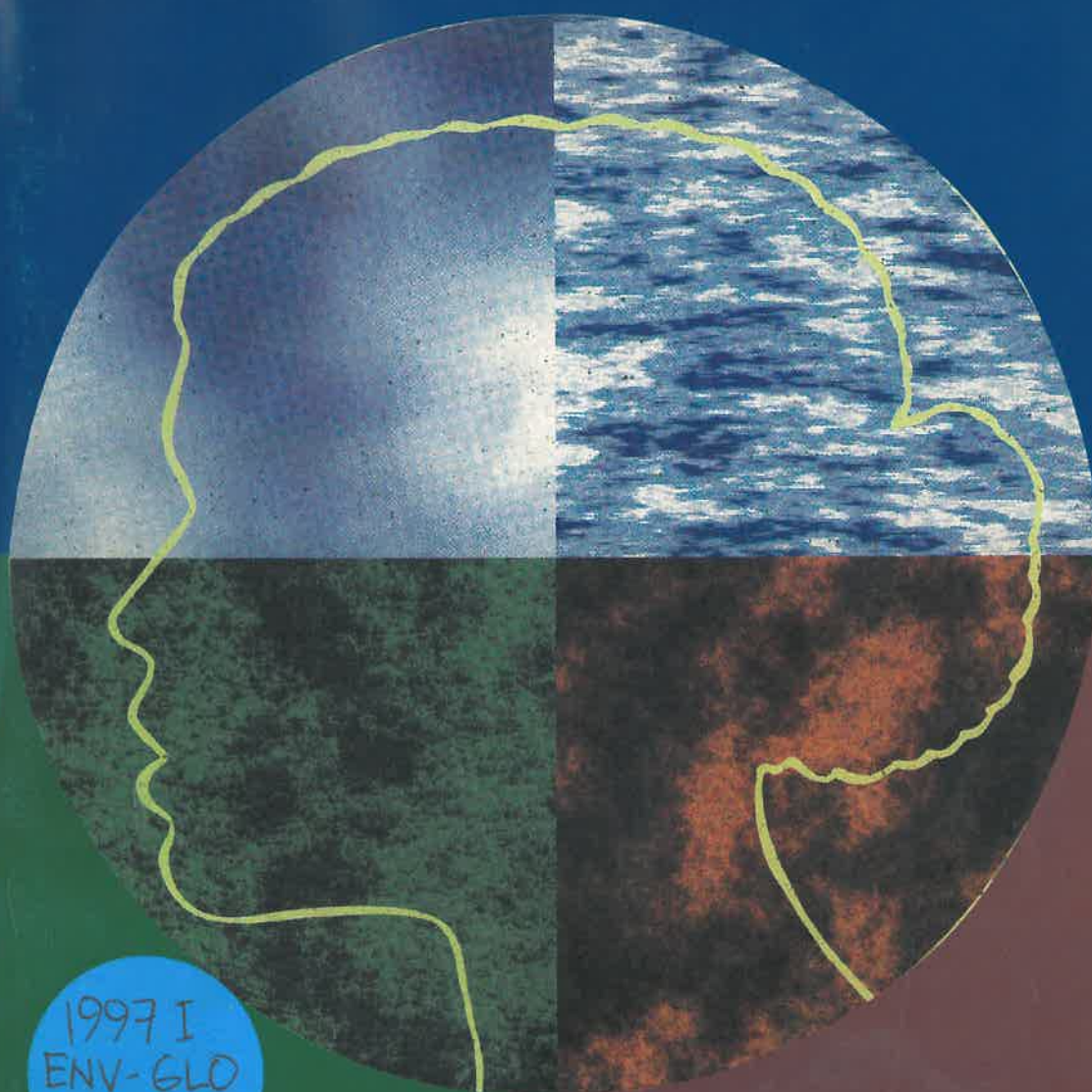


INSTRAW news



WOMEN AND DEVELOPMENT



1997 I
ENV-GLO
EAR
EN

Earth Summit + 5 - Women's Vision

INSTRAW News Special Issue No. 26 First Semester 1997

Table of Contents

EDITORIAL

Sustainable Development: A Concept, A Practice, A Mechanism to Achieve Gender Equality	1
--	---

SECTION 1

INSTRAW INITIATIVES IN IMPLEMENTING AGENDA 21

• Rio + 5 INSTRAW's Activities Regarding the Implementation of Agenda 21	3
--	---

SECTION 2

TRAINING AS A TOOL FOR THE EMPOWERMENT OF WOMEN

• Women, Environmental Management and Sustainable Development	7
• Women, Water Supply and Sanitation: INSTRAW's training initiatives	9
• Training on Women and Renewable Sources of Energy	10

SECTION 3

GENDER/WOMEN, TECHNOLOGY AND SUSTAINABILITY

• Technological Dreams and Life Embracing Ethics	12
• Women in the Field of Bioethics: Activities undertaken by the International Bioethics Committee of UNESCO	15

SECTION 4

ENVIRONMENTAL MANAGEMENT AND SUSTAINABLE DEVELOPMENT

• Fifth Session of the Commission on Sustainable Development	17
• Gender and Sustainable Land Use: the need for transformation	18
• Sustainable Forest Management and Gender Equality	23

SECTION 5

CASE STUDIES

-Sustainability, Farming Patterns and Food Security	28
• Eating and the Environment: how unsustainable are patterns of food consumption in Sweden?	28
• Food Insecurity and Women's Roles in the African Region	31
• The Killing Fields: Impact of Pesticides and Chemical Fertilizer Residues in Food Production in India	34
-Sustainable Energy Development	40
• Women and Energy: Household Energy for Developing Communities, South African Experience	40
• Energy Efficiency as an Instrument for Environmentally Sound Development and Economic Growth	46
-Sustainable Water Development	52
• Gender Equality and Water Resources Management: Five years after Rio	52

SECTION 6

REGIONAL IMPLEMENTATION OF AGENDA 21

• ECA: Mainstreaming Gender Equality in the Sustainable Development Process	59
• ECE: Active Involvement of Women under ECE Conventions	60
• ECLAC: The Gender Dimension in Sustainable Development in Latin America and the Caribbean	61
• ESCAP: Activities in Water Supply and Sanitation	62
• ESCWA: Statement to the Commission on the Status of Women	63

SECTION 7

LETTER TO THE EDITOR	65
----------------------------	----

SECTION 8

INSTRAW HIGHLIGHTS	66
--------------------------	----

Acronyms and abbreviations used in this issue	68
---	----

Supplements : Strategic Objective K - Women and the Environment Agreements for Sustaining the Future Environment

Editor

Martha Dueñas Loza

Guest Contributors

- Annika Carlsson-Kanyama • Ingegerd Ehn
- Carolyn Hannan-Andersson
- Georges Kuitukdjian • Joan Mencher
- Flora Mosaka-Wright • Els Postel Coster

Staff Contributors

- Borjana Bulajic • Martha Dueñas Loza
- Tiziana Marchetti • Julia Tavares
- Julie Zimet

Production and distribution

- Jeannie Ash de Pou • Magda Canals
- María Fernández

Layout

Ninón León de Saleme

Cover:

Design: Ninón León de Saleme

Illustration: Enzo Fortarezze

Taken from INSTRAW Training Package

"Women, Environmental Management

and Sustainable Development" ISBN-92-

1-1270006-5 (Turin, 1995).

Sustainable Development:

A Concept, A Practice, A Mechanism to Achieve Gender Equality

What can **we the women of the world** do in our individual endeavours and in our collective activities to translate into daily practice the concept of sustainability, thus ensuring our own well-being and that of our children. What does the precautionary approach principle mean to **us women of the world** who are searching for gender equality, development and peace.

We the women of the world, know that when a society is orderly, a fool alone cannot disturb it; we know that when a society is chaotic, a sage alone cannot bring order. Therefore, the impact projected by our individual actions is not sufficient to produce the magnitude of changes to attain gender equality and sustainable development. It is through our collective actions that changes will happen.

The United Nations Conference on Environment and Development, was probably the closest thing to a human encounter at the planet level. Five years have passed and the voices of hope have become distant in view of the extremes of opulence and overdevelopment in which approximately twenty per cent of the world population lives, whose level of consumption and overdevelopment is not a favourable sign of equilibrium either in regard to consumption of natural resources, or in regard to its production capacity - human and ecological- as the rest of the population (80%) fights at different and shameful levels of poverty and destitution. In these extremes and at intermediate levels, women live in unequal conditions.

The forthcoming General Assembly special session is called to evaluate the implementation of the principles, objectives and commitments of Agenda 21, adopted at the Earth Summit in 1992, when the governments and the peoples of the world, united for a first time, made the commitment to take care and protect an inheritance common to all: planet Earth and all its biological wealth. They also made the commitment of facilitating this process through sustainability as the main principle of individual behaviour and of the collective administration and maintenance of the wonderful heritage we have been trusted with.

Paragraph one¹ of the Preamble of Agenda 21 states: "Humanity stands at a defining moment in history. We are confronted with a

EDITORIAL

¹Rio Declaration - United Nations, DPI. ISBN 92-1-100509-4.

perpetuation of disparities between and within nations, [and between genders]², a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfillment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future..."

Intelligence and understanding of the different stages of human development converge in a summary of scientific, technical, cultural, economic and social progress of extreme magnitude. A progress that results in societies of great sophistication, who share the planet and its wealth with others, still more numerous, surviving in opposite and abject conditions, thus projecting a shadow of indignity over the human condition worldwide.

How are women's conditions and needs reflected in the concept of sustainability; as a practice, as a mechanism for building that future where human beings can live with dignity and in harmony without destroying the common heritage?

This type of consideration leads us directly to inquire how principle 15, the precautionary approach of Agenda 21 can become the most forceful argument by which **"we the women of the world"** decide to implement the commitments acquired in 1992. Principle 15 states, "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation". The PRECAUTIONARY APPROACH, can and should be applied to the total spectra of human activity complementing and reinforcing sustainability.

INSTRAW News 26 is proud to join all the women and men of good will, whose vision of a planetary commitment and individual and collective responsibility towards quality of life, towards the eradication of poverty, towards the conservation and respect of the planet that harbors us. As a contribution to the General Assembly special session, this edition of the magazine -on an experimental basis- presents articles of women scholars and one gentleman whose creative thinking, opinions, comments and contributions enrich and broaden our understanding of sustainability and precautionary approach.

INSTRAW News thanks them warmly and takes advantage of the opportunity to invite readers to send us their impressions and - why not- articles that can expand the analysis on sustainability and the precautionary approach principle as a basis to attain gender equality in the next millennium.

²Added by the Editor.

SECTION 1

INSTRAW Initiatives in Implementing Agenda 21

• Rio + 5 - INSTRAW's Activities Regarding the Implementation of Agenda 21

Since 1982, INSTRAW, in accordance with its Statute and mandate, has been engaged in research analysis and training activities addressing women's issues in the areas of: water supply, sanitation and waste management; new and renewable sources of energy; and natural resources. In compliance with the mandates of Agenda 21, INSTRAW's research and training programme also deals with environment and sustainable development issues. The Institute's programmes encompass activities in the areas of policy coordination, research, training and capacity building and information.

INSTRAW's four main programme thrusts are: (a) the economic and political empowerment of women; (b) women, media and communications; (c) women, environment and sustainable development; and (d) statistics and indicators on gender issues. These four programmatic areas are approached in an integrated and holistic manner and are cross-cutting and cross-disciplinary with relevant chapters of Agenda 21. In addition, they address women's

roles and activities in areas including: poverty, population growth, health, structural adjustment policies, education and training, water, energy, agriculture, and forestry, among others.

In relation to *United Nations inter-agency cooperation and coordination in areas of sustainable development, water resources and renewable sources of energy*, INSTRAW regularly attends the Commission on Sustainable Development (CSD). Since 1982, the Institute also actively participates in the United Nations Steering Committee on Water Supply and Sanitation and the Administrative Committee on Coordination (ACC) Subcommittee on Water Resources as well as at the Committee on Natural Resources, to which it provides substantive statements on the current roles and position of women in water resources management outlining constraints and presenting possible solutions. In addition, INSTRAW regularly participates in the Committee on New and Renewable Sources of Energy and Energy for Development and also attended the Ad-hoc

Inter-agency Meeting on Energy in UNESCO's Headquarters in Paris, 18-19 December 1996. For the fifth session of the Commission on Sustainable Development and the Special General Assembly session to Review and Appraise the Implementation of Agenda 21, INSTRAW, in cooperation with the Department for Public Information (DPI), prepared a backgrounder on women and sustainable development as part of the joint United Nations information activities.

In relation to Chapter 3 of Agenda 21 - Combating Poverty - and due to the Institute's concern with women, poverty and social and economic inequality, under its Economic and Political Empowerment of Women programme, INSTRAW carried out a successful programme on rural women and credit, which examined the cultural, economic and social constraints limiting rural women's access to credit from financial institutions in developing countries. The programme also identified rural financial institutions in developing countries from the African, Asian and Latin American and Caribbean

regions, with successful and replicable banking services, systems and procedures. The results of this research is a publication entitled, *"Credit for Women: Why is it so important?"*, published in cooperation with International Centre for Research on Women (ICRW).

