IGNORING THE OBVIOUS: Women's Roles in Environmental Management in Papua New Guinea

by

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ABSTRACT

This thesis examines relationships within and between women's issues and environmental management issues in Papua New Guinea. These relationships are social, environmental and economic in nature and are impacted by the dynamics of the development process.

The analysis used in the research is based on Gender and Development theory and sets out to examine women's access to, and control of, resources in relation to men. In order to effectively gather this information and uncover the reasons for existing relationships, and for divisions of resources and power, the research had a number of components. These included work with women at a national and provincial level, work with environmental organizations and, most importantly, in-depth work with women in the village of Pepaur.

The work with local women involved awareness raising workshops, field trips, interviews and observation, and many informal information sessions with village women. These research activities created a forum where women could direct the priorities of the research and use my presence and skills to meet some of their needs about environmental management issues. At the same time their openness and questioning allowed me the opportunity to collect information on women's knowledge of environmental management, women's traditional ecological knowledge, and women's roles in decision-making about environmental changes that have happened as a result of the development process.

The findings of this research indicate that women and men experience different levels of access to resources and particularly different levels of control of resources. As well women seem to have a higher level of knowledge of traditional uses of plants and more knowledge of plant names. This knowledge is rapidly eroding with the process of development

demonstrated by the differences in knowledge between older and younger generations of women.

Women's organizations at the national and provincial level attempt to provide outreach services to rural women to allow them to develop leadership skills and become more aware of what development is. However, these organizations are plagued by the same differential access to and control of resources as village women experience in their relationships. Within national environmental organizations, there is some focus on 'women and environment' issues, but male-female dynamics have also negatively impacted the ability of women extension workers to do outreach.

There are pan-cultural environmental management issues that women in Papua New Guinea are working to cope with. The approaches that they have developed are similar to those reported in literature on other developing countries. These approaches focus on working at all levels to clarify strategies to meet identified needs for raised awareness, solidarity and organizing skills. Papua New Guinean women's efforts to meet these needs will result in increased opportunities to participate more directly and effectively in the development of their country.

Examiners:

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CHAPTER 1: Introduction

"There are two ways of looking at this: we can refer to the real (but hidden) power of women or to the obverse, the real (but hidden) subordination of women. The argument here is that although men have a virtual monopoly of formal or public power, women are said to have real dominance because of their power and status in the informal or private sphere of the family, the domestic economy and ties between relatives and neighbours. This sphere is viewed as 'more important' because this is the basis of society. Hence ideological justification is given to the separation of powers between the sexes and women are made to feel like deviants when they venture into the male territory of public power. And power here refers not only to having autonomy to make decisions regarding the conduct of their own lives, their social and economic relationships with others, their ability to influence the decisions and behaviour of others at all levels of society, but also to having access to resources." – Marjorie Hinawaeola, 1987

A. Purpose of the Study

The purpose of this study is to develop a better understanding of gender relations and environmental management decision-making in a village in the coastal forest and grassland area of north-eastern Papua New Guinea (See Figures 1 and 2). Taking the village as a case example, a Gender and Development analysis will be used to examine the inter-related problems of increasing gender inequity and decreasing environmental sustainability. These two factors have been identified as negative impacts of the economic development and primary resource exploitation of PNG (Hinawaeola, 1987 and Hughes et al., 1989).

In this study, the concept of environmental sustainability is closely linked to balanced and informed decision-making on environmental issues. Consequently, there is considerable exploration of how environmental knowledge is gendered and to what extent women's knowledge is included in decisions on environmental use. The findings about gendered knowledge and experience on the one hand, and decision-making control on the other,

are quite straightforward. What is more complex is the matrix of influences embedded in gender-differentiated cultural valuations of men's and women's work-related knowledge and the ways people have experienced the rapid social and economic changes that have occurred in Papua New Guinea in the last sixty years.

There has been considerable research on issues of gender relations and the importance of women as key environmental managers. Work has been carried out at a number of levels from micro studies to policy analysis and overviews of global development trends (Sen and Grown, 1987; Whitehead, 1987; Shiva, 1988; Davidson and Dankleman 1988; Rocheleau, 1991). The research presented in this study has taken place at the micro or village level and was also reviewed and evaluated by women's and environmental organizations at provincial and national levels as data were being collected through the participatory research process. The research was disseminated and evaluated as it was in progress as an acknowledgment of the premise that it is important for women to work at all levels, and across levels, to increase awareness and understanding of the links between development and gender-relations issues in order to work towards an end to the subjugation of women (Whitehead, 1984; Young, 1988; Rocheleau, 1991).

B. Rationale/Nature of the Problem

Within PNG there is an expressed need from national and provincial governments, churches and non-government organizations to address the inter-related problems of gender inequity and the marginalization of women by the development process (Cox and Daure, 1991). At a national level women are struggling to develop creative, feasible options and strategies that will acknowledge their critical role in sustainable environmental management and empower them to foster community stability in rural areas to reduce urban migration and the breakdown of traditional social structures (Mathie and Cox, 1987). This effort has also been linked as critical to the larger process of expanding the international knowledge base around women's role as environmental managers to prevent their indigenous knowledge as the

primary agricultural and gathering users of tropical forests from being lost (Shiva, 1988; Sen and Grown, 1987; Rocheleau, 1991).

Within Papua New Guinea a number of groups are currently working on the design of programs and materials to raise awareness about women's roles in environmental management, and to increase their involvement at all levels of development projects with the aim of improving patterns of natural resource use (South Pacific Peoples Foundation, 1992; Cox 1992). Within this process there is a need to identify and understand the existing constraints at the rural level which inhibit women's participation and which devalue their work and knowledge.

C. Outline of the Thesis

This thesis attempts to provide a comprehensive view of the issues of women's inter-relation with the environment, in the light of a specific methodology and case study.

Chapter Two reviews the nature of the overall problems and constraints of gender inequity in development and looks at the connections between those issues and women's involvement in environmental management. The first section of the chapter examines development as a historical process and how women have been excluded from or involved in development policy. Secondly, a review of literature is presented on the current approaches to finding effective linkages between the issues of development and environment that involve and empower women.

Within the literature on involvement of women in the development process a theoretical methodology has been developed, which is referred to as an 'empowerment approach' or Gender and Development (GAD) theory. The specific criteria of this theory are more fully explored in Chapter Three and frames the research findings presented in Chapter Six.

Chapter Four presents a brief contextual background on Papua New Guinea and some relevant specifics on the geography and culture in the study area.

The goal of the research is to apply the theoretical framework of Gender and Development against this specific case example. Chapter Five describes how, in order to gain a holistic and relational perspective, a series of workshops was designed as a participatory research tool that allowed ongoing evaluation and adaptation by both the researcher and research participants. This process included follow-up discussions, individual interview sessions, and networking with provincial and national level resource people creating a variety of settings for observation, dialogue and interaction with participants over a four month period. During this time the group examined issues of gender relations and environmental stewardship with the aim of increasing awareness among women about the degree of their knowledge and the value of that knowledge to their families and community.

In Chapter Six, the data are examined to develop insights into women's knowledge and management of their local environment, their control of socially valued resources relative to men, and the implications for stability in the ecological, social and economic environments of their community. The relevance of these variables to the precepts of GAD, and the ability to mesh them with the analytical framework provides an opportunity to assess the usefulness of the theory to the very localized experience of rural women in Papua New Guinea.

The analysis uses information contributed by the women research participants who took part in the five workshops and by the wider community of Pepaur village. In-depth interviews with research participants and informal discussions were also used to gather information on gender and power relations in the village. The participants' experiences and social positions can be used as reference points from which to evaluate how representative the sample is of women in the community, and to provide an overview of the social context (See Appendices 1 and 2). Consideration of the differences between individual participants highlights dynamics and variations in women's influence resulting from other social organizing principles such as inherited social position, age, education, marital or other social affiliations that convey status to women. Identifying differentials of power due to a range of social variables allows a more accurate assessment of

gender as a factor in women's ability to access and participate in decision-making forums.

The summary of findings and conclusion reflect on the usefulness of a Gender and Development methodology to illuminate components of a specific case example relevant to understanding the links between gender relations, women's subordination and sound environmental decision-making. Conclusions on this topic are presented in Chapter Seven as are some thoughts on implications of the study. The data collected for the study are presented in their original categories in Appendix 3.

CHAPTER 2: Survey of the Literature on Feminism and Development

There is a growing body of literature about how women have been involved in the development process and how they are critical to more informed approaches to management of the environment, particularly in developing countries. This chapter surveys the literature in order to provide a context for this study and an understanding of the extent and nature of the connections between the problems of women's marginalization by development processes and decreases in environmental sustainability.

Introduction

There is a hierarchy of oppression inherent in the development process which overlaps and doubles back on issues related to women's subordinate position in all societies. There are also many parallels and linkages between the concept of patriarchy and the ways in which colonialism and development have exploited and dominated groups of less advantaged people to maintain power.

Development theory and related policy, which has emerged from capitalist countries, is based on economic growth as the key component of successful development. There has been a direct progression from colonization, as development's historical precursor, to the current development context. Under colonization dominant nations assumed control of groups and states in regions which had not been involved in the industrialization process, resources were exploited, wealth was accumulated by the colonizers, and the colonized were assumed to have benefited by the provision of infrastructure and by the exposure of some of their young people to a supposedly superior western education. Development processes continue to replicate this model with the exception that states receiving assistance have in most cases regained independence and are assisted[1] in their development by so-called

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[1] There are a number of images and misperceptions promoted about development as aid or assistance, i.e. an altruistic or at least benign paternalistic process. These images are, in fact, disproven by the actual flow of resources draining from developing to developed countries. Mies (1988) draws the analogy of women as a final colony, stressing that the treatment of women by

first world countries. Development itself has grown as an industry that provides economic gain to the developed countries and large corporations while appearing to provide economic aid to developing countries. (Sen and Grown, 1987; Mies, 1988; Shiva, 1988; Moser, 1989).

Section One of this paper provides a brief overview of the evolution of development, pointing out the junctures and ways that women have and have not been considered as actors or agents. This historical perspective illustrates an overall failure to effectively include women in development. Combined with women's subordinate position relative to men in the power structures of the societies of both developed and developing countries, it is apparent that development has generally reduced the options for women in the South to control the quality of their own lives. (Young, 1988; Moser, 1989)

Section Two explores the critiques of mainstream women and development approaches and surveys some of the feminist alternatives that are evolving from both developed and developing countries. Support and empowerment of women are the stated goals of these development alternatives being proposed by scholars, practitioners, and grass roots women themselves. Dovetailed with this examination of empowerment is an examination of women's roles as subsistence producers and their involvement as resource managers in environments whose sustainability is being threatened by development processes. There is a growing body of literature clarifying linkages between sustainability of environmental systems, the stability of human social systems and women's reproductive responsibilities. Further exploration of these linkages will be necessary in order to develop a framework of issues and concerns that can be useful and relevant to women and environment issues in cross-cultural contexts.

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the development process is still so overtly exploitive as to not even have the smokescreen of altruism.

2.1 Development Theory and Women

your basic average superstar
is singing about justice
and peace and love
i am glaring at the radio, swearing
saying that's what i was afraid of
the system gives you just enough
to make you think that you see change
they will sing you right to sleep
and then they'll screw you just the same
(ani difranco, singer/songwriter 1971 -)

Modernization and Welfare

The modernization theory of development began to be implemented at a global level in the 1950's and 60's and it continues to be the basis of current development practices (Kardam, 1991; Waring, 1988). Modernization theory is tied to standard economic theories of growth and is based on the assumption that conditions in a country are improved relative to the degree to which those countries can successfully adapt to and adopt 'western' or 'northern' technology and knowledge systems. This adaptation is presumed to allow equal participation in the competitive sphere of international markets. Modernization theory promotes centralized industrialization, a reduction of dependency on subsistence production (particularly subsistence agriculture), and the inclusion of developing countries in a global market.

The main assumption of modernization theory has been that the benefits of economic growth will 'trickle down' to the general population level in all countries and the world would be better off (Moser, 1989). Very little attention was paid to women because it was also assumed that not only would benefits extend to the household, but that women would benefit as their husbands became involved in development. Economic development planners have consistently and mistakenly assumed that households function as a sphere of equitable distribution for income and for other benefits of the development process. Women's roles are assumed to be focussed in the home, and men are assumed to be the household head and main providers of subsistence needs and cash income who share the wealth within the home (Young et al., 1981; Waring, 1988; Moser, 1989; Wilson,

1991). Many of these assumptions continue to be incorporated into development planning even though there is considerable empirical evidence to the contrary (Young, 1988; Waring, 1988; Sen, 1990; Elson, 1991).

As early as the first United Nations Development Decade (1960 - 1970) the growth of the less developed countries was falling below the predictions of development economists, and there was a documented increase in poverty. There were few programs aimed at women and those that were tended to focus on the very poor, who were perceived to need direct assistance in meeting specific needs to ensure their physical welfare. In many cases the main recipients of these programs were women heads of households. Welfare style programs recognized women only on the basis of their roles as mothers and homemakers. Those roles were perceived to be totally passive from a policy perspective, and it was not considered necessary to consult women in order to deliver programs to them (Moser, 1989). The welfare approach became a part of development theory and is still favoured by a number of governments and traditional non-government organizations. Welfare, as a component of development policy, does not challenge the status quo and provides women with little opportunity to have any valid input into development. The promotion of this passive role by welfare oriented programs increases women's dependence on men (Tinker, 1990).

With the acknowledgement of increasing poverty, women began to be more specifically targeted for two reasons: first, because it was noticed that statistically they made up the largest percentage of the 'poorest of the poor'; and secondly because population growth was as identified as a constraint to economic growth, and women were seen to be the obvious targets for population control programs. Programs designed during the 1970's continued to focus on enhancing women's domestic skills to allow them to better meet the basic household centred needs of their families and there was some focus on employment and education of women with the aim of reducing birth rates. This effort to reduce birth rates was unsuccessful in many of the poorest countries, mainly because assumptions about the underlying rationale for large families were based on western values and

were not sufficiently relevant to men and women in developing countries (Afxentiou, 1990).

Basic Needs to Equity?

During the the second U.N. Development Decade (1970 -1980) there was increasing discussion on the complexity[2] of 'development issues' and a growing concern with issues of poverty, unemployment and inequality. The aims of development based on modernization theory, as well as the method of achieving those aims, began to be seriously questioned by a growing number of non-government organizations from the North, grass-roots women's organizations in the South[3] and women scholars entering into the study of development (Young et al., 1981; Buvinic, 1983).

During the 1970s issues concerning women began to be incorporated into academic and policy level discussions of development. This increased involvement coincided with the growth of the women's movement in many western countries (Tinker, 1990; Young et al., 1981). 1975 was declared as International Women's Year and evolved into the International Decade for Women (1976 -1985), an international focus that provided increased funding for studies of women in developing countries. The resulting increase in awareness of women's roles contributed to the validation of research about women and the implications of the development process for their lives and livelihoods (Tinker, 1990). Major studies of women were undertaken focussing initially on poverty eradication through employment, and on work in previously unreported sectors such as the informal economies of developing countries. Findings highlighted women's over-representation among the poor, particularly in female-headed households (Loutfi, 1985).

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[2] It is interesting to note that there was never any serious questioning that the underlying structures and systems of development might be faulty, rather; as each approach failed, and made things increasingly unworkable, issues were only deemed to be more 'complex'.

[3] In many developing countries there are longstanding histories of a blending of political and gender struggles in populist and revolutionary organizations. Since the 1970s there has been an increased awareness among Southern women about the need to focus specifically on gender relations in development processes. This has been the point of origin of many of these grass roots organizations (Moser, 1989).

Anti-poverty and Basic Needs were two inter-related development approaches that explicitly acknowledged women's needs. These initiatives included a number of strategies designed to address the needs of women: raising the purchasing power of the poor to provide larger domestic markets; a reorientation of industry towards mass consumer goods; and the addition of human and social dimensions to growth criteria – based on the assumption that growth will happen when people are healthy, educated and productive (Afxentiou, 1990). The International Labour Organization (ILO) was the main global level agency which promoted the Basic Needs Approach to development. This approach aimed to identify and meet basic needs of physical and social security by the year 2000, and to involve beneficiaries in the development process. Because women were perceived by planners to be family-based people mainly responsible for meeting household needs, development programs began to appear which were designed to enable women to contribute more effectively to development through the informal economic sector via their household or reproductive roles. Anti-poverty approaches on the other hand, called for redistribution of resources with growth, and were aimed at enabling women to increase their productivity through employment (Moser, 1989).

These approaches allowed women's poverty to be seen as a problem of under-development and not of subordination, they failed to address the issue that global systems do not ascribe any formal values to women's work in the household (Moser, 1989). The 'new perspective' of both Anti-poverty and Basic Needs was promoted as an evolutionary step in development theory, but it was undermined by economic theorists and compromised in implementation because of the ways it conflicted with the more powerful mandates of economic growth. To meet the true goals of Basic Needs would have required a long-term commitment to health, education and equitable employment, and a consequent redistribution of wealth away from politically powerful groups and individuals (Afxentiou, 1990). The actual Basic Needs programs that were implemented can be seen in retrospect to have been only a minor adaptation to modernization theory designed to pay short-term lipservice to the needs of the under-privileged while continuing to safeguard the economic security of developed countries (Buvinic, 1983; Moser, 1989).

A major focus of the Anti-poverty approach was on providing income generating opportunities for women, attempting to fulfill a dual need of increased production with associated benefits of income for women (Moser, 1989). The main bias was the lack of recognition of the true extent of women's existing contributions to social maintenance and reproduction (Elson, 1990; Buvinic, 1983). By assuming women could add paid employment into the equation of their daily lives, the demands on the time and energy of poor women would be exacerbated when they were already stretched to the limits of individual stamina in subsistence and/or survival oriented lifestyles in the informal economy.

These types of flawed assumptions have combined with the undermining effects of structural adjustment policies to create an even greater climate of uncertainty around the concept of fulfilling basic needs through externally imposed programmes (Sen and Grown, 1987). Problems are exemplified in the poor records of many income generation schemes for women. These schemes gave no consideration to the fact that women do not pass off their reproductive responsibilities when they are engaged in productive employment; they are still the primary care givers for their children and often elderly relatives, and in many cases the sole person working at domestic tasks such as provision of water and fuel, cooking and cleaning. The insecurity of the formal employment sector is an additional factor which contributes to women's resistance to foregoing either their subsistence or informal economic activities, because they cannot expect to meet household needs through a single avenue of paid employment (Bienefeld, 1981; Sen and Grown, 1987).

During the 1975 -1985 period, under the auspices of U.N. attention, issues of equity were highlighted as the 'true' direction for effective policy to alleviate development problems faced by women (Young et al, 1981). Policy directions were identified which called for state interventions to promote political and economic autonomy for women. Equity approaches were proposed and promoted by planners in both the North and South, and by a number of non-government organizations, but were not adopted for implementation by

governments. Equity approaches were seen as presenting challenges to the status quo of male female relations within the private sphere of the household, and it was felt that making recommendations that would require shifts of power at this level would be perceived as cultural interference and manipulation – an inappropriate intervention on the part of Western governments and aid agencies (Moser, 1989).

Allocation of government resources favoured the catch phrase concept of Women in Development introduced by USAID which was oriented to planning that continued to promote anti-poverty concepts combined with efficiency approaches to women's involvement. This combination allowed intervention at the household level to continue to favour men (Young, 1988). Irene Tinker (1990: 5) points out the paradox of the situation:

> "Despite the recognition of the importance of including women in the planning and implementation of development programs, much of the optimism about the ability of practitioners to greatly alter the lives of poor women in developing countries has been moderated. ... Rapid urbanization and the pressures for two incomes per family have resulted in more women entering both the formal and informal labor force; but the control of this income and the sharing of the increased work burden are still too often hostage to patriarchal control."

Efficiency or Empowerment?

By the third U.N. Development Decade (1980 - 1990) global economic problems had increased and, for the reasons cited above, the Basic Needs, Anti-poverty and Equity approaches were considered to be unrealistic in that they were impossible to implement because they conflicted too directly with entrenched economic priorities. The close of the Decade for Women brought to light that women's conditions of life had steadily deteriorated as a result of international development policies. Structural adjustment policies in particular have been blamed for creating increased pressure on women, in that they concurrently deplete existing natural resource options, as well as social resources and safety nets that previously provided at least marginal support to women[4] (Waring 1988). A major focus was given to Women in Development approaches which, although never specifically defined, were aimed at integrating women into the development process for more efficient and effective development. Moser (1989) has built on the work of Elson (1987) to clarify how efficiency approaches actually undermine women.

> "In reality this approach often simply means a shifting of costs from the paid to the unpaid economy, particularly through the use of women's unpaid time. ... This built-in gender bias concerning the process of the reproduction and maintenance of human resources allows economic resource reallocation policies to assume that women's unpaid labor is elastic in such activities as caring for children, gathering fuel, processing food, preparing meals and nursing the sick" (Moser, 1989: pp. 1813-14).

Empowerment[5] approaches to development diverge from mainstream WID policy and have evolved with many of the same principles found in equity approaches. The main distinction between the two can be clarified by examining their points of origin. Equity approaches were mainly driven by concerned planners in the North, who sought to develop policies to address

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[4]Options for independence and self-sufficiency have been reduced by the pressure to industrialize agriculture and movement into large-scale cash crop production which marginalizes and limits women's traditional subsistence production opportunities.

[5]Gender and Development is an academic label that is commonly equated with empowerment approaches. The term empowerment is used here to encompass not only academic theories of development that empower women, but also those movements originating in developing countries which have not necessarily been labelled by their members.

women's unequal position in societies. The fact that policy content became more inclusive of women's rights in many countries, however, has not resulted in any real improvement in women's position relative to men or in their ability to access resources or take part with equal voices at decision-making levels. Empowerment approaches have tended to grow out of the grass-roots women's organizations in the South which are being supported by a few like-minded northern organizations and whose efforts are being documented by scholars from both North and South (Sen and Grown, 1987; Dankleman and Davidson, 1988; Moser, 1989; Nelson, 1992).

Where empowerment is an organizational goal, groups are developing strategies to strive for conscientization,[6] social change and in some cases resistance. This change is being sought directly and indirectly through micro-level approaches to basic needs issues and mobilization around strategic interests such as political and economic autonomy (Sen and Grown, 1987; Dankelman and Davidson, 1988; Young, 1988). The concept of empowerment presents a major challenge to governments and large conservative development organizations because it requires examination of women's subordination relative to men and implies a change to the status quo which currently entrenches male privilege. Consequently, empowerment as a programming approach receives less support from governments and many development agencies than do more traditional Women in Development approaches aimed at incorporating women into projects for purposes of efficiency and effectiveness (Moser, 1989). While this resistance derailed equity approaches, empowerment as a strategy seems to be steadily growing from the grass-roots. The approach has gained strength as women have become increasingly politicized through their own local and global networks (Sen, 1990).

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[6] The term conscientization comes from the work of Brazilian educator Paulo Freire (1970) and refers to the educational step of the learner gaining the realization that elements of her/his own life experience are political leverage points that have relevance to larger struggles for social change. Conscientization is the point at which a person can translate her/his own experience into a political rationale for action.

2.2 Alternative Perspectives on Development Theory

Women's Actual Contribution to the Development Process

Both colonization and development initiatives in the South have been seen by some analysts as cross-cultural interactions controlled by men to meet the agenda of economic growth within capitalist systems (Mies, 1986; Young 1988). As outlined in Section I, women have had a minimal presence at policy and analysis levels in the development field. One result of this has been that the statistical accuracy and the validity of assumptions about women's roles in both production and reproduction in developing countries were not questioned. Several scholars have documented areas where bias is entrenched in development policy through the collection and use of incomplete or skewed data about the social and economic systems of developing countries, and particularly about the roles that women play in various cultures. Assessments made on the basis of such inaccurate data then provide justification for reinforcement of a biased and self-serving male reality and system of power (Afshar, 1991; Elson, 1990; Young, 1988; Sen and Grown, 1987; Waring, 1988).

In 1970, Ester Boserup published her book *Women's Role in Economic Development* and presented information, mainly from Africa and Asia, which clarified the critical contribution that women make to the commercial agricultural systems in those countries. Boserup examined the differences in the sexual division of labour between countries with shifting versus settled and intensive agricultural systems, the various forms that women's work took within the economic systems of households and nations, and the differential impacts of various forms of development on women and their work responsibilities. Boserup (1990) has continued her work in the field of economic analysis, most recently analyzing how the changes in women's roles due to industrialization are impacted by other hierarchies of social organization, such as class, age, religion and race.

Beneria and Sen (1981) have argued that a missing link in Boserup's study was that women's social and biological reproductive contributions were not counted as 'work' to be factored into Boserup's analysis. They point out that

this allows a blindness to underlying structures of patriarchal relations of subordination. Without this clarification, the implication of the analysis seems to be that it is simply women's lack of participation in the economic sphere that creates their inequality – rather than that the modernization model reinforcing capital accumulation "generates and intensifies inequalities, making use of existing gender hierarchies to place women in subordinate positions at each different level of interaction between class and gender" (Beneria and Sen, 1981:292).

Although Boserup does not actively apply a feminist analysis to her work, many women scholars, planners and policy makers have made use of her thorough collection of information to build a strong argument around the need to acknowledge the value of women's contributions to the economic stability of their societies, and to provide them with assistance to continue to work effectively in that role (Sen and Grown, 1987; Waring, 1988; Tinker, 1990). Based on an awareness of the value of women's full contributions to their societies, further arguments have been put forward for women to be active as political agents, participating in decision-making about development policies (Beneria and Sen, 1981; Young, 1987).

The marginalization of women by the development process is particularly noticeable in the weakening of women's social position and power relative to men. Young (1988) has pointed out three key factors that have undermined women's position starting with the imposition of easily manipulated colonial political structures that excluded women, the promotion of the model of the nuclear family as a key element necessary to promote western style market systems,[7] and that economic and other necessary inputs were targeted largely to men in conformity with Western stereotypes, women's needs as producers being ignored, thereby exacerbating their dependence on men (Young, 1988). The rationale for excluding women

[7]Moser (1989) comments that this modelling of family structure doesn't really happen, but that the assumption that it has been adopted leads to continuation of inappropriate planning.

was based on (1) conceptual difficulties,[8] and (2) the difficulties of collecting data (Waring, 1988).

The work of Sen and Grown (1987) traces the linkages between macro-economic and structural issues and the reality of poor women in developing countries. They have worked with women's organizations in a number of developing countries and provide a thorough analysis of development policies. Their analysis highlights the ways in which the development experience has increasingly marginalized women from the expected benefits of development. The authors analyse how the structural elements of our global culture (macro-economics of accumulation and ensuing structural adjustment, industrialization and the impacts of militarization) continue to subvert the promise of equitable development for the countries of the South, and to perpetuate the subordination of women.

Sen and Grown outline three ways that structural adjustment policies have magnified the insecurity of women's lives in developing countries. Firstly, the undermining of subsistence sectors, with a focus on large agricultural ventures to promote export earnings, has meant that women have less access to productive lands to grow food for their families. Secondly, employment opportunities have been reduced in the area of domestic market production while employment in export sector factories in free trade zones is exemplified by work that is "temporary, with high turnover and severe discipline" (Sen and Grown, 1987: 62). Thirdly, the personal impacts on women caused by the reduction or withdrawal of social services means that women's workloads increase as they are forced by default to take on social and community work; they have reduced time to access health care and educational opportunities for themselves and they are often forced to withdraw their daughters from school to assist with labour needs in both productive and reproductive sectors.

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[8]Waring argues that the narrowness of personal interest has created conceptual difficulties, making it too difficult for men to develop models to account for work which they cannot relate to as having value. This perspective is also very well elaborated on by Sen (1990) in his discussion of the cooperative conflict model of resource distribution within households.

Other variables resulting from the macro-economic policy objectives which lead to militarization and industrialization have also failed to stabilize global systems. They have, however, had strong negative impacts on the economies of developing countries and have created an economic climate where agreement to structural adjustment policies are a prerequisite of outside "assistance" from the North[9] (Sen and Grown, 1987; Moser, 1989).

Perhaps of the most enlightening examples of male bias in global systems is the United Nations Systems of National Accounts, the system by which the governments of the world calculate the productivity of their citizens and allocate resources to address needs and potential. The inability of men to relate to the work women do as 'housework' without a readily traced connection of financial remuneration, is reflected in the United Nations Systems of National Accounts, where women's reproductive work is defined as part of the role of an 'inactive non-producer' or someone who having no formal 'occupation' is therefore 'unoccupied' (Waring, 1988; Sen, 1990). Reproductive work or housework is not counted as a viable input into national accounts, which makes it extremely difficult for politicians or planners interested in supporting women's needs to build tangible arguments and justifications for providing benefits to women.

The non-acknowledgement of a major component of women's contributions to societies exists in both capitalist and socialist countries[10] (Waring, 89). Waring in her 1988 book *If Women Counted: A New Feminist Economics,* illustrates a myriad of ways in which statistical data collection ignores women's roles and the value of the work women do, particularly in

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[9] Refer to Sen and Grown (1987) and Waring (1988) for detailed discussion and explanation of the inter-relations of macro-economic policies and their impacts on women in the South.

[10] The socialist component of this perspective is elaborated on by Mies (1986) in her critiques of capitalist approaches to development where she traces the entrenchment of patriarchal values into capitalist systems of accumulation and the exploitation of the South. Mies (1988) moved the argument further to examine the role of women globally as the last colony that continues to be exploited without sanction by the male-controlled patriarchal parameters of the global economic system.

household, and family reproductive and production labour.[11] In exploring the ways in which all of a woman's subsistence production and social reproduction can be overlooked by the global economic system, Waring points out a key limiting factor tied to the traditionally male-defined and valued sexual division of labour.

> "The conceptual boundaries of the scientific method used by the UNSNA authors are limited to the male world. Institutional child care would be a service. The use of electricity, gas, kerosene or coal as a fuel purchased in the marketplace would be consumptive. The processing or manufacture of foodstuffs in a factory is production. Water delivered through a tap has market value. A visit to a restaurant or laundry would be an economic activity. But when a Zambian woman does it all herself – it is housework" (Waring, 1988:91).

Moser (1989) elaborates on this perspective illustrating how all aspects of women's reproductive work, and their work of maintaining communities through participation in church women's groups, parents groups, or general 'volunteerism' has been seen as a natural flow from their biological role of bearing children.

> "Reproductive and community managing work, because they are both seen as 'natural' and nonproductive, are not valued. This has serious consequences for women. It means that the majority of work women do is made invisible and fails to be recognized as work by men in the community or by those planners whose job it is to assess different needs within low-income communities. In contrast, the majority of men's work is valued, either directly through paid remuneration, or indirectly through status and political power. While the tendency is to see women's and men's needs as similar, the reality of their lives shows a very different situation." (Moser, 1989: 1801).

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[11] Waring's book also draws parallels with the valuing process used to account and not to account for in situ environmental assets. In both these areas she demonstrates that by not accounting for a contribution, problems connected to either women or the environment can be conveniently ignored as though they don't exist, because in fact they don't show up in GDP or GNP calculations.

As a consequence of this level of bias and resulting blindness in global systems, it is doubly difficult to empower women in poor countries who work mainly in subsistence or the informal (and often illegal) economic system, and also have the ongoing responsibilities of human resource maintenance.

Elson's book *Male Bias in the Development Process* (1990) builds on the writing of other scholars and organizers, examining the difficult and often double-edged strategies necessary to expose and work around existing male bias and the version of "reality" it has created in economic models. Elson argues that there are several components of awareness necessary to bring women's subordinate position into an accurate contextual focus. These components include an awareness of: existing male bias; the actual value of women's work; the potential power of women's organizations and solidarity networks at all levels, from the grass roots to academic and government arenas. She maintains that these forms of awareness have a cumulative potential to reinforce the reality of women's contribution and therefore their right to a voice, an opinion and an equal place in decision-making arenas (Elson, 1991). The more negative side of this argument is that the pitfalls of cooptation and the risks of women unwittingly, or through coercion, contributing to their own subordination must also be recognized as a result of patriarchally defined values. In order to be subverted[12], these values must be thoroughly acknowledged and exposed for what they are, i.e. imposed parameters of manipulation and oppression.[13]

The process of conscientization through awareness and self-validation are the first steps that many grassroots women's organizations take to assist their members to gain a clear view of their own subordination. From this perspective many women then become politically oriented and often take on the roles of change agents (Sen and Grown, 1987; Sen, 1990; Elson, 1991).

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[12] Subversion refers to the bringing to light of a sub 'version' of reality (i.e. women's reality which has existed in an invalidated form) and replacing the existing imposed, incomplete and therefore inaccurate version which keeps women in subordinate positions.

[13] Sen (1990) provides in-depth exploration of the ways in which the social technology of any culture can form parameters for coercion or cooptation of women, limiting them from perceiving alternatives or options and viewing their subordinate position as 'natural'.

With an awareness of the flaws which exist in current global systems and structures, and an awareness of the need to continue to develop alternatives and strengthen women's strategic interests, the grassroots driven empowerment approach to development has become an active field of work and research. Both applied and theoretical elements are now part of an iterative process among women in developed and developing countries (Tinker, 1990).

Differential Access to, and Control of, Resources

A number of key analytical elements and research sectors have emerged within the literature. These research areas have delineated aspects of gender relations and the dynamics of asymetrical power resulting from the subordinate position of women to men across all other social organization principles such as class, race, or age. There has been a three stage progression in research on gender relations, centred around access to and control of socially valued resources which convey economic and political power, and facilitate the freeing up of personal time. The first stage of the progression examines social variables that have an impact on relationships between men and women. The second stage becomes more complex as the tensions between the inter-relation of social and economic systems are factored in, and altered power dynamics are taken into account. Thirdly there has been an assessment of the impacts of the development process on women as a result of the combined imposition of western social values and loss of control over stablizing cultural norms (Young et al., 1981; Stratigos and Hughes, 1987; Young, 1988; Elson, 1991; Momsen, 1991; Tinker, 1990).

The most commonly used framework for examination of gender relations in development is based on women's functional roles. The distinctions and similarities between women's roles as producers for society and as main figures of responsibility in the reproduction of societies have been central in studies of the household as well as in the informal economy. Both of these areas tend to be overlooked as peripheral to male structured systems of accounting and documentation, but are important monitoring points from which to track women's marginalization.

In studies of gender relations, whether specific to households or the market system, in a single culture or placed in the context of biased global economic accounting systems, certain critical constraints to women stand out. Women are less able to access and control political and economic resources relative to men, and mainstream development initiatives seem to make situations worse. Even in cases where women have their immediate conditions of life improved by, for example, access to income generation opportunities or health care, they are often undermined by structural adjustment policies which reduce their subsistence capabilities or social network, increase the demands on their time and require them to distribute fixed amounts of resources more widely to meet an increased set of needs (Young 1987; Moser, 1989).

Development analysts, strategists, and scholars who incorporate a feminist analysis into their work have done considerable documentation of the impacts of differential access to time on people's ability to participate as equals in the development process. Time issues are relevant in the ways that societies are planned and services are provided to meet assumptions which are male-defined and oriented. Restricting women's access to services forces them to further re-arrange their schedules to meet their own and their families' needs and depletes the time and energy they have available to participate in community fora or other development activities. For example, health and consumer services are often not open for extended hours which restricts the access of working women – the assumption is that working people have wives to do their shopping and look after their children's health. Transport services are planned around peak commuting hours, which restricts women with childcare and home-based subsistence responsibilities from engaging in part time or irregular employment in the informal sector. As well, there is a massive under-estimation of the time that women spend standing in lines to access goods which are in short supply, or in walking long distances to work in their fields or to find fuel or water (Shiva, 1988; Waring, 1988; Moser, 1989; Dankleman and Davidson, 1989).

Male biased assumptions that are laden with western values, and the continuing use of data that are not disaggregated by sex, cause and exacerbate

problems of women's lack of access to, and control of, resources. This situation continues to worsen despite more than a decade of research and clarification by scholars of development and feminism (Afxentiou, 1991; Moser, 1989). Problematic assumptions include the concept of male household heads and equal distribution of assets within households based on models of cooperation and equitable decision-making (Sen, 1990; Wilson, 1991). Planning based on these types of assumptions allows for development of programs which either make use of women or attempt to 'take care' of them. What feminist development literature strives to point out is that these assumptions preclude awareness of imbalanced 'relations' based solely on gender and promote discrimination and subordination. In order to facilitate the inclusion of women in effective development planning, their knowledge and potential as change agents and the value of their existing contributions to global production and reproduction have to be recognized.

These points have been eloquently, resoundingly, and repeatedly made in both global and local fora for the last twenty years. There has been no responsive movement to change the controlling global structures because it would require a redistribution of power (Afxentiou, 1991; Moser, 1989). The lack of political and economic power and of free time of oppressed groups is an effective mechanism for powerful groups to remain so unless other pressures, in the form of more powerful negative feedback force change. The increasing decline in environmental quality is beginning to be identified as a key feedback mechanism which can link awareness of the need for change in oppressive global social systems, and the need for change in the ways in which natural resources are valued and managed. Both problem areas result from unrealistic economic assumptions, the undervaluing of women and the poor, and from greed (Dankleman and Davidson, 1989; Shiva, 1988; Waring, 1988; Afxentiou, 1991).

2.3 Women and Environmental Sustainability [14]

Design flaws and faulty assumptions incorporated into development processes have led to the implementation of non-viable economic policy in a number of environment related sectors. Economic policies which do not consider the total range of values and contributions of all social sectors, have triggered poor resource management policies and practices leading to declines in sustainability, which have resulted in further negative ecological as well as economic repercussions within developing countries. A major design flaw explored in detail by Sen and Grown (1987) and others (Davidson and Dankleman, 1989; Waring, 1988) is the lack of value attributed to women's work and women's needs for a sound environmental base to support their subsistence labour.

> "Neglecting women's work in this case is not only detrimental to women, it also makes it impossible to develop the integrated approaches to the inter-linked problems of food–fuel–water that are increasingly being recognized as essential to the success of policy" (Sen and Grown, 1987: 51).

A number of authors cite problems created by the lack of integrated policy to address the integrated use of resources by the rural poor and particularly women, who are largely reliant on their immediate environments for survival and who are, at the same time, largely responsible for food production and provision and household maintenance (Sen and Grown, 1987; Davidson and Dankleman, 1989; Waring, 1988; Dankleman, 1991; Shiva, 1986; Rocheleau, 1991). Once problems have reached crisis proportions, attempts to solve problems by addressing discreet elements of those crises often have the reverse impact of exacerbating them.[15] These negative

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[14] There are many definitions of sustainability; overall it must include the basic principles outlined in this conceptual sketch of sustainable agriculture developed at the Workshop on Participatory Technology Development in Sustainable Agriculture (1989): "methods are being used which maintain or improve the productive and reproductive resources (such as soil, plants, animals, human labour and skills as socio-economic systems, services and infrastructures) as well as the non-productive natural and cultural resources"(ILEIA, 1989:8).

[15] Dankleman and Davidson (1989) provide a series of examples and case studies where women's roles and knowledge were overlooked in social forestry projects with many negative repercussions, including the failure of the projects.

impacts are caused by the disregard for local level knowledge of the people who are most in tune with site specific coping strategies. The downward spiral of impacts and the lack of success of mainstream policy to redress problems reflects a need to recognize women "as the key human elements in those linkages, and as active agents in any resolutions" (Sen and Grown, 1987: 57).

In recognizing the importance of the links between issues of environmental sustainability and the subordination of women, Dankleman and Davidson (1988) have identified three areas that provide justification for building integrated strategic development plans.[16] The first area is women's existing knowledge as resource managers: their awareness of the properties of species as well as their depth of experience in coping with environmental change make them excellent sources of information about ecosystems. Second, the demonstrated ability of women to work together for common goals that positively impact the well-being of their families and communities is valuable for effective channeling of time and financial resources, as well as enhanced learning. Thirdly, they mention women's ability to influence the next generation of people who will be using those environments and to instil ethics of sustainability and positive stewardship responsibilities. Integrated programming around gender and environment issues has a synergistic effect for the women involved in it. By paying attention to women and involving them in decision-making about the environment this holistic programming promotes control and self-validation, which empowers women within their families and communities (Dankleman and Davidson, 1988).

This view is also promoted by Robert Chambers (Information Centre for Low Input Agriculture Workshop Proceedings, 1989) and other scholars and practitioners of Participatory Technology Development who seek to build on indigenous knowledge and coping strategies in marginal agricultural areas. Development research on indigenous knowledge systems of agriculture,

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[16] Afshar (1991) points out the qualifier and semantic clarification that in integrating women into the development process, what should be taking place is the movement of women, who are already thoroughly integrated into the unpaid and subsistence levels of development, upward to levels of development where control and power in strategic decision-making become an issue.

forestry and environmental management reflects similar values to the empowerment approach to development. Work done in conjunction with local non-government organizations and individual farmers specifically acknowledges the division of labour and cultural variations where women hold specific, valuable knowledge about environmental management. Emphasis and value is given to involving agricultural producers in the research design and implementation phases to address local needs with farmer tested and adapted technologies (ILEIA Workshop Proceedings, 1989).

The work of Rocheleau (1991) specifically highlights some of the important gender issues that arise between women's knowledge of ecological systems, development approaches and policy. Her work highlights the importance of local level diversity and knowledge to an understanding of the global crisis being faced in many areas of the environment. As Rocheleau points out, "Ironically, the urgent concern over global environmental change has spawned a serious attempt to deal with the complexity of local cultural and ecological realities in the farm and forest communities of Africa, Asia and Latin America. ... Now, there is a growing awareness that indigenous science and practice may contribute far more to the current understanding and to the future survival and use of a wide array of ecosystems" (Rocheleau, 1991: 157).

