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Environmentally Sustainable Development and Poverty: A Gender Analysis

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Acronyms

CPR	Common property resources
ESD	Environmentally sustainable development
FAO	Food and Agriculture Organisation
IIED	International Institute for Environment and Development
IOM	International Organisation for Migration
PEC	Primary environmental care
UNEP	United Nations Environment Programme
WCED	World Commission on Environment and Development
WED	Women, environment and development approach
WID	Women in development approach

1 Executive summary

There is much debate over how to define the term environmentally sustainable development with many definitions emphasising some, or many, of the economic, political, social and ecological dimensions associated with the term. In recent years there has been a marked shift from an emphasis on the notion of the ‘sustainability’ of socio-ecological systems to a focus on the notion of the ‘resilience’ of the ecosystem, and people’s capacity to diversify their livelihoods to facilitate the ecosystem’s recovery from shocks and stresses.

Linkages between poverty and environmentally sustainable development are often dependent on how poverty is defined, the environmental problem in question, and the groups among the poor that are affected by environmental change/degradation in the context of uneven development. The causes of poverty and environmental degradation are structured by this uneven process of development operating via technologies, incentives and institutions and regulations which favour some. The broadening of conventional poverty measurements (income/consumption flows) to include other dimensions of poverty such as entitlements and vulnerability is changing the way linkages between poverty-environment are viewed.

Much of the mainstream literature on environmentally sustainable development has ignored the gender dimensions. In the instances where there has been specific attention to women, they have been viewed as naturally privileged managers of environmental resources with little attention paid to how gender relations systematically differentiate poor men and women in processes of production and reproduction and relegate women to environmentally-based activities and limit their access to other types of livelihood activity. More recently, linkages between gender, poverty and the environment are increasingly discussed.

A gender analysis is increasingly seen as important because: experiences of poverty and environmental change are gender-differentiated; environmental security is mediated by gender relations; and women and men have both conflicting and complementary interests and roles in environmental management. There are significant differences between women’s and men’s experience of poverty and environmental change because of gender inequalities in access to environmental resources, for example: land and common property resources; command over labour, e.g. allocation of labour time; capacity to diversify livelihood strategies, e.g. accumulating savings and market oriented activities; and decision-making powers.

This implies that there is a need to widen the range of choices available to poor men and women taking into consideration gendered differences in rights over land and resources to enhance environmentally sustainable development. Effective natural resources management requires participatory approaches that take into account the different activities of household members, the impact of their different uses of natural resources on the environment, and the gendered interests and incentives for natural resource management. It is clear that more detailed research is required to establish the links between gender and environmental management in different contexts.

2 Environmentally sustainable development and poverty

2.1 Environmentally sustainable development: conceptual shifts

There are numerous definitions of sustainable development, and much debate about what constitutes environmentally sustainable development. In the broadest sense, sustainability refers to the capacity of socio-ecological systems to persist unimpaired into the future (Raskin *et al.* 1996). ‘Environmental sustainability’ refers to the maintenance of the ecosystem and the natural resource base. Environmental degradation signifies failure in this regard. It takes three forms: depletion of resources; pollution, or overuse of the waste-absorbing capacity of the environment; and reduction in biodiversity - a loss of some types of resources. ‘Social sustainability’ is the term used to refer to the social conditions necessary to support environmental sustainability (Hardoy *et al.* 1992). This stresses the fact that natural resources are used within a social context and that it is the rules and values associated with this context that determine the distribution of resources within the present generation and the next.

More recently, there has been more emphasis on the notion of ‘resilience’¹. Ecologists have reached a better understanding both of the processes involved in the ecosystem’s capacity to recover from shocks and stresses (such as drought) and of people’s capacities to facilitate the recovery of the ecosystem and to diversify their livelihood activities from natural resource-based to money or market-based activities.

