The case for gender-sensitive socio-ecological research

Beate Littig
Institute for Advanced Studies, Vienna, Austria

ABSTRACT
This article deals with the emerging discourse on sustainable work, which has been triggered by the ecologically initiated discussions on sustainable development. It gives a critical overview of the most important approaches to this subject from a feminist perspective. From a feminist point of view many of the current concepts of 'sustainable society' and 'sustainable work' have several deficiencies. The main point of criticism is that these approaches do not consider gender differences appropriately, especially with regard to the gendered division of work. Feminist approaches to the sustainable redefinition of work, on the other hand, tend to be essentialist and therefore have to be looked upon critically, too. Trying to escape both of these pitfalls, the author suggests a gender-sensitive, socio-ecological approach to the complex field of sustainable work. This approach views socioecological problems as gendered problems and appreciates a transdisciplinary access to questions of sustainable development.

KEYWORDS
dematerialization / ecofeminism / Fordism / future of work / social ecology / sustainable ecology / sustainable development

Introduction
The discourse on sustainable work is rather new and received its inputs from neighbouring discourses, such as the mainly ecologically oriented discussions on sustainable development, the discourse on the multiple crisis of Fordist work societies, and finally the discussions on work and employment. Key elements of these partly independent discussions are:
the relation between environmental policy and employment; the connections between environmental policy and informal work; conceptual considerations about the linkages between work and the environment; and the role of work in the context of sustainable development.

From a feminist point of view these discussions have several deficiencies. These shortcomings extend from gender 'blindness', for example, in 'sustainable society' models and in discussions about the effects of employment upon the environmental segment of the labour market to the predominant use of a patriarchal definition of work, which limits work to paid employment. The feminist approach to work and environment consists of critical comments on various concepts, and also includes - to a lesser extent - feminist models of sustainable work, as for example the approach of 'provident economics' (vorsorgendes Wirtschaften). This paper will give a critical overview of these approaches, which are currently discussed under the general topic of sustainable work.

In this paper, I will first present and analyse from a feminist perspective the most recent approaches to sustainable work. I will then present and discuss feminist contributions to the redefinition of the relationship between work and the environment. Finally, I will suggest a gender-sensitive, socio-ecological approach of analysing the relationships between work and environment. This approach tries to avoid both the gender blindness of ecologically driven approaches as well as the apparent essentialism of feminist approaches.

**Sustainable work - an emerging discourse**

Because the discussion about the significance of work in a sustainable society has only just begun, the effects of sustainability upon the organization of work are anything but clear (see the contributions in *Politische Okologie*, 1998 as well as Bierter and von Winterfeld, 1998; Hildebrandt, 1999; HBS, 2000). The debate raises complex questions about the requirements and non-sustainable effects of employment-based labour and lifestyles in modern industrial societies and the interplay between labour and environment in production and reproduction. Current discussions are further complicated by the fact that the definition of work and its associations is not clear. What is the connection between work and 'life', or between work and nature?

Conceptual considerations about the connection between environment and society describe work as a mediating category in the metabolism between the social and the natural system (Fischer-Kowalski, 1997). According to these metabolic views, natural environment/nature and society are connected by material flows. However, often these concepts relate only to the relationship between people and nature. Nevertheless, sometimes they also try to quantify material and energy flows between a social system and its environment. The concept of 'societal metabolism' and the 'colonization of natural systems',
The case for gender-sensitive socio-ecological research developed by the interdisciplinary Vienna Team of Social Ecology, goes beyond the mere metabolic approach (Fischer-Kowalski, 1997; Fischer-Kowalski and Haberl, 1993, 1998; Fischer-Kowalski and Weisz, 1998, 1999; Fischer-Kowalski et al., 1997). The goal of this ambitious approach is to understand how to conceptualize the connections between symbolic and material systems. In addition, it wants to conduct empirical analysis of these relations without being subject to reductionism of either the social or the natural sciences (Fischer-Kowalski and Weisz, 1998). Following Hans-Peter Sieferle (1997), the 'societal metabolism' concept understands nature as a 'material system' and society as a 'symbolic system' of cultural practices. These two systems are linked by a population, in the sense of a certain number of people who are connected in a specific way. These populations are linked to the material and the cultural system. On the one hand, the cultural system provides them with the culturally produced codes and thus also determines the symbolic representation of the material world. On the other hand, by means of labour and the experiences that result from it, they are also linked to the material system. Labour, in this context, means the 'physical expenditure of energy in an intentionally designed fashion' (Fischer-Kowalski, 1997: 130).