Bearing in mind Agenda 21's Chapter 4 - Demographic Dynamics and Sustainability - and women's important participation in the informal sector in developing countries, INSTRAW produced two studies, *Measurement and Valuation of Unpaid Contribution: Accounting through Time and Output*, in 1995 and *Valuation of Household Production and the Satellite Accounts*, in 1996. Based on the results of these studies and the overall experience gained by INSTRAW in collecting new statistical information on time-use data and in measuring and valuing unpaid work, a training package, *Collection, Processing and Analysis of Data on Satellite Accounts on Women's and Men's Unpaid Work*, is being produced. In 1995, INSTRAW also prepared a training package, *"The Use of Statistics and Indicators on Gender Issues in Policy"*, which contains materials, computerized statistical models and exercises designed to enhance the user's understanding of and skills in utilizing gender-specific statistics and indicators to design policies and development

programmes. In its preliminary format and style, the package is ready for pilot-testing.

Relative to Chapter 7 - Promoting Sustainable Human Settlement Development- and concerned with the effects of armed conflict on women, INSTRAW, in cooperation with Habitat, organized a round table at the Habitat II Conference on "Women and Human Settlements in Conflict Zones". The round table focused on the situation of women whose habitat has been dramatically changed due to human-made conflicts and disasters. It also addressed some of the complex dimensions of international and intra-state conflicts and their multiple causes, including: socio-economic disparity and environmental degradation; the impact of conflict on women's habitat and the crucial need to empower women in order to achieve sustainable human settlement development. The proceedings of the round table will be published in June 1997.

Chapter 18 - Protection of the Quality and Supply of Freshwater Resources: Application of Integrated Approaches to the Development, Management and Use of Water Resources - is an area to which INSTRAW has substantively contributed through the ACC Subcommittee on Water Resources, by providing inputs on women's roles and activities in the water sector in areas such as: integrated water resources development and

management; drinking water supply and sanitation; water and sustainable urban development; and water for sustainable food production and rural development. INSTRAW also substantively contributed to the background report, "Gender and Water", prepared by the Swedish Environment Institute (SEI). In addition, INSTRAW prepared a multimedia training package, "Women, Water Supply, and Sanitation", to which an additional module on "Waste Management" was incorporated. The Institute has also organized training seminars on the subject-matter at the national, sub-regional and regional levels.

INSTRAW provided substantive inputs to the report of the fifth session of Commission on Sustainable Development, covering the inventory of on-going energy-oriented programmes and activities within the United Nations system, as well as the report to the 52nd session of the General Assembly, through the Economic and Social Council, on the possibilities of strengthening the coordination of organizations and bodies of the United Nations system in the field of energy within the framework of the Administrative Committee on Coordination. In addition, INSTRAW produced a multimedia training package on "Women, New and Renewable Sources of Energy" and conducted training seminars on

the subject at the national, sub-regional and regional levels.

In relation to *Chapter 24 - Global Action for Women Towards Sustainable and Equitable Development* - INSTRAW prepared a study *Women, Environment and Sustainable Development: Towards a Theoretical Synthesis*, in cooperation with the University of Utrecht and the Institute of Social Studies in the Netherlands. Complimentary to this study, INSTRAW has carried out research and case studies in four countries - Bangladesh, Brazil, Burkina Faso and French Polynesia - on major environmental problems affecting women and the actions being taken at different levels to solve them. These studies were published in *INSTRAW News* No.19 devoted to women, environment and sustainable development.

From 9 to 15 September 1992, INSTRAW organized an interregional workshop, in cooperation with the Task Force on Women and Development of the former United Nations Department of Economic and Social Development (DESD), the State Science and Technology Commission and the All-China Women's Federation of the People's Republic of China in Beijing. The purpose and outcome of the workshop was the development of eighty-six concrete and replicable project proposals based on the recommendations of the Nairobi Forward-looking Strategies for the Advancement of Women

until the Year 2000 and some of the issues raised in Agenda 21.

In September 1995, as part of the Special Events of the Fourth World Conference on Women in Beijing, INSTRAW organized a panel, "*Women and Natural Resources Management*", in collaboration with the Department for Development Support and Management Services (DDSMS) and the Swedish Environment Institute (SEI), which focused on the ways to enhance women's role and participation in natural resources management.

At the NGO Forum in Beijing, INSTRAW also organized a one-day workshop, "*Women, Water and Environmental Sanitation*", jointly with the United Nations Children's Fund (UNICEF) and with the collaboration of the Swedish International Development Agency (SIDA). The objective of this workshop was to elaborate strategies and guidelines to define the role of women in water policies and in water and environmental sanitation projects and programmes.

On 20 June 1995, INSTRAW organized at its Santo Domingo Headquarters, a colloquium, "*Women's relationship to Water Supply and Usage*", to mark World Water Day, World Environment Day and the International Day to Combat Drought and Desertification. On 11 October 1995, the Institute held another colloquium, "*Women and Children: Priorities for the Mitigation of Natural*

Disasters" in commemoration of the International Day for Natural Disasters Reduction.

From 18 to 22 November 1996, INSTRAW also hosted and expert group meeting in Santo Domingo, "*Women, Population and Sustainable Development: The Road from Rio, Cairo and Beijing*", organized by the Division for the Advancement of Women. The recommendations from this expert group meeting were used as the Secretary-General's background report on Women and Environment for the forty-first session of the Commission on the Status of Women held in New York, 10 - 21 March 1997.

As concrete follow-up to *Chapter 36 - Promoting Education, Public Awareness and Training* - and *Chapter 37 - National Mechanisms and International Cooperation for Capacity Building in Developing countries* - in 1996, INSTRAW prepared a multi-media training package "*Women, Environmental Management and Sustainable Development*" in cooperation with the International Training Centre of the ILO, Turin. The Institute conducted a sub-regional training seminar for Central and East European countries from 23 to 27 September 1996 at the ILO/Turin Centre on the basis of this training package. INSTRAW is pursuing the follow-up at the national level, in collaboration with UNDP, UNEP and UNICEF as well as the application of this training package in various training seminars.

SECTION 2

Training as a Tool for the Empowerment for Women

• Resolutions and Decisions Adopted by the World Conference of the International Women's Year (Mexico City, 1975)

26. International Research and Training Institute for the Advancement of Women

The World Conference of the International Women's Year

1. *Decides* to recommend the establishment, under the auspices of the United Nations, of an International Training and Research Institute for the Advancement of Women, financed through voluntary contributions, which in collaboration with appropriate national, regional and interregional economic and social research institutes and the specialized agencies of the United Nations would:

(c) Develop, adapt and provide training programmes for women, in particular those of the developing countries, which would enable them to undertake national research, to assume leadership roles within their own societies and to increase their earning possibilities;

Report of the World Conference of the International Women's Year. E/CONF 66 34. United Nations, New York, 1975. Chapter III, pp. 102-103.

• Statute of the United Nations International Research and Training Institute for the Advancement of Women (INSTRAW) 1984

Article II. OBJECTIVES AND FUNCTIONS

1. (b) To establish training programmes, including a fellowship programme and advisory services, through which the Institute shall endeavour to raise awareness on issues concerning women and development and shall strive to achieve equal participation of women in all aspects of economic and social development and to increase the opportunities for women to acquire new skills in order to meet the challenges of rapid change in today's society.

(The text of the statute was submitted to General Assembly in Doc. A/39/511 on 26 September 1984 and was approved by the General Assembly at its 39th session (39/249).)

• Agenda 21, Chapter 24 - Global action for women towards sustainable and equitable development

Objectives

24.2 (e) To assess, review, revise and implement, where appropriate, curricula and other educational material, with a view to promoting the dissemination to both men and women of gender-relevant knowledge and appreciation of women's roles through formal and non-formal education, as well as through training institutions, in collaboration with non-governmental organizations.

Agenda 21, United Nations Conference on Environment and Development (UNCED), Rio de Janeiro, Brazil, 3-14 June 1992.

• Fourth World Conference on Women (Beijing, 1995)

Chapter Five of the report of the Fourth World Conference on Women (Beijing, 4-15 September 1995) incorporated the following guidelines for INSTRAW's work:

334. "INSTRAW has a mandate to promote research and training on women's situation and development. In the light of the Platform for Action, INSTRAW should review its work programme and develop a programme for implementing those aspects of the Platform for Action that fall within its mandate. It should identify those types of research and research methodologies to be given priority, strengthen national capacities to carry out women's studies and gender research, including that on the status of the girl child, and develop networks of research institutions that can be mobilized for that purpose. It should also identify those types of education and training that can be effectively supported and promoted by the Institute".

As the only entity within the United Nations framework with the explicit mandate for research and training for the advancement of women, INSTRAW has operated in a cyclical process: conducting research studies from which methodologies are formulated from which training materials are prepared on which evaluations are conducted to determine future research directions. Thus, INSTRAW's training activities represent just one, albeit very important, output of its research endeavours. They also represent one of the Institute's more concrete actions in the process of empowering women, both economically and politically.

Over the years, INSTRAW has received very clear directives from the numerous documents emanating from UN bodies and conferences, a few examples of which appear in the box. In response, and from its earliest years of operation, INSTRAW has conducted training seminars and workshops at the national, sub-regional, regional and inter-regional levels. The participants of these training activities are persons who can continue the training process, utilizing the

specially prepared materials, at the national and lower levels thereby producing a multiplier effect of the original training effort. Thus, the outreach of INSTRAW's training materials, which are periodically updated, is limitless. There have been many success stories related to the further use of the Institute's training materials, the most recent occurring in South Africa (see section Letter to the Editor) in which Dr. Flora Mosaka-Wright received recognition as 'Energy Personality of the Year - 1996' for her efforts which originated from the utilization of INSTRAW training materials.

INSTRAW's training activities, for the most part, are concentrated in four areas: Water supply, sanitation, and waste management; new and renewable sources of energy; environmental management

and sustainable development; and statistics and indicators on gender issues. Numerous seminars and workshops have been conducted in all regions of the world, as illustrated in the following table.

Regional Breakdown of INSTRAW Training Activities by Programme Area 1985-1996

REGION	WATER	ENERGY	ENVIRONMENT	GENDER STATISTICS
Africa	6	3		7
Asia and Pacific	1	1	1	5
Europe		1	1	
Latin America & Caribbean	2	1		2
Western Asia		2		3
Total	9	7	2	17

• *Women, Environmental Management and Sustainable Development¹ Multi-media training package*

by **Borjana Bulajic**, INSTRAW Social Affairs Officer

The training package *Women, Environmental Management and Sustainable Development* ISBN 92-1-1270006-5 was prepared as a major part of INSTRAW's programme on Women and Sustainable Development, in response and follow-up to the United Nations Conference on Environment and Development, particularly its

¹The training package was prepared by Borjana Bulajic, Martha Dueñas Loza and Adelina Guastavi.

Agenda 21, the Plan of Action of the World Summit on Social Development and the Platform for Action of the Fourth World Conference on Women. The aim of the package is to contribute with an integrated approach in the organization and management of environmental policies and programmes integrating women's needs and participation in planning, management, implementation and evaluation of

environmental programmes and projects. The issue is complex, multi-disciplinary and encompasses all aspects of society. The purpose of the training package is to give an overall presentation of existing problems, possible solutions and policies.

Trainers, university professors and experts in the area should explore further adaptations for specific country situations.

The training package consists of 400 pages of text,

170 transparencies, a trainer's guide, bibliography and audio-visual support material. Its flexibility is assured by the built-in parallelism of activities, that is, the possibility of training different target groups simultaneously. The modular training methodology enables users to adapt it to their own needs. Each module is supplemented with a pedagogical scheme, a lesson plan, audio-visual support material, additional reading, bibliography, key-issue checklists for group work, evaluation forms for participants and trainers and a trainer's guide. The modular programme enables training in-situ and provides practical "how-to" materials.

The training package targets:

- Senior officials of Ministries of Environment, Natural Resources, Planning, Women's Affairs, Education, Health, etc.;
- Development planners and provincial or local authorities in charge of environmental programmes and projects;
- Engineers in charge of designing technologies for environmental projects;
- University professors, trainers and managers of national training institutes and educational institutions training staff on women, environmental management and sustainable development;
- Representatives of non-governmental and women's organizations involved in environmental projects.

The package consists of five modular units: Introduction - Agenda 21; Module One - Women and Environmental Health; Module Two - Women as Agents of Change in the Development Sector; Module Three - Women as Managers of the Environment; Module Four - Women, Environmental Indicators and Capacity Building Programmes.

Evaluation has been one of the crucial components of INSTRAW's training packages. An evaluation of three aspects was carried out before the training and audio-visual materials were finalized covering subject-matter (context), instructional design and technical presentation. The evaluators reviewed factors such as content accuracy comprehensiveness, sequence and relationship of ideas within context, technical quality and media compatibility of materials with the training package. In order to test the content of the training packages and participant's comprehension, two types of evaluation forms were used, one for each modular unit and one at the end of the training seminar.

The training package can be obtained at the United Nations bookstore in New York, at INSTRAW's Headquarters in Santo Domingo, Dominican Republic and at ILO/Turin Centre in Turin, Italy.