2.2 Dimensions and goals of environmentally sustainable development

The most commonly accepted understanding of environmentally sustainable development (ESD) is encapsulated by the Brundtland definition: ‘meeting the needs of present generations without compromising the ability of future generations to meet their own needs’ (WCED 1987). It is recognised that meeting essential needs requires economic growth and equity facilitated by ‘political systems that secure effective citizen participation in decision-making’ (*ibid.*). ESD has several dimensions (see Box 1) implying different types of needs: economic, social, political and ecological.

However despite the multi-dimensional nature of ESD there is a common goal: development that enhances rather than depletes environmental capital or assets. Hardoy *et al.* (1992) point out that environmental capital can be divided into three broad types:

- the ‘natural sink’ capacity of local and global systems to absorb or break down organic wastes and absorb gases without adverse effects on climate or the stratospheric ozone layer;
- the finite stock of non-renewable resources, e.g. fossil fuels and other minerals. Biological diversity, one key part of environmental capital, might also be considered a non-renewable resource;
- renewable resources such as crops and trees which are renewable only within finite limits set by the ecosystem within which they grow. Fresh water resources are also finite; in the case

¹Resilience is an ecological concept which in recent years has been used by socio-economists. Resilience is the time it takes to recover from shocks and stresses. It refers to the point at which the system can recover from stresses (personal communication with Lloyd Anderson).

of aquifers, human use often exceeds their natural rate of recharge and as such is unsustainable.

Box 1: Dimensions of environmentally sustainable development

Economic dimensions: economic needs such as adequate livelihood and productive assets, and systems, and how these interact with the environment.

Social and cultural dimensions: social and cultural needs and systems, e.g. health, education, shelter, equity, cultural institutions and norms, and their relationship with the environment.

Political dimensions: political needs (ability to participate in decision-making processes) and systems, and how they influence the environment.

Ecological dimensions: the maintenance of ecosystems and the natural resource base.

Sources: Raskin *et al.* (1996); UNCHS (1996); WCED (1987); Hardoy *et al.* (1992)

2.3 Poverty and environmental sustainability

The linkages between poverty and environmental issues are affected by how poverty is defined, by the type of environmental problem in question, and by which groups among the poor are affected.

Research and policy has tended to focus on the relationship between poverty and environmental degradation in terms of pointing out that the poor are both victims and agents of environmental degradation: victims in that they are more likely to live in ecologically vulnerable areas, agents in that they may have no option but deplete environmental resources thus contributing to environmental degradation (Sida 1996; Leach and Mearns 1991; UNEP 1995). However, it is also acknowledged that the poor often have practices that conserve the environment. Great physical and spatial variability in natural resource endowments also seem to complicate the picture (Redclift and Skea 1997).

In general terms, the underlying causes of both poverty and environmental degradation are structured by uneven processes of development operating via technologies, incentives, institutions and regulations which favour some social groups and some geographical areas over others (Leach and Mearns 1991).

The broadening of general poverty debates to include other measurements and dimensions of poverty (in addition to income/consumption based flows) such as entitlements and vulnerability is evident in the literature looking at poverty-environment interactions. A recent development is the understanding that linkages between poverty and environmental change are determined by environmental entitlements as well as changes in resource availability.

At the micro-level (individual, household, village), environmental entitlements are determined by a range of factors including natural resource tenure arrangements, labour mobilisation arrangements, social relations (including gender), capital endowments and technology. At the macro-level (sub-national, national, global), wider processes operate via decisions on technologies, incentives, institutions and regulations (land rights) to favour some social groups and some geographical areas. These processes include demographic changes, environmental processes, macroeconomic policies, markets and prices, donor and development agency approaches to poverty and environment, agricultural research, governance and political conflict (Leach and Mearns 1991; Leach, Mearns and Scoones 1997).

Vulnerability is another environmentally relevant dimension of poverty that is discussed in the current literature. It is a measure of the robustness/resilience and variability in income or livelihood sources in the face of shocks and stresses, and thus people's capacity to cope with and respond to them.

