

Water resources management: a macro-level analysis from a gender perspective

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1. INTRODUCTION¹

Two major strands of thinking have come together to create a new momentum in water resources management policy. Firstly, the failure of centralised government services to provide safe and reliable water supplies to the majority of their populations, particularly in rural areas, has led to a new emphasis on decentralisation and cost recovery in water and sanitation provision. Cost recovery is now perceived as a mechanism to move out of the 'low level equilibrium trap' whereby service provision remains inadequate; communities are now thought willing to pay for improved services. Secondly, the recognition of the economic value of environmental resources and the need to protect the environment for sustainable development, has led to an emphasis on conservation rather than extending supplies, with pricing used as a mechanism to limit waste and inefficient resource use.

The notion of integrated water resources management is currently high on the international policy-making agenda. Agenda 21, the policy statement of the United Nations Conference on Environment and Development (UNCED), contains a chapter on the subject, whilst the World Bank has commissioned a number of studies on the issue, culminating in a recent Policy Paper in 1993².

In general, the literature on water resources management emanating from the World Bank is both highly technical and economistic in orientation. Although paying lip-service to socio-economic concerns and equity, the studies are largely bereft of any form of gender analysis. This apparent gender neutrality at macro-policy level may in fact mask gender biases. The implicit reduction of gender to a micro level 'variable' fails to consider how issues of power and conflict inherent in gender relations are played out through social and political institutions, including those related to water resources.

This is thus a subject area in urgent need of gender-specific analysis. Because of the rapidity with which notions of integrated water resources management and development have been swept onto the international policy-making agenda, gender analysts have had little time to respond to the precepts contained within the approach.

Drawing on the wider body of research concerning gender and the environment, this paper will suggest some of the ways in which the conceptual framework adopted by the World Bank is deficient in terms of gender analysis. This paper will first summarise the approach embodied by the new water resources management (WRM) policy (drawing mainly on World Bank, 1993 and UNCED, 1992). It will then go on to look critically at some of the key themes and policy directions from a gender perspective.

¹ This report was written for BRIDGE by Cathy Green with Sally Baden

² The approach of the World Bank Policy Paper (1993) is consistent with that of UNCED.

2. WATER RESOURCES MANAGEMENT: AN OVERVIEW

2.1 Rationale for WRM policy

The rationale for integrated water resources management arises out of the conceptualization of water as a finite and vulnerable resource on which ever-increasing demands are being placed. It is argued that, in turn, these demands are generated by processes of population growth and the expansion and intensification of economic activity (UNCED, 1992: n.p).

The main facets of the water resource management policy are ‘the treatment of water as an economic good, combined with decentralized management and delivery structures, greater reliance on pricing, and fuller participation by stakeholders’ (World Bank, 1993:10). These aims are considered consistent with poverty alleviation, stated as the Bank’s overarching objective (*ibid*: 12).

The World Bank’s approach to water resources management is couched in the language of sustainable development³. It is argued that national water strategies should be formulated to deal with water resources in an ‘economically viable, environmentally sustainable, and socially equitable manner’ (World Bank, 1993:13).

The notion of economic efficiency is central to the World Bank approach to water resources management and development. Increased efficiency in water use requires a conceptual shift away from supply-led approaches towards the management of demand:-

‘...projects to increase supply are tending to encounter hydrological limits, face increasing costs in pumping or transferring water over long distances, entail increasing environmental costs...and demand growing government subsidies. These are powerful arguments for shifting the current emphasis towards more careful management of the existing resource.’ (Winpenny, 1994:25)

Demand management as a means to more efficient water use will be approached through pricing policies as well as new technologies, education and administrative measures to encourage conservation (World Bank, 1993: 52-3).

The Bank’s approach places social concerns on a par with economic efficiency and environmental protection. Primarily, these concerns are articulated in terms of the need to improve services to the poor and to ensure that their interests are not damaged by policies which affect water rights, and, more generally, the need for consultation with, and participation of, affected groups - in designing water resources interventions. (World Bank, 1993: 15-16.) Special attention is given to the need for participation of women (*ibid*: 16, 56-

³ The Bruntland Commission (WCED, 1987) defines sustainable development as development which 'meets the needs of the present without compromising the ability of future generations to meet their own needs.'

