	MK 157, 450.00
-Evaluation	MK 3, 500.00
Total:	MK 220700.72
Ending Balance	MK 90, 784.56

Comments on the changes in expense articles in comparison with submitted initial budget:

There have been some changes in expense articles in comparison with submitted initial budget. For instance training of youth in irrigated vegetable growing was budgeted for **US\$200.00** only. However about **US\$ 1350** was spent on a weeklong training workshop when it was noted that the youth were not fully participating in the implementation of the project due to inadequate

knowledge about the project. Thus an orientation workshop was opted for to orient stakeholders in the three major components of the project vis-à-vis Renewable Energy; Irrigation and Entrepreneurship. The workshop has enhanced stakeholders especially youth and community (Mvumbi) participation and ensured sustainability of the project. A report on the training will soon be sent to you. A video was also shot but due to financial hiccup I will not be able to send it to you. The Principal Secretary for Ministry of Youth, Sports and Culture officially opened the workshop.

The change in this expense article implies that some articles in the budget will suffer funding. For instance a fence may not be erected and so too procurement of inputs may not be done. I hope EDC will consider funding extra US\$2276.50 as per submitted budget so we do not have to compromise on quality of the project.

Another change occurred on expense article (f), which is supervision. Price of fuel has skyrocket in the past six months and this has resulted to increase to transport costs and subsequently an increase by about 35% in expense article (f) on our budget. This article was budget for US\$200.00 but over US\$260 has gone into this expense.

You will appreciate these changes when go through financial documents that will be sent to you in due course. I will prefer to have them faxed to you rather than post because posting is expensive. Or alternatively, should I make it to YES Mexico 2004, I will carry them with me for your perusal.

Final Report

Name of the Project: **Renewable Energy Wind Project in Malawi (Lumbadzi)**

Project Coordinator: **Ms. Jane Tawina Kopa**

Involved Organization: **Department of Energy Affairs and Malawi YES Network**

1.0 Background

Malawi is a small country with an area of about 144,000 square kilometers, situated in the southern part of Africa. It makes boundaries with Tanzania in the North, Mozambique in the South and East, and Zambia in the West. It has a population of about 11 million with about 85 percent of the population living in the rural areas. Of the 11 million, more than 60% comprises the youth.

Like most developing countries, Malawi has a high rate of unemployment among the youth. This is partly due to lack of creativity, knowledge and skills in various disciplines. Also the trend has been that the youths are last to be employed and first to be retrenched, which can be attributed to lack of experience and attitude employers have towards the youth. For instance, Non-governmental Organizations (NGOs) are mostly interested in employing the elderly who are believed to have some experience.

High rate of unemployment among the youth can also be attributed to increased number of youths graduating from colleges and schools every year and the low rate at which they are absorbed into the labour force. This is due to increase in number of institutions offering technical and professional studies and the increased number of students attending these courses every year.

Over the years, Malawi has been hit by high rate of HIV/AIDS prevalence among the youth, which is partly attributed to unemployment. The indulgence of the youth in malpractices such as alcohol and drug abuse is partly also as a result of youth unemployment. However, Malawi is well endowed with renewable energies which if put to effective use can offer employment to the youth in addition to protecting the environment which is being destroyed at an alarming rate.

There is therefore need to create awareness about employment opportunities for the youth as one way of addressing the afore-stated problems by engaging the youths in renewable energy technologies (RETs).

The purpose of this project is to create awareness among the youth so that they can engage in renewable energy related activities. Specifically, the project aims at providing the rural people with

clean water, creating opportunities that may help the youth get employment through the promotion of RETs. The project will involve the use of wind energy to draw water using a windmill. The water will be used for domestic and irrigation purposes. The project will have a demonstration center where the youth will learn about wind energy technology and other RETs in addition to irrigation development.