3 How mainstream debates address gender equality

3.1 Gender and environmentally sustainable development

Much of the mainstream literature on ESD has ignored gender relations. Where attention has been paid to women, thinking has been mainly influenced by the women in development approach (WID)² (Joekes *et al.* 1996). Broadly, women, environment and development (WED) thinking stresses the ‘managerial’ aspects of economic development. This seeks to minimise negative effects of the process of economic development by targeting women as recipients of environmental development assistance, simultaneously considering the effects of development on the environment, an approach propagated by many development agencies.

A more philosophical stream of WED sees women’s position as essentially closer than men’s to nature because their work has always entailed a close relationship with nature. Women are depicted as naturally privileged managers of environmental resources. An economic line of WED emphasises women’s work: the sexual division of labour that has led to women’s particular role in managing natural resources (Bradiotti and Wieringa 1994).

Feminist critiques have pointed out that WED conceptualisations are flawed because of three main reasons.

- First, environmentally-friendly management practices by women can be explained in terms of rational short-term interests. For instance, women may only collect dry wood for fuel because it is lighter and easier to carry, and certain tree species may be protected by custom or religious sanction rather than by women’s motivation to conserve resources (Jackson 1993).
- Second, relations of women to the environment cannot be understood outside the context of gender relations in resource management and use. Women’s relation to natural resources reflects social-structural forces, within the framework of gender relations which systematically differentiate men and women in processes of production and reproduction. These forces relegate/confine women to environmentally-based activities by limiting their access to other types of livelihood activity (*ibid.*).
- Third, like the WID approach, the WED perspective completely focuses on women at the exclusion of men, and pays little attention to differences among women (Joekes *et al.* 1996).

In recent years, there has been an increasing focus on linkages between gender and the environment in development research, policy and practice. Gender-environmental relations are seen as integral to the social and economic organisation which mediates people’s relationships with their particular environment. Gender is also viewed as a key dimension of social difference affecting people’s experiences, concerns and capabilities in natural resource management. These analyses recognise that gender relations have a powerful influence on how environments are used and managed over time and the effects of this on patterns of ecological change (Leach *et al.* 1995).

² Women, environment and development (WED) is the name given to WID as discussed in the environmental context.

4 Why a gender perspective is important

Environmentally sustainable development requires that livelihood activities be ecologically sound, socio-culturally acceptable, economically viable and equitable in terms of access to resources, benefits and decision-making processes. In this respect a gender perspective is essential for achieving the goals of environmentally sustainable development because of three overlapping factors which, if ignored, can result in further depletion of environmental capital:

- experiences of poverty and environmental change are gender-differentiated;
- environmental security is mediated by gender relations;
- women and men have both conflicting and complementary interests and roles in environmental management.

Environmental interventions need to take into account the relationships between environmental sustainability and gender equality. Other factors such as age, class and ethnicity which also influence gendered experiences of poverty and environmental change are equally important.

4.1 Gender, poverty and environmental change

There are significant differences between women's and men's experiences of poverty and environmental change because of gender inequalities in ability to have command over environmental resource entitlements (e.g. land, trees), labour and income. These inequalities leave women with limited flexibility to respond to environmental changes in ways which maintain environmental resources.

4.1.1 Command over labour and environmental change

An illustration of this inequality is the gendered nature of labour and how it may result in negative environment change. Women's heavier total workload constrains the allocation of their labour time, for example, forcing them more often than men to make trade-offs between environment conserving activities, socio-economic activities and health. For example, a woman who may have to combine food production with work on a husband's cash crops may have little time to invest in regenerating and sustaining the natural resource base. In parts of Nepal, women travel long distances to find fuelwood due to deforestation. This reduces their inputs into agricultural production and environmental conservation (Leach and Mearns 1991). These examples point to women's effective incapacity to make certain choices.