7). The nature of and rationale behind this concern for women's participation will be further discussed below.

2.2 Sectoral conflicts and concerns

The World Bank (1993) argues that sectoral water resources management programmes, developed within the framework of national water strategies, are an important means of dealing with conflicts between the various agricultural, industrial and domestic uses of water in the face of localised water scarcities, of widespread pollution and the destruction of some water sources. Both UNCED (1992) and the World Bank (1993) state that integrated water resources management policies should be carried out at the level of the river basin. This recognises the fact that water availability in one part of the basin is reliant on withdrawals in other parts.

The main 'sectoral' concerns of the new policy can be summarised as follows:

- * **Industry:** control of pollution and water conservation.
- * **Water supply/sanitation:** greater efficiency and accessibility of water services, waste collection and disposal with a view to providing universal coverage; increased emphasis on water conservation and reuse; increased participation of NGOs, water users groups, and the private sector; services that aim for cost recovery with 'graduated fees' targeted at the poor.
- * **Irrigation/hydropower:** Promotion of watershed conservation; water harvesting; reduction of agricultural pollutants; investments in irrigation facilities with special attention to the irrigation needs of small-scale farmers; cost recovery and efficient management of demand for services; participation of community and user groups.
- * **Environment/poverty alleviation:** environmental protection should be written into the design of water projects; promotion of efficiency in water use and conservation of supplies; extension of services to the poor; minimization of resettlement from large-scale water projects; low cost development of water supplies.
(World Bank, 1993:12)

2.3 Policy directions, instruments and interventions

The main components of the World Bank's (1993) policy are as follows:

- the development of a comprehensive analytical framework at country level;
 - the introduction of institutional and regulatory systems, with WRM organised around river basins;
 - the introduction of incentives, using estimated opportunity costs of water as a guide (or failing this, financial autonomy of water suppliers as a minimum requirement);
 - the introduction of water conserving technologies;
 - poverty alleviation;
 - decentralisation;
 - participation;
 - environmental protection;
 - upgrading skills;
 - designing country programmes;
 - improved transnational management of international watercourses.
- (World Bank, 1993: 13-19.)

The nature of policy recommendations in some of these areas will be selectively reviewed from a gender perspective in the next section.

The Bank envisages intervention at three levels: development of analytical frameworks; institutional capacity building; and the elaboration of environmental and socio-economic databases. In connection with this, a new area of technical literature is now emerging which will form the basis of the Bank's interventions. Given the likely influence of the new WRM policy, it is crucial at this stage to ensure that gender concerns within WRM have not been overlooked.

3. WATER RESOURCES MANAGEMENT: A GENDER PERSPECTIVE

This section will highlight some of the gender implications of the approach adopted by UNCED and the World Bank. The analysis is by no means comprehensive, but rather aims to pinpoint those areas requiring future research.

The new approach has potential for increased responsiveness of water resources management to the interests of women. In particular, a more rigorous approach to assessing the economic costs and benefits of water resource development has potential for more explicit recognition of the economic value of women's work in water collection and management and the opportunity costs of this. The focus of the new policy on decentralisation and participation implies increased sensitivity to local conditions and priorities and thus the possibility for greater user involvement and influence over the planning and design of new services, with potential benefits for women. However, to the extent that gender analysis is limited in the new approach, these potentialities may be lost.

3.1 Nature of UNCED/World Bank focus on women

Both UNCED and the World Bank refer to women in their analyses. However, women are conceptualised or described as a separate category, as a vulnerable and homogeneous group who warrant special attention. For example, within Chapter 18 of Agenda 21, women are singled out as a special category alongside youth, indigenous people and local communities.

This form of categorisation immediately distances women from their relationships with men **within** a group of indigenous peoples or a local community. Indeed, the World Bank fails to mention women in relation to men, or to elaborate on how women's relationship to the environment in general and water resources in particular is rooted in and mediated by the system of social relations, including gender relations, within which they operate. Neither is there mention of how various other differentiating categorisations such as class, ethnicity, nationality or age will produce a wide variety of interests amongst women in relation to water resources.

