

ADB FINESSE Africa newsletter



Financing Energy Services for Small-Scale Energy Users-ADB FINESSE AFRICA NEWSLETTER 1.4, JULY 2004

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From the Editor's desk

Indoor Air Pollution

The article on indoor air pollution outlines the health risks associated to exposure to levels of biomass smoke that are many times higher than international ambient air quality standards in sub-Saharan Africa. Women and children are unfortunately more at risk than men since they are in most cases responsible for food preparation at household level. Associated to this hazards are other household energy related problems women and children face that include burns, injury and time spent in the collection of firewood that in the end, place restrictions on their chances for equal educational and economic activities. A wide range of interventions can minimise the risk of exposure to biomass smoke. Experiences have however shown that no one intervention can fully address this problem and hence there is need for an integrated approach.

Successful implementation of the mentioned interventions requires supportive policies at both national and local levels. National policies need to facilitate the supply and distribution of cleaner fuels and new and better technologies, while local policies should incorporate indoor air pollution as a community development issue. Other critical success factors include effective participation by local people (especially women); collaboration among all relevant sectors dealing with environment, health, energy, housing, agriculture and planning etc; and emphasis on cost-effectiveness to ensure sustainability.

It is estimated that this public health hazard is causing an average of 1100 excess deaths per day. Such a situation is just unacceptable from both a developmental and humanitarian perspective. For this reason, indoor air pollution requires urgent and concerted global action to avoid unnecessary loss of life and the associated health burden to countries that are faced with other developmental challenges.

Forthcoming FINESSE activities

The FINESSE program has a number of activities that are planned for the coming half year namely;

- ~ **ADB Staff training seminar** - this is a one-day renewable energy sensitisation seminar for Bank staff.
- ~ **ADB formal training** - a formal training program will then be developed on the basis of the results of the ongoing needs assessment and feedback from the seminar.
- ~ **Sub-regional scanning assessment** - the FINESSE program will conduct sub-regional scanning assessments of issues of relevance to the FINESSE program.
- ~ **Regional consultation workshop** - the workshop will launch the FINESSE program to our stakeholders as well as present the findings of the scanning studies.
- ~ **Wind energy stakeholders workshop** - the workshop will discuss modalities of financing of potential wind energy projects across Africa.
- ~ **Capacity building in RMCs** - extensive training programs will be developed on the basis of the findings of the sub-regional assessments and the regional consultation workshop.

Details on other activities are as outlined in the article on page 3.

We take this chance to call for articles for publication in our newsletter. From next month onwards, each issue of our newsletter will concentrate on specific themes and will thus be much bigger. For the month of August, the theme of our newsletter will be 'wind energy' and we welcome relevant articles, news items and reports for publication. We count on your support to make this initiative successful.

1100 deaths per day, the effect of indoor air pollution in Sub-Saharan Africa

Energy situation in Sub-Saharan Africa

In spite of rapid urbanisation experienced recently, the majority of the population in the Sub-Saharan Africa region lives in rural areas. In fact, it is estimated that around 68% of the population in the region still lives in rural areas. The majority of the rural population live well below the poverty datum line. Examples of rural populations under national poverty lines are; Djibouti, 86.5%; Zambia, 83.1%; Madagascar, 76.7%; Gambia, 61.0%; and Nigeria, 45.1%. Over 80% of the population in the region does not have access to modern energy services and access to electricity is extremely low. Examples of populations served by electricity in Africa are; Sierra Leone, 4%; Malawi, 5%; Kenya, 25%; Ghana, 30%; Gabon, 40%. Further more, rural electrification levels are even much lower, some examples are; Ethiopia, 0.2%; Kenya, 2%; Mozambique, 0.7%; and Namibia, 9%.

The biomass factor

Solid biomass energy in its various forms (i.e. firewood, charcoal, animal waste, crop waste) is the dominant energy form in the region for most of the rural areas and the urban poor households. Examples of the levels of biomass energy use as a percentage of the total energy include: Tanzania, 96%; Uganda, 95%; Madagascar, 90%; Sudan, 85%; Ivory Coast, 69% and Namibia, 60%. The heavy dependence on biomass is expected to decline modestly and projections are that by 2010, dependence on biomass will still be on average around 80%. Between 90 and 100% of energy used in rural households is used for cooking and space heating and 85-100% of this demand is met by firewood.