4.1.2 Livelihood strategies and environmental change

Generally, women's livelihood strategies are more limited than men's. Participation in distant labour markets is an extremely flexible strategy for minimising risks such as unpredictable variations in rainfall that result in natural crises. Men are more able than women to resort to migration, as a longer-term strategy to reduce exposure to risk, whilst women may be thrust into greater dependency on the natural resource base. The widely held view that male out-migration makes women more vulnerable is questionable because in some instances male migration gives women greater decision-making powers, and opens up new livelihood possibilities (Redclift and Skea 1997).

Other livelihood strategies such as accumulating savings for harder times are not gender neutral. Gender disparities in access to income, combined with intrahousehold expenditure divisions and lesser rights in natural resource use, restrict women's ability to accumulate savings which could be a springboard to other rural non-farm activities. Consistent with this is the observation that in general, the poorer the household the greater the dependence on the natural resource base and on customary rights of access to common resources, e.g. firewood for cooking, fodder for feeding livestock, wood for the construction of houses. Such access is particularly important to women. This access is also gender-differentiated. In parts of Sub-Saharan Africa, men's rights to trees and their products tend to be stronger than women's rights since men have full disposal rights while women have use rights only for gathering fuel (Joekes *et al.* 1996).

Women's greater dependency on common property resources (CPR) has been documented for India. Agarwal (1994) shows that rural women depend more than men on employment in agriculture (women's share of labour force participation is 85 percent, and male labour force participation in agriculture is declining) and on the natural resource base and common property resources. This high dependence on CPR in India has policy implications for women, particularly as the productivity of India's CPR is falling drastically, and the acreage decreasing (as a consequence of high population density, land privatisation, codification and titling etc.) (Jodha 1995, 1991). Access to CPR is being curtailed by changes in land tenure fuelled by privatisation and land grabbing (Sida 1996). In addition, commercial pressures in many places are leading community institutions to re-interpret customary rights and obligations from collective use to individualised rights (Woodhouse 1997), a process which often disadvantages women.

4.1.3 Macroeconomic policies, poverty and environmental change

Links between macroeconomic policies, gender relations, poverty and the environment are not clear. Wee and Heyzer (1995) attempt to show, through case studies from different Asian countries, how national and international economic policies that contribute to environmental degradation also fuel the feminisation of poverty. In these contexts, they suggest that women's resource loss and their increasing poverty has to be understood at three levels:

- in terms of persisting gender inequities derived from the historical past, which have traditionally subordinated women;
- in terms of the reinforcement of existing inequities to serve the context of the present, such that women are excluded and disenfranchised from increasingly scarce resources;
- in terms of new processes that have resulted in women's loss of livelihood resources (Wee and Heyzer 1995).

However, the links between women's loss of livelihood resources and material impoverishment under environmental change are not clear. In Morocco, very resource-poor communities without recourse to external high wage migration opportunities in Morocco, women are impoverished by environmental change in terms of increased energy demands and workloads, but there is no data on other measures of poverty (El Mdaghri 1995). A study of some communities in Limbang district, Malaysia, highlighted variable community responses to declining resource availabilities in the face of deforestation and changes in government policy (Heyzer 1995). In terms of material indicators women were better off than before. The lack of diversity in livelihood activities may have increased women's vulnerability, but not their actual standard of living. By

contrast, in Kenya, anthropometric data shows that men's body weight fluctuates more inter-seasonally than women's (Oniango 1995).

Whether women's position in terms of relatively less access to resources, labour and decision-making powers to invest in managing natural resources translates into greater poverty depends on whether they can lay claim to other forms of support from households, kin etc. when disaster strikes. This inevitably depends on the nature of gender relations in any given location.

4.1.4 Impact of environmentally induced population displacements

The environmental impact of mass migrations, and environmental change as a cause for migration are increasingly receiving attention (IOM 1996), while concern with the impact of migrants on the natural environment of host regions is relatively new. The environmental impact of mass migrations may be different for men and women. Pressure on firewood may be felt initially by women in terms of increased journey times. In the camps at Dadad, in Kenya, there was some concern that travelling long distances to fetch firewood made women more vulnerable to banditry and violence.

