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LESSONS FROM THE FAMILY PLANNING EXPERIENCE FOR COMMUNITY-BASED ENVIRONMENTAL EDUCATION

by

Winifred Weekes-Vagliani

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List of Acronyms

CBD	Community Based Distribution
CPFH	Center for Population and Family Health
DAC/WID	Development Assistance Committee/Women in Development
EE	Environmental Education
FP	Family Planning
ICDP	Integrated Conservation Development Projects
ICRW	International Center for Research on Women
IEC	Information Education Communications
IEEP	International Environmental Education Programme
IUCN	World Union for the Conservation of Nature
KAP	Knowledge Attitudes Practices
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
OR	Operations Research
PEC	Primary Environmental Care
TFR	Total Fertility Rate
THP	Traditional Health Practitioner
UN	United Nations
UNESCO	United Nations Education Science Culture Organisation
UNEP	United Nations Environment Programme
WPPA	World Population Plan of Action
WWF	World Wildlife Fund

RÉSUMÉ

Ce document analyse et compare le Plan d'action des Nations Unies pour la population mondiale et la Stratégie globale de l'UNESCO-PNUE pour l'éducation environnementale — objectifs, tactiques, acteurs et institutions. Ensuite, l'examen d'un grand nombre de données issues du planning familial fournit des exemples de pratiques à appliquer dans les activités d'éducation environnementale par les communautés rurales des pays en développement. En outre, des variables concernant la population, la culture et les femmes sont extraites d'expériences réalisées sur l'éducation environnementale. De telles informations faciliteraient l'insertion de ces questions dans les programmes d'éducation environnementale et de prise de conscience du public.

SUMMARY

This paper starts out reviewing and comparing the World Population Plan of Action and the UNESCO-UNEP Global Strategy for Environmental Education: the objectives, tactics, actors and institutions. Subsequently, the examination of numerous materials from the family planning field provides some examples to be emulated by community-based environmental activities in developing countries. Population, cultural and gender variables are also sought in some existing environmental education and protection efforts. It is hoped that such information will increase the ability to integrate these concerns into environmental education and public awareness programmes. The analysis builds on the author's previous research on gender issues.

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PREFACE

In 1990, the Development Centre began work on environmental management in developing countries under the theme, "Coping with Environmental Threats". The major focus of this work is on the instruments used, economic incentives and/or regulation. In this context, the question arose whether environmental awareness raising and education should not be considered a complementary instrument to be used alongside with, or even as a prerequisite for the others. Consequently, research on the role of environmental education has been initiated, with case studies undertaken by people working in this field in developing countries. Furthermore, given certain parallels between community based environmental education and earlier experience with local development efforts in the field of population education/family planning, it was assumed that review of the empirical evidence could provide insights. This led to research for this paper, focusing on population, culture and gender variables and their relationship to environmental education and protection.

This paper also grew from a desire to examine environmental problems with a holistic view. The purpose of the study is twofold: on the one hand, to identify and describe examples from the family planning/population education experience for community-based environmental education, and on the other hand, to build on the women in development experience of the author. Both fields can provide lessons for research on the role of environmental education in managing environmental problems, given the cross-cutting nature of environmental and gender issues. The author argues that gender related questions are essential to environmental education and protection because different incentives have to be provided to men and women to motivate environmentally friendly behaviour.

Related work underway elsewhere focuses on two of the variables at a time, i.e. women and the environment, population and the environment, culture and the environment, etc.; this work is innovative in bringing all of these variables together as they are in reality part of the "interwoven threads of sustainable development".

Louis Emmerij
President of the OECD Development Centre
April 1992

INTRODUCTION

This study is part of the Development Centre's research programme 1990-1992 on "Coping with Environmental Threats". The latter theme singles out environmental education and public awareness raising among the factors to be considered in improved environmental management. This research uses a broad definition of environmental education (EE), including the formal and non-formal educational systems as well as a variety of other activities designed to inform the public about environmental problems, to change attitudes and behaviour patterns. Although a number of environmental education programmes exist in developing countries, so far there is little indication that research has been done on its role in managing environmental problems in specific settings.

The scope of this paper will be limited to identification, examination and review of:

— the parallels between population/family planning programmes and environmental education projects at the community level in rural areas. Similar target groups are envisaged in both types of projects; therefore, it is assumed that the family planning experience will be relevant for community-based environmental education; and

— the lessons learned from the family planning experience for environmental education including gender and cultural issues.

It is hoped that this research may help not only researchers on the specific topics included but will also reach out to a wider development community audience and increase the capacity to integrate cultural, gender and population concerns into environmental education and public awareness programmes.

The preparation and the timing of this work are geared to precede the UN Conference on Environment and Development that will take place in June 1992 in Rio de Janeiro. This paper is designed to stimulate an exchange of views and experiences and can indicate what kind of follow-up needs to be envisaged for further work by the Development Centre or others.

The objective of this paper is to contribute to an understanding of:

— how the lessons learned from the family planning, population education experience can be carried over to improve the design and implementation of environmental education projects at the local level;

— various strategies of implementation for family planning and environmental education. There are a number of actors at the national and international levels; comparison of the modes of reaching target groups in both fields may indicate potentials, opportunities and limits for the design of policies which will address population and environmental issues.

The decision to combine a focus on culture, gender and population in environmental education was based on the author's previous research at the Development Centre. In addition, her role as a participant-observer in the DAC/WID (Women in Development) Expert Group and experience related to the various task forces and seminars organised by this Group has indicated the need for this comparative approach. The literature and discussions at meetings indicate that each topic is usually treated separately in relation to environmental issues. For example, there is an emerging consensus that rapid population growth is linked to environmental degradation[1], however, population growth in the population literature is usually linked to the difficulty of providing health and education and employment for such populations rather than the idea of carrying capacity for environmental reasons[2].

This technical paper is mainly based on replies to a letter, with a statement of intent for this research, which was sent to a number of individuals, agencies and organisations in the population and environment fields. It reflects the exchange of views provoked by the request for "data" concerning this problematic. It will identify the issues addressed in the materials provided.

There are different kinds of lessons to be gleaned from the contributions received, they include: investigating parallels or diversity between the family planning experience and environmental education as far as the organisation, funding, and institutional arrangements are concerned. Family planning involves delivering a service for individuals, households and communities. What is the service which environmental education offers and are there any clear parallels? Some have suggested that a closer parallel might be with population education (the out-of-school type) or with information-education-communication (IEC) programmes relating to family planning.

Other responses to the author's "Statement of Intent" for this research included questions of why only "successful" family planning projects would be considered for "lessons". In fact, this paper will not be limited to success stories, but will try to review the experience from various types of family planning, population education etc. to draw positive or negative lessons which are relevant to environmental education. For example one response pointed out that community based distribution (CBD) of family planning "... has so far focussed heavily on women. Whether successful or not, the CBD approaches have overlooked men altogether. Therefore, the replication of the CBD-type approach for environmental education will have to make a great leap forward to cover men and women, young and old[3].

Another query from the same person and others who responded was related to the integration of gender issues and cultural and population variables into the study of environmental education programmes and projects. Most reponses indicated that they knew of no examples which linked family planning and population education messages to environmental education issues at the local level.

The idea of building on the women in development (WID) experience of the last two decades is part of the methodology of this research. The framework of criteria for environmental education endeavours which would be successful, is based on a

gleaning of lessons learned from WID research which includes sociocultural and gender dimensions. (See Part B of section I).

Some clarification is needed on how cultural variables will be dealt with; cultural considerations will cover the following. The development of awareness to environmental problems depends a great deal on being able to penetrate the worldview of the populations to be reached with environmental education. Arizpe and Paz[4] illustrate this point when referring to their research on changing perceptions of the environment in the Lacandon forest in Mexico. For example, the word nature (or "naturaleza") is not the term used by the peasants to denote the natural world[5]. "The term they use most frequently is that of "world" ("mundo") as *a single, unitary entity*, which means they do not divide the world into a human/social and a natural order, even though most of them hold Christian beliefs[6]." The creationist view of the natural world held by most people interviewed by Arizpe and Paz includes the notion that God made the world and "gave" it to man to use it. "Three different positions can be discerned within the creationist group: those that say that the natural world was created for human use, and therefore, can be used in any way; another also believes the former but think that human beings have no right to destroy it and a minority which overtly expresses a conservationist view[7]."

In other words, understanding of the local culture, value systems, "...and symbolic behaviour can help develop noneconomic but powerful incentive systems and motivational tools[8]." This view of culture supposes that it is,"... dynamic, resilient and compatible with "modernity"[9]. While it is not clear just how belief systems are translated into behaviour, there is evidence that cultural systems remain even in the face of large-scale transformations which can be absorbed in ways consistent with the reproduction of sociocultural differences[10]. Moreover, Kottak[11] found that while peasants want change in their living conditions, "...the motives that modify their behaviour are usually provided by their traditional culture and the concerns of everyday existence[12]." The same author found that in the successful projects he examined the goal was to change in order to preserve the traditional culture[13].

Grieser, in a review of environmental communication[14] found that the environmental communications field as compared to the population and health domains showed a striking lack of national communication strategies. "In the field of health or population, national strategies have long since determined priority issues for the general public as well as for specific target audiences. But in the environment sector few countries have developed national strategies, concentrating instead on local initiatives. Even these local initiatives have been technology driven rather than people-driven so that the communication emphasis has been on product rather than process, on issue rather than consultation[15]." Furthermore the same author found that while NGOs have been at the forefront of developing communication activities, they are inadequately staffed and trained to handle this role. The urban middle class in most countries has developed awareness to environmental issues, but motivation to change behaviour has not yet been created[16].

Furthermore, Grieser also found that "almost no evaluations exist to determine impact, few reports are available, and only a few descriptive articles document field activities[17]." "Even in countries with substantial environmental education activities

there are few knowledge, attitude and practice studies on the target populations, few anthropological or sociological studies and virtually no communication analyses. In other words the data base on which effective communication programmes should be based does not exist. Environmental education is still approached from the technical rather than the communication viewpoint by both educators and environmentalists[18]."

Relation to other studies

Other institutions and researchers are focusing on topics which deal with issues related to the design of effective environmental education (EE) programmes, such as women, poverty and the environment. However, they do not propose to study the relevance of the family planning experience for EE; they are not concerned with the design of environmental education (EE) projects and evaluating the role EE might have in managing given environmental problems.

Mention of work on-going in the development community is made here, because the outcome of some of this research may provide corroboration of a major hypothesis for this research. It is assumed that projects which start with an understanding of gender and culture specific attributes applicable to the target populations will be more successful than those which do not. It may also be separately true that environmental education projects limited to some narrow or stereotypical range of environmental issues do not take into consideration the multiple needs and roles of their target audiences and therefore fail or show only limited success.

The International Center for Research on Women (ICRW) has reviewed women's environmental contributions in Latin America[19]. This review has identified field based work in Latin America, existing literature and project information on strategies women use to manage the environment. Based on this review ICRW will analyse policies and project design and implementation features that support women in the management of natural resources and the environment.

A number of international NGOs in North, Central and South America are also trying to develop a conceptual framework which would address women, poverty, population and the environment. Among these is the International Women's Health Coalition, New York. At the Coalition they are trying to develop an alternative voice to the formal population movement. It is feared that there will be an alliance between those advocating population control (rather than voluntary family planning) and conservationists which will not address the essential issue of poverty and the environment.

The main problem for NGOs and others working on this problematic is that development, environmental and women's NGO's have worked separately until very recently. There is a need for cross-fertilisation between these organisations. The Conservation Foundation and ICRW are proposing research on:"Gender, Community Development, and Conservation of Biological Resources". ICRW already has an active programme on women and the environment, with a particular emphasis on the effects of poverty and population growth on women's ability to work and contribute to management of natural resources. The case studies will include projects from each

of three regions — Africa, Asia and Latin America. Case study sites from WWF's portfolio have been tentatively identified. They include those in which community development is a significant component and in which women represent a potential resource for project conservation activities.

A report of work on 'Integrated Conservation Development Projects'(ICDP)[20] looks at some of the early experiences and new approaches to the management of parks and reserves in the Tropics. Their summary evaluation indicates that most of the projects considered have been operational for less than five years and are at a relatively early stage of implementation, and thus must be regarded as pilot initiatives.