This view considers the ability to adapt and survive in the context of change and crisis in social, economic and political and ecological areas of rural life, as a key driving reality of women and the poor in developing countries. Indigenous knowledge systems have the potential to give direction to development planning (Rajasekaran et al., 1991), and women are often key subsistence producers with the experience of absorbing impacts of change or of developing strategies to adapt or cope. All these issues involve the complex interaction of socio-economic factors and have site-specific as well as general implications. This becomes particularly apparent where large scale projects threaten areas on which women rely for subsistence. An example is the under-estimation that exists in the development and academic literature on "the extent to which women's food security strategies are dependant not only on their access to fuelwood but on their collecting and processing a range

of foodstuffs from trees and forests to complement the agricultural and animal products consumed in the household (Molnar, 1991).

Dealing with change and insecurity shapes and reinforces women's knowledge and concern for their environment because they are tied to it for their own and their families survival (Shiva, 1988). Women commonly incorporate their knowledge of social standards and local politics into their strategies for subsistence. These concerns and complicated holistic strategies have been the basis of a number of environmental movements in developing countries such as the Chipko Andolan movement and the Self Employed Women's Association in India, and the Grameen Bank in Bangladesh. They have created models and a framework for viewing environmental sustainability as a set of relationships between rural subsistence, community stability, issues of equity and the distribution of economic and political resources (Dankleman and Davidson, 1988).

Rocheleau's (1991) premise is that the invisibility of women in the development process has contributed to obscuring their knowledge of ecological systems and their ability to deal with issues of sustainability. She points out that there is true value to be gained from women's knowledge systems in relation to the environment and that it will be necessary to raise awareness about that knowledge to direct research priorities. In order to facilitate positive working relationships with women and other rural people in developing countries, methodological directions promoted by Rocheleau and the ILEIA practitioners focus on creating research environments that are conducive to ongoing two-way learning, and which minimize hierarchies where certain types of knowledge are presumed to be superior (Rocheleau, 1991; ILEIA proceedings, 1989).

Dankleman (1991) reinforces the need for strategic changes in approaches to research and awareness about women's knowledge of the environment. She calls for not only an acknowledgement of women's key roles in natural resource management, but for shifts in the development agendas of organizations to incorporate women's knowledge and experience into initiatives for sustainability. This means examining issues of equity and

allocation of economic resources which facilitate the inclusion or exclusion of women from planning and decision-making fora at all levels from rural villages to the United Nations (Dankleman, 1991).

The overlapping fields of forestry and agriculture have seen an increase in initiatives involving women in sustainable management of forests and other food production areas. These have created and fostered consciousness-raising and political action as a response to the marginalizing effect of both development processes and the commercial exploitation of resources women rely on for subsistence and survival (Molnar, 1991).

Land ownership, tenure, and the opportunity for women to have a voice in decision-making about resource use are key issues that impact women's ability to meet their needs and fulfill their responsibilities. These are areas where a gender relations analysis can explain failures in development initiatives to assist women. Land ownership and tenure are extremely political issues in most countries and the balance of political power in favour of men has in some cases made it illegal or nearly impossible for women to own and control their own land (Dankleman and Davidson, 1989; Shiva, 1988). In subsistence cultures where there are no immediate prospects for commercial exploitation of land, women share or take primary responsibility for management of subsistence production. Knowledge is generally acquired from other family members and grows to include coping strategies to deal with climatic and ecological changes (ILEIA Proceedings, 1989). Where opportunities for commercial exploitation arise, assumptions that male landowners are the key players to be informed and convinced about project viability result in the exclusion of women's knowledge from the decision-making process (Dankleman and Davidson, 1989; Cox, 1987; Warren and Hambly, 1992).

The result of lack of tenure, and decision-making that excludes women's interests in subsistence, marginalizes women in a number of ways. Socially women are marginalized within their families by a devaluation of their roles of reproduction and production. The devaluation of their contribution to their societies lowers their social position as cash crops are substituted for

subsistence production of food crops, and the emphasis and status placed on introduced education systems reduces the value accorded to traditional awareness of ecological cycles and management of complex resource systems (Waring, 1988; Dankleman and Davidson, 1989; Cox 1987; Warren and Hambly, 1992; Rocheleau, 1991). As marginalization takes place, women have in a number of instances been forced to overuse their environments past sustainable limits. Again, false assumptions have resulted from this situation including claims that it is the poor of the world (most of whom are women) who are to blame for current environmental crises, that women are ignorant of ecological systems including concepts of population control, and that because women are uneducated they make poor target groups for extension efforts on conservation (Dankleman and Davidson, 1989).

Correlations have been clearly drawn between the development emphasis on cash cropping, the "green revolution", structural adjustment policies, and the resulting negative impacts of marginalization, impoverishment of women, and increased pressure on unstable marginal environments (Sen and Grown, 1987; Waring, 1988; Elson, 1991; Moser, 1989; Shiva, 1988). For decades, women have been undermined by development initiatives which have created impossible expectations. Concurrently, they have seen their quality of life deteriorate at increasing rates and have been subjected to increasing subordination relative to men. It is not surprising that after years of struggle with poverty and poor health, women have little energy to deal with conservation issues. This is particularly true when they have no voice in the activities which are taking place around, and regardless of whether the activities are environmentally unsound practices or conservation oriented. If it does not consider their values and needs, positive or negative change is not likely to be welcomed.[17]

However, from the positive perspective, there is a wealth of case studies demonstrating women's commitment to conservation if they feel they can

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[17] Dankleman and Davidson (1989) relate a specific example of WWF conservation schemes which promote Northern values of biodiversity which preclude equal consideration of women's needs for multi-use forests.

have an impact. Key criteria for stimulating commitment have been: firstly, the acknowledgement of women as skilled and knowledgeable resource managers; secondly, an awareness among planners that women are committed to and concerned about their environments; and thirdly, the flexibility in planning processes to include women in project design which creates the incentive of control, allowing women to actively contribute to the recovery and management of healthy stable environments capable of sustaining their families.

At Forum '85, the Nairobi conference marking the end of the Decade for Women, attention was focussed on how the exclusion of women from development processes and decision-making has direct links with unsound development policy. Recommendations were put forward at that time for the inclusion of women in development planning around environmental issues, but little has been done (Kardam, 1991). Dankleman and Davidson (1988) draw attention to the fact that there is an extreme imbalance of male participation at senior levels of most international fora, where development policy recommendations are made. They point out that even the World Commission on Environment and Development (1987), headed by Gro Brundtland as Chairman [sic], was comprised of nineteen commissioners only three of whom (counting Ms Brundtland) were women.

This imbalance at the policy making levels in developed and developing countries needs to be redressed before adjustment of the conventional male-biased structure of development can be addressed. At the same time, however, many women's small organizations indigenous in developing countries are successfully working at the micro-level to involve women in all phases of program planning and moving to develop political voices in their local communities and to work for change from the grass-roots up (Sen and Grown, 1987; Momsen 1991; Dankleman and Davidson, 1989). This type of initiative is in some cases being linked to research efforts from the North to build cooperative learning situations in developing appropriate learning mixes and technologies and to create a positive development experience for .

people living in developing countries[18] (Rocheleau 1991; ILEIA proceedings, 1989; Soondrawu, 1988; Nelson and Mullins, 1989).

As both Waring (1988) and Shiva (1988) have pointed out from different perspectives, global economic systems have been designed to overlook the value of healthy physical and social environments. Women's knowledge and roles in managing both will be valuable in developing to a more holistic systems approach. It will be necessary to incorporate women's knowledge into any successful plan for sustainability into the next century. This will require a rebalancing of power between men and women in all societies, as well as internationally between the South and the North.

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[18] Goulet (1992) puts forward an interesting argument about the paradoxical impacts of contemporary development which can simultaneously create macro-level failures and micro-level successes. In the case of grass-roots women's organizations, their tenacity and determination often seems to deny the very powerful forces which constrain them. Confounding the issue even further, Moser (1989) cites examples of how this paradox has been manipulated to take advantage of women's unpaid time, by using their effort and dedication to community welfare to economize on work that should have been the responsibility of the state. The positive aspect is however, that there is a transfer of decision-making power to women.

CHAPTER 3: The Methodology of Gender and Development

The basis of the methodology employed in this study is Gender and Development theory, where, based on an assumption of women's subordination, gender is perceived to be a social organizing principle recognizable within other social stratifications.

The methodology was selected for two specific reasons. First, it offers an opportunity to link research with the actual processes of practical development done for the benefit of women in developing countries. Secondly, it provides a framework to incorporate the researcher and research participants as activists working toward a common goal even though they may come to the work with diverse sets of cultural understandings and assumptions. Gender and Development acknowledges a specific agenda to promote women's empowerment in their own lives through increasing awareness, organization and solidarity. In establishing a clear agenda, where all participants are acknowledged as active in the research process, GAD allows for a clarification of the underlying assumptions and biases that an external researcher may bring to the work, and establishes processes for that to be monitored by local participants. Chapter 5 describes the process of the research and the roles of both researcher and research participants.

The aim of the applied theory is to develop approaches to meet two types of criteria simultaneously:

a) Answering immediate and basic *practical needs* for improved *conditions* of life; and

b) Involvement of women in identification of their own long term *strategic interests* in order to support them in working for change that will improve their *position* relative to men in the same society (Young, 1987; Sen and Grown 1987).

There are a number of conceptual foci in GAD methodology, which have become jargon. This chapter will attempt to briefly review the vocabulary[1] of

[1] Key terms specific to Gender and Development theory have been italicized the first time they are used.

GAD in order to clarify the ways in which the theory is designed to support ending the subordination of women.

An Approach to Women's Empowerment

The conceptualization of a Gender and Development analysis began to surface in feminist development literature in the early 1980s (Moser and Young, 1981), and research supporting and clarifying those concepts has been ongoing and increasing since that time (Young, 1987; Sen and Grown,1987; Rathgeber, 1990; Elson, 1991).

As a *holistic* and *relational* empowerment approach the theory acknowledges the complex human relations that underpin economic and political power dynamics at all levels of societies and in global systems. In analyzing these dynamics, gender is considered to be a key variable in the stratification of human relations exemplified by the way the gendered division of labour entrenches women in a position subordinate to men.

In order to understand how to influence change aimed at ending the subordination of women, it is necessary to develop and maintain an awareness of systems and to analyze how power is balanced in specific relationships. GAD analyses measure benefits in terms of *access to and control of resources* which convey power.

Resources such as political and economic power, and time are considered to be *socially valued* (Young, 1987). The degree of access to and control of those resources that women have in relation to men can be used as an indicator of women's status and control over their own well-being and environment. Planning for increased equity of access and control between men and women with respect to *socially-valued resources* is seen to be a key step in meeting women's *strategic interests* (Whitehead, 1987). Further to this, it is critical to involve women recipients of development interventions in all phases of those interventions from needs assessment and planning through implementation and evaluation. In order to do this it is important to remember that development has historically been imposed on people in the

third world by outsiders and there may be large gaps in the recipients' understanding about what the economic development process aims to do at a national and international level. Consequently expectations about the delivery of development benefits at the local level and longer term impacts need to be clarified on an ongoing basis. In effect every development project would benefit from a parallel development education program for recipients, allowing them to be fully informed before they commit themselves to their own development decisions (Kettel, 1991).

One aspect of the holistic and relational approach is embedded in understanding why resources are important, and what types of power they convey in different social and cultural contexts. It is important therefore to ascertain through the research process what the fit is between political and socio-economic levels, as well as within communities and families. The premise in GAD theory is that if political resources or economic resources are examined separately, an inaccurate picture of relationships and impacts will emerge. If the issue of women's time is not considered it is not possible to develop an understanding of the structural biases entrenched in both economic systems of organization and the subordination imposed by patriarchy in the home and wider society (Young, 1987). Christine White elaborates on this by explaining how discrimination in an economic system leads to subordination, which is a pervasive political denial of human rights:

> "Not only do existing socio-economic systems structure the work, leisure and life chances of men and women differently, but these differences add up to systematic inequality between the sexes, and more than that, pervasive subordination of women by men" (White, 1984:2).

These types of inter-relations and impacts are difficult to capture quantitatively. It is not possible to understand the consciousness behind an act when only the act is documented and counted, and to understand subordination one must understand not only relationships but also have a sense of the meaning imbued by the cultural context. Gender and Development methodologies value quantitative information as a tool for convincing policy makers, but promote a more in-depth qualitative approach

for the development of effective strategies to subvert the asymmetrical power dynamics created by unequal control of resources (White, 1984).

Grassroots women's organizations working in concert with western researchers to promote an empowerment ideology for women have identified *solidarity* and *organization* as key elements necessary to provide women with more access to resources (Young, 1987; Sen and Grown, 1987; Elson, 1991; Rocheleau, 1991). Training and support for women in techniques of gender analysis, developed through qualitative research, would then provide them with an understanding of the roots of inequality so they can become more effective in working for systemic change with the support of other women in their communities. The need for combined organization and training is based on an acknowledgment of two factors explained by Kate Young:

> " The approach views women as active agents and not passive recipients of 'development' but does not assume that women have perfect knowledge or understanding of their social situation. That is to say it assumes that while women as individuals may well be aware of their subordinate position, this does not necessarily lead to an understanding of the structural roots of discrimination and subordination" (Young, 1987:1).

Based on the development of a common analysis, and using the criteria of access to and control of socially valued resources, social change options can be assessed for the degree of benefit they offer to all parties. Both theoretically and practically it is important to consider what types and degrees of benefits different social groupings of people receive from any intervention aimed at creating change.

Development targeted to women can be classified into two basic categories which can, in some cases, be integrated. Interventions or initiatives may be solely *practical,* answering *basic needs* and simply improving the conditions in which women live. Meeting basic *practical needs* improves women's access to services, materials or economic resources. This reinforces a development style that is *ameliorative* without necessarily impacting the

status quo of socio-economic systems. The history of welfare approaches to development policy provides numerous examples of *women's condition* being a focus of assistance through initiatives like water projects or income generation schemes. Many of these projects have had no effect on improving the position of women in society, and no positive impact in the overall process of development. Many projects of this type have been proven to negatively affect *women's position,* and the well-being of their families. For example if an income generation project is introduced to increase women's participation in the labour force and increase the productivity of an area, a woman may not necessarily have control over that income, and it is almost certain that she will have less time to do her other work of maintaining a family and a household. In this situation women's labour is being used to increase the efficiency of the very structures which subjugate them.

Where women participate in planning initiatives on their own behalf more strategic processes result which have an increased potential to shift women's status or *position* in society. Meeting strategic interests improves women's access to political resources and to time, increasing self-reliance and providing the opportunity for women to make decisions about what forms of material improvement and economic self-sufficiency are most appropriate. Support for women to become self-reliant through identification of more strategic long term interests not only assists women to improve their position in society, but it also has positive impacts for others. The literature documents numerous studies demonstrating how when women's self-reliance increases they share benefits through their relationships with children and their communities more consistently than men do. Over the long term these types of improvements to women's position have a multiplier effect. Changes in social dynamics and the well-being of poor families and communities can be considered to have a *potential to transform* the status quo where women are subordinate to men, and the poor in developing countries are subjugated by the policies of developed nations.

In many cases the conditions of women's lives are so harsh that they have no opportunity to learn or think about options for change. Initiatives which are

planned with the strategic interests of women in mind can also provide improvement to women's conditions of life and become opportunities for learning and awareness. Increased awareness and relevant supportive assistance can ease the severe conditions of women's lives and allow them to identify strategic interests.

The process of shifting power balances and changing gender relations is obviously not simply a matter of working out definitions of interests and needs and following a straightforward plan of action to change the world. Inherent in power is the ability to use it to keep it, and it is extremely uncommon for people to give up power if they do not see some equal or greater benefit in the situation offered as an alternative. In GAD theory there is an assumption that "male privilege makes most men unlikely to ally themselves with women's liberation without powerful persuasion" (Young, 1987:4). When persuasion is not effective, and people or societies feel their power is threatened, conflict can result.

Gender and Development theory acknowledges that by attempting to change their position in society, women increase the risk of conflict in their lives. For women throughout the world, physical and psychological violence have often resulted from their attempts to challenge the status quo of gender relations. For this reason, GAD approaches identify *raised awareness* and *organization* as priorities within all initiatives, and encourage women to share information with each other and to develop strategies which offer the maximum possible level of support to and *solidarity* among participants. Planners and participants at all levels are encouraged to analyze situations and relationships in order to assess which avenues for change are the most *flexible* or acceptable and least likely to generate confrontation in relationships. These include recognizing opportunities to raise the awareness of men and increase their understanding of what they would gain from an improvement of women's position against their own.

Options which are perceived to be *rigid* and unlikely to result in change without conflict are bypassed or addressed only after all other alternatives have been worked through. Education and awareness raising to empower

women in their own development serve multiple purposes in this type of assessment process. In addition to increasing knowledge about the way development works and how it impacts women, increasing women's awareness about the universality of subordination can decrease women's sense of isolation, provide models and increase self-confidence. From this starting point women can begin to organize amongst themselves and *build alliances*. Organization and solidarity are the first steps to the creation of an improved 'sub-version' of social organization. Once women have formed alliances based on a common analysis, they can identify their interests and begin to acquire skills of influence which will facilitate their work for improvements in their societies.

Within the context of development, responsibilities should be shared, and women should be allowed to share equally in decision-making throughout the planning, implementation, and evaluation phases of development processes. This premise is reflected through the emphasis on the promotion of political self-reliance in Gender and Development theory. In a relational sense women's work and contributions to society are undervalued and women do not receive adequate remuneration or societal support. Addressing this problem is a prevalent strategic interest identified in the literature. By working to increase women's decision-making power at all levels, policy can be changed to provide more social and governmental responsibility for tasks that are now considered to be only 'women's work.'

> " GAD also puts greater emphasis on the participation of the state in promoting women's emancipation, seeing it as the duty of the state to provide some of the social services that women in many countries have provided on a private individual basis. This issue has become increasingly politicized in the 1980's, as many states that formerly had provided social services in areas such as childcare and healthcare, for example, have reduced or privatized them in the face of economic recession."
> (Rathgeber, 1990: 494)

As in most efforts to combine research and praxis, within Gender and Development methodologies there is a conundrum about where the most

effective work can be done to change oppressive social structures. Groups and individual women engaged in practical applications of empowerment approaches must cope with existing power structures and in some way work within and around them to raise awareness of the need for, and value of, equity. In many cases this means accepting that "welfare and anti-poverty approaches are pre-conditions for equity" (Young 1987:2).

Combining the experience of praxis with theoretical examination of the need to end the subordination of women has led to a further realization that there has to be clear acknowledgment of structural and systemic constraints. To identify problems and outline solutions within the existing socio-economic structures has the effect of obscuring the actual root causes (Rathgeber, 1990). For example, to say that environmental degradation is caused by population pressure, and that this can be solved by educating women about contraception and giving them access to contraceptive medicines or devices, obscures the root cause of the problem of environmental degradation at issue. The problem would be more accurately perceived by keeping in mind that in many third world cultures women do not have control of their own bodies because they are subjugated by patriarchal structures that disallow them a voice in sexual relations and in planning families. Furthermore, the structure and cultural dogma of societies where men hold power over women also de-value women's knowledge and discredit women's awareness and concerns about the fact that *they know* they cannot sustainably produce food for more people. To consider that a problem of this complexity can be solved by educating women about their bodies and their cultural perceptions of children's role in providing security may be a step in the direction of improving the condition of women. However, there is a distinct need for a broader analysis, if the strategic issue of either women's position in society or the degradation of environmental systems by increasing populations is to be successfully addressed.

For the same reasons it has been pointed out by a number of scholars (Mies, 1983; Kirby and McKenna, 1989; Personal Narratives Group, 1989; Lugones and Spelman, 1986) that there is a contradiction in doing feminist research within the confines of prevalent social science methodologies. For women to

work in these areas and develop accurate perceptions of underlying problems requires what Mies (1983) refers to as double consciousness. That is, an ongoing awareness of the tensions that are created by working within a structure in order to undermine and change the basic values that it is built on. This double consciousness (or researcher schizophrenia) is also required to analyze situations for their true root causes which may exist outside the parameters which define them, and therefore may turn out to be extremely threatening to the people who want to solve the problem, whose lifestyle and power base may depend on maintaining the factors responsible for the problem.

In this study a GAD approach has been used to design the applied research method, as well as to analyze the data and develop an understanding of:

a) the degree to which women in a rural PNG village have access to and control of resources;
b) the value attributed to women in their role as environmental managers and subsistence producers;
c) the degree of recognition of women's contribution to the maintenance of healthy, economically and environmentally stable communities;
d) the level of women's felt needs for increased self-confidence as leaders;
e) what identifying and supporting women's strategic interests implies as a process to lessen their subordination within their society; and
f) how improving women's subordinate position could impact issues of environmental management.

These points are elaborated on in Chapters 6 and 7 in the context of how Gender and Development criteria can be used to assess the constraints and potential that exist in the case example. Given this assessment, implications for improving both women's position and environmental management are examined.

CHAPTER 4: Background to the Study

In order to provide context for the information in this study, this chapter presents a brief overview of the country of Papua New Guinea. This includes a brief examination of how the culture and economics are being impacted by development-related change which is further developed in Chapters Five and Six. The village where the study took place is described to illustrate aspects of that culture relevant to the study. It is important to note that the nation of Papua New Guinea encompasses a diverse group of tribal cultures and response to development and change has not been consistent throughout the country. The information in this study cannot necessarily be used as a generalization about culture in other regions of PNG, but in many cases impacts of the development process are pan-cultural.

4.1 Country Background

Papua New Guinea has been an independent country since 1975 when it peacefully shifted away from a colonial relationship with Australia. The country has a British parliamentary system of government at the national and provincial levels. At the local level, within the nineteen provinces the British model has been unofficially combined with customary systems of tribal government (Dorney, 1990).

The country is extremely diverse both geographically and culturally. The population of 3,529,538[1] (PNG Population Census, 1990) inhabit areas ranging from tropical lowlands to high elevation mountain environments, and eighty percent of Papua New Guineans live in rural settings. The population has grown at a rate of 2.03 percent annually during the ten year period since the last census was taken. The population is very young, forty-three percent are under fifteen years of age and an additional nineteen percent are in the fifteen to twenty-four year age group (Booth, 1992).

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[1] This figure excludes Bougainville which could not be accessed during the census because of the civil war.

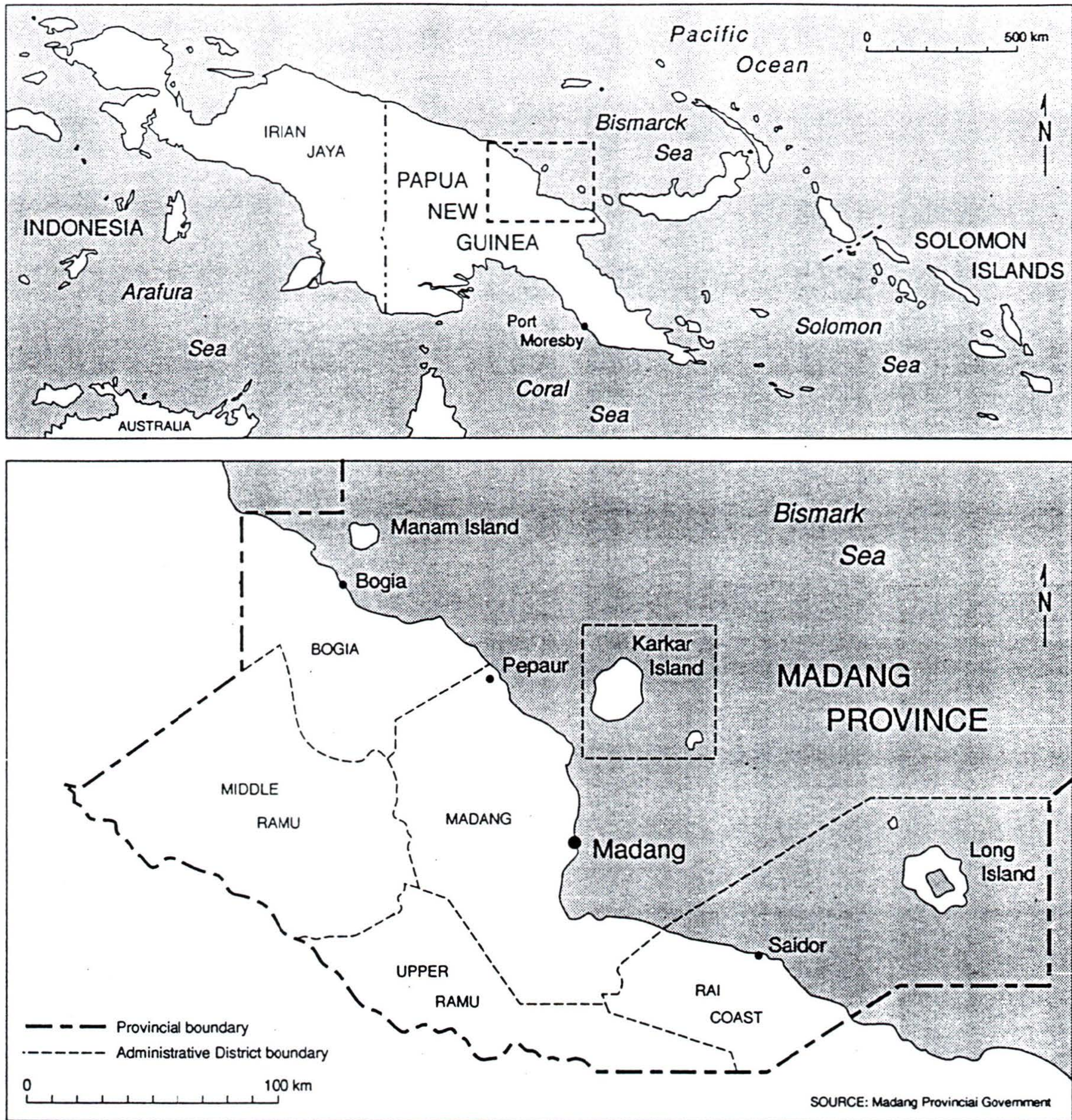


FIGURE 1 Papua New Guinea and Madang Province with Administrative Districts.

Forty-eight percent of the population is female and while over ninety percent of economically active women and girls are engaged in subsistence and/or cash earning activities of farming and fishing, only four percent of female citizens over ten years of age are employed in waged jobs, and three percent have their own businesses. These figures compare with sixty-six percent of men active in farming and fishing, twenty-four percent in waged jobs, four percent in business and one percent classified as on leave. Four percent of the men are considered to be eligible for work but unemployed while only two percent of the women fall into that category (Booth, 1992).

These figures indicate certain realities for women in PNG. First, they are extremely active and carry major household responsibility for both production and reproduction. Secondly, women are constrained by these responsibilities from being active in the formal labour force which conveys both economic and political status in a culture that is rapidly being permeated by western values of commercial consumerism. Certain sectors of the formal and waged labour force are more open to women than others. Government is the highest employer of women with 38 percent of the female labour force. Private business is the second largest employer with 35 percent of women workers. Within private business women are mainly employed in retail, clerical, and menial low paid areas of cash crop production on plantations. (Booth, 1992).

Formal empoyment figures do not, however, give a particularly accurate picture of women's place in the economy. With a population that is 80 percent rural and mainly occupied in non-wage earning activities, it is difficult to assess women's economic contributions statistically. There is very little information available on women's role in agriculture, the sector where they are most active. Booth (1992:5) notes that two recent studies, on agricultural extension service provision and a review of employment demands and training needs in Papua New Guinea, make no mention of women.

There are over 760 different languages in use in Papua New Guinea with language groups ranging in size from 30,000 people to under 100 people (Kulick, 1992). There are three official languages in the country: English is used in government and in the education system although most rural school children do not speak it outside of the classroom; Melanesian Pidgin is used in the northern and eastern areas of the country; and Motu, is used in the south-western areas and is also a pidgin language. As language groups mix with more regularity in urban and educational settings, Melanesian Pidgin is increasingly becoming the first creole language of the young, and the most widely used language in the country.

Subsistence agriculture and fishing are the economic mainstays of rural Papua New Guineans. Where local markets exist both men and women occasionally sell goods in excess to subsistence requirements to acquire a minimal cash income (Booth, 1992). However, this economic activity is not taxed and does not contribute to the government's need for capital. During the colonial period there were head taxes imposed on rural people, which were collected by the patrolling administrators known as 'kiaps.' Currently, however, there is no system of rural taxation for non-wage earning persons. Local government councils are provided with minimal operating budgets by the provincial government. Taxation in the country is focused on the wage-earning population located mainly in urban centres and on business and industry (AIDAB, 1992).

The national government is growing increasingly dependent on revenues from the exploitation of natural resources. Mining for copper and gold, extraction of oil and natural gas, and harvesting of tropical hardwoods are the main natural resource-based industries of PNG. In 1990 commodity exports provided one third of the national budget with gold, copper and forest products making up 82 percent of all exports. Figures for oil and gas revenues which began to come on line in 1991, are projected to dramatically increase the percent contribution of natural resource exports (AIDAB, 1992). The potential wealth of natural resources in PNG is reflected in the strength of the currency, the Kina. Due to the 'strong currency' policy of the national

government the Kina has not been devalued in relation to other currencies, and is consistently rated above the U.S. dollar (Mannur, 1992; AIDAB, 1992).

The exploitation of natural resources is the cause of increasing legal and social problems for the PNG government due to the fact that over 90 percent of land is owned by clan groups, and most is unregistered (Saulei, 1990). Conflicts over rights to resources and royalty payment issues have caused upheavals in many areas of the country and have resulted in a civil war in the North Solomons province (Bougainville), where landowners began to protest the exploitation and unfair practices of the mining company at the Bougainville copper mine. The closure of this one mine in 1987 resulted in a loss of 17 percent of the PNG government's annual revenues, and the increased cost of ongoing military intervention has severely impacted the national economy. The result of this economic shock has been an increased reliance on assistance from the IMF and the World Bank and a corresponding commitment to structural adjustment policies (Dorney, 1990; Parkap, 1992; Mannur, 1992).

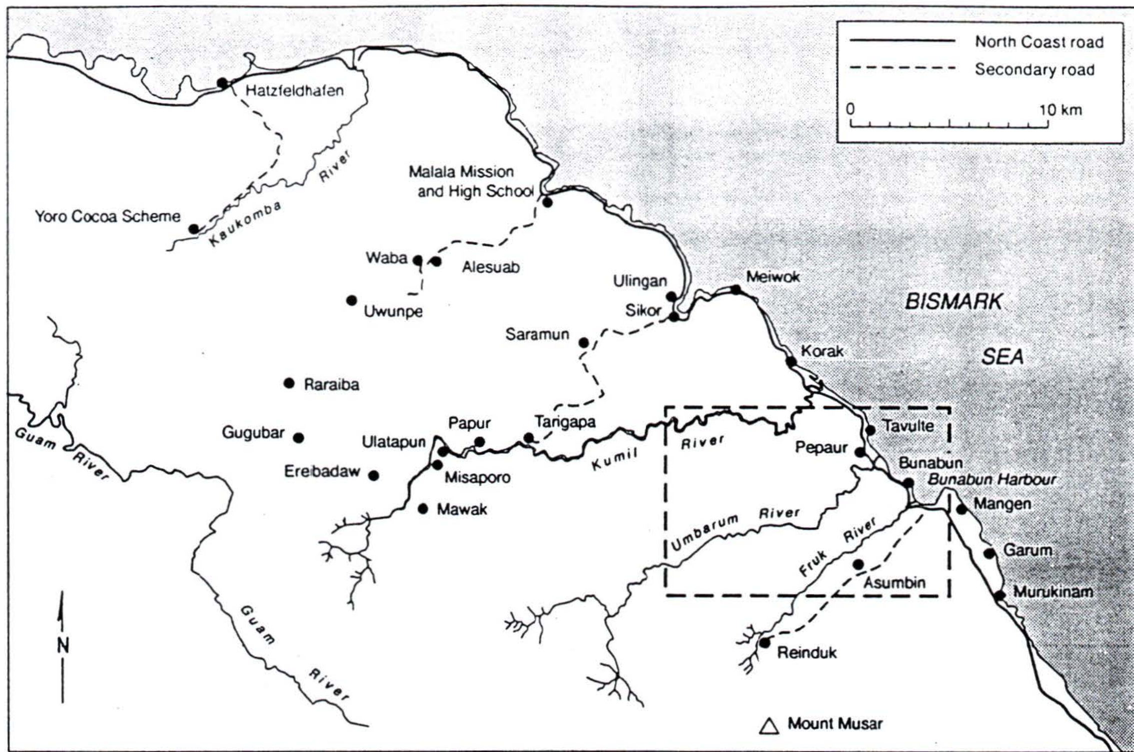
One reaction to the growing landowner unrest over natural resource exploitation and related social justice issues, has been the growth of Papua New Guinean non-government organizations (NGOs). These groups are attempting to raise awareness among rural people about their rights and the potential dangers to both social and ecological environments from large-scale resource extraction. The growth of NGOs creates tensions for the government. Many of the multinational companies interested in resource extraction are pressuring the government to ensure a secure environment for their investments and workers, and they claim that NGO activity compromises that security by making landowners more likely to protest contracts and agreements (Parkap, 1992).

An additional force of change in the mix of issues surrounding commercial uses of the environment and natural resource extraction, is a growing acknowledgment and awareness about the critical role that women play in environmental management in Papua New Guinea, as well as the need to allow women to become more active in all aspects of development. While this principle has been included in the national government's guiding 'Eight

Point Plan' since pre-independence in 1973 (Amarshi et al., 1979), it was not accepted as policy until 1993. The implementation of the policy has yet to be accomplished but its existence has created a degree of openness to women's programming in both government and non-government initiatives.

A number of the new NGOs in Papua New Guinea, as well as the international development agencies, include 'women's issues' in their mandates. This has fostered the growth of awareness about women's rights and needs and contributions to the PNG society, and there are now some resources to assist women in becoming more active in improving the social and economic and ecological environments of the country. Within all of these organizations there are also the ongoing challenges of overcoming the skewed distribution of power and influence held by men and universal problems of the subordination of women (Hinawaeola, 1987; Cox, 1991).

Papua New Guinea has predominantly patrilineal inheritance patterns for lands and traditional objects representative of wealth, and all cultures are patriarchal. Decision-making about the commercial use of natural and human resources is generally controlled by men either directly, or by the influence they exert over the profits of ventures ostensibly controlled by women (Bradley, 1982; Rumint, 1986). As mentioned above over ninety percent of women use the resources of land and sea to support their families (Booth, 1992). Women are highly reliant on a sound environment to support their families, but they are limited in the degree to which they can control or make decisions about how their environments are used and maintained. Factors that reinforce these limitations include colonial and church influences to make women into 'housewives' in nuclear family settings (Ralston, 1992); mainstream development policy which attempts to include women in their programs for economic growth of PNG, without working to change their status in society; cultural traditions of subordinating women to the level of physical property; and the widespread condoning of physical violence by men against women (Bradley, 1982; Mathie and Cox, 1987; Gillett, 1990; Cox, 1991).



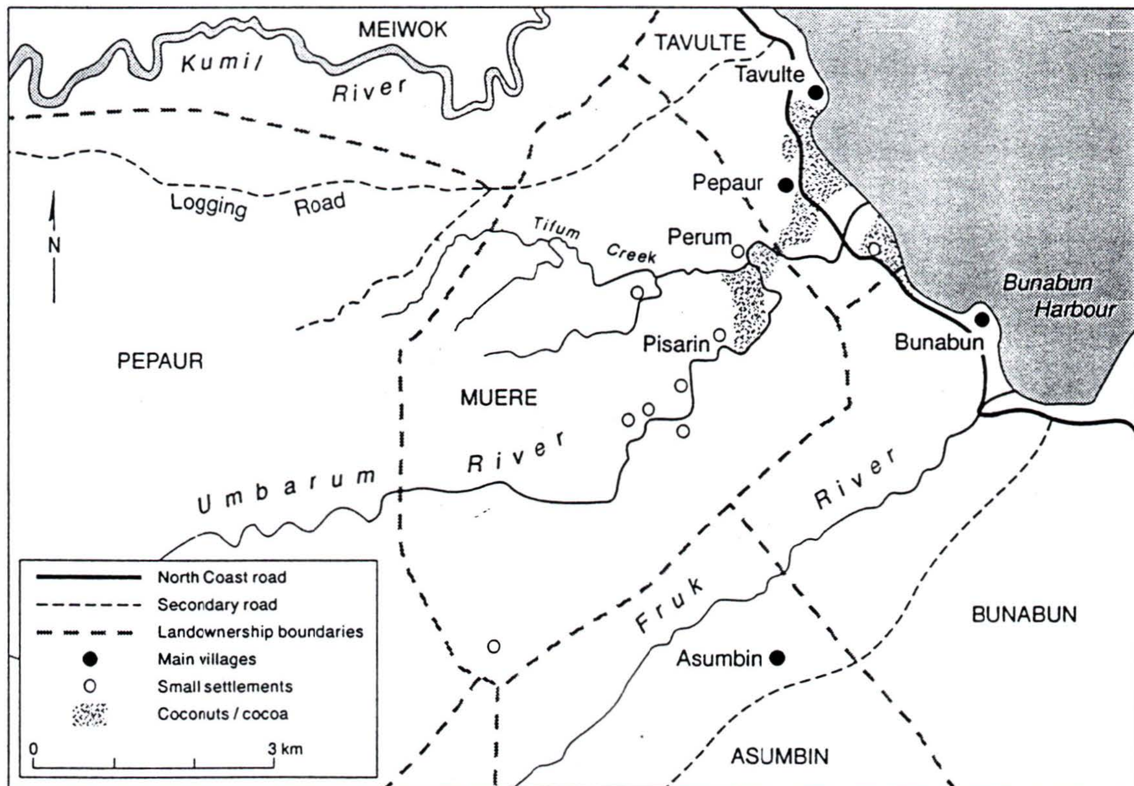


FIGURE 2 Study area of Pepaur village in regional context.

Figure 3: Pepaur Population (Main Village), 1993

Houses	Males	Females	Adult women	Total Population	Under 15	Over 55	Participants in Workshops
1	3	3	1	6	4		1
2	6	5	3	11	6	1	1 , 1*
3	1	3	2	4	2		1
4	3	4	1	7	5		1
5	2	5	1	7	5		-
6	3	6	1	9	5		-
	2	1	1	3	1		1
7	3	2	1	5	3		1
8	4	1	1	5	3		1
9	4	4	1	8	6		1
10	5	4	1	9	7		-
11	6	2	1	8	6		1
12	1	2	1	3	1	2	-
13	2	3	1	5	3		-
14	2	2	1	4	2		1
15	3	4	1	7	5		-
16	3	4	1	7	5		1*
17	2	3	2	5	2	1	-
18	6	6	2	12	8		1*
19	1		0	1			-
20	4	3	1	7	5		1
	1	2	1	3	1		1
21	6		0	6			-
22	1	3	2	4	2	2	1*
23	1	2	1	3	1		-
24	5	1	1	6	4		-
	80	75	30	155	90	6	12 fulltime, 4* parttime

Notes:

(i) During our stay in Pepaur, we lived in a vacant village house (#24), belonging to a school teacher (Adam Pesam) and his family. They live at Bunabun community school during the school year and return to the village during school breaks.

(ii) Of the total population, approximately 85 to 90 percent are resident in the village on an day-to-day basis. During the dry season, many families make temporary settlements in the hinterland to be closer to game, clean water and cooler temperatures.

(iii) Houses #6 and #21 each contain two separate families.

(iv) Age classifications are approximate.

(v) 6 of the adult women in the village were parttime residents.

4.2 Pepaur Village

The village of Pepaur where this study took place is on the northeast coast of PNG. The village population is concentrated near the one road which follows the coast, and there are two smaller 'camps' and several household compounds which are part of the village community and are accessed by bush tracks. The main village has twenty-two households made up of forty-eight adults (only four of the women are beyond child bearing age) and one hundred and one dependent children. Forty-nine percent of the main village population is female. The affiliated camps and compounds are estimated to have an equivalent population, which would bring the village total to approximately three hundred people.

The villagers consider themselves to have two local languages, Pepaur and Muere. Most older adults speak these languages among themselves and are not totally comfortable speaking Melanesian Pidgin. Young adults converse with their elders in Pepaur and Muere, but speak among themselves in Melanesian Pidgin. Children speak Pidgin among themselves, but can understand the local languages when the adults speak to them. Children, however, respond to conversation from adults in Pidgin regardless of the language in which they are addressed. English is not used in the village although a number of people have attended high school or done some training where it is the language of instruction. People who have married into the area from neighbouring villages also occasionally incorporate their own birth languages into daily conversation with other village residents. Most villagers seem to enjoy the use of multiple languages in a single conversation.

The main village is situated within one-half a kilometer from the sea and approximately an equal distance from a small river, which is the main water source for the village. The camps and household compounds are within a radius of approximately three and one half kilometers inland, although the land owned by the village residents extends about an additional eight kilometres. The area is low rolling hills, covered by primary and secondary forest with large tracts covered by a species of invasive grass (*Imperata*

arundinacea) that follows garden areas where soil nutrients have been exhausted. The area has deep alluvial, volcanic soil and a variety of subsistence crops are grown on a year-round basis. There are inconsistent wet and dry seasons: generally it is dry between June and October and wet from November to May. Temperatures range from 28 to 32 degrees Celsius and humidity ranges from 85 to 100 percent depending on the season.