Time spent cooking may increase for women in cases of environmental changes such as deforestation. Women may have to resort to using green wood rather than dry wood (Richard Black, personal communication).

4.2 Gender relations and environmental security

'Environmental security' (access to clean water, clean air and non-degraded land) (Redclift and Skea 1997) is influenced by gender relations. Men and women in rural areas are primary resource users, but access to resources is socially constructed, so that men and women derive different benefits and uses from natural resources, and in times of environmental shocks and crises may have fewer assets to fall back on, and limited diversification strategies.

4.2.1 Entitlements analysis of environmental security

Entitlements analysis provides a framework to show how access to and control over resources is socially differentiated by focusing on: 'endowments' (the rights and resources that people have, e.g. land, labour, skills etc.); 'environmental entitlement' (the utilities derived from environmental goods and services over which people have legitimate effective command such as direct uses in the form of commodities such as food, water, or fuel; or to environmental service functions, such as pollution sinks or properties of the hydrological cycle); and 'capabilities' which are what people can do or be with their entitlements, e.g. command over fuel resources derived from rights over trees (Leach *et al.* 1997). The example of south Ghana illustrates the gender differences in access and use of Marantaceae plants, commonly collected for wrapping food, kola nuts and other products (see Box 2).

Box 2: Entitlement analysis of access to and use of Marantaceae plants, south Ghana

Endowments – rights over the leaves

- on government reserved land, collection rights are acquired through a permit system
- off-reserve, collection rights are acquired through membership or negotiation with the landholding family or household

Entitlements – effective command over income from leaves (labour and marketing)

- women may have to negotiate labour time to collect leaves
- access to marketing is through village-based or visiting traders

Capabilities – to satisfy needs

- whether a woman can keep control of the income, and how it is used depends on intrahousehold bargaining arrangements

4.2.2 Market-based alternatives for environmental security

Because of nature of their responsibilities and direct dependence on land-based resources, women are the hardest hit by environmental degradation (UNEP 1995), particularly in rural areas where women's livelihoods tend to be more resource-based rather than money-based (Wee and Heyzer 1991). Poor women may become trapped into short time horizons with respect to resources over which they have little control, because they lack assurances of future access to resources and because they lack other economic opportunities. To the extent that they are excluded from participation in the market economy, they also rely directly on non-market natural resources for their immediate survival (UNEP 1995).

Money- or market-based activities are important fall-back options when environmental security is threatened by variations in rainfall, desertification, soil and land degradation, flooding etc. In general, men have more diversification strategies than women to limit environmental risks and vulnerability such as migration. Women have less access to productive assets, and in cases where they do hold assets these tend to be consumption-based assets with low disposal value (Kabeer 1991).

4.2.3 Health and environmental security

An immediate environmental problem is ill-health caused by biological and chemical agents in water, food and the soil. Whilst both men and women, and indeed children may be subject to parasitic infestations, women and children may be more likely to suffer from respiratory diseases caused or exacerbated by smoke and fumes from biomass and fossil fuels used for cooking due to their greater levels of exposure (Hardoy *et al.* 1992).

4.3 Gendered interests and incentives in environmental management

Women tend to have a greater involvement in environmentally sustainable activities and environmental management than men, but may incur certain costs or lack the required resources and decision-making powers to command control over resources.

4.3.1 Gender differentials in environmental resource management

Men's and women's interests in and incentives for environmental resource management differ in many situations, partly because of their socially constructed roles, and partly because of their lesser property rights and gendered interests. Women's socially constructed roles typically involve them in the management and use of environmental resources. A study of poor communities in three Latin American countries (see Box 3) indicated that women make significantly larger contributions to managing or ameliorating the negative effects on family welfare of natural resource decline and environmental pollution, particularly among the poor (Paolisso and Gammage 1996).