However, they have found that while the ICDP are innovative and experimental, there are few useful precedents. It is reported that even experienced practitioners are still confronting difficulties in implementing rural development programs. The incremental need for ICDPs to not only promote such development but to establish links to conservation adds a significant layer of complexity. A period of learning and gradual expansion has therefore been both unavoidable and useful.

Issues surrounding the integration of cultural, gender and population considerations into EE Programmes

a) Population and EE

This section could also be called "The Interwoven Strands of Development"[21]. Wheeler links poverty reduction to stabilising world population: "... poverty usually goes hand in hand with both a lack of interest in and inaccessibility of family planning." The same author also maintains that "environmental issues should become an essential component of all educational programmes."

Operational as well as basic research is still needed, inspite of the vast knowledge gained from population programmes in many countries[22]. Diverse environmental threats ranging from deforestation and the loss of biological diversity, to pervasive pollution and global warming are linked to the rapid growth of the Earth's human population. In spite of this, many conservationists have only recently begun to wrestle with the question of population growth[23]. However, it is at the grassroots level that examination is needed of the effects of population growth on local communities and their ability to manage their environment.

Although there is an emerging consensus on the relationship of rapid population growth to environmental degradation on a global level, there is little in the literature to indicate that population and family planning education have been linked to environmental issues at the local level. The emphasis of most family planning projects and programmes is that it be voluntary and geared to individual desires and/or needs for spacing or family limitation. The focus is on the individuals' or couples' behaviour for their own welfare rather than the issues of pressure on land resources for ecological reasons. One reason for this state of affairs is that each articulation brings with it a layer of complexity for the implementation of viable projects and programmes. One could argue that things are as they should be, i.e. parallel but separate population

and family planning education and environmental education. Perhaps "integrated" population and environmental messages with civic, ethical considerations linking people's personal behaviour to responsiblity for their community's and country's environment would be considered a "blame the victim" educational strategy. For example, deforestation is not brought about only by poor families' increasing needs for firewood. This is the case in the Amazon where big lumber companies are to a great extent responsible for the degradation going on there.

Barnes[24] has investigated the links between rapid population growth and the fuelwood crisis in Sub-Saharan Africa brought about by deforestation. Inspite of the recognition that this crisis is due to rapid population growth and encroachment on forest land, "... most of the solutions offered to improve the situation involve increased production or conservation of wood fuel energy rather than population related policies."[25] Furthermore, the problem is made even worse by the many other causes of deforestation also due to rapid population growth such as over-grazing. However, population growth alone is not enough to cause deforestation or household energy shortages. The location specific problems imply fine-tuning and careful design of population and environmental education projects and programmes. Cultural considerations and knowledge of traditions of managing the commons frequently still in force in many areas of Africa would also be necessary for the conception of messages to specific target audiences.

The key to linking population, cultural and gender concerns, to environmental education programmes may be the manner of implementation, i.e. with popular participation of local communities. However, a word of caution is needed here, based on studies of organising community participation in family planning projects[26]. Askew points out that the main role of the family planning associations was that of improving the associations' ability to inform and educate about family planning and to deliver these services. While empowerment of communities to handle their own affairs was also a goal, it was felt that it was beyond the technical capacities of the associations' staff.

Greater care must be taken, then, in preparing policy and programme statements about community participation, because "... rhetoric implying greater self-reliance could encourage initiatives that are doomed to fail if the guiding rationale is actually improving service provision capacity and increased service use[27]."

Another study of community participation and family planning which included projects from Latin America and Asia also indicates that caution is needed[28]. However, in one of the Asian projects included in that study, community participation increased family planning acceptance[29].

The same author points out one great advantage of the community's own family planning efforts is that they get to the people living in very poor and often isolated communities, which the national programme finds very difficult to reach. Community participation can extend the coverage of the national family planning programme[30].

b) Culture and Environmental Education

As stated earlier, cultural considerations permeate the literature both on women in development and population programmes. Gender roles are culturally prescribed and cultural forces often determine population dynamics. The environmental education literature also often refers to cultural aspects of the problems examined, such as respect for indigenous populations and their habitat. However, indigenous people are often hostile to conservationists' concerns because their perception is that the latter care more about animals (monkeys and elephants) than people[31].

Our definition of culture is anthropological; for the purposes of this study it would be sufficient to have an understanding of the underlying codes of operation (e.g. the social organisation of production and the use of land by men and women) ethical priorities, behaviour patterns and to some extent systems of knowledge on which various societies are based[32].

Successful community participatory projects have shown a respect for indigenous knowledge and culture while trying to bring about change which the people can identify as being in their own interests.

c) Gender and EE

Although discussion on the "integration of women in development" has been going on since the late 1970s, the various environmental and conservationist agencies and NGOs, as mentioned earlier, have only recently begun to communicate concerning development programmes and environmental education which would include gender concerns. Likewise, reflection on the relationship of women to the environment was on-going well before the 1985 UN Conference on Women in Nairobi. The concept of popular participation in development projects is also not new to the development community. While the DAC has long recognised women in development as a cross-cutting issue,[33] a recent DAC/WID Expert Group Seminar on Women and Popular Participation (May 1990) revealed the difficulties for practitioners of popular participation in "integrating" gender issues in an articulated and functional fashion.

An analysis by gender heightens the visibility of the actors, it looks at the roles and functions of both men and women. It should be part of any analysis especially at the household, project, community or village level. In other words, gender analysis in research on many topics, is an assessment of the extent to which men's and women's productive and reproductive activities converge with or are related to the objectives of, in this case, environmental education programmes and projects.

The problems inherent in rural development or environmental protection and awareness are not specific to the issues of women in development: participation and access to resources are relevant to both men and women and are part of a wider development concern.

It is no longer enough to state that women have pivotal roles in environmental management or family planning, we have to find out what these are in specific cases. An informed understanding of what is at stake is needed and should be provided by

information about socio-cultural structures, relations of economic exchange within households and communities, the gender division of labour in different tasks and on different crops, and the way different sources of cash income are earmarked (and by whom) for different household consumption requirements. The essential point is that traditional socio-economic complementarity between men and women can be expanded, rather than thwarted, by realistic incentives and opportunities for both men and women.

Much of the literature on women in development points to the stark contrasts in the contributions and benefits of women and men, and therefore their separate incentives to respond to policies. It is a mistake to see women and men within the household or community as a homogeneous human resource, perfectly substitutable and experiencing the same opportunity costs and gains from development initiatives.

Integrating gender issues into environmental education programmes, like population concerns, even when accepted as an explicit objective, will generate both technical and analytical problems requiring the ability to disentangle the densely-woven and intermeshing patterns of ecological, economic, demographic and cultural factors. However, closing the gap between good intentions and effective programmes requires precisely this ability. This is not just an academic exercise, because proper consideration for this issue will require considerable effort and forethought to "package the delivery of services", effective EE messages to protect the environment and provide the gender differentiated economic incentives (e.g.income generating projects) necessary to motivate desirable environmental behaviour.

Part A of Section I will identify and present the parallels between population/family planning and environmental education strategies at the global level. This will be done by reviewing existing strategies for the two fields (World Population Plan of Action, Review and Appraisal, l984 and 1989, and UNESCO-UNEP, IUCN,UNEP, WWF EE Strategy documents).

Part B of Section I will deal with considerations for a framework of project analysis, for both family planning and environmental education projects. It will set out the underlying assumptions of the study, given our definition of environmental education. A review of programme issues will end this section.

Part A of Section II will present the lessons for on-going and future EE projects from the family planning experience which have been gleaned from the materials made available for this analysis. And Part B of this section will look at population, culture and gender aspects of environmental protection and education activities.

Section III will present the conclusions and summarise the general points brought out by this analysis as well as suggestions for future research.

NOTES

1. See DAC Chairman's Report 1989, OECD.
2. See N. Birdsall, in *Population and Development Review, 1977* and Environment and Population Balance NGO in the United States.
3. Personal communication, Dr. Ock-Kyung Kim, Scientist, The World Conservation Union (IUCN).
4. L. Arizpe and F. Paz, "Culture and Sustainability" Paper prepared for the International Forum on Sustainable Development, UNESCO, Paris, 23-25 September 1991.
5. *Ibid.,* p.15.
6. *Ibid.,* p. 16.
7. *Ibid.,* p. 17.
8. Cernea, in Cernea : *Putting People First: Sociological Variables in Rural Development*, A World Bank Publication, Second Edition, 1991 p. 375.
9. See Susan Carol Rogers: *Shaping Modern Times in Rural France : The Transformation and reproduction of an Aveyronnais Community*, Princeton University Press, 1991.
10. *Ibid.,* p. 35.
11. Kottak, in Cernea, op.cit. pp 431-466.
12. *Ibid.,* p. 438.
13. *Ibid*, p. 439.
14. Mona Y. Grieser, "A review of Environmental Communication", Learning Technologies Project, USAID, August 1990.
15. *Ibid*, p. 1.
16. *Ibid*, p. 1.
17. *Ibid*, p. 5.
18. *Ibid*, p. 6.
19. Michael Paolisso & Sally Yudelman, "Women, Poverty and the Environment in Latin America", ICRW, Washinton, D.C., September 1991.

20. Michael Wells, Katrina Brandon & Lee Hannah (The World Bank, WWF-US and USAID, Africa Bureau,respectively) "People and Parks: Linking Protected Area Management with Local Communities", Draft, October 19, 1990.

21. See: J. Wheeler, in *The OECD Observer*, No. 167, December 1990/January1991, pp 31-33.

22. See: C.Wahren, "The Imperative of Population Control" in *The OECD Observer*, op.cit. pp. 34-37.

23. WWF & Conservation Foundation Letter, 1990, No. 2.

24. Douglas F. Barnes, "Population Growth, Wood Fuels, and Resource Problems" in George T.F.Acsadi, Gwendolyn Johnson-Acsadi & Rodolfo A. Bulatao eds., *Population Growth and Reproduction in Sub-Saharan Africa*, A World Bank Symposium, The World Bank, 1990.

25. *Ibid.*, p. 44.

26. See: Ian Askew, "Organising Community Participation in Family Planning Projects in South Asia" in STUDIES IN FAMILY PLANNING, Vol. 20, N. 4, July/August 1989, pp. 185-203.

27. *Ibid.*, p. 201.

28. Margaret Wolfson, *Community Action for Family Planning: A Comparison of Six Project Experiences*, Development Centre Studies, OECD, Paris 1987.

29. *Ibid.*, p. 42.

30. *Ibid.*, p. 45.

31. See: Sálvano Briceño & David C. Pitt, Editors *New Ideas in Environmental Education*, Croom Helm, London, 1988. (New Ideas in EE and the example of the Indian campaign to save the silent valley).

32. See: Lourdes Arizpe, "Culture in International Development"" paper prepared for the SID 19th World Conference, March 25-28 1988, New Delhi, India, p. 1.

33. See: CIDA, "Integration of Cross-Cutting Issues into Members' Evaluation Efforts 1985 and 1986: Women in Development", Paper submitted by CIDA to the DAC/Expert Group on Aid Evaluation, June 1987 and revised December 1987.

Section I

A. Review and Comparison of Population/Family Planning and Environmental Education Strategies

While our focus in this paper is on community based family planning and environmental education projects, it is useful to compare the strategies which have evolved on a global level. The first World Population Plan of Action (WPPA) was developed at the UN Bucarest Conference in 1974. This Plan has been reviewed and appraised at five year intervals by the United Nations Population Division (see 1984 and 1989 documents). In 1975, UNESCO and UNEP launched the International Environmental Education Programme (IEEP). In 1977 an inter-governmental conference on environmental education was held at Tbilisi (then USSR); it called on these two agencies to continue their efforts to further the development of this education within the international community[1].

A review of the strategies outlined in essentially three documents[2] was undertaken to see what parallels, similarities and differences, exist in regard to the: goals, tactics or ways of achieving the aims, and the actors, institutions and issues involved in implementation. We also looked for possible links between the two strategies.

