## A critical look at gender and energy mainstreaming in Africa

Njeri Wamukonya

# Draft paper distributed at the 'gender perspectives in sustainable development' side event organised by UNDESA/DAW and WEDO at Prep Com III

#### April 2002

#### Comments are very welcome: please send them to njeri.wamukonya@risoe.dk

#### Introduction

Inequity along gender lines has been one of the main factors driving the establishment of womenfocused and, more recently, gender-focused programmes. The earliest and most pronounced recognition of the gender disparities in development was the announcement by the international community of International Women's Year in 1975 and its later extension into a Women's Decade. Since then various forums on women or gender have been organised and a lot of Iterature amassed. Women/gender and energy conferences and meetings have become common, with a wide range of objectives, including reviewing implementation of previous plans of action such as the 1995 Platform for Action. Gender mainstreaming has become a buzzword in development circles. Increasing attention to women/gender and energy is demonstrated by the incorporation of women or gender into various energy policies, programmes and projects at national, regional and international levels, including UNDP-Sustainable Energy and Environment Division, World Bank-Energy Sector Management Assistance Program, and FAO-Rural Wood Energy Development Programme, the African Development Bank, and the emergence of gender desks in national energy agencies.

On the one hand the world seems to be changing rather rapidly. Globalisation, characterised by privatisation and the free market, is creating a new order in which government control of the economy is decreasing. In the African energy sector, reform is rampant: institutional roles are shiftin1zD 0bking over the

role of energy servic5e oovision from the government whose role Twexpected to become more facilitative rather than active. On the other hand, Africa Twsuffering abject poverty of modern energy

Historically, the Southern gender and energy approach is justified on the basis that women use energy differently from men, and that providing energy to women will improve their livelihoods; some have also argued that energy is a basic good (Clancy, 1999), implying that women are entitled to it as much as to health and education. This basic good view is contentious. WEC (1999) and UNDP/ESCAP (1990) recognise that energy is not a basic good though it is a useful input for satisfying basic needs. As the world transits into a globalised existence and the roles of governments vis a vis the private sector shifts with increased emphasis on the responsibility of the latter to meet energy demand, is the focus on women and energy be progressive in addressing the sustainable development challeng es?

As a result of the contexualisation of the energy problems as having a woman dimension, solutions have generally been crafted against this background, so that the general framework has focused on advocating and implementing a woman-targeted approach, both at the end user and decision making levels; advocating for increasing access to electricity to women, and, more recently, using decentralised electrification technologies as well as setting up micro-financing schemes to provide credit to women for energy and other needs. Hence, this chapter questions whether such strategies considerably improve the livelihood of the society and if they will enable its development in the future?

In an attempt to address the questions posed above, this chapter underlines the key challenges facing the African energy sector in order to understand the relevance of a gender approach. It reviews past approaches in the women/gender and energy debate, to gain insight as to how these have shaped current thinking, and into their ability to meet today's challenges. Recognising a tendency to use the terms 'gender' and 'women' interchangeably, and to some extent ambiguously, the chapter begins by highlighting the differences, as an introduction to how these terms are used in this book.

### 'Gender' and 'women': defining the jargon

The debates on whether to use 'gender' or 'women' has been rather energetic. Originally equity and social concerns were discerned as 'women' issues and not gender-related concerns. Later, proposals to replace 'women' with 'gender' emerged. The conceptual shift from 'women in development' to 'gender and development' reflects the recognition of the changing paradigm. Under gender and development the focus shifted from women to gender, and called for a re-examination of the structures from a gendered perspective. (UN, 1999). There are those, however, who prefer to keep 'women', on the basis that 'gender' draws attention away from the perceived victim – women. Regardless, in an attempt to give due attention to the disadvantaged majority, even while aware of the contextual differences between gender and women, there is a tendency to resort to 'women', or to use the terms interchangeably. Researchers and practitioners may in the foreground make an attempt to include men, often through such phrases as 'both women and men', but this approach is rarely sustained.