2.0 Project Description

Wind energy technology is the type of RET (Renewable Energy Technology) that will be used to draw water from a well. The water will be used for domestic and irrigation purposes. A vegetable garden of an area of 200 square metres will be established as a demonstration block. A fence will be erected around the demonstration centre to protect it against animals and human beings. The youths will be responsible for maintenance and management of the project when it is handed over to them. Youth clubs will be formed through which the youths will be trained in irrigated vegetable growing among other things.

The produce will be sold to the general public thereby raising money for the clubs and sustainability of the irrigation project. The surrounding community will also be trained in irrigated vegetable growing at a fee of MK25.00 (US\$0.25). This fee is affordable to a poor rural community. The community will also learn and discuss issues concerning generation of energy through a windmill and its use, and how to integrate water supply projects with income generating activities, such as vegetable growing.

The Project will be implemented in the central region of Malawi in Lilongwe District at Lumbadzi, Mkukula village, Traditional Authority Mkukula.

3.0 Project Objectives

3.1 Overall Objective

The overall objective of this Project is to create awareness among the youth on the use of renewable energy thereby contribute towards creating youth employment through use of wind energy as a RET in the area.

3.2 Specific Objectives

- Provide people with clean water

- Promote the use of renewable energy-through the use of windmills.
- Create employment to the youths of Lumbadzi
- Increased number of income generating activities among the youth in Lumbadzi
- Create awareness on the efficacy of windmills for water pumping
- Integration of irrigation and renewable energy technology.

4.0 Importance of the Project

Implementation of this project will ensure self employment among the youth in Lumbadzi. This will definitely contribute to the reduction of unemployment among the youth in Malawi, which will eventually result in preventing the youth from indulging in malpractices such as alcohol and drug abuse. The project will also assist in protecting the environment, which is being destroyed at an alarming rate and promotion of community-based micro-enterprises.

5.0 Project Site

5.1 Location and Beneficiaries of the Project

The project will be implemented in the central region of Malawi, Lilongwe District at Lumbadzi.

The major beneficiaries of this research project will be the rural and per-urban youth. The surrounding community will have an access to potable water. The project will also assist in promotion of RETs among the rural masses.

At least 100 youths will participate in the implementation of the project and the target group is the rural youth in Lumbadzi. The demonstration centre will be established at Mkukula village, Traditional Authority Mkukula in Lumbadzi. This location was selected because it is one of the impact areas of Malawi YES Network. Lying in the outskirts of Lilongwe District, Lumbadzi was also found to have highest number of youths that are just idling, among the network impact areas.

6.0 Time Frame

The project will be implemented over a one-year period as shown in phases below:

Phase	Period	Activity	Remark
1	May – August 2003	Energy Fellow training	

2	August – October 2003	Mobilization and sensitization of the community	
3	October –January 2004	Implementantion of the project	Installation of windmill and erecting of fence
4	October 2004	Handover of the project to the youths	Vegetables will be grown between April and July (after rainy season) and handover will be after marketing

Refer appendix 2 for detailed outline of activities with their corresponding time lapse.

8.0 Expected Outputs

- Increase in number of youths participating in RETs (Renewable Energy Technologies)
- Increase in number of people drinking clean water
- An improvement in livelihood on people in the area
- Increased income for the participating youths

8.0 Appendices

Appendix 1: Project Planning Matrix

ITEM	INDICATORS	ASSUMPTIONS
Project Goal To contribute towards the creation of youth employment in Lumbadzi Area.	10 youths find self employment in vegetable growing watered by a wind mill in the first year and about 200 youths in year 3	The project is feasible and the business viable
Project Purpose To use wind energy to pump water	Wind pump working effectively and efficiently to pump water	Wind speeds enough to drive a water turbine