Biomass smoke and indoor air pollution

The burning of firewood to provide energy for cooking and space heating is, in most cases, done very inefficiently and in poorly ventilated kitchens. This results in the production of both particulate emissions and other gases that have harmful impact on human health. Some of the known emissions include; particulate emissions below 10 micron in diameter; carbon monoxide; ozone; sulphur dioxide; ammonia; nitrogen oxides; volatile organic compounds; chlorinated fluorocarbons (CFCs), lead and other heavy metals. Studies carried out to date have shown very strong linkages between exposure to biomass smoke with a number of respiratory diseases. Some of the diseases include; acute lower respiratory infections; chronic



Cooking on an open fire

obstructive pulmonary disease, lung cancer and other health outcomes that include; low birth weight and prenatal mortality, asthma, tuberculosis; otitis media infection, nasopharyngeal cancer, laryngeal cancer, eye cataracts etc.

In Sub-Saharan Africa, it is estimated that 300,000 to 500,000 excess deaths are attributable to effects of indoor air pollution. This translates to about 1100 excess deaths per day. A significant percentage of these deaths are women and infants. Women and children are generally more exposed to indoor

air pollution than men as they are responsible for cooking and infants who are in most cases strapped to the back of their mothers are passive participants.

Reducing exposure to indoor Air pollution

Interventions aimed at reducing exposure to indoor air pollution should be made in the context of the fundamental predicaments that users currently face. The fundamentals include the fact that biomass is currently available for free and the fact that most communities in this situation are very poor. Given such a background, it is therefore prudent that we recognise that biomass will, in both short and medium terms, remain the dominant energy form for poor households. The healthiest solution is to cook with a cleaner fuel. Given the associated cost implications of fuel substitution, this will not happen soon and easily. However, poor households cannot afford to wait until economic prosperity happens, hopefully, for them to reduce the risks associated with exposure to biomass smoke.

Thus, the problem of indoor air pollution requires low-cost and sustainable interventions that either remove the smoke from the kitchen or stops smoke getting into the home. Effective short-term actions that can ensure long-term reduction to exposure would be ideal. Three types of intervention are possible namely, technical, behavioural, and policy levels interventions.

Technical Interventions

-Smoke removal – use of flues, hoods, and chimneys. Stoves with better combustions, more efficient heat transfer and longer life-span.

-Housing designs – changes to kitchen design to increase ventilation and control the distribution of the smoke.

-Fuels – cleaning existing fuels e.g. biogas and promoting fuel-switching to alternatives like kerosene and LPG.

-Introducing new technologies like solar cookers.

Behavioural interventions

-Promoting awareness of long term health effects for users. Deliberate awareness creation initiatives may lead to people finding ways of minimising exposure through better kitchen management and infant protection.

Policy Level Interventions

-Policy that support innovative financing mechanisms to enable fuel switching to better and less polluting alternatives.

Successful interventions require a sustained and targeted information dissemination drive that will create awareness and help in overcoming social and behavioural barriers as well as market dissemination of new technologies so as to ensure sustainable movement up the energy ladder. Other supportive factors include ensuring standards in technology design, incorporating the needs of technology recipients in technology designs, support development of local businesses and investment in alternative energies, improved cook stoves and ventilation systems. Indoor air pollution requires that all stakeholders address the problem with a sense of urgency.



Solar cookers are an option

Forthcoming FINESSE activities

The purpose of this article is to share forthcoming activities of the ADB FINESSE Africa program with our stakeholders. Figure 1, below shows a number of activities planned for the program for the coming half year.

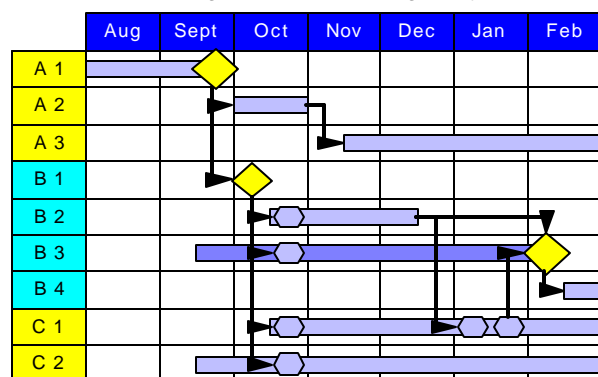


Figure 1 : Outline of FINESSE activities till 02/2005

- A1 – Internal Bank training seminar
- A2 – Assessment on training needs within the Bank
- A3 – Formal training sessions for Bank staff
- B1 – Expert meeting
- B2 – Sub-regional assessments
- B3 – Process leading to the consultative workshop
- B4 – Development of regional training strategy
- C1 – Renewable Energy & Energy Efficiency Strategy
- C2 – GEF consultancy