Goals

Before comparing the goals of the two strategies, it should be noted that there is one big difference in the nature of family planning and environmental education activities. Family planning programmes and projects are mainly concerned with the delivery of services. Acceptance of family planning is taken to show that the educational message has had the desired impact. On the other hand, EE is trying to make people aware of how they can care for their environment, but does not necessarily deliver a tangible service. However, much of the literature indicates that EE will not get people to change their behaviour unless they can perceive that they will benefit from such actions [3].

The World Population Plan of Action (WPPA) stated that one of the principal goals of population programmes and policies is to improve the levels of living and the quality of life of the people. Population policies are seen as an integral part of social, economic and cultural development[4]. The similarity in the goals of these strategies is that in both cases a change in behaviour is sought. These changes will most likely improve the environment as well as the well being of the individuals and groups concerned.

Another similarity between family planning and environmental education is that they are both continuous or "permanent" activities. Depending on the method of fertility control, people practising family planning have to be constantly vigilant. Environmental education is referred to in the UNESCO-UNEP document as "a permanent process in which individuals and the community gain awareness of the environment and acquire

the knowledge, values, skills, experiences, and also the determination which will enable them to act — individually and collectively — solve present and future environmental problems[5]." The aim of both strategies is modification of both cognitive and affective behaviour.

Tactics or Ways of Achieving the Aims

The World Population Plan of Action recommended that all **governments** "respect and ensure, regardless of their demographic goals, the right of persons to determine, in a free, informed and responsible manner, the number and spacing of their children[6]." The actions to be taken included the implementation and *funding* of programmes, the training of personnel (both management and medical) and the widespread distribution of service outlets and family planning methods[7].

The emphasis in the environmental field is somewhat different. While governments are included as those who will be involved in carrying out the strategy, they are not singled out in the same way. Individuals, businesses and NGOs are also listed among those called to action. Funding of programmes or activities is more diffuse and private initiatives are more prevalent. The situation was similar in the 1960s for family planning when NGOs were more dominant in the field. However, as family planning got more acceptance and many governments in Africa and Latin America which had rejected the early population messages changed their attitudes more countries developed population policies which included family planning.

The concept of self-help for individuals and communities is more prevalent in the environment field and those concerned are called upon to promote Primary Environmental Care to prepare local strategies for sustainability[8]. To determine how they can achieve sustainability plans should be envisaged for various levels: national, subnational and local. National leaders, national and international agencies and NGOs and their members are called on to make people aware of the significance of sustainability. A broad base needs to be developed of commitment to essential changes in attitudes and practices[9]. It is felt that the facilities developed and the cross-sectoral training for extension workers in rural and urban communities, are most likely to be effective if they are delivered through a community-based organisation[10]. Furthermore, all agencies funding projects and programmes are urged to place a greater emphasis on small projects with maximum grassroots participation[11].

Actors, Institutions and Issues

The strategies for population/family planning and environmental education relate their activities to the issue of sustainable development. Attention to women in development is stressed in the WPPA strategy and the EE documents consulted. Realisation that EE messages were not having the desired impact on the behaviour of a great proportion of the population has brought about a focus on the role of women in community development. Attention has also been given to the need to use local knowledge, traditional skills and values to improve communication skills. It is important to reach people whose everyday activities affect the environment most.

An entire chapter of the WPPA document is devoted to the role and status of women. Because governments have become increasingly aware of the link between the status of women and demographic goals, efforts have been made to improve the legal and economic status of women[12].

A similar periodic review and appraisal of the progress in environmental education activities based on the strategies outlined since 1975-77 has not been undertaken, although a 1990 document by UNESCO/IEEP does indicate considerable achievement in this field[13]. The report on the ten years of experience since Bucarest[14], indicates that those countries which were most successful in the organisation of their population programmes showed strong "...governmental commitment, appropriate public and private managerial capability, availability of internal and external resources, a social climate for attitudinal change, substantial utilisation and/or organisation of community participation networks and use of local and traditional personnel for the delivery of services[15]." It was also found that as legitimacy for the ideas put forward by the WPPA strategy increased, along with the breadth of action undertaken, there has been a decline in the level of controversy and confrontation involved in public debates on these issues. Evidence that the environmental education field will develop along parallel lines has not been found so far. There are still a number of conflicting interests at the local level and opposition of local communities to conservation and environmental campaigns and issues[16].

While community based environmental education usually procedes in a different way from a campaign to save a particular site, public awareness of environmental issues in general, may facilitate community based actions to protect or improve the local environment. In addition, sensitivity to gender and cultural aspects may indicate that they have enhanced the successful outcome of EE activities.

In part B of this section, we shall see how the parallels outlined above feed into a framework of project analysis for both family planning and EE projects. The links between the two strategies, while mentioned in both sets of documents, have not been articulated in an empirical and functional manner.

B. A framework of EE Programme Analysis with Regard to Culture, Gender and Population

As indicated earlier, the Development Centre's research on environmental education uses a broad definition of EE, including the formal and non-formal educational systems as well as a variety of other activities designed to inform the public about environmental problems, to change attitudes and behaviour patterns. EE and population/family planning education are "permanent" in nature, the individuals and communities must be constantly vigilant to ensure attaining their goals.

Assumptions and Research Problem

The major assumption of this study was that there are lessons to be learned from family planning programmes for community based environmental education

projects. The rationale for this assumption is that essentially the same target populations are envisaged and that similar gender and cultural factors must be taken into account in the design and implementation of environmental education programmes. The hypothesised criteria for successful EE projects have been developed from the author's women in development experience[17].

One difficulty in this research is that the population/family planning literature examined addresses issues surrounding population change and not the family planning project level. In addition gender and cultural issues did not emerge from a series of case studies of the cost-benefits and cost effectiveness of these projects[18]. Therefore, the problem is how to translate the issues and contextual information about mechanisms of change and motivation of target groups into design and implementation features of EE projects.

Another related problem is that family planning, population and safe motherhood literature[19] emphasize the need to change traditional cultural beliefs, attitudes and behaviour towards women and health while the environmental education literature stresses respect for indigenous cultural habits which include knowledge of the ecosystem and in many cases, protection of the environment.

These concerns will be taken into account when presenting the hypothesized criteria in the framework to be presented below. The criteria for successful projects are for reaching especially poor people in rural communities who would be the actors and beneficiaries of EE leading to sustainable development practices. Part of sustainable activities will involve adequate attention to maternal health. This leads us to a corollary of our major hypothesis which is that with development studies of this kind we are dealing with cumulative causation and a constellation of factors which can combine into negative synergies. Therefore, an attempt has to be made to illustrate how attention to the factors outlined in the criteria will catalyse positive synergies.

Another underlying assumption of this study is that all societies are economically rational. However, economic behaviour is rational only within the framework established by social ends[20]. A corollary to this assumption is that EE has to be combined with appropriate actions to be effective, i.e. they will have to link people's economic situation to the EE messages in order to get people to behave in environmentally friendly ways. Each society has rules for the gender division of labour, the implications of these rules have to be spelled out in community based environmental education projects and programmes.

Criteria for the Design of Effective Community Based EE Programmes

Two sets of criteria will be presented below, those applying to rural community based environmental education will be presented first. There is a distinction to be made between the kinds of incentives offered family planning acceptors and those proposed to people receiving EE messages. In the case of family planning the provision of primary health care with an emphasis on maternal and child health may be considered incentives. The literature on fertility indicates that mothers who have not experienced infant mortality are more likely to limit the number of children than

women who have lost children. The total fertility rates for the latter are higher than those of the former. The proposed criteria for effective EE and subsequently for family planning take into account this distinction and are presented below.

The criteria for the design of effective rural community based EE programmes are that they include:

— income generation or realistic alternatives to behaviour detrimental to the environment — a widening of choices, coupled with the possibility of making these choices (training, credit, etc.) for poor men and women;

— consideration of how to improve the visibility of the actors whose role is essential to the conservation or protection of the environment in given localities. This includes cultural factors related to traditional knowledge of ecosystems in the area;

— knowledge of socio-economic and cultural factors and their relationship to population dynamics;

— emphasis on men's and women's productive roles in relation to the environment. Information on the socio-cultural and institutional practices in regard to the ownership of property and/or access to land and related resources should be obtained. An appraisal of the possible chain of events set in motion by the implementation of local programmes and projects, i.e., positive and negative synergies;

— training in EE should be linked to transitions taking place in the locality, such as a shift from one "carrying capacity" to another in agricultural activities[21];

— support for the production of traditional produce (agricultural and artisanal) as a means of bolstering environmental protection.

In both rural and urban settings, special care should be taken to reach poor men and women with EE. This may mean a reconsideration of the methods of delivery of EE messages. Written materials or even other audiovisual techniques may not be appropriate. Materials which are closer to the people's cultural context may be more effective (e.g.short plays with traditional music, settings, look at the family planning experience in this regard).

Criteria for Sustainable Family Planning Programmes

The following criteria have been gleaned from the literature and indicate certain characteristics and features which sustainable family planning programmes should have:

— trained staff at all levels capable of evaluating the adequacy and quality of the service in order to adjust programme elements with needed flexibility[22];

— viable institutionalised activities which will continue to exist after donor support is withdrawn[23];

— the possibility of coordinating related activities to achieve maximum results;

— culturally relevant messages and modes of delivery[24];

— delivery mechanisms which ensure that the poor in the community will have ready access to these services; this may include receiving supplies free of charge or subsidized[25];

While this list of criteria could be longer, a discussion of the "contextual" criteria for programme success is very relevant for the lessons to be drawn from the population education and family planning field for EE projects. A presentation of the pre-conditions or the context in which family planning programmes need to operate successfully will be made first. Subsequently, the "linking" criteria , i.e. surrounding factors which would have payoffs for both family planning and environmental education, will be considered.

Contextual Criteria

Total government commitment to the legitimacy of family planning has been found to create an atmosphere in which these programmes flourish. However, Preston[26] points out that India with strong government commitment to family planning has not brought about a commensurate reduction in fertility, while Brazil whose programmes are mainly NGO initiatives has had a substantial decline in fertility[27]. Such commitment includes efforts to eliminate all forms of discrimination against women. These government policies usually involve institutionalisation and bring with them acceptance or, at least, tolerance by a broad segment of the population[28]. These considerations which the Acsadis have made concerning safe motherhood campaigns apply equally to the family planning/ population education field. Safe motherhood cannot be achieved without preventing births for very young women and older women (because of the high maternal morbidity and mortality rates in these age groups); this can only be done with efficient family planning programmes which reach these age groups in the population. Safe motherhood is most likely to be achieved in a population where contraceptive prevalence reaches 70-74 per cent, such as that obtained in Singapore, Hong Kong and the Republic of Korea[29].

Another "contextual" criterion is that women be educated, that is, have access to formal schooling. "Women's education is the central component of the social and demographic nexus that governs their capacity for self determination. It is the key to

women's expression of personal initiative, to the altering of perceptions as to their value and the most narrow straight path to their empowerment[30]."

Caldwell argues "that reductions in fertility have been principally a result of changes in social relations within the family, especially the greater sense of autonomy and efficacy among others, combined with improvements in the accessibility of modern health services[31]."

Ross and Isaacs[32] would argue that the general environment of incentives and disincentives has to be examined and could be considered contexual criteria for programme success. Both incentives and disincentives may be directed at the general population rather than distinct small groups[33]. Such measures range from benefits (or penalties) tied to a limited number of children which affect salary levels, tax exemptions, maternity leaves, eligibility for preferred housing, schools etc.. China and Indonesia have implemented programmes of rewards to individuals given under community auspices and influence, on a national scale.

Linking Criteria for Sustainable Family Planning and Environmental Education

Community participation is crucial to both family planning activities and to the implementation of environmental education messages especially in rural areas. The whole question of community participation has to be analysed further. Indications are emerging from a study by Askew et al[34] that there are divergent perceptions of the meaning of participation in family planning programmes. For the managers and planners of family planning programmes it is felt that "community members and their leaders should participate actively and in a variety of functions, particularly in relation to the CBD (community based distributors). Conversely, those at the community level, while agreeing with these sentiments, feel that active participation is more the responsibility of their leaders and the CBD, while they are prepared to participate in a more passive way[35]." Furthermore, when probed the managers and staff of family planning projects were more in favour of some form of 'controlled' participation[36]. Community members themselves it seems "are best motivated if their leaders endorse the proposed collective actions, and if those actions are both socially enjoyable and produce tangible benefits[37]."