The metabolic approach traces back to Marxist ideas of work and nature, which have been ignored by most sociologists so far (Dunlap, 1997; Fischer-Kowalski, 1997; Foster, 1999; Schmidt, 1971). Marx and Engels assumed that work is an existential human process to control nature (Marx and Engels, 1867/1961: 183 f.). At the same time, labour or work relations in particular structure the social relations within a society (e.g. Clausen, 1988). In contrast to Marx and Engels, labour is today no longer perceived as a productive exchange process with nature but as productive and destructive at the same time - at least in contemporary industrial society (Clausen, 1988: 55). This ambiguity becomes apparent in different models portraying the human exchange process with nature - i.e. labour as a circle of material resources (e.g. Hildebrandt, 1999). All types of work, be it paid employment, subsistence work, domestic labour, individual labour, or community work, need natural resources for the production of goods and services. The working person earns an income (money or goods). The expended working capacity is reproduced in various types of consumption (material, non-material, commercial, non-commercial, etc.). The products or services that are used in this process also produce waste or environmental hazards during production and consumption. Some of the waste created may be collected and returned to this cycle. The rest pollutes the natural environment and decreases the quantity or lowers the quality of the available resources that can be introduced into the material cycle (d. Hildebrandt, 1999: 20).
Figure 1 Labour and the environment as a material cycle

This cycle is represented schematically in Figure 1. This model of the material cycle has the advantage that it does not artificially separate the areas of production and reproduction/consumption (as opposed to most mainstream economic models, e.g. Varian, 1993; see also Ferber and Nelson, 1993; Hofmeister, 1999). On the contrary, the model connects energy and material streams that flow through these areas by the work that is done in that context. This view makes it possible to comprehend the extent of the hazardous effects on the environment that result from the different types of lifestyle and economy in modern industrial society (Fischer-Kowalski, 1998; Fischer-Kowalski et al., 1997; Weller, 1993, 1994b). Consequently, the complex interrelationships of the modern way of living have become the central focus of the discourse on sustainable development in the modern industrialized countries. The main arguments of this discourse will be outlined in the following section.

Concepts of sustainable development and work

The current concepts of sustainable development have a history of more than 15 years. Sustainable development as a term has been known since 1987, when
The case for gender-sensitive socio-ecological research
Littig

The World Commission for Environment and Development published the so-called Brundtland report, *Our Common Future* (WCED, 1987). This report describes sustainable development as a process of constant change with the objective of harmonizing current and future needs with the exploitation of resources, the stream of investments, the direction of technological development and institutional changes. Ever since the 1992 conference on Environment and Development (UNCED) in Rio de Janeiro, global sustainability has become the guiding principle for political discussions of environment and development (Sachs, 1997; United Nations, 1992).

While the Brundtland report still assumed the necessity of an exponential growth of 5-6 percent in developing and 3-4 percent in industrialized countries, it has become evident in the meantime that nature may not be able to sustain such a growth (see Meadows et al., 1992). Critics of the Brundtland forecast pointed out that the ‘preserving’ effects of environmental technologies are overestimated (Kopfmiiller, 1993: 6). In their perspective, innovative and ecological technologies are simply not enough to preserve resources and disembody the environment. Moreover, the critics recommended the supplementation of technical potentials for conservation and reduction of material with the substitution of technical products, with adequate economic conditions and with social innovations.

The criticism of the Brundtland report drew the attention away from environmental damage in developing countries caused by poverty to damage caused by ‘over-consumption’ in industrialized nations. It became apparent that the prevalent ideas of wealth, lifestyle and personal development as well as economic prosperity are based on the excessive use of non-renewable energy and natural resources. Therefore, they can only be globally applied (Giddens, 1992; United Nations, 1992).

A by now famous operationalization of sustainability in the sense of greater distributive justice is the concept of ‘environmental space’, which was elaborated by the Institute of Climate, Environment and Energy in Wuppertal (BUND/ Misereor, 1996). The concept of environmental space is a quantitative measure for the use of environment and natural resources per capita. The transgression of a certain limit puts sustainable development at risk. Based on modes of life and production in industrialized countries, the concept identifies central starting points for sustainable development, in particular technical and organizational optimization as well as changes of values, consumption patterns and lifestyles.