<p>Result 1</p> <p>Unemployment among the youth reduced</p>	<p>10 youths find self employment in vegetable growing watered by a wind mill in the first year and about 200 youths in year 3</p>	<p>The project is feasible and the business viable</p>
<p>Result 2</p> <p>Potable water accessible to the rural masses</p>	<p>The rural masses having access to potable water</p>	<p>Rural people will be drawing water from the project (at a fee)</p>
<p>Result 3</p> <p>Promotion of other RETs eg biomass briquettes is done</p>	<p>Biomass briquettes are produced by the youth clubs and the youth are aware of other RETs</p>	<p>People are willing to learn about RETs</p>
<p>Activities- Result 1</p> <p>Undertake market study</p> <p>Train youths in marketing skills</p> <p>Train youths in RETs including wind energy technology and preparation of business plans</p> <p>Install a water pump</p> <p>Establish a vegetable garden</p> <p>Sell vegetables</p> <p>Activities- Result 2</p> <p>Organize the youths into Youth Clubs</p> <p>Train the youth on income generating activities using water pumped by a windmill</p> <p>Open a bank account</p> <p>Activities- Result 3</p> <p>With assistance from Department of Energy Affairs train youths in RETs</p> <p>Train the youth marketing skills and assist them to market their vegetables</p> <p>Train youths from other villages on wind water pumping and vegetable growing.</p>		

Appendix 2: Time Frame

No.	Item	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr
1	Activities-Result: <i>Unemployment among the youth reduced</i>				
	1. Undertake market study				
	2. Train 20 youths in RETs including wind energy technology and preparation of business plans				
	3. Install a water pump				
	4. Establish a vegetable garden				
	5. Sell vegetables				
2.	Activities-Result 2: <i>Potable water accessible to the rural masses</i>				
	1. Organize youth clubs and train them on irrigated vegetable growing using windmills.				
	2. Open a bank account				
3.	Activities-Result 3: <i>Use of RETs promoted</i>				
	1. Train youths in RETs				
	2. RET advocacy				

Appendix 3: Budget

Item	Rate	Quantity	Cost
a) Renovating the well			
➤ Clearing ground	US\$15.00/manday	30mandays	US\$450.00
➤ Cementing	US\$10/bag	7 bags	US\$ 70.00

Actual flooring	US\$100/manday	3man days	US\$ 300.00
b) Erecting a fence	US\$75/manday	4mandays	US\$300.00
c) Installation of a Windmill	SUM	ITEM	US\$2000.00
d)Vegetable growing			
➤ Training on irrigated vegetable growing	US\$100/day	4 days	US\$ 400.00
➤ Making beds			
➤ Cost of inputs (fertilizer, seed, watering cans, etc)	US\$50/day	4 days	US\$ 200.00
➤ Transplanting of seedlings	SUM	ITEM	US\$ 400.00
e)Stationery	SUM	ITEM	US\$ 95.00
➤ paper, pen, photocopying etc			
f) Supervision (fuel, etc)			
TOTAL			
10% contingency	SUM	ITEM	US\$ 200.00
	SUM	ITEM	US\$ 200.00
GRAND TOTAL			US\$ 4,615.00
			US\$ 461.50
			US\$ 5,076.50

Final Evaluation Report

EVALUATION REPORT ON THE WIND ENERGY YOUTH PROJECT UNDER THE
YES FELLOWSHIP PROGRAMME – JANE TAWINA KOPA (MALAWI)

By Joseph Kalowekamo

1.0 INTRODUCTION

1.1 National Context

1.1.1 Physical characteristics

Located in Southern Africa, Malawi is a small, landlocked agricultural country with a total area of 118,484 km², of which 20% is covered by water, mainly Lake Malawi. The country shares boundary with Tanzania to the North, Mozambique to the West, South and East, and Zambia to the West.

1.1.2 Demography

The 1998 Population and Housing Census estimated Malawi's population at 9.8 million. Of these, 4.8 million were males (49%) and 5.0 million were females (51%). The overall sex ratio (number of males per 100 females) was 9, and females head about 24% of the households in Malawi.

1.1.3 Economy

Agriculture is the mainstay of Malawi's economy. It supports 86% of the population residing in rural areas and accounts for 36% of the Gross Domestic Product (GDP), 90% of export earnings and 46% of wage employment. Over 80% of the labour force is engaged in agriculture.