The implications for environmental education of another point made in this study are interesting to contemplate. The nature of participation in family planning is such that this relatively "passive" attitude is not a serious problem. However, environmental education programmes may lead to more active participation because they produce directly useful outcomes from collective action[38].

Given this basic difference in organisational structure between family planning and environmental education, mentioned above, the way collaboration between agencies providing related services could bring about mutually reinforcing projects would have to be investigated. The more grass roots nature of environmental education in rural areas often initiated by NGOs rather than government or commercial enterprises gives a different meaning to community participation. However, an effective family planning programme can be the catalyst for the spread of a mentality

necessary to change reproductive behaviour and some habits which are detrimental to the environment.

The key to linking demographic behaviour to the environment would be to get an informed understanding of individual, household and community strategies for survival and advancement, in particular ecological settings. In doing so, one should not be afraid of cultural obstacles or cultural immobility. Preston[39] contradicts conventional wisdom and points out that, "the earlier view of fertility in developing countries as deeply encrusted in custom and convention needs modification[40]."

How much of a dilemna is there concerning culture, change in demographic behaviour and environmental issues? The illustrative example from one area in Kenya which follows represents an attempt at peering more closely at how demographic change has come about in one area in Kenya with a very successful family planning programme. How is this change related to the complex ecological, economic and social environment there?

Chogoria (Kenya): Example of a successful family planning programme

This example of a successful family planning programme can be used to illustrate and test our assumptions about the relationship of cultural, economic and demographic variables to environmental problems and subsequently provide insights for the design of environmental education programmes.

The situation in the area to be focused on goes against the conventional wisdom reported in the literature, however, as we shall indicate below. In the 1960's, when family planning programmes began to be introduced worldwide by major donor agencies, socio-demographic research indicated that family planning programmes could not be expected to or were not adequate to achieve population stabilisation. Broader approaches to population policy were thought to be needed[41]; these policies would have to find ways to bring individual fertility goals in line with the societal goal of population control. Therefore, broader societal changes would have to be envisaged to bring population limitation about. Most family planning programmes were supported by the major donors mainly on the basis of the expected impact on fertility reduction. However, the example to be cited below and recent research[42] indicate that acceptance of family planning does not depend necessarily on the country's or couples' socioeconomic level or cultural affiliation but rather on the effective delivery of services.

The Chogoria Catchment Area in Kenya

In 1985 a survey was conducted in the catchment area of Chogoria Hospital in central Kenya, to investigate fertility levels and family planning practices in a rural area of Kenya. The area is about 150 miles north of Nairobi and is situated on the lower slopes of Mount Kenya in the Meru district of the country. Most of the 300,000 inhabitants belong to the Meru ethnic group and speak Meru dialects. A majority of

the population belong to Protestant denominations, particularly the Presbyterian and Anglican churches, but there are a large number of Catholics as well[43].

The catchment area includes three quite different ecological zones: the high altitude zone where tea is the major crop, the middle altitude zone where coffee predominates and the semi-arid lower altitude zone which is more sparsely populated. As altitude decreases, the socioeconomic status of the population declines markedly. A previous national survey[44] found that the country's total fertility rate was 7.7 births per woman, only slightly below levels observed in surveys conducted in the late 1970s. For rural Kenya, the total fertility rate (TFR) was found to be even higher — 8.1 births per woman — whereas the TFR for Eastern Province, in which Chogoria is located was measured at 8.0, the same as that reported among the Meru-Embu ethnic groups.

However, the 1985 survey mentioned earlier showed that current fertility levels in the Chogoria catchment area proved to be much lower than the national levels found in the earlier (1984) survey. Based on births reported as occurring in the previous two years, the catchment area's fertility was only 5.2 births per woman, less than two-thirds as high as the nationwide rural level. The analysis of the Chogoria survey also showed that overall fertility is lower than the national rate. The difference at ages 15-19 years appears to result mainly from later marriage in the catchment area than nationwide, but at older ages the difference stems from lower marital fertility in the catchment area[45]." Furthermore , the fact that there were no substantial differences in the fertility rates of older women in the catchment area and elsewhere in Kenya indicates that the lower fertility in the catchment area has come about quite recently[46].

Not only is fertility much lower but contraceptive prevalence rates are much higher in the area covered by the Chogoria Hospital programme than in the rest of rural Kenya. In addition, surveys in other parts of sub-Saharan Africa have revealed that people generally think that fertility is something determined by God or fate, these ideas are <u>not</u> prevalent in the Chogoria area; women there feel that fertility is something that should be controlled by families. "Childbearing has come to be seen by residents as an aspect of life over which they can and should exert control. Few women report wanting to have very large families....

"The significance of the fertility and family planning situation in the Chogoria catchment area is that substantial change has occurred in a country and a part of the world that has been highly resistant to such change[47]."

Most other analyses by socio-demographers and others have focused on factors such as income flows[48], family structure, women's status, control of resources, and other factors acting to maintain a high demand for children.

This example poses many questions in relation to the assumptions made earlier in this paper. Why is it that women in similar economic circumstances, i.e. poor rural women, in the Chogoria area are so accepting of family planning while in other rural areas of Kenya, women of similar characteristics: same ethnic group (implying certain cultural values about having big families), similar socioeconomic circumstances etc. show such different patterns of fertility and acceptance of family planning? The

authors of the study cited attribute the success of the Chogoria programme essentially to four features:"integration of services into maternal and child health care, community involvement, the community health workers network, and accessibility to services[49]."

Other questions related to people's perceptions about the carrying capacity of the land or population pressures on land in the area cannot be examined or answered so easily. It will be the task of future work on this area to see how much "contextual" information can at least help conjecture about how these variables are related. Subsequently efforts could be made to find out from those who have worked in the Chogoria area or similar places in Kenya whether this fertility behaviour relates to environmental problems. Does the people's feeling that they can and should control fertility carry over to other areas of their lives and include individual and community action to protect the environment? How can these attitudes towards fertility behaviour be built on in future environmental education programmes?

What does the Chogoria example of a family planning programme have to teach us about the design and implementation of environmental education programmes in rural communities? The little information on cultural and gender aspects provided negates the importance of cultural specificity. The acceptors of family planning were of the same ethnic group as others outside of the area, this may mean that the people in the Chogoria area have changed their cultural values about not controlling fertility. What has changed in their environment to explain evolving mores? The article by Goldberg, McNeil and Spitz[50] provides some clues to answer these questions; other answers should be sought for in the literature on rural areas in Kenya which will try to link reproductive behaviour to productive functions and other events.

The time span needed to build the health network and the trust of the communities served may be an important consideration : Chogoria hospital was established in 1922 and has had a considerable amount of time in which to develop its diversified activities and provision of services to the surrounding communities. However, the findings of the 1985 study show that change in total fertility rates is recent since older women in the Chogoria area have similar fertility rates to women in other rural areas in that age group. The hospital's outreach programme has gone into communities to deliver services and has built up a voluntary network of community workers. Family planning is integrated into maternal and child health. Earlier in this section of the paper, we mentioned that health services could be considered a kind of proxy for income generating activities mentioned in the list of criteria for successful environmental education. In other words, the provision of integrated health care has acted as an incentive to control fertility, perhaps because infant mortality has decreased.

Notes

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2. United Nations, Population Division, Department of International Economic and Social Affairs, "The Mexico City Conference: The Debate on the Review and Appraisal of the World Population Plan of Action", New York, January 1985; UNESCO-UNEP,op.cit.; and IUCN,UNEP,WWF, "Caring For the World: A Strategy for Sustainability", June 1990, Second Draft.

3. See: David S. Wood and Diane Walton Wood, *Conservation Education: A Planning Guide*, Peace Corps, Information Collection and Exchange, Manual M-23, October, 1985, p. 5.

4. United Nations, *Review and Appraisal of the World Population Plan of Action (WPPA), 1984 Report*, UN New York, 1986, p. 3.

5. UNESCO-UNEP, op.cit., p. 6 box I2.

6. WPPA, 1984, op.cit., para.29 (a).

7. *Ibid.*, p. 59.

8. IUCN, UNEP and WWF, op.cit., p. 4.

9. *Ibid.*, p. 6.

10. *Ibid.*, p. 24.

11. *Ibid.*, p. 28.

12. WPPA I984, p. 21.

13. UNESCO-IEEP, op.cit..

14. See: WPPA, I984 op.cit..

15. WPPA, I984, op.cit., p. 117.

16. See: *New Ideas In Environmental Education* op.cit., , the campaign to save the silent valley.

17. See: W.Weekes-Vagliani," The Integration of Women in Development Projects", Development Centre Papers, OECD, Paris, I985.

18. I. Sirageldin, D. Salkever and R.W. Osborn, eds., *Evaluating Population Programs*, St. Martin's Press, New York, 1983.

19. George Acsadi and Gwendolyn Johnson-Acsadi, "Safe Motherhood in South Asia: Socio-cultural and Demographic Aspects of Maternal Health", Paper written for the Safe Motherhood Conference, March 1990.

20. J. Caldwell,"Towards a Restatement of Demographic Transition Theory" in *Population and Development Review*, Volume 2 Numbers 3 and 4, September/December 1976, p. 326.

21. See: Ester Boserup, "Environment, Population, and Technology in Primitive Societies", in *Population and Development Review*, Volume 2 Number 1, March 1976, pp 21-36.

22. G.Acsadi and G. Johnson-Acsadi, "Safe Motherhood in South Asia: Socio-Cultural and Demographic Aspects of Maternal Health", Background Paper for Safe Motherhood South Asia Conference, Lahore, Pakistan, March 1990, p. 52.

23. *Ibid.*, p. 53.

24. R. Freedman,"Family Planning Programs in the Third World" in The *ANNALSof the American Academy of Political and Social Science: World Population: Approaching the Year 2000, Special Editor Samuel H. Preston*, p. 42.

25. John A.Ross & Stephen L. Isaacs, "Costs, Payments, and Incentives in Family Planning Programs", The World Bank, Policy, Planning and Research Working Papers, No. 88, September 1988.

26. Preston, Preface in *Annals*, op.cit., pp 8-16.

27. *Ibid.*, see p.12.

28. Acsadis, op.cit. p. 53.

29. World Bank, 1989 in Acsadis, *Ibid.*, pp 54-55.

30. *Ibid.*, p.54.

31. J. Caldwell, "Cultural and Social Factors Influencing Mortality Levels in Developing Countries" in *Annals, op.cit.*, pp 44-59.

32. John A. Ross and Stephen L. Isaacs, "Costs, Payments, and Incentives in Family Planning Programmes", The World Bank, Policy, Planning and Research Working Paper N* 88, Sept. 1988.

33. *Ibid.*, p. 3.

34. Ian Askew, "Motivating Participation in Family Planning Programmes: A Review of Some Relevant Concepts", funded by ODA, Institute of Population Studies, University of Exeter, UK, Occasional Paper No. 9, 1989; and Ian Askew, R. Castro-Perez, B. Ncube, V. de Silva and A. Soonthorndhada, "To What Extent Should Communities Participate in Family Planning Programmes? : A Report

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35. *Ibid.*, Abstract provided by ODA.

36. *Ibid.*

37. *Ibid.*

38. *Ibid.*

39. Samuel H. Preston, Special Editor, *The Annals of the American Academy of Political and Social Science, World Population : Approaching the Year 2000,* Preface.

40. *Ibid.*, p. 9.

41. See Davis (1967) in: Anrudh K. Jain, "Fertility Reduction and the Quality of Family Planning Services" in *Studies in Family Planning*, Vol 20, No. 1, Jan/Feb 1989, pp 1-15.

42. *Ibid.*

43. Howard I.Goldberg, Malcolm McNeil, and Alison Spitz, "Contraceptive Use and Fertility Decline in Chogoria, Kenya", in *Studies in Family Planning*, op.cit., pp 17-25.

44. The 1984 Kenya Contraceptive Prevalence Survey.

45. Goldberg, McNeil and Spitz, op. cit., p. 18.

46. *Ibid.*, p. 19.