To obtain training package contact:

INSTRAW

P.O. Box 21747

Santo Domingo, Dominican Republic

Tel: (809) 685-2111

Fax: (809) 685-2117

E-mail: instraw.hq.sd@codetel.net.do

Liaison Office

One UN Plaza

DC1-1106, New York, NY 10017

Tel: (212) 963-5684

Fax: (212) 963-2978

E-mail: bulajic@un.org

International Training Centre of the ILO

Corso Unita D'Italia 125

10127 Torino, Italy

Tel: (39-11) 693-6513

Fax: (39-11) 663-4266

COST:

Entire Training Package (training manual, trainer's guide & diskette, set of transparencies)	US\$315.00 plus postage
or	
Training Manual	US\$25.00 plus postage
Trainer's Guide (the folder plus diskette containing additional reading)	US\$90.00 plus postage
Set of Transparencies	US\$200.00 plus postage

• Women, Water Supply and Sanitation: INSTRAW's training initiatives

by Julia Tavares, INSTRAW Associate Social Affairs Officer

As early as 1986, INSTRAW initiated work on women, water supply and sanitation. The main objective of the programme was to establish the link between women, water supply and sanitation and to promote the consideration of women's needs as well as their participation in Water Supply and Sanitation (WSS) projects and programmes. A training package on Women, Water Supply and Sanitation was prepared in 1986, later updated in 1989 and is multi-media and modular in approach. It is aimed at senior officials of relevant ministries such as education, health and planning; development planners and provincial authorities in charge of water supply and sanitation projects; engineers in charge of designing and implementing projects; trainers and managers of national training institutes. The overall objective of the training package aims to promote the integration of women's needs with participation in sustainable water supply and sanitation programmes.

The package consists of 6 modules: I) The International Drinking Water Supply and Sanitation Decade (IDWSSD) and Beyond; II) The

Participation of Women in planning, Choice of Technology and Implementation of Sustainable Water Supply and Sanitation Projects; III) Role of Women in Hygiene Education and Training Activities for Water Supply and Sanitation Projects; IV) Involvement of Women in Management of Water Resources, Water Supply and Waste Disposal; V) Women and Waste Management; VI) Evaluation and Monitoring of Water Supply and Sanitation Programmes, Projects and the Role of Women.

Designed to train trainers and to allow users to adapt the materials to their own needs, each module comprises of five components:

- Description of the general and specific objectives of the package and the main characteristics of the target groups;

- Written text to prepare the lesson/presentation; additional readings for users without access to reference bibliographies; detailed bibliography;

- Tools for feedback control in each modular unit; a key-issue checklist to discuss the major points presented in the unit; an evaluation form;

- Trainers/users guide including a general lesson

plan, instructions and aids for the organization and conduct of a training session; lists of the requisite hardware, documents and audio-visual aids;

- Audio-visual aids; transparencies, sound/slides which can be used separately for very short sensitization sessions.

Prepared originally in English, the training package was translated into Spanish in 1994. Since its preparation in 1986, it has been used in 11 training seminars: 7 in Africa, 2 in Asia, 2 in Latin America and the Caribbean.

Considering the persistent need for sensitization and training on issues related to women, water supply and sanitation, INSTRAW will continue to conduct training seminars at the national, sub-regional, regional, or interregional levels. Due to limited financial resources, the Institute cannot respond to all the requests for seminars; in this regard, funds and collaborative arrangements must be sought in order to make training activities more widespread. Financial resources are also being sought for the translation of the training package into other languages, such as Arabic, in order to expand its use in other regions of the world.

Water scarcity is a real development problem which affects women in very profound ways. Despite

system-wide and other efforts to do away with the problem of water supply and sanitation, it is unlikely that the problem will be solved by the end of the millennium as was first

envisaged by the International Drinking Water Supply and Sanitation Decade (IDWSSD) and more recently by Agenda 21. By showing how women are part of the problem and the

solution, INSTRAW will contribute to efforts aimed at making sustainable use of water supply for the well-being of women and of society as a whole.

• *Training on Women and Renewable Sources of Energy*

by **Martha Dueñas Loza**, INSTRAW Acting Director

The Institute conducts catalytic training activities in close collaboration and coordination with agencies within and outside the United Nations system. The Institute collects, analyses and disseminates information and documentation concerning women and energy; helps to identify areas where research and training activities can make a critical difference in the field of women and energy; and promotes, through Technical Cooperation for Developing Countries (TCDC), the integration of issues relevant to women into energy policies, programmes and projects, primarily through the conduct of participatory training seminars on "Women and New and Renewable Sources of Energy (NRSE)" at national, regional and international levels in cooperation with United Nations organizations and national counterparts.

Past experiences in training have identified the quality of

training offered to community members (particularly women who voluntarily or for a small compensation carry out local maintenance and management activities), technical staff and technical agencies (involved in community NRSE projects) to be a weak element in many energy projects; most of these programmes emphasize technical skills and pay less attention to the managerial, socio-organizational and environmental aspects. This makes a case for the need to introduce the involvement of women in energy projects and emphasize its potential benefit to both projects and communities. Thus, the design of training courses for programme managers and engineers as well as community workers need to be revised to ensure increased emphasis on WID aspects.

The challenge, however, lies in creating training materials appropriate to the needs of women as well as development officials (who frequently

exclude women from development processes and sectors). The skill lies in linking the training materials to the issues of women, NRSE and environmental aspects in order to strengthen national institutions, promote various socio-economical and technically feasible renewable technologies (such as solar energy, wind, biomass), and simultaneously enhance awareness building, information and communication. An important concept in this direction is the production of innovative multimedia modular training packages (that allow for the flexibility of adaptation to local conditions) for training development officials, trainers, engineers and technical personnel, women's organizations and non-governmental organizations concerned with these issues.

The training package was first developed by INSTRAW in 1989, in cooperation with the

International Training Centre of the ILO in Turin, on "Women, New and Renewable Sources of Energy". This joint production was based on the findings of seven years of INSTRAW's research on the subject of women and energy as well as on insights gained by the training experiences of the ILO-Turin Centre. It also includes materials from other United Nations bodies and agencies as well as the decisions and recommendations of various meetings attended and/or organized by INSTRAW, both within and outside the United Nations system. The training package covers the following areas:

- An Overview of the United Nations Activities on New and Renewable Sources of Energy (NRSE);
- Women's Position in the Energy Sector;
- NRSE Projects and Programmes: Design and Implementation;
- Relevant NRSE Systems: Characteristics and Technology;
- Education and Training Activities in NRSE Projects.

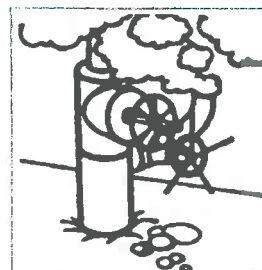
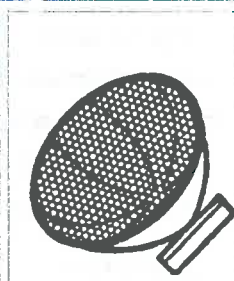
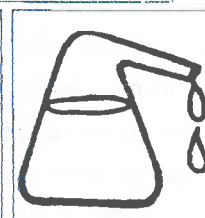
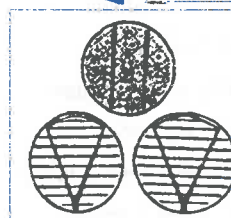
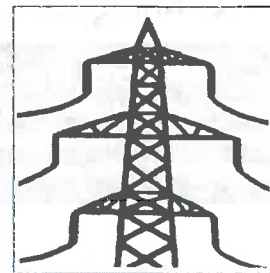
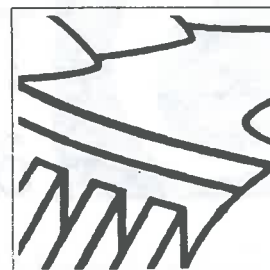
The main objectives of this training package are the following: (i) to contribute to a new approach in the organization and management of NRSE systems through the integration of women's needs as well as their participation in planning, technical operation and maintenance, assessment and implementation of environmentally sound NRSE

programmes and projects and (ii) to increase the awareness and capability of planners, officials and experts in charge of the management of energy programmes and of women's organizations and institutions, for the need to involve women in energy planning and in the development and implementation of NRSE projects.

The training package on "Women and NRSE" is aimed at different target groups: development planners, senior officials, engineers, managers of energy programmes, representatives of non-governmental and women's organizations, and community workers at national, regional and international levels.

In cooperation with national counterparts, INSTRAW has adopted participatory and self-reliant techniques in applying this innovative training approach. Three national training seminars (Dominican Republic, Egypt and Tanzania), one subregional workshop for the Mediterranean region (former Yugoslavia-Slovenia) and Arabic-speaking African countries (Libya), and one regional training seminar for Africa (at ECA Headquarters in Ethiopia) were conducted from 1989 to 1991. These seminars examined the relationship between women and various sources of renewable energy such as wind, geothermal, solar, biomass, and biogas; development and the environment.

sources of energy



sources of energy



Gender/Women, Technology and Sustainability

• Technological Dreams and Life Embracing Ethics

by **Ingegerd Ehn**. Senior Lecturer, Department of Environmental and Energy Systems Studies, in charge of the International Master's Programme in Environment, Lund University, Sweden. Ms Ehn's academic background is in biochemistry, genetics and microbiology with specialization in the field of waste water engineering, and strategic environmental assessment, with emphasis in Africa.

"Cost-benefit analysis is valuable in regulatory decision making, but unless we recognize its shortcomings we are likely to force a superficial quantification of issues that cannot wholly be grasped by the reassuringly precise embrace of numbers. If this technique is used inappropriately, we shall be guided by a bright light on the wrong place, and the result will be not only bad cost-benefit analysis, but bad decision."

Douglas M. Costle,
1981 US-Environmental Protection Agency
Administrator.

Many argue that the dominant world perspective, which has provided the models for the Western society since the Age of Enlightenment, is no less than bankrupt. Consequently, we have a crisis of intellectual, moral and cultural dimensions, in addition to the environmental crisis that this system has created. This

dualistic world view of dominance is now manifesting itself in what might be considered as the ultimate technological dream - the manipulation of life itself.

Sustainable development requires fundamental changes in the social, cultural and economic structures exploiting women and nature. Such fundamental changes are not going to come from the systems in power. The alternatives will develop elsewhere. It could be ordinary women, in true alliances with ordinary men, who contribute to these necessary changes, paving the way for a global sustainable future based on life embracing ethics.

We the women of the world, are one of the major groups that need to be strengthened to be fully, equally and beneficially integrated in all development activities. We have to learn. We have to be empowered to assume our responsibility for sustainability in the 21st century, according to our own

chapter in Agenda 21. We must learn how to be agents of change in development and to be managers of the environment and the natural resources on which we all depend.

Certainly, it is positive that our importance is acknowledged. And we are most likely to assume our responsibility in the 21st century - as we have always done. But, are we not expected to change our behaviour within the existing power structures, largely based on the prevailing scientific paradigm, which is western, Judeo-Christian, white - and very male. Or, *have we really been invited to participate in redefining paradigms and in building new power structures, in which we are equally important and powerful? Have we at last been invited to the building of a sustainable world in which we have equal human rights? Have the influential actors within the existing systems changed since Rio to*

genuinely accommodate for the values and needs of women and children, "moving towards real social partnership in support of common efforts for sustainable development"?

In the globalized economy, the key to the future for the elites is certainly not social partnership. Instead, it lies in continuous progress, synonymous to material growth. Consequently, in modern science there is a constant quest for technological break-throughs. Although history shows that every new technology, while offering solutions to some problems, unavoidably will create new ones, often worse than the original problem, needing new innovations and technology to be mitigated. The result is a race with time, not a genuine break-through - but the dreams remain.

Is bioengineering the technological break-through that will mark the turn of the millennium, opening new sustainable ways to feed the world and to cure dreaded diseases? Or, is it the ultimate arrogance of patriarchal science and technology expanding their dominance into the female domain of reproduction, finally taking complete command over nature, women and other cultures? For the issues of sustainability the answer is crucial. But only the future can tell - technology has potential benefits as well as serious drawbacks. Certainly, we are direct descendants of the Age of Enlightenment, decrying limits of any kind, confident in our

ability to plan properly and manage well. Sometimes though, we would be wiser - and also better long-term managers - if we care to follow the precautionary principles, instead of maximizing our short-term profits.

Basing the high-technological mode of production on science requires making knowledge itself, as the product of science, a commodity. The history of patenting in science and technology is ever expanding, increasingly enveloping life itself. The moral dimension of nation states granting - and scientists or corporations getting - patent on life is no less than overwhelming.

Getting patents on life is crucial for the biotech industry. The issue is much too important to be negotiated within the existing power structures. Then the outcome is obvious. It is utterly frustrating, that the issue is not publicly and vividly debated all over the world. If those of us, who are not struggling to satisfy our daily basic needs, were to take our responsibility as moral human beings, we would currently be seriously debating questions on Life in relation to so called Intellectual Property Rights: Can scientists create life? Can scientists discover life already living and used by others for centuries? Could life really be private or corporate property?

Among my colleagues and students, I have never yet heard anyone in favour of the granting of patents on life. From a moral

standpoint, and in the light of our alleged interest in sustainable development, is there currently any issue deserving more public attention and serious discourse among intellectuals than the issue of Patent-on-Life? Why does the debate not take place? Well, it is not surprising, given the power of those with vested interests, but is it not also a sign of the complacency of the materially well-off in the consumer society? It supports the argument many have that the dominant world perspective, which has provided the models for the Western society since the Enlightenment, simply is bankrupt. In addition to the environmental crisis that this system has created, we have a crisis of intellectual, moral and cultural dimensions. We are so busy in our modern form of pursuit of happiness, requiring instant satisfaction, that our capacity to engage in a discourse on long-term intellectual or ethical issues is extremely limited. Luckily, we are still capable of defining some of the problems within our old models, but do our models permit us to overcome them?