1.1.4 Extent of Poverty in Malawi

Malawi is one of the poorest countries in the world and ranks 169 out of 173 countries in the *UNDP Human Development Index, 2000*. Poverty in Malawi is a pervasive problem, affecting about 65% of the population who live below the poverty line, defined as being unable to fulfill nutritional requirements and meet essential non-food needs. Rural and urban poverty are estimated at 61% and 51%, respectively.

1.1.5 The Malawi Vision 2020

The Malawi Vision 2020 provides a framework for the preparation of short and medium term plans.¹ It defines national goals, policies and strategies designed to help the Government, the private sector and society in general to improve development management. The Malawian Vision is that:

“By the Year 2020, Malawi, as a God-fearing nation, will be secure, democratically mature, environmentally sustainable, self-reliant with equal opportunities for active participation by all, having social services, vibrant cultural and religious values and a technologically driven middle-income country”.

1.1.6 Poverty reduction

Because most Malawians live in absolute poverty, the government of Malawi (GoM) has made poverty reduction its main policy agenda for national development. The Poverty Alleviation Programme was launched on 25th August 1994. A Presidential Council on Poverty Alleviation and a National Steering Committee were set up to guide the development of the framework for policy and operational strategy. This has led to the formulation of the Poverty Reduction Strategy Paper (PRSP) in 2002 under which, since January 2001, debts have been converted into development assistance through the Heavily Indebted Poor Countries (HIPC) Programme. The PSRP says:

“Every Malawian should have access to basic necessities and should be able to develop and exploit his/her potential to lead a productive, dignified and creative life through social, economic and political empowerment...”

2.0 ENERGY CRISIS IN MALAWI

Lack of modern energy hurts the poor in Malawi. Energy is a priority in their consumption bundle and yet they are victims of exclusion, pollution and price distortions. The rural poor depend on inefficient traditional fuels such as wood, crop residues and dung. These sources of energy are vastly inferior and cause indoor pollution, which causes respiratory ailments. Women bear most of the drudgery of collecting, processing and utilizing these fuels. In rare cases, electricity is used for lighting, but the poor mainly use paraffin, candles and wood fires. These provide poor illumination and cause eyestrain.

Access to and improved energy services will directly increase the ability to raise income and enhance the well-being and sense of empowerment of the poor by:

- a) Reducing drudgery, time and effort spent gathering traditional (biomass) cooking fuels;
- b) Increasing labour productivity through irrigation, crop processing and mechanization;
- c) Improving illumination through use of higher quality lights that directly enable educational attainment and income producing entrepreneurship;
- d) Reducing health risks through use of cleaner burning fuels and better cooking equipment;
- e) Facilitating improved access to information and markets through radio, television and electronic communication;

¹ His Excellency the President, Dr. Bakili Muluzi, officially launched the Malawi Vision 2020 in March 1998

- f) Empowering people by increasing access to fuels for daily living and expanded fuel choice;

3.0 RENEWABLE ENERGY ENTERPRISE

3.1 Economy in Malawi

Malawi's economy is mainly dependent on agriculture dominated by subsistence farmers who, in turn, rely on static traditional farming technologies based on human and animal power. The failure to use modern energy i.e. renewable energy severely limits productivity and the full exploitation of the land's potential. It has also affected Malawi's ability to take full advantage, for irrigation, of the large water reserves in Lake Malawi and the many perennial rivers.

3.2 Effects of high unemployment rate among the youth in Malawi

Like most developing countries, Malawi has a high rate of unemployment among the youth. This situation is partly due to lack of creativity, knowledge and skills in various disciplines. The high rate of unemployment among the youth could also be attributed to an increase in number of youth graduating from universities, colleges and schools every year and the low rate at which they are absorbed into the labour force. The indulgence of the youth in malpractices such as alcohol and drug abuse is partly also as a result of youth unemployment.

Malawi has been hit by a high rate of HIV/AIDS prevalence among the youth aged between 15 and 24 years, which is also partly attributed to high rate of unemployment.