Furthermore, within the World Bank Policy Paper, there is a tendency to chronicle and compartmentalize women's roles. The Bank argues that 'women play a central part in providing, managing, and safeguarding water' (World Bank, 1993:24), they 'essentially manage water at the household level' (1993:56) and have 'a traditional role in securing water' and thus a 'potential role in educational training' (1993:62).

A broad base of literature which critiques the way in which women have been 'added in' to environmental policy-making now exists (see Agarwal, 1992; Leach, 1992; Jackson, 1993). Some lessons from this body of literature may be applied to the specific case of water resources management.

The World Bank (1993) puts great emphasis on the conservation and reuse of water resources. The implication is that women as **agents of conservation** will pursue water savings in their role as domestic providers of water. Both Agarwal (1992) and Leach (1992) argue that women are indeed active users of natural resources and that through their use they gain to differing degrees (depending on their class and gender experiences) some knowledge of the natural resource base. However, they argue that to posit theoretically an identity of interest between user and willing conserver of natural resources is a dangerous assumption. This type of analysis does not provide for an estimation of the potential losses and gains accruing to women as a result of their conservation activities (Leach, 1992:14).

A focus on women's roles also tends to lead to prescriptions of integration into sectoral initiatives as conventionally defined. This cements women's interests as those determined by their position within prevailing gender divisions of labour. This approach characterizes the INSTRAW (PROWWESS)⁴ document (1989) where, having catalogued women's roles as providers and managers of water, the report concludes that water and sanitation are a women's sector and that women's participation in such sectoral initiatives should be actively encouraged. Leach (1992:15) argues that this approach, with its assumption of women's roles as 'natural and unquestionable' adopts a reinforcing rather than a transformational stance concerning gender inequity. It seems that the assumptions contained within much of the literature on micro-level water resources development has been transferred uncritically into the Bank's macro-level analysis.

Furthermore, explicit reference to women within the World Bank Policy Paper is almost entirely limited to their role as providers of water for domestic consumption. This focus on women's reproductive activities leads to a total disregard for women's productive activities as agriculturalists, as users of irrigation systems and so on. It may be argued that subsequent policy-making for water resources development and management will be fundamentally flawed unless the World Bank reassesses its approach in this respect.

3.2 Pricing of water resources

The World Bank (1993) argues that the pricing of water resources will give users an incentive to pursue efficiencies in utilization. The argument goes that water has hitherto been under-priced as an economic (i.e scarce) resource (Winpenny, 1994:8). The conceptualisation of water as a free resource can result in both conflicts between users (e.g. as industries pollute rivers used for domestic supply) and negative environmental externalities (e.g. chemical pollution from irrigated agriculture). Negative environmental externalities can be reduced by 'correct' pricing whereby environmental costs are internalised in production and ultimately borne by consumers (*ibid*, 106) and/or by the application where appropriate of the 'polluter pays' principle (UNCED, 1992: n.p.).

⁴ The United Nations Development Programme's interregional project for the Promotion of Water and Environmental Sanitation Services.

Pricing is also intended to encourage the users of water for low value purposes (e.g. irrigation for low value crops) to conserve water thus freeing up water for transfer to other uses (e.g. domestic supply in urban areas).

Pricing is thus conceived as a tool both for increasing economic efficiency and for promoting environmental protection. However, Mearns (personal communication) argues that in this context, the pricing argument turns on correcting perverse incentives (i.e. those which are economically, as well as environmentally, non-rational) which is only ever a partial solution from an environmental standpoint. World Bank type proposals generally only internalise environmental and other externalities by eliminating subsidies, rather than correctly valuing all externalities downstream. This view is reinforced by the recognition within the World Bank policy paper that, although theoretically desirable, in practice, opportunity cost pricing which embodies full environmental costs may be difficult to implement. Financial autonomy of water suppliers is recommended as a second best solution. (World Bank, 1993: 14.)

At the micro-level, water user associations are considered a useful medium through which cost recovery procedures can be operationalized. Delivery of water to user groups gives them the responsibility for both water distribution and fee collection at the local level. Because, in general, women have less local public influence (Charleton, 1984 in Stamp 1990:47) the articulation of women's interests within these user groups cannot be assumed. Significant gender-based differences in preference in relation to the quality, quantity, reliability or cost of water services may therefore be ignored in local policy-making. Even where women are represented on user groups, it may be difficult for them to articulate their gender interests (see section 3.5).