The old, still prevailing, economic paradigm says: "Grow or Die". Economic growth by itself is very unlikely to be a vehicle to enhance sustainable development. This has become apparent with many development programmes based on large-scale western technology, which have been harmful to the

majority, when the basic human needs have not first been met. As long as the right of the poor to be able to satisfy their basic needs remains but a dream, there will be no global sustainability. As long as there is no end to the greed, there will be no global sustainable development. It is simply an utopian dream. If a world of up to 10 billion people is going to be sustainable, we must all wake up from our dreams and take our responsibility. This requires true democratization and the mobilization of the unprivileged and the oppressed. Oppressed people commonly fear freedom and become resigned to *status quo*, because they are so used to being treated as objects. Therefore, an important element in the struggle for a just and sustainable world is making the various oppressions visible, and then finding ways of empowering the victims of oppression. The advancement of women is impossible unless and until their equal rights are fully protected. Women, as much as men, are entitled to human rights.

Development is a process of change. If it is to be a democratically directed process, then the objectives must be transparent to everyone, and the means of achieving them democratically agreed upon. The objectives must be based

*The amount of material put through a process, especially in manufacturing or computing.

on the ethical beliefs and concerns of the people, and the means of implementation on their perception of reality.

Sustainable development is not a destination, but a journey guided by visions about ecological, social and economic sustainability. Sustainable development is about peace, freedom and democracy; not about some having the rights, others the responsibilities. Sustainable development requires a world where the throughputs* of materials and the use of energy are related to the permanently sustainable resource base. The science and technology used must be compatible with the conditions given by nature. Limitations cannot always be overcome by scientific progress and technological innovations - certainly some limits are relative, but others are absolute and unnegotiable.

The final assessment of the integrity of any political system may be judged on two primary concerns: the respect the system shows for nature and the care it provides for the less

privileged of society. As the Brundtland report suggests, both concerns are prerequisites for planetary survival. The future depends on our ability to create a truly democratic and ecological culture beyond dualism. There must be fundamental changes, if not a revolution, in the social, sexual and economic structures exploiting women and nature - and now life itself.

Fundamental changes are not going to come out of the patriarchal systems in power - nothing fundamentally new has ever developed elsewhere. It could be up to us, *the women of the world, in true alliance with men, to consider if we dare to contribute to the necessary fundamental changes, paving the way for a sustainable future based on life embracing ethics. We are still free to decide to be human - together.*

We do live in an exciting time: the misdeeds we participate in, or the moral choices we make, will have great impact on the life of coming generations and on the future of this planet.

"The world's biological diversity -the variability among living organisms- is valuable for ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic reasons. The diversity is important for evolution, and for maintaining the life-sustaining systems of the biosphere. The conservation and sustainable use of biological diversity are of critical importance to meet the food, health and other needs of the growing world population."

Source: Keating, M. *The Earth Summit's Agenda for Change*. Center for Our Common Future: Geneva, 1993.

• Women in the Field of Bioethics: Activities undertaken by the International Bioethics Committee of UNESCO

by Georges B. Kuitukdjian. Director of Bioethics Unit of UNESCO.

*"One day when there are no trees left,
the heavens will fall, and all men
will be destroyed."*

Juruna (Amazon) Indian proverb.¹

Growing awareness of the human and social implications of progress in the life and health sciences is one of the most significant developments at the close of this century.

The Constitution of UNESCO, in affirming in its Preamble that peace "*must be founded, ...upon the intellectual and moral solidarity of mankind*", assigned the Organization with an ethical mission. From its inception, UNESCO has been designated by Nehru as "*the conscience of the United Nations*". More recently, at its Twenty-seventh Session, in 1995, the General Conference of UNESCO considered "*it indispensable for UNESCO to continue to fulfil its specifically ethical calling in a world seeking new landmarks and common values*" (27C/Resolution 0.12).

¹Le Breton, Binka, "Voices from the Amazon", Kumarian Press, 1993. ISBN 1-56549-021-5. p. 9

Thus, in 1993, Mr Federico Mayor, Director-General of UNESCO, decided to create the **International Bioethics Committee (IBC)** - the only body of an international character in the field of bioethics - to respond to the major concerns raised by the progress made in the life sciences, in particular genetics and biotechnology. More than 60 distinguished personalities from all regions of the world sit on the Committee *intuitu personae*. The Committee, chaired by Mrs Noëlle Lenoir, Member of the "Conseil Constitutionnel" of France, includes not only scientists, but also jurists, philosophers, anthropologists and sociologists.

The action engaged by the IBC is three-fold. Firstly, it is conceived as a privileged forum for debate and exchange of ideas and information. Secondly, it has been given the task of drawing up an international instrument on the human genome with regard to the protection of human rights. Finally, the IBC promotes action aimed at enhancing the participation of the public in this debate. This action takes the form of educational and informational activities

concerning bioethics addressed to public and private decision-makers, professionals and the public at large.

Since its establishment, the IBC holds annual sessions. During these sessions, the Committee studies thematic reports on various aspects of research in genetics and biotechnology. It has thus dealt with ethical and legal issues linked to genetic screening and testing, gene therapy, genetic counselling, population genetics, neurosciences, access to experimental treatments and to the development of novel food genetically-modified. All reports and results of the discussions are published in the Proceedings of these sessions.

Within the framework of its reflection, the IBC has consistently assessed the impact of genetic technologies on the status of women. Technological progress, such as prenatal diagnosis, genetic screening and testing, in particular for the prevention of cancers and other "multifactorial" diseases, offers vast prospects for improving women's well-being and health. However, this progress could also be the cause of new forms of discrimination or constraint, for example in the field of

medically assisted human reproduction or in prenatal diagnosis. In the latter case, this has sometimes been used as a means to a gender-based selection of embryos.

It should be recalled that the Fourth World Conference on Women (Beijing, September 1995) adopted a Declaration which highlights the link between progress in life sciences and issues which directly concern the health of women. Furthermore, two of the themes retained in Beijing i.e., health and human rights, meet the concerns of the International Bioethics Committee. More specifically, the Platform for Action, adopted at the conclusion of the Conference, encourages governments and the United Nations system to "*monitor human genome and related genetic research from the perspective of women's health and disseminate information and results of studies conducted in accordance with accepted ethical standards*".

For all these reasons, the IBC, at its Fourth Session (Paris, 3-4 October 1996), organized a Round Table on "**Bioethics and Women**", led by Mrs Noëlle Lenoir, with the participation of a number of leading international figures such as: Mrs Michèle Barzach (Former Minister of Health, France); Mrs Lorraine Dennerstein (Director of the Key Centre for Women's Health in Society, University of Melbourne, Australia); Mrs Laila El-

Hamamsy, (Professor of Cultural Anthropology at the American University of Cairo, Egypt); Mrs Elisabeth Hubert (Former Minister of Health, Chargé de mission to the President of the French Republic); Mrs Attiya Inayatullah (President of the International Federation of Planned Parenthood, Pakistan); Mrs Bertha María Knoppers (Professor of Law at the University of Montreal, Canada); Mrs Marie-Madeleine Mborantsuo (President of the Constitutional Court of Gabon); Mrs Elisabeth Pognon (President of the Constitutional Court of Benin); Mrs Yvette Roudy (former Minister, Former Member of Parliament, Mayor of Lisieux, France).

The discussions highlighted two major issues: the implications for women of new human reproduction technologies and their access to knowledge and scientific careers. On the one hand, a number of ethical issues concerning human reproduction needed to be addressed, for example the right of women over their body, the right of the partner, the right of the child, etc. On the other hand, access to education and the free choice of a career are part of a woman's basic rights, for only in this way can women exercise their responsibility in society. Inequalities are often an obstacle to the practice of this responsibility. When a decision is constrained by economic, social or cultural

factors (voluntary interruption of pregnancy, medical assistance to procreation, sexual mutilations), where does the practice of responsibility stand? Where is her freedom and the exercise of her autonomy? It cannot be denied that the role of women in society and their involvement in decision-making processes in many cases remain insufficient.

Following this Round Table, the International Bioethics Committee, in recognizing the need for an in-depth examination of women's health within the perspective of human rights and the bioethics framework, has set up a Working Group, chaired by Dr. Attiya Inayatullah, to prepare a report on "Women's Health, Bioethics and Human Rights". This report, which will be presented at the Fifth Session of the IBC in October 1997, aims to be a scholarly review of the major health and human rights issues of women in the varying stages of their lives and in different cultural settings.

SECTION 4

Environmental Management and Sustainable Development

• *Fifth Session of the Commission on Sustainable Development*

The fifth session of the Commission on Sustainable Development was held from 7 to 25 April 1997 at the United Nations Headquarters. During the three-week session the 53-member Commission functioned as a preparatory and negotiating body for the General Assembly's nineteenth special session to review the implementation of Agenda 21, the programme of action adopted by the United Nations Conference on Environment and Development (UNCED), held at Rio de Janeiro in 1992. The document, which was a starting point for negotiations during the fifth sessions, expresses concern over the lack of progress in the areas of finance and technology transfer for sustainable development, and the foreign debt situation, described as a major constraint towards achieving Rio's goals and commitments. The major focus of the Commission's preparatory work and the special General Assembly sessions is the fulfillment of the Rio commitments and the further implementation of Agenda 21 and other related outcomes of the UNCED.

The Commission elected Mr Mostafa Tolba (Egypt) as its Chairperson. The Commission began the fifth session with a three-day high-level segment, with ministerial participation, focusing on two reports, one of the Commission's Ad Hoc Open-ended Inter-sessional Working Group and the other of the Open-ended Ad Hoc Intergovernmental Panel on Forests. The high level segment was followed by a plenary meeting and six days of dialogue sessions with major groups, considered to be of critical importance to the effective implementation of Agenda 21. Dialogue sessions were held with representatives of children and youth, the scientific and technological community, women's groups, workers and trade union, indigenous peoples, non-governmental organizations, local authorities, farmers, and business and industry organizations. During the second and third weeks, drafting groups negotiated the final draft text to be submitted for adoption to the special June session. During the Commission's three weeks, there were numerous parallel

panels and caucuses organized by non-governmental organizations which contributed to the discussions and dialogues.

On the basis of INSTRAW's initiative, on 10 April 1997, MOA Foundation (an environmental foundation) organized a panel on Environment, Health and Peace Issues. Ms Martha Dueñas Loza was the keynote speaker at the panel. She addressed a wide range of issues pertinent to sustainable development and INSTRAW's programme on women, environment and sustainable development. Ms Dueñas also presented INSTRAW's training packages on women, water supply, sanitation and waste management; women, new and renewable sources of energy; and, women, environmental management and sustainable development.

The Dialogue on Chapter 24, Global Action for Women Towards Sustainable and Equitable Development, was held on 14 April at the Commission on Sustainable Development during a morning session. It was chaired by Ambassador Monika Linn-

Locher (Switzerland). Ms Bella Abzug, Women's Environment and Development Organizations-WEDO (United States) acted as a facilitator.

The presenters included the representatives of the following women's organizations: Country Women Association of Nigeria; Women Food and Agriculture Working Group/Via Campesina; Central and East European Network for Sustainable Development; Redeh of Brazil; Movement for Nuclear Safety; and Women in Europe for a Sustainable Future. Representatives of various governments presented statements. Ms Dueñas Loza,

INSTRAW Acting Director, also made a statement on challenges to implement sustainable development and INSTRAW's activities. The challenges and recommendations of this dialogue were: to identify instruments that have been successful in combating harmful commercial advertising; to identify industrial hot spots and

prepare a plan to clean these areas; to strengthen the role of women in efforts to implement Agenda 21; to recognize that the outcome of the Micro-Summit has important implications for rural women; and, to earmark one per cent of all aid dispersed via the World Bank or regional development banks to assist women.

Industrialized countries inhabited by 20% of the global population, consume as much as 80% of energy and raw materials, producing 75% of global wastes and 80% of carbon dioxide.

Source. Prof. Dr. Maciej Nowicki, Vice-Chairman of the Bureau of the CSD. Report of the Workshop on Indicators of Sustainable Development, Ghent, Belgium, 1995.

• Gender and Sustainable Land Use: The Need for Transformation¹

by **Prof. Els Postel Coster**, Professor at the Institute for Cultural and Social Studies at Leiden University, Leiden, The Netherlands. She is currently a member of the INSTRAW Board of Trustees and served as President of the Board from 1994 to 1996.

"If all the Earth's inhabitants were such consumers as the Westerners are, they should have ten such planets at their disposal."

Gro Harlem Brundtland.

¹Keynote Address to the 3rd International Course on Gender in Policy Development for Sustainable Land Use, International Agricultural Centre, Wageningen, The Netherlands. 7 October 1996.

Almost ten years ago, the Brundtland Report *Our Common Future* (World Commission on the Environment and Development, 1987) made sustainable development into a permanent topic on the agenda of UN agencies, governments and NGOs all over the world. More and more people are convinced that a real transformation in values and behaviour is needed to prevent humankind from totally devastating this precious planet of ours within a few

generations. However, so far policies have lagged far behind the facts. The relationship between sustainability and gender, which may contain the key to the process of transformation, has not received the attention it deserves.

Economic growth, poverty and unsustainability

The year 1996 was designated by the United Nations as the International Year for the Eradication of Poverty. However, this message does not seem to

have reached a wide public, least of all the poor themselves. So far, no miracles have been accomplished. According to the UN statistics, 1.3 billion people still live in absolute poverty, 70% of whom are women.