3.2 Energy Resources in Malawi

Malawi is endowed with several renewable energy sources such as high solar irradiation (estimated at 21.1 MJ/m²/day) adequate for photovoltaic and photo-thermal applications, wind energy (wind speeds averaging 2 - 7 m/second) for water pumping and others which, if put to effect use could offer employment to the youth. The use of renewable energy could also contribute towards protecting the environment, which is being destroyed at an alarming rate.

It is against this background that it is imperative to establish Renewable Energy Enterprises as a viable alternative to address the afore-stated problems. Productively engaging the youth in renewable energy enterprise will not only address the issues of ineffective use of renewable energy and high rate of unemployment among the youth and the associated problems but also mitigate environmental issues.

Improvements in the availability and quality of energy services for communities will indirectly benefit the poor in general and the youth in particular by:

- a) Creating jobs, both farm and non-farm, thus reducing overall unemployment and opening up more diverse livelihoods;
- b) Enhancing service delivery and quality in health (lighting, equipment, refrigeration), water and sanitation (pumping, purification) and education (lighting and entertainment);
- c) Easing pressures on destructive natural resource exploitation, particularly the depletion of forests for wood fuel.

Jane Tawina Kopa, the recipient of the seed grant therefore thought it wise to use wind energy, a type of renewable energy to pump water for domestic use and irrigation purposes. She felt that more effective use of renewable energy could enhance crop diversification and production of high value crops at the same time creating jobs for the youth.

4.0 THE SEED GRANT RECIPIENT

4.1 Brief biography of the seed grant recipient

Jane Tawina Kopa was born on 7th July 1979 in Ntchisi District, which is about 200 Km to the north of the Capital City, Lilongwe. She comes from a middle class family, and she is the second born in a family of six children – three boys and three girls.

Jane did her primary education for eight years at Chinkhuti Primary School in Lilongwe from where she was to the south of Lilongwe) in 1992. Upon successful completion of four years of study at the secondary school, Jane was selected to go to University of Malawi, Bunda College of Agriculture in 1997. While at the university, Jane was actively involved in and held elected positions in a number of clubs and organizations, which included the Bunda College AIDS Club. The club assisted in spreading HIV/AIDS messages in and around Bunda College of Agriculture. In 2001, Jane graduated with a Bachelor of Science Degree in Agriculture, majoring in Crop Science.

After graduating from the university, Jane worked briefly with Eastern Produce Malawi Limited, a tea growing and production company as an Assistant Field Manager. She joined the company in July 2001 and resigned two months later in search of greener pastures, and for carrier development. In the same year, 2001 Jane joined the Department of Irrigation, which is under the Ministry of Agriculture, Irrigation and Food Security as an Irrigation Officer, stationed at the headquarters in Lilongwe. She was so dedicated to her work that the department felt it necessary to send her for a short-term training in irrigation in Zimbabwe in 2003. Barely 7 months upon returning home, she was promoted to the post of Principle Irrigation Officer and was thereafter transferred from the Irrigation headquarters in Lilongwe to Mzuzu Agricultural Development Division in Mzuzu, which is some 370 Km to the north of Lilongwe.

4.2 Involvement in YES Campaign

In 2002, Jane became so interested in issues to do with the youth that she participated actively in activities aiming at addressing problems affecting the youth such as high rate of unemployment, HIV/AIDS, drug and alcohol abuse etc. She also developed an interest in gender issues. It therefore pleased the then Minister of Gender, Youth and Community Services, Honorable Mrs. Mary Kaphwereza Banda MP to include Jane in her trip to Alexandria - Egypt to attend the launch of the Youth Employment Summit (YES) Global Campaign in 2002. The YES Malawi Country Network was established in December 2002 as a follow up of the Alexandria launch and Jane was one of the pioneers of the organization.

One bright day, Jane was browsing the YES Website and came across an advert for a fellowship in renewable energy. She thought of trying her luck and she therefore sought the assistance of a friend, Joseph Kalowekamo who works for the Department of Energy Affairs (DoE) in the Ministry of

Mines, Natural Resources and Environment to assist her in applying for the fellowship. In May 2003, Jane received an e-mail informing her that she had won the renewable energy fellowship to a tune of \$7,000.