The planned activities are linked to the FINESSE program aims of increasing the capacity in the Bank's Regional Member Countries to identify and initiate renewable energy and energy efficiency projects and increasing the capacity within the African Development Bank to handle these types of projects. Figure 1 above visualises the inter-linkages between the different activities.

ADB staff training seminar

One of the aims of the FINESSE program is to increase the capacity inside the African Development Bank to handle projects in the field of renewable energy and energy efficiency. As a first step in that direction, the FINESSE program is organising a staff awareness-raising seminar tentatively scheduled to take place on the September 23rd.

Overall objectives of the staff seminar are to sensitise Bank staff on the;

- energy situation in Africa and the potential of renewable energy and energy efficiency in addressing the energy problems of Africa.
- linkages of energy to critical developmental issues like environment, poverty, health, access to water etc.
- specific renewable energy and energy efficiency technologies and how to assess the potential of these technologies in different situations. The target technologies include small hydro plants, biomass, solar photovoltaics, wind, geothermal, solar thermal and energy efficiency measures; and
- financial evaluation of alternative energy projects.

The seminar will be targeted at task managers from all op-

erations complexes in the Bank and all staff that are engaged in operations from time to time. While the target group is mainly those linked to operations, the seminar will benefit greatly from the participation of other Bank staff from all levels.

ADB capacity building needs and formal training

The staff awareness-raising seminar is a starting point of a detailed inventory of the formal training needs for Bank staff, which will start with an evaluation of the staff seminar and a stock taking of the type of additional information needed by them. Based on the information gathered a formal training plan will be developed.

Regional consultative meeting

In order to launch the ADB FINESSE program within Africa, consult the beneficiaries on how best the program can benefit them given their varied national situations and exchange ideas and views on critical issues affecting the renewable energy and energy efficiency sectors in Africa, the FINESSE team will be organising a regional consultation workshop early February 2005. At this workshop, we would like to present sub-regional scanning assessments of the capacity-building needs in relation to renewable energy and energy efficiency.

Regional consultative meeting preparation

As part of the preparations of the workshop, the ADB will invite a number of energy experts to Tunis in October to discuss the procedures for the sub-regional assessment, finalisations of the program of the regional consultative workshop and to get their feedback on the FINESSE program implementation. These same experts will be asked to prepare assessments of the capacity building needs in the different sub-regions of the continent, to be presented at the workshop.

Capacity building in the African countries

Based on the outcome of the sub-regional assessments and the consultative workshop, the FINESSE team will develop a strategy to address the capacity building needs of the continent.

Renewable Energy Strategy

The ADB has a Energy Sector Policy, but lacks an appropriate Renewable Energy & Energy Efficiency Strategy. Within the framework of the FINESSE program, this strategy will be developed. A first presentation of the principles and guidance for this Strategy will be presented at the regional consultative workshop in February. Later during the process of development, interaction with all stakeholders involved is envisaged.

GEF projects linked to ADB projects

The Global Environment Facility is a co-funder of projects in developing countries in the areas of biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants. Within the current Bank's pipeline of operation, several projects potentially can benefit from attracting additional GEF funding to enhance their performance on environment related aspects. The FINESSE team is in the process of contracting a long term consultant to work with the team on the preparation of GEF project proposal.

Energy News from Africa

Uganda: Govt Secures Sh27b for Rural Energy

The Bank of Uganda (BOU) has set aside sh27b for four proposed rural energy projects expected to generate 15 Megawatts. The projects include Nyagak in Nebbi district, Kakira in Jinja, Kisiizi Micro-hydropower, and Rukungiri /Bushenyi projects in western Uganda. An official in BOU's development finance department, Specioza Ndagire, said the money would come from the Energy for Rural Transformation Refinance Facility. She was speaking at a workshop at Hotel Victory in Masindi recently. The managing director of West Nile Rural Electrification Company, Kevien Kariui, recently accused BOU of delaying release of the government subsidy funds for Nyagak Hydropower project.