There is a small but growing literature on the willingness of pay for water supply, which indicates that income elasticities of demand for improved water supply are relatively low and that elasticities of demand for improved water sources are relatively high in relation to capital, recurrent and time costs. Broadly, the conclusions drawn from this literature are that income has a limited effect on the level of demand for improved water supplies, but that the level of costs, including opportunity costs of time, of new water connections and charges will significantly affect take up and usage.

Kamminga (1991) points out that there may be a tendency to overestimate the benefits to women of improved water supplies and to underestimate their costs. The assumption that time is saved does not always hold. In particular, where community management of water is conceived as women's responsibility, time spent in collecting water may simply be replaced by time spent collecting fees or attending meetings. Unless the new supply is considerably closer than the old one, the time saved may not be sufficient to put to productive use. In any case, other forms of support may be needed in order for women to gain economically from the time freed by improved water supplies.

In some areas where cost-recovery schemes have been introduced, the rate of recovery has proved surprisingly low, at least in part because affordability studies based on men's incomes did not include the possibility that women would pay for a substantial portion of water costs. (BRIDGE, 1993). This may also reflect wider problems with the 'willingness to pay'

methodology. A World Bank study found it ‘hard to convey the notion of what was meant by the maximum an individual would be willing to pay’ (World Bank Water Demand Research Team, 1993: 49). One respondent asked the enumerator ‘What do you mean the maximum I would be willing to pay? You mean if I had a gun to my head’! (*Ibid*: 49.)

In some instances, the introduction of cost recovery has led to certain households, particularly female headed households, being excluded from access because fees had been set at too high a level. (*Ibid*.) The introduction of new water supplies may also mean that:

‘women are...expected ... to pay for water supply from their own incomes. Sometimes they are even made solely responsible for system maintenance and financing, often without concurrent means to generate this income...As women’s own income is usually lower than that of men, they are likely to spend a relatively greater proportion of their income on water or sanitation, even though their nominal contribution may be less.’

(IRC/PROWWESS, 1992:3)

It is vital, therefore, that pricing of water resources takes into account differentials in intra-household access to cash resources.

A 1987-1990 World Bank funded survey into the demand for water in rural areas of Latin America, South Asia and Africa recognised gender differentials in preferences regarding water supply, as well as in access to and control over finances. The study found that variations in willingness to pay for specific types of water supply were partly explained by the gender of the respondent, though not in a consistent direction. In Tanzania and Haiti, women appeared willing to pay considerably more than men for access to public taps; however in Nigeria and India, they were not prepared to pay as much. No further analysis is given of why this should be the case other than that ‘the direction of influence [of gender on willingness to pay] depends on the specific cultural context’ (*ibid*: 53). Despite women’s positive response to the suggestion of improved local water supplies in some cases they were ‘reluctant to commit the household to a substantial financial obligation’ (World Bank Water Demand Research Team, 1993:52), perhaps because they had limited influence over household finances.

Thus, a gender based contradiction emerges with the willingness to pay approach, where women might be willing to pay, but, because of patriarchal decision making structures and/or biases in intrahousehold resource allocation processes, unable to commit resources to such an investment.

3.3 Poverty alleviation

Although the World Bank recognises the need to subsidize water consumption by ‘the poor’ within its proposals, this may conflict with other objectives within the overall policy. For example, it is argued that the ‘assignment of noncommercial objectives to a public enterprise may undermine the achievement of its service objectives’ (World Bank, 1993:15).

Furthermore, the potential for cross-subsidisation of water provision to the poor through ‘social fees’ may be limited where a policy of decentralised management is being simultaneously introduced. Unless service providers at local level cover heterogeneous populations which enable cross subsidisation at local level, it is not clear what mechanisms would provide for this. The incentive for decentralised water supply units to provide services to the poor and/or implement complex exemption systems may be minimal in practice.