The aim of the discussion here is not to further elaborate on these definitions, rather to provide a basic understanding on the way the authors of this book have used these terminologies. 'Men' and 'women' are concepts which refer to basic physiological differences. Gender, on the other hand, refers to the socially constructed roles and socially acquired behaviours and expectations associated with men and women (World Bank, 2001). Gender, as a social construct, legitimises and sustains men's power over women and is hence inherently about relations between men and women. Societal institutions, households, and the broader economic space, including markets, collectively determine opportunities and life prospects for men and women.

### Contexualising the gender and energy discourse

In parallel with the developments taking place within the energy sector, there were social shifts in the gender discourse which generally influenced the gender and energy progression. As Sachs (1996) notes vicissitudes of the international development debate follow the rise and fall of political sensibilities within the Northern countries. Gender is no exception. The wave of feminism became prevalent in the 1960s mainly in the United States of America and other developed countries, triggered by the economic and social changes associated with war. The work of Ester Boserup in the 1970's articulated in the publication *Women' s role in economic development* drew attention to the economic disparities between women and men, lack of integration of women in the development programs and the role of technology in this, in developing countries. This initiated the establishment

of Women in development (WID) networks in the North which later formed links with the South. Under the WID discourse women were the focal points and the number of women participating in a programme was a key indicator of progress. WID also generally considered women as a homogenous group. Shortcomings with the WID approach resulted in a divergent school of thought in the late 80's, distinguishing sex from gender. The emerging concept was largely referred to as the Gender and Development (GAD). GAD distinguished the social roles of women and men enabling understanding of the underlying mechanisms influencing development processes of men and women. Increasing global environmental concerns, motivated by the Brundtland report 'Our common future' (1987) captured the attention of ecofeminists on the link between environment and women, resulting in a Women, Development and Environment (WDE) discourse. The WDE placed women as the central focus of environment arguing that women have an affinity with the environment and are the best placed to safeguard it (Shiva, 1989). This discourse which has largely been driven and sustained by non-government and have profound knowledge of plants animals and the ecological processes (Dankelman and Davidson, 1989).

Sensitivity on women and gender issues motivated the establishment of forums for discussions of related themes. Starting from the 1970's international, regional and national forums targeting women and gender i

of Women2\* Ourse. he Ouresding of These forums hmsusargely ba pr lishsdir the

and genen. and genen.

the national economy, as evidenced in Kenya<sup>2</sup> and Uganda in 2000 (World Bank, 2000a; World Bank, 2001b). Most countries lack the capital to invest in new electricity generation facilities and have to rely on expensive external funding, which comes with various conditionalities (World Bank 1993; Edjekumhene et al, 2001; DOE, 1997). The same predicament is suffered in the fossil fuel sector. Many countries intermittently face liquid fuel shortages.

Africa exports over 50 percent of the fossil fuel energy it produces while at the same time importing energy at a cost that is crippling its economies. In 1997, for example, Africa commercial energy production was 13.25 million barrels of oil and its consumption was 5.7 million barrels of oil (DOE, 1999). The continent has significant energy resources that could be used to meet its needs; if exploited at current rates, the coal, oil and gas reserves could last 268, 98.3 and 28.2 years respectively (Davidson and Sokona, 2001). However, these resources are not equitably distributed, but concentrated in certain countries (in 2000, 18 of the 53 countries were not generating any primary fossil fuel energy). Nigeria, Algeria and Libya between them produce two-thirds of the regions oil output. Six out of the 53 countries produced more than 70% of their respective GDP in 1995 (Iwayemi, 1998). Clearly the resource is there but many go without. Thus the challenge is how to develop the infrastructure necessary to enable access to these resources and increase intra-regional energy trade.