The concept promotes both a ‘revolution of efficiency’ and a ‘revolution of sufficiency’. While the ‘revolution of efficiency’ includes technical and organizational optimization, the ‘revolution of sufficiency’ propagates changes of values, consumption and lifestyles. Both ‘revolutions’ strive for increases in productivity of resources and energy (Hinterberger et al., 1994; Schmidt-Bleek, 1993; Schmidt-Bleek and Tischner, 1995; von Weizacker et al., 1997).

The ‘revolution of efficiency’ aims primarily at technical and organizational efficiency on a microeconomic level. The organizational component of the
concept is concerned with the idea of selling services instead of products and, beyond that, with optimizing logistics, distribution and utility. The technical component of the concept tries to optimize products, processes and infrastructures. It focuses on product innovations, which are based on ecological design; diminished use of resources; energy conservation; avoidance of dangerous raw materials and of toxic emissions in production processes and consumption; long-life, repairable and recyclable products, etc. According to preventive or integrative ideas of environmental protection, process innovations should minimize energy and water use as well as the output of pollutants.

With regard to sufficiency, there is more at stake than claiming new 'dematerialized' qualities of use by the slogan 'using instead of owning' (Hinterberger et al., 1994; Schmidt-Bleek, 1993). Even more importantly, the quantitative level of utilization needs to be kept as low as possible. This implies that ways of basing consumption on a 'collective goods' concept need to be found. Examples for this are community washing machines, cooperative car sharing, commercial lending or leasing of sewing machines as well as home and garden tools. New models of prosperity are aiming at our lifestyles, consumption patterns and habits of recreation. Examples for such ideas include the preference of vacationing at home instead of trips to faraway places, the reduction in consumption of meat, the preference for organically grown food, extensive reduction of car driving in favour of walking, cycling and public transport. Overall, these models describe a new way of living and dealing with time, space and speed. In this context, these concepts consider a new 'prosperity of time', which could be created by a decrease of total working hours and the establishment of a lifelong work time, which includes reproductive private work and work for hire. All of that can be accomplished by job sharing and similar efforts (see BUND/Misereor, 1996: 221). The authors of the mentioned study regard the implementation of a social and ecological tax reform, which makes energy more expensive and labour cheaper as the most urgent need. This reform should slow down energy-intensive mechanization. Further taxes should reduce use of raw materials and ease the change to a more labour-intensive 'repair society' (see also Blau et al., 1997). A socio-ecological tax reform should lead to ecological structural changes within economy and society, which may reduce the use of non-renewable energy and resources and - at least on a medium-term basis create new jobs.

The Wuppertal study is a good example for a concept of sustainable social development. It demonstrates that the concept of sustainable work cannot be limited to the 'greening' of working processes. The principles of sustainable development call for a rearrangement of the entire structure of modern Fordist work societies with their close connection between economic growth, prosperity, social security, quality of life and psycho-social well-being to paid employment and income (HBS, 2000; Lipietz, 1991; Senghaas-Knobloch, 1998).

The Wuppertal study can serve as a starting point to define five important thematic areas within the current sustainability debate (see Hildebrandt, 1999: 16):
1 job creation by environmental protection;
2 flexibility of and reduction of working hours in combination with a reorganized social security system (e.g. providing general income, which is independent of 'employment status');
3 extension of informal individual and subsistence labour for developing an extended definition of work, the reduction of paid employment as central source of income, the development and propagation of a new qualitative understanding of prosperity which is less tied to material consumption;
4 reorganization of cost relations between different production factors by a socio-ecological tax reform and by taking into account the real costs of environmental protection and distribution in product prices;
5 qualification measures in environmental protection and increased participation of workers and employees to make environmental measures more effective.

A feminist point of view raises several questions about sustainable work. Do the concepts treat gender relations at all and, if so, in which way? To what extent do these concepts address the different living and working conditions of men and women? What kinds of solutions do they provide for a just division of labour between the sexes? These questions have to be addressed, if only for the one reason that Agenda 21, Chapter 24 - one of the key documents of the sustainability discourse - explicitly demands to accord equal social, political, economical and legal status to both genders (Littig, 1998; Moghadam, 2000; United Nations, 1992).