In 2003 and while participating actively in the YES Malawi Country Network, Jane established her own organization known as the Young Women Empowerment for Economic Development (WEEDO), headquartered in Dowa District, some 30 Km to the north of Lilongwe. This is a female-led rural based organization aimed at empowering women and the youth at large for sustainable livelihoods. It focuses on youth employment, entrepreneurship, HIV/AIDS, gender mainstreaming and the environment. Currently the organization has 200 registered members.

WEEDO is one of the stakeholders of the YES Malawi Country Network. Both WEEDO and the YES Malawi Country Network are registered with the National Youth Council of Malawi (NYCOM), which is under the Ministry of Youth, Sports and Culture. Due to her activeness in youth issues through these two organizations, Jane was appointed by the then Head of State of the Republic of Malawi, Dr. Bakili Muluzi as a Board Member of NYCOM- a position she is holding up to this day.

WEEDO is currently running programmes in capacity building, renewable energy advocacy, HIV/AIDS and cultivating entrepreneurial culture among the youth. It is for these reasons that Jane thought it wise to implement her Wind Energy Youth Project at Mbvumbi Village - Lumbadzi area in Dowa District.

4.3 Demographic report of Mbvumbi Village

Mbvumbi Village, the site for the Wind Energy project is located in Lumbadzi area in Dowa District which is 30 km to the north of Lilongwe. The village has about 100 households, each with an average of 5 people. The villagers live in dire poverty. They face a lot of problems, which range from insufficient food to eat for the whole year and lack of portable water to unemployment mostly among the youth. The village has not been spared of the deadly HIV/AIDS and alcohol and drug abuse. Whether fortunate or unfortunate the village is close to the headquarters of WEEDO and is one of the impact areas of the organization. That being the case the organization carried out needs assessment of the village and it came out clearly that the villagers need water for domestic use and irrigation first before addressing the other problems. Currently the villagers use unhygienic water, which is drawn from a well which they share with domesticated animals such as cattle and goats.

The main occupation of the inhabitants of Mbvumbi Village is subsistence agriculture, the main crop being maize, which is the staple food in Malawi. They also grow groundnuts and partially tobacco. However, the villagers do not yield enough maize to eat for the whole year and this is partly because of loss of soil fertility and unaffordability of inorganic fertilizer to increase soil fertility. On average a bag of inorganic fertilizer costs \$25 yet the majority of the people in Malawi live on less than a dollar per day. Despite of all this villagers, just like most Malawians are hard workers and are striving to make ends meet. The afore-stated facts therefore prompted Jane through WEEDO to select Mbvumbi Village as a site for the implementation of the Wind Energy Youth Project.

There are other villages that are in a similar situation and having noted this, Jane with the assistance of Joseph Kalowekamo a renewable energy expert from DoE has written a proposal for similar projects which has since been submitted to Global Environmental Facility Focal Point in Malawi for consideration. If the proposal passes through then similar projects will be implemented in about 10 villages across the country and about 10,000 youth will find employment either directly or indirectly; about 20,000 people will use clean water for domestic purposes and for irrigation; and about 20,000 people will benefit from wind energy technology.

5.0 AN OVERVIEW OF THE DEPARTMENT OF ENERGY AFFAIRS (DOE)

In fulfillment of the requirements of the fellowship programme, Jane sought the support of DoE, as a local training institution. The department became a co-applicant with Mr. Joseph Kalowekamo, as a contact person for the fellowship programme.