The above study found that women's time and task allocations change in response to environmental degradation. Environmental tasks appear to impose additional burdens on women, in part because their existing productive and reproductive activities are not easily transferred to other household members. This inability to substitute for female labour arises from high demographic dependency ratios, existing demands on household labour, and socio-cultural practices that determine the gender division of labour. Women's environmental tasks represent an important part of the household's first line of defence against environmental degradation. Despite the time they spend mitigating the costs of environmental degradation, women and their families are still at risk of environmental health problems because public infrastructure and services are scarce, because women face difficult poverty and demographic constraints, and because information about environmental health risks and dangers is not widely available (*ibid.*).

Box 3: Women's responses to environmental degradation

In La Argelia, a peri-urban area of Ecuador, women undertake the majority of environmental management tasks: caring for family members who are ill with water or media-borne diseases; purification of drinking water and the management of domestic waste. The research also found that poverty and migration status greatly influenced environmental management practices in this area. The poorer households were disproportionately those who had recently migrated from rural or other peri-urban areas, and were more likely to engage in environmental practices due to increased exposure to environmental risk.

In Cerro Navia, a peri-urban area of Santiago in Chile, 88 percent of women interviewed reported that they regularly wet and dampen roads, sidewalks, and paths to reduce the spread of dust. Women engaged in risk minimising, e.g. bagging all household waste, keeping animals and vermin from garbage, securing garbage until it is collected. Only 30 percent of women reported receiving help from other household members. Using regression analysis, it was determined that time dedicated to environmental tasks by women increased if that woman was a household head.

In rural Honduras, environmental degradation, measured in terms of the soil quality available to households for corn production, affects men and women differently. The study found that women's responses to environmental degradation are much more conditioned by their reproductive and domestic responsibilities. The demographic composition of the family had a strong effect on a woman's time spent growing corn.

Source: Paolisso and Gammage (1996)

4.3.2 Tenure rights, ownership and environmental management

Other research shows that women's natural resource tenure rights and control over decisions rarely match their extensive environment-related work responsibilities. In Zaire, for example, men usually allocate securely-tenured household land to permanent tree crops such as coffee. Women's food crops are marginalised onto annually-rented steeply-sloped land with erosive soils, where they have little incentive to invest in soil conservation structures (Leach and Mearns 1991).

4.3.3 Power over decision-making and environmental management

The many different ways in which water is used and managed often have distinct implications for men and women users. In Comoe, Burkina Faso, women were in charge of rice production on the lowlands and men worked on higher value crops on the rainfed uplands. Development staff nevertheless deferred to the men for inputs on the design and management of new rice irrigation works, despite the fact that the men had limited knowledge of irrigated rice and that their interest was limited to land value (van Wijk *et al.* 1996).

5 Policy implications and research directions for gender-aware environmentally sustainable development

5.1 Policy implications

5.1.1 Diversifying livelihood strategies

There is a need to widen the range of livelihood choices available to poor men and women, taking into consideration gendered differences in rights over land and resources. This implies a need for non-environment focused interventions such as market-based initiatives to enhance environmentally sustainable development (Leach and Mearns 1991; Joekes *et al.* 1996). Other poverty reduction focused measures are also a prerequisite for environmentally sustainable development. Investments are required in both natural and human capital (UNEP 1995).

5.1.2 Natural resources management

Alternative approaches are required which focus more on resource users rather than resources, recognising that women are key agents of change (Steady 1993). Effective natural resources management requires a genuinely participatory approach that emphasises the different activities of household members to ensure that different uses and impacts of natural resources are recognised and accounted for in natural resource management (van Wijk *et al.* 1996). Where charges, e.g. for water, are involved, policies need to take account of the fact that women have lesser command over cash than men and that where men control household expenditure, they may not give proper weight to women's interests or priorities. Policy needs to recognise that men and women's interests in and incentives for environmental resource management differ in many situations. Furthermore, environmental management initiatives should give some consideration to women's time constraints and workload. Projects that rely heavily on women's inputs should pay for women's time and labour.

