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# Food Systems under Stress in Africa

## African-Canadian Research Cooperation

**Proceedings of a  
Workshop held in  
Ottawa, Ontario, Canada  
7-8 November 1993**

**Edited by  
Ronnie Vernoooy and  
Katherine M. Kealey**



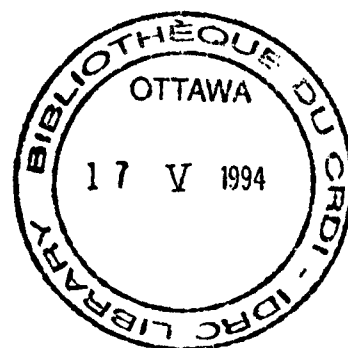
The International Development Research Centre  
Le Centre de recherches pour le développement international  
El Centro Internacional de Investigaciones para el Desarrollo

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# *Food Systems Under Stress in Africa* *African-Canadian Research Cooperation*

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# *Research into Agricultural Production and Management in Africa: Conceptual and Methodological Challenges*

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**Abstract** The objective of this paper is to identify challenges to research, most particularly to define silences within that research and ways of searching for meaning within them. In the second part of the paper, I examine elements of gender and class differentiated analysis of struggles over land and agricultural knowledge from the perspective of a feminist political economy of the environment and in relation to questions of agricultural production and environmental sustainability. Methodological implications of this approach are identified in the third section of the paper.

## **Context**

There was a famine and the husband went to stay in his hut (*thingira*) and was eating his goats. He told his wife that they were no longer together: "You will eat your property and I mine." The man would slaughter a goat and hang it in his hut. The woman thought she and the children would die and so she went to a swampy region and found *nduma cia mwanake* (arrowroots of young men) which she uprooted.

She carried this with some firewood and went home. She cooked and ate one without giving any to the children. In the morning she found that she was quite fine and therefore that the arrowroots were not poisonous. She called her children and gave each of them an arrowroot. After they had eaten, nothing had happened to them. She was quite happy as she had found something to eat during that time. So every morning she went to uproot those arrowroots.

The husband was surprised and so one day he called her and asked her why she and the children were not growing thin whereas even those who were eating meat were growing thin. The woman told him that she collected arrowroots from the forest and ate them and that was why they were not getting hungry.

The man asked her to go and get them so that he could also eat. She went and brought them to him. The man peeled them and ate. He even told her that the meat that was in his hut was to be cooked by her and that they were to start living together in the same house. Every morning the woman went to uproot the arrowroots and she could even leave her husband cooking them while she did something else. The famine finished and they joined again.

When the land was cultivated those arrowroots were uprooted by the woman from where they had grown naturally and she planted them in areas where there was water. She planted a lot.

Wanjiru

What soup will you serve us up in next?

Fatou Sow

Two quotations provide an entry point for a discussion of conceptual and methodological challenges to research into food systems under stress, specifically, in conceptualizing the relationships among agricultural production, poverty and the environment. The first, a story recounted by an elderly Kikuyu peasant farmer as she drew with her stick on the hardened brown-red earthen floor of her home, directs attention to the deeply political nature of the relationship between people and their environment.

With lighthearted amusement, she spoke in the company of her husband, the first wife, and a friend, in an interview in 1984<sup>1</sup> whose objective was the collection of gender and 'class' specific oral agricultural history. She left no doubt that she was aware of the contested terrain to which her story alluded. The second quotation identifies the force behind the methodological questions raised. Spoken by Fatou Sow, a professor at Cheikh Anta Diop University, Dakar, at the first meeting of WEDNET,<sup>2</sup> in May 1988, an IDRC initiative whose aim was to make visible the relationship between gender and resource management, the question reveals both the sense of frustration with theoretical inadequacy in that field of scholarship, and, more generally, the sense of powerlessness as a researcher in the South in defining the problem and its resolution, in having little control over the production of that knowledge.