<http://allafrica.com/stories/200407120940.html>

Rwanda: Le rationnement de l'électricité est la consommation courante

La plupart des consommateurs de l'électricité connaissent chaque jour de longues heures de coupure du courant au Rwanda depuis bientôt trois mois à cause d'un rationnement. La quantité d'énergie disponible est rationnée suite à une brusque baisse de rendement des deux principales centrales hydroélectriques qui fournissent la moitié de l'électricité consommée dans le pays. "A part les installations essentielles comme les hôpitaux, les aéroports et les services de sécurité, qui continuent à être servis 24 heures/24, tous nos autres abonnés doivent supporter ces délestages journaliers. C'est la seule façon de répartir équitablement l'énergie actuellement disponible, en attendant que la situation s'améliore", a déclaré à IPS, Walter Klotz, directeur de la compagnie semi-publique de distribution d'eau et de l'électricité, Electrogaz. Ce rationnement fait principalement le malheur des commerçants tenanciers des boucheries, charcuteries, poissonneries, salons de coiffure et autres débits de boisson. Ils avouent enregistrer, depuis le début du délestage, des pertes allant de 10 à 25 pour cent de leur chiffre d'affaires. "Nous sommes obligés de recourir chaque jour aux groupes électrogènes avec toutes les contraintes que l'on peut imaginer: les coûts de mazout et d'entretien, sans oublier que les moteurs ne peuvent souvent pas rester allumés pendant huit heures d'affilée sans être endommagés", se plaint Christine Kanakuze, patronne d'un salon de coiffure à Kigali, la capitale rwandaise.

<http://fr.allafrica.com/stories/200407120140.html>

Pas d'inquiétude pour le fonctionnement du barrage d'Inga en RDC

Les barrages hydroélectriques d'Inga dans la province du Bas-Congo continuent à bien tourner, a rassuré vendredi à la PANA une source proche du ministère congolais de l'Energie. Selon certaines rumeurs, les barrages d'Inga sont sur le point de s'arrêter à cause de l'ensablement de son canal. Il existe un problème d'ensablement au niveau du canal de barrage dû au non-fonctionnement de la drague, a fait remarquer la source avant de préciser que la Société nationale d'électricité (SNEL) a fait appel à des équipes de techniciens qui travaillent d'arrache-pied en vue d'assainir le canal.

En effet, l'ensablement du canal a fait que les turbines du barrage ne recevaient plus la quantité d'eau requise pour leur fonctionnement. Sans compter l'étiage consécutif à la saison sèche observée dans la partie Ouest du pays.

<http://www.panapress.com>

UNDP helps set up micro-power plants in Congo

The Congolese government and the UN Development Programme (UNDP) have signed a financial agreement to the tune of 6 million dollars to fund micro-power plants, according to a release by the ministry of Mines, Water and Power. Mines, Water and Power minister Philippe Mvouo and UNDP resident representative Aurelien Agbenonci signed the agreement. "UNDP is capable of mobilising more funds to develop the energy sector in Congo, provided the country defines a strategy and action plan adapted to its needs and hydro-power potential," the release affirmed. It said the UNDP had linked up with the Global Environmental Facility (GEF), the African Development Bank (ADB) and the Energy and Environmental Institute for French-speaking Countries (IEPF) to launch a regional energy initiative seeking a systematic approach to rural electrification. http://www.hoovers.com/free/news/detail.xhtml?ArticleID=NR20040720670.2_48640003bd12ce3b.

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Web Resources

ADB FINESSE Africa newsletters : http://www.afdb.org/about_afdb/finesse_newsletter.htm

Updated RETScreen International - Clean Energy Decision Support Centre : <http://www.retscreen.net>

Renewable Energy and Energy Efficiency Partnership (REEEP) : <http://www.reeep.org>

Partnership for Clean Indoor Air : <http://www.pciaonline.org/index.cfm>

World Health Organisation: Indoor Air Pollution: <http://www.who.int/indoorair/en>

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