Subsistence farming is the primary source of food and some people raise small numbers of pigs and chickens. Pigs are usually only eaten during feasts, but chickens are used as a protein supplement on a regular basis by the families that raise them. Some families buy rice, tinned mackerel imported from east Asia, or tinned beef on a very infrequent basis when they have spare cash.

The people who speak the Pepaur language have migrated to the coastal land of the Muere people and use Muere land for most of their subsistence gardens. Gardens are made by cutting large trees either from primary forests or older secondary forests. Decisions about the sites for gardens are made collectively by the male head of the family that will plant and use the garden and the actual landowner. There is no consistent pattern to choosing new garden sites, in some cases they are cut immediately adjacent to old gardens, which encourages the spread of grass lands. Gardens in this area of PNG are never replanted on the site from the previous year. No money changes hands in relation to the use rights for land, but there are ongoing agreements based on traditional obligations or past commitments that dictate who can use whose land for what purposes. The issue of gender relations and land-use rights is explored further in the findings section.

The tropical forest in this area is the most lucrative natural resource that could be readily used to generate cash income for the local people. There is an existing agreement with the national government for the timber rights, which covers a large area of the coast and creates the need for the people of Pepaur to reach agreement with neighbouring communities on how the timber resource should be used. From 1983 to 1985 some logging took place in the Pepaur area. However, very few benefits were received by local people

either in the form of employment/training or cash payments. Currently no logging is taking place in the area, although during the time when the field work for this study was being undertaken, meetings took place between people from other villages, the member of parliament for the area, and representatives from multi-national logging companies to discuss further cutting agreements.

Resource use patterns within the village are centred on subsistence agricultural production, gathering, and cash crop production. Cash cropping is widespread in this area with most families engaged in very informal and irregular smallholder production of cocoa and copra. Cash cropping is labour intensive and provides a very low return. All family members over approximately ten years of age may take part in this work. There is a fairly consistent gendered division of labour in both types of production. As with subsistence land use, decisions about commercial land-use allocation are made by men.

Social Change

Social relations in Pepaur are changing as the relative influence of traditional and colonial structures (social, political and economic) diminishes, and people who have gone through the western educational system begin to mesh a more individualistic focus into their family and community interactions. Traditional systems were based on xenophobic, autocratic, and hereditary leadership structures. The colonial system was characterized for villagers by having a new set of rules about behaviour and work imposed and enforced by patrolling administrators known as 'kiaps' (Amarshi et al., 1979). The kiaps were in a sense another layer of autocracy. Although acceptance of kiaps was not universal in PNG, people in Pepaur relating stories of the kiaps seem to have had no trouble incorporating this additional system with their own, and speak positively of the changes that were enforced through the kiaps, such as rules of behaviour between villages and work programs to keep village areas clean. The kiaps selected leaders outside of the mainly hereditary system of 'big men', and thereby created a dual set of administrations. The leaders of the main families were 'big men' who looked after traditional socio-economic interactions, and the representatives

appointed by the kiaps enforced the rules of the colonial government (Amarshi et al., 1979). The systems promoted since independence through government programs, schools, and churches encourage independent action by individuals and/or cooperation across clan and tribal affiliations. The latter requires an acknowledgment of individual responsibility to be successful. This type of responsibility seems not to have been emphasized, taught or considered either by government or the educational system. The result is that when issues of tradition and change were discussed with the people of Pepaur, they related very mixed feelings, understandings and analyses about the impacts of change in their village. The problems arising from Papua New Guineans' struggles to deal with these issues is the subject of extensive development literature (Stratigos and Hughes, 1987; Cox, 1991; Amarshi et al., 1979). The influence that these changes have on gender relations and women's ability to take part in decision-making are discussed in the findings.

Gender Relations in Pepaur Village

Cultural descent and inheritance patterns in Pepaur are patrilineal and all land titles are held by men. Land is the resource with highest social value, and men and women acknowledge land ownership as the most important form of power within their culture. Women are not perceived to have any significant economic or political influence because they are not landowners. This study discusses how these power dynamics and perceptions influence women's participation in their society and what types of control or power women have within their families and the community.

Cash income is earned by both men and women in Pepaur and family distribution of that income varies depending on the source. The only income that women have fairly consistent control over are earnings from the small scale marketing of surplus subsistence produce or cooked food. The income from copra and cocoa is not regular, harvesting and selling generally being done on an irregular basis as the need for cash arises. Income from cash crops and the harvest of forest resources is controlled by men, although it is generally referred to by both men and women as a family resource and is

often used to pay school fees or to contribute to community events such as feasts.

As in other areas of PNG, women in Pepaur are largely responsible for the day-to-day maintenance and production of subsistence food crops, child care, household cleaning and yard maintenance, laundry, finding and carrying firewood, carrying water from the river, food preparation and cooking, and community work at the area school and health centre (usually harvesting and carrying new building material, or grass cutting with long machetes). Men share responsibility for food production and community maintenance, but have specific tasks which are perceived to be more difficult physically such as falling trees and building fences and houses. Men's work is sporadic and seasonal, whereas women's work is ongoing and repetitive, often with multiple tasks being done concurrently. Women's assignment to the task of carrying huge loads long distances show that women do in fact undertake work that is equally if not more demanding of physical strength than men's work. This structuring of the division of labour means that men have more time and energy to devote to leisure activities and politically oriented meetings.

Men and women ostensibly have equal access to government services and educational opportunities. Within the education system at the elementary level most children attend the local school about 2.5 kilometres to the south-east. Elementary schools charge a set fee of K20 per year per student. The schools offer instruction from grades one to six, and most students in Pepaur start grade one at nine or ten years of age. There are many factors that influence attrition from the school system for both boys and girls, including poor health and the disinclination of families to send their children so far each day, particularly in the rainy season when fording swollen rivers may present major physical risks.

At the time of the study there was only one adult woman in the 10 - 45 year age bracket who had not attended elementary school. There were two girls of school age who were being held out of school by their families to help with work. There was only one boy not attending school; he had made the

decision himself to drop out after grade two and his parents could not convince him to return. Statistics in PNG indicate that in 1988 the ratio of boys to girls at the end of elementary school was 56:44. However, by Grade 12 the ratio was 75:25 (MacPherson, 1990). This trend was reflected in Pepaur where the highest grade completed by two women was grade 10, while at least six men had completed grade ten or higher.[2]

Women's access to government or non-government services targeted specifically to women is often limited by social pressure and economic factors. For women in Pepaur to access services, they have to leave the village and travel for two hours on a public vehicle to Madang town.[3] Unless one of their children is extremely ill, the expense of such a trip is considered too high for most women. For women to go to town alone for any reason other than the health of a child is considered socially inappropriate, and women will find themselves the objects of gossip or ridicule if they make such a foray on their own.

In public meetings of the community over the period of the research, women in Pepaur did not speak or offer their opinions to the meeting at large unless asked a specific question. Men and women sit in separate areas during community meetings and discussion may be going on in both areas simultaneously, but the discussion among the men is always considered to be the one most relevant to the meeting agenda. Discussions among women may also be concerned with the agenda topic and often serve to align women in response to, or rejection of, some proposal being put forward, but these discussions are never spoken loudly enough to be heard in the realm of the men and are therefore not considered to be 'public.'

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[2] In PNG Grade ten graduates can proceed either to a national high school to prepare for university, or they can enter other tertiary institutions such as colleges or training institutes. There are also options for church run vocational schools for girls after grade six. Two women participants in the workshops had attended vocational school where they were taught cooking, gardening, nutrition and sewing.

[3] The price of such a trip is K8. return (children free). This cost represents half the profit from the sale of a bag of copra, and is very high in relation to the labour time that is expended on copra production.

For example, if the meeting is being held to discuss who will do community upkeep of the local health clinic, the men may be making a decision that everyone will go on Tuesday morning. Women in their group may be deciding that they will not go do this work because many of them are considering going to sell produce at a Wednesday market and will use Tuesday afternoon to travel to their gardens and harvest their goods. If however, discussion is centred around financial or training opportunities for community members, women have no influence or power among themselves in these areas, and therefore they lose any chance to influence or be included in projects because they do not speak out directly.

In all areas of gender relations in Pepaur major constraints to women's participation in political and economic decision-making are their primary responsibility for child care, and the fact that they are overworked. Overwork combines with and exacerbates women's poor health resulting from endemic malaria and multiple pregnancies. Women's available time, energy levels and abilities to cope with the additional demands of community work are decreased. Even when women do manage to participate in community events and attend meetings they are always coping with nursing infants and toddlers, who compete for their attention and often prevent them from being eligible for training and economic opportunities. These factors must be taken into consideration when assessing women's skills and knowledge, and considering responses to the problem of women's marginalization from development processes.

CHAPTER 5: Method and Process of Information Gathering

The information for this thesis was collected as part of a project designed to raise awareness[1] about the links that exist between women's knowledge of environmental issues, and their management of natural resources in Pepaur village. Eighteen women were ongoing participants in the research process, approximately half of the extended village population of adult women who were permanent residents. In the main village where the workshop component of the research took place, eight women who did not attend the workshops, although four of them women took part on some occasions.

This chapter describes the methods and processes used to gather the information, and is organized into three parts. The first section explains the contextual aspects, which established parameters for the process design and methods; the second section describes the integrated components of the research, outlining the combination of human relationships observed or established to provide different perspectives on the research topic. Finally, the third section describes the experience of starting the research project in the village and the use of different methods and techniques of information collection.

5.1 Verifying Research Objectives and Procedures

At the beginning of my time in PNG I met with a number of people to check the validity of my research assumptions and objectives. They included representatives of groups who are involved in work with women and who have, or are interested in adding, environmental components to their mandates. In these meetings I reviewed my intended research procedures, and asked individuals to comment on the feasibility of the approach, to

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[1]The project was designed to raise awareness at a number of levels including: the men and women of Pepaur village; program planners in national and provincial environmental and development NGOs; staff in the government departments which design services for rural women; and myself.

express their perspectives on the issues, and to suggest information on relevant materials or initiatives that had been undertaken on similar topics.

As a result of these meetings I confirmed that there is an increasing awareness among organizations, and national and provincial governments, about the two problems addressed in this study, i.e. gender inequity and decreasing environmental sustainability. All individuals I met with expressed an understanding of the benefits of examining the connections between the problems. However, only the National Women's Division and the Melanesian Environment Foundation, have begun to develop specific materials or programs to promote awareness of these types of linkages. I received positive input on the feasibility of all but one aspect of my proposed work. I had suggested that village women could write reports and participate in correspondence with other women's organizations at the national and provincial level. The communications officer for the National Women's Division felt that this proposal would be an optimal scenario, but that it was probably unrealistic. Her experience suggested that rural women are not confident enough in their literacy and are too isolated from postal services to undertake or maintain such a task. This proved to be accurate. Although research participants were interested in having ongoing communication with the resource people they met and interacted with, written correspondence was not a workable option. Alternatives were suggested by individuals involved in the network and are discussed below in the section on networking. A list of organizations consulted on the workshop design is included in Appendix 5.

The establishment of these contacts as well as those with representatives of organizations at the provincial level also gave me several sounding boards. By communicating with urban and educated PNG women, all of whom have at one point in their lives been part of a village community, I was able to get a multi-disciplinary perspective on what I was proposing and what I was learning as the research progressed. This has helped to avoid one of the pitfalls of isolation in a cross-cultural setting described by Robert Chambers, that is the risk of researchers spending considerable time in a field work situation, yet because of cultural constraints they end up "not knowing what they know" (Chambers, 1983: 61). Creating networks of this sort also facilitates sharing of the research information relevant to others who may not

have the resources or time to undertake inquiries. While associates in a network may not use information immediately, it may be useful in some way later on, and so I tried to share what I was doing as widely as possible, agreeing with Chamber's perspective that:

> "Benefits also work themselves out over many years and in many places, in changing the research priorities of others, in changing opinions, in the design and implementation of projects and programmes, and so on" (1983: 62).

Practical Parameters: Rural Women's Reality

A key consideration in designing the research method was finding a non-threatening way to involve women and establish trust between the community and myself as an outsider. Women in rural PNG are tremendously overworked and undervalued, and are consistently left out of development initiatives (Gillett, 1990; Yeates, 1987; Crossley, 1988). Their exclusion may occur for a variety of reasons: they may be too exhausted or have no time to participate; the initiatives available would require them to leave their home areas to receive training, which is often not feasible; because men tend to appropriate opportunities which promise economic gain or the chance to use technology; or because men fear loss of control and either forbid their wives to participate, or simply make participation too difficult or risky.

As discussed in chapter four, women in Papua New Guinea have lower traditional political status and are in general less educated than men (Booth, 1992). One result of these inequities is that women are shy and lack the self-confidence needed to use public gatherings as a forum to speak and lobby for their inclusion in development initiatives. Women are similarly inhibited from expressing opinions about ways to control changes being introduced as a result of development. If women cannot speak publicly about their perspective on life, due to social inhibitions, then their knowledge of their environment, if it is acknowledged at all, will be appropriated by others (Rocheleau, 1991) and their ability to be self-determining is negated (Lugones and Spelman, 1986). If women cannot speak their knowledge, their intelligence goes unrecognized and self-esteem and confidence are impacted,

reducing the chance that women will contribute what could be critically valuable opinions to the community power base on how to cope with changing conditions. One of the purposes of the workshops used in this study was to allow women a voice on the issue of environment in a setting that was supportive and stimulating.

It was very interesting that in the first stages of establishing contact with the community of Pepaur and proposing activities for myself and the women, the men were verbally very supportive of what I wanted to do. They claimed it was very positive that the women should get involved in something, but they were apologetic and warned me that the women would let me down. In public and private meetings men said that women in Pepaur were incapable of working together, that they would never voice an idea, and that I would have a very hard time and would probably not accomplish my goals because the women would not be competent to participate effectively. None of these things turned out to be totally true, but women were obviously fighting off these images that were being imposed on them, and in many cases women actually believed that they were incompetent when they were not. For example, in the first two workshops, the women who had not attended high school were very hesitant to voice their ideas and opinions in the large group. During follow up interviews I asked individual women about this hesitation and there was a consistent response that they felt they weren't smart enough, and they were ashamed to answer in front of the large group. Women felt that they would somehow make a mistake even though the workshop discussions were centred around individual experience and not wrong or right answers. The fact that women felt their own experiences were not valid reflects the public atmosphere created by the men's comments.

This phenomenon of cultural valuation, transference of perception and internalized oppression is discussed by feminist anthropologists (Bradley, 1982; Sanday, 1990) and is clarified by Lugones and Spelman (1986: 68).

> "For it matters to us what is said about us, who says it, and to whom it is said: having the opportunity to talk about one's life, to give an account of it, to interpret it, is integral to leading that life rather than being led through it; hence our distrust of the male

> monopoly over accounts of women's lives. ... Another reason for not divorcing life from the telling of it is that as humans our experiences are deeply influenced by what is said about them, by ourselves or powerful (as opposed to significant) others. Indeed, the phenomenon of internalized oppression is only possible because this is so: one experiences her life in terms of the impoverished and degrading concepts others have found it convenient to use to describe her. We can't separate our lives from the accounts given of them; the articulation of our experience is part of our experience."

Another consideration for the design of the research process was the fact that PNG is a society where violence against women, although it is technically illegal, is often condoned for a multiplicity of reasons (Bradley, 1990). The research method therefore needed to be designed to involve and support women without putting them at risk by creating jealousy in the community or by threatening the status of men who could be violent to them. For this reason it was critical to establish a trusting relationship with the community. There were a number of factors that helped me to develop what I feel was a good relationship: the fact that I was in the village as one half of a married couple and had children and an extended family (who weren't there physically, but were there in photos); that I had been in that region of the country before and demonstrated a working (though not comprehensive) knowledge of customs, social protocol, and language; that my partner and I attended community functions such as church services and celebrations; that my partner was supportive of my work with the village women and was willing to talk about gender relations issues with the village men. Another fact that contributed to the women's acceptance of me was that I was willing to discuss my own personal history and experience as a woman in North America where problems such as violence against women and social oppression are very common.

A key aspect in the implementation of the research was the ongoing evaluation and monitoring of community responses. Finding ways to share the status given to women, as project participants, with the whole community was also important in reducing possible feelings of insecurity, jealousy and anger among men. As well, it was important that the project

was perceived to be relevant and of benefit to the community. The issue of creating a drain on women's time was worrying, but in evaluation of this issue women said they felt the workshops provided them with an opportunity to rest physically, even though they found it tiring mentally to spend an entire day in the workshop setting. In response to women's concerns about the issue of overwork time was spent in each workshop discussing strategies for decreasing women's work in environmental management, including increased sharing of responsibilities with other family members. To address the issue of women's shyness, the workshops were designated as being 'women only' events, and took place inside our raised house to deter observers. Within the workshops small group discussions were used frequently to allow women to speak and discuss issues without feeling exposed to the scrutiny of a room full of their peers.

Theoretical Parameters

In order to test the theoretical methodology of a Gender and Development analysis against a specific case example, it was important to design techniques for information collection and documentation that would:

a) illuminate political relationships at a family level and within the village community;

b) provide a holistic perspective on gender relations and women's interactions with their environment;

c) incorporate key players from a wider social context to provide a perspective on the impacts and influences of the larger political and economic systems driving development for both gender issues and natural resource use; and

d) create an ongoing awareness of cultural differences and economic disparity existing between myself as researcher and the research participants.

Languages Used During Workshops and Data Collection

The language situation in PNG is complex. Melanesian Pidgin is the most common link between different language groups, but it has only basic grammar and a limited vocabulary. To convey concepts or abstract ideas in Pidgin requires extensive use of examples. In Pepaur village different combinations of three main languages (Melanesian Pidgin, Muere and Pepaur) are used to communicate among and between different age groups.[2] A few villagers, including two of the workshop participants, had a sound understanding of English acquired during high school education, although they did not use it.

I am relatively fluent in M. Pidgin and, for the workshops and interviews I prepared all my own notes, examples and questions in English, translating them as I used them. This allowed me to keep track of my original ideas and the primary concepts. Participants would often hold their own interim discussions in a mix of Pidgin and the two local languages, which have large vocabularies and sophisticated grammatical structures, before resuming the general discussion with me in Pidgin. The records from interviews and notes taken during workshop sessions were usually written first in a mix of Pidgin and English and later translated into English.

In Madang town and Pt Moresby where other aspects of the research took place, English and Pidgin were used. During discussions and interviews people chose the language they preferred to speak, which was often what is commonly known as 'politician Pidgin.' That is, Pidgin is used until an idea comes up for which there is no vocabulary, and then a conceptual or abstract English word is inserted into the sentence.[3]

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[2] A further explanation on languages used in Pepaur is provided in Chapter Four.

[3] This manner of speaking is common among all people who live and work in towns and have been educated in English. It is also the cause of an increasing marginalization of rural people, because as politicians and government workers deal with rural people many continue to use complex English words in their speeches in Pidgin. Rural people do not understand the meaning of many words, but generally will not ask for clarification. Consequently rural people end up with limited understanding of information presented to them, and at a disadvantage to make use of services or hold politicians to their promises.

In order to minimize the risk of misunderstanding information provided to me in any of the research settings, I constantly reiterated what I thought I had heard not only at the time it was said to me, but with other participants, villagers, professionals, and with my partner who was also conducting interviews and discussions with people on related topics.

This reiteration allowed me to feel more comfortable in my interpretation, and acted as a verification technique to ensure the stability of the qualitative data being collected on political dynamics and interpersonal relationships. This concept can be compared to the concept of statistical reliability in quantitative research. The method I used has been documented by Billson (1991) and involves a process of reflecting information back to participants for comparison and clarification.

> "When conflicting or contradictory material emerges, I restate the perceptions of previously interviewed participants: 'Someone has told me such-and-such – do you think that's accurate, do you agree with it, or do you have a different perception of it?' I ask participants to try to explain why women might not agree on a common analysis; this elicits subtleties that have to do with age, income, education, marital status, and unique situations shared by one woman or a few women in the community. When the analysis is broadened until consistently verified by subsequent participants, I know that together we have achieved at least a basic understanding of male/female relationships and the roles of men and women in that culture without obscuring their complexity and variability. The qualitative data generated by intensive interviewing can achieve 'stability' through such a reflexive process." (Billson, 1991:208)

5.2 Relational Perspectives

This section describes the different combinations of interactions that took place within the research project. The information collection was designed in this way to try and integrate a number of perspectives that I thought might result from different combinations of people working together and discussing

issues. By attempting to gather information from a number of relationship settings, I hoped to achieve a more holistic impression of women's lives and understand the various influences that contribute to the complexity of their interactions with their environment.

Component One: Participant and Researcher Activities

As the researcher, I observed participants in their community and home settings, and conducted ongoing informal discussions/interviews and three sets of formal interviews. The informal interviews were done to monitor women's assessment of the impact of the project on: themselves; the participant group as an informal organization; and relationships between participants and their families. The formal interviews were done to gather specific profile information, to evaluate the process and content of the workshops, and to clarify information on women's control over subsistence and commercial uses of natural resources. Over a four month period, participants were asked to participate with me in four workshops on environmental issues and decision-making and one networking workshop with resource people invited from provincial groups.

As a qualitative research project the analysis involved ongoing assessment of the assumptions, observations and insights of myself as researcher and cross-cultural observer living in the community. Project participants were asked to assess the accuracy of my cultural assumptions on an ongoing basis and to regularly do informal evaluations of the project direction and its applicability to their situation.

Component Two: Participants and Their Families.

The eighteen participants were asked to develop strategies for sharing information, monitoring responses, and reporting back on their experiences as educators of their extended families. Reporting was done in the workshop setting and I had further discussions individually with women about the attitudes and awareness levels of families in response to a variety of specific actions on the part of the participants.

The Melanesian Environment Foundation has produced an information package of basic principles for environmental sustainability in PNG called the Conservation Club Kit. As well, the National Women's Division has produced a training package on women's health which incorporates a number of environmental management concepts related to both physical and mental health. This information was used with the women participants as background material for developing ideas for the family education component of the project.

Component Three: Networking with NGOs and Government

I established contact with the Melanesian Environment Foundation (MEF) and organizations in Madang Province active in areas relevant to the research topics. MEF representatives were invited to attend at least one workshop. That organization had set the establishment of a 'women and environment program' as one of their 1993 planning objectives. Their women's desk officer felt that it would be useful to establish contacts, and that participating in the workshop project would provide an opportunity to use the project as a guide for their planning process. There was also discussion among MEF staff about possible ongoing support and contact with the Pepaur women after the end of the research phase. Due to internal staff disputes[4] and reorganization priorities, representatives were unable to attend, but I was invited to present a two day workshop to male and female MEF trainers and managers in Pt. Moresby to summarize the project and discuss its findings with the organization.

During the first two workshops, the participants and I discussed the concept and benefits of networking. The Pepaur women then decided to invite the provincial organizations to send resource people to take part in a networking workshop (see Appendix 6). Through the networking process the project

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[4] The staff disputes which arose were related to male trainers' jealousy and complaints that it was unfair for women trainers to take advantage of an opportunity which had no role for men and did not offer them an equivalent experience. At the end of the research period, I gave a workshop for MEF in the capital and the issues were still unresolved, and women had no clear mandate for doing extension work without men's involvement.

participants gained information about other activities in the province addressing the issues covered in the workshops.

Establishment of ongoing communication between the group of participants and resource people was suggested as an important issue by all the women who took part in the networking meeting. Written correspondence was not seen to be a feasible alternative, but four groups have either patrol allowances, or organizational mandates to do outreach and voiced a commitment to making return visits to the village. MEF resource people have also proposed that they will mail all relevant materials on women and environment issues to the contact person for the participant group. MEF's hope is that the materials will keep women informed of ongoing developments, and provide them with new discussion topics.

The Communications Officer at the National Women's Division had requested that I provide her with reports on the process and results of each workshop. The research participants directed me on what information to include in these reports which were then published by the Women's Division in the three national newspapers. This media coverage was another level of networking, and because the reports referred to the entire community, (see Appendix 8) they served to share the status of participation among all members of the village.

Discussion of international issues related to gender and environmental management was maintained throughout the project. This was done using newspaper clippings, discussion of radio reports, and by circulating the materials produced in PNG to raise awareness among the participants and the community at large about the scope, immediacy and relevance of the issues as identified by the government and PNG environmental groups.

5.3 Project Start-up and Implementation

Acquiring a Host Community and Participant Selection

Contact with our host community was initiated through a family who are personal friends of my partner and myself from previous time spent in PNG. We had corresponded with this family telling them of our intention to return and expressing interest in working in their village. One week after our arrival in the provincial capital we drove to the village to meet with them, explaining in more detail what we hoped to accomplish in our research, and outlining our needs in terms of accommodation. The man of the family is a leader in the head clan in the village. He approved our request to stay in the village, and arranged for us to use the house of one of his brothers. This brother moved his family out of their house and into the house of a third brother, a school teacher, who was not living in the village.

After securing housing, the second step for both my partner and myself was to inform the community about our intentions, and to try to clarify expectations about what we were doing there. We attended church the first Sunday we were in the village, where the catechist and prayer leader both took time at the end of the service to welcome us and announce that we would meet with the community that afternoon to explain our work. We held an extended meeting that afternoon explaining our separate projects and inviting people to be involved in helping us collect information and to take part in our work. We reiterated this information the next day at a village 'assembly' meeting which is a regular local government forum. On each day I addressed the whole community and explained the purpose of my work, including how I hoped women would be involved. Following each meeting I met separately with women to answer questions and discuss their needs and their ability to take part. In both instances the meetings with women served as planning meetings where content, time frames, use of the research and criteria for participation were discussed.

However, even after the two community announcements, the meetings with the women, and several more informal discussion sessions with villagers, people still seemed to hold erroneous assumptions about what my role

would be in the village. While conversations with individuals indicated that they had, in fact, heard what I had said, they were continuing to express the expectation that somehow I was also there to teach women how to cook and sew. There are two probable reasons for these misunderstandings. First, villagers had not had much interaction with researchers, and the idea of research was foreign to them. The cultural biases that have been inculcated into Papua New Guineans by colonizers and development workers have not given rural people any sense of the value of their own culture; they therefore couldn't seem to imagine what there was of value in their community for us to study. Secondly, peoples' main experience of women's development projects, has been courses in western style domestic training as run by vocational schools and missionaries, where cooking and sewing are the major foci. As a result I felt it was critical to reiterate the focus of the workshops and the purpose behind my research. I did this at every opportunity in the ten days that we spent in the village prior to the first workshop. Further it was important to make sure that women were comfortable explaining these issues to their families to avoid misplaced expectations by men about what their wives and daughters would be gaining from the workshops.

The workshop project was explained as a pilot study, an interactive educational process that would result in a project guide to be used by other groups to further explore issues of women and the environment. Having the prospect of a tangible product that could result from women's participation and contribution, and which would be useful to other groups at a national level, conveyed status to the participants and their families. Initial reinforcement of this idea was achieved through the publication of media reports about the workshops (see Appendix 8).

In the first two public meetings I held with the women of Pepaur, we discussed who could participate in the workshop project. My criteria for women's participation were that women should:

- have time to attend all the workshops in the series;
- be interested in the issues and acknowledge that they were not going to learn how to cook and sew;

- be willing to disseminate information to their extended families about general environmental issues, and to facilitate discussion about women's roles as environmental managers; and
- be willing to monitor and report back on family and community responses to the process.

These criteria were agreed to by the women who expressed interest in attending the workshops. As women became more interested in the idea, in the time period leading up to the first workshop, they themselves began to discuss and explain the criteria to their families. One criterion I had hoped to include was an agreement by women to organize childcare with relatives for the days when workshops would be held. There was a great deal of discussion on this issue, no one felt they could arrange care for all their children, especially as almost all women have nursing infants to care for. A 'compromise' was reached, with women agreeing that children over three or four years of age would be discouraged from disturbing us during workshop times. Most women tried to bring only one child with them and did attempt to have help with their other children for at least part of the workshop day. This help was provided by the three to four active women in the immediate village compound who were not attending the workshop, and in some instances older women from the outlying camps came to assist with their grandchildren.

I had hoped that women from a multi-generational cross-section of the village would take part in the workshops in order to foster respect and communication and reinforce both traditional and introduced knowledge. The eighteen women who attended were of two generations, ranging in age from seventeen to thirty-four. There are only four women over forty living in the village on a permanent basis, three of these women are around sixty years of age. One of these women dropped in on the first workshop for a half day, and one woman always visited with us during breaks, was interested in the discussions, and offered opinions as an observer to the small group sessions held outside. When formally invited to attend, both women claimed to be too old to go to 'school.' The third older woman was in poor health. Even though these women did not officially participate in the

workshops the views of one of them were incorporated into the reports of some small group sessions.

Literacy was not a requirement, but literate women were asked to team up with less literate women for interpretation of any written material. This approach worked fairly well, but the aspects of the workshop that involved reading and writing were challenging to even the literate women. Reading and especially writing are not common place activities in rural PNG, and many women had not done any since leaving school. The writing of the reports resulting from the small groups discussions, which were then read back to the large group, was a particularly slow process. However, it was useful because it offered reinforcement and validation of women's experience, allowing them to make their own records of their knowledge.

I had originally thought that the optimum number of participants would be ten to twelve in each of two communities. When it became apparent that I would be working in a single area, it seemed acceptable to agree to involve all eighteen women who expressed formal interest in the project. The project had considerable 'presence' in the community and, because all participants were close at hand, interviewing and data collection did not pose logistical problems.

Workshop Method

The idea of using workshops as a research method is connected with the belief that in order to reduce cross-cultural inaccuracies in the information gathered, and improve the relevance of the study to the lives of the participants themselves, there needs to be reciprocity and dialogue in the research process (Lugones and Spelman, 1986; Mies, 1983; Kirby and McKenna, 1989). Workshops allowed participants to influence the agenda to ensure the relevance of the discussion to their interests, and provided opportunities for discussion both among participants and in dialogue with myself as researcher. The workshops and follow-up aspects of interviews and discussions also facilitated the continual verification of information (Billson, 1991).

Prior to leaving for Papua New Guinea I had outlined some workshop design options and collected basic materials. On arrival, I gathered additional materials with the help and suggestions of organizations in the national and provincial capitals (see Appendix 5). In my initial discussions with women in the village we reviewed these materials to develop some mutual understanding about which environmental management issues would be most relevant for the women, and what they would like to have happen during the workshop project. The main focus of women's interests was around improving the work they did for their families and reducing their workloads. In addition to these comments women stressed that they were interested to hear whatever information I could bring to them. These fairly broad guidelines assisted me in finalizing the format and content of the first workshop, and also gave me a fair amount of leeway in introducing the topics of environmental management and gender relations. Appendix 7 contains the final 'Women and Environment Project Guide' which was developed with the women as a result of the workshops. It is a guide to the workshops with outlines of both content and process. This final guide reflects the activities that I participated in with the women of Pepaur, as well as the refinements made in response to their evaluations.

During the first workshop I outlined my proposal for themes and topics to be covered in the rest of the series. These were mainly drawn from material already produced in PNG and reflected concerns identified at a national level. The series started with an introductory look at the idea of environment focused on the home/village environment. The second workshop centred on health and how it is related to environmental management. Workshop three looked at the subsistence environment in rural PNG, and the fourth workshop examined commercial uses of the environment, particularly land-based resources (see Appendix 7). At this time I also asked participants to inform me of any additional information that they would like to see included in the agendas.

At each workshop participants had an opportunity to both evaluate the previous workshop and to raise issues for either subsequent workshops or the networking workshop held with resource people from Madang, the

provincial capital. During the formal interviews which took place following the first workshop, women were also asked to respond to a set of evaluation questions on their understanding of the content covered in the first workshop and to suggest ways of improving the second workshop. Women were initially hesitant to suggest changes or make comments on the design. At first their comments were mainly concerned with logistical issues, such as timing, spaces for small groups to work, and child management. During subsequent informal interviews, and with the leadership of the more educated women in the group, participants started talking more about their local environmental concerns and how we might address them in the workshops. As the workshop series progressed women became increasingly comfortable about articulating their views and concerns on issues, particularly in the context of how environmental changes might affect future generations.

Environmental management issues, including the responsibilities of management and the dynamics around decision-making between men and women, were discussed in each workshop (see Appendix 7). The aim of the workshops, as agreed on with participants, was to raise awareness on a number of levels : by increasing my own and the participant's understanding of the inter-relations between environment, women's work, and gender relations in decision-making; and secondly, to increase participant's self-confidence in pro-actively discussing and addressing these issues with their families and other community members.

Awareness raising is a process to convey knowledge by working with people to contextualize their information about themselves and others outside their immediate cultural parameters, including validation that their own views of their personal lives are worthwhile.

Where women are isolated or restricted by social constraints, awareness raising is a key step towards individual agency. It also works towards the creation of solidarity and revelation of shared experience and a pool of knowledge that is valid even though it may contradict the normative male version of reality (Personal Narratives Group, 1989; Isis International, 1988).

Through the use of a workshop process, a group articulation of experience can be developed, and a group memory of revelations about those experiences can be created (Lugones and Spelman, 1986). This group memory cannot be discounted by one man or a group of men as is possible if an individual woman goes outside the village for training and returns with new understanding of dynamics. The solidarity of a group of women sharing newly revealed common experience offers protection from the accusation of showing off that might face an individual who has received outside training.

Discussions and feedback on the workshop topics took place mainly in small groups, where each group had some specific questions to focus on. Each group appointed a recorder who then reported the small group findings to the large group. Findings were then discussed in the large group with reflection on the variety or similarity of responses, consideration of what the responses implied about connections between issues, or what they implied about gender relations. In the final section of each workshop, the women discussed options for educational activities that could be done with their families, and in some cases set objectives to be met or ideas to be tested before subsequent workshops. In order to develop suggestions on how to share information with families, participants worked in small groups as well as in large groups to brainstorm ideas.

The workshop design was kept flexible, in terms of content, to meet the needs of the women participants and to allow the testing of a variety of workshop techniques to suit the women's learning styles. In addition to small and large group discussions and brainstorming sessions, the workshops used posters as visual aids and incorporated drama and games as techniques which would allow women to be more spontaneous in the way they related their perspectives, and to take advantage of humour as a medium for conveying the sensitive information of gender relations. Each workshop's agenda was intentionally over-full, creating content options that could be adapted to suit available time and participant interest.

All workshops required participants to take on and share some leadership responsibilities. The most obvious leadership tasks within workshops were

facilitating and recording small group discussions. As well, women were asked to take turns reminding people of the start times for workshops and circulating in the village to gather people in the mornings and after lunch-hour breaks. Women helped with review sessions, interpreting poster information to small groups, and helping me to restate difficult ideas in Pidgin and the local languages. Outside of workshops women were asked to be leaders in their families to initiate discussions about environmental management topics, sometimes assigning or instigating small projects in their households or gardens (see Appendix 10).

Workshops were conducted once per month over the course of the project with the networking workshop added in to the final month. Each workshop lasted for one full day and women were asked to make arrangements for a relative to take over some of their family responsibilities on those days. While men continued, throughout the workshop series, to pay lipservice to the idea of taking on those responsibilities, the participants said their partners rarely did more than deliver an older child to another female relative.

The issue of child care was the biggest constraint for women during the research project. At each workshop the eighteen women arrived with twenty children under the age of three or four. This meant that the women's ability to concentrate or voice their opinions was inhibited when children made demands to be nursed or comforted. Even when children were playing quietly in a corner or sleeping in their string bag/hammocks under the house, women were always having to keep a monitoring eye or an ear tuned to them. Women were occasionally late to arrive at workshops because they had to cook extra food for their husband's mid-day meal. When the workshops finished for the day women then had to carry the day's dishes to the river for washing, bathe children, collect firewood and carry the wood and water home again to prepare dinner. This reality strongly reinforced my awareness that time is an extremely limited resource for women.

The goal of the workshops was not to effect immediate change in the community on a series of controversial issues, but to build women's confidence in critical thinking about those issues, and to give them

experience presenting issues to their families and to the community. The workshops were focal points for discussion of serious issues as well as fora for women to work together to identify needs and discuss strategic long term approaches in response to their interests as responsible and knowledgeable community resource managers.

After each workshop was completed, I translated and compiled the written responses from small group sessions, and recorded observations on participant reactions and responses to other workshop exercises. I attempted to spend time after each workshop talking with urban Papua New Guinean women from the networking group to check my assumptions and gain additional insight and perspective on my observations. The observations were used in the compilation of a set of information on women's knowledge and experience as resource managers in different settings, this was cross-checked against information from my interviews with the participants, and against my partners interviews with village men.

Interviews

The main purpose of the interviews was to gather information that would facilitate assessment of women's position in the household and in the community, relative to men. The indicators I used included economic, political and time-related resources as outlined in the Gender and Development methodology. Using these indicators as guides allowed me to gauge women's perceived control of, and access to, those resources. This information was gathered during the three sets of formal interviews and verified in a continuing process of discussions with other participants and community members. Participants were also questioned in ongoing informal evaluations about their perceptions of whether the project design, process and information had the potential to improve their ability to access and/or control resources. Most questions were open-ended to stimulate discussion and analysis of the relationship between increasing women's knowledge and awareness of resource issues, and women's ability to participate in decision-making fora, which in turn influences the distribution of resources and resource management responsibility.

A second purpose of both formal and informal interviews was to gather information from the participants on the appropriateness of the structure, content and process of the project, relative to its purpose and objectives. The participants were surveyed over the course of the project for their comprehension of the goals and objectives of the project, their confidence in contributing to the project in ways that they felt were meaningful, and their confidence at being able to continue the process of awareness raising about environmental concerns in some form after the end of the initial (researcher present) phase. This information is not directly factored into this study, but will be useful to the PNG organizations who expressed interest in replicating the project to meet their development objectives. The last point in particular is indicative of women's sense of their own power. Generally, women felt they had neither the skills, the resources nor the community support to continue the process themselves. They were, however, enthusiastic about accessing information on supportive individuals and services that might be available to them in Madang town.

One set of formal interviews was conducted with individuals, and one set with small groups of participants. I also tried to encourage participants to discuss issues with each other outside formal interviews to clarify their perspective as peers. I held final formal interviews, individually, with four participants who had different levels of education and different levels of status in the village. These final interviews aimed to clarify my understanding of if and how women perceive connections between their confidence levels and their ability to contribute to community decision-making on resource-use issues.

After each set of interviews I continued to have discussions with women and other members of the community about the interview questions. I kept a notebook for each participant where I recorded formal interview information, and observations resulting from informal interviews and discussions. These have been used in combination with my journal and workshop notes to analyze the effectiveness of the research method and its impact on participants and the community.

Formal Interview Format

The formal interviews were based on a list of questions (see Appendix 11). In the case of the individual interviews, the participant came to our house and she and I sat either inside where we had the maximum amount of privacy or outside in our shade house, where adults generally respected the privacy of the process. Privacy was an issue in the interviews because women were less candid in discussing gender relations and power in their marital relationships when there were older children, men or women from other clans close by.

I used each question as an opportunity to get to know the participants better, and encouraged each woman to expand on each question as much as she liked. In approximately half the cases women came alone, although I had not asked them specifically to come without children. The women who did come alone were noticeably more focused, and took more time to consider and discuss the questions and related issues. Interview times ranged from approximately thirty minutes (in the case of one women who did not arrive until nearly dark, and had to walk half an hour through the bush to get back to her camp) to two hours, the average being about an hour and a half. In some cases women stayed on longer to look at or read the print materials I had on hand about the environment and women's issues.

The four group interviews were also based on specific questions, but were less private and focused because they attracted children and in one case three men, one of whom was a camp leader. In this case the male leader answered approximately one third of the questions and the women offered very little elaboration. In the other three cases women did discuss the questions among themselves, which helped to clarify any seeming contradictions or questions I had. For participants in the main village, I composed the groups for the interviews with a mix of ages, as well as a 'class' and education mix. This allowed me to observe if the relationship dynamics of the workshop would be consistent in small groups in a slightly different setting. Interestingly, in these groups it was older women who took leadership roles, as opposed to the situation in the workshops were it was the most educated or the most recent school leavers (i.e. younger women) who often took lead roles.

Holding interviews in the village setting was time consuming and sometimes frustrating. In addition to the time required for elaboration and discussion, the process was slow because I had invited each woman to come to our house, which meant I had to wait for them. In a village culture where no one has a clock or watch, time is noted by whether it is morning, day, late afternoon or dark. Often the delineations are very fuzzy. For logistical and organizational reasons I could therefore only schedule two interviews per day, one in the morning, and one in the afternoon. I usually waited an hour or two past the time I thought I had arranged with the women, and because women seemed to be always trying to finish a task before coming to me, I did not feel it was appropriate to track them down and hurry them.

A major benefit of individual interviews was the degree to which they increased the comfort of the participants in dealing with me as a 'normal person', with whom they could then, in subsequent encounters, carry on a casual conversation. The interview questions were largely family and relationship oriented, which gave women a chance to talk both directly and indirectly about themselves and their culture. For many of the women the initial interviews were our first opportunity to carry on a private discussion.

The women were nervous about arriving,[5] and about the unknown nature of what would take place. This feeling of uncertainty seemed to affect all of the women, even though I had explained the reason for the interviews and the nature of the questions that would be asked in the first workshop, and even though after the first one or two interviews, women told each other what they had done and how the interviews proceeded. However, the participants consistently seemed to relax when they realized for themselves that I was not asking them prying or embarrassing questions or making judgmental comments on their answers.

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[5] To be responding to a request for a meeting at a 'set' time seemed to be as difficult for them as it was for me, and they were obviously uncomfortable about whether they were arriving at the appropriate moment.

