Gender and Energy in the South:
A Perspective from Southern Africa

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Background Paper for the Expert Workshop
"Gender Perspectives for Earth Summit 2002:
Energy, Transport, Information for Decision-Making"
Berlin, Germany, 10 - 12 January 2001
Jointly hosted by the Federal Ministry for the Environment,
Nature Protection and Nuclear Safety
and
the Heinrich Boell Foundation

Paper commissioned by UNED Forum as input for the workshop

UNED Forum, 3 Whitehall Court, London SW1A 2EL, UK
www.unedforum.org and www.earthsummit2002.org
Workshop website www.earthsummit2002.org/workshop

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1. Aim of the paper

The aim of the paper is to provide an overview of existing research studies and their approaches concerning the linkages between gender and energy, including, where possible, practical experiences with energy projects and their monitoring. This paper covers the situation and the perspective from developing countries.

1.1 The specific objectives of the paper

a. Give a fully referenced overview on gender differences and commonalties in energy consumption behavior; review evidence of differences and commonalties regarding information levels, criteria for decision-making, and behavior of men and women.

b. Provide an overview of research gaps with a view to developing knowledge, and providing policy makers with information on priority areas

c. Review reasons for gender differences: review existing theoretical approaches to, and research on existing gender differences and commonalties, and their potential practical consequences; elaborate on the social and economic aspects of gender differences, review literature on gender differences and commonalties with regard to environmental values and environmentally sound behavior

d. Make conclusions/recommendations with regard to enabling and promoting gender-differentiated sustainable consumption behavior; i.e. gender sensitive development of environmentally sound technologies, gender-specific "marketing" approaches

e. Give recommendations/conclusions with regard to developing gender-differentiated policy measures and possible stakeholder partnerships.

1.2 Scope and context of paper

While the paper refers to examples and citations of cases from developing countries in general, the experiences dealt with in the paper are mainly from southern Africa, and South Africa in particular.

Many if the recommendations and gaps cited in this paper come out of gender and energy initiatives that took place in South Africa, and Nairobi in 1999. The first of these was a national consultative workshop for South Africa, funded by the UNDP (1998). This was followed by a regional workshop for southern Africa (1998). An Africa workshop was held in Nairobi in March 2000. These events provided a platform for the consolidation of gender and energy concerns in Africa. This paper has been written at a time when exciting initiatives in gender and energy are taking place in Africa. For example, the March 2000 workshop has resulted in the formation of many national and regional gender and energy networks in the continent. Another very important landmark in the energy and gender sphere is the United States-Africa Energy Ministers' Meeting on Women in Energy that took place in Durban, South Africa, from 11-12 December 2000. This paper has drawn significantly from all these activities.

Acknowledgements

I would like to thank Minu Hemmati, Elizabeth Cecelski and Sabina Anokye Mensah for their very valuable comments.

2. Abstract

From a production point of view, the participation of women in the energy sector has been largely restricted to forestry and biomass management in rural areas. In the urban setting, poor women have remained victims of the environmental impacts of coal based electricity production that services industry and middle to higher income groups. In many rural areas where large hydro projects and gas pipelines have been or are being developed, indigenous populations have lost their land, and have suffered relocation to make way for energy projects from which they do not benefit. Few women are

involved in the formulation of energy policy, and big energy projects have remained the preserve of men. Both rural and urban women dwellers have very little say and choice over the domestic fuels that they use. In rural areas, such say and choice is determined by woodfuel availability, and to some extent availability of cash to purchase fuels such as paraffin. In urban areas, the most used fuel by low-income earners is paraffin due to high costs of electricity and related housing problems.

High-income earners in both rural and urban areas are the ones that have many energy options available. The fact that they do not opt for environmentally friendly energy sources is not a matter of gender, but rather of class and affordability.