According to feminist critics, the above-mentioned study 'Sustainable Germany' (Zukunftsfähiges Deutschland), which can serve as a typical example for a 'sustainable' social model, has a number of shortcomings. Feminist critique concentrates on the fact that the study treats gender-related questions unsystematically, especially in view of the gendered division of labour (summarized in Bernhard, 1999; Littig, 1998; Schultz, 1999). Moreover, as Irmgard Schultz points out, the authors of the study take a rather uncritical attitude towards the role of science in sustainable processes. Additionally, she criticizes the apparent lack of democratic participation in the preparation and implementation of sustainable goals and strategies (Schultz, 1999). In contrast, Agenda 21 perceives women as an important group of actors in sustainable processes and their participation as central (Littig, 2001). Claudia Bernhard's (1999) criticism of the study 'Sustainable Germany' is even more serious. She reproaches the authors of the study with the fact that - under the 'cloak' of socio-ecological re-organization - they instrumentalize women for the benefit of capitalist/patriarchal interests.

Feminists demand four basic revisions of the current discourse on sustainability and work:

a critical reflection of underlying definitions of work and the development of a concept of work, which also includes domestic, family and subsistence work;
2 the consideration of the actual working and living conditions of women whenever sustainable types of work and living arrangements are set up;
3 a critical view on possible 'mock' solutions of environmental measures, which includes a look at the consequences for all affected people;
4 the revision of the leading non-sustainable economic principles in favour of utility value-oriented and cooperative economic principles.

From a feminist perspective, these demands should also apply to the new models and discussions about sustainable labour, economy and lifestyles (e.g. Bierter and von Winterfeld, 1998; BUND/Misereor, 1996; HBS, 2000; Hildebrandt, 1999). In fact, however, gender issues are debated in the sustainable development discourse in a way that is hardly in keeping with the complexity of current problems. Nor is it in any way natural for the mainstream proponents to include a gender perspective in the debate (Braidotti et al., 1994; Harcourt, 1994; Hausler, 1994; Littig, 2001). This deficiency in the debate contrasts with a number of official documents on sustainable development that aim to accord equal status to both genders and target women explicitly as important actors.8

Another critical comment of E. Hildebrandt deserves to be mentioned. He criticizes that the concept of sustainable labour and living fails to pay adequate attention to the actual changes of paid employment and its structural requirements. This concerns the disintegration of the so-called regular employment contract, the regulation of working conditions and vocationalism, the feminization of labour, global competition, etc. (Hildebrandt, 1999: 14; see also Littig, 2001; Matthes, 1983; Sauer, 1999). Instead of reorganizing existing types of paid employment and its institutions in a more ecological way, the Wuppertal study advocates another type of full employment. The proposed new 'sustainable work society' encompasses informal activities, such as do-it-yourself and self-help economic activities and combines them with part-time employment (Hildebrandt, 1999: 14). Prerequisites for this reorganization of working life are shorter working hours and flexibility. The study, however, pays no attention to problems associated with flexible working hours. In fact, as has been shown in the case of VW in Wolfsburg, Germany, the consequent varying working hours can increase the difficulties to organize one's social and family life {Hielscher and Hildebrandt, 1999; Hildebrandt, 1999).9

Feminist contributions to the concept of sustainable work

The advocates of the 'provident economics' approach (vorsorgendes Wirtschaften), a concept which they call 'work in progress', also criticize the sustainability discourse. The name 'provident economics' was coined as an antithesis to the prevailing concept of economics by a group of German-speaking feminist economists. Like other feminist criticisms (e.g. Ferber and Nelson, 1993), 'provident economics' accuses economics of excluding private reproductive from total economy (Biesecker, 1997; Biesecker et al., 2000; Diskussionskreis
'Frau und Wissenschaft' [Discussion Circle 'Woman and Science'], 1997; Hofmeister, 1999; Inhetveen, 1994, 1999; Jochimsen and Knobloch, 1997; Jochimsen et al., 1994). They criticize the following tendencies: economic analysis focuses on the money-based, market economy and thus does not cover the 'entire' economy (Hofmeister, 1999: 85). Moreover, the economy is presented as autonomous from its natural surroundings and the social life (Biesecker, 1997). In accordance with the currently prevailing paradigm of economic rationality, the market economy aims only at abstract values and not at the satisfaction of needs. The aim of 'provident economics' is to reverse this. Provident economics strives for the realization of utility values and natural values (Biesecker, 1997). Contrary to the predominant money economy, 'provident economics' is governed by other principles (Hofmeister, 1999; Jochimsen and Knobloch, 1997), namely:

cooperation (instead of competition);
foresight (instead of after-care);
looking at really existing needs (instead of abstract monetary values).

The advocates of 'provident economics' do not think that the realization of these principles is utopian. On the contrary, they presume that these principles have already been realized in many areas of employment, especially in the reproductive area of the domestic and subsistence oriented 'gardening economy' (Biesecker et al., 2000; Inhetveen, 1994, 1999; Hofmeister, 1999).