From this starting point, of the political embeddedness of research into agricultural production, the objective of this paper is to identify challenges to research, most particularly to define silences within that research and ways of searching for meaning within them. In the second part of the paper, I examine elements of gender and class differentiated analysis of struggles over land and agricultural knowledge from the perspective of a feminist political economy of the environment and in relation to questions of agricultural production and environmental sustainability. Methodological implications of this approach are identified in the third section of the paper.

## *Concepts*

A feminist political economy of the environment distinguishes itself from "women and environments analysis" (Dankelman and Davidson 1987; Kettel 1990; Sontheimer 1991)<sup>3</sup> primarily through locating gender, rather than women, centrally in analysis of the relationship between economy and environment. A principal concern is to differentiate *among* women in terms of class, age, and marital status, as well as between women and men, in contradistinction to accepting

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<sup>1</sup>Interviews were conducted with members of 35 households in an area of smallholdings, Murang'a district, Central Province, Kenya, in the context of doctoral research.

<sup>2</sup>WEDNET (Women, Environment and Development Network) was formed at a meeting of African and Canadian researchers in May 1988 at York University.

<sup>3</sup>It should be noted that the volume edited by Sontheimer (1991) includes Agarwal's paper (1988), which takes a broad political economy approach in the analysis of the fuel crisis in rural South Asia and Moser's et al. (1991) research in Latin America. Neither of these chapters falls readily under the "women and environments" rubric.

"women" as a sufficient analytical construct. As Leach (1991, p. 22) points out, although gender differentiation does not capture the entirety of "difference" in relationships between people and their environments, as a critical source of difference in farming systems in sub-Saharan Africa, it provides a way into a historically grounded analysis of issues of agricultural production and environmental sustainability (including local knowledge systems and environmental action). This captures the iterative nature of the relationship between what goes on at the local level (whether the "black box" of the household (Watts 1989) or of the community) and the large-scale process at the national and international level.

In part, this approach draws on work by Redclift (1984, 1987), Blaikie (1989), and MacNeill et al. (1989), which views the environment as socially constructed and locale-specific environmental change as a "social process, inextricably linked with the expansion and contraction of the world economic system" (Redclift 1987, p. 3). Succinctly, as Redclift explains, the poor "impose excessive strains on the carrying capacity of the natural environment because of the structural demands imposed on them" (Redclift 1984, p. 130). Whether through long-term debt or the need to meet immediate cash needs, exacerbated inter alia by deteriorating terms of trade for agricultural commodities and rising interest rates, farmers, and particularly the poorest, are pushed to intensify land use or extend production onto more fragile land.

As internationalization of the environment proceeds, Redclift (1987, p. 51) argues, so is the contradiction between the economy and the environment deepened. In global terms, the "central contradiction of advanced capitalism" in terms of relations between the North and the South, concerns not only the exploitation of labour "but through this, exploitation of the environment in ways that are unsustainable in the long term" (Redclift 1987, p. 51).

Redclift (1987, p. 65) briefly recognizes the link between the loss of local environmental control and gender-differentiated access to and control over resources, yet fails to connect this observation to his overall analysis. Where such differential access to and control of the means and resources of production results in "a double subsidy" as Stamp (1986) argues, to capital as women labour without a wage, or without an adequate wage, and to husbands, who appropriate the proceeds of their labour, and where women have prime responsibility for agricultural production, at the centre of the contradiction lies the exploitation of female labour. The "simple reproduction squeeze," which Bernstein (1979, p. 427) theorizes, whereby land and labour are exhausted as production is commoditized, is felt most severely by poor women farmers. With prime responsibility for food and frequently export crop production in sub-Saharan Africa (Staudt 1987; Gladwin and McMillan 1989), and for household reproduction, yet without commensurate security of access to and control of land or labour (Muntemba 1981; Staudt 1987; Stamp 1990; Mackenzie 1993), the "squeeze" results in maximizing short term economic gain at the expense of longer term sustainable land management. What Blaikie (1989, p. 22) calls the 'option value' of soil conservation activities declines under these conditions, with the most serious results on holdings of the poorest.