Meanwhile, as noted earlier, responsibilities for energy provision are shifting with reforms at both macroeconomic and energy sector levels. Liberalisation of the petroleum fuel markets has resulted in government having limited control over provision of service and tariff setting in the petroleum sector. During the pre-reform era the government was responsible, through vertically integrated public utilities, for meeting a country's electricity demand. Power sector reforms are resulting in adoption of one or more of these elements: restructuring, unbundling of the sector, commecialisation, coorporatisation, and privatisation. The role of the public sector in electricity provision is expected to diminish and switch to a facilitative one. But electrifying the bulk of the unelectrified population will be prohibitively costly, particularly to the profit-driven private investor. Dedicated electrification agencies to address this issue have been proposed (Karekezi and Kimani, 2001) and countries such as Senegal have established such agencies, mainly funded from public and donor funds. These agencies are owned by the public and through them the government is expected to continue providing electricity to commercially unviable areas, particularly rural ones. Notably, in an environment where public funds are permanently in deficit, the challenge to provide universal access to electricity is likely to persist.

Although it is increasingly documented that energy service, and not energy *per se*, is the issue (UNDP, 2001; Wamukonya, 2001) providing an affordable and desirable service that elevates productivity remains a challenge. Provision of the energy service is not by itself a sufficient condition to meet development objectives, and the additional challenge is to integrate the appropriate energy service into national and sectoral development planning, while availing the other complementary factors to trigger sustained development.

In the face of these challenges, the previous question is restated: will the gender and energy approach serve the energy sector goals? In the following section, a discussion on how gender and energy has evolved is presented as background to dealing with this question.

#### Historical overview of the gender and energy linkages

The argument for a woman-focus<sup>3</sup> with respect to energy is conducted mainly on the basis that women use energy differently from men (Parikh, 1995; Howorth *et al* 1997; Cecelski, 2000). One is tempted to ask whether this is because they are women or because they are poor; is it a predicament of the poor rather than of women

The energy crisis in the 1970s focused some attention on biomass energy, particularly woodfuel, (Leach and Mearns, 1988), and by extension on the rural energy dimension. The increased demand for woodfuel and the perception that demand outstripped supply and was responsible for deforestation, raised concern for what was referred to as 'the other energy crisis' (Eckholm, 1975), necessitating better understanding of the supply and demand situations. This saw the entry of the 'gap theory', which identified a gap between supply and demand, resulting in country forecasts that predicted critical shortages (O'Keefe and Raskin, 1985; Anderson 1986). Although the gap theory has been extensively challenged (Katerere, 1992; Bradley and Campbell 1998), it nevertheless formed the basis for defining the woodfuel crisis. This definition focused on the biological yields of biomass, ignoring the social economic, cultural and historical factors that influenced the management of the resource. The crisis was also simplistically defined in terms of the time and labour required to gather fuelwood. While reductionist, these definitions however helped raise attention among development circles on the level of human effort needed to acquire fuelwood.

The women and energy dimension was highlighted through work done by the International Labour Organisation and others in the 1970s (Cecelski 1984; Agarwal 1986; Eckholm, 1975; Cecelski, 1987). The debate was mainly captured and imprisoned in the rural household economics and time budget/labour discourses. The time spent, and the drudgery suffered, by women in gathering fuelwood for household cooking needs were highlighted as the main problems (Tinker, 1987; ILO, 1999; Bryson and Howe, 1993; UNDP, 1995; Horestein, 1989). Emphasis was also placed on the negative health impacts on women and children emanating from fuelwood collection and its use (Smith, 1987). These themes – women, time, drudgery and health, associated with fuelwood use – were taken up as the main gender and energy issues and have been propagated by consequent work. The gender and energy problem was largely reduced to a rural dimension, fuelwood and household cooking. There was inadequate acknowledgement of the fact that in households with financial means, women did not gather fuelwood: here this was done by paid help or the wood was bought and delivered to the house by motorised transport. The link between women and energy were presented in such a manner that made the associated problems appear obvious, self-evident, and later acquired a 'conventional wisdom' status with legitimised predetermined solutions.