Winpenny (1994:108) argues that the pricing of water may not affect the poor negatively. The urban poor, often relying on vendors for water, pay higher unit rates for water relative to their urban counterparts with piped supplies. These costs can be reduced if water supply is piped and metered. Nevertheless, the costs of installing equipment and of ongoing maintenance must also be considered, as well as unit costs of water. Poor people buy in small quantities from vendors precisely because they cannot make such investments on ongoing outlays.

Budgetary transfers or subsidies combined with payment schemes spread over time are proposed to enable the connection of poor households, although it is not clear how this would operate in practice. If loans are involved, constraints on women’s independent access to and ability to repay credit need to be addressed. Ongoing charges need to be set at a level and collected in a manner which takes account of the pattern of income flows and other claims on household expenditure.

The suggestion is that a minimal use of water primarily for domestic purposes would be charged at low rates in order to be accessible to the poor. Incremental use above this would be charged at higher rates. In effect, this may prevent poorer households and particularly women from using water for small scale income generating purposes (e.g. vegetable growing on garden plots), or reduce their returns on such activities.

3.4 Decentralisation

Decentralised management of water resources is a key plank of the new policy, with governments being largely restricted to a regulatory role, and other roles and responsibilities being devolved to ‘the private sector, to financially autonomous public corporations, and to community organisations such as water user associations’ (*ibid*: 15).

Two main arguments for decentralisation and user participation are to improve the cost-recovery potential and to reduce the costs of administering water allocation. ‘Governments are finding that, by involving strong water user associations at the local level, they can use the capacity of community members to exert social pressure on their neighbours to pay’ (*ibid*: 57). ‘Community management can help bring costs down to affordable levels’ (*ibid*: 57).

However, if decentralised units (whether public, private or community association based) are expected to be financially autonomous, it is not clear how cross subsidisation between better off and poorer users will be operationalised, unless there is an assumption that all communities contain identical distributions of wealthier and poorer people. It is not clear

what the incentive for the supplier will be to provide subsidised services for the poor, from whom cost-recovery is limited and probably costly to implement.

The implied cost savings from decentralised management, in a feminist analysis, may represent hidden costs in terms of increased labour for women at community level. Decentralised management may mean women being paid less, or not at all, for functions previously provided by men at a higher level (BRIDGE, 1993). Jackson (1993: 1951) argues that women tend to be mobilised into labour intensive community management because of 'the male dominance of public office, the presence of women's groups facilitating the mobilisation of women, and the realization by women that if they fail to do such work, it remains undone'. There may indeed be potential for cost savings, but care must be taken that this is not done at the expense of women.

Another key issue in decentralisation which may have gender dimensions, is the nature of relationships between lower and higher level units and the degree of institutional support provided to lower level units, as well as regulation. This is of particular importance for issues such as ongoing maintenance, pollution control etc. The restructuring of overall WRM around river basins implies the creation of new higher level management units, with environmental, rather than political or administrative boundaries. Whilst this may be advantageous from an ecological viewpoint, it may mean that river basin management authorities are relatively inaccessible and unresponsive to the lower level service providers and user associations.

3.5 Participation

UNCED (1992:n.p) places great emphasis on the adoption of 'participatory techniques' to encourage 'full public participation' in water resources management and development. Likewise, the Bank argues that it will 'encourage the participation of beneficiaries and affected parties in planning, designing and implementing and managing the projects it supports' (World Bank, 1993:16) and that this process of participation will be empowering (1993:73). Women are singled out as a target group for participatory activities because of their role as domestic providers of water (1993:16).

However, the concept of participation is not as straightforward as the Bank seems to assume. Firstly, the demands of women's multiple roles may preclude them from participating in the planning process. Alternatively, participation may only occur at a cost to women, perhaps in terms of a longer working day, and, ultimately, their health. The problem is then one of **time**. Likewise, context-specific assumptions about what constitutes 'appropriate behaviour' for women may influence the **nature** of their participation. According to Moser (1993:104) 'Participation presupposes a pro-active capacity and willingness to negotiate and debate throughout the planning process. Because of the way that women are so effectively excluded from real decision-making, in reality they often chose (sic) to withdraw rather than participate in planning processes.' Furthermore, women's **perceptions** of their needs in relation to water resources development and management may arise out of their 'socialisation into male

dominance' (Jackson, 1992:12). Thus even if women do participate in the management and development of water resources there are problems:-

'Empowerment and participation are seen as self-evidently 'good', their meanings are not interrogated. Yet from a gender perspective, priorities, perceptions, participation etc are problematic...different views are solicited, but then submerged in the process of establishing a consensus, which must reflect power relations between participators.'