Informal Interviews, Observation, and Journal Records

During the time I spent in Pepaur I tried to interact with women several times each day. There were often opportunities for visiting, the best were times when people were waiting for something to happen. These events included: village assembly meetings; the monthly visit by the local priest to hear confession on Fridays, or the visit of the Maternal/Child health worker on first Tuesdays; market days (Wednesday or Saturday); days when cocoa buyers passed along the road to purchase wet beans; special events days; and every Sunday morning before church. Conversations were casual, and generally focused on relationships, work, children and health.

In these settings I often had the opportunity to raise issues for discussion, and could choose combinations of people to talk to either as I saw them casually gathered and waiting, or when they were alone in their house areas. Our house was another site of numerous conversations, where people came to visit in the evening or when we were sitting outside in the day. In all instances, it was useful to take note not only of people's responses to our queries, but of the issues that people raised with us, making reference to previous discussions, or information they thought we might be able to access for them. As well, I was often an observer to interviews my partner had with men in the village, which gave me insight into some of their views on resource issues and allowed me to ask questions to cross-check gender perspectives on specific topics.

Women have an opportunity to gather socially while they do various household chores at the river. The river oriented work was a favorite activity of many women because they could cool off in the water at the same time as they did their work, and children were at their most contented playing in the shallows or catching crayfish. I had several relaxed and informative discussions with women when I would meet them at the river where they were collecting water, and washing their laundry, produce, dishes, or children.

An aspect of PNG culture that contributed very positively to people's willingness to engage in informal interviews and discussions is the

considerable consumption of betelnut, a mild stimulant and intoxicant. The effect of betelnut is to make people very expansive and talkative, and keep them awake in the evening. It also serves to physically energize people, and in an area of so much hard work, and a high incidence of chronic malaria, the consumption of betelnut is considered absolutely necessary as a warm-up to almost any activity. Women always took time to chew betelnut (called 'buai' in Pidgin) before workshops and interviews to 'clear their eyes' and prepare themselves psychologically for conversation. Buai breaks were also a regular part of the workshop agendas, and part of my responsibility was to provide buai on these occasions, which could be considered equivalent to providing coffee and tea for breaks in a more western setting.

Another forum for informal interviews was when my partner and I went on 'field trips' with people from the village. I participated in six walks to various gathering and gardening sites, as well as to an area where timber harvesting had taken place, and to areas where people had been preparing copra. In these instances we were being given 'guided tours,' and were offered considerable information about customs, work roles of men and women, forest uses, and how development changes were influencing land use. Based on this information we could ask for elaboration or detail on a given issue. Three of these trips were made with both men and women as guides, and three with only men. It was interesting to note that women seemed to have more knowledge than men about plants and their uses. When there were women present they were consistently referred to by the men for the local language name of plants, and for explanation of their uses.

I recorded points from many casual discussions and informal interviews in my journal. The journal notes include my reflection of the ways that conversations, behaviours and people's interactions fit with what I was observing in the workshops. Keeping a journal which included a record of feelings and emotions was also an effective way of retroactively monitoring my own cultural reactions to attitudes or ideas. Similarly documentation of visits and casual conversations with people have served to track my interpretations of villager's comfort levels with us as their neighbours.

Community Education and Response Monitoring:
Participants used an information package prepared by the Melanesian Environment Foundation and a variety of other materials that have been published in PNG on issues of women and environment to determine the most effective ways to raise issues for discussion within the family (see Appendix 9). Some of the materials suggested practical home-based activities that women could do with their families to improve or better manage their home environment. In the workshops we discussed how women could initiate small projects, which family members could be involved in, and how the reasons for undertaking those projects could be explained to children.

During subsequent workshops, participants were asked to report back on family reaction to their awareness-raising initiatives. Reactions discussed included: levels of expressed interest; approximate lengths of discussions; ideas about plans to apply information to family or community activities; and which family members were most supportive of the women's initiatives.

This component of the project illuminated strong cultural differences between western concepts of parents' roles as educators of their children and the attitude that existed in this area of rural Papua New Guinea. Education in the village is generally done as a process of osmosis, with information being passed on to children who demonstrate an interest. When children are not interested – or if given an opportunity where they decline to participate – they are dismissed as stubborn, and little extra effort is made to interest them. Learning is seen more as the child's responsibility than the parent's.

A related contributing cultural pattern is the shame attached to standing out as a 'know-it-all.' This kind of behaviour is derided in Papua New Guinea, and has been identified as a constraint in training programs (Mathie and Cox, 1987). Because parenting is not done in private in PNG, some of the same inhibitions may exist in parent/child interactions and explain why parenting

is not a process of telling a child what a parent knows – which could be perceived as too didactic – but more a process of modeling.[6]

In the instance of the family education component of the workshop, women reported mixed results and levels of participation by children. Generally girls and younger boys were the most interested and involved, older boys scorning something that was considered 'women's work.' A report from one women who was obviously trying hard to carry out her commitment to implement an activity alarmed me, she reported that her children listened to her much more attentively after their father had hit them. Corporal punishment for children is fairly common, but it was not what I had in mind as a process for involving children. At the next workshop we discussed this and I stressed that family involvement should be voluntary, and that all aspects of the workshop were only being tried to see if they would work. The women then reassured me that it was not my project that was at fault for corporal punishment, but that women often had to resort to paternal force to get any results from stubborn children. Women did not express any familiarity with rewarding or positively reinforcing children for tasks or with explaining underlying reasons for doing specific work.

This aspect of the project also provided insights into marital communication regarding family issues, and showed the degree to which information was shared or not shared within the community. The workshops were an

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[6] This was a complex issue which both my partner and I discussed with people in several contexts. It has implications for both the transfer of new knowledge through parents to children, as well as the loss of traditional knowledge, when children are now at school and do not have the time to spend tramping through the forest and working in gardens with their elders, simply absorbing information as daily tasks are carried out. Other factors include changes in languages from one generation to the next, a general de-valuing of traditional knowledge that has occurred with the introduction of technology and a cash economy that allows replacement of subsistence products with consumer goods. Diane Rocheleau, in her study in Kenya, found that in addition to the influence of formal schooling, "men's outmigration had simultaneously removed adult men as tutors and created a labour shortage and double workload for women, leaving little time for traditional education in multi-generational groups of either sex" (Rocheleau, 1991: 161). While outmigration is not extensive in Pepaur it is interesting to note that it is the most educated men from the lead families who form the bulk of people absent from the village; this may have a similar impact by reducing the leadership and modeling of traditional behaviours.

unusual happening in the village, for this reason men were curious about what went on during the workshops and women reported that men were always interested to hear about the content of the day, and were quite supportive of women trying projects with children, and in a number of cases men helped with material preparation for projects (see Appendix 10). Men seemed comfortable with the project aspect when it was small-scale. However, when the women decided that a safe water supply was their main environmental concern, and asked my partner and me to help them research this as a project, a number of men began to express concern that the women were overstepping their roles.

Women reported that other members of their extended families and women who were not workshop participants were also consistently interested in hearing reports on the workshops. Yet when women did start projects with their children, often only their immediate neighbours would know what those projects were, and it was a revelation at the following workshop for women to share what they had undertaken in the previous month. This lack of publicizing or sharing of new information reflects the cultural inhibition mentioned earlier that blocks any behaviour which could be interpreted as showing off, standing out, or knowing too much.

This component of the project was in some ways the least successful, but also illustrates an area where there is scope for more research: into parenting patterns and effective ways of transferring information, or modeling environmentally sound behaviour, and examining how information passed on by women to their families is valued.

Networking and Media

The establishment of a network of contact organizations was very important to my ability to do this project. As mentioned earlier, it also provided a context to demonstrate to men in the village that the work women were doing by participating in the project was valued by people and organizations of influence. The media coverage of the project conveyed status to the participants and by affiliation to their male partners and to the larger community.

The development of contacts for the network, and the reporting on the project was fairly straightforward, and I did the majority of the organizing outside the village. The part of the networking most relevant to the study was the workshop that took place with resource people from the provincial capital of Madang. I was impressed by the willingness of the provincial agencies to take part, and to cooperate with each other around scheduling and travel arrangements. In the first workshop women had expressed a desire to meet with representatives of provincial groups. When it became obvious that those groups were also interested and actually willing to come to Pepaur, the workshop participants became hesitant about the actual process of interacting with these groups; at the same time they were quite excited about the prospect of accessing information and meeting the representatives as individuals. Participants expressed worries about being too shy and not knowing what questions to ask, or what to talk about. They also felt the village was too unkempt, and were concerned that they would be judged negatively because they had no existing women's groups or 'women's projects.'

In the process of setting up the networking workshop, I met with different representatives of organizations at different points in time over a six week period prior to the actual workshop. I briefed these women on the workshop process, including what issues were being focused on and what the concerns of the village women were. I then told the women which groups or individuals were willing to attend, and asked them what information they would like to have from these organizations. Generally women were interested in knowing what services were offered, what costs were associated with them, and how they could access the services. They were also specifically interested in accessing information on two topics: how to start up a village kindergarten project; and family planning, particularly methods of contraception and their risks.

When it became obvious that the workshop was actually going to take place, the women in the workshop got very organized about the logistics of the meeting and their roles as hosts. They planned where in the village we

should sit, what food would be prepared and who would bring it, when it would be gathered, whose house it would be stored at, and which women would work together in cooking groups to prepare the food in the early morning before the arrival of the guests. The preparation of food for large groups is something that women are experienced and comfortable with because that is part of their work during ceremonial feasts and celebrations.

The women made no mention of men's role in this venture except to plan that the men would cut and erect the poles for a temporary sun/rain shelter for which I would provide a large tarp for a roof. I was, consequently, extremely surprised two mornings before the workshop was to take place when I was called out for a serious talk with two male village committee members. They informed me that I had done things incorrectly, according to custom, by not consulting them. They said they needed to know what the schedule of the day was because they had to tell the women how to organize the days logistics, including what to cook, how to gather and store it and how to organize the timing and cooking groups, or things would not run efficiently. I was baffled and somewhat amused, and after apologizing for the breach of custom, informed them of the planned agenda. They reassured me that my ignorance would not be held against me, and that they would take care of things, including planning and delivering the welcoming speech.

I left the rest of the organizing to be sorted out among the villagers, but was again interested to observe that the work and hosting of the day was all carried out to the plan that the women had originally developed in our group meeting before my interaction with the men. This included a welcome speech, an opening prayer, and a thank you speech all delivered by the workshop participants. Later in asking the women about this apparent contradiction or misunderstanding, they just laughed, made dismissive comments about the committee members being too bossy, and said they had done what they'd wanted to because it was their day. It was obvious to me that they were very secure in this domain of responsibility, and were comfortable asserting themselves in this aspect of their lives. This example reflects the concept raised by the Personal Narratives Group in that it reveals

that women "do not [always] think, feel, act as they are 'supposed to'" and "can serve to unmask claims that form the basis of domination" (Personal Narratives Group, 1989: 7).

On the day of the meeting, men and women attended the talks given by resource people. The entire village ate together at mid-day, and interacted with the fourteen guests. The meeting lasted from eleven a.m. until four in the afternoon, but the repercussions were felt for many days. People were very stimulated and inspired by the presentations and the variety of programs, services and issues that were discussed. The presentation on family planning was perhaps the most talked about as the woman who made the presentation is an excellent speaker who incorporates drama and a great deal of humour into her discussion. The evening after the workshop, we heard uproarious laughter and repetition of some of her jokes and phrases, far into the evening. People also began increased discussion on the feasibility of starting a village kindergarten program and selected four participants for teacher training.

Potential of the Method

The information obtained from this combination of methods can be adapted in a number of ways. It can be organized into tables for comparative purposes to show the diversity and similarity in women's social positions and how that relates to their use of environment. It can also be more effectively used as the framework of a narrative to demonstrate both existing interactions and potential for communities and agencies involving and serving women. Diane Rocheleau (1991) has pointed out that by highlighting some of the interconnections in women's lives, methods which aim to provide a wider perspective can clarify how researchers and development agencies can complement each other's work to increase the potential for positive change.

By looking at the information in the form of a case study or narrative Robert Chambers states his feeling that a richer perspective is gained from a narrative. Narratives also provide context and reduce the risk created by tables of statistics which can contribute to:

> "elitist stereotypes of the stupid, ignorant and lazy poor to persist. ... Case histories of families and of individuals are one of the better ways for changing what outsiders know and feel about the rural poor" (Chambers, 1983: 64).

In line with the perspectives of both Rocheleau and Chambers, I have chosen to relate the findings that have come from the employment of these methods in narrative form. It is important to keep in mind that I have tried as much as possible to let the narrative come directly from my interactions with the women of Pepaur: the women themselves then have been the narrators of this story through the workshops, interviews and discussions, and I have attempted to interpret it in an academic sense (Personal Narratives Group, 1989). In order to make this interpretation I had to categorize information collection process (see Appendix 3). I was then able to assess the accuracy of my categorization against the information offered to me by the research participants and to elaborate the contextual issues on the basis of their shared understandings.

5.4 Impact of Our Presence on the Village of Pepaur

It is difficult to accurately assess all of the impacts caused by the research project. There were some noticeable changes that took place in the village which seemed to happen in response to our presence. These are noted here as a reminder that we were not in fact low profile, and we did not have a 'fly on the wall' vantage into the lives of people. In an area where life is repetitive, and there is little stimulus outside of conversations with the same group of people who have known one another all their lives, we were something new and different and full of unknowns. We were oddities, we were closely observed and people always responded to us immediately.

In relation to the villagers we were also extremely wealthy in a material sense, and as white people from a distant developed country we were mysterious and very powerful in our knowledge of the world. For these reasons people often went out of their way to please us, and there was a risk that they would begin relating to us what they thought we wanted to hear, especially at the beginning of the projects. To decrease this risk we tried to be

as open as possible with people about ourselves and the reasons for our work, maintain conditions where questions were open ended, make our work as reciprocal as possible for the men and women of Pepaur, and to continually cross-check information.

Between the time of our initial visit to Pepaur and the time we left, there was a notable increase in the tidiness of the main village area. This did not seem to happen in direct response to our presence, but rather in relation to a series of events. For example, after the first time we had visitors from outside the village, a number of people decided to clean up their household areas. As we took responsibility for cutting the grass around our house, other people seemed to cut or burn their grass more frequently. After discussions in the first and second workshops about aesthetics and about the relations between household rubbish and malaria vectors, there was a decrease in the amount of garbage laying around the perimeters of household areas. When the time for the networking meeting drew near, the village area and nearby paths to the river were comprehensively cleaned up.

The local village-level committee meetings were called weekly when we first arrived, even though it quickly became obvious that there was not always much to talk about. After the first month, however, this pattern shifted back to meetings held on Mondays only when there were particular issues to be raised with the community, which averaged about once per month.

We were regarded as resource people by a number of men and women in the community and we seemed to pique the interest of people in 'outside things.' Our house was often a centre of discussions that were more far-reaching than the normal community-centred discussions. Related to this and the activities we introduced, there was an increase in interactions between people from different clan and sub-clan groups, who said they did not normally have much prolonged or direct interaction. In this way by just being in the village we provided a focus of cohesion which was manifested most obviously in the major cooperation and good feeling that were applied to the networking workshop and the traditional feast and dancing known as a 'singsing' which was put on for us the day before our final departure from the village.

CHAPTER 6: Findings

Data for these findings have been collected through discussions with workshop participants, members of the community, and government and non-government personnel working in the areas of women and/or environment. As explained in the previous chapters, an integrated combination of methods including workshops, interviews and networking activities were used to collect and sort information. Gender and Development criteria were used to develop categories of gender-related access to socially-valued resources. That information was then used to contextualize a discussion and comparison of women's knowledge of environmental management and their decision-making power in that area. This section synthesizes the case study information and draws on the theoretical framework of Gender and Development to highlight the connections between women's subordination and their ability to maintain a sound environmental base.

References to environment in these findings are made using a broad definition to denote the spheres of activity where the work of women in Pepaur is dependent on the direct use and management of natural resources from their immediate surroundings. These include both the productive responsibilities of farming and gathering, as well as the reproductive activities of maintaining the health and well-being of their families and community.

6.1 Gender-Related Access to Socially-Valued Resources.

The following categories of socially-valued resources (economic, political and time) have been developed as an analytical tool of Gender and Development theory. In working with the information gathered through this project it has also been useful to consider knowledge as another socially-valued resource where the value is unequally ascribed along gender lines, and where access and control of knowledge may be experienced differently between men and

women. Section B. of this chapter presents information from the case of Pepaur to illustrate how considering knowledge as a resource helps to clarify the differences between recognition of the work women do and the degree of cultural value ascribed to women's knowledge, on which that work is dependent.

In a general sense incorporating knowledge into a GAD framework may provide insight into the distinctions between women's overt and covert power in their societies. A greater understanding of all the power dynamics that exist in relationships can assist in developing more effective strategies for increased self-reliance through organization and solidarity among women.

A. Economic Resources

This section focuses on land ownership and class structure. The primary intention is to examine gender-related differences in access to, and control of, land in Pepaur based on the knowledge and perceptions related by the women research participants. It was difficult to gather concise information on this topic because the people of Pepaur themselves had different interpretations of their own history depending on their clan relationships, and often women had slightly different interpretations than men. Women tended to be concerned about issues of land security, that is, being ensured of land on which to raise food. Men on the other hand were more concerned with the details of the history of land ownership, and with the political power land ownership and distribution conveys. What is germane to this discussion is how all of these factors create and entrench gender-biased access and control of resources and power. These biases influence people's perceptions of the value of women's knowledge and women's potential to contribute to the well-being of their environment.

Figure 4: Gendered Control of and Access to Economic Resources

Type of Economic Resource	Control of Resource	Access to Resource
Land	Male land ownership and inheritance patterns Women may in extraordinary circumstances own land but only for purposes of transfer to the next male heir	Numerous ways for men to access land they do not own. Women access land through their affiliation with men.
Land-Based Resources: land,trees,vines gathered food	Controlled by either men in clan groups, or individual male land owners.	Women and men may access these resources by permission of male landowner(s) or in some cases by permission of use rights holder.
Use rights: cash crops excess produce	Male use rights holders control rights to cash crops - both the trees and the produce. Women usually have control over excess produce of food crops, but in some cases income from sale of produce is expropriated by the woman's male affiliate.	Women have access to the benefits of cash crops at the discretion of male affiliates, or through labour agreements with relatives. Men have access to food produced by women and can enforce their access through violence.
Livestock: pigs and chickens	Pigs are bred and controlled by men as a symbol of wealth. Chickens are bred and controlled by some women as an easy protein supplement to family diets.	Women and men have access to pigs as a food source only during feasts. Women and men have access to chickens at their own discretion.
Human Resources	Women control the labour of their female children. Men control their immediate family as a labour pool and depending on status, may control the labour of many clan members.	Women have access to the labour of their husbands and sons for help with gardens and can access the labour of female relatives through exchange and obligation. Men can access community/extended family labour through exchange and obligation for large projects.
Cash or material goods acquired through formal employment	Men control their earnings from formal employment. Single women control their earnings within socially defined parameters about what is appropriate use of those earnings.	Women have access to husbands earnings at the men's discretion. Parents may have access to the earnings of single daughters.

Land

Land and land-based resources are the major economic assets in Papua New Guinea and in Pepaur. The only other economic resource people have direct control of is their own labour. Land is traditionally-owned, that is, in most cases it is not registered and is not bought and sold, but rather inherited. In Pepaur the culture is patrilineal and inheritance of land passes through men and male children. Women cannot access land except through a man, and have no decision-making control over land. While women do exercise considerable management control over land which they farm for subsistence crops on a year to year basis, and over the areas of their household compounds, they cannot choose to locate these or change them in any independent way without male approval. Land is extremely important economically for the population of Pepaur as it is their source of farmed and gathered food, housing materials and, to a decreasing extent, medicinal plants. Land is also the base of the minimal commercial enterprise that people engage in to access cash through production of cocoa and copra, and through the sale of round logs or rough sawn timber. There are a variety of usufruct[1] and ownership patterns that surround the production of these commercial commodities. In Pepaur usufruct is particularly common. This is because the traditional land of the Pepaur tribal group is located in the hinterland, and many people negotiate use rights closer to the main village and the road. Details of access to land are discussed below.

Political Status: Impacts on Access to and Control of Land

In Pepaur, as in other parts of Papua New Guinea, there are status differentials between clan and family groups. From a western perspective the distinctions are relatively minor in a material sense. They are, however, very important within the community and serve to designate which clans and families have more access to and control of resources. Political status in Pepaur is based mainly on hereditary leadership and on the acquisition of wealth which is a benefit of leadership and class power. The social structure is relatively flat because there are not many official, traditional positions

[1] Usufruct is considered to be the rights to use and profit from something belonging to another (Warren, 1992). In the case of cash crops it refers to owning the plants or trees and their produce without owning the land.

other than that of headman (or bigman), which is held by a man from the leading clan. In the case of Pepaur this position was disputed and unsettled within the lead clan because of conflicting oral traditions. One family did seem to take precedence with a combination of hereditary influence, formal education and economic wealth acquired through work outside the village. The other clans also have leaders but they do not take precedence, rather they seem to interact with the same status as the leaders of the sub-clans within the lead clan. It must also be kept in mind that the distinctions are not always clear due to the influence of differing personalities and the desire for recognition of each individual. Each clan has its own area of land, and within that area land is divided for families of the sub-clans.

Political status differentials starts to appear more clearly with the issue of access to and control of land and with the control of community labour. Male members of each clan are considered to be land owners and, even if they are not leaders, they have secure rights to their own land. In order to gain status or acquire wealth they often have to rely on alliances with leaders in their own clans. Other men (generally those who have married or migrated into the area or who have been adopted) and single or widowed women, and their families who do not have a direct rights of hereditary inheritance make up a 'worker' class. In Pepaur these groups are consistently provided with a place to grow food, but it is often not their own garden, rather they are given the right to grow food in exchange for work. By assisting a relative or clan leader with their food production and cash cropping they earn a space within that person's garden to grow enough food for their own family. Within every family the oldest male can exercise control over the economic benefits produced by the labour of family members.

Both the patrilineal inheritance patterns and the class system exclude women from land ownership and therefore from direct control of the main economic resource. Women can sell excess produce they grow from their use of land, but this represents a minimal income and in some cases the use of this income is overseen or controlled by men. In interviews with people in Pepaur, there was repeated confirmation that women are not considered to have power because they cannot own land. This influences women's own

perception of themselves as basically powerless people and conveys a blanket justification among men for why women have been left out of the development process, that is, because they have no power or worth. Men can, and often do say that this is also why women 'are not good at' speaking out in public, or working together, or being focused on projects to improve the quality of life in the village.

Types of Access/Rights to Land

Pepaur represents a fairly beneficent Melanesian society in that no one is denied the right to use land to produce food. There are different levels of access to land for men, and women can only access land through affiliation with a man. Where women are divorced or widowed, they become dependant on affiliations to their brothers or fathers, and do not act as independent household heads. One type of access and control for local men is through traditional and direct rights, that is they are using their own land, which their families (primarily wives and daughters) farm for subsistence or cash crops.

The second type of access is via use rights, where a person who has land in another area is given the right to use the land of a second clan closer to the village to grow food on a year to year basis. There does not seem to be any implicit assumptions that at another time use rights may shift to the use of the clan whose land is fairly distant. This may be tied to the absence of any perception that using land for swidden agriculture is an environmentally degrading process.

Usufruct rights are more long lasting than the annual cultivation of food gardens. Through some ceremonial and/or monetary exchange, men accord other men the use of land to grow copra or cocoa as cash crops over a long term. The trees and their produce belong to the user but the land remains in the control of the owner who can technically, in extenuating circumstances, evict the user.

A final, but much less common form of access to land is through actual transfer of ownership. These transfers are not registered or channeled

through government bureaucracy. In Pepaur the eldest man in the head clan bought the land which is the current site of the main village from his wife's family in the adjacent village of Tavolte. As population pressure increases in other areas in the country, such as East Sepik province or the small islands off the coast of Madang province, some villages or clan groups in the district are making the decision to sell portions of their land to people from those areas. Often these sales are organized through marriage to a woman from the village were the land is bought. These transactions have no traditional basis in patrilineal culture. Through pressures of development and change, women who are not in control of land are increasingly used as conduits for arrangements to access and control land.

Women's access to land comes through affiliation to men in their relationships as wives, sisters or daughters, and a number of complexities emerge depending on hierarchies of male and female siblings in a family, and various new patterns of marriage, as mentioned above. Wives have direct access to the land of their husbands if those men are landowners. Where women's husbands are from outside the community, those women must have an arrangement with their fathers or brothers to access land, and in some cases this is only granted as labourers' use rights. Only rarely are men from outside the village able to access land for a long term to grow cash crops. The children of these families will not have any guarantee of land, particularly if their older relatives have died. Each successive generation will be more firmly bound to the community as labourers working for the right to grow food, and will have little chance of accessing cash cropping privileges.

Young unmarried women or widows are given land to use within the gardens of their fathers or brothers. In Pepaur there were four young unmarried women, who in addition to assisting with subsistence production for their parents or brothers, also had their own individual gardens where they practice their farming skills for the time when they will become responsible for their own husbands and children. These young women also did cash-cropping work for a number of families and generally had arrangements to be paid in cash. Potentially this gave these women more autonomy than the married women in the community, who rarely receive

cash for their labour. The young women were, however, quite strictly controlled in terms of how they used their money because they were not allowed to go to town, and were to afraid to go outside the village to attend dances or nearby markets. Consequently their income was spent on foodstuffs from the local trade store, or occasionally on used clothing which the brothers of the head family sometimes bought in bales and sold to the villagers. There are strict expectations that women will marry. The only exceptions to this are women who make commitments to celibacy through their involvement with religious orders. In Pepaur there were no women who had taken that option.

There was one example of an exception to patrilineal inheritance in Pepaur. One woman who was an only child had inherited land from her father. This is unusual because often families with no sons will adopt one. Yet, the woman in question did not control her land. It was seen rather to be held in trust for her son under the supervision of her husband. The fact that her husband also controlled her land was perceived to give him more power in a society where status is linked to increased acquisition of resources.

Informal Channels of Access to Economic Resources

There are a number of informal ways for people to acquire access to economic resources. One is the traditional obligation system which is very strong in Papua New Guinea[2] and allows relatives to access each others wealth. Payment is simply assumed to be owing and can be collected in many forms, often at an unspecified time in the future, when the original lender may be in need of repayment. A second main pattern of access results through adoption, both formal and informal. Boys are generally adopted for status and to carry on inheritance lines, while girls are adopted to increase a family's labour force. Adopted children are generally well cared for and boys often benefit considerably from adoption because they do not necessarily forfeit their original inheritance, and consequently can end up with rights to more land than other men. Girls may benefit from adoption through an improved

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[2] This is referred to as the 'wantok' system (literally translated as 'one language') where people of common language or regional origin are strictly obligated to assist and support their 'relatives.'

position in the hierarchy of family status which may then lead to marriage with a man of higher status. For these reasons families are often willing to give their children for adoption because the arrangements have the potential to improve their status and acquisition of wealth.

Women's Market Income

Women's only access to economic resources of their own comes through the sale of excess market produce or betelnut, cooked food such as fried bread, gathered food such as nuts and semi-processed food such as sago. With the exception of the processed food all other marketing relies on access to land. The production of excess produce can be considered to be a usufruct privilege accorded to women.

It is difficult to accurately assess the amount of time and energy women devote to earning market income. In order to sell produce women make extra trips to their gardens, which in most cases require at least two hours of walking for a round trip, time spent in the garden harvesting food, time spent carrying produce to the river and washing it, then an hour spent carrying the food to the market to hopefully sell it. Sales are in no way guaranteed because the crops people grow are neither varied nor specialized and there are often ten people at the market selling the same thing to a small group of buyers. For gathered, processed or semi-processed food the time investment is higher and for most women the earnings from a market trip range from K1. to K5. Only one woman in Pepaur had an organized business baking and selling bread in a drum oven she had built with the help of her husband. This woman sold baked yeast bread twice a week at two different markets, and made K50 to K70 per month not counting transportation costs provided by her husband, who was the acting bigman and had the only vehicle in the village.

In some areas of Papua New Guinea women are responsible for livestock, especially pigs which are a major traditional economic asset. This is not the case in Pepaur. Pigs are outlawed in the main village. In the outlying camps, although women had the responsibility of feeding pigs, they were not responsible for other aspects of their care. Some women in Pepaur did raise

chickens as a family food source, but spoke of them as family property. Raising chickens reduces the time and energy women have to spend gathering wild sources of protein and make it unnecessary to buy tinned fish as a substitute.

B. Political Resources

In order to document women's access to and control of political resources I observed women's participation in different decision-making forums and discussed with research participants how issues of independence, leadership, participation and decision-making fit into the ongoing functioning of families and the community. By considering how women fit into the political process at different levels, it is possible to gain understanding of the gender-related differences that exist, and what forces cause and perpetuate those differences. As with economic resources there are connections with other social organization principles which influence women's access to the benefits of political power and skills held by their husbands. At the level of informal community networks and within families there are greater differences that hinge on individual personalities as well as education and family status. At all levels it is useful to consider the correlations between women's political rights and responsibilities and how those reflect on access to and control of political resources.

Decision-Making Fora

"Traditional" Meetings (within and between clan groups)

Traditional meetings in Pepaur usually take place for the purpose of negotiations over land or appropriate social behaviour. During the time of this study, I witnessed one meeting held to deal with the latter, and there were two or three held for discussions of land issues which I was told of. None of these meetings included women in a participatory manner. The first was a ceremony to chastise young men for fighting and to re-establish positive relations between the two communities involved in the dispute.

Women observed the ceremony and when it was over they joined the men of Pepaur in shaking hands with the youth as a sign that they accepted their apologies. No women from the other village attended. In land rights discussions neither men nor women considered it necessary for women to be directly involved because they are not landowners and therefore are considered to be without rights or relevant opinions. In exceptional cases where land rights pass through a woman, her husband would speak as though the land were his own. Some women did take a direct interest in land issues and could relate the purposes and outcomes of the meetings, but they did not feel they had rights to participate other than through their partners. Women's only formal roles at these events were as support workers who prepared, cooked and served food.

In some areas of Papua New Guinea there are strong traditions of magic and evil, which are practiced by the men of various clans against one another when disputes arise (Lawrence, 1964). In Pepaur, people prided themselves on not practicing magic, but told stories of other areas where it was still entrenched as a tradition. Magic is linked to political power because it can be used to hex people who are involved in negotiations, or to kill people to allow a change in control of resources.

Government Introduced Political/Judicial Structures

The village 'assembly' meetings are the community level manifestation of the government-introduced political system. Women are expected to attend as it is at this level that announcements about community work responsibilities are made and tasks assigned to men and women. As described in the previous chapter, women sit separately, away from the men and the village committee member who makes the announcements and leads discussions. Women did not take part directly but held their own parallel conversations, sometimes on the topic under discussion, or how it related to them specifically and how they would or would not respond to the dictates of the meeting. Other times women ignored the discussion and carried on their own conversation on other topics. During the four meetings observed over a four month period, there were no instances of women addressing the whole group. When questioned about their lack of direct

Figure 5: Women's Access to Political Fora

Decision-Making Forums	Access	Degree of Control or Influence	Rights	Responsibilities
Traditional Meetings	Women may attend but are not encouraged to voice opinions to the group at large.	Women have no control over meeting agendas or outcomes and have no direct influence within meetings.	Women can express their views to male members of their families outside meetings and hope that these may be represented.	Women are expected to follow meeting directives pertaining to them, prepare and serve food to the men, and keep children from disturbing the meeting.
Introduced Government Structures	Women are expected to attend, but do not physically place themselves in the same area as men. Women's comments are often not heard by the whole group.	Women have no control over meeting agendas or outcomes and have no direct influence within meetings.	Women may express themselves to the group, but are generally too inhibited to speak. Women can use the same approach as is used for traditional meetings.	Women are expected to follow meeting directives pertaining to them, and keep children from disturbing the meeting.
Church	Women are expected to attend, but do not physically place themselves in the same area as men. Women's comments are often not heard by the whole group.	Women have no control over meeting agendas or outcomes and have no direct influence within meetings.	Women may express themselves to the group, but are generally too inhibited to speak. Women can use the same approach as is used for traditional meetings.	Women are expected to insure that children attend church, follow directives from church leaders, maintain church property in conjunction with men.
Informal Networks	Women establish their own informal networks and have free access to them as long as their family responsibilities are not compromised.	Networks serve various purposes, and within same sex groups women control informal agendas and outcomes.	Rights among network groups vary according to status, there is generally some form of mutuality among network members.	Responsibilities are defined according to the needs of the groups.
Family	Women have access to family decision-making related to children, male members may hold meetings separately to discuss specific economic or political plans.	Women have control of household management and day to day child rearing. Men control interactions with the larger community, but women may influence their partners views within the family circle.	Women have the right to express their views to their partners, men are not obligated to carry those views to external forums. Some women are intimidated from expressing views through men's negation of them.	Women are responsible for sound decisions that will maintain family and community harmony. These are enforced through cultural standards and sanctions, and are manifested at all levels.

participation, the women said they were too nervous to speak, and that if they did they would forget what to say and their voices would not work.

Church

Church is considered here as a political forum, because it provides another opportunity for community members to influence the behaviour of the group as a whole. The community of Pepaur is Catholic and an anomaly in the local area where all other communities are Lutheran. The priest for the parish district visited the community twice a month on the first Friday and Sunday of the month for confession and mass. At other times village men were responsible for running the services and organizing collections to support both the village church as well as to pay dues to the parish, and to hold special events designed to support and strengthen the community. In theory men were in control of all aspects of the planning and finances, and women were expected to attend and to work to raise money for contributions.[3] Women formed a larger group attending church, and were active in extra events. Women said they enjoyed church related events because the emphasis was not on work, and people had an opportunity to sit before and after church to exchange information. The special events usually had some dramatic build up associated with them as well as music which women found relaxing and enjoyable.

Informal Community Networks

Informal networks take a number of forms in Pepaur: some are women only and some are mixed groups of men and women. They are political forums in the sense that discussions take place which can influence change within the community. It is these networks that form safety and support systems for women and one of the levels where women seem to have some covert power which can be exerted to meet their own and their children's needs. Women have personal knowledge of men as individuals and have direct access to their attention at this level. They can often use that knowledge and access to

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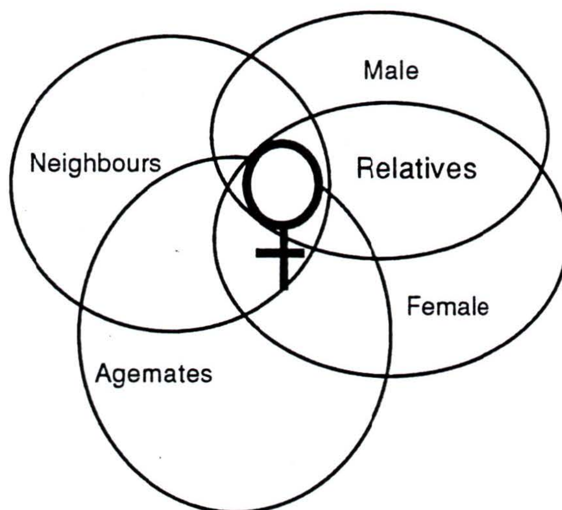
[3] In fact there was not much work associated with the church because there was distrust among the church leaders about misappropriation of funds. Consequently no one donated money unless asked specifically by the priest and unless he made a point of collecting it. This happened only once during the four month research period.

Figure 6: Lines of alliance through informal networks

Component Groups	Focus of Interactions
Immediate Neighbours*	Assistance with management of common areas, sharing and exchange of betelnut.
School/ Agemates	Recreation, gathering, friendship, shared childcare.
Close male relatives	Support with security and economic resources in exchange for assistance with cash crops, family support, food production.
Close female relatives	Friendship, shared food production, assistance in crises, shared childcare.



* Often a woman's immediate neighbours are also her relatives, in these cases the focus of interactions encompasses a wider range, inclusive of those relationships.

negotiate a situation which will meet their needs for support in a higher political forum and in assistance with their work.

Networks are made up of different types of groupings and an individual may be part of all types of these groups or only one, depending on their family and marital situation. Some examples of groups would be siblings and cousins from one extended family or sub-clan, within which close female relatives are a particularly strong group; age mates or people who have attended school together, especially those who have been away together at residential school; and neighbours whose houses are particularly closely grouped or those who live in the camps and households outside the main village.

When groups are women only they serve women's needs much more than when they are mixed. Women tend to share their feelings and frustrations more frequently with each other in women-only groups. This openess eases stress and helps women cope with the strains exerted on their physical and mental health by their arduous lifestyle. Women organize work parties which sometimes incorporate an aspect of recreational activity. An example would be to go to the river to wash clothes and bathe children, and at the same time, the women can swim and dive for crayfish which they can cook in bamboo on fires beside the river. Women often organize trips to health centres and markets in twos or threes, and support each other by taking turns watching children or selling a variety of goods, while others speak with health professionals or browse the markets for things they want to buy.

In mixed groups the amount women speak tends to be dictated by the make-up of the group. One woman, who was a neighbour and cousin of the wife of the acting bigman, said she rarely says a word in his presence because she is afraid of his sarcasm. In other instances women are fairly comfortable with their neighbours and especially school mates and brothers, and will carry on rousing conversations and arguments about the pros and cons of someone's behaviour or the need for a specific task to be accomplished in the village. The oldest women in the community were more outspoken in mixed groups than middle aged or young women. The mother of the village bigman often sat on the fringes of men's meetings and interjected contextual comments

about how things were done in the past, and was referred to regularly by the men for information on traditional matters. When this type of interchange took place in the presence of outsiders, the men invariably repeated the information to the outsiders as though it were their own knowledge.

Topics I heard being discussed between men and women in these informal settings included health, land use rights, children's education, the need for a village water supply, and social events taking place at other villages. A noticeable cultural difference is the format of discussions. Issues are usually related as 'stories,' and as such they can be discussed in a more disconnected context, where people have less involvement and responsibility for their opinions. It is only as a result of these types of discussions that women have any real chance of communicating their perspectives indirectly into the higher level forums where they feel too inhibited to speak. By convincing men in their networks of the value of an opinion, women can hope that a man will raise that perspective for consideration in the context of a formal meeting.

Immediate Family

The immediate family is a forum in which the degree of communication between partners and parents and children varies considerably. In instances where a woman is strong and confident, and/or where a respectful relationship exists, women have considerable influence, and can in some cases get the commitment of their partner for support in some aspects of their work, and in sharing economic resources equitably or at least adequately for the benefit of the family. A woman's relationship with her brothers and father can also influence the marital relationship, especially if her male relatives are well respected and/or powerful. Men have permanent responsibility to protect and offer shelter to their sisters and daughters if their marriages are unsuccessful or if they are widowed, and men tend to take an ongoing interest in the well-being of their female relatives. If a woman's brothers are powerful it will be a lever for her to participate more equally in her relationship with her husband.

Sharing of responsibility in marriage is often in the area of child care. Men do take care of children for short periods, and often carry toddlers the long distances to garden sites if they are going to help with some aspect of the work. The division of labour requires cooperation, a good relationship, and good negotiation skills on the part of women. Where men can order their wives to do a task and punish her if it is not well done, women must depend on their skills of influence at the family level to accomplish household tasks that require male labour. For example, women are responsible for sanitation and health care within the family and women said they make decisions more often than men about the need to upgrade household areas to maintain health and safety. If a family needs a new latrine, it is the man who must agree to do the digging because that is men's work. If the man does not agree or postpones the work the family suffers, but if a good relationship exists he will work with his wife and children to accomplish the task which also includes extra work for women of carrying the building materials from the bush and helping to weave walls and roof pieces. Other areas of household management include grass-cutting and the digging of drainage ditches around houses to prevent the establishment of malaria vectors; sweeping up of garbage and animal feces (pigs, chickens, dogs); and trying to keep children clean to avoid skin diseases. With the exception of grass cutting these tasks are exclusively women's work, but often men will assist by amusing toddlers or taking infants for walks so women can do a specific task.

These examples seem like minor occurrences yet they are the only areas where women have a chance of expressing their needs and receiving support from men. Because women are the food producers they do sometimes exert their covert power in reaction against an unsupportive mate by taking children to the garden and cooking meals there, spending time with a female relative and basically going on strike for more support in the marital relationship. This is very risky for women and represents what many men feel is fair justification for beating their wives.

Another aspect of family politics where communication and understanding is critical to a woman's well being is in the ability to have some say about her own body. None of the women research participants had access to

contraceptives. The women who had attended high school or vocational school (both Catholic institutions) had heard of, and some understood, the Billings method of natural birth control taught by the church. This method requires abstinence during women's fertile days each month. Other women said they tried to resist their husbands sexual advances in the hopes of reducing the risk of pregnancy. Most women said their husbands insisted on sex when they wanted it, and women were unable to refuse without a verbal argument and abuse which would wake up their other children and cause more upheaval.[4]

[4] In the past women used medicinal plants as abortants to terminate unwanted pregnancies, but this practice has been outlawed by the Catholic church. In the workshop group women said they knew which plants were used but no longer knew the dosages required. They have received warnings from health care workers at the Catholic hospital that the use of these plants could cause permanent sterility.