To address the woodfuel crisis, and the consequent problems for women, the logical solution was to close the gap through supply and demand management strategies (Katerere, 1992). The specific solutions were tree planting and production and dissemination of efficient biomass stoves. The emergence of the 'energy ladder'<sup>4</sup> theory (Hosier & Dowd, 1987; Leach 1988) raised the prospect of an alternative solution, fuel-switching (Dickson & Baldwin, 1990; Foley, 1997; Chomitz & Griffiths, 1997). The ladder theory highlighted the importance of income as a determinant of fuel choice. However, the ruralisation of the women and energy issue, a context where the monetary economy is weak, meant that fuel-switching received little attention among gender and energy advocates, since it was largely seen as an unattainable alternative. So an early appreciation of the link between energy service as a critical input for income generation leading to economic development and gender equity was somewhat missed.<sup>5</sup>

Having identified the solutions, donors and governments designed and launched projects and programmes on tree planting (Foley, 1997), and promoting improved biomass stoves (World Bank, 2000d; ESMAP, 1997). Women were regarded as a special target group, to which donors and NGOs directed aid in various ways. They were the main target group for wood-saving stove programmes and eventually also of rural afforestation programmes. The stoves in particular received a lot of attention from donors (Barnes et al 1994), and women were seen as the main beneficiaries (Eckholm, 1983). Project performance was not particularly good, and the reasons identified included poor targeting (i.e. women were excluded), inappropriate technologies, and men not meeting their responsibilities (Agarwal 1983; Wood, 1987; Cecelski, 1984; Hoskins, 1983; Tinker 1992). Despite various reports on the poor performance of stove projects and the documentation of the associated reasons (Barnes et al, 1994; Jones 1988), these projects have continued to attract support. The G8 renewable energy taskforce report recommends use of advanced biomass cooking stoves which they

<sup>&</sup>lt;sup>4</sup> It should be noted that this theory has been widely questioned and replaced with the multiple fuel-use approach.

<sup>&</sup>lt;sup>5</sup> It is increasingly generally acknowledged that gender-specific issues are not particularly important in higher economic development societies (Parikh, 1995; Roehr 2001) thus acknowledgement of the link could have provoked more critical analysis of the gender and energy approach.

note can reduce fuel consumption by 40% or more (G8 report, 2001). Mali had a US\$11 million project financed through world bank and bilateral loans implemented in 1995-99 where one of the key components was to deploy improved wood stoves (GEF, 2000). The improved biomass stoves are noted to result in fuel, financial, labour and time savings (ESMAP, 1991; Habermehl, 1994; Klingshirn, 2000). It is perhaps important to note that the stated financial savings occur in areas where the fuel is purchased, and even then the amounts saved are relatively small. A study undertaken for DFID covering Ethiopia, Kenya and Uganda concludes that urban households using improved charcoal stoves saved 0.6-5.6% of the household total income, and that the improved stoves do not lift people out of poverty (DFID, 2000). In addition it is important to question the validity of getting loans and grants from multilateral organisations for such technologies that cost less than US\$10 (G8 report, 2001) and save households less than 1US\$ per month, especially since the countries tend to be 'neck-deep' in debts.

Lack of land tenure was noted as one of the barriers to women's ability to increasing production of woodfuel since they would not own the trees, and men would use wood for purposes other than fuel (Fortmann and Rocheleau, 1985). Ownership of land does not, however, guarantee access to fuelwood, since the competition for land for food and more beneficial outputs compared to fuelwood has meant that farmers give low priority to trees for fuelwood (Dewees, 1993). Increased demand for cash necessitates trading most farm products and in communal lands most of the forested land has been cleared, so that even if women owned the land their access to fuelwood might not necessarily improve. In fact if women had tree tenure and planted and used trees for fuelwood under such circumstances (instead of selling them for timber) they would be economically irrational.