The leading principles of 'provident economics' are important prerequisites for the conception and realization of sustainable development (Biesecker, 1997; Hofmeister, 1999). An extended sustainable definition of labour, which is based on cooperation, foresight (provision) and a focus on essential needs, can only be realized by taking into account the 'unity of the economy'. This idea embodies an extended understanding of economics and embeds economic behaviour in people's natural surroundings and social lives (Biesecker, 1997; Hofmeister, 1999). Thus, the principles of 'provident economics' also serve as a reference point for 'ecologizing' the existing main types of employment.

While the approach of 'provident economics' is more interested in the solution of ecological problems, the so-called 'subsistence perspective' is decidedly feminist, critical of development and globally organized (Bennholdt-Thomsen and Mies, 1997; Mies and Shiva, 1993; Mies et al., 1988). Since the 1970s, a number of social scientists, including developmental sociologists at the University of Bielefeld in Germany, published many studies on subsistence (Hasenjiirgen, 1993: 12). Several empirical studies in different so-called Third World countries revealed that the utility value-oriented production of meeting individual needs, or subsistence economy, is the most important element of reproduction for large numbers of people living there. These findings contradict the capitalist development model, which assumes that the adaptation of...
so-called developing countries to the technological and social levels of western industrial societies would be the key for development (Braidotti et al., 1994; Wehling, 1992). This model favours 'developmental policies' to abolish subsistence forms of labour, because it alleges that all 'non-capitalist' living and working conditions are either under-developed, traditional, or backward. In contrast, the so-called 'subsistence perspective' points out that capitalist development does not entirely replace the subsistence economy by salaried work. Non-capitalist subsistence labour, which is based on individual needs, is an essential part of capitalist development, because it contributes to the reproduction of labour (Hasenjügen, 1993). The subsistence approach also links social division of labour and gender relations by pointing out that the predominantly female subsistence work is part of the basic structure of capitalist societies.

Within the feminist subsistence debate, this so-called 'subsistence perspective' became much more radical through making the connection of subsistence with patriarchal power structures and the capitalist production of goods. The advocates of the feminist so-called Bielefeld approach - Maria Mies, Veronika Bennholdt-Thomsen and Claudia von Werlhof - conducted several studies about female working and living conditions in particular in different so-called Third World countries (Mies, 1986; Mies et al., 1988). The authors proceed from the assumption that the global exploitation associated with capitalist economy determines all the local, regional, national aspects of production and of society, including poverty and so-called under-development. The capitalist exploitation logic includes not only salaried work, but, as an essential part of the capitalist system, also unpaid reproductive labour usually done by women. This holds true not only for the so-called First World but also for the subsistent production in marginal population groups in the so-called Third World. This unpaid reproductive and subsistence work ensures the reproduction of labour power and is thus incorporated into the profits of capital. As a functional part, it is ultimately included in the utilization process and contributes to the accumulation of capital. The Bielefeld group calls the capitalist appropriation of unpaid (female) labour 'robbery' and perceives it as the second strategy to accumulate capital as supplementary to the exploitation of salaried work.

In their view, the fact that female reproductive and subsistence labour is unpaid structurally devalues female subsistence work. Since subsistence work practically takes place outside the area of social production, unpaid labour - according to a dualist society-nature concept - is quasi-degraded to 'natural productivity' and thus is an exploitable 'natural resource'. This naturalization of female informal productivity can be perceived as an exploitative capitalist relationship with nature, which in capitalist utilization logic ultimately provides free resources. In this analogy between the 'sphere of nature' and the 'natural productivity' of female and subsistent labour in so-called Third World countries, 'women are the last colony' of capital-as in the title of a famous book by these authors (Mies et al., 1988). Consequently, in this perspective, the decrease of material consumption to encourage autonomous subsistence production is the only opportunity for a feminist liberation struggle and for the reorganization of
society's relationship with nature (Bennholdt-Thomsen and Mies, 1997; Mies and Shiva, 1993).