Policy interventions have largely been focusing on access to safe, reliable and affordable energy sources. While many governments now recognise the importance of including environmental concerns in their energy policies, a lot still needs to be done at the implementation level. Environmental concerns in energy have historically taken a back sit due to the pressing need to alleviate poverty in both rural areas and urban areas. Current trends in energy provision in many developing countries show that unless funded by external mechanisms, environmentally-friendly energy technologies such as renewables are out of reach of the people that currently need basic access to energy.

From a developing country perspective, and based on current trends and lack of successful gender energy projects, it is clear that energy projects need to be designed with the aim of facilitating integrated and sustainable development in rural areas, and employment creation, particularly in urban areas. If designed entirely for purposes of meeting electrification targets, such projects cannot, and will not contribute towards poverty alleviation. There are currently many funding opportunities available for gender/women environmental-energy projects in developing countries. However, such projects will only succeed if they are linked to raising the incomes of the targeted groups, both in rural and urban areas. Improving access to energy for lighting and cooking alone might alleviate the drudgery of women's domestic chores, but will not alleviate poverty on a sustained basis. While it is accepted that energy is a basic need like water and health, it is now time to start looking at the holistic well being of poor women, of which energy is a critical component.

What follows is an overview of existing research studies that have been undertaken in the field of gender and energy in developing countries, as well as recommendations for further research and activities to mainstream gender and energy concerns.

3. Reasons for gender differences

Gender differences are based on the division of tasks, rights, and responsibilities along sexual lines. In some societies certain tasks, rights and responsibilities are allocated to men, and the fact that other societies may allocate the same tasks to women is evidence that gender differences are more of a cultural rather than a biological factor. This point is strengthened by the fact that in female-headed households, women take on the traditional male roles. Male roles are no longer as fixed as they used to be historically. The reproductive and productive, and socio-economic roles played by women must therefore be analysed as well as the roles played by men both economically and socially (Oxfam. 1994). This is what gender analysis is all about:

> *… To understand the distinct culturally and socially defined roles and tasks that women and men assume within the family and household and in the community* (Cecelski, 2000, VI).

Women have dual productive and reproductive roles in society. In their reproductive role, women are at the pinnacle of family planning programmes, health and nutrition, both for themselves, and for their families. In their productive roles, women are widely involved in natural resource management, small business development, and various activities aimed at household survival (Paolisso and Gammage, 1996).

Women do not exist in isolation, and their lives are determined by their relationships with men. It has therefore since been recognised that focusing on women's needs is inadequate. There is a need to take cognisance of the differential gaps between women and men in all aspects of their existence. "While biological differences between men and women do not change, the social role s they play in

different societies and cultures at different periods of history can change (Oxfam, 1994). The term "gender" is used to describe this differentiation, therefore gender relations affect the ways in which men and women participate in the economic, social, and political process that shape their lives. While the existence of gender relations is universal, their description varies by culture (White, 1994).

A summary of the gender-based differences between men and women is presented in table 1 below.

Table 1: Gender role differences

Women	**Men**
• Reproductive • Responsible for domestic work • Care for the children • Cooking and providing food to household and other community services • Play major role in productive activity of family in farming, paid domestic labour and industries • High but unrecognised economic participation • Low social and political influence • Tasks arduous and time-consuming • No involvement in development planning • Mainly agricultural work in rural areas, or informal work in urban areas • Community management	• Productive roles more formal • Productive roles result in cash income • Have public profile and political representation • High visibility • Do not have a clearly defined reproductive role
As a result of the above roles: Women perform two thirds of the world's work Women earn one tenth of the world's income Women are two thirds of the world's illiterates Women own less than one hundredth of the world's property Women face a higher ratio of unemployment, 5:8 when compared to men. More than half of poor people in the world is found in rural areas and more than half the rural poor are women.	

Compiled from various reference sources[1]

3.1 Why gender and energy?

The main basis of differentiating men and women as far as energy is concerned is the different societal roles that the two sexes play. While the biological differences in males and females are undoubtedly obvious and universally acknowledged, the various roles that women play in society still have to be fully acknowledged, and taken into account in the decision-making processes.