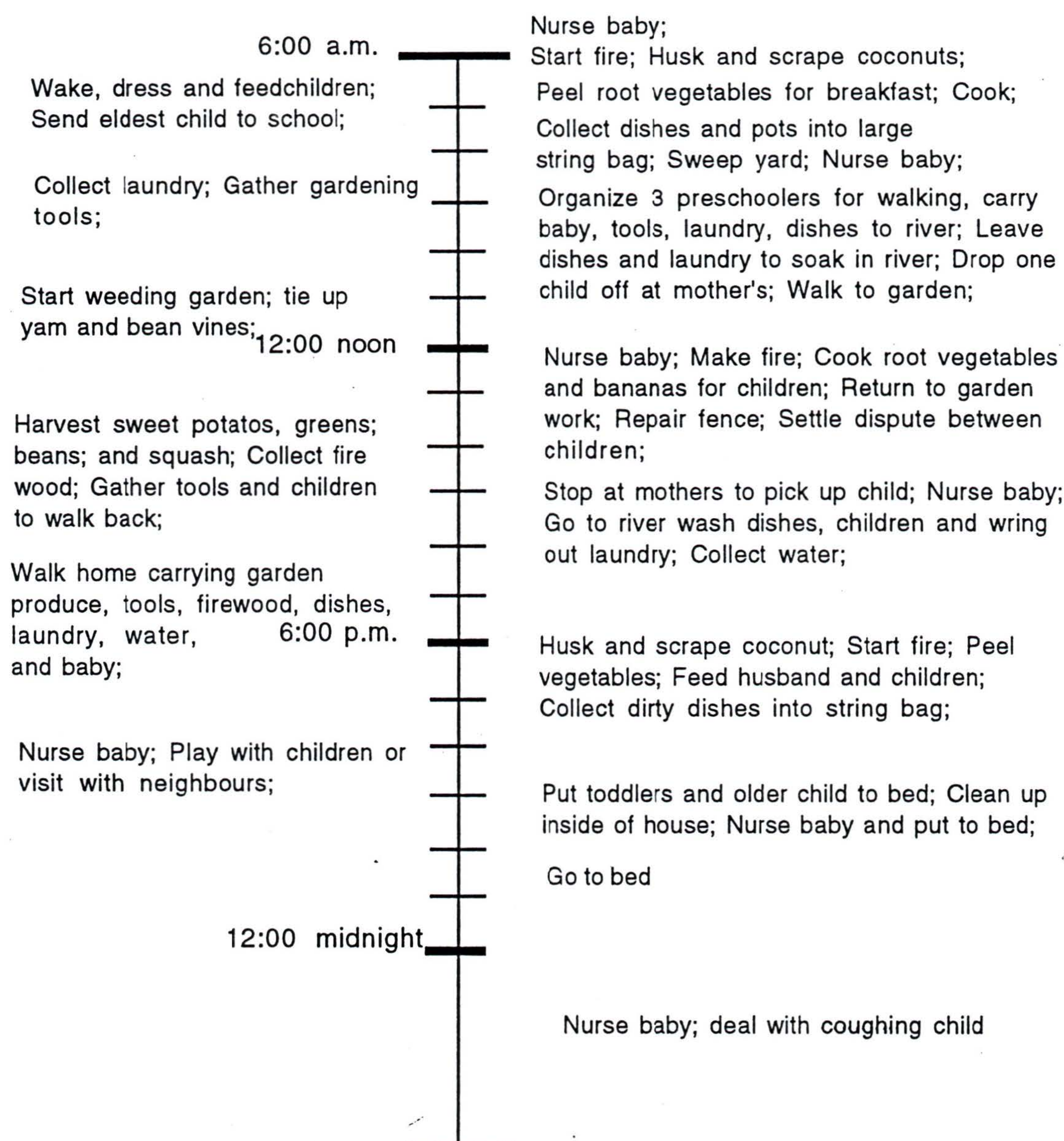
C. Time

There was an observable difference in the amount of leisure time men and women had in Pepaur. It was much more common to see men sitting together and chewing betelnut with no work at hand than it was to see women doing the same. Women are often together chewing betelnut and talking but the difference is that the women are almost always concurrently looking after toddlers, nursing infants and responding to the demands of older children. Women are also often supervising the preparation or cooking of food which includes encouraging their daughters or the young single women to participate and learn.

During the time of this research men would frequently come to our house in the evening and stay for one or two hours or longer. Infrequently women would also come, but again they always had at least one child with them, and generally stayed for shorter periods. Women's time was very fragmented due to the nature of their multiple tasks and the demands of children. During the workshops it was particularly noticeable how much the fragmentation of time increased women's stress, inhibited women's ability to concentrate and to participate fully. Men on the other hand would often spend whole days at a single task such as fence building, cutting timber, or making a trip to town to sell copra.

For women, the lack of time is a major block to their ability to access resources, information and education. The key constraining factors on women's access to time are: children; the lack of support from men reinforced by the gendered division of labour; and a lack of validation from external sources that women are overworked and that cultural patterns should change to allow women to reduce their workload. In discussing these issues with women and men, I found that women are extremely appreciative of support from their partners, but are cautious about asking for too much, particularly if they then feel themselves to be shirking responsibility, or worry that others will think badly of them for that reason. Women feel it is alright to have men help if a woman is ill, has a very large number of young children (over five), and if at all times the woman is working as hard as the

Figure 7: Sample twenty-four hour timeline for a woman in Pepaur



* Based on observations of Ludwina Inup as a fairly typical woman in the middle of her child bearing years. Ludwina is approximately 32 years old, she is married and has five children ages 12 months to nine years.

man. Women also say that men are hesitant to help them because they fear ridicule from other men, a very effective way to maintain the division of labour.

In addition to work related aspects of access to time, there are some cultural considerations that stem from a lack of value directly attributed to time, and the fact that time is not tracked. People do not monitor how they spend their time. For example, there is an inherent expectation that one always waits for things to happen, and sometimes they just don't happen after all. Women seem to resent this more than men and I heard many women complaining after waiting for two hours or more that they could be in their gardens getting some work done, or finishing some other task. At the same time they noted that they enjoyed the opportunity to talk with other women and be in a semi-resting mode of behaviour (still looking after children).

The problems with waiting are self-perpetuating, because it is unheard of to worry about keeping someone other than a foreigner waiting, and people are continuously making jokes about 'PNG time.' This cultural pattern is another way that women are limited from accessing and particularly from controlling their time; first because their time is literally not their own when they are faced with so many responsibilities for both production and caring for children and the household; and second because when people don't keep track and monitor time women themselves have no basis on which to try to change their behaviour and use time more effectively.

Impacts of Development Related Change on Women's Access to Resources

The development process in Pepaur, and in Papua New Guinea, has had a negative impact on women's ability to access and control resources. As the older autocratic systems are replaced with a looser democracy, some traditional taboos that were beneficial to women's well-being have been lost. These are mainly population and conservation issues. According to the people of Pepaur, until three generations ago there were strict limits imposed

on the numbers of children a family was allowed to have, the maximum being three. Sexual taboos limited contact between men and women and women could fall back on the use of medicinal plants as abortants. As democratic systems were put in place by the colonial and national governments, attitudes have shifted to become more individualistic, and people are less afraid of contravening traditional taboos, some of which are also negated by the church.

In talking with people about how development is changing their lives, women repeatedly mentioned the strain that having large numbers of children had on them physically, and the overwork caused by both the responsibilities of feeding a large family and the necessity to work as labourers on cash crop production. Increased family sizes mean women have longer work days and are in poorer health due to pregnancy related problems of anemia and increased susceptibility to malaria. Increases in population also mean that women are in some cases already walking longer distances to access land for gardens, and that health and education services are shrinking in relation to demand. The decrease in services has implications for women because when resources are in short supply boys are usually the ones chosen to attend school and receive more health care than girls (Gillett, 1990).

In the area of conservation, taboos existed mainly in regard to fresh water fish and shellfish, and birds. There were size limits, catch limits, seasons, and restrictions on who could capture. Now everyone fishes all the time for whatever they can catch and people will happily consume bamboo containers full of fingerlings or newly hatched crabs or crayfish. Older people say the stock of fish is drastically reduced from what it used to be, and that some types of fish have actually disappeared. With depleted stocks women have more work to do if they want to gather a protein food for their families. However, they have noticed that bird populations have actually come back after a period of near devastation when the colonial government introduced rifles as payments for certain types of services. Yet birds are very shy, and rarely sighted clearly, because they are hunted for their plumage by young men who always have slingshots in their pockets.

Development initiatives have consistently been aimed toward men, presumably based on the mistaken assumption that benefits trickle down through the nuclear family. This assumption has been proved wrong through numerous studies done over the last fifteen years (Sen and Grown, 1987; Moser, 1989; Rocheleau, 1991) but it still appears to be a mainstay in the approaches of development agencies. As well, because women have been excluded from the development process for so long, it is no longer possible to expect them to participate as soon as programs were made available for them. There have to be remedial measures of education and awareness-raising to assist women to overcome the negative image that has been created and is perpetuated about them as being too shy, or too restricted, or too ignorant to become full participants. This view of women was expressed to me by numerous men and women in Pepaur over the time that I was there. Women disproved it themselves (even in the short period of the research project) through their interest and enthusiasm and clear thoughts on many complex issues.

Changing marriage patterns resulting from increased mobility and individualism brought about by the development process are also impacting women's access to resources. The change most relevant to women of Pepaur is marriage to men from outside the area. Previously, women would always move to their husband's village or would marry people in nearby clans as long as they were not directly related. As land shortages develop in other parts of the country some men are migrating and moving to their wives home areas. As mentioned in the section on economic resources, this shift in familial divisions of land rights impacts the security of access women have to land, and will have an increasingly negative impact on future generations. If land shortages develop in Pepaur the children of these relationships will be part of the first rural landless class in PNG.

6.2 Gender-Related Knowledge and Decision-Making Control in Environmental Management

In working with women in Pepaur and collecting qualitative information based on both the experience of women themselves and my observations, I appreciated Marjorie Shostak's assessment (1989) that the challenge in such situations is to track and note whether perceptions and experiences are widely or individually perceived. The researcher must be comprehensive enough in discussions with participants to clarify the variables that account for differences in perception of issues, in order to then establish what information constitutes the basis and scope of viewpoints expressed by participants.

In considering gendered environmental management in Pepaur, it was necessary to clarify and maintain an awareness of what variables distinguish women from men socially and contribute to perspectives different than men's; and to understand what common gendered viewpoints exist across social stratifications among women. When these factors are clarified it is easier to develop a sense of the basis and scope of women's viewpoints which can be used to understand the biases and social constraints that exist to separate women's knowledge from their rights to decision-making power. In the case of Pepaur, the Gender and Development framework clearly shows the differences in gendered access to resources, differences which cut across social divisions between women such as age, education, and family status stratifications.

By understanding women's views about their own knowledge, it is easier to assess areas where they could have a positive contribution to make through increased participation in decision-making about the management of resources and to identify awareness gaps that exist in women's understanding of the structures that entrench their subordination. By understanding why women feel secure or insecure about contributing to decision-making it is possible to see connections between knowledge and awareness gaps, the cultural value that is ascribed to women's viewpoints, and political bias that marginalizes women. The following section lays out the types of knowledge

women feel they have, as well as how they acquire information, and incorporate it into their daily lives.

A. Women's Knowledge

Knowledge as an additional socially-valued resource is a combination of information and understanding that individuals can incorporate into their world view to assist them in their development.

Rocheleau (1991) suggests that in designing research as well as development projects related to the environment, consideration must be given to the gender divisions not only of labour, but of rights, responsibility and knowledge. Her research into the gendered aspects of indigenous knowledge in Kenya demonstrates that women's involvement in research and development initiatives involves ongoing negotiation by women with men. These negotiations tend to be an extension of social strategies women have developed to allow them to survive. Rocheleau states that these social strategies are part of women's adaptive indigenous knowledge, and that this type of breadth should not be simplified, rather that researchers and development workers alike need to carefully consider and explore the gendered nature of indigenous knowledge.

> "The mere recognition and documentation of survival as a gendered science in harsh and unpredictable environments (political, economic, ecological) may effect change at local and national levels. At best it may serve to re-establish the legitimacy and strengthen the dynamism and innovative capacity of rural women's and men's separate, shared, and interlocking knowledge as tools to shape their own futures" (Rocheleau, 1991: 163).

Development is changing the context of PNG society, including the ways environments are managed and how environmental resources are used. There has been a move by some of the non-government environmental organizations to promote a wholesale return to things and customs 'traditional' as an automatic fix to the environmental threats being introduced through the development process. It will be important to think

Types of Knowledge	Acquisition of Knowledge	Loss of Knowledge	Associated Changes
Practical Knowledge	Observation and practice of subsistence and childcare skills Oral traditions/cultural norms Formal education	Less time for observation due to demands of formal educ. system Breakdown of social standards, less credence to oral tradition Cultural blocks to implementing knowledge acquired via school	Women maintain knowledge of basic subsistence skills, but lose knowledge of conservation oriented taboos and rules. Formal educ. skills transfer takes place out of context and without cultural sanction.
Analytical Knowledge	Observation and practice develops some empirical-based analytical skills Oral tradition Formal education	Less time for observ. due to demands of formal educ. system Breakdown of social standards, less credence to oral tradition Value conflicts/ low correlation between formal education skills and day to day experience.	Women have a low level of confidence for decision-making outside of subsistence and family tasks. Development of contradictions and conflicts over use of traditional vs introduced processes for problem solving.
Conceptual Knowledge	Interaction with external sources: formal education system; church; media; extension workers. Oral tradition	Conceptual information from external sources is fragmented and out of context with day to day experience. Breakdown of social standards, less credence to oral tradition, less relevant to changes of development Cultural blocks to shared inform-ation and cooperative processes	Difficult for women to relate their experience of rural life to the external world, esp. changes of development. Difficult to plan changes or improvements over a long term. Difficult to take advantage of development processes requiring cooperative ventures.
Spiritual Knowledge	Church teachings Oral traditions/ magic Media	Breakdown in social standards Religious teachings and oral traditions are inflexible to peoples changing experience.	Power of religious teachings may decrease as social confusion increases. Openings created for evangelical religious teachings which create seemingly safe boundaries of social behaviour.

Figure 8: Acquisition and Loss of Knowledge Types

carefully about what tradition means, how it could be 'returned to' and why people should want to. Ralston (1992), calls for a realistic consideration of the concept of tradition and what it means to women's lives.

> "Within the volatile debates about tradition (is it authentic, invented, from pre-contact times or continually evolving ?), the importance of different male and female perceptions, lived experience and aspirations cannot be ignored" (Ralston, 1992: 172).

Types of Knowledge

Women's knowledge is categorized here into four types: practical, analytical, conceptual, and spiritual. These are discussed with examples and followed by a discussion of how women acquire knowledge in Pepaur. Examining the areas of women's practical knowledge shows not only the range of skills women are adept at, but also demonstrates the emphasis on women's roles as labourers and support workers. Women also possess analytical and conceptual knowledge, but it tends to be applied within their day to day subsistence and survival tasks and is not demonstrated in any ways which could convey political or economic prestige or self-confidence.

Practical Knowledge

Practical knowledge is used to accomplish tasks and meet needs that present themselves on a regular basis. Women use their practical knowledge automatically and without stopping to figure out how to do a given task. It is through the repetition of tasks that knowledge becomes practical and automatic. The constituents of practical knowledge will vary from place to place and culture to culture, and between men and women. Some examples of practical knowledge possessed by women in Pepaur are: how to clear and plant large areas of jungle after the trees are felled; how to tell if produce is ready for harvest; how to store food and protect it from insects and rodents; how to cook dishes in sauces without pots and pans; how to find wood and build fires; how to make house walls and roofs from various types of grasses; how to carry huge and heavy loads through difficult terrain; how to keep large areas of lawn cut using only a long knife; how to do the preliminary processing of copra and cocoa.

Figure 9: Gendered Control of and Access to Knowledge

Types of Knowledge	Access	Control	Cultural Valuation
Practical Knowledge	Access to more specific env. knowledge than men, due to subsistence responsibilities. Access to knowledge of health care depends on extent of service delivery directly to communities Women limited by div. of labour to access non-traditional skills. e.g.. construction, hunting.	Women control much of their practical knowledge, but also have a responsibility to produce positive results or they face retribution through negative social evaluation by their community and their husbands	High acknowledgment of women's practical subsistence skills. Men are supportive in provision of labour for complementary tasks of forest clearing and fence building. High value ascribed to women's practical child care skills, but low acknowledgment of women's roles in social and cultural reproduction. Knowledge of health issues valued in absence of other expertise.
Analytical Knowledge	Access to self-taught analytical knowledge through trial and error in subsistence and home management. Oral tradition provides analytical perspectives on social behaviour and consequences.	Women use analytical knowledge to control practical activities and to monitor community behaviour. Formal literacy and math skills contribute to ability to control marketing and cash crop activities.	Low value ascribed to women's analytical knowledge. Women are not active problem solvers in community issues. Older women valued for knowledge of traditional medicinal properties of plants.
Conceptual Knowledge	Limited access to external sources of conceptual knowledge due to social norms restricting women's opportunities to interact with people and services outside village. Access to relevant knowledge in oral tradition restricted by focus on men's history.	Time restrictions and social mores limit women's ability to control knowledge through input into available services, learning and planning activities.	Women's ideas are given a low value and are not actively sought or heard during community/public meetings. Women's ideas valued to varying extent in family fora depending on personalities and quality of communication.
Spiritual Knowledge	Women have access to delivery of spiritual knowledge, but do not have access to training course for church leadership roles. Women do not have access to male defined traditional rituals of magic.	Women have little control because they are restricted to prescribed roles in both church activities and magic.	Women's spiritual knowledge is seen to be valued equally with men's within the bounds of congregational roles. Some acknowledgement of women's role in social reproduction through instilling religious values into young children.

Analytical Knowledge

Analytical knowledge is generally used for problem-solving, and requires consideration of how to combine information about a problem or puzzling situation with an assessment of available resources and skills and incorporates decisions about what are the best steps to follow to deal with that situation. Some examples of analytical knowledge used by the women of Pepaur are: how to deal with a sick child; how to assess what to do when crops are attacked by pests; how to decrease the risk of attracting snakes in a household compound; how to design a string bag; how to obtain clean water from a flooding or nearly dry river; how to ford a flooding river; how to avoid making men angry when challenging their authority.

Conceptual Knowledge

Conceptual knowledge rests in ideas, connections, projections and the ability to dream or envision the relevance of information in new ways. Women in Pepaur rarely spoke on a conceptual level about their lives unless directly questioned in a situation of what would you do if... or how would this work..? Life in Pepaur tended to be very immediate. There was only one radio, which was not regularly heard by more than the family that owned it, and no current newspapers or books came into the village unless we brought them.[1] It seems from the Pepaur example that conceptual knowledge develops through use; in the workshops women became increasingly articulate about discussing the implications of different situations of environmental management as they explored their knowledge about how things have changed in their community with the development process, and as we talked about situations in other places where women were attempting to deal with some of the same problems. Women who had attended high school were by far the most comfortable with speaking in conceptual terms.

Spiritual Knowledge

Spiritual knowledge is individual and personal, an inner understanding and connection with other people, the ability to love, and an interpretation of

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[1] The trade store did sell used newspapers for rolling tobacco and for use as toilet paper, but they were Australian, written in English and completely out of date.

links between human and divine nature. These aspects of women's spiritual knowledge were exhibited and talked about by Pepaur women as important parts of their lives. They tended to frame them in the context of the teachings of the Catholic church for purposes of discussion, but their behaviour especially in their love of their children and appreciation of nature demonstrated a wider understanding than articulated in the limited teachings of traveling priests and village level catechists.

Methods of Acquiring Knowledge

The methods of acquiring knowledge discussed here are overlapping and depend on people's learning styles, self-confidence and, most of all cultural reinforcement. All types of knowledge can be acquired through the following processes, but this discussion will focus on the main ways women in Pepaur said they learned various skills.

Observation and Practice

Observation, demonstration, trial and experience are the processes which contribute to an acquisition of most practical knowledge. This is the way that girls learn skills from their mothers and other women in the village. Young girls are expected to take on responsibilities for younger siblings and for household chores such as cooking and washing dishes at the river from the time they are physically big enough to carry an infant, or a bag of dishes and pots, or to handle a coconut scraper and build a fire. Until children start school at the age of nine or ten, girls go with their mothers several times a week to the garden and participate in tasks from planting to maintenance to harvesting. Travel through the jungle and grasslands gives girls an opportunity to observe and assist with gathering, and rest stops at rivers are frequently opportunities to fish. When girls finish grade six they are usually given their own plot of garden and are expected to manage it themselves.

Girls also observe demonstrations of gendered behaviour in community life and may suffer consequences of ridicule or chastisement if they try out culturally unacceptable behaviour. For example bicycle riding is a skill which is common for boys, and both men and boys use bikes to increase their

mobility and range for interacting with other people. A few girls learn to ride bicycles but they are made fun of if they ride bikes after they reach puberty. This ridicule creates a social stigma and places women at a significant disadvantage since this form of transport could greatly increase women's ability to get to and from their gardens and could also be adapted to use as a wheeled carrier for heavy loads of vegetables, firewood or water. Cycling would also reduce the time women spend going to and from markets and health centres and would allow them to interact more often with women in neighbouring villages.

Oral Traditions

Oral traditions serve mainly to reinforce patterns of behaviour and resource use. They can also be useful as a store of analytical and conceptual knowledge, providing reference points and alternatives to fall back on when changes or problems arise. Oral traditions are still strong, but their content is changing as older people's stories are lost through changes in language use, through the devaluation of 'old' things in favour of 'new' things and through taboos imposed on tradition by the Catholic church.[2]

In Pepaur there were few older people. Of these, one man and one women (brother and sister) in particular held a rich store of traditional information. The woman's knowledge seemed to be more extensive and she was referred to as a more reliable source for stories and names of plants than the man. There may be a number of reasons for this difference including different impacts of aging, but the woman did have a wider range of knowledge about medicinal plants and plants for household uses This richness of knowledge does not exist among younger people. People continue to 'tell stories' and thereby create and pass on cultural perspectives on events, but they are now less rooted and more individualistic and fragmented.

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[2] Religious taboos have banned stories about evil spirits which were used to protect special places, the use of medicinal plants as abortants, and encourage a nuclear family structure in place of the customs of men's houses which was also a traditional method of birth control.

Formal Education System

The formal education system attempts to develop analytical and conceptual knowledge through mathematics, reading and writing. High school spaces are limited and entrance is based on performance; therefore women who have attended high school generally seem to be fairly skilled and comfortable with using their abilities to think in those ways when faced with problems or questions. The formal education system also teaches practical skills such as subsistence gardening and discusses environmental issues. Women said there was a great deal of variation in the competency and interest of their teachers in these areas and they consistently preferred to carry out their farming according to the methods they had learned from their mothers. The focus on environmental issues is fairly minor within the community life curriculum and focuses on examples of large scale resource exploitation and its impacts. Research participants said that they did not understand the relevance of the lessons to their particular situations because it was not contextualized as something that could happen in their area.

Diminishing or Lost Knowledge

The knowledge of previous generations is being lost by the people of Pepaur. There seem to be two main factors contributing directly to this loss and the problem is exacerbated by a growing disregard and devaluation of the practices of the past.

Reasons for Loss of Knowledge:

A critical structural reason for the loss of knowledge is that the forum of knowledge transfer has changed with the advent of the formal education system. Before the introduction of schools, children spent their time with their elders watching them work, hearing their stories and learning through hands-on experience. Now school children spend much less time in the company of their parents and other adults because they are encouraged to attend community school from the time they are nine or ten years old until they are sixteen or seventeen. This separation of 'learning' at school, versus absorbing useful knowledge in a practical context, has not been balanced by

any corresponding adaptation in methods for transferring information based on cultural practices.

A second related factor that may be responsible for the diminishment of knowledge is the existence of cultural blocks that inhibit both the sharing of information and cooperation between non-traditional groupings of people. Cultural blocks also inhibit the adaptation of new knowledge to blend with more 'traditional' knowledge. While this last factor seems to illustrate a process of holding on to tradition, increasingly it is holding on to some of the practices, while much of the knowledge useful to balancing systems (such as conservation, and population control) is being lost. It is hard to make conclusive statements about the dynamics of this situation without more in-depth study of existing techniques of management in comparison with an exploration of information from older people about how management was done in the past.

These inhibitions may all be related to a fear or uncertainty about change and a feeling that the only security is what is known and is rooted in the status quo (Bradley, 1982). This fear of change and reluctance to adapt results in people relying on a status quo which becomes less relevant and more insecure as the traditional knowledge base shrinks.

Reasons for a Growing Disregard for the Practices of Previous Generations.
The breakdown of social standards is one aspect of a growing disregard for the practices of previous generations. The breakdown is partially caused by the shift from life under the dictate of autocrats and a single set of values for behaviour, to a world where choice and individualism are promoted without being contextualized by the concept of individual responsibility. In urban areas of Papua New Guinea the consequences of this change include the sacrifice of traditional obligations, which have up until now provided a safety net of sustainable social welfare. In this transition at the village level the same risks exist. The people of Pepaur do not have a strong written culture. The mores of the older generations are not recorded and so once lost can not be revisited for their valuable aspects if and when recently introduced ways of life fail to provide a secure society. When these social safety nets fail, it is

women and children as the most dependent members of the society who are placed in positions of extreme vulnerability.

Conflicting values about the purpose of the environment and the concept of shared ownership are a second aspect of change and the increasing disregard for older standards and practices. Shared ownership of land among clans has in the past served to guarantee access to land as an economic resource and encouraged joint management among clan members that allowed a stable, if unequal, benefit to women from the gendered division of labour. That benefit is security of access to the means of a subsistence livelihood for their children. Currently the national government of Papua New Guinea is being pressured by the multilateral agencies (World Bank and IMF) to promote land registration with only one or two signatories from a clan group required to authorize a sale of land presumably owned by a much larger clan population. The rationale for the registration system is that clear ownership vested in one or two individuals would facilitate economic development (by clarifying collateral issues to increase access to credit) and provide more security for long term tenure agreements (Parkap, 1992; AIDAB,1992). These conflicts combine with the temptations offered by the only recently introduced concepts of capitalism and a cash economy to undermine and de-value other concepts of environmental management, and undermine the stability of women's access to land.

Impacts of the Shift to a Monetary Economy

Capitalism and greed should be common concepts to most individuals who have grown to adulthood and moved into a formal workforce in a developed western country. For the people of Pepaur, however, the advertising and hyperbole that Northerners take for granted (and are to some extent immune to) is mesmerizing and engaging. From the discussion I had with men in Pepaur, it seems that the idea of becoming a businessman at any scale is magnetically attractive, and it is accepted that being a 'businessman' justifies self-interest and includes an expectation that one can turn ones back on

traditional values.[3] As these influences become more common, they disrupt traditional protocol and create alternative and sometimes conflicting patterns of class status, but without providing substitute social values. The creation of this type of void has negative impacts on community stability. The involvement of men in business activities simultaneously increases women's work loads and decreases the value of the work they do to maintain a subsistence base. When men participate in business activities, they have less time to contribute to subsistence activities and the extra work must be picked up by women. The attitude that work which earns cash is more valuable than work which does not devalues women's unpaid subsistence activities. While women acknowledge that there is a need for cash in the household economy, they also recognized that there are some means of acquiring cash which are more reliable than others. Women stated that they would prefer to help their husbands with cash crop ventures than to have the men spend time and energy on risky more commercialized business ventures.

The process of capitalizing the natural resource base undermines subsistence uses of the environment without providing women with the same levels of access to resources or resource substitutes. Pepaur women reported that when cash crops are planted on nearby fertile areas, those portions of the land base are taken out of the pool of land available for subsistence farming , and women often have to walk further to plant food gardens. When cash crops are produced both men and women have extra work to do, but for women this reduces the time available for subsistence production in favour of time spent to help earn cash which will not be in their control, and which cannot be guaranteed to provide purchased food substitutes.

Timber harvesting in the area impacts women less directly in the short term, in that it does not drain women's labour. The cleared sites are often used for gardens which also reduces a major portion of men's labour of clearing the large trees for garden sites. There is, however, insufficient information to

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[3] This interpretation of being in business is alarmingly pervasive in PNG, and the phrase "Well, but he's a businessman" is used as an acceptable excuse for many large and small financial crimes as well as contravention of traditional obligation.

confirm what the long term impacts will be. The spread of invasive grasses, the loss of biodiversity through continued cutting of old trees, and the damage caused by dragging logs out of the forest has not been investigated in this area. Negative social impacts of logging are much more obvious in the ways that they affect women. Women in Pepaur tell stories of a period in the mid to late 1980s when there were loggers in the area who enticed a number of young girls and interacted with village men in their off hours – beer consumption increased in Pepaur and associated crimes of theft and violence began to take place much more frequently than had been the norm.

People are taking different approaches to environmental management in order to develop a base of cash income without understanding the long term, and often negative implications of the development process. New technologies designed to allow small-scale resource exploitation and improved cash cropping do not 'come with instructions' and clear explanations of what can happen to the environment if it used past its limits, even on a small scale. Large-scale projects offer bribes of big royalties and services 'to be provided'[4] by the multi-national companies, but obfuscate the potential social and environmental repercussions. Women research participants had fairly strong negative feelings about the development process and insisted that they would argue strongly in their families against any large scale resource exploitation.

Knowledge Gaps

Two large knowledge gaps seem to exist for women in Pepaur. First, there is a lack of awareness about the context of the changes they see taking place in their village. This is self-perpetuating because it constrains women from accessing services and resource people and material which could improve their understanding of the world around them. Secondly there is a lack of awareness about the commonality that they share with other women, in the country and internationally, in terms of gender-bias. This results in a lack of self-confidence and confusion about how to articulate a rationale for changes that would address their concerns and rights.

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[4] It is important to note that rural people have almost no avenues of legal redress if a company does not fulfill its contractual obligations to build health centres, roads or school buildings.

Added to these knowledge gaps are women's lack of experience with analysis of situations outside their immediate family, and lack of practice in conceptualizing themselves as individual agents of change deserving of basic human rights such as the power to control their own bodies, and be rewarded for their work.

The women of Pepaur identified their own knowledge gaps in being able to understand the context of the world outside their village, and their insecurities in even beginning to try and analyze their situation in relation to the complexities in that world. These insecurities mean that women do not feel adequate to plan for the future, and so continue to observe the diminishment of familiar social constructs and the growth of unpredictability. This extends to all environments women are responsible for; many research participants said they felt vulnerable in the face of the changes being introduced by development, and the obvious fragility and questionable value of 'tradition' in developing responses to the negative effects of change.

B. Women's Decision-Making Control in Environmental Management

> "... [F]or a woman whose traditional role has been mainly as a mother, a cook, and a household servant, the topic is quite complex. Women have always been *looked upon* as support labour, not as managers" (Bungtabu Brown, 1987: 78).

For women in Pepaur, decision-making control is gendered and defines worker status, even though in some areas where women are considered chiefly labourers or support workers, they have acquired equivalent or more extensive knowledge than the men who make the decisions controlling the use of basic resources. This section builds on the discussions of women's access to resources, and of women's knowledge, by outlining the responsibilities women have and in what areas they do manage and make decisions. Comparisons of these sets of information can be used to advocate

Figure 10: Women's Decision-Making Roles

Area of Environmental Management	Degree of Women's Decision-Making Control
Human Resources	
Food and Nutrition	High within normal subsistence practices
Personal health	Low due to time restrictions and limited financial resources
Children's health	Variable dep. on education and access to transportation and financial resources
Personal Education	Low due to time restrictions and social mores
Children's Education	Variable dep. on quality of communication in marital relationship
Family labour	Variable dep. on # of male and female children
Home Management	
Waste management	High within normal subsistence practices
Water management	Low depending on available sources, or technology accessed by men
Energy use	Variable for purchased and gathered fuel
Land use in household area	High, but dep on time and physical energy
Disease control	Variable dep on educ and financial resources
Subsistence Activities	
Land use planning/designation	Low, some input at the family level
Crop production	High, control of seed stock and planting sched.
Crop harvesting	High in response to family subsistence needs
Pest control	High if attempted in range of normal practices
Soil management	High if attempted in range of normal practices
Gathering (food and medicinal)	Moderate: gathering boundaries male-defined
Animal husbandry	Moderate dep. on educ., experience and finances
Commercial Activities	
Land use planning /designation	Low, may be some input at family level
Cash crop production	Low, may be some input at family level
Cash crop harvesting	Low, may be some input at family level
Cash crop marketing	Low, may be some input at family level
Timber-related activities	None
Surplus subsistence production for market	Variable dep. on choice, time avail, quality of communication in marital relationship

for women's increased formal involvement in decision-making fora, and to show how that inclusion would be beneficial to all members of the community.

Decisions are often poorly made because rural people as a group have less access to information and less skill in analyzing the potential short and long-term impacts of any decision. Involving women in the decision-making process would not automatically alter or improve this situation. Working to raise community awareness and combining the knowledge of both men and women in more informed decision-making would provide a better base for decisions which would benefit the community as a whole, as well as future generations. Involving women in decision-making fora would also provide a more formal arena for women as an organized group to lobby for their own human rights. As discussed in Chapter 3, it is uncommon for people to willingly give up power they already hold to the less powerful. The promotion of increased organization among women and a re-valuing of their knowledge on the assumption that it will benefit men and women and children, serves a double purpose. These changes support an advocacy for recognition of women to become a more well used and effective group of resource people and at the same time provides women with a safety net to make them less vulnerable as individuals in their separate families.

Men own or control the use of most local natural resources,[5] and hold ultimate socio-political control over human resources, although women often manage them. Because women's management skills and the extent of their knowledge relative to men are not acknowledged, they are seldom consulted about major resource decisions. The most straight-forward example in Pepaur is land, the key economic resource which conveys political status. Men own the land in the Pepaur area and women farm the land, manage the production of food and maintain the family and community through their work. The community is dependent on the effective use of land for subsistence production, and yet when decisions about allocation of land are made, or an opportunity for commercial exploitation of the land

[5] The exception to this are: sub-surface resources which are by law in the control of the national government, and the river which are considered to be a common resource.

arise, men meet to discuss the possibilities and come to a decision without consulting women.

In the area of community and household management, decision-making is more divided based on an understanding that ultimately the power rests with men. Men exhibit some trust for women's management abilities in this area. It must also be kept in mind, however, that in many cases, because this work is designated mainly as 'women's work,' men feel it is below them to get involved unless some intervention is being made through government, such as health services; or where an external agency is introducing some level of technology such as a water system. Decisions about management of commons areas within the community are made through the village level government process, and men and women both provide labour for grass-cutting and maintenance of the church and school grounds. Decisions on water supply management are the responsibility of women, as are family health management issues such as waste disposal, sanitation and toilets, malaria control, and nutrition. Where there is any question of having to go outside the community for assistance women must confer with their husbands and receive permission. If outside assistance comes into the village men must approve women's participation, although for activities like taking children to Maternal Child Health clinics, the community pressure is very strong that women be allowed to participate.

In order to involve women in decision-making, cultural constraints must be assessed in a way which illuminates relationship dynamics and the factors which entrench them. This cannot be done without the participation of women themselves and it is unlikely that it can be done without risk. In discussing this consideration with women during the study, additional difficulties arose in the form of women's comfort and ability to articulate all aspects of their circumstances. These hesitations seem to indicate that the reality of such shifts in people's social and cultural patterns are part of an extremely long-term process. Understanding the time frames necessary to facilitate such change reinforces the need for strategic planning based on mutual understanding (between rural women and their supporters) of women's strategic interests in moving out of the conditions of subordination.

It is difficult to capture the cultural and socio-political subtleties behind rural women's reluctance to discuss gender relations. Some of the factors involved are fear of change, combined with cultural norms and inhibitions which hold women in a subordinate position without any overt or obvious disciplines.

During the process of the research project, and in keeping notes on women's responses in workshops, I felt that there were some type of 'shutters' on discussions of gender relations: workshop and interview discussions conducted with the women in Pepaur all held references to dynamics of gender, but women's responses indicated that they were still unsure about how to talk about the ways in which they negotiate their "exceptional" gender status in areas outside their specific activities, because this would mean an acknowledgment that there was something 'wrong' (Personal Narratives Group, 1989: 5). To admit something was wrong would indicate the need to make a decision for change, which is an intimidating concept to many people, not only women. Where women are lacking a supportive, organized solidarity among themselves, to make an independent decision for change at the personal political level presents a high risk of violent reprisal and social ostracism.

Change in Papua New Guinea is particularly frightening and stressful to male/ female relationships because there has been an extreme degree of drastic, unexplained and disruptive change in the last two generations (Bradley, 1990). Rocheleau also reflects on how, in researching gendered approaches to negotiating social survival, women may have very complex analyses of gender-relations and be skilled at meeting their needs despite barriers of inequality, yet they may perceive that to talk openly about those inequalities is unsafe (Rocheleau, 1991).

The workshops pushed women to look at how they live their lives, and by telling me about their lives, to consider how other women[6] view their relationships with men. This telling, as well as the comparison with the

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[6] Through the workshops, women in Pepaur became aware of each other's views, my views as well as the views of women who came to speak to them from the provincial captial of Madang.

differences in division of labour between them and their partners and me and my partner, illustrated differences and therefore the potential for change. Women participants claimed in the workshops and in interviews that they did not believe such shifts could happen in their own relationships. Yet, when women saw these shifts in other relationships and began to talk about their overwork in the light of 'what men don't help with,' their conception of the inevitability of the status quo began to change. This opened a window of awareness on women's true position, exposing how "[w]omen's lives are lived within and in tension with systems of domination." (Personal Narratives Group, 1989: 8). Mies (1983:125) expands on this by pointing out that "[a]s long as normalcy is not disrupted [women] are not able to admit even to themselves that these relationships are oppressive or exploitive." In Pepaur, women were not ready, or not well enough supported to face the implications for potential disruption if tensions were acknowledged to an extent that required action.

While concluding the findings by saying that women were not ready to take action to overturn their own oppression may seem somewhat pessimistic, the women themselves did not view their experience in those terms. At the end of the research period, women were positive about a number of issues. Individual women volunteered final evaluative comments on their experience in contributing to the research and to the development of a workshop guide that would be used in other areas of the province. Comments were inclusive of both personal and political issues, all of which related to some aspects of environmental management:

- The workshops provided an opportunity for women to demonstrate to men that they could in fact work together and carry through on a commitment.
- Women felt an increased sense of validation about the importance of their work, which they acknowledged as a group.
- Women had a chance to practice voicing their opinions, to hear the views of other women, to realize areas of commonality and difference, and to discuss options for acting on common concerns.
- Women were more aware of services that were avilable for them in the provincial captial.

- The networking aspects of the workshops process increased awareness of women who could be referred to as role models.

C. Summary of Findings

a) In Pepaur, women have less access to, and control of, resources than men. This is consistent across all other lines of social organization.

b) Women's contributions to the maintenance of healthy, economically and environmentally stable communities are recognized within a social structure that maintains a male-biased status quo of gender relations:
   - Women's perceived contributions are family and subsistence centred. They are considered less valuable than activities which have a monetary aspect or which involve interacting with people outside the boundaries of the community. These latter activities are reserved for men;
   - Perceptions change in the context of different relationships. Within the family unit women are perceived to have the right to voice concerns and views relating to management of the family environment. In the larger community women's views are not solicited and social controls exist to inhibit women from becoming politically vocal outside the family.

c) Women are under-valued in their role as environmental managers and subsistence producers:
   - Control of, and access to resources is limited to women and does not accurately reflect women's environmental management responsibilites in the areas of food and cash crop production, health, human resources, and culture.

d) Women have perceptions of political climates (familial, community, local) which reflect an awareness of gender inequity:
   - Women have developed covert strategies to circumvent power structures in order to access critical resources. These strategies include

the use of negotiation and persuasion to influence decision-making about the allocation and distribution of resources. At the family and community level these strategies are consistently justified in terms of improving quality of life for children.

e) The identification and support of women's strategic interests requires the development of a process to lessen their subordination within their society:

- Raising awareness and conscientization are critical steps particularly in changing attitudes towards knowledge and the transfer of knowledge;
- The involvement of women in all phases of the research project was effective in improving self-confidence among women and helped to identify information and communication gaps or problem areas;
- Solidarity among rural women and connections to other levels of organizations with similar interests needs to be ongoing;
- Constraints have to be acknowledged, root causes analyzed, information shared and decisions made with rural women about appropriate starting points for change.

f) Improving women's subordinate position has the potential to impact issues of environmental management.

i) Currently people are hindered in their management of the environment by:

- Adherence to tradition even as traditional knowledge is being lost, which results in a diminishing base of knowledge from which to manage the environment;
- Avoidance of change which inhibits the incorporation of introduced approaches to environmental management;
- De-valuation of women's experience and capabilities in environmental management;
- Cultural obstacles to women's participation in public forums, especially in the roles of decision-makers;

- Lack of appropriate curriculum and/or effective teaching methods at the community school level which could develop awareness of the value of women's work and the environment.

ii) Improving women's subordinate position would increase opportunities to incorporate women's interests and values into decision-making about resource use and environmental management. Women's value sets reflect a concern for integrated environmental management that would maintain their interests in a sustainable subsistence production base.

CHAPTER 7: Conclusions

The following conclusions and recommendations summarize key points that have arisen during this research project. Section I discusses the links between gender inequity and women's ability to manage their environments in an optimal fashion. This is prefaced by a brief assessment of the effectiveness of Gender and Development as a methodological framework for analysis. The focus of the research has been on women's work and women's knowledge and skills related to environmental issues. It appears that the gendered division of labour leads to a division of knowledge and that the knowledge of men and women is to some degree complementary. However, women's knowledge has a lower cultural value as reflected by the indicators of access to and control of political and economic resources. Women also have less opportunity to participate in the development process because they have less access to and control of their own time.