The dominant trend in economic theory is to put full trust in the so-called free market as the vehicle that will lead towards the solution of this problem. Once nation states have successfully started a process of economic growth, and defined the terms of the Gross National Product (GNP), as the newly industrialized countries in Asia have done, the problems of poverty and inequity are supposed to be solved. Still, at the World Summit on Social Development (Copenhagen, 1995), governments recognized that the gap between the rich and the poor is still widening. Unemployment is a chronic disease, even in the most "developed" economies. At the same time, the number of billionaires in the world has increased by 140% between 1987 and 1994. Some 358 individuals have accumulated personal capital worth about US\$762 billion. This is equivalent to the per capita income of 45% of the world's population – 2.5 billion poor people (*Forbes Magazine*, quoted in Wee, Vivienne and Noeleen Heyzer, 1995:27). If we still needed proof that the "trickle down effect" is not an automatic remedy, here it is.

It seems that inequity is not just an unfortunate and

transient side-effect of economic growth; undeniably, the globalization of the economy has a built-in tendency towards structural dualism (Pronk, 1994): between countries, within countries and between women and men. The "free market" is not an equal level playground: those who have reached the top can set the rules. This may be illustrated through to the two central items of the present course: gender relationships and land.

An increase in production is realized to a great extent by exploiting resources that so far had little, or in some cases, no monetary value. Women's work as well as land belongs to this category. Many developing countries are forced to promote the export of natural resources for competitive prices and to supply cheap labour in order to survive in a global market-dominated economy. From the lower layers of the dual structure, a constant flow of underpaid resources runs to the higher ones, thus maintaining and strengthening an imbalance between the two. This leads to environmental degradation, destruction of the resource base of local communities and over-exploitation of cheap –mainly female– labour.

Reasons for looking at sustainable land use from a gender perspective

The first reason why gender, that is, the social construction of manhood and womanhood, is important in this context is that in every society in the world

there is a division of labour along the lines of the sexes. The patterns of activities resulting from it show a wide variety and usually they intersect with other dividing lines such as class, age or status in a family. The important thing, however is to remember that women and men each have different tasks and unequal access to resources. In an agricultural context this may mean different crops or animals to tend, different obligations to supply labour and different rights to land, products and profits. Although it is not an absolute rule, in general the family's sustenance and the tasks that go with it, like collection of water and fuel, is women's domain. In the rural sector, women's livelihoods tend to be more resource-based than money-based. When resources become valued in terms of monetary calculations and not in terms of subsistence needs, women are particularly affected.

This leads to the second reason why a gender perspective is so important: both sexes also have their own responsibilities and, in connection with this, their own interests, even when they are members of one and the same household. In the development discourse, this has always been a hard nut to crack. In spite of all the evidence against it, people still like to think of a household as a harmonious unit, headed by a father who is the income-earner and spokesman and with one common set of needs and interests. Up to the present day, one can read in policy documents

that 'the household will try', 'the household decides', 'the household reacts in such and such a way', etc. (see for instance World Bank, 1994 on the "old-age crisis").

In fact, household members may have quite different priorities and it depends on the power relations whose interests will turn the scale. In the past, development policies have often strengthened the position of men by making them the vehicle of modernization and the main participants in the market economy (Jacobson, 1992). The result of this was that the family's labour force was absorbed in cash crop activities with neglect of their immediate subsistence needs: the plough, pesticides and fertilizers had to be paid off. Women in Burkina Faso told researcher that they "stole the time from their husbands" early in the morning in order to cultivate the peanuts and vegetables for family use in their own fields. Real work, they had been taught, was sowing and weeding their husband's fields and helping with the harvest of cereals for the men to sell; caring for the family's daily meal did not count (Rookhuizen, 1986:97).

The third, and perhaps most important reason for paying attention to gender as a factor in sustainable land use, is that division of work and responsibilities also involves specific knowledge. For ages, transfer of traditional knowledge has followed two paths: from father to son and from mother to daughter, as both sexes mainly

learned from their elder kinsfolk of the same sex. Extension services have a tendency to direct their activities in the first place towards men, who are then informed about new seeds, chemicals and mechanization.

Not all farm women in the world are totally excluded from the market; many of them take part in commercial activities, most often on a local level. Gradually, and mainly thanks to the mediation of local women leaders, women's roles as managers of the environment are increasingly highlighted (see for instance *INSTRAW News* No. 19, 1993). In particular women's indigenous knowledge systems have attracted attention. Where women spend part of their time to food gathering, they turn out to have an elaborate knowledge about the nutritional and medicinal properties of leaves, wild fruits, roots and plants. In agriculture, knowledge about plant varieties and seed selection is often transmitted from mother to daughter.

Information on these roles of women is now widely available. However, this has not yet resulted in real changes in policy. Women are still denied equal partnership in rural development. Along with the degradation of natural resources, their traditional wisdom may well become lost.

Women's activities for the environment

The question of why so many women in the world share a concern for the

conservation of natural resources: water, land and forests, has given rise to a revival of the old discussion on whether this is due to nature or nurture. Some adherents of the (mainly Western) eco-feminist movement, trace the connection between women and nature to an innate disposition. Women would, by their bodily functions, be closer to nature or more nurturing and caring than men. Others criticize this "essentialism", and maintain that the special relation of women with the environment is a matter of gender relations, which basically are a social construct. I doubt the use of this opposing argument for analysis. It seems that some eco-feminists have taken over the very dualism which we have disapproved of in Western science since the Enlightenment.

Whatever the explanation may be, it is a striking fact that women, both on a micro level and, during the last few years, in the international forum, often take the initiative to carry out environmental activities, based on their immediately felt needs, their responsibilities for the environment and their knowledge from experience.

In the preparatory process to the world conference on the environment, the United Nations Conference on Environment and Development (UNCED) held in 1992, women's voices sounded louder than ever before at such an occasion. Common views were

developed on environmental problems, possible solutions and the transformation of society; despite the ongoing discussions, a broad basis of agreement was founded. The 'World Women's Congress for a Healthy Planet', held in Miami in November 1991, attended by 1500 women from all over the world, adopted the Women's Action Agenda 21 as a forerunner to the UNCED document.

The Women's Action Agenda reflects a commitment to safeguarding the life-support systems of the world, "on behalf of ourselves, our families and future generations". It recognizes that this involves a call for profound and immediate transformation in human values and activities. The document was widely published and seems to have met with general approval and respect for its achievement. "The Women's Action Agenda 21, based on the principles of global equity, resource ethics and empowerment of women, represents the basis for a paradigmatic shift in development ... and provides detailed recommendations on how to deal with the problems." (Braidotti et al, 1994:102) Deep divisions, such as in the UNCED between the rich countries and the poor, did not occur.

Reflections of the Women's Action Agenda 21 are to be found in various chapters of UNCED's Agenda 21, adopted in June 1992.

From that time onwards, fundamental criticism on

development in connection with gender and sustainable development was taken more serious in UN circles. The Platform for Action of the Fourth World Conference on Women in Beijing has a section on women and the environment, which more or less follows the lines of UNCED. Ecology was not one of the main issues at the conference; most conspicuous in this respect was the struggle over inheritance rights, in which African, Caribbean and Arabian delegations strongly defended their case. Women's land rights are a precondition for sustainable land use, household food security, in particular, and for sustainable development, in general (Mehra, 1995).

Some remarks on policy for gender and sustainable development

With respect to agriculture and land use, it is obvious that the technology of modern industrialized agriculture does not provide a global model for sustainability. It developed in a male dominated, market oriented society, where environmental care was hardly an issue and little value was attached to the necessities of long term subsistence. In a historical review of how mankind from the earliest times has exploited the earth and annihilated vegetation and animal life, Ponting (1992) indicated that this process continues even today at an accelerating pace.

If we look at modern agriculture from the viewpoint of energy input/output rates, the only conclusion we can reach is that its performance is very poor. According to Ponting (1992:291), modern industrial cereal farming produces at best twice as much energy as it consumes. In contrast to this, "the most energy efficient agriculture in the world is the production of rice in paddy fields in China and Southeast Asia, where the output of energy is about fifty times greater than the input". Energy input in modern industrialized agriculture is mainly in the form of fertilizers, pesticides and machinery; many of these are non-renewable and polluting resources, the real costs of which are not properly reflected in the prices. Modern agriculture is, moreover, becoming steadily less energy efficient. Meat production, according to the same author, consumes between 2 and 3 times the energy it produces. Processing and distribution of food before it is eaten takes about three times as much energy as producing the food itself. (One extreme example is the transport of potatoes from the Netherlands to Italy and back for the purpose of cheap cleaning.) Once this is taken into account, the all food production in the industrialized world uses more energy than it creates.

As regards sustainable land use, modern agriculture and food management obviously are

in a state of crisis, with the rate of energy input/output reaching absurd proportions and hunger existing in countries that export food. Development geared to the example of modern industrialized societies, no longer seem to provide a favourable prospect. Together we must try to find new alternatives and indeed, research and practical experiments are being tried out on a small scale.

In a global context, there are some signs of hope. The call for a profound and immediate transformation in human values and activities, first publicly launched in the Women's Agenda 21, was repeated in subsequent world conferences, and most forcefully so in Beijing. Economic theory and practice have been built on the dominant value of self interest: to get maximum financial profit in the shortest possible time. By now it is clear that this is totally incompatible with sustainable development, which must be based on such values as equity, consideration for natural resources and long-term views on the quality of life in the future. The *Human Development Report 1995* (UNDP, 1995) clearly reflects this new ethics and fully recognizes the contribution of women.

The constant stream of criticism against the policies of the International Monetary Fund and the World Bank, in particular structural adjustment

programmes and large-scale land-consuming projects, finally seems to have penetrated to the ranks of these institutions. The social and environmental effects of their measures are gradually entering their agendas. No doubt, this is to a great extent the result of activities of the so-called civil society: movements for protecting nature, local interest groups, NGOs and women's associations.

During the last decades, women manifested themselves more and more as activists for environmental protection in their immediate neighbourhood. Well known from the literature are exemplary movements such as the Chipko in India and the Greenbelt Movement in Kenya. The former was a source of inspiration for the well-known publicist and activist Vandana Shiva, whose book *Staying Alive* (1988) was an important stimulus for the discussion on gender and sustainable development. On a smaller scale, evidence abounds that women are prepared to defend their livelihood systems. In the Netherlands, the Association of Countrywomen has activated its 75,000 members in a long-lasting campaign for critical consumption and sustainable production, in which also the North-South partnership is taken up as an issue.

Local leaders of women's groups in particular, can play a crucial role by helping their members to translate their experiences into a language that

will be understood at the higher levels of decision making. Women—with so much to lose in the current course of things and so much to gain from a sustainable and equitable future—must be in the forefront of this process of global transformation.

References

- Braidotti, Rosa et al. *Women, the Environment and Sustainable Development*. London: Zed Books and INSTRAW, 1993.
- INSTRAW. "Women and the Environment" *INSTRAW News*, issue No. 19. Santo Domingo: 1993.
- Jacobson, Jodi. "Gender Bias: Roadblock to Sustainable Development", *World Watch Paper* 110, 1992.
- Mehra, Rekha. "Women, land and sustainable development", International Center for Research on Women (ICRW) Working paper. Washington: 1995.
- Ponting, Clive. *A Green History of the World*. London: Penguin Books, 1992.
- Pronk, Jan. Speech to the Second Committee of the United Nations General Assembly, October 1994.
- Rookhuizen, Marion. *Femmes de Rana. Les besoins et les possibilités des femmes d'un village Mossi au Burkina Faso*. Leiden: Institut d'Anthropologie Culturelle, 1986.
- Shiva, Vandana. *Staying Alive. Women, Ecology and Survival in India*. New Delhi: Kali for Women, 1988.
- UNDP. *Human Development Report 1995*. New York and Oxford: Oxford University Press, 1995.
- Wee, Vivienne and Noeleen Heyzer. *Sustainable Development. Towards a holistic framework of understanding and action*. ENGENDER – Center for Environment, Gender and Development. Singapore: 1995.
- World Bank. *Averting the Old Age Crisis*, 1994.
- World Commission on Environment and Development. *Our Common Future*. Oxford: Oxford University Press, 1987.

• Sustainable Forest Management and Gender Equality¹

WOMEN AND FORESTS

by Tiziana Marchetti, INSTRAW Associate Social Affairs Officer

*"What enables a nation
to survive is benevolence and justice;
what enables people to live
is practical virtue,
people acknowledge their respect
for the mountains, forests, and rivers
to realize universal harmony."*

*Chinese proverb from the Masters
of Huainan.*

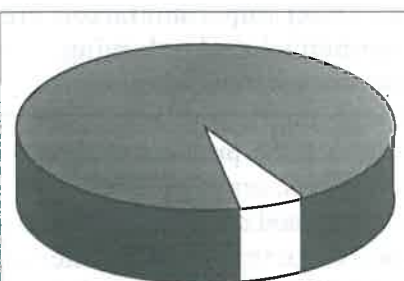
Synopsis:

In nearly all cultures, there are gender-based forest practices. These practices need to be identified and designed if community forestry projects are to be successful. Women have often been blamed for deforestation due to the fact that they are the primary collectors and consumers of fuelwood for heating and

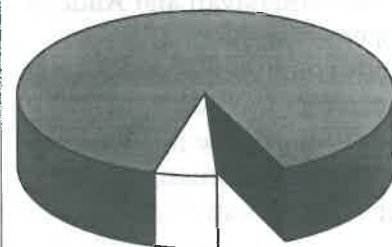
cooking. However, a number of studies refute this claim. Surveys of rural energy use indicate that an average person consumes approximately one kilogram of air-dried fuelwood equivalent per day.²

Deforestation and land degradation prevent absorption of a fourth of the carbon released into the atmosphere by burning fossil fuels from industry, heating and transportation. This substantially contributes to accelerated changes in global climates. Deforestation also robs the world of irreplaceable biodiversity. "The demand for firewood, lumber and paper is overwhelming the sustainable yield of forests in many countries. [...] The wholesale deforestation of Southeast Asia to supply lumber to Europe and Northeast Asia is now spreading into Africa and the Amazon basin".³

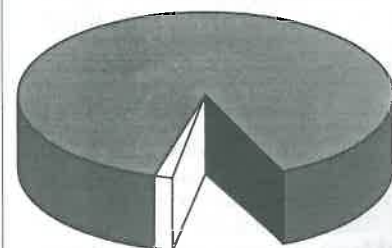
Forest, coastal and inland wetlands, coral reefs and other ecosystems are being converted or degraded at rates that are high by historical standards. The loss of forest has severe ecological and economic costs. These include lost watershed protection, local climate change, and lost coastal protection. Amongst others, for about 200 million people



5 800 000 km² degraded by deforestation: between 1975 and 1990, more than 2.2 million km² of tropical forest were destroyed, mainly to provide new land for food production;



6 800 000 km² degraded by overgrazing that has damaged 20 per cent of the world's pasture and range lands;



1 370 000 km² degraded for fuel wood and charcoal. Each year an estimated 1 730 million m³ of fuelwood are taken from forests and plantations.