DoE is under the Ministry of Mines, Natural Resources and Environment. It was established in 1992 and has four divisions namely:

- Policy and Planning
- Rural Electrification
- Alternative Energy
- Management and Support Services

DoE has several functions divided among the divisions. Generally, the central role of DoE in a liberalized energy economy is to develop policies and provide policy guidance, advisory services on key energy developments and investment decisions, strategic macro-economic information, research and development in alternative energy sources, investment promotion, and delivery of energy services that may not meet critical commercial criteria e.g. rural electrification. The renewable energy project fell under the Alternative Energy Division, which is responsible for increasing access to modern and renewable energy technologies (RETs). The department, which has 15 professional officers with different qualifications ranging from engineers to economists, operates centrally with its offices located in the capital, Lilongwe.

The department conducts training in RETs in collaboration with Mzuzu University. It has a center called the Testing and Training Centre for Renewable Energy Technologies (TECRET) located at the university. Starting from this year, the university is offering a BSc Programme in RETs courtesy of the department. Some of the resource persons/lecturers come from the department and these include Mr. Joseph Kalowekamo. Since 2000, about 100 technicians are trained every year at the center. The BSc programme in RETs has started with only 10 students however it is expected that the number will increase come the next academic year. Going by the afore-stated facts it can be safely said that Jane did not make a mistake by consulting DoE to train her.

6.0 TRAINING PROGRAMMES

In October 2003, DoE organized a daylong training workshop in which 20 youths from WEEDO were trained in renewable energy technologies. The training was conducted theoretically and practically. The theoretical part was delivered using power point presentations and video, and the technologies covered were wind energy and solar photovoltaic. The practical part involved hands-on-training in making biomass briquettes – a type of heating and cooking energy, and stove production. The training was conducted using the \$2000.00 that YES headquarters sent and was meant for the training component.

In June 2004, Jane in collaboration with the Malawi Entrepreneurs Development Institute (MEDI) and DoE organized yet another training. The weeklong training workshop, which was held at MEDI in Dowa District, some 60 km to the north of Lilongwe centered on wind energy and entrepreneurship. The training workshop aimed at empowering twenty (20) youths (again from WEEDO) for sustainable livelihoods through wind energy. The workshop covered operation and application of wind as a source of energy for water pumping; irrigation technology; irrigation as an income generating activity (IGA) to curb unemployment among the youth; and entrepreneurial skills. To enhance understanding of the training materials, power point presentations were made. Handouts on the training materials were given to the trainees for future reference.

At the end of the training, the youth were expected to appreciate wind as a source of energy for pumping water, develop skills in establishing irrigation schemes and to develop an entrepreneurial culture. An evaluation of the training has not been done yet as it awaits implementation of the project.

7.0 THE WIND ENERGY YOUTH PROJECT

6.1 Plan of the Wind Energy Youth Project

Jane planned to implement the Wind Energy Youth Project in order to, among other reasons provide clean water to the community and create employment opportunities for the youth. The project was planned to use a windmill to draw water for domestic use and irrigation purposes. The project would act as a demonstration center where the youth will learn about wind energy technology in addition to irrigation development.

The project will establish a vegetable garden with an area of about 0.1 hectares. The youths will be responsible for management and maintenance of the project once it is handed over to them. Management of the project will use the already existing structures of WEEDO i.e. WEEDO Youth Clubs. The produce from the vegetable garden will be sold to the general public thereby raising money for the clubs and for sustainability of the project. The surrounding community will be trained in irrigated vegetable growing and use of windmills at a fee of MK 25.00 (\$0.25), which is affordable to a poor community.

At least 100 youths will participate in the implementation of the project and the target group is the youths of Mbvumbi Village – Lumbadzi area in Dowa District. This area was selected because it is one of the impact areas of WEEDO as well as YES Malawi Country Network. Lying in the outskirts of Lilongwe City, about 30 km to the north of the city, the area was found to have the highest number of youths that is idle among the network impact areas.

7.2 Feasibility of the project

Jane thought of borrowing techniques that are being used by a similar project called Tiyanjane Irrigation Scheme situated in Nkhota kota District, about 200km to the North East of Lilongwe. Tiyanjane Irrigation Scheme has a unique type of farm organization which is working out however it requires high level of commitment among the farmers. The scheme uses a motorized pump and hence encounter fuel problems. Funds permitting, Jane is planning of taking the youths to Tiyanjane to appreciate the management of the scheme.