Although women and energy concerns did extend to include urban areas, the focus remained predominantly biomass-oriented. Concerns about the impact of the urban biomass energy consumer on rural women was one of the original motivations. The solutions remained the same, with particular emphasis on the improved biomass stoves. But the fate of the women, and the household energy poverty situation, has hardly improved. Clearly the situation has not been advanced by the fact that biomass has normally been treated as the fuel of the poor (Katerere, 1992) and predominantly as a household issue, and thus not given sustained attention. A study by UNDP/ESMAP (2001) concludes that, in spite of the emergence of new technologies such as solar energy, there has been little improvement in decades in the energy household sector. Environmental

erc 2.ttor. Env58 () fuel energid tifo no4583 TbTc 0. 4.06masndsultrovemr) they tragndsinc Tc -0.2109 Tw () T

decentralized technology promoted in Africa, often on the justification of cost-effectiveness<sup>6</sup> (Erickson and Chapman, 1995; Trieb *et al*, 1997; Gope *et al*, 1997; Muntasser *et al*, 2000). One of the barriers to accessing the solar systems is capital cost. In view of this, governments with

Advocating for an increase in the number of women in decision-making certainly has its merits, particularly since it creates employment opportunities. However, using the number of women in any given institution as an indicator of representation has various drawbacks. Firstly, the representation system runs the risk of abuse, where nepotism and favoritism are used to select women who are therefore likely to become mere 'rubber stamps'. This weakens the whole decision-making process, to the disadvantage of both men and women. Secondly, women politicians and other decision-makers are not always able to alter energy decision-making to cater for gender concerns, mainly because of a general lack of comprehensive understanding of the policy impacts, and interference by stakeholders with vested interests.ciamertaibec11sour34.11.211.ensts.

Uptake of Renewable Energy Technologies, held from 27 June to 4 July 2001 in Australia, is a good example. However it is important to question whether this women-caucus strategy is socially benefic ial, and the extent to which it advances the energy poverty reduction and development agendas.

1998). Hence, efforts to incorporate gendered thinking into *energy and* development requires more than a focus on women: what is also needed is a focus on men (Greig *et al*, 2000; Sweetman, 2001). In addition, there is growing evidence that targeting women can result in a backlash of resentment by men against what they see as excessive emphasis on women in development programmes (FAO, 1998). Notwithstanding, the changing economic status in Africa has caused social upheaval, as men lose jobs and have to rely on women to support the household, further justifying the need to economically empower both men and women especially for the sake of social stability (Silberschnidt, 2001). A significant share of the retrenched men lacks the capacity to adjust by going into alternative income-generating ventures. They are often forced to return to the rural areas or join the majority poor in urban slums, hence competing with women for the meagre informal incomegenerating opportunities that exist (ILO, 1999; ILO 2001; Silberschmidt, 2001).

The energy challenges that Africa is grappling with are anchored more within the overall development context than the energy sector in isolation. Opportunities for the energy sector facilitating lifting the population out of poverty lie in providing useful energy services in an environment where the service can be used to generate income. Thus, energy planning will have to be done in collaboration with the main economic sectors. It **is the population of a contract sector**.