Sustainability in agricultural production and management, then, is integrally related to security in rights to land, to labour and to its product, as these vary with increasing polarization in rural societies (e.g., Mbilinyi 1988 for Tanzania; Bienefeld 1989) and as the environment is internationalized. Negotiation and struggle over these rights, as Berry's (n.d., 1984, 1989) work indicates, have been part and parcel of the commercialization and growth of African agriculture



since the first years of colonialism. Property rights, for example, were "politicized rather than privatized" over much of Africa "and strategies of accumulation were directed toward building power over resource rather than increasing productivity" (Berry 1984, p. 92). For this reason, despite state legislation effecting land tenure reform and the institutionalization of individual freehold tenure in parts of Africa, "customary law,"<sup>4</sup> dependent on the maintenance of rights in people rather than things as Chanock (1985) explains, and subject to continuous negotiation and reconstruction by individuals differentiated by gender and class (Mackenzie 1990), becomes one of the political instruments through which complex interlocking and multiple rights to land are negotiated.

Berry (1989, p. 49) emphasizes that, under stress, as in the current economic crisis, people diversify their economic activities in ways that have an impact on the environment. People engage in activities with shorter gestation periods and there is a reluctance to invest in long-term projects. This argument is extended by Leach's (1991) observations with respect to gender differences in land and tree management in eastern Sierra Leone. In conceptual terms, what this means is that the "dialectic between social and environmental change" (Blaikie 1989, p. 232) is of a deeply political nature. As Mearns (1991) proposes, it is a nonlinear, plural, and multidimensional problem.<sup>5</sup>

One example, drawn from a densely populated, coffee-producing area of Kenya, may illustrate some dimensions of the argument.<sup>6</sup> In Murang'a District, Central Province, as elsewhere in Kenya (Stamp 1975–1976; Davidson 1987), women now produce food crops, for subsistence and for the market and export crops, here tea and coffee. Their responsibility for export crop production is related to high rates of male outmigration, reaching over 70% of adult men in some locations. But commensurate remuneration for this shift in labour has not followed. Marketing and the initial processing of coffee is organized through 16 local coffee societies of the Murang'a District Farmers' Cooperative Union (MDFCU). Payment, which has a history of being erratic, is made to shareholders, predominantly male land owners. Of two coffee societies for which data were collected in 1984, in one, Irati, 17% of the membership was female, in the second, Njora, 10%. Women farmers expressed bitterness over the unreliability of remuneration from their husbands for their labour on this crop.

Two implications for the argument pursued in this paper emerge from this situation. First, a substantial number of women respond by withdrawing their labour during the peak coffee-

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<sup>4</sup>"Customary" law, following this conceptualization, is not static, ahistorical, or autonomous, the product of a "self-contained particularity" (Fitzpatrick 1988, p. 1). Nor is it purely an imperial construct, fixed or frozen through the colonial project as Snyder (1981) implies. Rather, following the conceptualization of Parker (1972), Glazier (1985), and Moore (1988), "customary" law refers to a continually contested legal domain.

<sup>5</sup>Mearns (1991, p. 29), following Miller (1985), suggests that the problem is a "wicked" one, representative of open systems that are "complex, ill-defined and difficult to bound, and information about them is commonly incomplete and ambiguous." He does not include gender in his analysis.