47. *Ibid.*, p. 23.

48. J. Caldwell,Editor, *The Persistence of High Fertility :Population Prospects in the Third World*, Changing African Family — Family and Fertility Series, 1977 and later publications.

49. Goldberg, McNeil and Spitz, op.cit., p. 23.

50. *Ibid.*

Section II

A. Gleaning of the Family Planning Experience for Community-Based Environmental Education Projects

The lessons gleaned from the family planning experience pertain to a number of aspects of our problematic. There may be many parallels in how the family planning movement got started and developed and the way environmental education activities are evolving by geographical region. The level and type of development in each region may have affected both family planning trends and environmental education activities. As we shall point out below, advocacy, legitimation of the idea and institutionalisation of family planning came about in different decades in each region. In dealing with the information provided, the author has grouped "the data" into three categories which are presented below.

The first group of "lessons" deals with: funding issues and modalities; advocacy, legitimation and institutionalisation; operations research and other research needs; and the importance of information, education and communications (IEC) for family planning and thus most probably for environmental protection as well.

A second group of materials reviews the experience with the community level approach, gender and sex role barriers, evidence of male opposition and the "women only" emphasis of many family planning programmes and the need to involve men. As stated earlier, lack of male participation is a negative lesson, i.e. not to be emulated. The question of possible generational conflict is raised. And some points related to training, the experience with volunteers, motivation, compensation, remuneration and incentives are also discussed here.

The third group is a review and reflection on the family planning experience with integration into health systems and possible links between family planning activities and environmental education programmes at the local level. Indications from the literature and interviews conducted will inform our understanding of the pros and cons of linking the two. Actually, the only attempt to link which was provided were nine IUCN (International Union for the Conservation of Nature) studies. What they have found will be reported below.

Group One: Advocacy and Research

Will environmental education (EE) activities follow the same patterns of development as family planning (FP) programmes by geographic region? This question is related to advocacy and legitimation of EE and public awareness projects and programmes. Family planning, information, education and communications (IEC) had its earliest start in Asia in the 1950s and 1960s; many Latin American governments were antagonistic to the idea of family planning until the late 1970s. And in Africa government support for population policies and programmes began in many countries as late as the early 1980s. For example, Acsadi[1] points out that in 1965

there was no African government support or active promotion of family planning, by 1985 there were 44 governments which provided support. Although most programmes have developed only as far as the rhetoric for family planning, this support is necessary to ensure that people will not be denied access to FP, even if NGOs are providing the services.

In many Asian countries, the early IEC activities focused particularly on increasing public awareness and on promoting favorable attitudes to FP[2]. Research on IEC was conducted on social norms, communication networks within communities, and diffusion of innovation within a community or society. The findings about patterns of communication on taboo subjects in these societies were used to guide programme design in early Asian programmes.

Unfortunately, similar operations research on various aspects of family planning service development in Africa has been difficult to institutionalise. This problem is due to a shortage of human and financial resources resulting in low priority for research and evaluation. Rapid changes in staff in many African ministries has meant that research skills and institutional memory have been lost[3].

Emulating Research Approaches

Columbia University, Center for Population and Family Health (CPFH) has tried to overcome these obstacles in a number of ways: emphasis on Operations Research (OR) as a management tool, avoidance of complex data collection and analysis, inculcation of data collection skills; "and working with universities which can act as more permanent repositories of OR experience"[4]. In addition OR workshops to train more people in OR techniques were carried out in most project countries.

The family planning experience with operations research (OR) could be emulated for the development of EE activities in a number of settings. It has been used as an approach to introducing and improving FP service delivery in Africa and elsewhere[5].

Operations research is the "application of research methods to improve action programs"[6]. "OR aims to provide data on priority issues of direct interest to managers including socio-cultural information to increase program components, information regarding the feasibility of new programme strategies, and guidance for cost reduction. An important hallmark of OR is that specific actions are taken on the basis of the research results[7].

Other interesting features of OR is its ability to stimulate and identify questions of interest and provide rapid initial answers to these questions. These techniques have made it possible to start innovative family Planning systems even in places where the host country attitudes were hesitant[8].

OR has also been recognised as a policy tool; policy issues differ by region. In Africa, the issue is the acceptability of community based distribution of contraceptives, in Asia and Latin America quality of care and mix of services are the

issues[9]. It is also considered a problem solving methodology[10]. Such research conducted with specific EE activities in view could have similar functions.

For example, the major goals of an operations research project in Zaire[11] were descriptive and diagnostic rather than analytic and hypothesis testing. In rural Madagascar[12], a time series quasi-experimental design was employed in the operations research study there. And in indigenous communities in Ecuador the family planning organisation (CEMOPLAF) used four different types of promotion during the OR project: home visits, FP talks in communities, radio and information stands in markets. They found that the most effective techniques used interpersonal communication and therefore this should be a feature in all FP programmes for indigenous populations in Ecuador[13]. In rural Kenya an OR study had the idea of testing the motivation and capacity of trained traditional health practitioners, including Herbalists (usually male) and Traditional Birth Attendants (usually female) "to act as a large reservoir of extension workers functioning in liaison with the modern health care system"[14]. The fact that these people represent an existing corps of health professionals who are respected, widely patronized, self-supporting, and with their own facilities, is very positive. The same type of personnel could be trained and helped to develop EE projects in their communities. Preventing environmental degradation through public awareness might also help to preserve the plants and herbs used in treatment by these practitioners. The feasibility of such an undertaking could be investigated with OR techniques to provide rapid information.

In Honduras, the main objective of the OR project was to test different strategies to incorporate FP within the social development activities carried out by a Non-Governmental Organisation (NGO) Save the Children/Honduras[15]. In rural Kenya, OR techniques such as focus group sessions and other operations research techniques proved to be useful tools in understanding decision making in families; it showed that the husband is most often the decision maker[16].

One day seminars can be useful for the dissemination of the results of such operations research; participants could include: representatives of local aid missions, Ministry of Health, World Bank, UNICEF, UNFPA and other interested agencies. This was done in rural Madagascar[17].

Similarly in Honduras, the results of their OR study was circulated to other Save the Children offices in Latin America to promote the adoption of strategies tested by the Honduran office. There was a project seminar with representatives of other NGOs with no Family Planning services[18].

And finally as Piotrow and Meyer[19] point out,"One benefit of OR is that careful audience research can be used to persuade policy makers, who are often fearful of a negative public reaction, that family planning (or environmental education) messages are acceptable to the public." This knowledge can be used to link FP/IEC (Information, Education and Communications) to EE at the national level.

The lessons to be learned from operations research studies are not blueprints for new projects, but rather ways of getting quick, clear ideas of options for project and programme design[20].

Other research needs indicated include **Knowledge, Attitudes and Practices (KAP) studies** for environmental education project design. Such studies well known to the family planning field would include information about the ethnic group(s) inhabiting the region, the kind of agricultural land available, road networks, the number of health centres and delivery points etc. In order to produce appropriate audio-visual and printed materials, the proportion of people literate in the local and other languages should be known.

Other socio-cultural information might be gleaned from existing sociological or anthropological studies or by **OR techniques** such as discussion groups which could indicate, for example, the kinds of communication between husband and wife. The nature of this communication cannot be assumed. For example, according to an important body of research[21] until there is emotional and economic nucleation in African families, adoption of family planning and perhaps other practices will not come about. For example, "Focus group and KAP survey participants of both sexes reported only limited or no discussions of family size, family planning and related issues with their partner or spouse[22]." The same may be true of environmental problems, we shall have to find out, in order to gear programmes in the right direction.

Such baseline KAP surveys which measure selected health, family planning, knowledge and behaviour before Traditional Health Practitioners (THPs) are trained and after training are needed to provide measurable results from projects which employ such personnel[23].

Such surveys should also provide community level information. For example in the OR study in rural Kenya mentioned previously,[24] "A number of potential sites (in rural Kenya) will be identified in Phase I, and local leaders and village groups will be visited informally to determine general characteristics of the villages and information about THPs in these areas."

The Information, Education and Communications (IEC) experience of the family planning movement has special lessons for the development of environmental education programmes. Evidence of the importance of educational activities for family planning acceptance abounds in the literature. This knowledge is based on research and evaluation of specific IEC endeavours. Piotrow and Meyer[25] point out that, "family planning promotion is a process, not a product, and that the ultimate goal of IEC goes beyond changes in knowledge and attitudes and seeks behaviour change based on individual decisions." This realisation began in the 1980s and recognition of this goal motivated "a methodology based on audience research, a coherent strategy, a detailed dissemination plan, step by step implementation, regular monitoring, and an impact evaluation to check results against measurable objectives established at the start[26]."

The success of the information stand programme in communicating with indigenous persons about family planning and health topics encouraged the Ministry of Health in Ecuador to try to emulate this experience[27]. In Africa, Bouzidi and Korte,[28] found in their review, that proper motivation through education can overcome major impediments and thus makes a good case for "intensive efforts to educate the people as to the efficacy of family planning with the view to increasing intrinsic

motivation among them[29]". The success of IEC activities in the family planning field has been documented with OR techniques, as a result, family planning promotion, in the 1980s "became both more effective and better able to document its effectiveness[30]."

The evidence for the importance and the effectiveness of IEC activities spans from Nigeria to Lebanon to Tunisia. Significantly more women who were specially counseled adopted family planning than those who received no counselling (70% compared to 50% of the others) in Nigeria. There were similar results in a Lebanese hospital. And in Tunisia counseling by trained outreach workers doing home visits led to a 125% increase in new users whereas increasing the availability of medical services alone increased users by 65%[31].

The integration of family planning into health services in Jamaica, brought about a reaffirmation of the function of IEC. The IEC unit has re-established its identity because education and training had been neglected[32].

Education and awareness aspects of community-based out-reach programmes are considered essential by Bouzidi and Korte[33] to achieve family planning objectives. Such education is needed in order to break the cultural and religious resistance to family planning. Similar efforts may be needed in the field of environmental education and public awareness raising. What is the nature of the barriers to environmental protection? For the family planning field, the same authors suggest eight steps to reach rural and peri-urban populations which might be emulated for the environment:

"1. Organize advocacy activities for influential members of the community e.g. seminars for policy/decision-makers to discuss area/target groups' problems, using facts/data.

2. Create or use existing groups/structures. Identify local leaders.

3. Promote idea of self-help.

4. Bring donors' attention to the need to address communities' needs.

5. Increase use of appropriate media.

6. Where appropriate, involve religious leaders.

7. Increase use of research in providing information and services.

8. Build partnerships with appropriate organizations/agencies[34]."

The methods used by IEC activities in the family planning field and Operations Research (OR) projects in reaching disadvantaged groups might also be emulated, given the links between poverty and environmental degradation.

Piotrow and Meyer's review has found that the radio is still "the most powerful medium for reaching rural areas .... People who do not have their own radios or

televisions frequently gather around family or village sets ... OR and social marketing research show that mass media are overtaking interpersonal communication as the major source of new information, in many locations[35]."

There is indication that mass-media promotion of family planning may change patterns of inter-personal communication. It is reported that it stimulates communication between spouses and among other members of the community[36].

Other ways of reaching given audiences such as the concept of the ENTER (tainment)- Educate Approach was tested with an OR like approach. It was found for example, that commercial sponsors, broadcasters and others in the private sector were willing to share the costs[37]. And finally an evaluation of the "ENTER-EDUCATE" Approach showed that such projects can transform initial seed-money into "substantially larger support including millions of hours of free airtime, press and other media coverage, and much associated publicity...[38]." In addition such programmes reach audiences which are less likely to visit conventional family planning clinics and who are more likely to be exposed to broadcast media.

Group Two: Community Level Approaches

The experience with a community level approach to the distribution of contraceptives was thought to be the most pertinent for environmental education activities in rural areas. In the 1960s community-based delivery (CBD) of family planning was begun with several goals in view. It was thought that services would be more acceptable if the social distance between provider and consumer was reduced. Another objective was to reduce the costs of reaching people in rural areas. Recently, such programmes have proliferated and now are present in 70 locations in about 40 countries[39].