This perspective frequently gave rise to serious debates, especially within the feminist movement and research in West Germany (Bennholdt-Thomsen and Mies, 1997; Braidotti et al., 1994; Wichterich, 1992). Many critics doubt the success of propagating the renunciation of the comforts of consumption along with the (re-)establishment of subsistence-oriented lifestyles, at least not under the conditions of contemporary industrial societies. Moreover, the portrayal of traditional farming life, especially in view of women's social status, is criticized as idealized and stereotypical (Hasenjürgen, 1993). The Bielefeld approach neither differentiates between women from different social situations and backgrounds, nor does it discuss the cultural conditionality of female role stereotype. Furthermore, there are fundamental doubts concerning women's alleged and positively rated 'closeness to nature' which most eco-feminist approaches have in common (Braidotti et al., 1994; Mellor, 1997). From a constructivist point of view, the basic objection against this approach is directed at the idea of a natural bipolarity of gender. This easily accepts without questioning and merely reproduces the everyday differentiation of men and women without questioning its preconditions (Gildemeister and Wetterer, 1992; West and Zimmerman, 1997). The fact that this perspective universalizes and essentializes gender differences and that it assumes a gendered division of labour instead of identifying it as a social construction is problematic (Gehmacher and Singer, 1999; Gildemeister, 2000; Knapp, 1998; Lorber and Farrell, 1991; Scott, 1998).

Some of the above criticism is also aimed at the 'provident economics' approach (Knapp, 1997), which ascribes this closeness to subsistence behaviour and knowledge to women in a similar way. The main moral principle of 'provident economics', which is foresight (provision) and which ought to renew the existing economy, is derived from the assumed female abilities to provide and care (Biesecker, 1997; Hofmeister, 1999; Jochimsen and Knobloch, 1997). Hofmeister, when faced with this critique, responded by pointing out that provident economics would by no means be connected with essentialist ideas of a caring female (1999: 91). However, the learning and practising of behaviour and skills of provident economics are taking place in the reproductive sector, which is in the primary responsibility of women. This does not mean that caring as such is 'female' (Hofmeister, 1999: 91). On the contrary, both genders should have equal access to formal economic and reproductive activities. Ultimately, these two separate economies, each of them with its particular principles of action, ought to be combined along the lines of a sustainable economy (Biesecker, 1997; Hofmeister, 1999). The provident economics approach is also often blamed for being unrealistic because it presumes that two economies can co-exist harmoniously instead of seeing them as structurally dependent and asymmetrical (Knapp, 1997). This very basic line of critique calls into question the efficacy of moral demands that the existing economy and the exploitation of nature and women be changed. Hofmeister addresses this critique by stating
that the 'provident economics' concept is deliberately committed and normative, and that it mainly tries to point out the great significance of ethics and morals in economics, or at least in the sustainable economy view (Hofmeister, 1999: 91).

Resume and outlook: sustainable work from the perspective of gender-sensitive socio-ecological research

Considering the shortcomings of the prominent Wuppertal study and of feminist contributions to sustainable work, the following remarks about the discussion of sustainable work can be made. The concept of sustainable work cannot shut itself off from reflections upon existing capitalist power constellations, the actual development of paid employment, the structural separation of productive and reproductive labour, and the global as well as the gender-differentiating division of labour. In order to reach beyond well-intended but mostly ineffectual moral claims, it will be necessary to introduce and analyse concrete margins and limits for the realization of socio-ecological labour for women and men. Sustainable social development will depend to a large extent on ecologizing the existing employment patterns and structures, as well as our entire way of life.

As described above, environmental problems result from the currently predominant destructive relationships between nature and society, whose extensive utilization of nature by material exchange processes can be described and measured. Men and women are in a different way involved in these exchange processes and differently affected by any problematic consequences thereof due to gender-specific role attributions, positions and functions. Thus, the gender relationships, which are based on the predominant dual construction of gender and usually lead to male privileges, have gradually become the object of analysis. Society's hierarchical gender organization is expressed by several facts: the social division of labour, the free disposition of power and resources, and the opportunities to assess certain social functions, positions and roles. At the same time, gender is a universal category, which applies to all known forms of society regardless of cultural and historical variations (Klinger, 1999: 109). It is both important to recognize any concrete forms of expression and social contexts common to men and women, and to focus on differences within genders. The reason for this are overlaps between gender categories and other characteristics. The general homogenization and comparison of women and men leads to wrong assumptions and results. It also raises unrealizable political expectations (e.g. women's global solidarity). These statements are in line with the conceptual framework of 'gender mainstreaming', which in September 1995 effectively entered the international public policy at the UN Fourth World Conference on Women in Beijing. Gender mainstreaming features prominently in the so-called Action Platform and commits the institutions of the UN system to systematically incorporate gender perspectives into all policy processes.
The case for gender-sensitive socio-ecological research Littig (Moghadam, 2000). By the end of the 1990s, the European Commission and Parliament also incorporated the idea of 'gender mainstreaming', which has been especially adopted in European employment policies (Behning and Pascual, 2001; Pollack and Hafner-Burton, 2000).