Section II outlines some of the difficulties that were encountered in conducting the research at various levels including both applied and theoretical factors. Section III suggests areas where further research is needed to assist in the feminist project of involving women in the successful management of their environment. The final section highlights some of the potential implications of this project and future work that could take place with a similar agenda.

7.1 General Conclusions and Recommendations

A. A GAD framework is an effective tool for illuminating relationships and dynamics relevant to the issue of environmental management.

During the course of designing and conducting this research project, the Gender and Development methodology has highlighted and clarified a number of factors about women's lives and their involvement in environmental management in rural Papua New Guinea.

- Inequalities between men and women are apparent when comparing the roles and responsibilities women have in environmental management with their level of decision-making power.

- The examination of contributing factors to differential access and control of economic and political resources show that there is a cultural valuation of knowledge and work which is skewed in favor of men and does not account for women's equal or more extensive knowledge of forest environments and food production strategies[1].

- There are a number of key relationships which influence the degree of a woman's access to and control of resources without changing the overall social balance. These can make a difference to a woman's general well-being and mental health, but do not influence the status quo of the society, and therefore do not afford women the opportunity to become more active in formal decision-making processes about environmental management.

B. ***The use of a combination of methods to develop a GAD research framework was useful, particularly in terms of awareness raising, illuminating relationships, providing a comprehensive information set, and a design framework that reduces the risk of conflict for women. This conclusion is based on the following evaluative criteria:***

- Women's interest, and that of the community, remained constant throughout the project;
- After the initial workshop there was no attrition, and three new participants joined the research participant group;
- Women became more conversant about how their actions related to environmental topics during the course of the workshop;
- There was ongoing positive response and support from provincial and national level government staff working in the area of women's issues

[1] See section on Difficulties in the Research, points 1 b. and 1 c.

and non-government organizations active in the support of women and environmental awareness.

C. Knowledge should be considered as a fourth socially-valued resource intrinsically connected to women's ability to access political and economic resources and time.

If women are not acknowledged in arenas of power their voices cannot be heard and their knowledge on environmental (and all other) issues remains untapped, unacknowledged, and is not used to benefit the community. This is a complex issue tied to culture and meaning of language, and it has been discussed in the anthropological and feminist literature. The following excerpt from Strathern, discussing an analysis by Threadgold illustrates the ways in which these issues are linked:

> "However the problem of making words mean is not an exclusively feminist one, for it is not language that men control but access to valued modes of meaning. What men and women do with language shows 'how the *doing* is constrained by *existing* power relations, subjective coding orientations and access to genres and discourses' (Threadgold, 1988: 64, original emphasis). In her [Threadgold's] view it is not language that oppresses but the economic, political and discursive forms which control differential access" (Strathern, 1992: 71).

D. Attitudes towards knowledge and the transfer of knowledge are important.

The study has highlighted the above points regarding knowledge as a critical resource for successfully managing environments. Related to this is an acknowledgment that attitudes towards women's knowledge are a key starting point in understanding women's inequality with regards to socially-valued resources. Negative attitudes about women's knowledge block

women's participation in political forums and inhibit the formal and informal sharing of knowledge.[2]

7.2 Difficulties in the Research

In conducting this research I experienced a number of difficulties at various levels. Some of these are 'classic' problems of cross-cultural research that are well documented in academic literature. Others are specifically related to the intensity of the change process in Papua New Guinea relative to the length of time prior to development, during which the culture maintained fairly stable patterns of social interaction and survival. This rapid change has resulted in a shortage of Papua New Guineans trained in western skills of policy and public administration and a lack of clear indigenous analyses of the impacts of the development process.

At the Local Level

i) An ongoing problem at the village level was the impact we made just by our presence. The development of relationships with people in the village required constant attention and continual affirmation of the value of local people's views in order to avoid having research participants feel like they should tell us what they thought we wanted to hear.

ii) It is not possible to gain a comprehensive understanding of the underlying cultural value of women's contributions to their society, and how this impacts women's perception of their ability to affect change, without being in the field for an extended period[3]. Findings on these issues are based on observations in Pepaur combined with discussions with Papua New Guinean women from other areas, and in relation to the work of researchers who have studied in other areas of the country.

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[2] See Difficulties in the Research section, point 1 c.

[3] It is difficult to specify what length of time it would take to clearly understand women's perceptions of themselves. The time required would be relative to the intensiveness of interaction, the researcher's own awareness of cultural patterns and gender relations. Living closely within a village society for two or three years should allow a relatively solid base of experience from which to make a general analysis.

iii) Another complex variable of cultural valuation is group and individual responsibility in the management and care of resources. Some people seem to have an awareness of how the impacts of development schemes, and population growth are creating an increased need for a more planned approach to resource management. However there are cultural constraints which need to be assessed. These constraints relate to the hesitation by men and women to accept responsibility for projects, to take leadership roles, and to share knowledge. There are also cultural inhibitions toward ventures that require groups to work together across family or clan lines. Without fully understanding what causes these blocks, it is very difficult to make clear recommendations on effective strategies. In this study, the research component involving family education projects demonstrated this problem most clearly.

At the National and Provincial Level

At the national and provincial level there is a shortage of personnel with a clear analysis of the complex linkages between issues[4]. There is a lack of organizational capacity to deal with environmental issues and issues related to women's empowerment. The government is paying lipservice to issues of environmental sustainability, but maintaining such stability is not in its short term interest due to the national fiscal crisis and lucrative opportunities to share in the revenues of forestry and mining companies. There is a national women's policy in place in Papua New Guinea, but there are many cultural and financial obstacles to its implementation. These problems are extremely complex when the system of government in Papua New Guinea is examined in light of the rampant graft and corruption, law and order problems, pressures from multi-national investors and the short-sightedness of assistance programs coming from multi-lateral and bi-lateral sources.

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[4] It can well be argued that the same shortage exists at a international level, but I feel it is most critical at the provincial and national level where there is a distinct need for facilitation of a bottom-up flow of information about rural people's experience.

At the Theoretical/Conceptual Level

In applying the theoretical methodology to the reality of the women of Pepaur difficulties arise in the process of making recommendations about appropriate courses of action. There is a dilemma in finding a balance that will provide the most effective combined approach to these problems whether that is through reformist tactics, radical measures to expose and address root causes, or carefully strategized subversion. The complexity of the problematic requires a complex response which can combine numerous approaches, but which overall must involve women in every decision and support them at every turn.

7.3 Areas for Further Research

Research into women's lives and how their knowledge is important to successful environmental maintenance is complex because it relies on finding a satisfactory means to mesh the categorizations and discourse of culture in the anthropological, geographical, and feminist literature with the interpretative needs of an environment /development perspective. The assumptions of western academic disciplines must be translated through a cross-cultural experience and then restated in the context of the imposed western praxis of the development industry (which is based on very different assumptions). All the while the researcher must attempt to maintain the priority of faithfulness to the research participants' views of their own world. Marilyn Strathern has recognized this difficulty even within the confines of anthropological discourse on behaviours of men and women in Melanesian society, and she deals with it by taking an intentional binary approach. In discussing how to clearly relate dichotomous Melanesian attitudes about gender she states:

> " In order to make this other form of thinking appear one that is not the inverse or negation of Western forms, for it was not developed in relation to them, I am constrained by the fact that there is of course, no 'Melanesian case' that is not a Western

> projection. I therefore deliberately 'reveal' it through a binarism firmly located in an us/them contrast that works by inversion and negation. These are my means. Not the infinite regression of third (mediating) terms, but a strategy of diplacement. I thus try to present Western discourse as a form through which Melanesian discourse can appear. If one thinks about it 'Melanesian discourse' can, of course, have no other locus. Yet the transparency of the fiction will, I hope, simultaneously indicate that the life of the one form is not pre-empted by the other, and is certainly not residual to it" (Strathern, 1992: 75).

Research design must reflect a conscious recognition of the various filters through which information passes and must also be clear on who it is designed to serve. The following recommendations for further research are aimed primarily at the needs of rural women and their communities. The process of involving these people in the larger process of development and academic inquiry can also then provide genuine improvement to the praxis of both of those endeavors.

Research Needs

Women's Work in Environmental Management

There is a need for more practical research into effective methods to support and involve rural women in creating an awareness of, and an appropriate value for, women's work in environmental management. Concurrently there needs to be research into how the experience and knowledge women gain through their work managing environmental resources can be translated into rights for their participation in decision-making and planning for environmental sustainability at all levels.

Integral to this research must be an analysis of the links between systems of oppression. Women's needs are often marginalized by cultural patterns and biases as well as by existing development processes and adjustment programs. Such analyses should aim to demonstrate that the health of both people and the environment is compromised by the fact that women are constrained from managing at an optimum level. Considerable research along these lines has been done (Sen and Grown,1987; Chitepo, 1991; and Momsen, J. 1991), but

results have not yet been incorporated into development policy. Therefore, even though lack of data may not be the root cause of policy makers continuing to bypass women's needs, one must assume that there is still a need for further case studies demonstrating these issues and further analytical overviews at a macro-economic level to tie them to the implementation of more functional policies beneficial to women.

Reasons for Loss of Knowledge
There is a need for further research with rural people about the reasons for their loss of traditional knowledge about the environment and conservation processes, and about ways to salvage and reincorporate that knowledge into the context of the changes currently taking place due to development processes.

Documentation of Traditional Resource Use and Environmental Knowledge
There is an immediate need to document the knowledge and resource use patterns that have been used by the people who now comprise the older generation of Papua New Guineans. This will facilitate an assessment for the value of those practices in promoting sustainability, and may reflect important cultural resources of environmental attitudes. These analyses must be designed to reflect gender-related work and benefit patterns.

7.4 Implications:

Given a long-term supported project there could be a number of positive impacts at the village level. These include an increase in self-confidence and self-esteem as a result of interested outsiders focusing attention on rural women's knowledge and environmental management abilities as a valuable set of skills. This did take place during the time I was part of the community, but is unlikely to continue without external support. Tentative alliances and connections were made between the women of Pepaur, government representatives and non-government organizations. If these could be maintained the external support could help the women of Pepaur develop a stronger political voice and increase their potential to participate equally in

decisions about the use of agricultural and forest resources. Given that women are primarily responsible for family welfare in Papua New Guinea, (Cox, 1987) in the long term their participation in projects similar to the components of this research has the potential to increase community stability through improved environmental management – which will more successfully meet a range of family and community needs for biodiversity, health, cultural integrity and economic security.

The degree of support and interest offered by Papua New Guinean environment and development organizations, and by government agencies, indicates that there is a lack of material that can be used to facilitate actions to address the combined issues of women's subordination and environmental management in a proactive way. As the Papua New Guinea government is currently attempting to implement the national women's policy, in part to facilitate the realization of their national goals for the equality of women in the development process and environmental sustainability, the use of an empowerment approach such as Gender and Development seems appropriate. GAD theory is relevant to those goals, and can provide criteria for applied work. The incorporation of a number of emerging theories on gender-relations and environmental management serve a process for information collection on key issues which can be used in policy formation. While it is positive that support has been expressed for this type of work at the provincial and national levels, it is important to stress that the quality, tangibility, and 'value of the projects' diminishes if work is not rooted at the grassroots, and this requires a commitment of resources from governments and other agencies to rural women.

The project has provided an opportunity for in-depth academic analysis of gender-relations and environmental management. I hope that this project has served to improve understanding of the strategic connections between gender relations, community level environmental management by increasing information about the linkages between those issues, and by making that information available to local people and national Papua New Guinean groups concerned with environmental management.

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Appendix 1: Basic Profile Information for Research Participants

Name	Age	Grade of Education	Marital Status by Choice or Arrangment	Year of Marriage	# of Living Children*	Guaranteed Access to Land through Husband's Rights	Access to Cash through Marketting**	Access to Cash through Cash Crop Labour**
Lucy Owara	34	10	Married - C	1977	6	Yes	Yes - N	Yes - M
Ludwina Inup	32 ?	6	Married - A	1982	5	Yes	Yes - S	Yes - M
Maria Jorow	38 ?	6	Married - C	unknown	5	No	Yes - S	Yes - M
Aplonia Sikor	24	6	Married - C	1984	3	Yes	Yes - S	Yes - M
Christine Kapokam	28 ?	6	Married - C	1984	2	Yes	Yes - S	Yes - M
Elsie Alphonse	18	6	Single	N/A	0	N/A	No	Yes - S
Christine Pium	23	8	Single	N/A	1	N/A	No	Yes - S
Julie Irum	17	6	Single	N/A	0	N/A	Yes - S	Yes - S
Barbara Marke	31 ?	0	Married - A	unknown	5	Yes	Yes - M	Yes - M
Susan Pesam	21	10	Married - C	1991	1	Yes	Yes - S	Yes - M
Valerie Mamir	26	5	Married - C	1984	3	No	Yes - S	Yes - M
Betty Yabis	32 ?	6	Married - A	unknown	4	No	Yes - S	Yes - M
Barbara Bing	30 ?	6	Married - A	1982	4	Yes	Yes - S	Yes - M
Scholastica Nambar	22	6	Single	N/A	1	N/A	Yes - S	No
Sarah Suanwe	23	8	Married - C	1990	1	Yes	Yes - S	Yes - M
Anastasia Sumayam	18	6	Single	N/A	0	N/A	Yes - S	Yes - S
Christine Kiok	21	9	Married - C	1992	1	No	No	Yes - M
Marianne Lucas	23	8	Married - C	1988	2	Yes	No	Yes - M
Imelda Philip	26	6	Married - C	1987	2	No	Yes - S	Yes - M

* Indicates the number of living children currently residing in the household – this includes adopted children.

** 'S' indicates thatcash is controlled by the woman herself; 'M' indicates that cash earned is pooled in the household and is ultimately controlled by a woman's husband or father; 'N' indicates that control of income is negotiated within the family. Marketting and cash cropping are generally irregular sources of income.

Appendix 2: Personal Profiles: Ten Participants

Lucy Oware

Lucy is 34 years old, has five children of her own, including three year old twins, and has adopted two daughters, one of whom is now married. Lucy is one of the two most educated women in the village, having attended the nearby residential Catholic high school and graduated from Grade 10, the highest level. Lucy is married, by choice, to Melchior, the acting bigman in the village, who has two years of university education.

Lucy was the person who was most open to me about her marital relationship. She has a position of status, through her husband, but as a result of his poor political and economic leadership around a now defunct timber project, considerable negative feeling has been directed toward both him and Lucy. Melchior demands that she 'stand by him' and not mix socially with people who have caused him trouble.

Lucy often spoke with me about her conflicts with Melchior, how he did not like her to spend time with other women in the village, how she was supposed to stick close to home and work on family projects. As a result of this demand Lucy was forbidden to take part in a business education workshop in 1990, the only major activity to take place in the village until our arrival, and one where the organizers made a concerted effort to involve women. Lucy said she would not have been allowed to take part in the women's workshops associated with this research, except for the fact that Melchior would have lost face if he prevented her because I specifically asked Lucy to help with the organization.

In her own right Lucy is an intelligent person and she has been able to insist on some of her own demands in exchange for her loyalty to Melchior. She insists that she be supported in her bread baking business, that Melchior use his truck (the only vehicle in the village) to support her work by buying ingredients on his frequent trips to town, and by driving her to markets on Wednesday and Saturday.

Lucy and Melchior appear to have a close relationship and they spend much more time together than other couples. During the time that we were in the village they talked at length about projects they could undertake together with the labour contributions of community members - farming and milling peanuts for example or building a burner to manufacture charcoal . However, these ideas were transitory and easily thwarted by the lack of actual support they had from most people in the village. Their incomplete

understanding of external economic factors needed for developing successful projects was also a very real constraint.

Lucy and Melchior have been denied access to land or have had access rights retracted for two reasons: because of choices Melchior made in regard to the timber project; and because they allowed their adopted daughter to break an arranged marriage agreement. Melchior has inherited land in the clan area which is about a half day walk from the village, an impractical distance for a food garden, and much farther than other people's gardens who have arranged access to land belonging to the Muere clan. During our stay in the village Lucy had no large garden of her own, she had a small yam garden on their home compound and a number of fruit trees. Through their family status Melchior can control the labour of others and can demand to be paid in food in exchange for trips to town or market in his truck. However this has made Lucy more vulnerable than other women because she does not have the same sense of control as other women about food security, and she is also not allowed to interact as much with other women on outings to gardens. Lucy's self-esteem is compromised in that she has less control over her socio-cultural responsibility as a woman, wife and mother to meet the subsistence food needs of her family.

Lucy has her own regular source of income with her bread baking and marketing. She makes approximately $50. to $70. (US dollar equivalent) profit from this enterprise each month, and has some say over how it is spent, although she often follows Melchior's suggestions for spending the money on consumer items. A considerable portion of this money is spent on rice and canned fish as replacements for garden food. They had no cash crops available to them while we were in the village, but they have a copra dryer on their land. They charge other people rent for the use of the dryer and also transport copra to town for a $3/per bag fee. These combined income sources plus money Melchior charges people for rides to Madang town, make Lucy and Melchior the most 'cash-prosperous' permanent village residents.

Ludwina Inup

Ludwina guesses that she is about 32 years old, she has five children of her own under the age of nine years, the eldest had just started grade one when we arrived in the village. Ludwina finished grade six at the local community school and then attended Catholic vocational school for two years. Ludwina was married to Anton, the youngest son of the lead family by the arrangement of their parents. At the time of the marriage, Anton was forced to go through with the ceremony against his will, and then ran away for two years to work in the neighbouring province on a sugar plantation. Ludwina lived with her mother during this time and said she felt quite ashamed, even though the villagers blamed Anton for bad behaviour. Ludwina is the daughter of the second and sometimes competing family in the lead warrior clan, and the marriage was arranged for political reasons to bring the two families together.

Ludwina has access to more land than many of the village women because Anton was formally adopted by his Muere step-father and has two inheritances including land from both his natural and step-father. Ludwina has a number of gardens at different distances from the village, she and Anton work together in partnership, although they do not seem particularly close in any other way. They spend most of their time apart when they are in the village. Ludwina seemed to work very hard and often returned to the village in the evening carrying a huge load of root vegetables, her gardening tools and the youngest baby in layered bags hanging from her forehead down her back with either an enormous tub of water or a couple of long firewood logs on her head. Anton usually followed separately carrying one or two coconuts and perhaps the two year old on his shoulders. Ludwina and Anton have both cocoa and copra as cash crops and harvest them sporadically when they need cash. They were also quite active in working together to produce sago, a starchy food requiring extensive pounding, scraping and straining of the sago palm trunk. Ludwina said she occasionally markets excess produce although she did not undertake this activity during the time we were in the village.

Ludwina was very articulate and socially concerned, especially about women's overwork, issues of safe water, and the lack of family planning information available to women. She did not feel she could take any leadership roles in the village on these issues because she was married to the youngest son of the head family, and she would be usurping the position of Lucy or Susan, the eldest daughter of the actual big man. Another possible contributing factor was that although Anton is from the lead family and holds the position of village committee member, he has very poor leadership skills. It would have been threatening to his position if Ludwina were to become a more popular leader.

Ludwina said she feels she learned useful information when she attended the vocational school, but she does not use the gardening or sewing skills she acquired, she does try to remember her nutrition training to keep her children healthy. She is close to her mother, who was divorced from her father when he decided to marry a younger woman. She and her mother garden together, and her mother often helps Ludwina by looking after some of the children or taking them to her own house in the Muere camp of Perum.

During the workshops and in a number of social settings, Ludwina was very supportive and encouraging of the young unmarried women in the village. She consistently facilitated small group discussions during the workshops, but usually had the younger women do the recording and reporting back. Ludwina was also a consistent visitor to me and was instrumental in organizing field trips to an outlying garden for my partner and myself.

Maria Jorow

In a formal interview session Maria said she thinks she is between 35 and 40 years old, she has seven children of her own, one of whom – a twin now aged 19 – was given away for adoption at birth to a woman in the camp of Perum. Maria attended community school to grade six. She is married by choice to Clements, who is from the island of Manum where there is an extreme shortage of land due to overpopulation.

Maria and Clements have cash crops on land arranged for them by Maria's maternal uncle, and have garden land arranged through contacts with the neighbouring village of Tavolte. This is unusual, as the most common arrangement for members of the Pepaur clan is to use the land of the more closely affiliated Muere clan. The garden is jointly managed with Maria's siblings and parents.

Maria's children are all boys with the exception of one younger girl. This means that Maria has an inordinately heavy work load with no older daughters to help her with gardening, cooking, and laundry. She often works in conjunction with her sisters in-law and has help from Clements and her sons with projects around the household compound and in gathering wild meat. Clements is a trained carpenter and sometimes does building work in the area with schools or health projects to earn cash. Maria also does some marketing of excess produce and shares the work of collecting food and selling it at market with one of her sisters in-law. Maria's younger sister is dying of cancer in the village, and Maria spends considerable time helping her brother-in-law and three young children meet their subsistence needs.

In the workshop setting Maria was one of the most attentive and supportive participants but even though she was the eldest participant, she did not talk at all in the large group unless addressed directly. She was also extremely shy and insecure when having one to one contact with me, and was very uncomfortable talking in abstract or conceptual terms. She did not interact with members of the village outside her own family compound except to attend church or village meetings, where she stayed with her own family members, she did however express strong interest in the idea of a workshop and said that her husband supported her attendance. Maria herself was very supportive of our presence in the village, she often sent one of her sons to our house with green coconuts or garden produce and accompanied us on a visit to the family garden to explain issues of division of labour, cultivation of food crops and the uses of wild plants in the vicinity of the garden.

Scholastica Nambar and Christine Pium

Scholastica

Scholastica is one of the two young women among the workshop group who were single parents. She is 22 years old and her daughter Sarah is 3 years old. Scholastica lived at home with her parents at the beginning of the research period, but half way through moved away to live with a man in another village. She left her daughter in the care of her parents. Before the birth of her daughter she made an adoption arrangement with distant relatives who live on the island of Karkar (a one hour drive and a three hour boat ride away). When Sarah is four she will go to live permanently with these people.

Scholastica was a bit of an outcast in the workshop group, bearing a double stigma, her father, who had married into the village from another language group in the hinterland, was accused of being a liar and a swindler of church funds during the time he worked in the role of village catchiest and this reflected on all members of his family. Village gossip reflected that Scholastica's single parent status was another manifestation of his inability to adhere to good Christian principles and raise a respectable family. When I interviewed her I asked her if attending the workshop had been her choice, and she told me that while she was interested in taking part it was her father who insisted that she should come. Her family lived across the road from the main village in a separate compound area, and they rarely came into the main village area.

Scholastica attended school to Grade 6, but seemed to have little idea of a role for herself within the community. She helped her immediate family with their subsistence work, and with the maintenance of her nine younger siblings. In the two workshops that she attended, Scholastica was very quiet, participating in the small group discussions, but never in the large group, and never staying after to workshop to join the other women in the informal winding down and wrap-up discussions and questions that followed the formal adjournment.

Christine

Christine was the second single parent who attended the workshop. She was 23 years old at the time, and her daughter Seran was born in late 1992. Christine was a direct contrast to Scholastica; I never heard any negative comments directed toward either Christine or her family as a result of her having borne a child outside of a relationship. She lived with her parents in the camp of Perum, and her father was one of the leading elders in his clan. Her parents and her married siblings doted on the baby and donated considerable energy to supporting Christine in her parenting work.

Christine works with her parents and brothers in their food and cash crop gardens. She said she particularly enjoyed spending time with the other single women of the village (Julie, Elsie and Anastasia) going out to the bush and camping for a week or two during the processing of wild sago into the paste for cooking starchy dumplings. During these trips Christine's father and at least one brother would accompany them as 'protectors' even though the young women were capable of meeting all their needs through their wilderness survival skills. Christine was an avid marketer of excess produce before her child was born, but said she now finds it too much work.

Christine attended high school to Grade 8, and was one of my main resource people during the workshops. She would always take responsibility for recording small group comments and was helpful in large group discussions, because even though she was quite shy, she would force herself to speak up and explain a point or answer a question. Christine was one of only five or six women workshop participants to come to our house outside workshop times for the specific purpose of reading the resource material I had collected.

During one of the group interviews with women in the camp of Perum, Christine, Barbara, Christine's mother and the wife of the camp's bigman prepared a huge meal for myself and my partner. Christine and Barbara planned the meal for the double purpose of hospitality and demonstration, showing me how to kill, clean and cook a chicken, and prepare a typical meal of root vegetable and greens cooked in coconut milk. They were concerned that in the workshop setting the question and discussion format was too limiting, and that I should be able to witness more directly how women carry out their work.

Susan Pesam 21

During our stay in Pepaur, Susan and her husband Raymond were our most interactive neighbours. Susan's outgoing, self-confident nature was a key reason for the openness. She was the first woman to come and visit us in our house and was as outspoken as any of the young men she came with. Susan was 21 years old during the time we spent in the village (and was the only one of the workshop participants who knew her exact birthdate). She was married, by choice in 1991, and her son Rudolph was eight months old when we first came to the village. Susan is the first child of the acknowledged 'bigman' of the village, Alois Pesam, who is headmaster of a community school about a two hour drive away. She is the niece of Lucy and Melchior and has a close relationship with Lucy based on family ties, as well as the fact that they are the only two women in the village to have completed grade 10.

For most of the year Susan, Raymond, their baby, and Susan's 13 year old sister Mary (who was enrolled in grade 5 at the local school) are the main caretakers and residents of Susan's father's house in Pepaur. It is the only permanent house in the village, built with cement foundation, iron roof, windows, screens, and a water tank. This house provides considerable status to the young couple. Susan has a small garden in the yard of the house, with greens, fruit and some taro. Susan and Raymond are very secure in the village, having inheritance rights to land and power from both their families, (Raymond is also of the main Pepaur clan and has both his own land in the clan area and rights to use Muere land closer to the village).

Like Lucy, Susan does very little heavy gardening work, she receives produce from relatives and neighbours who owe her father favours, and who benefit from Susan's generosity in sharing the clean rain water they collected in their tank. She was often around the village when other women were off working, and, like Lucy, was very helpful to me in my assessing, interpreting and evaluating outcomes of the workshops and in designing aspects of the interviews. Unlike Lucy, Susan was free to socialize as much as she wanted to and was a very popular person in the village and the camps.

Susan also provided considerable insight into the impacts of development change by providing me with a connection to her grandmother Kendawok, the defacto matriarch of the head family. Sometimes this took place when we were all sitting together at one or another's house, and sometimes Susan would report to me on conversations she had with Kendawok in my absence. As well Susan facilitated one formal interview session with her grandmother where we discussed women's knowledge and use of wild and cultivated plants.

Susan accompanied us to the first large Saturday market we attended at Malala residential high school, which she attended (an hour and a half drive

from Pepaur). All along the road she pointed out the villages and explained the connections of each village in terms of who lived there and how they were related to someone in Pepaur.

In the context of the workshops, Susan acted as an active facilitator, encouraging people to respond, and offering to record in small groups. During large group discussions she tended always to defer to the opinions of older women, but was very vocal in encouraging her contemporaries to overcome their shyness. She also offered examples from the high school curriculum about how environmental issues are important to Papua New Guineans, and how women should take some responsibility for environmental management in their day to day work. Susan usually managed to arrange for Kendawok or her mother (when she came home to visit) to look after her baby during most of the workshops. The baby would be delivered to the door when he wanted to nurse and was sent off again when he became restless.

Susan was encouraged to participate in the workshops by her father, and in a visit with him between the first and second workshop, he gave her a copy of a book on small projects for village improvements, which included a section on composting - a topic the workshop group discussed as a possible home-based project for both soil improvement and waste management. Susan was the first workshop participant to begin a family project, which was building and using a compost.

Valerie Mamir

Valerie is about 26 years of age and is a member of a group of women 'cousins' and sisters (including Lucy, Imelda and Sarah) who form a cooperative working group. All four women were workshop participants and encouraged each other with their attendance, arranging interviews with me and working on family-oriented projects.

Valerie lives next door to Lucy and they appeared to be quite reliant on each other. They were in and out of each others houses several times a day and their children also interacted closely. Valerie was fairly quiet when she was around me. In one to one conversations she was conservative in her opinions about the possibility for change in women's status. However, she offered very observant and perceptive comments about the degree of autonomy women have in their families and the variable that influence that autonomy, such as having a tight network of other women. Valerie stopped attending school after grade 5, and her self-confidence levels seemed lower than women who had completed the available 6 grades of community schooling. At the same time she is from the Pepaur lineage and has family security.

Valerie is married, by choice, to Joseph who is one of the church prayer leaders. Joseph does not have any of his own traditional land in the area as he migrated with his father to Pepaur. He was, however, adopted by Melchior as a young boy and has a number of status benefits from that relationship, including being allowed to drive Melchior's truck to do local errands and occasionally make trips to town. Joseph and Valerie receive some cash from Melchior in return for the assistance that Joseph provides to him, and they also help Valerie's relatives with cash cropping to earn some income.

Valerie told me once that she is very intimidated by Melchior and never speaks in his presence, she is afraid of his sharp tongue and of having him speak badly of her to her husband. So even though she has a close relationship with Lucy, as a family, and as neighbours, there are tensions for Valerie in living next door to the acting 'bigman.'

One of the negative influences that Melchior has on Valerie's life is that of promoting the idea that women should stay 'at home' and not wander around the village talking with other women. Joseph then enforced this behaviour, and consequently Valerie's sister Imelda, sister-in-law Sarah and cousin Lucy tended to meet in Valerie's house. Valerie was not free to come to our house, but was always welcoming if I wandered down to her's. She would always tell me jokes and was quite consistently worried that I must be very bored by village life.

Barbara Marke

Barbara Marke was the one woman who dropped out of the workshops because of objection by her family (although another woman in the community told me she was not allowed to attend at all because her husband thought it was a waste of time). Barbara stopped attending after the first workshop and interview were completed. She was very shy and came together with Betty Yabis, her friend and neighbour, to be interviewed. During the interview she discussed each of my questions with Betty (who was also very shy) before they would provide me with their responses.

Barbara was about 31 years old, she has five children, and is married to Nicholas – who chose her as his wife in arrangement with her parents. Barbara has never attended school, although two of her children are now attending. (Her parents are also currently raising two of Barbara's nieces and they are not allowing them to go to school, using the argument that the grandmother needs help with the gardens, cash crops and family maintenance.) In the midst of a relatively well-educated community, Barbara obviously feels inadequate. This is aggravated by her marital situation which forces her into a very submissive position.

Barbara is the only woman in the village who is the victim of consistent and blatant domestic violence. Both her parents and other community members reported to me that her husband places very specific demands on her regarding having certain tasks done at certain times, and if she does not meet his demands he beats her. Many people in the village pity Barbara and speak poorly of Nicholas, but no one interferes with, or attempts to stop, the abuse.

Barbara and Nicholas have some copra and cocoa crops and Barbara also does some marketing when they have an excess of betelnut on their land. Their food gardens are on land allocated to them by Barbara's family who are of the Muere clan group. She said she has never been to Madang town, and has only left the immediate vicinity when her children have been seriously ill and needed attention at the regional health centre. Barbara's time is allocated to responding to her husband's demands, looking after her children and her parents. She seemed most relaxed when I visited with her and her parents at their house, but even in that instance her husband came to the periphery of the household compound on his bicycle, looked at us and rode away. Within minutes Barbara was collecting her children and her pet piglet which she kept tied in a string bag (to conform to the rules about no pigs in the main village) and resignedly leaving us to go home.

Aplonia Sikor

Aplonia is a young woman, aged 24, with three children. She is married to Felix, who is Maria Jorow's brother. Aplonia is from the Pepaur/Muere area. Her father died about 1983, and her mother remarried a much older man in the village of Asumbine (about a five hour walk away). The children were adopted by various relatives in Pepaur. Lucy and Melchior adopted Aplonia's two younger sisters in turn, taking the younger one when the older was married. Aplonia lived with relatives in one of the Muere camps, attended school to grade six and married Felix, by choice when she was 16 years old.

Aplonia and Felix have traditional land that is quite distant, but have one of the closest gardens to the village, by arrangement with the Tavolte people. They share their gardening land with Felix's parents, Maria's family, another sister, and Anastasia, who is Maria's and Felix's niece. They have no cash crops of their own but sometimes work for cash or help Felix's father with his blocks of cocoa or copra.

Aplonia was a 'bright light' for me in the time I spent at Pepaur, she was full of energy, despite the fact that she had three children under 7 years of age, and worked very hard. Her house was always very tidy, she maintained flower beds around her house, and she worked with Felix on a regular basis to cut the lawn with long knives and to rake and burn the cuttings. Their house was diagonally opposite ours and every morning I would watch Aplonia going about her daily tasks. Cutting fire wood stored under the house, making the cooking fire in the house, scraping coconuts, cooking, sweeping, washing her children. All this was done in the first hour of her day before she set off with her string bags full of gardening tools, laundry, dishes, the baby – and with a seven and five year old in tow – to her day at the garden and the river.

Aplonia's personality was consistently upbeat, she interacted on a regular basis with all members of the community, but was still very focused on her immediate family and production responsibilities. She was originally very shy to speak to me, but when she finally made the leap to sit down for her interview with me she was excited and quick at picking up the questions, perceptive in her observations about gender relationships, and insightful about how women might work best together in the workshops.

During the workshops Aplonia was in a constant battle with her youngest child who at about 12 months was very prone to continual screaming and fussing. It was hard for her to concentrate (and for the rest of us) but she came to every workshop and participated equally with everyone else, particularly

enjoying the role plays that we did, and contributing some valuable information on family inter-relationships and responsibilities. She also initiated a family projects with Felix (planting a food garden close to the house) and building a two household compost with Valerie who was her closest neighbour.

Appendix 3: Data Categories Used for Information Collection

1. **Topic: Personal profiles in the context of family and community**

   Information Collection Method(s):
   • Formal individual interviews, informal interviews, observation, and workshop discussions.

2. **Topic: Knowledge, experience and decision-making in resource management.**
   a. home and human resources
   b. subsistence and gathering
   c. cash crops

   Information Collection Method(s):
   • Formal individual interviews for the topic of home and human resources;
   • Formal group interviews for the topics of subsistence and gathering, and cash crops;
   • Additional information and verification through informal interviews, observation, and workshop discussions.

3. **Topic: Women's participation levels in various decision-making contexts**
   a. public forums of discussion
   b. family forums of discussion
   c. informal forums of discussion

   Information Collection Method(s):
   • Informal interviews, observation, and workshop discussions.

Barbara Bing

Barbara is approximately 30 - 34 years of age, she attended community school up to Grade 6, and then attended Bonara Vocational school for a two year residential program. Ludwina came to the school the year after Barbara started, and they were in residence together for one year. Barbara says she loved this period of her life, she enjoyed getting to know the foreign lay missionaries who taught at the school as well as the Papua New Guinean nuns. Barbara says she uses the information she learned at the school in many aspects of her daily life, including gardening, cooking, monitoring the nutrition of her children, maintaining relatively hygienic conditions in her household, and occasionally sewing small items of clothing for her children.

She and Ludwina are the youngest women in the village to have arranged marriages. Barbara's parents arranged that she should marry her husband Vincent, whom she did not know at all before the marriage. She says she is happy in the relationship and with the dynamics in their family of four children under the age of nine years. None of these children are in school, the oldest will start school in the upcoming intake session (January 1994) if there are spaces available. Vincent has a Grade 10 education and Barbara is very proud of him. She told me that he would like to find a job as a clerk in a store in Madang, but that if this happened she would prefer to stay in the village and look after the household and gardens.

Barbara lives in the outlying camp of Perum, but is often in the main village visiting with her sisters and aunts, carrying cocoa beans to the road on the days the buyers pass by, or going to the market at the community school. She is an outgoing self-confident woman. She is assured of access to land through her husband's clan rights, and use rights in the area surrounding the camp where she and Vincent grow their food gardens and some of their cash crops. Barbara and her two sisters (Anastasia and Guat) are very close. This may be tied to the fact that their mother died some time ago and they work together to meet their needs, and to help their grandparents who are looking after their youngest, ten year old, sister.

Barbara was more casual in her approach to the workshops than any of the other women. On two occasions she arrived two to three hours late. When she was present, she provided stimulation to other women to overcome their shyness and speak their minds on issues and questions that were up for discussion. She frequently referred to the innovative agricultural techniques that she had been taught at the vocational school and tried to explain in the context of the workshops why people should be open to some of the changes of development.

Appendix 4: Supporting Organizations for the Project

1. Melanesian Environment Foundation

Programming objectives:

- To be a public advocate for the goals and directive principles stated in the National Constitution, especially as they relate to the Melanesian Environment;
- To promote the definition of a Melanesian ethic for conservation and development, firmly based in both the urban and rural contexts and blending traditional and modern ecological knowledge and wisdom;
- To respond to, support and stimulate local level initiatives which are based on the sustained use and development of local resources for community self-reliance and economic growth;
- To forge strengthen and facilitate co-operative action between churches, community, concerned agencies, and government(s) at the local, provincial, national, regional and international levels.

Women's Programs:

At the beginning of 1993, MEF underwent structural re-organization, and a new aspect of programming was added to the organization's objectives. A need was identified to raise awareness of the role women play in managing the environment, and program design was initiated to include women more directly within the organization's operations as well as in their outreach programs. A 'women's desk' position was established and a number of organizational changes were implemented around shared duties, childcare allowances to allow female staff to travel for extension work, and maternity leave benefits.

The design of programs to be directed toward women had not been completed at the end of this research period. However, I did spend two days in a workshop setting with MEF staff and trainers, and one Greenpeace local staff person discussing the process I used in my research and how my experiences might be useful to them.

Support Provided:

MEF sponsored my visa application into the country, acted as an ongoing consulting agency on project design, and in the final workshop with MEF staff and trainers provided evaluative perspectives on the activities undertaken in the research process.

2. CUSO-PNG

Programming objectives:

CUSO-PNG's programs aim to support local non-government organizations in their work to improve human and social development in the country.

Women's Programs:

CUSO-PNG does not currently have a specific 'women's program,' but they do conform with the larger organizational goals to promote gender equity at all levels in the organizations they support. As a result of this commitment, CUSO has undertaken to sponsor volunteers in PNG to support the development of women's programs within NGOs. CUSO has funded the Women's Advisor for MEF for the past two years and currently funds a similar position within PNG Trust, a coalition of groups working to develop critical literacy within the country.

Support Provided:

CUSO co-sponsored my visa application with MEF and did considerable work to facilitate research approval at the national level. CUSO staff offered comments and suggestions about national organizations who could comment on the research design. CUSO also solicited funding to support the development and publication of a workshop guide which will allow other organizations to replicate the workshop component of the research as an awareness raising tool for issues of women and environmental management. In addition CUSO staff and volunteers provided us with accommodation and office use during the times we spent in Pt Moresby.

3. Business Enterprise Support Team (BEST)

Programming objectives:

BEST does pre-business education with rural people, assisting them in considering and evaluating their options for becoming involved in business, including how the changes brought about by business activities may change their lifestyles and living conditions.

BEST's Women's Programs:

BEST has a specific women's program aimed at increasing awareness about the value of women's contributions to rural subsistence lifestyles, and providing leadership and pre-business courses for women.

Support Provided:

BEST staff provided ongoing comments and suggestions on the research process and results which were very useful. The BEST Women's Program Consultant organized logistics and transport to the Networking Workshop and acted as a liaison with the provincial Meri Bung Komiti (Women's Meetings Committee). In addition the BEST staff as a group allowed us to use their computers, phones, fax, copiers to assist us in keeping our data organized.

Appendix 5: Organizations Consulted on Project Design

<u>Organization</u>	<u>Representative</u>
Melanesian Environment Foundation,	**Women's Program Advisor**
CUSO-PNG,	**Field Staff Officers**
National Women's Division,	**Acting Assistant Secretary, and Communications Officer**
National Research Institute,	**Education Officer**
Greenpeace USA,	**Regional Representative** (U.S. based)
Business Enterprise Support Team (rural education organization with specific focus on raising awareness about women's contributions in rural areas)	**Coordinator and Fundraiser**
Provincial Social Development Branch	**Welfare Officer** (who has also previously held the Women's Division position)

Appendix 6: Groups Attending Networking Workshop

Organization	Representative(s)
Business Enterprise Support Team	Coordinator; Women's Consultant; Trainer.
Provincial Health Branch	Head nurse, Madang Town Clinic.
Meri Bung Komiti (Women's Meetings Committee)	President.
Kindergarten Long Ples (Kindergarden)	Staff team (four members) and one Village volunteer.
Provincial Social Development Branch	Welfare Officer.
Institute for Medical Research	Women's Health Consultant; medical doctor working on prenatal malaria risks; post-doctoral researcher in malaria parasitology.

Women and the Environment in Papua New Guinea

A Project Guide to Four Workshops on Environmental Issues in Papua New Guinea

by
Gayle Nelson and the Women of Pepaur Village, Madang, Papua New Guinea

Printed with the assistance of CUSO and the Canadian High Commission

August 1993

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Preface

Who is This Guide For ?

This Project Guide on Women and Environment is designed to be used by any group or organization interested in raising awareness. The workshops highlight a range of environmental issues and the importance of women's roles as environmental managers. The workshop series was originally designed and tested with rural women, but could also be used with mixed groups. While the focus is on rural lifestyles it will also be relevant to people in urban settings most of whom have direct experience with village life and who still have family members in rural areas. The workshop can be adapted for participants with a variety of education levels and experience. Suggestions for adapting the workshops are outlined in the section on 'How to Use This Guide.'

It is highly recommended that facilitators using this guide read through the workshops carefully and consider what other material they are aware of which they may want to use to supplement discussions. The workshops are meant to be adaptable to the needs of different groups and can be focussed down onto specific areas, or sections can be changed to highlight and discuss existing or proposed projects.