Gender analysis in energy has gained prominence because of the ever-increasing attention being paid to energy issues. Energy is also being recognised as a critical component of the environment-development nexus. In addition, a significant number of countries now view women as active participants in economic development, justifying the need to listen to their needs and interests. Women have also started occupying influential positions in the energy field, making it difficult for development planners to ignore women's energy needs. International organisations are also continuously and ef-

[1] This is a summary from various references that are listed in the Reference section of the paper

fectively giving higher visibility to women issues in the energy sector, as is evidenced by the many courses now being run on gender training for the energy sector. Finally, there is an upsurge of interest both nationally and internationally on gender and energy (Cecelski, 2000).

Energy is critical in the daily lives of women, both in the rural areas, and in the urban areas of developing countries. The ever-increasing presence of women in the informal and the small and medium enterprises sector is evidence that women are becoming important role players in energy and energy technology. Yet:

> *Despite this close link between women and energy, women's preferences and interests have not been accommodated in energy policy and planning in developing countries* (Women and Energy Group (WEG), 1995, 3).

Women and men participate in energy projects on unequal terms, with women benefiting less, but bearing more of the disadvantages: such as in the construction of dams when available land is covered with water, women have the added burden of locating fuel wood sources in distant areas. They also bear the environmental and health impacts of these projects (White, 1994). Much of the existing research has managed to highlight the plight of women and children, who are the majority of the poor in rural areas. For example, the lack of energy services, which is common in developing countries results in particular difficulties for women. The lack of adequate energy services has been caused by energy planning processes, policies and projects that ignore the gender specific needs of women. This problem will persist unless these national energy policies are expanded or improved (Karlsson, 1999).

The fact that rural energy poverty has a gender bias is also well documented (Cecelski, 2000). The argument that poverty influences and determines an energy choice has also been well supported by many authors on this subject. Poor people have fewer energy choices than their rich counterparts. Cooking and heating are also known to be the main uses of energy in rural areas (James, 1995).

4. Gender differences and commonalties in energy consumption behaviour

It is important to mention from the outset that "women" or men are not a homogeneous group. Their class, gender, religion and geographical location, as well as availability of energy services influence men and women's energy choices. Women's interests are therefore not based on biological similarities. It is also important to state that the household is not a homogeneous unit (Elson, 1995). The household as a unit does not explain the social support networks that keeps the household functioning, as well as the gender struggles that give construct to the access to, and use of resources (Hooper-Box *et al*, 1998).

4.1 Characterisation of rural energy consumption patterns

Energy policy formulation and implementation in many developing countries has focused on addressing the needs of urban areas to the exclusion of rural areas, where the majority of women live. The significant amounts of time that women spend on fuel collecting and cooking is not considered to be important issues, therefore there has not been an incentive to invest in time and labour saving devices. The nutritional impacts of frequently eating undercooked food, reheated, and cold food have not received attention either. The health impacts on women of walking long distances over treacherous terrain, and carrying heavy loads of firewood have not been investigated, and the linkages between them have not been well documented (Clancy, 1998).

Women are playing a critical role in the management of energy resources, particularly biomass. The need to survive requires them to learn energy resource management at an early stage. A rural case study on energy consumption patterns in the Pura village in Karnataka showed that: Fulewood was the major energy source, providing 89%, Human energy, 7%, Kerosene, 2%, bullock energy, 1%, and electricity, 1%. The study also showed that the greatest need for energy was for domestic activities 91%, followed by industry 4%, agriculture 3%, lighting2%. Human energy was distributed as follows:

grazing livestock, 37%, cooking, 19%, gathering fuelwood 14%, fetching water, 10%, agriculture12 %, and industry 8%. The study proved that women and children contribute the significant amount of human energy. Women contributed 42% of the energy used in gathering fuelwood, 80% of that used in fetching water, 15% of that for grazing livestock, and 44% of that used in agricultural work. Further analysis of the above results showed that:

> *Within agriculture, men carry out operations of land preparation; women carry out transplanting, weeding and harvesting, and …all operations that require bending or sitting postures and that are back-breaking and strenuous* (Batliwala and Reddy, 1996, 1).