Source: FAO-UNEP. *Our Land, Our Future* 1996. ISBN 92-5-103906-2.

¹This article has been prepared on the basis of Module One, Chapter IV 4.4; Module Two, Chapter I, 1.5; and Chapter II, 2.6 of the Training Manual *Women Environmental Management and Sustainable Development*, INSTRAW/International Training Centre of the ILO; ISBN 92-1-1270006-5 (Turin, 1995).

²Training Manual *Women Environmental Management and Sustainable Development*, INSTRAW-International Training Centre of the ILO; (Turin, 1995). ISBN 92-1-1270006-5.

³Brown, L.R. et al *State of the World* W.W. Norton & Co.: New York. 1996. p. 6 ISBN 0-393-31339-5.

forests are their only home.⁴ Forests provide fuel and construction wood, animal products and fodder, vegetables, fruits, nuts, medicine and many raw materials for industry, such as: oils, rubbers, waxes, fibre, etc. Other important factors are commercial timber logging, planned migration, resettlements and large-scale construction projects. At the local level, growing demands for firewood and fodder contribute to their loss. The consequences of this deforestation process are severe: disturbance of water systems, for example, results in flooding and drought and, as in the case of the Himalayan and Andean regions, the destruction of fields and livelihoods, aggravating the living conditions of the population, particularly women, who depend on them.⁵

⁴Training Manual *Women Environmental Management and Sustainable Development*, INSTRAW-International Training Centre of the ILO, (Turin, 1995). ISBN 92-1-1270006-5.

⁵Dankelman & Davidson, *Women and Environment in the Third World*, London: Earthscan Publications. Ltd. 1988, p.45.

⁶State of the World, Brown, L.R. et al *The State of the World* W.W. Norton & Co. New York 1996 ISBN 0-393-31339-5.

⁷UNDP *The Challenge of the Environment* Annual Report 1991.

⁸Dankelman & Davidson, *Women and Environment in the Third World*, London: Earthscan Publications. Ltd. 1988, p.45.

⁹World Resources 1992-1993, Oxford University Press: New York, 1992. pp.116-118.

¹⁰Momsen, J.H. *Women in Development in the Third World*, Routledge 1991, p.95, ISBN 0415016959.

History is about change and progress

"The world economy is growing even faster than population. It has expanded from US\$4 trillion in output in 1950 to more than US\$20 trillion in 1995. In just the 10 years from 1985 to 1995 it grew by US\$4 trillion more than from the beginning of civilization until 1950. [...] Economic growth in East Asia, for instance, has averaged some 8 per cent annually in recent years. From 1991 to 1995, the Chinese economy expanded by a staggering 57 per cent, raising the income per person of 1.2 billion people by more than half".⁶

It is estimated that approximately 100 million hectares of forests have been lost throughout the world since 1950. The World Resources Institute estimates that the world is losing up to 20.4 million hectares of tropical forest every year. If current trends continue, tropical forests will cover only 7 per cent of the planet's land area by the year 2000, compared to 15 per cent in 1950. Temperate forests may stabilize at 20 per cent, due to less population pressure and more successful reforestation.⁷

In tropical regions, deforestation rates have outstripped reforestation by up to twenty times in recent years. The present rate of reforestation is assessed to be less than 10 per cent of that needed to supply minimum needs of many countries in the

Third world by the year 2000.⁸ Stripping the land for firewood causes wind and water erosion of the soil, estimated to be 7 per cent worldwide and as high as 13 per cent in Africa. Clearing the land for population settlements accounts for approximately 40 per cent of soil erosion in Asia and South America. Further deforestation of tropical lands for agricultural and/or urban uses through the 1980s increased by 50 per cent by the 1990s.⁹ Firewood is the main source of energy in Africa, but it is increasingly difficult to find as the land is cleared for economically driven cash cropping.¹⁰ Because about half the world's population cooks with biofuels, total consumption amounts to about 2.5 billion kilograms per day, or almost a billion tonnes a year. As the demand for fuelwood exceeds the potential for reposition and supply in many countries, a trend that is likely to grow worldwide, fuelwood has been declared "the other energy crisis". Wood gathering and land clearing have been said to be the principal causes of deforestation. Rural biomass, however, differs markedly from wood consumption in urban areas. Wood consumed in cities comes almost entirely from whole trees and is thus likely to be a significant agent of deforestation. In rural areas women and children are more likely to collect twigs, branches and roots for cooking rather than fell whole trees. According to a survey of rural energy in

India¹¹, 84 per cent of total biofuel consumption is in the form of crop residues, animal wastes or small branches and twigs, most of which have fallen to the ground, and thus, do not contribute to deforestation, but do not facilitate the fertilization cycle process either.

With so much pressure on the land and on natural resources, women have little choice but to use forests. If they are not given alternative sources of energy they will have to continue collecting fuelwood for survival. At present, women's participation in environmental development is impeded by many factors. Competition for land, problems of land tenure and ownership deprive them of access. Moreover, women often lack institutional or organizational support. If a balance between greater productivity and environmental protection is to be achieved, *policy-makers must ensure that agricultural and forestry extension services are designed incorporating a balanced gender perspective, include women's full participation in decision-making fora and build upon their knowledge of community concerns.*

While rural communities are not a cause of deforestation, they are certainly victims of deforestation due to commercial logging and other

activities, including hydroelectric dams, supplies to urban centres and commercial agriculture. In many households in China, India and elsewhere, communities have turned to crop residues or dung fuels which are perceived to be inferior sources of energy and which, when burned, represent a loss of valuable fertilizers for the soil.¹²

Customs regarding the use of trees are very local. Some case studies illustrate the role of women in forestry projects and what actions they have taken to overcome a number of constraints to their participation. When scarcity is felt, women can often describe their problems, make proposals to address these problems, and act upon them once constraints are removed.

Women as agents of change

Women need to be active agents of change in community forestry projects to ensure their full participation, the enhancement of the traditional know-how that fosters ecosystems protection and to promote changes in traditionally negative attitudes and discriminating practices and legislation. Community forest activity needs and projects should be designed and implemented in a manner sensitive to the needs of women and bring forward a sound gender balance. Project managers should, therefore, *i)* discuss the issue with women in order to learn about their

needs, practices and requirements; *ii)* incorporate women's needs and requirements in forestry projects; and *iii)* describe concrete steps to involve women during the project's formulation, implementation, evaluation and follow-up.

Examples of Questions that project planners and implementors can ask women:

1. What areas of natural vegetation are available and how are these used?
2. Is there communal land and what are the rules on its use?
3. Is there any forest reserve land and who has access to which products from this land?
4. Are there products that could benefit rural families if made available?
5. Could these areas be managed to provide more benefits, especially to the poor, without disadvantaging others?
6. Who in the household collects and uses these products?
7. What trees are found on the farm and in household areas, who has the rights to them and who actually uses them?
8. Are they used for fodder, medicines, fuelwood, food, or soil, water or wind management?
9. Are they used for household use or income generation activities?
10. Are they used to provide shelter for animals, as building materials or to make household utensils?

Examples of Questions that projects planners and

¹¹ Dutt & Ravindranath, p.684.

¹² Dutt & Ravindranath, p.685.

Bangladesh: The economic and technical subtleties of a community forestry project were designed by an economist and a forester. The sociological issues were dealt with in a cursory fashion, through a household survey done with male heads of households. In their report, the project designers noted that: "the involvement of women in forestry is very limited". In fact, unknown to the project designers, women's involvement in forestry was substantial. So many problems resulted from this misunderstanding that the project's mid-term evaluation team included an anthropologist to discover why women's participation in forestry activities had not been forthcoming. The evaluation team's report concluded that women should have been consulted during the project design phase and recommended a series of immediate practical steps to correct this "oversight".¹

Burkina Faso: In southern Burkina Faso, at a formal meeting, women were asked how they wished to be involved in the management of a previously closed forest reserve. When they did not answer, they were chided and told that if they did not speak up, they would lose access to all potential forest products. At this point one woman rose and said: "We are not familiar with what the forest currently contains. We do not know what your project has to offer. We do not know the costs or the benefits of participation. Once we know these things we will tell you what we wish to do". In the informal discussions that followed, women asked to go into the reserve accompanied by project staff to identify forest products available for harvesting and asked if the project could provide them with market information on medicinal plants, fruits and nuts, and if they could learn about machines for extracting honey.²

India: Women in developing countries have been largely responsible for community initiatives in afforestation. The Chipko Andolan movement in India protests against forest destruction and also acts to rehabilitate the environment by planting trees and by holding eco-development camps in which rehabilitation of the ecological balance is promoted. The survival rate of Chipko plantations increased from a dismal 10% to 80-90% as local women began to care for the trees. The camps are open to both women and men, however, while men's interest and participation has decreased, women's involvement is increasing.³

Kenya: The Green Belt Movement in Kenya is another well-known afforestation project started by the National Council of Women. The main objective of the movement is to prevent deforestation by awareness-raising and tree planting. Local women are encouraged and assisted to establish "Green Belt" communities and small tree nurseries. By 1982, there were 50 nurseries producing 2,000 to 10,000 seedlings per year and, 239 "Green Belts".

In an area in Kenya where trees denote land ownership, women were forbidden to plant or cut trees because land belonged only to men. A fuelwood project overcame this obstacle by introducing shrubs and exotic trees not traditionally identified as denoting land ownership. Thus, women were free to plant and cut these species. Other women groups have established self-organization programmes or fund raising to support large-scale tree planting and nursery development.⁴

Nepal: In Central Nepal, a village forest committee formed by women successfully modified legislation that sought to delegate forest management to the panchayat, an administrative unit that includes many villages. The organized women argued that management should have been in the hands of a sub-unit of the panchayat, as had been the tradition. This smaller unit was closer to the women and would allow them to participate more fully.⁵

Sudan: A forestry project overcame customs that secluded women by employing women as extension agents and by concentrating on activities that could be done inside the family compound. In this way, women were able to produce seedlings in backyard nurseries and eventually joined in planting woodlot.⁶

¹ FAO *Restoring the Balance: Women and Forest Resources*, 1989, p. 12.

² *Ibid.* pp. 18-19.

³ Dankelman & Davidson 1988, p. 50.

⁴ FAO *Restoring the Balance: Women and Forest Resources*, 1989, p. 18.

⁵ *Ibid.* p. 21.

⁶ FINNIDA. *Whose Trees: A People's view of Forestry Aid*, Panos Publications Ltd. London, 1991.

implementors can ask themselves to ensure women's central role in forestry projects:

1. What do women already know about trees, their products and management?

2. What problems are women experiencing in relation to tree resources?

3. What constraints do women face in addressing tree and forestry management related problems?

4. What do women know about traditional forest technology and about modern and clean technology?

5. What kind of economic and legal instruments (credit, ownership) do women have access to in order to overcome constraints related to forest use and sustainable forest management?

What do women already know about trees, their products and management?

Women living in rural and forest areas can explain the uses of trees and the rationale behind traditional tree management, essential for designing new activities for a sustainable use of forest products and for the use of clean/friendly technology.

In Sierra Leone, women knew 31 uses of trees on fallow land and in forests, and knew what forest products would be

produced in a particular fallow year. Men knew only eight uses. In Zambia, women made oil from a local tree that foresters had not considered suitable for a nursery. In Thailand, women selected different species of wood for cooking different items, according to their different heating qualities.¹³

In 1987, FAO identified 8 steps to incorporate women in project design, these are:

1. Explore gender issues through a two-way communication with rural women, recognizing that the needs of women and men may not be the same and that the impact of projects on them may, therefore, be different.

2. Investigate customs, taboos and time constraints that women face: knowledge and common sense can go a long way overcoming these constraints.

3. Promote the role of women in forestry activities at each level and analyze the ways in which projects either exclude or include them.

4. Exchange information with individuals at every level, with local women on forestry activities, with practitioners on involving women in forestry, with policy-makers on women's roles in forestry.

5. Support women's groups and encourage the formation of new ones that help gain access to the decision making and political process and strengthen women's support for one another.

6. Work together to provide access to land and trees, recognizing customary and traditional women's holdings, ensuring women are included where land is privatized, and seeking creative solutions for landless women.