The workshops plans are presented in detail, to allow trainers to present them as single units, as a series or in a four day session. Each workshop has notes attached for the facilitator to provide extra information about sources of material, and optional presentation methods.

Acknowledgments:

Who Helped to Make This Project Guide

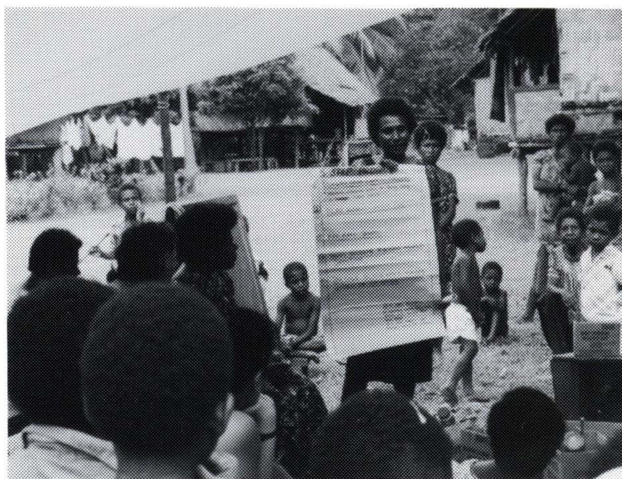
This guide has been produced with the help of a number of individuals and organizations, and is part of a research project on 'Women's Knowledge and Decision-Making Roles in Environmental Management in PNG'

- The men and women of Pepaur Village, in Madang province hosted the workshop series, encouraged the workshop participants and assisted me in my research.

- The Pepaur women listed below gave up several days of their time to participate in the workshops. These women also helped to evaluate the workshop processes and topics, and shared their personal lives and knowledge with me during the time of the workshop series. **Workshop participants:** Julie Irum, Lucy Owara, Christine Kapokam, Valerie Nowi, Elsie Alphonse, Scholastica Nambal, Susan Pessam, Christine Pium, Ludwina Karera, Anastasia Sumayam, Barbara Bing, Sarah Soanu, Aplonia Sikor, Maria Jorwo, Betty Yabis, Barbara Marke, Imelda Nowir, Christine Kiok, Amelia Wasa, Marianne Pium.

- Women from Madang Town, whose organizations and agencies provide services for women, participated in a 'Ples- Taun Netwok Miting' and acted as external resource people to the workshop participants.
  Special thanks to: Mary Kamang and Gloria Pari of the Meri Bung Komiti; Flavia Arnold, Mandy Stringer and Sally Brooks of the Business Enterprise Support Team (BEST); Magdalene Japu, Anastasia Imai, Robin James, Theresa Limbe, and Rose Kovera of Kindergarten Long Ples; Matricia Mari of the Welfare Office, Social Development Branch, Madang Prov. Government; and Sue King and other women's health researchers from the PNG Institute of Medical Research.

The Business Enterprise Support Team (BEST) provided office space and computer facilities for the production of this guide. CUSO-PNG and the Canadian High Commission provided funding for production and printing costs. The Melanesian Environment Foundation and CUSO sponsored my presence as a researcher in PNG and provided advice and support for the workshop series.



The graphics and many of the ideas for topics in the workshops have come from existing materials which have been previously published in PNG on topics of environment, women's work and women's health. Unfortunately, many of these are currently out of print. They are however listed in the Suggested Resources Section, and are well worth copying whenever originals can be found. Graphics used for the posters are from materials produced by BEST and the Liklik Buk Information Centre.

A. Introduction to Women and Environment

Why should we think about women and the environment at the same time ?

Women are key environmental managers working in numerous environmental settings, and therefore need to be considered as important players in decision-making about how to use the environment. Women are the main workers and managers of food production activities for the subsistence of PNG's people, and are also key workers in the production of cash crops. As well when commercial projects are started to earn income from environmental resources, women are often the people most negatively impacted by these projects. This is partly because they often have very little opportunity to take part in the initial decisions about what are appropriate uses for the environment. Women manage the physical and social environment of their family. Women manage the health, nutrition and education of their children. In addition, they contribute a great deal of their time to creating stable community environments through volunteer time given to church and community activities.

Why raising awareness is important ?

- Raising awareness is important to help people make wise decisions about changes being caused by the development of Papua New Guinea.

- Raising awareness is important to help people see the true value of their work and their environments.

- Raising awareness is important to help people learn how to share and use the knowledge they have to solve problems for themselves when outside services are not available.

Women are knowledgeable people when it comes to environmental issues, but often their knowledge and work is not valued, by either themselves or their communities. It is important to raise women's self-esteem and self-

confidence about their own knowledge, so they can act more effectively to maintain healthy environments in their forests, reefs, rivers and households as well as in their families and communities. It is important that other people realize and value women's roles as environmental managers so that training can be delivered at the right levels to the right people. It is important that men at all levels – from sons and husbands, to government leaders – acknowledge the value of women's work and knowledge about environmental issues, and involve women in decision-making about how to care for and wisely use the natural and human resources of the country.

How Can Awareness be Raised ?

Making people think about new ideas and about what they already know are the main ideas behind raising awareness. Discovering the connections between local problems and bigger problems in the province, country or the world is another part of raising awareness. Reading, talking and sharing ideas are all ways of raising awareness, and these activities can be done in many different settings.

This Project Guide provides instructions for four workshops which allow women to share their knowledge, gain new ideas and talk about how their own skills and successes, problems, and concerns have points in common with other people in other places. Hopefully as women learn through these workshops they will feel motivated and encouraged to begin to take considered steps, however small, to improve their immediate environments. Women can also use their existing and new knowledge to raise the awareness of their families and communities about environmental issues, through both demonstration and discussion.

Networking is another way of raising awareness of both the group itself and of the people being communicated with.

B. How to Use the Project Guide

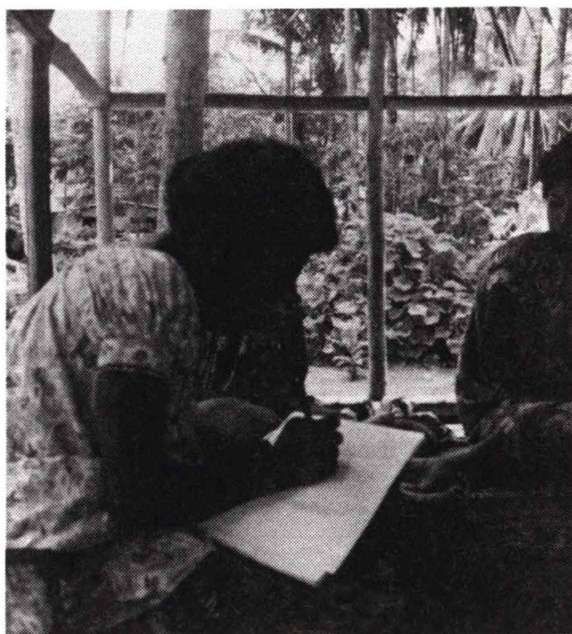
Facilitation of workshops

The number of facilitators required to give the workshops will vary depending on the number of participants. While it is possible for one or two people to lead workshops, they will run most smoothly if there is one facilitator or small group leader for every ten participants. Small group leaders can come from among the workshop participants themselves, or can be outside members of the facilitation team. Group leaders and facilitators may want to trade-off responsibilities for the presentation and debriefing sections of the workshop exercises, in order to keep the energy level high and maintain a clear focus on each topic. More specific guidelines for facilitators are discussed in the Facilitators Notes section.

Adapting the workshops for participants with different levels of education and experience

The workshops in this guide have been designed for use with village women with an education level of grade four or five and up. Participants with high school education can be invited to take part as small group leaders, as described above. These workshops are designed to be challenging, to make people think hard, and to raise awareness. Participants will be tired at the end of each day, and should be encouraged to regard this as a positive sign showing that they are making progress and discovering new parts of themselves. The challenges that they experience can, and should be, shared with other people to stimulate thought and raise awareness further.

The workshops can very easily be adapted for use with more highly educated groups of participants, or people with a wide experience of environmental issues. The main consideration is the timing of the sessions. The more educated and experienced the participants, the longer they will be able to spend discussing the topics in both large and small groups.



There are two ways of adapting the workshops. The overall time can be extended to one and a half or two days per workshop, or certain sessions can be dropped from the agenda. If the second alternative is

chosen, participants themselves should be allowed to review the agenda and decide which sessions to eliminate. It is highly recommended to keep the drama exercise in the workshop, both because it provides a light change of process to the day, and it also allows people to look at issues in a very different light from straightforward group discussion.

The workshops can also be used with pre-literate participants. In this case, it is strongly recommended that there be one fully trained facilitator for every ten participants to act as consistent group leaders to clarify discussion and record small group exercises. For use with pre-literate participants, workshop leaders may choose to reduce the number of sessions per workshop, and have some of the recording sessions be done in the form of rough 'story sketches' or as collages of pre-cut line drawings, so participants can have their ideas visually represented.

** Most of the exercises and report back sections of the workshops have a number of presentation points for discussion. These can be reviewed as a group of ideas to stimulate thinking or can be used for in-depth discussion. How these points are used will depend on the level of the group, the facilitators preference and the time available.

Timing of Workshops: Extended Timetable or Consecutive Days

These workshops were originally designed to be run one at a time over a four month period, with some activities and follow-up between workshops. This format provides an increased opportunity, between workshops, for participants to think about ideas, try small awareness raising projects with their families and develop questions and assessments of their own lifestyles and methods of environmental management. The follow-up aspects depends on the time available and the proximity of the person or organization coordinating the workshops.

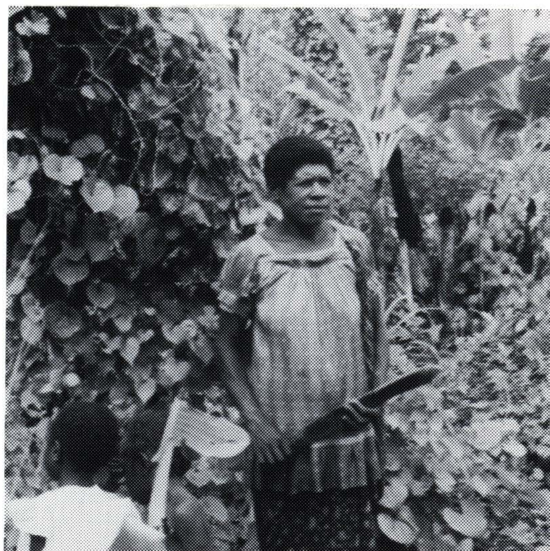
The workshops can also be run on consecutive days or at weekly intervals. It must be remembered that it is often difficult for women to take time away from their other work responsibilities. For rural women with families and ongoing subsistence production responsibilities 'taking off' four consecutive days is often not realistic. For participants from urban areas or those who are already involved in an ongoing training program it would be practical. To hold the workshops on consecutive days, the activities sections will need to be adapted to discussion formats. The networking and media reporting can be discussed and assigned in the first day, and undertaken as a small group project for off-hours. The group responsible can then provide updates and ask for input in Workshops Two and Three, and the entire group can review reports and plans at the end of Workshop Four.

Networking and Media Reporting

Encouraging workshop participants to increase their awareness of existing, available resources and services is the purpose of the networking aspect of the workshops. Using the media to report on the progress and challenges of the workshops provides an opportunity to raise awareness in the larger community. Media reports can also increase the workshop participants' sense of self-confidence about their awareness-raising projects within their immediate families.

In order to accomplish these projects, facilitators need to do some pre-workshop research to inform resource people about the workshops, find out their schedules, interest levels and availability. Networking meeting logistics can be varied to meet the needs of all participants, but it is recommended that the first meeting take place in the participants' village to give participants an opportunity to play the role of host, and to allow resource people to experience the participants' reality. Media reporting can be done through provincial, national, or women's newspapers and newsletters. Facilitators

can find out who the appropriate media contact people are by visiting, writing or calling the newspaper offices and asking to speak to the person who writes on women's issues or environmental issues. Facilitators may also wish to explore the possibility of having workshop participants, or resource people from the networking group do an interview on local radio programs.



Potential for follow-up: meshing organizational goals with community awareness activities

Follow-up activities held between workshops or at the end of the series, offer the opportunity for organizations to evaluate the clarity of their own aims and double-check how their assumptions about issues of women and the environment mesh with the lives of different groups of people. Many of the exercises and discussion sessions in these workshops can be adapted to cover specific issues, ideas or projects that organizations wish to test or implement. Follow-up discussions, assessments or activities then act as both a motivation to participants trying new activities, and as an evaluation opportunity for the organization sponsoring the workshops. Awareness aids such as posters, dramas, and presentations can be used between workshops for dual reinforcement and clarification of both workshop ideas and organizational awareness goals.

Suggested family activities for environmental stewardship

The following ideas can be suggested as small group projects which women can do together with their families. Women should also be encouraged to create their own individual and family projects to meet their specific environmental concerns and which will suit the resources available to them. With all of these projects it is important that women understand the value of sharing information with their families and encouraging their children with their projects. This can include asking children to give the family daily updates on how their projects are going, and praising them for maintaining interest.

- Plant special flower gardens and share the seeds with other children;

- Build a compost close to the house for vegetable and fruit refuse which can be put on fruit trees, flowers or gardens;
- Start a fruit tree nursery with a tree for each child in the family;
- Create a garbage collection point where children can bring garbage they find around the village;
- Start a returnable bottle collection in one village location, and use the proceeds to buy seeds or new plants to beautify the village;
- Use old tins and tires to make planters for flowers, these containers can be painted with the names of children who plant and look after them.
- Have children tell stories about what they learn in school about gardening and looking after the environment;
- Have children count the numbers of different kinds of birds and animals they see when they walk to the garden or to school.
- Start a family list of plants that village elders used as medicines.
- Ask village elders to tell stories about looking after the environment, and the rules their parents had to prevent overuse of resources.

Suggested resource material for rural women wishing to explore issues related to the environment.

This list of materials represents some of the resources created in Papua New Guinea which address issues of the environment and consider the concerns of women. Excerpts from these materials can be used as handouts or extra readings during workshops, or as additional resources to meet specific interests of participants. These materials also provide many ideas that can be used for further projects or discussion outside the workshop setting.

- Yu Tu Ken Daunim Sik Long Ples, undated, by N. Cape, B. Osake and L. Sow, Liklik Buk Information Centre, UniTech, Lae.
- Stori na Wok, undated, by Elizabeth Cox, Liklik Buk Information Centre, UniTech, Lae.
- Save na Mekim. 1982, by Dr U. Bergman (ed.) Liklik Buk Information Centre, UniTech, Lae.
- LikLik Buk. 1987, by Amanda Twohig (ed.), Liklik Buk Information Centre, UniTech, Lae.
- Changes Challenges and Choices: Women in Development in Papua New Guinea. 1991, by Elizabeth Cox and Molly Daure, Women's Div of the Dept. of Home Affairs and Youth, Port Moresby.
- The Health of Women in Papua New Guinea. 1990, by Joy Gillet, PNG Institute of Medical Research, Goroka.
- New Directions for Women in Non-formal Education. 1987, by Alison Mathie and Elizabeth Cox (eds.), Kristen Pres Inc., Madang.
- Ol Meri i Ki bilong Go Het bilong Papua Niugini, 1991, Business Enterprise Support Team, Madang.
- Introduction to Commerce and Business, 1992, Business Enterprise Support Team, Madang.
- PNG Trust, Literacy and Environmental Awareness Materials Packets, 1991, PNG Trust, Port Moresby.

C. Facilitators Notes

Facilitators should read the whole introductory section of this project guide, and be prepared to adapt the workshops to the level of the group of participants and the materials available. The workshop plans can be adapted for both time and experience of the group by omitting or adding questions, and by requiring more or less detailed discussion. All these issues are discussed in more detail in the 'How to Use The Project Guide' section.

Preparing material for workshops

When preparing for each workshop, the facilitator should check that the following material is all on hand to use in presenting the workshop:

- workshop agendas and plans
- workshop posters
- questions for small group discussion written on flip charts or copied onto recording sheets, or ready to be copied onto a blackboard
- extra resource material and handouts (these may be copies of the posters for participants to take home, photocopies of newspaper stories, handouts from other groups interested in the environment)

Using participants as small group leaders

If possible, facilitators should try to identify three or four participants who are interested and willing to act as small group leaders throughout the workshops, and to be contact people both before and after the workshops. As contact people these leaders can assist with the logistics of organizing a space for the workshops, and making sure people are reminded of the day and time each one will be held. Small group leaders will:

- Review agenda and discussion points ahead of time with facilitator.
- Consistently act as facilitators in small groups (see instructions in directions for small groups).

- Act as translators into tok ples where necessary.
- Take active roles in reflecting on report backs.
- Take leadership roles in the reporting out and networking aspects of the workshops.

Directions for small group exercises

- The best size for small groups is four to six people.
- When dividing participants into small groups it is good to make sure that the members of each group are of different education levels and ages so they can give different views on the issue under discussion.
- Assign one person to act as facilitator for each small group. This person's job is to clarify instructions, make sure that people don't loose track of the topic, and that everyone in the group gets a chance to speak.
- Assign one person to act as a recorder for each small group. This person's job is to clarify the questions the group is discussing, and that the answers are written down and reported back to the large group.
- Questions for small groups can be written on a blackboard or on flip charts and copied down by the group recorder. Questions can also be prepared in advance – written on the top of a blank sheet of paper and photocopied for the groups to use as recording sheets. This method is faster and easier.

How to use the posters

The posters are included in the package to help illustrate some of the ideas and terms that people may not be familiar with. The posters are meant only to give a few ideas and start people thinking. For the exercises where the use of posters is suggested, the facilitator can talk about the discussion points presented and then use the poster to show some pictures of the same idea. It is important to talk about the connections between the pictures and the ideas and to then work with participants to think of other ideas that are also related to the topic being discussed.

Points for using drama as a workshop tool

Instructions for putting on the dramas are included in each of the workshop plans. Facilitators should try to include all participants in at least one drama over the course of the workshop series, and should try at all times to encourage the participants to be as creative as possible drawing on their own experience as well as experiences they have heard of through the media and word of mouth. Facilitators should be very positive and supportive about participants roles as actors. Neither facilitators nor the audience should criticize the actors or their choice of topics after the group has agreed to them. The session following each drama can discuss how realistic the dramas were and what other options there might be for dealing with the problems or issues shown in the drama.

AGENDA: Workshop #1

i Opening Prayer

A. Introduction

- Purpose of the workshop series, agenda review, what people do in workshops, how people feel in workshops.
- Round of self-introductions with statements of favorite work or leisure activities. Whole group discusses how each activity depends on the environment.
- Use posters and handouts to explain ideas of environment and raising awareness.

B. Background to "Women and Environment" Ideas in PNG

- Circulation and review of some of the materials that have been produced on issues related to women and environment in PNG.
- Discussion of materials, taking note of the focus on increasing women's knowledge and participation in development and the number of areas which overlap with different kinds of environmental issues.

C. Signs of a Healthy or Sick Environment

- Small group discussions to list three signs that show when an environment is sick and when it is healthy. One topic per group:
  1. Village and home environment;
  2. Cash crop garden environments;
  3. Food gardens;
  4. Wild places used for gathering.
- Report back reflects on why environments may not be healthy, and what can be done to improve them.

D. Drama

- Whole group discussion and selection of a key problem in the village environment.
- Whole group selects characters and actors.

Lunch

D. Drama (cont'd)

- During lunch, and for a short time after, actors plan their skit.
- Audience discussion about points to watch for in the drama.
- Skit presentation.
- Debrief of issues from the audience and players.

Stretch Break

E. Action Planning and Enlisting Family Support

- Whole group discussion on what actions individuals can take to improve their environments. Revisit concepts presented in materials in Session B.
- Small group discussions on most effective ways to involve children in environmental care and stewardship.
- Report back and ask women to choose a project they will try with their families

F. Follow-up to Workshop

- What will happen in the next month/days: activities with families; and schedule of visits to participants.
- Facilitator reviews what will happen next in the workshop series

G. Discussion on Reporting and Networking

- Whole group discussion of reporting out as form of networking and how women can use media to raise awareness.
- Whole group discussion about what should be in the report, who will write the report, and who it should be sent to, for example, the Melanesian Environment Foundation and National Women's Division.

Workshop Closing

Workshop #1

Introduction to Women's Roles in Environmental Management.

i Opening Prayer

A. INTRODUCTION

Total time: 1 – 1&1/2hours

Purpose of this session is to explain how the workshop series is designed, what will happen, and what participants can expect to happen.

1. **Discussion/Presentation Points: What are the workshops are about.** (20 minutes)

- Explain and review the following points and use posters and handouts to illustrate the ideas. (Posters 1 & 2)
- This series is scheduled to have four workshops that will fit together. The information from each workshop will build the others. This workshop will look at what types of environments there are, and what roles women play. The following three workshops will look more closely at some of these issues in the context of Environment and Health; Management of the Subsistence Environment; and Commercial Uses of the Environment.
- The workshop series has several overall purposes which will be reviewed at the start of each workshop.
  a) To look at what environment is, and what role women play in looking after the environment;
  b) To clarify and discuss in the workshop what women do know, so we can find out what women need to know more about;
  c) To think and talk about how women can strengthen their customs and practices which look after the environment, and change patterns of use which may damage the environment;
  d) To talk about using the environment properly so it will be strong and healthy for future generations.
- Explain that if people have never been in a workshop before they may find it scary or confusing because they do not know what to expect. We will review the agenda so people know what will happen throughout the day, and people should take the opportunity to have fun and share their ideas.
- Point out that women tend to be quiet when they are unsure of themselves, but that if they don't speak out, the workshop will not be productive.

2. **Review Agenda** (10 minutes)
- Go over the points in the agenda, briefly explaining the topics and the types of exercises that will be used.
- Reinforce that participants need to talk a lot and share their ideas if the workshop is to be a success for themselves and others. Everyone learns from everyone else. Participants should ask lots of questions, be supportive and try to think of working cooperatively and not competetively.
- Ask if women have any questions about the workshop series or the agenda for Workshop #1.

3. **Exercise: Round of introductions** (30 min -1 hour)
- Each person gives her name and states one of her favorite activities of work or leisure, and why she likes to do it;
- The facilitator takes note of what participants have mentioned and reflects their choices of activities back to them looking at how each activity is connected to the environment and how the environment provides different things of value to us. This reflection can be done with the assistance of the group after each participant speaks.

B. BACKGROUND TO WOMEN AND ENVIRONMENT IDEAS

Total time: 50 minutes

Purpose of this session is to look at some of the material that has been produced by and for PNG women about women's role in using and caring for the environment.

1. **Discussion/Presentation Points: What material is available.**
   Distribute available materials collected on Women and Environment, and go over the following points. (15 minutes)
- Many people in PNG recognize that women do most of the work in looking after home, children and in subsistence gardening;
- People are also beginning to see that women are overworked, that it is important for more people to understand how women look after the environment, so that they can help and support women in this work;
- One way that this can happen is to talk more about women's work and knowledge and put more information into books, newspapers and onto the radio;
- Another way is for women to teach both male and female children the importance of a healthy environment;
- Many people have already produced material to help women (and women and men together) to look after their environment;

- There are many good ideas that women can use to improve their work and to help them look after the environment. Some of the ideas in the books on hand can be done by individual women, some are for groups, and some can be done with children and families.
- All of the ideas in the materials should make women feel proud of the work PNG women do. One ongoing project women can undertake is to begin consciously teaching children to look after the environment so it will be strong enough to support future generations.

2. **Exercise: Review of print materials** (20 minutes)

- Ask pairs of women to spend 15 minutes looking through the books and other print materials and discuss for about 5 minutes what they found interesting and useful to themselves in the content and images.

3. **Report Back** (15 minutes)

- Ask each pair of participants to mention one thing they found interesting about the materials on view, and why.
- Arrange to put books and materials in a place where women can look at them at lunch and after the workshop.
- If possible have a place to keep materials where women can look at materials between workshops.

C. SIGNS OF A HEALTHY ENVIRONMENT

Total time: 50 minutes

Purpose of this session is to look at how women can tell if the environment is sick or healthy.

1. **Discussion/Presentation Points: Signs or indicators** (10 minutes)

- The signs that show if an environment is healthy or being spoiled are called indicators, and can a) show us that the way the environment is being used will keep it healthy for others to use in the future; or b) show us we are damaging the environment through certain practices.
- Ask the large group to think of a few signs that would show that a large timber project or mine were damaging their environment.
- It is easy to see the signs of damage caused by big projects, but it is also important to think about how our day to day use of the environment may cause damage.

2. **Exercise: Indicators in the local environment** (20 minutes)

- Small groups will look at different aspects of the environment, and talk about signs that show us if the environment is good or has been used too much, or damaged by weather or specific activities of people or animals.

- Divide participants into four groups. Hand out paper and pens to each group and ask one person to record and report back.
- Assign one topic to each group: Food gardens; Cash crop gardens; Bush or wild places; The village or community.
- Ask each group to list 3 or 4 signs that show if a place is sick and three signs that show a place is healthy.

3. **Report back** (20 minutes)

- As the reports are given, ask each group to explain:

a) how or why the negative indicators happened;
b) how negative signs can be avoided; and
c) how positive signs can be strengthened.

- Facilitator can raise issues that may have been missed, for example, expansion of kunai and deforestation; run-off pollution from pesticides on plantations; conservation issues.

D. DRAMA

Total time: 1 hour & 10 minutes (excluding lunch break)

The purpose of this session is to have women identify and explore an issue of environment that exists in their households or village.

1. **Discussion/Presentation Points: Local issues.** (5 minutes)

- Ask group to remember session on signs or indicators and have the group briefly discuss what is the main environmental problem or issue that exists in the village. This should be a management issue (something that women can do something about) : ie. toilets, water supply, garbage, grass cutting, clinic maintenance etc. The issue could be one that women experience within their individual families, or in the community as a whole.

2. **Exercise: Drama logistics** (10 minutes)

- Have the group identify and confirm the topic of the drama based on their assessment of what is a key problem in their own village or in their own households.
- Have the group identify characters and actors. This should be 5 - 7 people. Make name tags for the characters if necessary.

3. **Briefing Session: Actors** (10 minutes)

- Audience may attend or be excused for lunch
- Brief actors on what should be emphasized in the skit, and/or provide them with the following checklist of key points.

Plot Guidelines
a) what is the main problem
b) how did the problem come about
c) what are options and obstacles
d) how are decisions made

Acting Guidelines
a) face audience
b) speak up
c) use humour
d) stay in character

LUNCH - actors to eat together and plan skit.

4. **Exercise: Final skit preparation and audience briefing** (15 minutes)
- Actors to firm up plot and roles and do a dry run.
- Audience and the facilitator review 'points to watch for', discussion of why these kinds of questions are important to closer examination of any problem:
  a) who is positively and negatively affected;
  b) what skills are demonstrated to be lacking or are needed to address the problem;
  c) have all the options been covered;
  d) who has the power to make necessary decisions to act on this kind of problem.

5. **Skit Presentation** (5 - 10 minutes)

6. **Debrief of drama** (15 minutes)
- Use questions and discuss how the approach taken by the actors fits with what real actions women in the participants' village could take to address such issues. If the outcome of the play did not result in a positive solution, briefly list steps that could be taken to create a problem solving plan of action for such a situation.

E. ACTION PLANNING AND FAMILY EDUCATION

Total time: 1 hour 20 minutes (including break)

The purpose of this session is to plan ways that women can work with their families to strengthen the environment.

1. **Discussion/Presentation Points: Educating Families** (10 minutes)
- The overall aim of the workshop series is to strengthen women's ability to educate their families about looking after the environment, in order to reduce overwork and share responsibilities more evenly with other family members.
- On each workshop day this issue will be discussed to look at the easier and more difficult sides of educating families.

- In between workshop sessions women can try new ideas or increase family education about existing activities. These will be women's personal projects. Facilitator can be available for assistance in implementing some ideas with individuals.
- If people are interested in starting a group project they can decide to approach the facilitator for assistance in clarifying planning and leadership ideas.

2. **Exercise: Working with children.** (15 minutes)

- Form two groups and ask each group: to list three or four activities in taking care of the home environment. For each activity think of ways that pre-school children and school children can help. For each activity think of two reasons mothers can give children to explain how that activity makes their environment better for the family.

3. **Report back** (20 min)

- Group report back and identify key areas to involve young children and school children. Suggest that women to ask school children to share with the family what they learn at school on this topic. Women may also want to discuss the difficulties they anticipate in involving children in this type of activity, and how they might be addressed.

4. **Discussion/Presentation Points: Possible Activities.** (20 minutes)

- Facilitator asks all women to concentrate for the next month on sharing ideas of the workshop with her family.
  Women should make an effort to explain to her children:
  a) why she is doing each task
  b) how that work benefits the family
  c) how young children can be important by helping
  d) to ask young children to explain these reasons back to her
- Suggest that women consider starting a small project with their husbands and/or children, for example, a special flower garden; a compost for kitchen refuse which can be put on fruit trees or flowers; a fruit tree nursery with a tree for each child; a garbage collection point where children can bring garbage they find around the village; to ask village elders about ancestral stories about looking after the environment. Ask women which ones they think would be easiest and the most fun. Ask which would interest different age groups and the whole family. A handout can be provided with suggestions printed. Make sure to include a space for projects that women and their families can decide on for themselves.
- Point out that women may also want to meet again outside the workshop to discuss possible group projects.

F. REPORTING OUT AND NETWORKING

Total time: 30 minutes

The purpose of this session is to discuss whether or not participants would like to publicize the fact that they are having a workshop series on 'Women and Environment'. (Poster # 4 can be used to introduce this session)

1. **Discussion/Presentation Points: How to report on workshops.**

- Who participants would like to inform, for example, National Women's Division, Melanesian Environment Foundation, Provincial Women's Council etc.
- What participants want to be in the report. Points may include:
  a) The name of the village and the number of women taking part
  b) The number of workshops women will attend or the number of days a longer workshop will last
  c)What types of follow-up activities women will do
  d) Topics to be covered in the workshop
  e) Techniques used in the workshops eg. dramas and small groups
  f) Questions or issues women identified about their environment
- How the report will be written: people working as a team; taking turns; assigning the task to an individual.

H. WORKSHOP CLOSING

- Confirmation of date and time for next workshop

AGENDA: Workshop #2

i Opening Prayer

A. Review of Issues from Workshop #1

- Purpose of session is to clarify ideas from the previous workshop.
- Small groups discuss questions related to women's roles as environmental managers and the of value that work.
- Report back session focuses on the importance of raising awareness within families.

B. Introduction to Environment and Health

- Discussion of various ways of examining problems and issues.
- Game for all participants to look at health concerns and their environmental causes and solutions.

C. Priority Health Concerns of Women

- Pairs of participants discuss their main health concerns.
- Report back session reflects on environmental causes of the problems and allows time for discussion of possible solutions.

D. Population and Environment

- Session examines problem solving and control as aspects of managing environment and health.
- Small groups look at the example of family planning as an environmental issue.
- Report back reflects on how concerns over pressures on the physical environment and land are connected to social environments and the power some groups of people have over other groups of people

E. Drama

- Whole group discussion and selection of a key health and environment problem participants are concerned about.
- Whole group selects characters and actors.

Lunch

E. Drama (cont'd)

- During lunch, and for a short time after, actors plan their skit.
- Audience discussion about points to watch for in the drama.
- Skit presentation.
- Debrief of issues from the audience and players.

F. Report Back on Activities from Workshop #1

- Small groups discuss the activities they have started since the time of the last workshop.
- Report back session reflects on whether participants feel they have made progress in working with their families to raise awareness about the environment, and if women are sharing information with each other.

G. Family Activities for a Healthier Environment

- Whole group discussion of environment and health problems women would most like to address.
- Small groups discuss how families can be educated about these problems and what roles family members can take in improving their environment to improve health.

H. Networking and Media

- Small groups discuss the results of reporting out from Workshop #1, and the possibility of inviting resource people to a networking meeting with participants.
- Whole group discussion and decisions about further media reports to raise awareness of the workshops aims and activities.

Workshop Closing

Workshop #2: Environment and Health

i Opening prayer

A. REVIEW OF ISSUES FROM WORKSHOP #1

Total time: 45 min.

Purpose of session: To clarify our thoughts why raising awareness is important, and what the word 'environment' means. (Posters 1-3)

1. **Discussion/Presentation Points: Raising awareness about the environment.** (10 minutes)
- Read the attached excerpt from Save na Mekim - "Putim ia"
- Review posters on Environment and Environment and Health, talking about the messages, the images and how women's work is key to managing environments for family and community health.

2. **Exercise: How women manage the environment** (20 minutes)
- Small groups review posters looking at all the images, and discussing what they remind them of from Workshop #1
- Ask each group to discuss and respond to two related tasks about environment.
  a) List four areas of the environment that women help to manage or look after.
  b) For each area list two ways that the work women do benefits other people, and list who those people are.

3. **Report Back** (15 minutes)
- After the groups have reported back ask women to consider: Why is it important for women work with their families, and help them to think more about their environments? Refer to posters if necessary.

B. INTRODUCTION TO ENVIRONMENT AND HEALTH

Total time: 1 hour

Purpose of the session is to examine linkages between problems, causes and solutions in environment and health related issues.

1. **Discussion/Presentation Points: Over-riding issues** (15 minutes)
- Breaking environmental concerns into smaller parts helps us see more clearly where we can take effective action. One way to divide issues is to look at what is the main problem, what are its causes and what are its

solutions. Sometimes this helps us see that their are many problems connected to each other. This can help us clarify what are the best steps to take, who can take them, and how solving one problem can sometimes solve others at the same time.

- There are two questions which people should keep in mind as they are playing the game: (these can be written on a blackboard or flipchart)
  a) How does environment affect health?
  b) How can the environment be improved to improve health?
- To start people thinking, read aloud from one or two sections in Changes, Challenges and Choices by Elizabeth Cox, these are attached at the back of this workshop plan.

2. **Exercise: Web Game** (35 - 40 minutes)
   Instructions for the game:

- Form a seated circle (if space is limited, form 2 circles, one inside and one behind, and women can play in teams of 2);
- Use three colours of wool to represent, a) problems, b) causes and c) solutions;
- First player holds the ball of wool (colour for problems). She names a problem that has to do with health and environmental management, and throws the ball of wool across the circle;
- Second player (who has caught the ball of wool) is given the colour for causes. She names one cause of the problem and throws the wool across the circle;
- The game continues with this colour until no one can think of any more causes;
- The last person with causes is given the colour for solutions, she names a solution and throws the wool. This continues until all ideas for solutions are used up;
- The color for problems is passed around the outside of the circle (to the last person holding the colour for solutions) and the game starts again with another problem.

3. **Debrief game** (10 minutes)

- Discuss how the colored strings let people see, and imagine more clearly, the connections between problems and their solutions, and to look at how different causes can be addressed. The game also shows how women can play key roles in all attempts to finding solutions, and to educate others to help implement solutions. Review key points and questions to make sure most connections have been made. Ask women to name some common solutions to different environment and health problems.

C. MAIN HEALTH CONCERNS FOR WOMEN

Total time: 30 minutes

Purpose of the session is to discuss health issues which have been shown to impact most heavily on PNG women.

1. **Exercise: Personal Health Issues.** (10 minutes)

- Ask pairs of women to talk quietly with each other for a few moments about what aspects of their lives and work they feel take the biggest toll on their bodies.

2. **Report Back** (20 minutes)

- Ask one woman from each pair to present one point, go around the room and ask each pair to add to the list.
- Choose the two most commonly mentioned problems, and ask women to speak about some of the causes and complications that make these health issues so common for women. Highlight the environmental causes.
- Ask women to think of 3 ways in which environments could be better managed to control these health risks/diseases. Write these on the blackboard or flip chart. For each idea, list what blocks might stop people from dealing with these problems.

D. POPULATION AND THE ENVIRONMENT

Total time: 45 minutes

The purpose of this session is to examine problem solving and control as aspects of managing 'environment and health' and to look at the connections between social environments, power issues between different groups and pressures on the physical environment.

1. **Discussion/presentation points: Population and environment** (10 minutes)

- The issue of access to family planning information and contraceptives has been identified as a problem in PNG in many of the materials produced on women, environment and development.
- We can look at this issue, and others, in a way that gives women more power to find answers to the problems that they face and to make choices with their partners about planning their families.
- Using the specific example of family planning, discuss how population and environmental management are related. Review points on population from Changes, Challenges and Choices by Elizabeth Cox, these are attached at the back of the workshop plan.

2. **Exercise: Family planning** (20 minutes)

- Small groups look at the example of family planning in light of the following questions:

  What are the parts of the problem:
  a) What do women want to achieve and why - discuss specifics of #s/spacing.
  b) What things block them from reaching their goal?
  c) What do they need to do before they can reach their goal ?
  d) How can they access what they need ?

3. **Report back** (15 minutes)

- Reflect on what women feel are the biggest challenges for them in dealing with rapidly growing population.
- Discuss what participants would need to do to develop an action plan to involve resource people and raise awareness about issues of population and environment. Handout resource information.

E. DRAMA

Total time: 1 hour (excluding lunch break)

The purpose of this session is to have women identify and explore an issue or problem related to environment and health.

2. **Exercise: Drama logistics** (10 minutes)

- Have the group identify and confirm the topic of the drama based on their assessment of what is a key problem in their own village or in their own households.
- Have the group identify characters and actors. This should be 5 - 7 people. Make name tags for the characters if necessary.

3. **Briefing Session: Actors** (10 minutes)

- Audience may attend or be excused for lunch
- Brief actors on what should be emphasized in the skit, and/or provide them with a list of key points as a checklist:

Plot Guidelines
a) what is the main problem
b) how did the problem come about
c) what are options and obstacles
d) how are decisions made

Acting Guidelines
a) face audience
b) speak up
c) use humour
d) stay in character

LUNCH - **actors to eat together and plan skit.**

D. DRAMA (cont'd)

4. **Exercise: Final skit preparation and audience briefing** (15 minutes)

- Actors to firm up plot and roles and do a dry run.

- Audience and the facilitator review 'points to watch for', discussion of why these kinds of questions are important to closer examination of any problem.
  a) who is positively and negatively affected
  b) what skills are demonstrated to be lacking or are needed to address the problem
  c) have all the options been covered
  d) who has the power to make necessary decisions to act on this kind of problem.

5. **Skit Presentation** (5 - 10 minutes)

6. **Debrief of drama** (15 minutes)

- Use questions discussed earlier with the audience and talk about whether the approach taken by the actors fits with what real actions women in the participants' village could take to address such issues. If the outcome of the play did not result in a positive solution, briefly list steps that could be taken to create a problem solving plan of action for such a situation.

F. REPORT BACK ON ACTIVITIES

Total time: 30 minutes

The purpose of this session is to give participants an opportunity to share the activities that they have been doing with their families since the previous workshop.

1. **Exercise: What have women done.** (15 minutes)

- Small groups are formed, and group leaders are asked to draw women out on what they have tried to do with their families in the last month.
  a) What activities have people tried ?
  b) What has family response been from husbands, parents, and children ?
  c) Were participants aware of other people's projects?

2. **Report back** (15 minutes)

- After all groups report, ask participants to comment on two questions:
  a) How can we tell if we are making progress ?
  b) How can we share with each other and be supportive ?

Stretch break (10 minutes)

G. IDENTIFICATION OF POSSIBLE ACTIVITIES FOR ENVIRONMENT AND HEALTH Total time: 45 minutes

Purpose of session is to develop a list of suggested activities that women can undertake to improve their own and family health through environmental stewardship.

1.Discussion/presentation points: Managing for healthy environments (15 minutes)

- Review issues raised in web game and ask participants to choose problems they feel could be taken on as projects to involve family members. Some examples are:
  Family planningOverwork
  NutritionRespiratory illness
  Malaria preventionHygiene related problems
- Record these issues on the blackboard or flip charts and have women identify two or three that they would like to take action on.

2. Exercise: Educating families. (20 minutes)

- Form small groups and identify activities that different people in the family can do to control or manage the environmental causes of these health problems: Pre-school children; school children; young adults; men; women. When participants are not sure of how causes and activities are inter-related they should list who potential resource people might be who could help identify actions to be taken. (Some practical examples can be found in the book: Yu tu ken daunim sik long ples)

3. Report back (10 minutes)

- Record answers on blackboard or flip charts.
- After all reports have been made, review to make sure all obvious actions are listed.

H. NETWORKING AND MEDIA

Total time: 40 minutes

The purpose of this session is to explore ways of using media and networks as tools for raising awareness. (Poster # 4)

1. **Discussion/presentation points: Media and resource people** (5 minutes)
- Facilitator reads any media or other reports that have resulted from the first workshop.
- Ask the group to consider if they would like to invite resource people to speak to them on any of the key issues they have discussed during the day as areas of concern.

2. **Exercise: Working to increase awareness.** (20 minutes)
- Small groups are formed to discuss either or both of these questions:
  a) How it feels (or how they think it would feel) to have themselves written about in the newspaper. Each group should list 2 or 3 ways that they think this kind of media coverage can help to raise awareness about issues of environment.
  b) Who they would like to invite as resource people, and how they could arrange to meet with them.

3. **Report back** (10 minutes)
- Discuss networking possibilities. Who to contact first, where to meet and what the resource people would be asked to talk about.

4. **Exercise: Preparing reports.** (10 -20 minutes)
- Whole group discussion to decide on what type of reports participants would like to make.
- Identify women to prepare report on Workshop #2, possible topics could include: main health concerns and their environmental causes; how women are planning to network with resource people; what work they plan to do with their families. (see also Workshop 1 instructions for reporting)
- Discuss possibility of having a radio interview and the option of asking resource people to work on it with participants.