The World Energy Council *et al* (2000) recognise the difficulties that women face in relation to energy (Table 2), and make some recommendations on how to alleviate these problems. The World Energy Council *et al* also rightly point out that poverty is the over-riding priority for developing countries

Table 2: Energy-related options to address social issues

Social Challenge	Energy linkages and interventions
Alleviating poverty in developing countries	• Improve health and increase productivity by providing universal access to adequate energy services, particularly for cooking, lighting and transport-through affordable, high quality, safe and environmentally friendly energy carriers and end use devices. • Make commercial energy available to increase income-generating opportunities
Increasing opportunities for women	• Encourage the use of improved stoves and liquid or gaseous fuels to reduce indoor air pollution and improve women's health • Support the use of affordable commercial energy to minimise arduous and time-consuming physical labour at home and at work. • Use women's managerial and entrepreneurial skills to develop, run, and profit from decentralised energy systems
Speeding the demographic transition to low mortality and low fertility	• Influence attitudes about family size and opportunities for women through communications made accessible through modern energy carriers

Adapted from the World Energy Assessment, 2000, 9

Gender and Poverty Nexus

Women in rural areas often do not have rights to land. Their access to credit facilities is very limited. Even though in some cases they may receive land, they do not have title deeds. This lack of access to resources hampers women's participation in development, where entry largely hinges on initial capital investments.

Men and women have different practical and strategic gender needs (Macdonald, 1994). This is due to the differences in the roles that man and women play in society. The practical gender needs relate to men and women's existing roles in society, and how they fulfil them (White, 1993). The strategic gender needs relate to changing those roles, for example legal rights, access to education, equal wages (Oxfam, 1994).

Other important aspects of rural energy consumption patterns are summarised in Table 3 below.

Table 3: Summary of negative effects of current energy consumption patterns in rural areas

- Rural electrification programmes take up large investment resources, and such programmes only reach a few households, and do not cater for the main rural household energy use, which is cooking.
- Large hydropower development can destroy forest areas and displace local populations in order to provide electricity for distant cities
- Forest plantations to supply industry can destroy native bush areas and limit their use by local people
- Subsidies to paraffin and other fossil fuels ultimately benefit the higher income groups and urban consumers. This can result in shortages and black markets in rural areas.
- Health and safety, this calls for the improvement of safety for children in particular and improved stoves and fuels for cooking.
- Excessive exposure to indoor air pollution affects many women, leading to respiratory infections in children and chronic lung diseases in non-smoking women
- Women are particularly vulnerable due to workload, pregnancy, and lactation. Fuel scarcity also affects dietary patterns in many areas, but this is not yet documented, which in turn has negative impacts on household nutrition.
- Cut back on fuel use in cooking
- Where fuel must be collected in areas of contested access or civil disturbances, rape and brutalisation of women has been reported (in Somalia)
- Bridal suicides due to failure to meet family fuel needs have been reported in India
- Spend scarce cash on fuel instead of food
- Cook fewer meals
- More use of snacks or “street food”
- Biomass gets commercialised

4.2 Characterisation of urban energy consumption patterns

It is very clear that there is need to differentiate between rural areas and urban areas, where the most common domestic energy source (biomass) is not as commercialised as in urban areas, and even then, not to treat urban women’s plight the same way as rural women.

Research indicates that decision making around fuels can be jointly made by the woman and the man of the household, by the man alone, by the woman alone, and occasionally by adult children of the households (Hooper-Box *et al*, 1998). In the cases where women earn an income, they can make the fuel use decision by themselves.

Research carried out in South Africa (Hooper-Box *et al*, 1998) demonstrated that women are generally responsible for the management of the household and children, while the men control the finances and make and enforce decisions. This clearly shows that poor urban South African women have no decision making and purchasing powers on fuel, as compared to their rural counterparts:

> *Men’s and women’s differential rights and needs are particularly evident when one examines the amount spent on batteries in households…recreational appliances, such as television and radios, were bought before appliances which may aid women with their domestic work. The decision to purchase appliances and their ownership lay in the hands of the men of the household* (1998, 2).