In socio-scientific environmental research, the results and considerations of gender research imply that gender as a social/structural category plays an essential part in the definition and solution of problems (Littig, 2001; Schultz, 1994, 1998; Schultz and Weller, 1995). In order to be gender-sensitive, environmental research needs to consider the socio-structural consequences of gender with regard to the free disposition of resources and the limited possibilities for action. This is, for example, due to social role stereotypes, the participation in decision-making and power, the opportunities to shape one's personal life, etc. This does not just apply to basic research (e.g. conceptions of the relationship between people and nature or the definition of categories), but also to the empirical collection and evaluation of data (e.g. operationalization of variables and interpretation of results), and to the accompanying empirical research (e.g. differentiation of expectations, opportunities and possibilities for action). This kind of research aims at both the gender-sensitive analysis of the existing socioeconomic crisis and the search for gender-sensible solutions. I would suggest calling such a socio-scientific research approach 'gender-sensitive socio-ecological research'. Knowledge production for socio-ecological problems, which is gender-sensitive, will quite naturally integrate gender issues into environmental research instead of moving them to a special, often marginalized area (such as 'Women and Environment'). This applies to the discussion of future forms of (sustainable) work as well as to the topic of sustainable consumption, the change of environmentally destructive behaviour and political mobilization or institutionalization.

It has been repeatedly pointed out that the ecological crisis can only be solved by combining the change of individual lifestyles and behaviour with the change of the existing environmentally destructive modes of production and consumption. This perspective challenges the basic social principles of contemporary societal organization, especially Fordist (paid) labour societies, which are based on mass production and consumption. However, the Fordist labour model is not only problematic from an ecological perspective: in times of global economy, its (social) national limitations also pose a problem. From a feminist point of view, the employment-based Fordist social model has also been extensively criticized - first, because it ignores the necessary requirements (female reproductive labour) and, second, because it disadvantages employed women (unfair salaries, lack of access, etc.) (Abbott and Wallace, 1997; Sauer, 1999). These points of criticism call for a new extended social understanding of labour, which - to sum up - should be ecologically and socially compatible and should also acknowledge gender variations. Such extended problem perception needs trans disciplinary cooperation and knowledge production, which is oriented towards the solution of social problems (Gehmacher and Singer, 1999; Gibbons et al., 1994). The recurrent strident demands for gender equality and social
justice show that existing research in this context is inadequate and incomplete. With regard to ecological systems, this is expressed by sympathy with nature and present and future generations. Such problem orientation would blur the boundaries between basic and applied research and call for cooperation of science and practice. In this way, the production of knowledge would no longer be limited to small scientific circles and academic institutions. Instead, it would require new networks and new forms of institutionalization.

Gender-sensitive socio-ecological research does not prefer special techniques of empirical research. A pluralistic set of tools, both quantitative and qualitative methods, can be applied: if representative information is needed to get an overall view of a special issue, instruments of quantitative, statistical research such as opinion polls, representative surveys, secondary analysis of official statistical data, etc. will be adequate. Qualitative techniques such as interviews, group discussions, participant observation and case studies should be used to explore living situations and their cognitive representation in detail. For evaluation projects on special programmes or measures, a combination of qualitative and quantitative methods (triangulation) might be useful.

Summing up, the main characteristics of gender-sensitive socio-ecological research are:

- an emphasis on socio-ecological problems and their gender-specific conditions and consequences;
- a determination to eliminate gender disadvantages;
- a need for transdisciplinarity to define and solve problems effectively.

Gender-sensitive socio-ecological research has the advantage that it combines the findings of women's and gender research with environmental studies. However, there have hardly been any attempts to implement such a perspective. On the contrary, both approaches seem to ignore each other. Nevertheless, future research will show whether this combination will be successful in practice.

Notes

1 There is no valid national or international agreement on the meaning of the term 'environmental segment of the labour market' (Hildebrandt and Oates, 1997; Ritt, 1998). Its meaning ranges from those industries and services which primarily aim at environmental goals to a broader definition of the term including all commercial activities which have a positive effect on environmental conservation. Using this broader notion, in 1994, the number of jobs in the Austrian green labour segment totaled 44,000, i.e. 1 percent of total employment (Ritt, 1998: 8).