7. Consult with women before introducing new technologies or species, ensuring that women's needs have been considered and that the impact of new techniques or trees on women's lives have been evaluated.

8. Collaborate to make credit and income available to women, either individually or through women's groups.¹⁴

See "Agreements for Sustaining the Future Environment", supplement to this issue of *INSTRAW News* for information on Policy Framework for Women and Forestry.

¹³FAO. *Women in Community Forestry: a Field Guideline for Project Design and Implementation*, 1989.

¹⁴Restoring the Balance: Women and Forest Resources, FAO 1987.



Case Studies



SUSTAINABILITY, FARMING PATTERNS AND FOOD SECURITY

• *Eating and the environment: how unsustainable are patterns of food consumption in Sweden?*

by **Annika Carlsson-Kanyama**. She holds a "Frl.Lic." (Swedish Licenciata) and a BSc in various Environmental subjects and Geography, since 1994 a doctoral student at the Department of Environmental and Energy System Studies, Lund University, Sweden; has a broad professional background as Environmental Inspector in several Swedish municipalities; as a Soil-Conservation Officer in Tanzania and as Farmer in Tropical South America.

*"Only one world to care and share,
we also wish to live
in harmony with nature.
We must not fail."*

Tommy Koh.¹

Introduction

Agenda 21, adopted at the United Nations Conference on Environment and Development held in Rio de Janeiro from 3 to 14 June 1992, has inspired numerous efforts to address unsustainable patterns of production and consumption, in Sweden and elsewhere in the North. Such efforts have, for

example, involved increased recycling of solid wastes, consumer boycotts of products with unnecessary packaging materials or distribution of "environmental handbooks" where consumers are advised what or not to buy.

Too little attention has, however, so far been given into developing and using methods for quantitatively assessing how unsustainable patterns of consumption and production in the North really are, and what in those patterns is particularly damaging. Without this knowledge, there is a risk that insignificant improvements are emphasized at the expense of significant ones. Also, there is a need for methods to determine when the goal for sustainable patterns of consumption and production is fulfilled.

A research project called Quantifiable Environmental

Impacts from Consumption Patterns has attempted to address the above-mentioned issue. The focus has been on estimating emissions of greenhouse gases from present patterns of food consumption in Sweden. Like in many other countries in the developed world, the consumption of imported and processed food, as well as meat, increased in Sweden during the post-war period. These changes have, among others, meant that the consumption of potatoes, a crop grown in the open in large quantities in Sweden, has plummeted while the consumption of rice, French fries, fresh vegetables and meat all increased. Since rice, many vegetables, wheat flour for pasta and animal fodder are imported and meat is very resource demanding during the production phase, these

¹Tommy Koh, Chairperson of the Earth Summit Preparatory Committee, United Nations Conference on Environment and Development (UNCED) 1992.

changes have probably not contributed into making patterns of food consumption in Sweden more sustainable than before. So far, emissions from the consumption patterns of some vegetables, potatoes and pork have been calculated in the project presented here. The methods and results are discussed below.

Methods and data

The methods developed in the project builds on the Life Cycle Assessment (LCA) concept, but have been developed further to meet the special needs occurred when analyzing consumption patterns instead of products. When analyzing a consumption pattern, the quantities and types of products or services consumed by a certain segment of the population is the starting point.

The analysis is based on a number of different data sources. Published material such as articles in scientific journals, official records or reports are used but information obtained during interviews with a number of experts from firms, research establishments, corporations, cooperatives and authorities in several different countries were also important.

Results

The results, based on data about the average Swedish consumption per capita in 1992-1993, show that emissions from pork were about 33 times higher than emissions from

potatoes, while emissions from tomatoes were about half of the emissions from pork. The emissions in CO₂ equivalents with a 20-year time perspective, are given in Table 1.

The significant stages, or processes, during the life-cycle are identified as storage and crop farming for carrots, while crop farming –mostly in greenhouses– dominated all other stages for tomatoes. For potatoes, crop farming and transportation dominated, while the most important stages during the life-cycle of pork were crop farming and the rearing of pigs.

The sustainability of food consumption patterns

One way of calculating The Permitted Use of the Environmental Space per Capita for CO₂ is to base it upon what the Intergovernmental panel on Climate Change, IPCC, considers as the maximum amount of CO₂ that can be emitted from 1991 to 2100, if the concentration of CO₂ in the atmosphere should stabilize at 450 ppmv (parts per million by volume). This is 630 Gt C (giga

tonne of coal), and when this amount is divided by the sum of all human years expected during this period the result is a Permitted Use of the Environmental Space per Capita for CO₂ of 2,4 tonnes per year.

Several studies have shown that food may contribute to 17-30% of the total environmental impacts from consumption patterns. The assumption here is that 25% of the Permitted Use of the Environmental Space per Capita is set aside for food consumption. For CO₂ this is 600 kg per capita and year.

The total amount of food consumed in Sweden is about 700 kg per capita and year. The amount of food analyzed is 87 kg, or 12% of the total amount consumed. The emissions from those 12% are 110 kg of CO₂ equivalents (20-year perspective) or 18% of the Permitted Use of the Environmental Space per Capita for food. This means that the remaining quantity of food consumed, must have lower emissions per kg if the limits of the Permitted Use of the Environmental Space per Capita for food and CO₂ should not be exceeded. Other foods are, for

Table 1:

Emissions of greenhouse gases in CO₂ equivalents with a 20-year time perspective during the life-cycle of carrots, tomatoes, potatoes and pork consumed in Sweden. In g CO₂ equivalents per capita and year and g CO₂ equivalents per kg of consumed product.

	Carrots	Tomatoes	Potatoes	Pork
g CO ₂ equivalents per capita and year	2,000	23,000	12,000	72,000
g CO ₂ equivalents per kg	290	3,100	190	6,300

example, fresh, and sometimes exotic fruits, milk, cream and cheese, beef, spices, rice, ice-cream, soft-drinks and fats. Many of these foods are processed while others are imported from far-away countries with subsequent effects on energy requirements for transportation. Emissions from packaging should also be considered. The conclusion is that the emissions from foods, not analyzed, are probably not lower than for carrots, tomatoes, potatoes and pork. Therefore, present patterns of food consumption exceed the Permitted Use of the Environmental Space per Capita for food and CO₂. The magnitude with which the Permitted Use of the Environmental Space per Capita for food and CO₂ is exceeded is probably considerable.

A diet within the limits of the Permitted Use of the Environmental Space per Capita for food and CO₂ could, for example, be composed in the following manner: 50% of products with emissions such as potatoes, 5% of products with emissions such as pork, 39% with emissions such as carrots and 6% with emissions such as tomatoes. Such a diet would require substantial changes away from the present levels of animal and imported food towards more domestically produced vegetable food. There are, of course, potentials for improving, for example, energy efficiency, handling of the manure or the practices for N-

fertilizer applications. Such potentials are probably large, but are they so large that dietary adjustments are not needed?

Future studies of the sustainability of consumption patterns should, apart from extending the calculations to other foods as well, also explore different consumer group's consumption patterns. Among existing consumer groups, there are certainly those which have consumption patterns more sustainable than others.

Consumer groups that should be especially looked into are women, low-income households, and households in the South. It has been shown that low-income households use less energy for their food consumption than high income households. In the South, the consumption per capita of beef and veal, was approximately six times lower than in the North. The food consumption patterns of women could be less unsustainable than those of men because men eat more meat and other animal products than women do, at least in Sweden. These consumption patterns, can, when identified, be models and serve as inspiration during the transition to a sustainable society. Also, as a matter of justice, it is important to identify, not only what, but also, who contributes the most.

References

Agenda 21. United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992. United Nations: New

York, 1992. A/Conf.151/4 (Part I). Agenda 21, chapter 4 was available on gopher://gopher.undp.orp:70/00/unconfs/UNCED/English/a21_04 on 970310.

Befolkningens kostvanor och näringsintag 1989. Metod-och resultatanalys. Food consumption habits and nutrition among the population in Sweden 1989.

Analysis of Methods and Results. Statens Livsmedelsverk, Uppsala. 1994. In Swedish.

Carlsson A. 1997. *Food and the Environment. Implications of Swedish Consumption Patterns*. Department of Environmental and Energy Systems Studies, Lund University, Sweden. Thesis for the degree of Licentiate of Philosophy, presented in May 1997.

Carlsson A. 1997. Climate Change Impacts Related to Food Consumption -a case study from Sweden. Paper presented at the 8th Global Warming Conference and Expo in New York, May 25-28, 1997

Climate Change 1995 the Science of Climate Change. Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press: Great Britain. 1996.

Vringer K. and Blok K. 1995. The Direct and Indirect Energy Requirements of Households in the Netherlands. *Energy Policy*, Vol. 23. No. 10, 893-910.

Wackernagel M. and Rees W. 1996. *Our Ecological Footprint. Reducing Human Impact on the Earth.*, New Catalyst Bioregional Series No. 9, New Society Publishers: Gabriola Island, B.C. Canada. 1996.

World Population Prospects. The 1994 Revision. Department for Economic and Social Information and Policy Analysis Population Division, United Nations: New York. 1995.

World Resources 1994-1995 a guide to the global environment. People and the Environment. Resource Consumption, Population Growth, Women. The World Resources Institute. Oxford University Press: New York, London. 1994.

RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT

PRINCIPLE 1:

"Human beings
are at the centre
of concerns
for sustainable
development.
They are entitled
to a healthy
and productive
life in harmony
with nature."

Source: Earth Summit,
Agenda 21,
United Nations, 1992.
ISBN 92-1-100509-4.

• Food Insecurity and Women's Roles in the African Region¹

by Julie E. Zimet. Consultant, INSTRAW Liaison Office in New York since September 1996. Holds a Bachelors degree in International Affairs from Lafayette College, Easton, Pennsylvania.

*"For those who think the future
may be a simple extrapolation
of the past, there may
be some surprises ahead."*²

L. R. Brown.

The concept of Food Security was first addressed by the United Nations in its Charter, signed on 26 June 1945, when all Member States agreed that the right to food was a human right. *The Universal Declaration of Human Rights*, (proclaimed by the UN on 10 December 1946), additionally recognized "freedom from hunger" as one of the "inalienable and inviolable rights of all members of the human family".

Food security is the assurance of an adequate food supply over an extended amount of time. It relates specifically to the quantity, quality, and nutritional balances of food intake. According to the Food and

Agricultural Organization (FAO) food security exists when "all people at all times have access to the food they need for a healthy, active life." A food-secure household can be described as one with access to enough food for each and every member of a household in order to lead a healthy and productive life.

Food insecurity is most severe on the African continent, with Asia and Central America also potential danger areas. The General Assembly, resolution 39/165 addressed the "dramatic deterioration of African food and agricultural production and the resulting alarming increases in the number of people, especially women and children, exposed to hunger, malnutrition, and even starvation."³

Presently Africa faces many social, political, and economic demands. These countries are challenged by the necessity for sustained economic growth as well as the need to eliminate widespread poverty, malnutrition, and food insecurity inflicted upon their population. Currently, 800 million people in the developing world face food insecurity.⁴ Moreover, an analysis compiled by FAO concluded that 200 million of the 800 million people suffering

¹ This is an abstract from the research paper which will be published in its entirety in 1997.

² Brown, L.R. et al *State of the World*. W.W. Norton & Co. 1996. ISBN 0-393-31339-0.

³ General Assembly Resolution 39/165.

⁴ International Food Policy Research Institute, "Women: The Key to Food Security", p. 1.

from food insecurity, are located in Sub-Saharan Africa. Furthermore, by the year 2010 the World Food Programme (WFP), estimates this number will increase to more than 330 million if the current situation remains unchanged.⁵

The severity of food insecurity in Africa was reiterated in a study conducted by the International Fund for Agricultural Development (IFAD), in 1988, which stated that 21 out of the 37 "low food security" countries were in Sub-Saharan Africa. The IFAD defines "low food security" using the criteria of domestic production, fertility rates and number of displaced people suffering from chronic malnourishment.⁶ The IFAD study also discussed the growing problem of malnutrition in many of the regions' countries, specifically: Ethiopia, Ghana, Mali,

Mozambique, and Sierra Leone.⁷

For example, in Ethiopia, women are the most vulnerable part of the population. The status of women has been characterized by hardship, deprivation, and uncertainty. Only 3-7% are literate and 12% are married by the age of 14. Ethiopian women work an average of 17 hours a day, hauling water, fetching fuelwood and pounding grains for food. In addition to these household tasks, they are forced to work in the fields planting, harvesting, and transporting. According to a statistic taken by the IFAD, three out of four vendors in village markets are women. As producers they have no independent access to land, credit, technology, or extension resources.⁸

African women play a key role in tackling the continent's food insecurity problem. Women are often the main food producers, income-earners and guardians of family health and nutrition at the rural level. In Africa today, 85% of the rural women work in agriculture and thus, produce 80% of the food consumed by the family.⁹ Unfortunately, women face many social, economic, religious, and political barriers that hinder an efficient agricultural production.

At the Women's Conference in Nairobi, Kenya, in 1985, Member States and participants encouraged women to "play a central role in the development and production of food and

agriculture."¹⁰ Through this role they could promote food security. Furthermore, governments were called upon to establish programmes that fully integrate and empower women by providing them with access to land, child-care facilities, and education.¹¹

At the Fourth World Conference on Women held in Beijing, China, in September 1995, the Platform for Action reached a consensus on the importance of "Equality, Development, and Peace" for women.¹² This document stressed that women and girl-children face discrimination in education, health, and human rights. These forms of discrimination are exacerbated by armed conflict and unequal economic institutions; 189 member states agreed to these inequalities.¹³

Currently, Africa suffers from two main causes of food insecurity, natural disasters and conflict. The UN Charter written in 1945, addresses the distribution of food availability due to these two main causes. It is written that without the certainty of food there can be no sustainable peace, democracy or development.