WORKSHOP CLOSING

Reading for Session A:

"Putim ia – Kirapim Tingting - Kirapim Ples"

Bihainim pasin blong bosman na kirapim tingting, dispela em i no gutpela tumas. Long wanem, bosman i save hatim na hariapim ol wokboi blong en.

Bihainim pasin blong tisa na kirapim tingting, dispela tu i no gutpela tumas. Long wanem, tisa i tilim save bilong en long ol pikinini, na ol i wok long kisim tasol. Ol i no save skelim.

Bihainim pasin blong wantok na kirapim tingting, dispela em i gutpela tru. Long wanem, wantok i no save toktok tasol na autim tingting blong em yet olgeta taim. Nogat. Em i save putim ia tu long harim tok blong arapela wantok.

Givim spes
Dispela pasin blong putim ia i no rot blong mekim wanpela man o meri kamap bikpela. Nogat. Em i rot blong givim spes long ol manmeri, bai ol yet i ken lukautim samting blong ol.

Ol pipol blong ples, ol yet ken skelim sindaun blong ol. Ol yet i ken tokaut long wanem wok ol i laik mekim. Na ol yet wantaim sampela autsait lain ken wok long kirapim.

Tru ol autsait lain i gat planti tingting na save. Em i orait. Ol lain long ples tu i gat save na tingting. Ol wok bai kamap moa beta sapos ol autsait lain i bihainim pasin blong toktok i go i kam.

Ol lain long ples bai givim sampela save na tingting long ol autsait lain. Long wanem, planti save na gutpela tingting i stap hait long ples.

Tru, sampela manmeri i no bilip moa long save blong ol yet. Long wanem, ol i lukim planti nupela samting. Tasol maski. Sapos olgeta bihainim dispela rot blong toktok na putim ia tu, bai sampela gutpela tingting na save blong ol i ken kamap ples klia gen.

AGENDA: Workshop #3

i Opening Prayer

A. Review of Previous Issues and Ideas

- Purpose of the session is to briefly talk about issues covered in the first two workshops to check that people are clear about ideas.
- Small groups discuss what people felt were interesting and difficult or challenging ideas from Workshops One and Two.
- Report back session reflects on how difficult issues and ideas might have been talked about more clearly.

B. Introduction: What Does Subsistence Mean

- Whole group discussion on what subsistence is, and how subsistence lifestyles are being changed by development.
- Small groups become three teams in a game about the benefits and trade-offs between the changes of development and subsistence activities.

C. How is Development Impacting the Subsistence Environment

- Whole group discussion on pressures being put on the subsistence environment by development and change.
- Small groups discuss the impacts of development on food production and better ways to use the environment so subsistence activities can continue to provide for the needs of rural people.
- Report back reflects on using paticipants' ideas to raise awareness in other communities.

D. Personal Assessments of Subsistence

- Pairs and then small groups of participants discuss their own feelings on their ability to meet family and community needs through subsistence activities.

E. Drama

- Whole group discussion and selection of an idea or story which would reflect the real benefits of subsistence activities to rural people.
- Whole group selects characters and actors.

Lunch

E. Drama (cont'd)

- During lunch, and for a short time after, actors plan their skit.
- Audience discussion about points to watch for in the drama.
- Skit presentation.
- Debrief of issues from the audience and players.

F. Conservation in Subsistence Environments

- Whole group discussion about what conservation means.
- Small groups discuss traditional methods of conservation and the extent to which these are still practiced.
- Report back reflects on possible ways of improving conservation and raising awareness about conservation as an important issue.

G. Educating Children About the Value of a Subsistence Environment

- Whole group discussion about the need for children to understand environmental issues to so they can have a good life when they grow up.
- Small groups discuss these issues and each group outlines a children's story, modelled on the traditional stories of their ancestors. The objective of the stories is to teach the importance of looking after the environment.

H. Activities, Reporting and Networking

- Small groups discuss plans for continued networking and use of media to raise awareness about environmental issues.

Workshop Closing

Workshop #3: The Subsistence Environment and Change

i. Opening prayer

A. REVIEW OF PREVIOUS ISSUES AND IDEAS

Total time: 30 minutes

Purpose of session is to think about the issues covered in the first two workshops, and to build on those ideas which will be used in this workshop on subsistence uses of the environment.

1. **Discussion/Presentation Points: Review of workshop topics.** (5 minutes)
- Briefly review agendas and posters from Workshops #1 and #2 to refresh people's memories about the topics discussed.

2. **Exercise: Interesting and challenging issues about the environment.** (15 minutes)
- Divide group into pairs. Discussion the following two questions, which have been written on the blackboard or flipchart.
  a) What was the most interesting idea we talked about in Workshop #1 and Workshop #2 ?
  b) What ideas from Workshop #1 and Workshop #2 were the most difficult to understand or the most difficult to find answers to ?

3. **Report Back** (10 minutes)
- Go around the room and ask one person from each pair to report back, discuss how the difficult ideas could be better or more fully covered.

B. INTRODUCTION: WHAT DOES SUBSISTENCE MEAN

Total time: 40 minutes

Purpose of this session is to look at women's knowledge and awareness of how subsistence activities are changing (for example, becoming more reliant on introduced technologies and tools), and to look at the benefits and costs of these changes. (Poster #5)

1. **Discussion/Presentation Points: Women's knowledge about old and new methods of using the environment for family subsistence.** (10 minutes)
- Discuss what subsistence means, and how people are in many cases moving away from pure subsistence.
- 'Traditional' subsistence was the ability to use the immediate environment for all the communities needs. As outsiders have come to

PNG, they have introduced tools and technologies that have changed the ways people use their environment. Give examples and use the poster to illustrate.

- These changes may have both good and bad sides, which people need to think about and weigh in order to make good decisions about how they want to continue to live.
- Discuss briefly who the first outsiders were in the area, what their reasons for coming were and what 'things' they brought with them.

2. **Exercise: Trade-offs Game** (30 minutes)
   Small group discussions where each group has a separate topic:

   Group A: What are 5 traditional ways of gardening that their grandparents used;
   Group B: What are 5 of the new technologies and ideas they have heard about and/or used in gardening; and
   Group C: What makes people use new ways or old ways of gardening, how can people tell if it is good to leave behind traditional ways or to hold onto them.
   List at least 5.

   Each group takes it in turn to state:
   a) an older traditional way of gardening;
   b) a newer custom of gardening; and
   c) what are the pros and cons of each method.

- Let Groups A and B take turns leading the discussion
- Debrief after each set of statements by asking Group C: Have all the good and bad sides of the issue have been covered? Do all participants agree about the benefits of change ? What other changes would help?

C. HOW IS DEVELOPMENT IMPACTING THE SUBSISTENCE ENVIRONMENT? Total time: 1 hour

Purpose of this session is to look more closely at how development is impacting people's ability to use their environment to meet their needs, especially their needs for food and shelter. (Posters #5 and #6)

1. **Discussion/Presentation Points: Changes of development** (15 minutes)

- How can we tell if changes introduced as 'development' are creating pressure to use land for things other than gardening and food production?

- How does this impact women's work loads and their ability to feed their families?
- Did previous generations have ways of making sure that there would be enough fish and animals for their children? What kinds of taboos or rules did they have? Are these changing in good or bad ways? Are the changes related to development?

2. **Exercise: Impacts of development on subsistence production** (30 minutes)

- Small group discussions of two questions:
  a) How have development changes impacted styles of gardening and use of the environment? What are the good and bad sides of these impacts?
  b) How could current gathering and gardening processes be changed to make better use of, or protect the environment? Are these changes practical, what prevents people from making these changes? (allow lots of time to discuss ideas like: kunai expansion, land degradation, impact of cash crops on prime land, distance to gardens, population growth, workloads.)

3. **Report back** (15 minutes)

- Discuss how these ideas can be shared with other rural people to raise awareness about issues of development and subsistence.

D. PERSONAL THOUGHTS ABOUT SUBSISTENCE AND CHANGE Total time: 30 minutes

Purpose of this session is to have women make personal assessments of their ability to cope with changes and meet their families needs through their own subsistence activities.

1. **Discussion/Presentation Points: Ability to meet needs via subsistence.** (5 minutes)

- Ask women to think back to the discussions of the first two workshops, remembering concerns and issues about health, overwork, how fast their community is growing and how they are using land.

2. **Exercise: Looking at our ability to cope with change.** (20 minutes)

- Write these issue areas on the blackboard under the question: Are things getting A. Worse; B. Better; or C. Staying the Same?
- Divide the group into pairs to discuss the question. After five minutes ask the pairs to form groups of four, compare their ideas and record them to report back.

3. **Report Back** (10 minutes)

- As each group reports note issue areas on the board where people feel their ability to cope with change is increasing or decreasing.
- Are there areas were women need to learn more about environmental management to improve their ability to look after their families?

E. DRAMA

Total time: 1 hour (20 minutes before lunch/ 40 minutes after)

The purpose of this session is to have women identify and explore an issue or problem related to the use of the environment for family/community subsistence.

1. **Discussion/Presentation Points: Subsistence issues and women's work** (5 minutes)
   Review purpose of drama in the context of this workshop. Encourage participants to consider relationships and power dynamics.

2. **Exercise: Drama logistics** (10 minutes)

- Have the group identify and confirm the topic of the drama based on their assessment of what is a key problem in their own village or in their own households. (Suggestion: if there is no readily identified subsistence "problem", base the skit on the scenario of a woman who has been raised in town, and marries into the village. She will have to be instructed in all subsistence activities, their value and costs. Try especially to clarify division of labour and decision-making issues.)
- Have the group identify characters and actors. This should be 5 - 7 people. Make name tags for the characters if necessary.

3. **Briefing Session: Actors** (10 minutes)

- Audience may attend or be excused for lunch

- Brief actors on what should be emphasized in the skit, and/or provide them with a list of key points as a checklist:

Plot Guidelines	**Acting Guidelines**
a) what is the main problem	a) face audience
b) how did the problem come about	b) speak up
c) what are options and obstacles	c) use humour
d) how are decisions made	d) stay in character

BREAK FOR LUNCH - **actors to eat together and plan skit.**

D. DRAMA (cont'd)

4. **Exercise: Final skit preparation and audience briefing** (15 minutes)
- Actors to firm up plot and roles and do a dry run.
- Audience and the facilitator review 'points to watch for', discussion of why these kinds of questions are important to closer examination of any problem.
  a) what does the drama show about the value of women's work in subsistence activities.
  b) what does the drama show about the extent of women's knowledge.
  c) what does the drama show about the extent of changes in the country and the need to maintain the knowledge base that allows people to use their environment for their subsistence.

5. **Skit Presentation** (5 - 10 minutes)

6. **Debrief of drama** (15 minutes)
- Use questions discussed earlier with the audience and talk about whether the approach taken by the actors fits with what is really happening in the country. Discuss how people can be made more aware of the real value of their subsistence activities.

F. CONSERVATION IN THE SUBSISTENCE ENVIRONMENT

Total time: 45 minutes

Purpose of this session is to look at what conservation means, how it has been practiced by elders, and whether change is occuring in conserving the resources that support subsistence. (refer to Poster #6)

1. **Discussion/Presentation Points: What is conservation?** (10 minutes)
- Conservation is making sure that there will always be an adequate supply of natural resources to keep environment from degrading or getting sick.
- In order to practice conservation people have to understand signs and signals from the environment, and to be able to make decisions about how much of any environment can be used at any one time.
- Some cultures have taboos about using some parts of the environment, some cultures have laws to prevent people from over-using plants and animals, some countries have set aside areas to reserve them as examples of balanced environments.

2. **Exercise: Traditional conservation and change?** (20 minutes)

- Four small groups are formed to discuss conservation as practiced by their ancestors and changes that have occurred.
- Each group has two tasks:
  a) List as many traditional conservation taboos or laws as they can think of and note whether they are still practiced today.
  b) List resources which they think are being wasted used badly or degraded in their subsistence environment.

3. **Report Back** (15 minutes)

- If groups are reporting negative changes in conservation, ask them what steps they think could be taken to improve the situation. Who needs to understand and address the problem. What are people using as substitutes for subsistence resources that are being used up, and what are the costs of loosing resources or using substitutes.
- If groups are reporting positive results of continuing conservation, think of ideas about how their example could be used to raise awareness for other people.

Stretch break (10 minutes)

G. EDUCATING CHILDREN ABOUT THE VALUE OF THE SUBSISTENCE ENVIRONMENT Total time: 1 hour

Purpose of this session is to examine how we can continue to educate families about the value of the environment in providing
a good life in rural areas using subsistence activities.

1. **Discussion/Presentation Points: Teaching children to value their environment.** (5 minutes)

- How can children be encouraged to evaluate what is happening to their environment and learn to choose good ways to use the land?
- Talk about stories and drama as tools for teaching children. These are fun and entertaining ways to learn.
- Many stories from our elders have a moral or value lesson in them about the environment ? Ask the group to think of examples of ancestral stories that talk about caring for the environment or community and conserving subsistence requirements.
- Do we need to make new stories to teach children to cope with the changes and choices of development?

2. **Exercise: Stories and games for children** (40 minutes)

- Divide into 3 small groups. Ask each group to list 3 ways in which development is changing their environment, and what are the influences that pull people away from their subsistence way of life.

- Each group should talk about the good and bad things that could happen to their villages and children as a result of people being influenced by these changes? (trade-offs, costs and benefits of these influences and changes)
- Ask each group to make up the outline of a short story (no more than 5 minutes), or the plot of a drama that could be used to teach children about how to notice change and make choices to keep a good subsistence environment.

3. **Report Back** (15 minutes)
- Each group tells it's story.

H. ACTIVITIES, NETWORKING, AND REPORTING

Total time: 1 hr/ 15 min

Purpose of this session is to discuss and plan networking activities. (Poster # 4)

1. **Discussion/Presentation Points: Accessing Resource People** (10 minutes)
- Discuss who has been contacted to meet with workshop participants
- Discuss the skills and experience of the resource people, the time they can give to a meeting, their ability to travel to meet with workshop participants, and what they have stated as their expectations.

2. **Exercise: Networking Meeting** (15 minutes)
- Small group discussions on plans for meeting with resource people:
  - What should the program be?
  - What would women like to ask?
  - What would women like to share?

3. **Report Back** (15 minutes)
- Discuss suggestions in the large group and decide on an agenda for the networking meeting.
- Confirm time and dates for meeting.

4. **Exercise: Reporting Out** (15 minutes)
- Assess the need to report out on the outcome of Workshop #3
- Follow instructions in Workshop #1 for reporting out.

I. WORKSHOP CLOSING

Dates and times for resource people coming. date for last workshop

AGENDA: Workshop #4

i. Opening Prayer

A. Introduction: What is Commercial Use of the Environment

- Purpose of the session is to clarify what land-based resources are and to discuss their commercial use in PNG (or, how resources are used by people to make money).
- Whole group discussion on what women know about these issues and what commercial activities they have been involved in.
- Small groups discuss what they know about three specific commercial activities: logging, copra and market gardening.
- Report back reflects on whether women would like to be more involved in planning about commercial uses of their environments.

B. How Does Selling Land-Based Resources Change the Environment

- Whole group discussion of impacts of commercial uses of the environment.
- Small groups form debating teams to examine the pros and cons of different types of commercial activities using land-based resources.
- Report back/debate is carried out among the small groups.

C. Women's Knowledge, Work Roles, and Decision-Making Control

- Whole group discussion on what women feel they can contribute to commercial activities using land-based resources.

D. Drama

- Whole group discussion and selection of an idea or story which reflects women's roles in the commercial use of the environment.
- Whole group selects characters and actors.

Lunch

D. Drama (cont'd)

- During lunch, and for a short time after, actors plan their skit.
- Audience discussion about points to watch for in the drama.
- Skit presentation.
- Debrief of issues from the audience and players.

E. Women's Choices About Active Involvement in Commercial Use of the Environment

- Whole group reviews examples of women's roles in commercial activities and projects, and discuss the impact of this involvement on their other work responsibilities.
- Small groups discuss what it would be like to have these kinds of projects implemented in their communities.
- Report back reflects on the roles women do play and would like to play in decision-making about commercial use of the environment.

F. Environmental Awareness Within the Family

- Whole group discussion about how the pressures development will increase for rural people in the future, and the need for children to learn about the true value of their land.
- Small groups talk about how adults can teach children to appreciate the environment and understand the importance of making wise choices about how to use it.
- Report back session reflects on different methods of educating children in the home and community.

G. Reporting and Networking

- Whole group discussion about final reporting needs and responsibilities for the workshop series, and how networking with other groups and individuals can continue.

Workshop Closing

Workshop #4: Commercial Uses of the Environment

i. Opening Prayer

A. INTRODUCTION: WHAT IS COMMERCIAL USE OF THE ENVIRONMENT ?

Total time: 1 hour and 10 minutes

Purpose of this session is to develop an understanding of what land-based resources are, and which ones women are most familiar with as commercial environmental resources. (Poster #7)

1. **Discussion/ presentation points: Women's knowledge of commercial use of the environment.** (15 minutes)

- Briefly review the ideas covered in Workshop 3 about what subsistence use of the environment is, and point out that this workshop will look at what happens when people use the environment in different ways to make money, this is called 'commercial use'.
- Use the poster to discuss different types of commercial development in PNG that make use of the land and things that grow on it or lie under it: for example, cash crops, market gardens, fisheries, timber and mining are all land-based resources that people can make money from in different ways.
- Discuss different types of commercial uses of the environment that women are familiar with.
- Discuss which types of activities involve women, and which don't.
- Discuss how some activities are easier for the community to control, than others.

2. **Exercise: Women's roles in commercial uses of land-based resources.** (40 min.)

- Divide into small groups and ask each group to discuss what they know about logging, copra, and market gardening.
- Each group should ask the following questions about each topic:
  a) What work is involved in making money from this activity? b) What is the value of products?
  c) What needs to be done to get the product ready for market? d) What are the rules of selling the product?

3. **Report Back/ Debrief:** (15 minutes)

- Ask women to relate which areas their groups knew more about, and why their knowledge is better in some areas than in others. Follow-up with a large group discussion of the question: Would women like to

know more and become more involved in planning how to use land-based resources for commercial purposes.

B. HOW DOES SELLING LAND-BASED RESOURCES CHANGE THE ENVIRONMENT Total time: 1 hour and 10 minutes

Purpose of this session is to examine what women know about the positive and negative impacts of different types of commercial land use. (Poster #8)

1. Discussion/ presentation points: Impacts (15 minutes)

- Use the poster to explain that the scale of projects and harvesting processes can create different types of impacts.
- Use the examples of a large scale market garden vs selling excess from family gardens and the comparison between portable sawmills and large scale timber harvesting to discuss the scale of projects that are undertaken.
- Use the example of harvesting taro or buai vs harvesting trees to illustrate different types of processes needed to harvest different resources, and the different impacts they cause.
- Discuss how in looking at these issues people need to consider the value of their environment for subsistence, compare it to what value will come from commercial use, and think about what the land will be good for after it is finished being used for commercial purposes.
- Discuss the fact that there are many different sides of the picture to look at before wise decisions can be made.

2. **Exercise: Assessing impacts of commercial use of environment.** (30 minutes)

- Divide into four small groups and explain that each group will have to argue for the good and bad sides of different types of commercial use of the environment.
- Assign two groups to be for commercial uses and two groups to be against.
- Each group should think about two types of land-based resources that can be used to make money commercially.
  a) One group for and one group against: externally controlled large-scale forestry;
  b) One group for and one group against: locally controlled medium-scale cash cropping.
- Each group discusses issues for thirty minutes to consider their arguments.
- Write "Points to Keep in Mind" on the blackboard or flip chart or provide as handouts. These points should help participants consider the conflicts and linkages with other uses of the environment, and could include:

a) what will happen to the land currently being used for gardening and gathering?
b) what will happen to the land that should belong to future generations?
c) how will the activity change the amount of work that men, women and children do in the family and community?
d) who will get jobs and / or money from the project?
e) will there be social changes caused by outsiders coming into the community?
f) what health problems might happen?

3. **Report Back:** (25 minutes)

- Return to large group and ask groups to take turns presenting different sides of the issues.
- Discuss how the control of resources changes with different activities; and how the distribution of benefits from commercial activities can vary.
- Discuss what which parts of the subsistence environment need to be conserved/reserved? Are these being lost or maintained under current subsistence practices, will they be threatened by commercial resource use?
- Are there ways to save enough resources for subsistence uses and also use the environment commercially?

C. WOMEN'S KNOWLEDGE, WORK ROLES, AND DECISION-MAKING CONTROL Total time: 20 minutes

Purpose of this session is to have the large group discuss their feelings about the knowledge and skills women can give to help families and communities make decisions about commercial use of land-based resources.

1. **Discussion/Presentation Points:**

- Using the examples of covered to this point in the workshop, and ask women to discuss why they are or are not involved family and community decisions about commercial activities using the land.
- Discuss women's knowledge and skills and talk about how they could be useful when families and communities are making decisions.
- Discuss whether there are connections between the degree of women's contribution to decisions about commercial activities and women's ability to control other environments: eg family, health, social relations in the village.

D. DRAMA

Total time: 1 hour (20 minutes before lunch/ 40 minutes after)

The purpose of this session is to have women identify and explore an issue or problem related to their perception of their roles in commercial use of land-based resources.

1. Exercise: Drama logistics (10 minutes)

- Have the group identify and confirm the topic of the drama based on a key problem of commercial use of the environment in their own village or regional area.
- The topic should reflect women's involvement or lack of involvement in a commercial project. Ideas that can be suggested are: do women voice their opinions, take stands on issues, discuss impacts with other women, do research, etc. The drama should also explore what options are available, and what resource people or services could help them overcome any exisitng constraints.
- Have the group identify characters and actors. This should be 5 - 7 people. Make name tags for the characters if necessary.

2. Briefing Session: Actors (10 minutes)

- Audience may attend or be excused for lunch
- Brief actors on what should be emphasized in the skit, and/or provide them with a list of key points as a checklist:

Plot Guidelines
a) what is the main problem
b) how did the problem come about
c) what are options and obstacles
d) how are decisions made

Acting Guidelines
a) face audience
b) speak up
c) use humour
d) stay in character

BREAK FOR LUNCH - actors to eat together and plan skit.

D. DRAMA (cont'd)

3. Exercise: Final skit preparation and audience briefing (15 minutes)

- Actors to firm up plot and roles and do a dry run.
- Audience and the facilitator review 'points to watch for', discussion of why these kinds of questions are important to closer examination of any problem.
  a) what does the drama show about the value given to women's skills which could be used in commercial activities?

b) what does the drama show about the extent of women's knowledge of commercial resource use?

c) what does the drama show about the need to understand what the impacts of an activity will be before it is undertaken?

4. **Skit Presentation** (5 - 10 minutes)

5. **Debrief of drama** (15 minutes)

- Use questions discussed earlier with the audience and talk about whether the approach taken by the actors fits with what is really happening in their area and in other parts of the country. Discuss how people can be made more aware of the potential for women's input and involvement in commercial activities.

E. WOMEN'S CHOICES ABOUT ACTIVE INVOLVEMENT IN COMMERCIAL USE OF THE ENVIRONMENT

Total time: 1 hour

Purpose of this session is to discuss what work and decision-making roles women feel most comfortable with, what challenges they would like to take on, and how they feel they can make the best contribution to their community.

1. **Discussion/Presentation Points:** (20 minutes)

- Do women feel they have the knowledge, time and inclination to participate inlocal commercial ventures?
- Review the Village Development Trust proposal for involvement of women in forestry included at the end of this workshop) or find other examples where women have played active roles in commercial resource use. Write the main activities designed for women's involvement on the blackboard, flipcharts or handouts.

2. **Exercise:** (30 minutes)

- Break into small groups
- Ask participants to discuss how these ideas would work in their own village, and to respond to the following questions:

  a) What skills do women feel they would need to undertake such projects?

  b) How do women think the community would react to these types of activities in the village?

  c) What benefits and problems would women associate with these activities? (consider particularly issues of time and existing work commitments)

3. **Report Back** (10 minutes)

- As each group reports back, ask the large group to reflect on the different skills and knowledge that women have which they could apply to increase community benefits and solve problems by taking active roles in decision-making about resource use.
- Ask women to reflect on what they feel would be the single biggest block stopping them from taking a more active roles in such activities

Stretch break 10 minutes

F. ENVIRONMENTAL AWARENESS WITHIN THE FAMILY

Total time: 50 minutes

Purpose of this session is to discuss ways of raising the awareness of children about the value of their environment and the importance of making wise decisions about using the environment.

1. **Discussion/Presentation Points:** (10 minutes)

- Discuss the level of increase that has occurred in commercial resource use in the last two generations.
- Ask women to think about and offer suggestions about what kinds of activities might be taking place in their community in the next two generations.
- Explain that there are many pressures pushing the government to continue to promote both large and small commercial projects using land-based resources. These include the need to raise money to provide services for the growing population of the country, and to continue to pursue its policy of economic development.
- Often the government will not consider the interests of rural people unless rural people draw attention to themselves and argue for their rights to be respected.
- It will become increasingly important for the children of today to be able to argue for their rights to take care of their land so it can be a source of security for their future.

2. **Exercise: Teaching children to make wise decisions** (20 minutes)

- Form small groups to discuss how can women help their children be more aware of the issues and choices that they will face in the future?
- Ask women to list three areas of environmental care that they feel are most important for school aged children to understand.

- Ask women to discuss what they feel are the most effective ways of teaching children about these issues, and what they feel are the difficulties in raising children's awareness about these issues.

3. **Report Back** (20 minutes)

- As groups report back, ask the group to reflect on techniques of child education. Following are some ideas that can be used as a basis of group reflection.
- Discuss which ones would be most suitable to teaching children in the participants' villages, and the reasons why they would or would not work:
  a) multi-generation family discussions about the real value of subsistence activities and impacts of change;
  b) encouraging family members to always ask questions about any activity that is proposed;
  c) asking for assistance from outside resource people to evaluate development ideas;
  d) working with community school teachers to reinforce the curriculum coverage of environmental issues;
  e) reading aloud newspaper stories about environmental issues.

G. REPORTING OUT AND NETWORKING Total time: 15 minutes

- Discussion and decisions about reporting on the last workshop in the series and the potential for the participant group to continue educating their families and continue networking with resource people outside their village or area.

H. WORKSHOP CLOSING

Involving Women in Commercial Forestry Activities

(To be reviewed in **Session E of Workshop #4**)

The following three income generating suggestions were put forward as potential activities that would involve women in commercial forestry projects in rural villages in a proposal developed by Village Development Trust in Lae.

The suggestions are useful because give women a chance to talk about what they would do if these kinds of activities were proposed for their area. Read the suggestions and ask women to consider if they would work in their area using the questions in **Session E of Workshop #4**.

Keep in mind that the proposal includes instruction and advisors who would be available to support the women's activities.

1. Starting a tree nursery and selling seedings to the groups harvesting the forest, who would be obliged to replant areas where they had been cutting. Seedlings could also be sold to other groups who wanted to improve or replant areas that had been logged.

2. Operating guest houses in the to provide a place to stay for government workers and other people from development organizations interested in how rural forest projects work. Resource people from provincial women's groups would be asked to help women get started with these operations and provide advice and support.

3. Using small scale equipment to produce charcoal from the waste wood left after harvesting timber. The charcoal is used as cooking fuel and could be sold at local markets.

Appendix 8: Media Reports on Workshop Project

The following reports appeared in the PNG national press during the time that the research project was taking place. Copies of the reports were circulated among the workshop participants and posted in the village.

Thursday Mar.11 1993 page 20

Women learn about environment

LAST Thursday 16 women of Pepaur village on the north coast of Madang took part in the first of a series of four workshops on women and environment.

The women have agreed to take part in this pilot project which is being supported by CUSO PNG, the Melanesian Environment Foundation, and BEST (Business Enterprise Support Team).

The women of Pepaur manage large households, produce their own food from subsistence gardens, participate in growing cash crops with their families, and have had experience with the results of large scale logging as part of the Kumil TRP.

Pepaur women have decided to have four workshops at one month intervals. The focus of the first workshop was on exploring different aspects of the environment which are managed by women in their day to day work.

Women examined how their roles as managers of homes, subsistence production and cash crops are linked to environmental stewardship.

A key topic of discussion was on how women can use their position as key educators of young children to promote knowledge of sound environmental practices of the next generation.

The workshop participants will spend the next month working with their children and younger relatives to explore ways in which children and parents can work together to clarify why caring for the environment is important and how young children can help in stewardship activities.

During the workshop the participants reviewed and discussed material produced to date in PNG on topics related to women and environment.

They used drama as a tool for portraying environmental problems and community dynamics in their own village.

Participants also facilitated their own small group discussions on indicators of environmental integrity, techniques for family education on environmental issues, and blocks to better environmental management. In this way the women of Pepaur began to identify some of their own needs and some of the challenges which will face them as they begin to work to improve environmental awareness in their families and communities.

Topics for the next three workshops will examine: environment and health; women's knowledge and skills in subsistence production; and impacts of using the environment commercially each workshop will have a follow-up component where women will work with their children and relatives to discuss environmental issues, and reinforce environmentally sound activities.

Between workshops, the women will work with a Canadian researcher, Gayle Nelson, to clarify the overlap of women's environmental knowledge and resource management skills.

This information and the practical experience of the women between workshops will be used to create a project guide for others who would like to hold workshops and build on the environmental stewardship experience of PNG women.

PNG Times, Thursday March 11, 1993. p 20.

Ol meri skul long lukautim gut ol bus na graun bilong ol long bihain

LONG Mas 4, 16 meri bilong ples Pepaur long Madang provins i bin go insait long wanpela woksop o pailet projek em tripela environmen oganaisesen insait long kantri i kamapim.

Dispela projek i sut long tok save na kliaim tingting bilong ol meri long wanem kain samting i wok long kamap long ol bus, graun na solwara bilong ol. Na wanem kain bagarap dispela inap kamapim na wanem samting ol inap mekim long stapim ol dispela bagarap.

Ol dispela tripela grup em CUSO-PNG, Melanesian Envaironmen Faundesen na BEST (Bisnis Entaprais Sapot Tim).

Ol dispela lain meri bilong Pepaur i save lukautim haus bilong ol yet olsem wokim gaden, kamapim kes krop bilong famili bilong ol na tu ol i gat sampela save long katim timba olsem na dispela kos bai helpim ol long luksave long sampela we bilong lukautim tu envaironmen bilong ol.

Long dispela ol kos, ol meri ya bai lain long menesim ol liklik wok bilong ol yet long ples bilong ol..

Taim ol i pinisim dispela ol kos na i go bek long ples bilong ol bai ol i skulim ol lain bilong ol tu.

PNG Wantok, Thursday March 11, 1993. p 19.

Post-Courier, Thursday April 22, 1993 — WOMAN TODAY 39

Woman Today

Workshops on environment

By GAYLE NELSON

WOMEN on the North Coast of Madang are continuing to learn more about environmental issues.

The women from Pepaur village have now completed the second of four workshops in a series devoted to involving women, families and the community in greater awareness of environmental issues.

Nineteen women attended the second workshop which was focused on inter-relations of environment and health.

Participants used games, drama and small groups discussions to explore and identity issues of concern to them.

Group of participants at the workshop.

The women identified three main health and environment problems in their village.

They will have discussions and work with their families and the community to raise awareness about:

- The need for local water supply;
- Overwork related to the environmental management tasks done by women; and
- Population growth and health problems caused by closely spaced pregnancies.

Participant discussed the work they have done with their families to improve their home environment since the first workshop in March.

They also began to develop plans to further activities related to improving the health of their families through better environmental management.

The next steps the workshop participants have set for themselves, is to continue with their children on environmental education and to initiate research on the community project to install a shallow well and pump system in the village.

Participants have also invited resource people from Madang to come and speak to them on the services available to women in the provincial capital.

The third workshop in the series will be held later this month and will focus on women's role in managing the subistence environment and food production.

The fourth workshop will look at women's involvement in commercial uses of the environment.

The women of Pepaur are piloting this workshop series which will then be developed into an environmental awareness project guide that can be used by other women's groups in the province.

This project is being supported by the Melanesian Environment Foundation, CUSO-PNG, and Business Enterprise Support Team.

Madang villagers hold last workshop on environment

By EILEEN TUGUM-KOLMA

THE women of Pepaur village on the north coast of Madang have undertaken environmental awareness with their families.

This was revealed at their third and final workshop on environmental issues on May 20.

During this time, women participated in the areas which has taken place over the last four months.

The four-day workshop focused on women's knowledge and experience on commercial use of land-based natural resources.

During the workshop, women took part in exercises and discussions which helped them to examine their role in commercial ventures.

The women of Pepaur have personal experience of both large and small scale timber exploitation in their area, as well as cash cropping for cocoa and copra.

Participants reviewed and evaluated options of women's involvement in commercial projects associated with small scale timber-milling which are currently being proposed by PNG development associations.

As well, participants examined their potential and willingness to be more actively involved in decision making and planning of commercial activities.

One issue of outstanding concern to the participants was the ability to take on additional work when their subsistence production responsibilities.

Many women felt that it would be necessary to to ease their existing work loads before they could take on new tasks.

During the previous three workshops, women have looked at environment in the village, environment, health issues and the value of subsistence and conservation.

Throughout the series, a strong emphasis have been given to the value of women's knowledge about the environment and their ability to raise awareness within their own families, and to educate their own children to make wise choices about using the environment.

During the final workshop, participants discussed ways in which all aspects of their environment could be properly valued and weighed to allow people to make appropriate decisions.

The project series is published in the form of a project guide for groups and organisations who would like to explore how issues of environment are relevant to women.

The guide is intended to be used by experienced facilitators or teachers.

It includes instructions for workshop leaders, detailed plans for each workshop and instructional posters.

Three hundred copies of the '*Women And Environment Project Guide* are currently being prepared and will be available by September this year.

Organisations wishing to place preliminary orders should send name and address and personal information to either Womens Division, P.O. Box 7354, Boroko or BEST, P.O Box 726, Madang.

Post Courier, Thursday June 3, 1993, p 26.

Appendix 9: Support Materials for Workshops

This list of materials represents some of the resources created in Papua New Guinea which address issues of the environment and consider the concerns of women. These materials were used to develop handouts and extra readings during the workshop component of the research project. They have also been recommended to trainers and facilitators running the workshops for other agencies, to be used as sources of ideas for further discussion.

- Yu Tu Ken Daunim Sik Long Ples, *(You Can Make Your Community More Healthy)* undated, by N. Cape, B. Osake and L. Sow, Liklik Buk Information Centre, UniTech, Lae.

- Stori na Wok, *(Talking About Work)* undated, by Elizabeth Cox, Liklik Buk Information Centre, UniTech, Lae.

- Save na Mekim. *(Understand and Do Things Yourself)* 1982, by Dr U. Bergman (ed.) Liklik Buk Information Centre, UniTech, Lae.

- LikLik Buk. *(The Small Book)* 1987, by Amanda Twohig (ed.), Liklik Buk Information Centre, UniTech, Lae.

- Changes Challenges and Choices: Women in Development in Papua New Guinea. 1991, by Elizabeth Cox and Molly Daure, Women's Div of the Dept. of Home Affairs and Youth, Port Moresby.

- The Health of Women in Papua New Guinea. 1990, by Joy Gillet, PNG Institute of Medical Research, Goroka.

- New Directions for Women in Non-formal Education. 1987, by Alison Mathie and Elizabeth Cox (eds.), Kristen Pres Inc., Madang.

- Ol Meri i Ki bilong Go Het Bilong Papua Niugini, *(Women are the Key to Development in Papua New Guinea)* 1991, Business Enterprise Support Team, Madang.

- Introduction to Commerce and Business, 1992, Business Enterprise Support Team, Madang.

- PNG Trust, Literacy and Environmental Awareness Materials Packets, 1991, PNG Trust, Port Moresby.

Appendix 10: Family Projects

Participant	Project(s)	Men involved
Lucy Oware	Growing new types of plants Building a compost	yes
Ludwina Inup	Building a compost	no
Maria Jowor	none	
Aplonia Sikor	Building a compost, started root vegetable garden close to house	yes
Christine Kapokam	Planted peanut and flower garden close to house (with Elsie)	no
Elsie Alphonse	see Christine Kapokam	no
Christine Pium	none	
Julie Irum	Building a compost (with Anastasia)	no
Barbara Marke	none	
Susan Pesam	Building a compost, new flower gardens	no
Valerie Mamir	Building a compost (with Aplonia)	yes
Betty Yabis	Planted new flower gardens	no
Barbara Bing	Started a fruit nursery for children with one tree/child	yes
Scholastica Nambar	Started small greens garden beside house	no
Sarah Suanwe	Started new flower garden (with Imelda)	no
Anastasia Sumayam	Building a compost (with Julie)	
Christine Kiok	No new projects, but already has big flower gardens and food garden close to camp	no
Marianne Lucas	Started new flower gardens, initiated cutting common area grass	yes
Imelda Philip	Started new flower garden (with Sarah)	no

Appendix 11: Interview Information Solicited[1]

A. Personal Profile/ Village and Family Context

1. Name
2. Age
3. Mother and father's home areas
4. Marital status (marriage arranged or made by choice)
5. Education and training (did she live away from home/ did she enjoy it)
6. Number of children (ages)
7. Number of children attending or who have attended school
8. Husbands home area
9. Husbands mother and father's home areas
10. Do you have your own land? Do you have access to local 'family land' through husbands ownership
11. Whose land are their gardens on
12. Do friends or relatives share food production work
13. Do friends or relatives share care of children and support for school fees and consumer needs
14. Does you or do you and your husband have your own cash crops
15. Do you participate in helping others with cash crop work
16 Do you do any marketing of excess garden produce, other food items or manufactured goods
17 How often do you sell things at the market and how much money do you make? Do you pay a sellers fee
18 Are some products easier to grow or access? Which are easier to sell
19 When you need money, what are the sources for cash

B. Knowledge and Experience of Resource Management:

1.1 Human Resources Issues

1) Personal assessment of own health
2) Personal assessment of health of children
3) Do you perceive health issues as a problem? Why
4) Will all your children attend community school
5) Would you like to see children go to high school
6) Do you think it will be difficult to pay school fees
7) What do you think is the most valuable aspect of education
8) Do you think children use what they learn in school
9) Do you use the knowledge and information you learned in school
10) Do you think school undermines peoples happiness with traditional culture and values
11) At what age do children start helping in the home
12) At what age do boys and girls start doing separate types of work
13) Do you keep your children home from school to help with gardening or household work when you are tired or sick? Do other people?

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[1] The following lists outline the information solicited in formal interviews. The actual questions were presented in Melanesian Pidgin, and were structured in a more conversational way than the points which appear in this appendix.

1.2 Home Management Issues

1) What do you do with different types of garbage
2) Do you have a toilet, how often do you make a new one, who does the work
3) Where do you do your laundry and bathing and dishes
4) What do you use carried water for
5) What types of fuel do you use for cooking, where do you get it
6) Where do you do your cooking
7) Do you have any gardens near your house
8) Do you have sleeping houses in your gardens
9) Who cuts the grass around your house
10) What types of home based work do men do, and how often is this done
11) Do you feel overworked
12) What do you think are the most tiring aspects of home based work
13) What do you do to cope with mosquitos
14) Do you have any methods to reduce the number of mosquitos in the village
15) Have you ever taken drugs to prevent you from getting malaria
16) Do you ever take drugs when you have malaria

2. Subsistence and Gathering

1) How old were you when you started doing garden work
2) When did you first have major responsibilities for planning and managing food production activities
3) What kinds of crops do you grow, and how many varieties
   a) legumes b) leafy greens c) root crops d) others eg fruits, squash etc.
4) How many crops have specific planting times, and how do you keep track of them
5) Which crops need the most care
6) Which crops are most vulnerable to pests
7) What are your pest management strategies
8) When gardens are cleared, how do people decide, and who decides how big to make them
9) What happens to old gardens, which plants come back first, what makes the difference between gardens that go back to being bush and those that are overtaken by grass
10) When new gardens are made, are they adjacent to old ones or in the middle of a new patch of forest
11) Does kunai grass expand more readily into gardens planted adjacent to other grass areas or previously used gardens
12) What types of food are gathered from old gardens
13) What types of food aregathered wild
14) Which types of gathered and cultivated foods keep best
15) Which types of gathered and cultivated foods produce most prolifically
16) What is your personal assessment of your ability to meet your familiy's food needs through agriculture and gathering
17) Do you use traditional medicines
18) Do you know as many names and uses of wild plants as your mother and grandmother did
19) Do you grow more types of food then your mother and grandmother did
20) Do you raise animals
21) Do you think current methods of garden/land use is satisfactory
22) Is expansion of kunai a problem, will it be in the future
23) Are your gardens farther from the village than they used to be

3. Commercial Uses of Environment

1) Does everone have a cash crop garden
2) Do women help other people with their cash crop work? Who do you help
3) Do you know the price of cash crops? Do you know what the costs of production and transport are
4) Are cash crops planted on land that would normally be used for gardens
5) Do cash crops increase women's work loads
6) Do women benefit from cash crops eg. money, use of dry coconuts, transport to town, etc
7) Who decides where to plant, management schedules, when to harvest, who will do processing work
8) What kinds of work do women do in cash crop production or other commercial uses of the environment
9) Have you seen areas where timber has been cut? By a large company? By a wokabout sawmill?
10) What was your impression of the environmental impact?
11) How has this land been used after the logging?

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