2 In the 1970s, another discussion concerning 'environment and employment' began, which mainly focused on the negative and positive effects of environmental policy/protection on the number of available jobs (Sprenger, 1997). Only recently this debate came to include questions of job quality in the envir-
3 This definition of labour is problematic because of its width. Such a definition would also encompass many other human activities such as sports, sexual intercourse, several hobbies. The Hawrylyshyn's 'third party' rule (1977) is surely a necessary additional criterion, i.e. that, if the rewards or product of the activity are diminished by hiring someone else to do it, then it is not simply labour - see Hakim (1996) or Pahl (1984) for further discussions on this issue.

4 In this way, paid employment and reproductive labour, which is predominantly carried out by women, may also be seen as two connected parts of the economic process (Abbott and Wallace, 1997; Pahl, 1984).

5 P. Tjimes and R. Luijf substantially criticized the Brundtland report's ideas regarding economic and developmental policies. They pointed out that the report applies without reflection the theoretical economic assumption of scarcity to ecological economics and as a consequence only demands improvements of the economic management of poverty. Traditional socio-cultural differences in the ways of how to deal with shortages are not considered at all. The modernization of traditional societies according to the western example is recommended without further scrutiny (see Tjimes and Luijf, 1995; see also Muttagi, 1998; Shiva, 1989).

6 Other scientists propose a third 'revolution of consistency' for a sustainable development. This means fitting anthropogenic material streams undisturbed in the natural material cycles (see Huber, 1995).

7 There are several country studies following the Wuppertal concept of sustainable development - among others, ones for Germany (BUND/Misereor, 1996), the Netherlands (Milieu Defensie, 1992) and Austria (Kosz, 1998), besides the one titled *Towards Sustainable Europe* (Friends of the Earth, 1995). But, from a Social Sciences point of view, it is not unproblematic to operationalize sustainability as proposed by the Institute in Wuppertal. Demanded socio-political change (i.e. change of lifestyles and values, a new definition of labour, etc.) is cast in normative ideas of how it should be. Possible social implications or consequences are sometimes phrased very vaguely. Overall, the proposed changes lack consideration of detailed sociological findings and of the analysis of society (see articles in Brand, 1997).

8 The idea of gender mainstreaming - i.e., generally speaking, the integration of a gender perspective into all policy processes - already manifests itself in Chapter 24 of the Agenda 21 titled 'Global Action for Women towards Sustainable and Equitable Development' (UN, 1992). Most items of Chapter 24 were confirmed in 1995 by the participants of the fourth World Conference in Beijing. At that time, gender mainstreaming became an official political keyword (Littig, 2001).

9 Other work models such as regular, part-time hours, particular parts of the day or week can offer flexibility to both employer and employee, without the disruptive impact of variable (or unpredictable) hours on the work-life balance of the worker.

10 The question of whether the homogenization of women as a feminist political strategy may also be justified by the fact that gender is a universal criterion of social structuring gave rise to some heated discussions within feminist circles. It was mainly ecofeminists who criticized the fact that postmodern and post-
In view of current globalization processes, it seems not very promising to impute a homogeneous interest (in the environment) to women of different social class, ethnic background and age, and to proceed from gender-stereotypical attributions of interests and coalitions and mobilization potentials (Sassen, 1998; Wichterich, 1995). At least academic gender studies and partly policy debates (e.g. on gender mainstreaming, Moghadam, 2000; Pollack and Hafner-Borton, 2000) slowly acknowledge this heterogeneity - which black feminists recognized since the 1970s (e.g. Lorde, 1984; see also Gildemeister, 2000; Klinger 1999).

The history of the concept of gender mainstreaming traces back at least to the Third World Conference on Women, in Nairobi, Kenya in 1985, where feminists criticized mainstream capitalist development policies for their gender blindness and developed the first principle elements of gender impact analysis (Braidotti et al., 1994; Moghadam, 2000). Meanwhile, gender impact assessment has become an elaborated instrument 'designed to analyse potential effects of new government policies on the gender relations' (Verloo and Roggeband, 1996: 3).

References


The case for gender-sensitive socio-ecological research


Weller, I. (1994b) 'Zur Diskussion der Stoffe und Stoffströme in der Chemie-
Beate Littig

Beate Littig is a sociologist and works as assistant professor at the Institute for Advanced Studies in Vienna, Austria. In her research, she focuses on the role of sociology in the different areas of environmental research (environmental consciousness and behaviour, sociology of traffic, sustainable development, sustainable work, gender and ecology).

Address: Institute for Advanced Studies, Stumpergasse 56, A-1060, Vienna, Austria, E-mail: littig@ihs.ac.at