<sup>6</sup>The data were collected as part of research for a doctoral dissertation (Mackenzie 1987). The data included here are published in Mackenzie (1986).

picking season from their own *shambas* (i.e., farms), selling their labour individually or as groups locally to other smallholders or travelling by truck daily to the nearby coffee estates in Kandara and Makuyu Divisions of Murang'a or to nearby Kiambu District.<sup>7</sup> In each case, women have direct access to daily wages. The decline of quality in coffee production in the district in the early 1980s, a consequence of women's action, was subsequently attributed by the MDFCU to unreliable societies in areas of high male outmigration, Thanga-ini and Irati, had, respectively, 79.2 and 55.4% of the total accounts held jointly.<sup>8</sup>

Second, with land scarcity, caused by growing polarization in the size distribution of smallholdings, an increased population, and a reduced land base for food crop production as male owners turn over more land to coffee production, it is likely that women will increasingly intensify production of those crops over which they do exercise control (i.e., food crops), with a view to meeting immediate needs of household reproduction, at the expense of long-term sustainability of the resource base. In the struggle to make ends meet — necessitating among poorer households<sup>9</sup> the sale of labour for a wage or involvement in petty trading — it is increasingly unlikely that there will be time or labour sufficient to undertake labour-intensive activities such as mulching or green manuring or the construction of *miconjo* (piles of leaves and other vegetable matter laid perpendicular to the slope such that soil erosion is prevented) necessary to sustain the resource base. For a more complete discussion of this argument, see Mackenzie (1993).

To extend this argument, it is necessary to acknowledge, as Kettel (1990, p. 5) does, that this action, or inaction, on the part of women "frequently violate[s] their own knowledge and concern for the well-being of their neighbourhoods." Such use, or misuse, of the environment, Watts (1989, p. 15) explains is "a function of the intersection of resource managers with extrahousehold, non-local circuits of accumulation and surplus extraction" as illustrated in the foregoing example. But in the process of such articulation, it is likely that there will be further loss of the ecological specificity (Richards 1983, p. 56) of local knowledge, whose consequences must be measured in terms of loss of biodiversity, in terms of questions of power/knowledge locally, and in terms of wider scales of social interaction.

Local knowledge or "indigenous knowledge" does not mean here "ethnographic artifact" or "unconscious ecological wisdom" to borrow two of Rocheleau's (1991, p. 157) phrases, but, as she proposes following Thrupp (1989), to the legitimization of local "knowledges"<sup>10</sup> through a

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<sup>7</sup>Evidence for the withdrawal of women's labour from elsewhere in Africa comes, inter alia, from Jones (1986) and Carney (1988).

<sup>8</sup>The equivalent figure for Njora was 17.1%.

<sup>9</sup>Murang's District *Development Plan 1988-1993* (Kenya, Murang'a District 1989) identifies 35% of the population in the high potential areas of Kandara, Kigumo, Kiharu, and Kangema Divisions as being below the poverty line. In Makengu Division, the equivalent figure is 65%.

<sup>10</sup>The notion of "knowledges" comes from Michel Foucault's (1980, pp. 83-84) theorization of the relationship between power and knowledge. He argues that "knowledges," defined as unscientific or low-ranking, have been buried by "functionalist and systematising theory" and are frequently defined as illegitimate.

redefinition of environmental discourse. In Foucault's (1980, p. 81–82) terminology, such knowledge has been "subjugated" through the operation of "functionalist and systematising theory" and excluded on the grounds of being deficient cognitively or in terms of "scientificity." Both devolve, to follow Mudimbe (1988) in *The Invention of Africa*, from the subjugation in general of African "knowledges" through the pervasiveness of a Western epistemology.

The task of uncovering silenced "knowledges" involves engagement with the theoretical and methodological assumptions of epistemological ethnocentrism, as Mudimbe (1988, p. 71) argues. In that environmental/agricultural knowledge is gendered (for example, Carney 1988; Shiva 1988; Carney and Watts 1990; Stamp 1990; Leach 1991; Rocheleau 1991), the task also concerns uncovering androcentric assumptions in scholarship. In conceptual terms, this means that the research problem is defined not in terms of cataloguing women's knowledge about agriculture or the environment, but of recognizing that such knowledge is constantly recreated and renegotiated within the context of political rights and responsibilities — within the household, the community, the nation and internationally. As Rocheleau's (1991) stories from Machakos District, Kenya, illustrate in the context of the drought of 1984, survival was dependent not only on botanical and agricultural knowledge, but on how women, individually or in groups, mobilized political skills to access resources, in private plots, or public lands — from men.