The majority of un-electrified households in South Africa depend on multiple sources of fuel for cooking, space heating, water heating, and lighting, and for appliances such as televisions and radios. In countries such as Ghana and Senegal, the most used fuel by low-income earners is charcoal and fuelwood. Poor households have to spread their meager incomes over a wide range of basic needs. This fact has an influence on energy choices that these households make, with the resulting effect of perpetuating household reliance on paraffin. Within this scenario, paraffin is an important fuel for the urban and rural poor, and despite perceptions that it is dirty, smelly and dangerous, it is by far the most widely used household commercial fuel in South Africa. It is estimated that at least 60 per cent of unelectrified households in South Africa use paraffin. It is also important to note that research has already shown that many low-income households find electricity more expensive than is generally anticipated, and revert to cheaper fuels (paraffin in particular) for cooking and heating purposes, with electricity being used for lighting and entertainment purposes. Most of the newly electrified households cannot afford a complete switch from cheaper fuels such as paraffin to electricity, despite the fact that these cheaper fuels increase indoor pollution.

Currently, there are three main challenges facing the domestic energy paraffin sub-sector: reducing paraffin poisoning through oral ingestion; minimising risks posed by poor quality stoves and/or negligence in handling appliances; and improving both indoor and outdoor air qualities.

Paraffin is the most commonly used domestic fuel in developing countries for the following reasons: decreasing availability of fuel wood in rural areas; increased urbanisation; population growth, and wide availability from informal and flexible distribution networks.

4.2.1 Externalities of domestic energy consumption

Externalities in the households sector have received little attention in literature, policy making, or analysis in the past. Energy and environmental issues in black townships in South Africa for example, previously received no attention due to apartheid policies. Many of the responsible authorities had little or no capacity or interest to address the linkages and problems related to household environmental problems. Furthermore, externalities in the household energy sector are diffuse and dispersed; making it complicated to intervene at this level. Whilst paraffin is considered in some sectors to be an efficient domestic fuel, the high costs from morbidity and mortality due to childhood ingestion of paraffin necessitates urgent interventions. The rate of paraffin poisoning has almost reached epidemic proportions, and preventive measures are now necessary.

It is important to consider the fact that the consumers of paraffin (polluters) are the same as, or very close to, those suffering the pollution. Another important point to note is that often enough, the economic effects of externalities of paraffin use are not confined to the consumer alone, but are spread between the paraffin consumer, the public health sector, neighbours, friends and relatives. Thus, ultimately, the social and economic costs of paraffin use move from the private to the public domain.

The incidence of paraffin poisoning is highest in unelectrified areas, and higher in rural areas than urban areas.

Other externalities of domestic energy include:

- The reliance on technically inferior flame stoves contributes to high incidences of fire.
- These fires leave thousands of families homeless each year as they destroy

informal settlements, often killing sleeping residents

- The fear of fires has become a feminised fear, as it affects mostly women, and such gendered witch-hunting rituals are evidence of the continued marginalisation of

women in society.

- Burns are one of the top four causes of injury-related deaths in children under the age.
- It is estimated that in South Africa, carbon dioxide emissions from paraffin constituted 1.4 million tons of the national total of 25.4 million in 1990

5. Common themes for rural and urban areas

Institutional representation

A study of energy institutions and the electricity, petroleum and nuclear sectors in South Africa proved that women were poorly represented in the sector, "*comprising eleven percent of the total workforce, and accounting for four percent of total management* (Hooper-Box *et al*, 1998, 49). The worst represented in the sector are black women, who made up one percent of the total workforce and less than one percent of total management. On a general level, women are poorly represented in the science faculties of education, and this has a ripple effect on women's representation at the workplace, particularly the policy making level (Cecelski, 1995). However, there is also a need to review the emphasis that is being placed on using numbers as an indicator of progress being made in the gender and energy debate. There is no evidence yet to prove that women in high positions in the energy sector necessarily use their positions to push for women access to energy.