No trend data exists, but nearly all of the CBD programmes began from a zero base about 15-20 years ago. These programmes are not widespread and are still struggling for legitimation in Africa, for example. There has been opposition from the medical profession and some women's groups, one knowlegable feminist referred to CBD as the "ghost delivery system", because of the rapid turnover in personnel. Our purpose here is not to evaluate such programmes but to look for insights for community-based environmental education activities.

Among the organizational issues raised by Askew and Khan[40] is the need for organizational integration among the services provided at the community level, so that there will be collaboration rather than competition[41]. Self-reliance is inferred by community participation and this means financial self-sufficiency[42].

A summary of the components of CBD programmes, can indicate what is needed to build sound community-based environmental education. Ross et al[43] suggest "a system which includes effective mechanisms for community preparation and participation, the identification and recruitment of low-cost personnel, adequate training for the individuals, satisfactory mechanisms for supervision and support, a reliable delivery system and useful evaluation." What are the equivalent components

associated with effective operations of EE activities? Can the delivery of family planning services be paralleled to concerns about the provision of a safe water supply, alternative sources of energy, or sanitation systems?

The characteristics and the selection criteria for the workers in relation to the tasks to be performed might also be considered, i.e. the same kinds of questions about suitable characteristics might be envisaged to develop a core of EE promoters. For example, women approaching other women and men going to men or teams of men and women? An effort should be made to find out what works in specific settings. Consideration of intangibles such as maturity, tact, perseverance and enthusiasm may prove to be equally important as gender or generational factors. For example, young people may not be the most suitable purveyors of environmental protection messages, because their authority and knowledge may be questioned by the older people in the community[44].

Almost all CBD agents are women, in Swaziland[45] the proportion was over 75%. In a CBD project in Ecuador only half of the CBD workers were women and they could often not operate alone because of threats from men in the communities served. In Kenya[46] the selection criteria agreed on included: married people, mature (about 35 years of age) women with children, with some education (because of record keeping and instructions which require literacy) and flexibility. The latter characteristic was considered important to involve men in the project and to reach young women.

In a recent Workshop on Community Based Services[47] it was suggested that training needs for CBD workers should be developed out of the community needs assessment[48]. Training should also include effective ways to approach and communicate with people in the community. One chief in a project in Swaziland recommended educating the chiefs to make them more effective participants in the family planning activities[49]. In Tanzania, the training was phased so that it would take into account the domestic responsibilities which is especially important for women with overlapping tasks, time constraints and heavy workloads[50].

Motivation and compensation of volunteers and other workers have to be investigated. John Ross et al. in their review[51] suggest that CBD workers may not necessarily be motivated by monetary payments but by food and assistance with domestic responsibilities. In two projects in the Phillipines, outside agencies provided start-up capital to initiate income-producing cooperative ventures that have successfully provided compensation for the CBD workers[52]. What are the parallels for environmental education activities?

In the Primary Environmental Care (PEC) Siena Meeting[53], one of the participants[54] mentioned "derivative motivation — once the immediate need is answered ...a motivation to do other things arose". In environmental education activities most of the tasks may be carried out by volunteers, the tradition for such work should be known and built on. For example, in the Save the Children (SC/H) "integrated" project in Honduras, most of the activities at the community level are carried out by volunteers who are continuously trained by SC/H. These family planning promoters perform a double function as specialists and generalists. They are

key resource people for the health programme and are also responsible for education and natural resource programme activities[55].

Most CBD agents operate in the communities in which they live and are recommended by community leaders. Their training in community participation and motivational techniques could also be emulated.

Group Three: Integrative Approaches

As illustrated above, a constant preoccupation of this review of the family planning experience is to think in terms of what the equivalent or parallel is or would be for environmental education projects. For example, would the concept of Primary Environmental Care (PEC) be the equivalent of the integration of family planning into maternal and child health (MCH) programmes? If so what are the pitfalls? A slight detour at this point is necessary to provide the reader with a definition of the PEC concept.

> "Primary Environmental Care (PEC) is a process by which local communities-with varying degrees of external support-organize themselves and strengthen, enrich and apply their own means and capacities (know-how, technologies and practices) for the care of their environment while simultaneously satisfying their needs.
>
> In short, PEC is about the integration of three components:
>
> — protecting the environment
>
> — meeting needs
>
> — empowering communities[56]."

According to one knowlegeable source[57] it was a mistake to integrate family planning into maternal and child health (MCH) programmes because it excluded adolescents (male and female) and older men and women who do not go to MCH clinics. The lesson of this exclusion for environmental education activities is that all segments of the population must be addressed in EE messages. This is very important, because while women's work could be made much lighter by the availability of clean drinking water, EE or the PEC concept, should not be translated into making environmental protection only a women's concern.

A rationale for EE is the individual's or community's own health and livelihood. However, given the gender division of labour, there must be prior knowledge of men's and women's responsibilities so that the preconditions for making environmental protection effective, are spelt out.

One of the lessons from family planning in this regard is that certain contraceptive methods are male-controlled, e.g. condoms and vasectomy, while the IUD or pills are female controlled. There is much evidence that no methods are entirely female controlled because the decision to use any contraception at all rests with the male in many societies. For example, when a monetary incentive was given for IUD insertion, in one Asian country, husbands agreed to their insertion, not once but a number of times in different locations, so that they would receive the monetary reward for each insertion[58].

Gillespie (the present Director of the Office of Population, USAID) emphasizes the need to find out the rationale for family planning service integration. The rationale may be: political acceptability; expediency; community acceptability; community needs and desires; synergistic effect and cost-effectiveness. Gillespie has pointed out that "the arguments for integration often have been based more on philosophy than on data ... but the dilution of the effort and family planning's secondary role is a result[59]."

In Kenya recent research has shown that opportunities for education are missed. One of the major supporting reasons for operating an integrated MCH/FP clinic is underutilized; few clinics have educational materials, and health talks that include family planning are rare.

Furthermore, the success of integration of family planning with other activities is not clear; the record is mixed, most often the experience has shown negative effects for the efficiency of family planning programmes. This was the case in Ecuador, when Oral Rehydration Therapy (ORT) was added to the workload of CBD agents there.

In Africa, there are major political and secular changes in family planning acceptance, with implications for integration. "In the early 1980s, the political milieu dictated that most family planning activities be integrated with health. All of CPFH's (Columbia University School of Public Health) OR projects initiated prior to 1984 offered integrated health and family planning, the latter service being introduced after the health interventions, at least in part to enhance political and community acceptance. Since 1985, opportunities to provide family planning as the initial or sole project activity have increased[60]."

The problems of integration may be compounded by the relevant host institutions. For example, family planning services in francophone Africa, in keeping with the greater conservatism and centralisation in such countries, meant that all family planning projects were conducted with ministries of health or the equivalent[61].

The authors of a review of the integration of family planning and health activities, conclude that most government bureaucracies are ill-suited and lack the administrative flexibility and capacity to ensure successful integration of family planning and health or development programmes[62]. And Phillips et al[63] similarly concluded that "Careful attention must be given to ensure that new components do not detract from the financial, time or organizational needs of existing programs".

There are more negative views about integration than positive ones but the proceedings of the Workshop on community based services[64] point out that to be successful, "primary health care and community based services need to be integrated into the national health care infrastructure and to be supported by the medical profession (cf. forestry or other specialists of the environment?) ... to ensure that the needs of the whole population are met[65]."

The integration issues, and gender considerations must be addressed for environmental education projects. One basic question is whether, for example, male involvement is a key prerequisite to the success of a family planning or EE programme in order to avoid misallocation of scarce resources[66]. A good reason for reaching out to include men comes from a study in Zimbabwe. It is reported that "men voiced a much broader comprehension of the relationship between demographic and national issues, e.g. employment, cost of living and land shortage[67]".

Given gender differences in the perceptions of family planning, as illustrated in Burkina Faso, Niger, Senegal and Uganda, these will have to be taken into account in the design of IEC and service strategies both for family planning and environmental education projects. The reasons given for positive attitudes towards family planning often differed strikingly between men and women[68].

As far as linking family planning and environmental education projects locally, more reasons were given for keeping them separate than for integration. One such reason is the diversity between the two. Family planning is a private matter, while EE implies individual and collective action. "Family planning is ... controlled by socio-cultural beliefs, therefore people may not want to act collectively and publicly for a matter so personal[69]." Another reason for separation is the funding issue. The constituencies providing support for family planning and environmental protection and conservation are different. NGOs can collect more money for planting trees than if they combine their activities with population issues. This is especially true of the present climate of opinions in the United States with the opposition of the "right to life" movement to abortion and even fertility control and choice in general. Therefore, in some countries linking family planning or population to local environmental education would be counter productive[70].

In Ecuador and probably elsewhere in Latin America, linking population education to EE might mean opposition from the Catholic Church which has pressured to have community based distribution removed from indigenous villages. Threats were made against the CBD volunteers, sermons, messages over town loudspeakers, and anti-CEMOPLAF broadcasts on a Church-controlled radio station[71].

Some would argue that family planning IEC is a part of environmental education. "People must be made aware of how childbearing patterns affect every facet of their existence[72]."

B. Population, Culture and Gender in Existing Environmental Education Activities

This brief presentation of environmental protection and EE activities is based on a variety of project descriptions and case studies. The materials used are not as extensive as those reviewed for the population/family planning field. In fact they are serendipitous; the original study did not include project materials from the environmental field. The initial call for data with the statement of intent mentioned earlier, did not yield projects which combined, for example, environmental protection and education with population/family planning IEC programmes.

This part of section II will also deal with activities which illustrate the importance of cultural and gender considerations for environmental protection and EE. As stated in the introduction, the present research builds on the previous WID research of the author. In addition, recent participation in meetings on women and the environment[73] and a seminar on women and gender relations[74] suggest issues which go beyond the initial scope of this inquiry. Examples of cultural aspects of our problematic are taken from a workshop on "Building Support for Conservation in Rural Areas"[75]. The purpose of this review is to illustrate how population, cultural and gender issues are reflected in existing environmental protection and EE activities.

Population/Family Planning Issues from IUCN case studies[76]

Examination of the IUCN's (World Union for the Conservation of Nature) case studies shows that they deal more with the relationship of demographic variables to the sustainable use of natural resources, rather than ways of combining environmental protection with population programmes. These studies are descriptions of demographic and natural resource problems. The IUCN's environmental education activities reviewed do not link population IEC to environmental education and conservation issues. In one of the sites[77], positive signs in this direction are due to a spin-off effect rather than the result of the intrinsic structure of the project. The main obstacle in this case, to linking demographic and environmental goals, is the reluctance of Brazilian environmental organisations to do so. The notion of "population control" is considered too political to deal with although they realise that many of their projects cannot succeed unless population issues are taken into account[78]. In addition the Brazilian government has no national population policy, although NGOs are providing services with considerable success.

In another IUCN case study in Costa Rica, the comprehensive national conservation strategy being formulated does not address population growth and distribution. It is reported, however, that a private group plans to launch an initiative to map population distribution in relation to pressures on the natural environment[79]. Unlike Brazil, this country has had a national population policy since 1968.

The controversial character of population issues and opposition from the Catholic Church work against linking environmental protection to family planning in the case study on Honduras. When interviewed the people in the location studied said they had no clear interest in practising family planning.

The three regions included in these illustrations differ in the possibility of linking population factors or behaviour to environmental protection efforts. In Latin America as we have just illustrated the obstacles are political with organised opposition from the Catholic Church regarding family planning activities. In the African case studies (Burkina Faso, Congo and Madagascar) the issue was more the difficulty in raising awareness to family planning with modern methods. There does not seem to be institutional opposition from the Church or the Government. Opposition is due to the perceptions of the people themselves, who prefer to space births with traditional methods. In addition to these cultural perceptions and "social-psychological" reasons, the lack of accessible delivery outlets and the price of contraceptives were other obstacles to family planning. In Madagascar, two villages were studied, in one a family planning programme has existed since 1985 which is integrated into the local primary health care service. No mention is made of attitudes of the people to linking population issues to environmental concerns.