(Jackson, 1992:11-12)

If women's interests in relation to water resources are not articulated through these participatory processes there will be a variety of negative outcomes at the micro-level. In short, environmental interests and the interests of economic efficiency will overrule gender interests.

3.6 Environmental protection measures

A fundamental facet of the World Bank's framework for water resources development is the requirement that all projects undergo an environmental assessment (EA). This is in line with the Bank's Operational Directive 4.0 of 1991. According to the Directive, within these EAs the views of 'affected groups and local NGOs' must be taken into account in the design and implementation of projects (World Bank, 1991:191). Historically, the record of EAs or environmental impact assessments (EIAs) in assessing the likely socio-economic impacts of development activity on communities, institutions and individuals is not good. Moreover, to date many guidelines on EA do not explicitly require consideration of the gender implications of development activity⁵.

Holmberg et al (1993:31) argue that considering the way in which the interests and concerns of local people have been overlooked within many EIAs 'there is now a need to adapt EIA to include social and participatory factors - a so-called sustainability analysis.' However, the World Bank must avoid submerging the specific interests of women in relation to water resources within the unitary categorisation 'affected groups'.

Specific environmental protection measures are proposed by the World Bank, e.g. the removal of subsidies on agrochemicals and other inputs (including irrigation water) to reduce inefficient use and waste (World Bank, 1992: 2), and the adoption of integrated pest management is encouraged as a means of reducing the pollution of water resources by agricultural chemicals (World Bank, 1993: 60).

However, the removal of subsidies for agricultural inputs such as pesticides, fertilisers and water can have profound gender implications. For example, Lele has shown that fertiliser

⁵ One exception, however, is the ODA's 1992 **Manual of Environmental Appraisal** which instructs aid practitioners to assess the geographical distribution of the costs and benefits between people **and by gender** likely to result from a development activity (Green, 1993:16).

subsidy removal in Malawi led to reductions in usage and thus yields, particularly by female headed households farming small plots. (Lele et al, 1989.) More generally, removal of subsidies on agricultural inputs may lead to (indeed are intended to lead to) shifts in cropping patterns towards lower input and/or higher value crops. But no analysis is given of how such shifts might intersect with existing gender divisions in cropping patterns, or of the possible impact on household consumption and nutrition.

Integrated pest management systems which rely on precise and timely spraying of crops, crop rotations and the introduction of natural predators, although satisfying a range of environmental criteria, may do little to serve women's strategic gender interests. The way in which women are affected by these proposals will depend on the particular division of labour prevailing within farming systems. In systems which rely heavily on unpaid female labour the need for well-timed applications of pesticides could come up against the already inflexible work regimens of women (Green, 1993b:29). Moreover, Francis (1989) and Fordham (1983) argue that the intercrop combinations required to reduce specific pest problems generally require high labour inputs. Such changes could rely on the intensification of female labour.

The World Bank also argues that surface and subsurface waters can be protected if the following forms of environmental protection are introduced: erosion control, reforestation, measures to reduce waterlogging and salinity through irrigation, introduction of flood control measures (World Bank, 1993:60). Moreover, the Bank argues that 'The aim is to require land users to bear the costs that their land management practices impose on others' (*ibid*). The micro-level implications of attempts to reduce water pollution and introduce soil conservation measures via a combination of incentives, technical assistance and education are profound. However, the specific impact on gender relations will vary depending on factors such as household composition and, again, sexual divisions of labour within farming systems. For example, women who farm on their own account whether primarily for subsistence or for the market may be less able to perform labour intensive conservation activities than households who have access to a pool of unpaid female family labour.

Moreover, if irrigation systems are improved it is not guaranteed that women will benefit equally with men, especially if their activities beyond household water provision remain invisible to policy-makers and planners. In addition, women generally have less access than men to credit or other sources of finance which would improve their chances of improving their productivity and incomes from upgraded irrigation systems. Differentials in access to and control over productive resources may mean that women are marginalized as recipients of technical assistance.