5.1.3 Valuing women's work

There is a need for greater attention to women's contributions to enhancing environmental capital. 'Both women and the environment are "shadow subsidies" that enable profits to be made, because both are taken as free goods'. There is undervaluation of both environmental resources and of women's labour in managing and conserving these. Methods of valuing women's work as well as environmental goods need to be incorporated into approaches to environmentally sustainable development.

5.1.4 Institutional aspects of environmental change

The institutional aspects of environmental change require some policy attention. There is widespread consensus within international development circles that environmentally sustainable development should be based on local-level solutions derived from community initiatives. But expectations often fall short because community approaches tend to ignore power and social difference. In terms of bargaining power, interests and needs, community-based organisations can, like other institutions, reproduce relations of unequal power and authority (Leach *et al.* 1997). Policies aimed at environmental solutions through decentralisation, particularly the

devolution of responsibility for natural resources to local communities need to consider social difference and gender relations.

5.1.5 Property rights

In the wider context, attention to women's lesser property rights is required and the danger of further institutionalising gender disadvantage with moves towards individual ownership, unless counteracting measures are taken. Strengthening women's legal rights needs to be complemented by measures to improve women's bargaining power at local level

5.1.6 Macro-micro policy linkages

There is a need for approaches that address both macro and micro problems. A recent approach to operationalising sustainable development within the development context has been Primary Environmental Care (PEC), promoted by NGOs. However, PEC deals only with environmental problems at local project or regional levels in the South. It does not address such poverty-inducing macroeconomic processes as structural adjustment policies and austerity measures, which impose added stress on local environments in so far as they necessitate people's increased reliance on local resources for their survival needs (Braidotti and Wieringa 1994).

5.2 New directions

There is a need for more detailed research to establish the links between gender relations and environmental management, drawing on institutional and environmental analysis (Joekes *et al.* 1996). This will include examination of the trade-offs faced by poor women between sustainable management of environmental resources, economic benefits and well-being.

Use of pricing instruments in the management of environmental resources has gender-differentiated effects, as an *a priori* gender analysis would suggest (Joekes *et al.* 1996).

The gender biases in community organisations and other forms of governance at the local level are a theme that warrants specific research (*ibid.*).

Bibliography

- Anderson, L., 1994, 'Ecological aspects of drought mitigation', *Insights for Policymakers* 12, Brighton: IDS
- Abzug, B. and Islam, I., 1996, 'Beijing and beyond: women's leadership in sustainable natural resource management', *Natural Resources Forum: a United Nations Journal*, a special issue on women and natural resources management, Vol 20 No 2
- Agarwal, B., 1994, *A Field of One's Own: Gender and Land Rights in South Asia*, Cambridge: Cambridge University Press
- Braidotti, R. and Wieringa, S., 1994, *Women, the Environment and Sustainable Development: Towards a Theoretical Synthesis*, ZED/INSTRAW
- Chambers, R. and Conway, G., 1992, 'Sustainable rural livelihoods: practical concepts for the 21st century', *IDS Discussion Paper 296*, Brighton: IDS
- El Mdaghri, C., 1995, 'Women, environment and population: a Moroccan case study' in S. Joekes, M. Leach and C. Green, 1995, *IDS Bulletin: Gender Relations and Environmental Change*, Vol 26 No 1
- Franks, T., 1996, 'Managing sustainable development: definitions, paradigms and dimensions', *Sustainable Development*, Vol 4 No 2
- Greve, A., 1995, 'Institutional structures for environmentally sustainable development: towards environmentally sustainable development in sub-Saharan Africa', *Post UNCED Series Paper* No 3, Building blocks for Africa 2025, World Bank
- Hardoy, J., Mitlin, D. and Satterthwaite, D., 1992, 'Sustainable development and cities', in J. Hardoy, D. Mitlin and D. Satterthwaite, *Environmental Problems in Third World Cities*, London: Earthscan
- IOM, 1996, 'Environmentally-induced population displacements and environmental impacts resulting from mass migrations', International Symposium UNHCR, IOM, RPG, April 1996
- Jackson, C., 1993, 'Doing what comes naturally? Women and environment in development', *World Development*, Vol 21 No 12
- Jodha, N., 1991, *Rural Common Property Resources: a Growing Crisis*, International Institute for Environment and Development (IIED) Sustainable Agriculture Programme Series No 24, London: IIED
- Jodha, N., 1995, 'Common property resources and the dynamics of rural poverty in India's regions', *Unasylva: an International Journal of Forestry and Forest Industries*, Vol 46 No 180