Women in industry

Women in South Africa are heavily involved in the small-scale manufacturing sector, which is energy intensive, for which energy is forms a significant business cost. Yet there has been no research undertaken to establish the potential for energy efficiency improvements and efficient energy technologies for the sector (Hooper-Box *et al*, 1998).

Technology

There is a wide gender gap in relation to access to technology, and at times the very existence of technology widens the gap further. Large-scale electricity projects are unlikely to benefit women, unless they are linked to initiatives to provide appropriate technology, which is necessary to make effective use of electricity. More work still needs to be done to clarify the role, and inter-linkages with energy provision and sustainable use in rural areas (Clancy, 1998).

6. Research Gaps

Current research efforts have been concentrated on building up evidence and experience linking attention to gender in energy policy and projects to equitable, efficient, and sustainable outcomes in energy and development. Another important area of focus has been advocacy on the merit of engendering policy analysis and debate, as well as implementation. Capacity building has been a major focus area, and has comprised of advising, and providing assistance to energy projects both at the policy and implementation level so as to integrate the gender perspective (Cecelski, 200). The creation of networks and institutions at the national and international levels to reinforce efforts in other areas has received significant attention.

Research gaps still exist in the following areas:

- Research and documentation on the complexities and inter-linkages between women's productive and reproductive roles and energy and the environment.
- Multi-disciplinary research, as well as policy dialogue on the role of women in energy at both the national and the international fora
- Data collection to reflect on women who participate in the labour force in developing countries. This is evidenced by the fact that rural women are invisible in data sheets, and so is their contribution to development.
- Evaluation of lessons learnt to date. Case study material that enforces advocacy work, as well as the critical role women play in the energy sector needs to be well documented and disseminated.
- Documentation of qualitative indicators for successful projects, such as more time to rest and for leisure, which is good for women's health and well being.

- There is no clarity on how gender analysis and the assessment of potential gender impacts of energy projects should be done (Skutsch, 1998), and currently there is no sources where one could look for guidance to gain that clarity.
- There is a dearth of concrete examples about the differentiated gender impacts of rural electrification. Case studies evaluating the social and economic benefits of rural electrification should be compiled.
- There has been no in-depth research and analysis of how women and women-related issues are integrated into donor agencies' programmes (Journal of Developing Areas, 1990).
- Data needs and analysis at all levels, particularly on the linkages between wood energy, cooking and health. In addition, women's electricity needs, particularly in small enterprise development, have not been explored to the full extent.
- While the problems that women face in accessing credit facilities have been well documented, not much has been researched and documented on sustained access to credit outside a project-specific context.
- Most of the energy research that has been undertaken is heavily biased towards technical or techno-economic issues. There is a glaring absence of location-specific detail based on participation of target groups in problem identification and choices of interventions. Hooper-Box *et al* (1998) also highlight that quantitative research has often taken precedence over qualitative research which addresses the needs of women. The dearth of research support on women and energy, has meant that a number of issues, methodologies, and technologies of critical importance to women go unresearched or under-researched because they do not fall within the definition of priority sectors (Makan, 1996). An argument is now being made that qualitative research in energy should be proiritised to reflect the global shift that have taken place over the last two decades when concepts such as Women in Development (WID), Gender, Environment and Development (GED), and Gender and Development (GAD) started developing (Hooper-Box-*et al,* 1998).

7. Recommendations for promotion of gender differentiated sustainable consumption behavior

It is becoming more and more apparent that energy, like health and education, is not gender neutral (Skutcsh, 1998). The availability of energy in terms of price and quantity has different impacts on men and women because they do different things with it. Men and women have different levels of access to different types of energy. Shortages in a particular energy source may affect one gender more than the other. Policy interventions will bring different problems and opportunities for men and women (KBF, 1995). Furthermore, opportunities for, and constraints on participation in energy projects, and their benefits, are gender differentiated. Below is an outline of recommendations and conclusions that can be implemented in order to promote gender differentiated sustainable consumption behavior, or to promote sustainable consumption behavior in a gender-differentiated manner.