## **Method**

With this as a premise, what are the implications for research? In answer, what follows is intended to be provocative rather than definitive. First, and most fundamentally, thinking must be focused around the question: in whose interest is this particular research? As there has been a tendency in research to look at interrelationships among food production, poverty, and environmental production to marginalize local issues, a strong case may be made for directing research toward this level. By this I am not implying that this level may be isolated. Frequently, given the multidimensional nature of the problem, research needs to proceed iteratively to connect what goes on within the household and community with what goes on at the national and international levels — to connect the micro- and macropolitical economies. Questions of food security at the local level are deeply embedded in political issues — access to and control of resources and, in turn, environmental change — at all levels.

If the research is to serve the needs of the people most immediately implicated, the research hinges on their collaboration in defining the problem and their priorities in its resolution. Further, if local expertise is not to be separated from the political environment in which it exists — and become bits and pieces of decontextualized knowledge, "ethnographic artifacts" in Rocheleau's (1991, p. 157) language — local people must be actors in its definition. From this point, the grounds for a reshaping of the discourse, through the liberation and valuing of previously subjugated "knowledges," may emerge.

In this context, it is necessary to recognize diversity within rural populations. Research into food security needs to take account of the fact that differences of gender, level of wealth, or basis of livelihood mean that women and men, differentiated by wealth and livelihood responsibilities, will have different "knowledges" on which to draw. As Stamp (1990, p. 124–129) and Rocheleau

(1991, p. 157) point out so clearly, the task of unearthing local "knowledges" is a double one, involving creating a discourse reflecting African rather than Western "knowledges" but also challenging what Stamp refers to as the "gender blindness" of such knowledge.

Thus, for example, if one is concerned in a research effort to trace the relationships between economic policy (e.g., agricultural measures carried out under structural adjustment programs) and the environment with the objective of understanding their implications for food security, it is necessary to ask questions that recognize the gender specificity of such knowledge and experience and the gender specificity of responses to increasing economic pressures. The line of questioning might proceed as follows, recognizing that gender relations, rather than women (as in "women and environments" discussions) inform political economy analysis. In understanding food security issues as they relate to agricultural production and management, to what extent have external debt and policies adopted to service or meet repayment schedules exacerbated stress on the resource base, reducing what MacNeill et al. (1989, p. 27) call "basic natural capital?"

Many Structural Adjustment Programmes (SAPs) focus on the promotion of commodities such as cocoa, coffee, or tea, but when international prices fluctuate wildly, or when there is a consistent decline in the relative terms of trade in such commodities, how do farmers in the South respond? Are the environmental costs of global gross national product (GNP) transferred through such trading practices to the South, as MacNeill et al. argue? If so, through what processes does this occur? When food subsidies are removed, is the effect on farmers uniform? Who benefits? Are large- and small-scale farmers, women and men, affected in the same way? To what extent does this process translate into a reduction of exploitation of the resource base, the soil? Or does a skewing of resources to rehabilitate the export sector render marginal any change in food crop price?

If it is accepted, at a general level, that there is a differential impact of SAPs on women vis-à-vis men (Cornia et al. 1987; for Ghana, Ghana 1987; Tanzania, Tibaijuka 1988; Commonwealth Expert Group 1989; Zambia, Evans 1989; Nigeria, Onimode 1989; Wagao 1990; Elabor-Idemudia 1991; Meena 1991; Zaire, Schoepf and Engundu 1991), how do women farmers, caught in the trap of inequitable property regimes and modes of remuneration and under conditions of significant budgetary autonomy (e.g., Moore 1986; Staudt 1987), respond? Do they opt to maximize short-term agricultural production at the expense of long-term sustainable land management? To what extent do they violate their own knowledge base in so doing, as Kettel (1990, p. 5) suggests? Or, to what extent do they draw in their historical knowledge of ecology and politics to recreate what Rocheleau (1991, p. 161) refers to as "the requisite science of survival?"