If Jane adopts the Tiyanjane concept then chances are very high that the project will be implemented successfully because she will be using techniques that have proven record. Her project will have an advantage over the Tiyanjane Scheme, which is spending money on fuel while she will use a free and renewable type of energy to pump water for irrigation.

Even though the initial cost of the windmill is a bit high i.e. about \$2100 this will be off set considering the number of years that the windmill will be used which most of times, if installed up to standard and is well taken care of, can stay over 15 years with minimal maintenance.

There is a ready market for vegetables at Lumbadzi. There are about 1000 middle class households near the proposed site for the project. The households currently rely on vegetables that come from very far areas and most of them are not flesh. A market study was done to ascertain this.

The community, which is going to benefit from project by having clean water, has already shown interest in and commitment towards the project by clearing the site for the windmill and digging the well where the wind pump will be put in. The community has also sourced bricks for the windmill stand, which have since been brought to the site. This is instilling a sense of ownership of the project, which is a welcome development for the sustainability of the project.

It is not possible at the mean time to determine the rate of return and assure sustainability of the project because the windmill has not been installed yet however if the fore going statements are anything to go by then the project looks feasible.

7.3 Status of the project

Despite all the effort made and promising plans laid down, the contractor who is supposed to install the windmill has frustrated the youth and the community in general and Jane herself in particular. The YES headquarters in Boston, United States of America transferred \$2100 into the account of the contractor, Marine Engineering Services of Post Office Box 70, Malindi, in Malawi. The money transfer was done in or around April 2004 and was meant for the installation of the windmill but this (the installation) has not been done up to this day – a thing that has led to the community to be at Jane's neck now and again. Several follow up phone calls were made and these yielded nothing apart from promises and lies. In mid June, Jane wrote a letter to Marine Engineering Services on the same, a copy of which was sent to DoE but still nothing was done. Just recently Jane phoned the contractor who promised to install the windmill in a few days time. The contractor claims that the windmill components have been gathered and all that remains is to transport the components to

the site. The components are in Blantyre City, which is about 350 km from the proposed site of the windmill. The contractor is said to have problems to transport the components to the site.

7.4 Way forward

NYCOM has pledged to assist the contractor with transport to ferry the components to the site since the project is for one of its active Board Members. This consultant confirmed this arrangement with both the contractor and NYCOM. If all goes on well it is anticipated that the windmill will be installed any day before the end of the year.

It should be noted that the rainy season in Malawi starts from around November to around April hence there is no need for irrigation during this period. This being the case the effect of the project i.e. irrigation will be felt from around June to around October 2005. Otherwise Jane properly timed the project by lying down plans to implement the project by June 2004 and this could have been achieved because the YES headquarters disbursed the funds for the windmill in good time (April, 2004).

Marine Engineering Services is indeed an installer of windmills. The company has installed several windmills mainly in the southern part of Malawi which are being used for pumping water for domestic use and irrigation purposes. The company uses local materials which make their installation to be relatively cheap. DoE has reputation for the company and therefore did not expect it to behave in unprofessional way mainly considering the fact that the owner of the company was once a President of the Renewable Energy Industries Association of Malawi (REIAMA) – an organization which is a brainchild of DoE and was established to oversee the affairs of companies involved in RETs.

6.0 CONCLUSION AND RECOMMENDATION

Jane as well as the youths have benefited a lot from the trainings in RETs as well as in entrepreneurship. It is unfortunate that what has been learnt has not been put into practice. However, she proudly said that she is eager to implement the project and that she is optimistic that it will be successful.

She has already seen the need to implement the project on a large scale and this explains why she wrote a proposal which was submitted to GEF to implement the project on a large scale. However, there is need to first of all experiment on this small-scale project whose lessons will be used to successfully implement the large-scale project.

It is recommended that DoE in collaboration with NYCOM should assist Jane in order to make sure that the windmill, even if it may not be used immediately, is installed by end December 2004.