However, research and projects that focus on women to the exclusion of men reinforce mainstream development planning to ignore the equitable participation and benefits for women in mainstream social, economic, and political programmes. There is a need to convert the focus on women into a broader gender approach which links the relations between women and men, and how these relations affect the ability of both men and women to benefit from development efforts (KBF, 1994). It should be recognised that development is about change, and being able to reach out to women calls for a change in traditional gender-relations. This requires that men have to understand, agree with, and become actively involved in measures to improve women's access to sustainable energy projects.

Recommendations from a Mozambican report to the UNDP regional workshop include the one that development projects, including energy projects, should not be designed for and by women alone, but the whole community. However, the report notes that the key to improving the status of women is to educate them to accept and to spearhead change. The report also notes that current lack of access to education, few employment opportunities, and the high fertility rates impede women's advancement (Karlsson, 1999).

Information

The case of access to useful information and ability to make a democratic choice has been made. Energy information should include technical and social costs and other important considerations resulting from a spectrum of energy choices. This information should be accessible to both men and women. (Karsson, 1999). The dissemination of relevant information to the public would (also) assist in widening the energy options available.

Education

There is a need to encourage women to take up science and engineering degrees. However, it is important to note that above a certain level, energy access becomes a class issue, not a gender issue.

Affordability

Affordability of energy services is crucial, not just to women, but to men as well. Payment schemes such as pre-paid meters or small retailing options offer a great opportunity for consumers that rely on small or irregular, and at times seasonal capital outlays (Karlsson, 1999). Levels of energy demand, end uses, consumption patterns and ability to pay vary throughout developing countries. This means that consumers should not be treated as if they are a homogenous group. There is need to take into account issues of class, location, as well as the gender-specific energy needs of consumers (World Bank *et al*, 2000). Further, energy consumption patterns should be tailored to the social, economic, and technical realities of specific communities to ensure the delivery of high quality, and reliable energy services.

Impacts of energy and energy projects

In addition to the above areas, it is also important that greater attention be paid to energy and the environment, energy projects and sources and their environmental impacts, particularly large hydro projects. This should be done in tandem with the development of policies such as land tenure and property rights (Cecelski, 1995). Large energy projects, such as hydro, produce a multitude of social and economic problems, often different for women and men, and often particularly impacting indigenous peoples[2].

Exposure and integration

Opportunities should be created for women to get more varied exposure on energy projects, and for them to be treated as equal partners in project planning and implementation. This can take the form of study tours of successful case studies for them to learn from. There is an assumption that only women are/should be interested in gender and energy. This further alienates women's energy issues from the mainstream (Skutsch, 1998). There is therefore a need to integrate women and energy issues into overall development goals so that they do not become a stand-alone activity. Both men and women must tackle gender inequality (Oxfam, 19994), and both men and women must be consulted in energy project formulation, design and implementation, as well as technological design.

Access to energy services

Improved access to wood-fuel would enable women to spend their time on income generating activities. Improved access to efficient stoves can reduce cooking time and health and environmental impacts. Further to this, improved access to appropriate technologies would enable women to use other more reliable and efficient sources of energy (Muguti *et al*, 1999). Access to micro-credit would make it possible for women to purchase new and renewable sources of energy; a well as embark on wood-fuel based income-generating activities. All these strategies should be supported by a drive to train and educate women in skill to build confidence so as to enhance their participation in the decision-making processes (Karlsson, 1999).

Access to credit facilities

There should be facilities to grant small loans that can be repaid more frequently, and under more flexible mechanisms. Current transaction costs for loans are unaffordable for poor people in developing countries. There is a need therefore to make the transaction cost less inhibiting. There is also a need to create more women-friendly banking atmospheres, ensure an increase in women's land ownership, provide consumers with simple loan application procedures to accommodate illiteracy, and facilitate the use of information channels that are accessible (Cecelski, 2000). Finally, there is a need for documentation on women's access to credit in energy programmes and projects.