provision through a pro

- Cecelski Elizabeth 2000. the role of women in sustainable energy development. NREL report NREL/SR-550-26889. USA
- Cecelski, E. 1984. The ru ral energy crisis, women's work and family welfare: Perspectives and approaches to action. Working paper 15, ILO/WEP10, Geneva.
- Ceceski Elizabeth 2000b. Enabling equitable access to rural electrification: current thinking and major activities in energy poverty and gender. Briefing paper prepared for a brainstorming meeting on Asia Alternative Energy Policy and a project development support: emphasis on poverty alleviation and women. Asia alternative energy unit, World Bank 26-27 January 2000
- Chomitz Kenneth M and Griffiths Charles 1997. An economic analysius of woodfuel management in the sahel.: the case of Chad. The world bank, policy research working paper 1788.
- Clancy Joy, 1999. Policies, Projects and the Market Empowering Women? Some initial reactions to developments in the energy secto Paper presented at the ENERGIA Workshop on Improving Women's Access to the Market: policies, projects, or market. University of Twente, the Netherlands, November, 1999
- Connell R.W. 1995. Masculinity and Globalisation. Men and masculinities Vol 1, No.1
- Dankelman, I and Davidson J. 1989. Women and environment in the third world : alliance for the future. Earthscan publications, London.
- Davidson O. and Sokona Youba, 2001. Energy and sustainable development: key issues for Africa. Proceedings of the Africa high-level regional meeting on energy and sustainable development for the CSD9. N. Wamukonya (eds). UNEP.
- Dewees Peter 1993. Trees, Land and labor. World bank environment paper No.4 World Bank'
- DFID, 2000. Poverty reduction aspects of successful improved household stove programmes. DFID KAR Project R7368, UK.
- Dickson B.J. and Baldwin S. A, 1990. The development of low cost fuel-efficient wood burning stoves appropriate for underdeveloped areas of South Africa.
- DOE 1999. Energy in Africa. USA Department of Energy, Washington DC
- DOE, 1997. Electricity reform abroad and US investment. USA Department of Energy, Washington DC.
- Eckholm Eric 1983. Unicef and the household fuel crisis. UNICEF
- Eckholm, Eric 1975. The other energy crisis: Firewood. Paper No.1, Worldwatch Institute, Washington DC.
- Edjekumhene Ishmael, Amadu M.B. and Brew-Hammond A., 2001. Power sector reform in Ghana: the untold story. KITE, Ghana.
- Elson Diane and Mcgee Rosemary, 1995. Gender equality, bilateral program assistance and structural adjustment: policy and procedures. World Development Vol 23 No 11. pp 1987-1994
- ESMAP 1991. Rwanda: commercialisation of improved charcoal stoves and carbonisation techniques. ESMAP report No. 141/91.
- ESMAP 1997. Swaziland household energy study. Report No 198/97
- FAO, 1998. Women and Farm tools.www.fao.org/waicent/agricult/magazine/9810).
- Fortmann Louise and Rocheleau Diane, 1985. Women and agroforestry; four myths and three case studies. Agroforestry systems No.2 253-72
- FUNDELAM, 1999. The socioeconomic impact of credit programs on rural women: a study in Carchi, Ecuador. ICRW, PROWID program, USAID.
- GEF 2000. Household energy project; Mali. http://www.gefweb.org/Outreach/outreach-PUblications/Project\_factsheet/Mali-hous-1-cc-wb-eng.pdf
- Greig Alan, Kimmel Michael and Lang James, May 2000. Men, masculinities and development: broadening opur work towards gender equality. Gender in development Monograph series No 10. UNDP
- Habermehl Helga, 1994. Micro and macroeconomic benefits of household energy conservation measures in rural areas of Kenya, GTZ.