Integrated rural development projects in Nepal, Pakistan and Thailand were studied in the Asian region. In the project in Pakistan there was recognition at the national and higher administrative levels that population dynamics are related to environmental protection. The Director of the latter project stated: "If Pakistan is destroyed, the biggest reason would be its birth rate[60]." However, lack of participation in the government family planning programme was attributed to socio-religious pressures[61]. Women there are much clearer in their understanding of the impact family planning could have on their lives. The immediate need and benefits of family planning were recognised by 92% of the women interviewed. In contrast, the men were uneasy about and suspicious of family planning and opposed to it.

In one of the Nepalese projects, family planning acceptance rates varied but were comparatively high. There are indications from interviews conducted that people do link their demographic behaviour to the availability of natural resources. Studies of the hilltribes in Thailand, indicate that they do not "like or believe in family planning. Men particularly do not want to use any kind of contraceptive. Thus, only women occasionally practise family planning[62]." A survey done in one of the sites showed that 46.2% of Hmong women living in the project area are practising birth control by various methods. In another development project for the same group, contraceptive practise is high.

Environmental Protection, EE and Culture

The importance of cultural considerations emerged in one study which is trying to use local knowledge, traditional skills and values. The work with the Rendille ethnic group in Kenya was reported at the Vermont Workshop mentioned earlier in this section, showed that this project has already learned the "lesson" from the family planning experience, namely using culturally relevant materials to carry the message. Environmental concepts were to be "injected into the Rendille culture"[63] through folktales on radio and television. "The success of this project is dependent upon: the strong oral tradition of the Rendille people; securing land tenure rights (the Rendille have only squatter's status); and, the ability and desire of individuals to remain Rendille. The major hurdle or obstacle to success is the perceived lack of conservation awareness among the Rendille people[64]." Another interesting pursuit

in this project is an indirect KAP (Knowledge, Attitudes and Practices) inquiry to "extrapolate their conservation ethic" from questions about camel husbandry, for example. It is hoped that emulation of the conservation practices of other areas in Kenya may result from mobile training centers that would transport Rendille leaders to different reserves. Observation of the indigenous conservation ethic of tribes that reside in areas where resources flourish could provide positive examples of environmental protection.

Environmental Protection and Education and Gender Relations

Although all the projects presented at the Global Assembly of Women and the Environment were initiated and carried out by women, they do not provide enough information to understand what the obstacles are related to gender. These are by and large WID projects which have made a valuable contribution to environmental protection and awareness raising. Further probing with those concerned might provide some insights into the difficulties due to socially constructed and culturally variable roles that women and men play in their daily lives. In other words, gender relations obstacles should emerge from project evaluations. In addition, gender issues need to be integrated into the discussion of various strategies. Gender is an important social relation that impinges on all aspects of economic life and may shape the design and outcomes of development starategies[85]." The term gender instead of WID is more useful here because women are not a homogenous category.

Environmental protection and awareness is closely linked to "reproductive work", i.e. behavaviour patterns which include biological and social caring and nurture essential for human reproduction. Concern for gender relations constraints in regard to environmental protection (including family planning) requires the ability to look at relations between men and women within households as well as between households. Gender distortions are barriers to the efficient use of resources.

For example, the Chipko movement owes much of its success to the actions and initiatives of women. Dasholi Gram Swarajya Mandal (DGSM/or Chipko movement) is located at Gopeshar, District Chamoli in the high Himalayas of Uttar Pradesh in India. The organisation plays a key role in motivating the local people to participate in various eco-development and soil-conservation schemes with the main thrust on plantation and forest protection. Since 1977, DGSM has been organising various environmental conservation camps chiefly concentrating on the catchment areas of the Ganga river. These areas were badly affected during the Alaknanda disaster of 1970. The flood inundated an area about 1000 square kilometers. The DGSM workers discovered during their relief work after the flood that the main cause of the flood was heavy deforestation and the ill-planned road construction in the area.

The DGSM launched its first direct action programme of forest protection in 1973 at Mandal. This was the birth of the celebrated "CHIPKO ANDOLAN" (hug the tree movement). Later it was mainly because of the movement at Reni, where the people (**mainly village women**) saved the trees from the contractors' axes, that the Government resolved to set up a committee of scientists and social workers to inquire into the conditions of the mountains.

Gender relations, which may turn into obstacles, do not emerge from this description of the CHIPKO movement. However, the project's aims which include the socio-economic and environmental development and enhancement of the resources of the proposed area with the active participation of the local people does have gender implications. Sustainable development of this area means differentiating incentives to men and women which will bring about equitable sharing of labour. " The extent to which unpaid work, both in the home and in the community supports and underpins general social and economic development needs to be better understood in order that the burden may be shared more equally between men and women[86]."

Notes

1. G. Johnson-Acsadi, "Levels and Trends of Contraceptive Use in Developing Countries with Special Reference to Africa" in Bouzidi & Korte, Editors, *Family Planning for Life: Experience and Challenges for the 1990s*, IPPF, GTZ, London, May 1990, p. 17.

2. Rogers (1971), Rogers & Kincaid (1981) in Piotrow and Meyer,"Promoting Family Planning: Findings from Operations Research and ^Program Research", Johns Hopkins University, 1991, p. 2.

3. See: Columbia University,Center For Population and Family Health, "Operations Research Program: Overview of Lessons Learned, 1984-1990"(Africa and Haiti), p. 18.

4. *Ibid.*, p. 18.

5. See: Therese Mcginn, "Accelerating Family Planning Acceptance in Rwanda: Results of An Operations Research Project", Paper presented at the 117th Annual Meeting of the American Public Health Association, Chicago, October 22-26, 1989.

6. *Ibid.*, p. 4.

7. *Ibid.*

8. *Ibid.* p. 20.

9. See: J. Townsend and J. Foreit,"Efforts to Improve Program Performance in Latin America and the Caribbean: Lessons Learned from Operations Research", Paper presented at IUSSP Seminar: The Role of Family Planning Programs as a Fertility Determinant, Tunis, June 26-30, 1989, in *Ibid.*.

10. See: J.R. Heiby, " Operations Research in Primary Health Care" in M. Wawer, S. Huffman, D. Cebula and R. Osborn, *Health and Family Planning in Community-Based Distribution Programs*, Boulder Colorado, Westview Press, 1985, in *Ibid.*, p. 22.

11. See: Population Council Data Bank,"Proposal for the Africa Operations Research and Technical Assistance Project: "Situation Analysis of the Family Planning Program of Zaire", p. 5.

12. See: *Ibid.* Data Bank,: "The Impact of Strengthening Clinic Services and Community Education Programs on Family Planning Acceptance in Rural Madagascar", December, 1989.

13. *Ibid.* Data Bank, "Final Report: Delivery of Family Planning and Health Services in Campesino and Indigenous Communities in Ecuador", Centro Medico de

Orientacion y Planificacion Familiar (CEMOPLAF), April 1, 1986 - July 31, 1989, p. 29.

14. *Ibid.* Data Bank, "Expanding Health and Family Planning Delivery Systems Using Traditional Practitioners: An Operations Research Study in Rural Kenya", June 1991 - November 1991, p. 1.

15. *Ibid.* Data Bank, INOPAL II,"Incorporation of Reproductive Health Service into Save the Children's Social Development Strategies", Honduras, March 1991, p. 5.

16. *Ibid.*, p. 14.

17. *Ibid.* Data Bank,"....Rural Madagascar", op.cit., p. 11.

18. *Ibid.* Data Bank, ".... Honduras", op.cit., p. 12.

19. P.T. Piotrow and R.C. Meyer, "Promoting Family Planning: Findings From Operations Research and Program Research", Center for Communication Programs, Population Information Program, The Johns Hopkins University, School of Hygiene and Public Health, 1990, p. 21.

20. Columbia U.(CPFH), op.cit. p.19.

21. See: J.C. Caldwell and Pat Caldwell,"High Fertility in Sub-Saharan Africa" in *Scientific American*, pp 82-99, May 1990; See also various writings by Jane Guyer, Judith Bruce; and W.Weekes-Vagliani, *Analyse des variables socioculturelles et de l'ajustement en Côte d'Ivoire*, Document Technique No. 9, OECD Development Centre, 1990, French only.

22. Columbia U., (CPFH) OR Review, op.cit. p. 7.

23. Op.Cit. Data Bank, "....Rural Kenya", p. 23.

24. *Ibid.*, p. 30.

25. Piotrow and Meyer, op.cit. p. 39.

26. *Ibid.*, p. 39.

27. Op.Cit. Data Bank, "....in Indigenous Communities in Ecuador", op. cit. p. 29.

28. Bouzidi & Korte, op.cit.

29. *Ibid.*, p. 18.

30. Piotrow and Meyer, op.cit. p. 2.

31. See: Coeytaux et al.,(1987) in Piotrow and Meyer, op.cit., p. 4.

32. Bouzidi & Korte, op.cit. p. 25.

33. *Ibid.*, p. 67.

34. *Ibid.*, p. 221.

35. E.G. Niamey, Niger, in Columbia U., 1989 and e.g. Bangladesh and three Nigerian provincial cities, see: Piotrow and Meyer, op.cit. p. 23.

36. *Ibid.* p. 26.

37. *Ibid.*

38. *Ibid.*, p. 36.

39. John Ross, Donald J. Lauro, Joe D. Wray, and Allan G. Rosenfield, "Community-Based Distribution", Chapter 14, pp.343-366 in Robert J. Lapham and George B. Simmons, Editors, *Organizing for Effective Family Planning Programs*, National Academy Press, Wahington, D.C., 1987,p. 343.

40. Ian Askew and A.G. Khan, "Community participation in National Family Planning Programs: Some Organizational Issues", in Studies in Family Planning, Volume 21, number 3, May/ June 1990, pp 127-142.

41. *Ibid.*, p. 135.

42. *Ibid.*, p. 136.

43. Ross et al, op.cit., p. 349.

44. See: Population Council Data Bank, "Family Life Association of Swaziland (FLAS): CBD Pilot Project, May 1990, p. 6.

45. *Ibid.*, p. 6.

46. *Ibid.* Data Bank, Dr. A. O. Oyoo, and Robert A. Miller, "Community Based Distribution of Oral Contraceptives in Kenya: A Policy Development Report", p. 3.

47. IPPF/GTZ, "Workshop on Community Based Services", Harare - Zimbabwe, 21-25 January 1991, Produced by The Programme Department IPPF.

48. *Ibid.*, P.1, of Day Three.

49. Population Council Data Bank, op.cit."FLAS: CBD..." op.cit., p. 10.

50. See: John Ross et al, op.cit., p. 345.

51. *Ibid.*, p. 347.

52. *Ibid.*

53. Grazia Borrini, *Lessons Learned in Community-Based Environmental Management: Proceedings of the 1990 Primary Environmental Care Workshop*, Siena, Italy, 29 January -2 February 1990.

54. PEC, Siena Meeting, A. Catalano, p. 72.

55. Population Council Data Bank, " SC/Honduras....", op.cit., p. 3.

56. See: Proceedings Siena meeting op.cit., p. 145.

57. Personal communication, Gwendolyn Johnson Acsadi, July 1991.

58. *Ibid.*

59. Population Council Data Bank, "Delivery of FP ...Indigenous...in Ecuador", op.cit. p. 2.

60. Columbia U. OR Review, op.cit. p. 7.

61. *Ibid.*, p. 14.

62. Ruth Simmons, Michael A. Koenig, and A.A.Zahidul Huque, "Maternal-Child Health and Family Planning: User Perspectives and Service Constraints in Rural Bangladesh" in Studies in Family Planning, Volume 21, Number 4, July/August 1990, pp 187-196.

63. James Phillips et al, "Integrating Health Services into an MCH-FP Program: Lessons from Matlab - Bengladesh", in Studies in Family Planning Volume 15, No. 4, July/August, 1984.

64. IPPF/GTZ Workshop, op.cit. p. 2, (in Day One section).

65. *Ibid.*

66. Population Council Data Bank, "Increasing Male Involvement in the Family Planning Association of Kenya (FPAK) Family Planning Program", p. 4.

67. F.T. Chikara,"Information, Education and Communication(IEC) Programme in Zimbabwe", in Bouzidi & Korte, op. cit. pp144-145.

68. Columbia U., OR Review, op.cit. p. 7.

69. Ian Askew & A.G. Khan, op.cit. p. 136.

70. Personal Communication, Mr. Winthrop P. Carty, Journalist, Editor, *Global Edition* at the Population Reference Bureau, Washington D.C., July 1991.