Training

Training and exchange of experiences is important for women's participation in the energy sector. Training should not be viewed as a panacea to lack of women's participation (Moser, 1993) in energy projects. The problem is more than just lack of women's training, rather, it is:

> *Gender blindness, rigidly entrenched attitudes and hostility to women's concerns or plain ignorance of how to integrate gender into planning* (Moser, 1993, 177).

Training should be aimed at achieving a gender-equitable society, to give an impetus to change at the individual, organisational, social and policy levels, which encourages gender responsive sustainable development. This requires training of both men and women working in the energy sector, at the policy, academic and project levels. Training materials for such programmes would have to be designed by multi-disciplinary teams, and be action-oriented as compared to being too theoretical. It is impor-

[2] Review comment by Minu Hemmati

tant that such training be undertaken by a multi-disciplinary team of policy, research and practitioners in the energy and related sectors. Such an approach would integrate energy into other inputs in development, such as health, water, and forestry.

Training is identified as a crucial activity in sensitising or awareness raising of the importance of gender in energy. However, such training should be targeted at the appropriate groups, mainly focusing on the gender blind. Skills transfer in gender analysis and diagnosis should be aimed at imparting skills to those that are already gender-aware to enable them to undertake gender analysis and diagnosis. The next step is the translation of skills into planning practice, and this is aimed at developing the capacity to translate theoretical issues into practice. The last component of training should be motivational, and this should be aimed at motivating practitioners to do their job (Moser, 1993).

Government commitment

Governments should commit themselves to ensure stable and continuous project management. This is particularly important because experience has proven that many projects collapse due to over-reliance on external donor funds. Lobbying for gender-sensitive policies and increased budget re-allocations should continue. This should be supported by the compilation of all relevant research and its recommendations that will be used to inform project implementation.

Local and indigenous knowledge

It is equally important to use local and indigenous knowledge systems for projects on wood harvesting and management.

Involvement and consultation of women

Women should be supported and be encouraged to act as agents of change, and active participants and beneficiaries, not as passive recipients of energy projects (Journal of Developing Areas, 1990). There should be a complete shift from projects and technologies being designed by scientists without effective consultation. There is a need to consider women's needs and existing knowledge, as well as their interests in energy problems, and the effects of energy solutions on themselves and their families (UNIFEM/UNEP, 1990).

Documentation

There is a need for documentation of existing experiences so as to provide empirical evidence of strong linkages between energy, poverty reduction, and gender (Cecelski, 2000, 3). There is a need to document examples of "best practices" models and approaches in order o facilitate the replication of successful case studies.

Capacity building

There is a critical need to start dialogue and interventions between the theory in energy, poverty and gender. This needs to be supplemented with developing capacities of people working in this inter-disciplinary field (Cecelski, 2000). This could include, among other target groups, capacity building for academics regarding interdisciplinary research and working with practitioners.

Additional issues that should be addressed by policy makers in order to facilitate the mainstreaming of gender and energy are summarised in Table 4 below.

Table 4: Summary of recommendations

- Pricing policies that favour women, particularly single-headed households
- Marketing policies, and promoting sustainable consumption behavior in a gender differentiated manner?
- Credit policies and technical assistance
- Land-reform policies that should be gender sensitive
- Limited access to land
- Political structures for women's participation
- Labour saving technologies
- Basic and applied agricultural research
- Energy should be used to substitute human labour
- Energy should be used for increasing agricultural productivity and growth leading to higher rural incomes and employment related industries
- Energy for rural industry and trade
- Needs oriented approach
- Dialogue and consensus (inter and cross sectoral)
- Using existing resources
- Providing missing inputs, and avoiding duplication
- Experimentation and flexibility (interaction)
- Organisational building
- Funding
- Private sector investment

Compiled from several references[3]

[3] This table is a summary of issues taken from various reference sources

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