The boundaries of such knowledge, as she points out, are neither static nor independent. Rather, the "[content] and distribution of gendered knowledge influences and is influenced by the gender division of rights and responsibilities in national, regional and local contexts." (Rocheleau (1991, p. 161). In her experience in Machakos District, Kenya, poor women survived through a "careful interweaving of social and ecological knowledge to survive in the cross-currents of erratic environmental conditions with uncertain terms of resource use, access, and control" (Rocheleau 1991, p. 162). The latter had to be constantly renegotiated with individual men and the collectivity.

Before proceeding, a caveat is in order. To privilege gender as I have done in the foregoing is not to deny either the significance of "community" or the collectivity in understanding questions related to food security, or to argue that gender is of greater analytical significance than level of wealth or class. Notwithstanding the fractures or tensions within rural communities (see Barber 1992; Taylor and Mackenzie 1992), there are times when the objectives of different interest groups are served most expediently through collective initiative (e.g., Dei 1992).

At other times, as Thomas (1988, p. 22) has argued with respect to the politics of Harambee in Kenya, "strong communal identities" frequently coexist with "nascent class awareness." Adhesion to a community solidarity may also coexist with a contradictory gender awareness (Stamp 1986; Mackenzie 1990). The result is the complex interplay of individual and collectively perceived rights and responsibilities that, at times, are realized through collective action and, at other times, are not. In essence, with reference to agricultural production and management, under stress, what it means to be a farmer is constantly renegotiated in the context of individual and collective — gendered and class - interests. At times these interests are shared, at times complementary, and at times conflicting, as Leach (1991, p. 19) demonstrates in the case of resource management in eastern Sierra Leone.

The foregoing analysis demands of research that attention be paid to the processes implicated in resource management as only through processual analysis, which proceeds iteratively to connect the relations between micro- and macropolitical economies can the fundamental questions regarding the links between food production, poverty, and environmental degradation be understood. To capture the changing nature and complexity of such relationships, research must often be grounded in detailed case studies that recognize differences in rights and responsibilities among rural peoples. Questions of agricultural production and management need to be investigated within the broader social and political context at the local level, and then explored with reference to the wider or macropolitical economy. As Leach and Mearns (1991, p. 52) point out, from a basis of multiple case studies, "strong causal propositions" may emerge to challenge previously held explanations.

Such research, by definition interdisciplinary, will need to employ a range of complementary research methods. Qualitative research methods will, in most situations, form the core of such research, with the use of quantitative analysis to complement the findings. For such research, success may depend on the effective collaboration of local people. In essence, if the research is to serve their (different) interests, the "normal," i.e., hierarchical relationship between researcher and researched, will need to be replaced to allow, in Rocheleau's (1991, p. 158) words, for "a more active exchange at the interface of knowledge systems."

Although ethnographic research may comprise a core for some studies, and Pottier (1991) would argue that the in-depth nature of such research may not be compromised by short cuts, a growing literature on participatory research suggests that for many purposes, participatory rural appraisal (PRA) methods allow for flexibility in time and the opportunity to understand *processes* of change (for example, Chambers et al. 1989; Cernea 1990; Chambers 1991; Moser and Sollis 1991). Collaboration between IDRC and the Dene Cultural Institute, adopting a "participatory action" and "community-based" approach, indicates ways in which research into local knowledge may be reoriented in ways congruent with local agendas (Johnson 1992).

A new literature on PRA informed by gender-awareness suggests that understanding complex gender relations similarly does not always necessitate extended field research (McCracken 1990; Leach 1991; Rocheleau 1991). It also suggests that action research, whereby there is in effect a meaningful partnership between "researched" and "researcher," is vital for a successful outcome of the research process and if "intellectual colonialism" (Leach and Mearns 1991, p. 52) is to be avoided (more generally, see Reinharz 1992).

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