Jackson (1993) argues that, contrary to the assumptions of ecofeminist and WED approaches, women often have less of an interest than men in conservation measures, because their rights of access to land and common property resources are often less secure or long-standing. She goes on to argue that incentives may be required to engage women's participation in land improvement measures, for example. A similar argument might be advanced about water conservation and related measures.

3.7 Water conservation technologies

Plans for the introduction of new technology for water conservation or water reuse should be informed by the findings of the extensive literature on technological change and gender. Stamp (1990:50) argues that the conceptualization of technology as a neutral tool rather than a social construct has resulted in many inappropriate developmental interventions. In particular, new agricultural technologies commonly increase demands on women's labour (*ibid*: 51).

Furthermore, the interests of women in relation to technological change may differ from those of men. The introduction of environment-friendly innovations such as devices for water conservation may displace those women (and men) who rely for a living on the sale of water. The World Bank (1993:15) argues that 'Policies that affect or change water rights should be carefully evaluated to ensure that they do not harm the poor, since water rights are often crucial for generating income.' It is crucial for proper application of this caveat that women are viewed as more than providers of domestic water (as in the Bank's current limited perception).

3.8 Upgrading of skills

UNCED (1992:n.p) argues that the management of water resources should be decentralized and that this 'necessitates educating and training water management staff at all levels and ensuring that women participate equally in the education and training programmes.' However, the prescription for equal participation by men and women is optimistic considering the gender gap in education and training that exists to a lesser or greater extent in developing countries. If women are to participate in water resources management and development projects and programmes on an equal footing with men many structural and ideological biases must be overcome. However, the 'add-on' approach adopted by the World Bank suggests that the latter is largely unaware of or unwilling to confront these institutionalised forms of bias. This raises the question of the extent to which the Bank's concern for women in its water resource management policy-making is largely rhetorical.

The Bank's statement on upgrading skills is somewhat in contrast with the earlier emphasis on poverty alleviation and participation. The kinds of skills training suggested are highly technical, being mainly economics, management or environmentally oriented. The new skills package is to be aimed at 'country policy analysts, planners, managers and technicians' (*ibid*: 17). It might be assumed that this implies upgrading the skills of a mainly male technocratic elite, with no commitment to redressing gender biases in the sector. No mention is made of the need to develop specific skills for socio-economic impact analysis, for consulting and working with affected communities. (*Ibid*: 17.) The training of water user associations or other community based organisers is to be left to Government and NGOs (*Ibid*: 57), although other studies suggest that this may be a particular area of weakness (BRIDGE, 1993).

4. CONCLUSION

The new approach of the World Bank and UNCED to WRM has potential for increased responsiveness of water resources management to the interests of women. However, women have been ‘added in’ to the WRM approach. To the extent that gender analysis is limited in the new approach, its potentialities may be weakened.

Potential weaknesses in operationalising the WRM approach in relation to women include the need to fully account for the time and money costs to women of new supplies and environmental protection measures. In this regard, the adoption of participatory approaches may prove to have a higher cost for women than expected. Moreover, for a variety of reasons, participatory approaches may not result in the representation of women’s interests. The flawed assumption that participation automatically leads to empowerment arises from a failure to problematise the concept of participation from a gender perspective.

The costs to women of new WRM interventions may be alleviated somewhat if appropriate supports (e.g. credit) are made available to women. By extension, there is a need for a reconceptualisation of women as water users for productive purposes and not simply as managers of domestic water supply.

As in other matters of policy, issues of intrahousehold inequity, especially in relation to control of resources and expenditure, need to be thought through. The household is not a ‘neutral medium’ through which development policies pursue specific outcomes (Haddad et al, 1992:67) and neither are gender interests generalisable (Levy, 1992:140).

Although the World Bank does recognise the fact that ‘the recommended reforms will typically entail difficult political choices and tradeoffs between conflicting objectives’ (1993:76), this concern is mainly focused at the intersectoral level, with little or no mention of the fact that there may be conflicts of interests generated at the micro-level by gender difference.

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