71. Population Council Data Bank, Ecuador, op.cit., p. 7.

72. G, Johnson-Acsadi, "Levels and Trends of Contraceptive Use in Developing Countries with Special References to Africa", in Bouzidi & Korte, op.cit., p. 21.

73. "Global Assembly of Women and the Environment: Partners in Life" (4-8 November 1991, Miami, Florida.

74. "Seminar on Integration of Women in Development, United Nations Office at Vienna, Centre for Social Development and Humanitarian Affairs, Division for the Advancement of Women, Vienna, 9-11 December 1991.

75. "Building Support for Conservation in Rural Areas", Workshop Proceedings, Volume I : Case Study Summaries, 27-31 May 1986, the Tyler Place, Highgate Springs, Vermont, U.S.A.

76. Nine Case Studies from the IUCN Population and Resources series were reviewed, three in each continent: Brazil, Costa Rica and Honduras; Burkina Faso, Congo and Madagascar; and Nepal, Pakistan and Thailand.

77. IUCN Case Study, Tamar, Brazil.

78. IUCN Brazil Case Study, p. 27.

79. IUCN Case Study Costa Rica, p. 6

80. IUCN Pakistan Case Study, p. 6

81. *Ibid.*, p. 7.

82. IUCN Case Study Thailand, p. 13.

83. William Eddy, "Effects of the IPAL Project on the Rendille Tribe in Kenya", pp 85-87, in Vermont Workshop Proceedings, op.cit.

84. *Ibid.*, p. 85.

85. Diane Elson, "Gender Issues in Development Strategies", Paper prepared for Seminar on Integration of Women in Development", Vienna, 9-11 December 1991.

86. United Nations Office at Vienna, Centre for Social Development and Humanitarian Affairs, Division of Advancement of Women, Final Report, Seminar on the Integration of Women in Development, op.cit.

Conclusions

The initial scope of this paper was to find out if there were lessons from the family planning experience for community based environmental education projects. It was assumed that given the similarities of the target populations in rural areas of developing countries there would be a number of parallels between the two fields. Another assumption was that simply asking how community groups have been mobilised to accept or support family planning would provide insights into how they could be mobilised for another purpose. Although project specific documents were not available, the examination, study and review of the materials at hand was carried out with a project cycle methodological approach. In other words, the author, building on previous WID research looked for information on each stage of the project cycle, namely: identification of particular areas for intervention, preparation, appraisal of possible impacts on specific groups, negotiations, implementation and monitoring, and evaluation.

It was found that these lessons pertained to three aspects:

- advocacy (including funding) and research;
- community based approaches, including gender and cultural issues; and
- integration with other programmes, such as health.

The main lessons from the family planning experience relate to: funding issues and modalities; the importance of advocacy work; legitimation of the idea and institutionalisation. Emulation of the operations research techniques used in the family planning experience will depend to a large extent on funding possibilities. However, two case studies from a workshop on "Building Support For Conservation in Rural Areas"[1] illustrate that some groups in the environmental education field already recognise the need for evaluation and institutionalisation. There are comprehensive national plans and strategies for environmental education and evaluation. These plans are at different stages of design and implementation. Efforts are underway to develop a "much-needed impetus and a generalizable model for the design, development, implementation, and evaluation of focused conservation education programs for use in endangered ecosystems elsewhere in Brazil and in other countries[2]. The evaluation procedures being developed will form a base for more cost-effective — allocation of the scarce funds available for "critically-needed" conservation education.

The case study for the Dominican Republic presented at the same workshop[3] shows that a similar understanding exists there. Part of the national plan is also to develop and test alternative communication techniques to strengthen awareness of resource issues. Training of teachers, leaders and farmers in conservation concepts and practices were included. These activities are similar to those described in materials of four workshops held in the LatinAmerican/Caribbean region by WWF[4].

The relevance of the framework developed in section I and confirmation of the hypothesised criteria for success comes from the Chipko Movement mentioned earlier[5]. The movement attributes much of its notable success to seven factors:

— Incentives were given to women and youth of the area so as to inspire them to actively participate in various development schemes;

— Social and Agroforestry were promoted as a means towards soil-conservation and to fulfill the needs of fodder and fuel;

— Reduction in drudgery, an improvement of health services and changes brought about in the traditional agricultural pattern;

— The opening of possibilities for small-scale cottage and village industries based on local resources;

— The improvement of marketing outlets for local craft;

— The organisation of various eco-development camps to increase environmental awareness and also as a means to diffuse basic scientific and technical knowledge among rural people;

— The introduction of non-conventional sources of energy such as Gober Gas, Energy Chulas, etc.

These factors match very closely the hypothesised criteria for success of environmental education projects setout in part B of section I of this paper.

The success stories from the "Global Assembly of Women and the Environment:Partners in Life" (4-8 November 1991, Miami, Florida) also bear out the major assumption that environmental education has to be backed up by appropriate actions. Slightly over half of all the projects selected for review (in Africa, Asia/Pacific and LatinAmerica/Caribbean) mentioned or indicated environmental education and or population factors. Very few of the projects mentioned population in the environmental problems presented and all of these also included environmental education. In Latin America, public awareness raising came as a **result** of actions to protect or improve the environment in specific settings. What this material suggests is that actions speak louder than words, i.e. they may often have to come **before** hortatory campaigns or audio-visual information, communications and education (IEC) programmes. We would like to believe that those projects or programmes which managed to raise public awareness will lead to more sustainable environmental protection in other areas and in the long run. This means that those endeavours which do not stop at solving the development problems posed but open up possibilities for other initiatives will have a more lasting effect. It is too early to tell whether this assumption will prove true.

Review and analysis of the "enabling" factors for these 160 successful projects (from the Global Assembly in Miami) also provides some insights which relate to the funding issues from the family planning experience. Most often funding came from a

number of sources such as multi-lateral and bi-lateral donors, international and national NGOs (many of these from local women's groups) but almost all depended to a great extent on volunteer local communal labour. Each of these projects illustrates the importance of individual initiatives which show imagination, tenacity and courage. These projects also provided income-generating opportunities and led to a general improvement in the local environment. Many of them are good illustrations of the Primary Environmental Care (PEC) concept mentioned earlier.

Funding issues are basic to an application of the "lessons" learned from the family planning experience. What resources are available for EE and environmental protection activities at the local level? This question is related to a major assumption of this study, namely that in order to be successful environmental education and public awareness activities must be backed up with appropriate actions. Will the funds come from the major bi-lateral or multi-lateral donors? How will the funds be channelled, to and through what organisations? The funds should initially be grant funds which are clearly earmarked thus providing a firm basis for programme development in various agencies in specific settings. What mix of indigenous resources and outside funds can be envisaged and set as goals for donors and NGOs working in this field?

Funds are needed for operations research (OR) to provide answers to the problems of implementation encountered in field operations. Research can test and indicate which EE strategies work best with what personnel. OR studies should address real problems generated by programme implementation. Special research needs include finding out what component of present environmental protection activities involves increased environmental education (EE) and public awareness? Further work also needs to be done to investigate where links have been made between family planning education and activities and EE.

Environmental Education (EE) messages will have to be tailored to address the problems identified by local communities. For example, provision of safe water supply may be an initial way of sensitizing the population to other environmental issues which are related to health, such as the abuse of pesticides and chemical fertilizers. EE projects should be fashioned to achieve a sharply defined objective, such as the elimination of water related intestinal problems, rather than a decrease in all environmentally caused disease occurrence. When effective means of supplying safe water to various target populations have been found, it will be easier to win over people to other environmental protection activities through education and action.

The key problem when trying to transfer population/family planning experience to EE work is that it may be much more difficult to define just what are the objectives of the EE programme. The environmental objectives must be well defined, durably acceptable to the community, and progress toward attainment of the objective must be measurable and monitored. The indices must be chosen in advance. Much of value can be learned from spot surveys. If well designed a sample survey of 1000 persons or households will usually suffice for programme guidance. The key to any useful survey is a clear, crisp definition of purpose, with questions which will permit arithmetic analysis and charts of salient data.

Funding modalities indicated in the family planning literature reviewed, show a variety of possibilities worthy of emulation for EE projects. Many proposals in the Population Council's data bank, referred to throughout this study, mention "buy-in" arrangements in developing countries. Buy-in is a free standing contract to provide services through e.g.The Population Council. USAID can purchase an amount of services through its local mission to expand a project already underway[6]. Other bi-lateral and multilateral donors have been approached in a similar fashion. Similar concerted efforts and collaboration will be needed and are probably feasible for environmental education projects and for environmental protection programmes.

As far as linking population/family planning IEC and environmental education (EE), the evidence from this review and recent contact with a number of women from developing countries indicate that such linking would be counter productive at the present time. There are a number of pre-conditions necessary before this can be done. The way to link would have to come from the communities themselves, i.e. be perceived or identified as one of their basic needs. In a case study of Saint Lucia, West Indies[7], presented at the Vermont Workshop mentioned earlier, two points may provide insights as to why population concerns have such a low profile in the environmental education and protection studies reviewed. Perhaps they have not been sufficiently linked to the development needs and conservation issues addressed. In fact, population factors are not always part of the problematic in the perceptions of the people concerned. In Saint Lucia it was reported that participatory research is one of the "concrete tools" which also included identification of the local problems collectively. They also point out that the development needs should have as much priority as the conservation requirements.

Future research on linking population/family planning IEC to environmental protection and public awareness raising is needed. Studies which would clarify individual, household and community strategies for survival and advancement in particular ecological settings. One site for such a study would be the Chogoria catchment area in Kenya mentioned in part B of section I. What is the direction and intensity of the cultural constraints limiting the adoption of fertility planning? What is the nature of the other constraints?

Studies focusing on the role of environmental education in managing environmental problems should find out what proportion of present environmental protection activities includes environmental education. The examination of the success stories from the Global Assembly in Miami, mentioned earlier show that over half of these endeavours either started with education and public awareness raising or that EE was the result of environmental protection or improvement. Evaluation studies need to be integrated into project plans so that there will be a better understanding of the ingredients of success in particular settings and timeframes. Our sample of successful environmental education projects is biased because all of those taken from the Global Assembly were initiated by women and had mainly women participants. The others from the Vermont Workshop, address cultural and development issues, but gender relations did not emerge clearly from these reports. The main concern is that the visibility of those responsible for environmental protection on a permanent basis in their communities be increased. As stated earlier, incentives to change behaviour

are different for men and women in various settings because of the gender division of labour and responsibility. Therefore, more work needs to be done on the gender related obstacles to increased public awareness of environmental issues including the population ramifications.

Notes

1. "Building Support for Conservation in Rural Areas", Workshop Proceedings, Volume I : Case Study Summaries, 27-31 May 1986, the Tyler Place, Highgate Springs, Vermont, U.S.A.

2. Lou Anna Dietz, "Brazil Community Conservation Education Program for the Golden Lion Tamarin", in IBID Workshop proceedings, pp 8-16.

3. Robert E. Roth, "Natural Resources Management (NARMA) in the Dominican Republic: A Case Study in Environmental Management Education", in IBID, pp 93-96.

4. WWF, Washington, four reports of environmental education workshops: Federation Dominicana de Asociaciones Ecologistas, "Reporte Final Tecnico Y Presupuestario del Proyecto, "Campana Educacion Ambiental Parque Nacional Jaragua"; "Sociedad Ecologica de Barahona Soesa, "Yo Conozco y Defiendo El Parque Nacional Jaragua", Febrero-Octubre 1990; "Environmental Education at the Alto Quindio Reserve, Columbia #6192"; "Environmental Education Program at Beni Biosphere Reserve, Bolivia - Phase IV, #6197", July, 1990.

5. "Conservation Work of Dasholi Gram Swarajya Mandal (Chipko Movement), pp 68-70, in proceedings Vermont Workshop, op.cit..

6. Personal communication, Mr. Fred Perry, USAID, American delegation to the OECD.

7. "Conservation and Development of the Southeast Coast, Saint Lucia, West Indies, A Case Study" by Yves Renard, pp 110-116, in op.cit.