- Heinrich Böll foundation, 2001. Report on the international conference gender perspectives for earth summit 2002 energy, transport, information for decision-making at jagdschloss glienicke, berlin, germany 10-12 January 2000
- Horestein Nadine H. 1989.women and food security in Kenya. Working paper, women in development. World bank
- Horworth Chris, O'Keffe Phil and Convery Ian, 1997. Energy utilisation in peri-urban areas: issues of demand. Energy for sustainable development Vol III. No. 5 June 1997
- Hosier R and Dowd, J 1987. Household fuel choice in Zimbabwe: an empirical test of the energy ladder hypothesis. Resources and Energy Journal Vol 9.
- Hosier Richard 1992. Translating energy planning and research into practise: a reflection on ten years of African efforts. International experience in energy policy research and planning. Edited by Anton Eberhard and Paul Theron. Elan Press, Cape Town.
- Hoskins Marylin 1983. Rural women, forest outputs and forestry projects. FAO Rome
- ILO 1999. World employment report 1998-99. Women and training in the global economy. http://www.ilo.org/public/english/bureau/inf/pkits/wer98/wer98ch4.htm
- ILO 1999. World employment report 1998-99. Women and training in the global economy. http://www.ilo.org/public/english/bureau/inf/pkits/wer98/wer98ch4.htm
- ILO, 2001. ILO's World Employment Report 2001
- Iwayemi Akin 1998. Energy sector development in Africa. ADB
- Jones D. 1988. Some simple economics of improved cookstove programs in developing countries. Resources and energy Vol 10 247-264.
- Karekezi S and J Kimani. 2001. Introduction In 'Power sector reform in Africa –Proceedings of a Regional Policy Seminar. AFREPREN Occasional Paper No.5
- Kiiru Washington and Pederson Glen, 1997. Kenya Women Finance Trust: case study of microfinace scheme. World Bank report no 21077
- Klingshirn Agnes, 2000. Integrating household energy into rural development programmes. Energia. http://www.energia.org/resources/papers/klingshirn.html
- Leach Gerald 1988. Household energy in south Asia. International institute for environment and development. Elsevier Science Pub. Co. New York
- Mehlwana Anthony M. 1997. The anthropology of fuels: situational analysis and energy use in urban low-income townships of South Africa. Energy for sustainable development Vol III No.5 January 1997.
- MicroFinance Network, 1999. 1998 membership survey. www.bellanet.org/partners/mfn
- MicroFinance Network, 1999b. Microfinance Network basic statistics, December 1999. www.bellanet.org/partners/mfn/stats1299.htm
- Nishimizu Mieko, 2001. Energy Gender and Poverty reduction. A speech delivered at the ESMAP/ASTAE/AFRREI/RPTES Joint Strategy Business Meeting, May 8 2001. http://www.worldbank.org/html/fpd/esmap/pdfs/mnishimizu.pdf
- O'Keffe P and P Raskin, 1985. Fuelwood in Kenya: crisis and opportunity. Ambio 14:220-224
- Parikh K Jyoti 1995. Gender issues in energy policy. Energy Policy Vol 23 No 9; 745-754
- Qase, N. 1999. Energy provision for the urban poor: South African country case study. EDRC Report
- Silberschmidt Margrethe 2001. Disempowerment of men in rural and urban east Africa: implications for male identity and sexual behaviour. World Development Vol 29 No 4. pp 657-671
- Shiva V. Escaping from masculine time. Earthwatch No 37; 4-5
- Smith K. 1987. Biofuels, air pollution and health: a global review. Plenum press, New York.
- Sweetman Caroline 2001. Men's involvement in gender and development policy and practice; beyond rhetoric. Oxfam UK
- The East African Standard (Nairobi) December 7, 2001 Moi Barracks Sir Jeffrey, Bucks the Gender Trend
- Tinker Irene 1992. The political context of rural energy programmes. Energy for rural development. M.R Bhagavan and S Karekezi (eds) Zeb Books London.
- Tinker Irene, 1987. The real rural energy crisis: women's time. Energy Journal No. 3; 125-46

- Turyahikayo Godfrey R and Sengendo M., 2001. Uganda's experience with PV systems. In Experience with PV systems in Africa: summaries of selected cases N. Wamukonya (eds). UNEP
- Ulrike Roehr 2001. Gender and energy in the north. Background Paper for the Expert Workshop" Gender Perspectives for Earth Summit 2002:Energy, Transport, Information for Decision-Making" Berlin, Germany, 10 – 12 January 2001Jointly hosted by the Federal Ministry for the Environment, Nature Protection and Nuclear Safety and the Heinrich Böll Foundation
- UN 1995 preparations for the fourth world conference on women: action for equality, development and peace: review and appraisal of the implementation of the nairobi forward-looking strategies for the advancement of women second review and appraisal of the implementation of the Nairobi forward-looking strategies for the advancement of women
- UN 1995. Beijing Declaration and platform for action.