- Joekes, S., Green, C. and Leach, M., 1996, 'Integrating gender into environmental research and policy', *IDS Working Paper 27*, Brighton: IDS
- Joekes, S., Leach M. and Green, C., 1995, 'Editorial: environmental change', in S. Joekes, M. Leach and C. Green, *IDS Bulletin: Gender Relations and Environmental Change*, Vol 26 No 1
- Kabeer, N., 1991, 'Gender, production and well-being: rethinking the household', *IDS Discussion Paper No 288*, Brighton: IDS
- Leach, M., 1992, 'Gender and the environment: traps and opportunities', *Development in Practice*, Vol 2 No 1
- Leach, M. and Mearns, R., 1991, 'Poverty and environment in developing countries: an overview study', final report to Economic and Social Research Council Society and Politics Group & Global Environmental Change Initiative Programme and Overseas Development Administration, Brighton: IDS
- Leach, M., Mearns, R. and Scoones, I., 1997, 'Environmental entitlements: a conceptual framework for understanding the institutional dynamics of environmental change', *IDS Discussion Paper No 359*, Brighton: IDS
- Oniang'o, R., 1995, 'The impact of out-migration on household livelihoods and on the management of natural resources: a Kenyan study', in S. Joekes, M. Leach and C. Green, 1995, *IDS Bulletin: Gender Relations and Environmental Change*, Vol 26 No 1, Brighton: IDS
- Paolisso, M. and Gammage, S., 1996, *Women's Responses to Environmental Degradation: Poverty and Demographic Constraints. Case studies from Latin America*, Washington: ICRW
- Raskin, R., Chadwick, M., Jackson, T. and Leach, G., 1996, *The Sustainability Transition: Beyond Conventional Development*, Stockholm: Stockholm Environment Institute
- Redclift, M. and Skea, J., 1997, 'Environmental security', *Insights 21*, Brighton: IDS
- Serageldin, I., Cohen, M. and Sivaramakrishnan, K. (eds), 1995, *The Human Face of the Urban Environment*, Proceedings of the Second Annual World Bank Conference on Environmentally Sustainable Development, Series No 6
- Sida, 1995, *Promoting Sustainable Livelihoods: a Report from the Task Force on Poverty*, Stockholm: Sida
- Steady, F., 1993, *Women and Children First: Environment, Poverty and Sustainable Development*, Vermont: Schenkman

- UN, 1996, *Natural Resources Forum: a UN Journal*, a special issue on women and natural resources management, Vol 20 No 2
- UNEP, 1995, *Poverty and the Environment: Reconciling Short-term Needs with Long-term Sustainability Goals*, Nairobi: UNEP
- van Wijk, C., de Lange, E. and Saunders, D., 1996, 'Gender aspects in the management of water', *Natural Resources Forum: a United Nations Journal*, a special issue on women and natural resources management, Vol 20 No 2
- Wee, V. and Heyzer, N., 1995, *Gender, Poverty and Sustainable Development: Towards a Holistic Framework of Understanding and Action*, New York: ENGENDER, UNDP
- Woodhouse, P., 1997, 'Land, water, and local governance in dryland Africa', *Insights 21*, Brighton: IDS
- World Commission on Environment and Development (WCED), 1987, *Our Common Future*, Oxford: Oxford University Press
- World Resources Institute, 1992, *World Resources: Toward Sustainable Development*, Oxford: Oxford University Press
- World Resources Institute, 1994, 'Women and sustainable development', in *World Resources: a Guide to the Global Environment. People and the Environment*.