Famine, due to drought, affects human livelihood through the manifestation of both poverty and vulnerability. It creates poverty because people are forced to live in a short-term lifestyle, which has a negative cyclical affect on the economy and the environment. It affects the economy because

⁵World Food Programme, "World Food Programme Annual Report 1994", pp. 7-10, 1994.

⁶World Food Programme, "Tackling Hunger in a World Full of Food: Tasks Ahead for Food Aid", p. 10, 1995.

⁷International Fund for Agricultural Development, "The State of World Rural Poverty, a Profile of Africa", p. 4, 1993.

⁸International Fund for Agricultural Development, "The State of World Rural Poverty, a Profile of Africa", p. 8, 1993.

⁹International Fund for Agricultural Development, *Providing Food Security for All*, p. 89, 1991.

¹⁰The Nairobi Forward-looking Strategies for the Advancement of Women, paragraph 174, p. 43, 1975.

¹¹ibid., paragraph 176, p. 43, 1975.

¹²The Fourth World Conference on Women, *Beijing Platform for Action*, United Nations, New York, 1995.

¹³Ibid.

drought causes a decrease in agricultural production.

Environmental degradation is a consequence of natural disasters as well. It causes both soil nutrient depletion and deforestation. Human-made deforestation has led to long-term famine. Families are forced to burn animal dung for survival, for heating and cooking, causing harmful effects on the environment. This is because animal dung could and should be used for soil conservation.

The most traumatic outcome of famine, in regards to women, is that it creates a sense of vulnerability. In a statistic compiled by the WFP, households headed by women were noted as being the most vulnerable group affected by food insecurity caused by drought and erosion.

Even worse than droughts, conflict, is now the primary cause of famine. According to FAO, conflict has become the single most serious cause of food insecurity in Africa.¹⁴ Countries common to the turmoils of civil war are Angola, Ethiopia, and Mozambique. Recently the area commonly known as the Great Lakes (Burundi, Rwanda and Zaire) has seen tragic acts of genocide and war which has

caused severe malnutrition and starvation.

War leads to food insecurity as it interrupts the distribution of food, causes people to flee their homes, and hinders agricultural production. War zone areas and refugee camps lack food, clean water, energy sources, and adequate health care because food distributors, like the WFP and the United Nations Children's Fund (UNICEF), are unable to reach people with supplies. Furthermore, women are the last to receive food through distribution. This is because women are not culturally accepted as the head of the household in most of the African region. Due to this cultural bias, most women and children suffer from malnutrition in refugee camps. If camp authorities would distribute equally between males and females there would be fewer cases of malnutrition and starvation.

Currently the United Nations High Commissioner for Refugees (UNHCR), is enforcing distribution of food to women in many camps. In Somalia, women face no discrimination in access to food, and because of this, Somalia camps have little if no reports of women and children starvation cases.¹⁵

The lack of long-term agricultural production also causes food insecurity in war zone areas and refugee camps. Conflict hinders production because war converts land into battlefields, male farmers are

transformed into soldiers, and government spending is shifted toward military costs. This directly affects women because they lose their land, husbands, and income to war.

Food security is a complex problem which entails various aspects and actors of a given society. It is a global problem of the 21st century which does not have boundaries; it affects people in both developing and developed countries. It is a question of survival.

Unfortunately, the poorest and the weakest are most severely affected; women, children, older persons, refugees and migrants.

Women are directly involved in achieving food security because they are burdened with the responsibility of being family managers in the areas of food availability/food production, income, nutrition and care. Thus, they hold the responsibility of obtaining food to sustain food security for the entire household. Women could become vital players in solving world hunger if given the right tools and support from the government and the community. This can be achieved by implementing strategies and guidelines that directly involve women.

Programmes should incorporate all aspects of food security such as education, poverty, population, and access to credit.

Furthermore, women are not the cause of food insecurity, natural disasters and conflict, although, they shoulder the burden of eradication.

¹⁴Food and Agricultural Organization, "Fighting Hunger and Malnutrition", p. 4, 1996.

¹⁵United Nations High Commissioner for Refugees, "Issues and Options for Refugee Women in Developing Countries", pp. 3, 16, 1996.

Governments must be sensitive to this and formulate solutions and strategies that target women and empower them as productive agents, farm managers and income earners. Only when this is achieved, at the governmental and grass roots levels, can the eradication of household poverty and hunger begin to end. In order to do this governments must stop using food and or other humanitarian assistance as a political instrument. Governments and communities should accept women as equal

partners for achieving food security and overall sustainable development.

There is a need to develop further strategies and guidelines to prevent food insecurity in various regions of the world. It should also encompass a holistic approach to the social economic development of a society. Protection of the environment is a crucial aspect of food security and food production. All actors of a society, particularly women, have a decisive role in food production, consumption, and distribution. More attention by

the international community and governments should be placed on developing programmes that encompass emergency solutions to food insecurity whether caused by natural or man-made disasters, in order to prevent mass starvation and famine. We are all aware there is no quick fix to this problem. Therefore, further studies, programmes, and actions are needed to prevent famine and enable societies to reach sustainable development. Women are a crucial target group to these strategies.

The Killing Fields: Impact of Pesticides and Chemical Fertilizer Residues in Food Production in India

by **Dr. Joan Mencher and Martha Dueñas Loza.** Ms Mencher holds a Ph.D., Anthropology, Columbia University (1958). Professor, Lehman College & Graduate Programme in Anthropology, University Center of the City University of New York. Ms Dueñas Loza is Acting Director of INSTRAW.

*"This is what I prayed for;
a plot of land and a bit of forest."*

Horace, 65 B.C.

Synopsis

The intense use of pesticides such as malathion, organophosphates, DDT, petrol and ketone based fertilizers, insecticide, fungicide, rodenticide and herbicides, contribute to a serious increase of

pollution affecting directly the farming population in India (and in all developing countries), particularly women who are directly exposed. Some studies are being conducted to investigate if there is a link between the high amounts of pesticide in fatty tissue and breast cancer. Pesticides residues may also lead to a rapid induction of resistance in disease vectors.

Integrated pest management has not been taken seriously

due to several factors of an institutional character. Many pests are now developing a tolerance for pesticides; in some areas, the amount of pesticide being used keeps increasing. "Toxicity occurs when a living organism experiences detrimental effects on being exposed to a substance. In normal concentrations most chemicals are not toxic. Others, such as pesticides, are toxic by design. Yet, in excess

INSTRAW



SUBSCRIBE NOW TO

INSTRAW NEWS

THE INSTITUTE'S
BI-ANNUAL BULLETIN
PUBLISHED IN ENGLISH
FRENCH AND SPANISH

SIMPLY FILL OUT THE
FORM AND SEND IT TO
US WITH YOUR
INSTRUCTIONS

If you wish to know more
about the most relevant
women's issues today,
please write and enquire
about our publications on
subjects such as
environment, statistics,
empowerment of women
and much more.

I want to subscribe to **INSTRAW NEWS**

ONE YEAR SUBSCRIPTION:

For Industrialized Countries
For Developing Countries

US\$25.00* Plus mailing costs
US\$15.00* Plus mailing costs

MAILING COSTS:

For the Americas US\$4.00
For Europe US\$5.00
For Africa US\$5.00
For Asia US\$7.00

METHOD OF PAYMENT:

I am enclosing a cheque drawn against a bank in the US for US\$ _____

I am transferring funds to your account No. 015-006875 with Chase Manhattan Bank, United Nations Branch.

(According to US Bank regulations, all foreign cheques deposited in US bank accounts are subject to a transaction charge equivalent to US\$25.00.)

NAME _____

ADDRESS _____

Please send me the following number of copies in the languages indicated:

E _____ S _____ F _____

I want to subscribe to **INSTRAW NEWS**

ONE YEAR SUBSCRIPTION:

For Industrialized Countries
For Developing Countries

US\$25.00* Plus mailing costs
US\$15.00* Plus mailing costs

MAILING COSTS:

For the Americas US\$4.00
For Europe US\$5.00
For Africa US\$5.00
For Asia US\$7.00

METHOD OF PAYMENT:

I am enclosing a cheque drawn against a bank in the US for US\$ _____

I am transferring funds to your account No. 015-006875 with Chase Manhattan Bank, United Nations Branch.

(According to US Bank regulations, all foreign cheques deposited in US bank accounts are subject to a transaction charge equivalent to US\$25.00.)

NAME _____

ADDRESS _____

Please send me the following number of copies in the languages indicated:

E _____ S _____ F _____



**UNITED NATIONS
INTERNATIONAL RESEARCH AND TRAINING INSTITUTE
FOR THE ADVANCEMENT OF WOMEN**

**PLEASE SEND YOUR
FORM AND/OR
ENQUIRIES TO ONE
OF THE
ADDRESSES
GIVEN BELOW:**

Headquarters:

**César Nicolás Penson 102A
Santo Domingo
Dominican Republic
Tel: (809) 685-2111
Fax: (809) 685-2117
E-mail:
instraw.hq.sd@codetel.net.do**



**UNITED NATIONS
INTERNATIONAL RESEARCH AND TRAINING INSTITUTE
FOR THE ADVANCEMENT OF WOMEN**

Liaison office:

**Room DC1-1106
United Nations
New York, NY 10017
Tel: (212) 963-5684
Fax: (212) 963-2978
E-mail: bulajic@un.org**

Mailing address:

**INSTRAW
EPS - A 314
P.O.Box 52-4121
Miami, FL 33152
U. S. A.**

concentrations, even a benign substance such as table salt can be toxic".¹

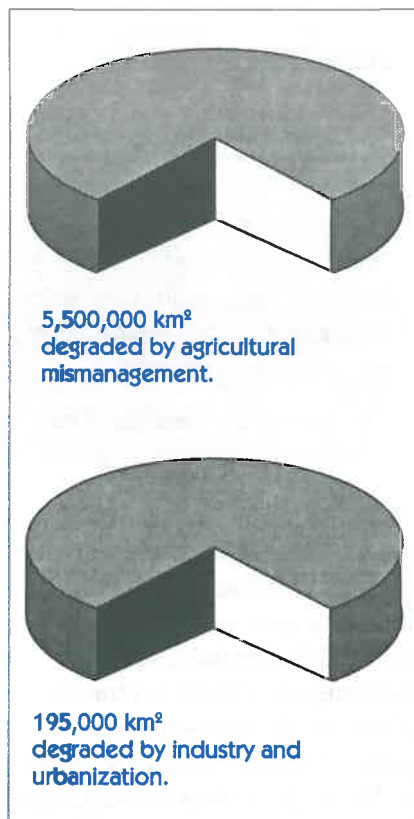
As recently as February 15, 1997, the magazine *India Today* published that Indians daily intake of pesticide residues in food, is among the highest in the world. The article goes on to note that this is being done for a variety of reasons including the need to make cauliflowers look whiter. The most commonly used pesticides include over 40 per cent organophosphates and malathion which severely affect the nervous system. Furthermore, though the use of DDT is banned, many farmers manage to use it. When violations of the standards are detected, both water and soil are already contaminated.

"The potential for contamination of the environmental asset by toxic substances is one of the most complex environmental problems. Substances that could prove toxic number in the millions. Some 55,000 of these are in active use".² The nutrients in fertilizers may give rise to eutrophication of surface water bodies and promote the growth of aquatic weeds. Pesticide residues are hazardous to both human and animal health.

¹Tietenberg T., *Environmental Economics and Policy*. Harper Collins College Publishers: New York, 1994. p. 343. ISBN 0-673-46974-3.

²Ibid, p. 365.

³Ibid, p. 344.



Ecological imbalances

Tracing the influence of environmental effects on human health and reproduction is still a new science. However, a growing body of scientific evidence suggests that exposure to chemicals, tobacco, alcohol and other substances, may cause genetic defects that can be passed on for generations as well as severe neurological damage. Problems exist for both men and women. In men, exposure to toxic substances has resulted in lower sperm counts, malformed sperm, and genetic damage. In women, exposure can also result in sterility or birth defects in their children.³

While Integrated Pest Management (IPM) as developed by FAO is an attempt

to use as little pesticide as possible and to only use pesticides for very limited short periods of time, they have had a hard time selling it to farmers in many parts of the world. IPM managers are quite aware of the human health risks of pesticides as well as how the indiscriminate use of pesticides can actually increase the number of insects. People trying to introduce IPM techniques may be thwarted by pesticide salesmen and by the reluctance of government officers to support IPM.

The emergence of new agricultural pests following irrigation development will trigger pest control activities that can range from simple applications of pesticides to complex integrated pest management (IPM) strategies. For instance, activities should be carefully assessed for their human health risks: pesticide poisoning of farm workers and the effects on insect populations that may favour a rapid build-up of vector densities. Managers of Integrated Pest Management programmes should attempt to include vectors in their monitoring activities as well as liaising with health authorities on early warning mechanisms for disease outbreaks.

Animal husbandry may imply human health risks in two ways: *firstly*, domestic animals may act as reservoirs for human infections as was the case with the notorious pig-virus-man combination in the

irrigate rice ecosystems in South and South East Asia in connection with Japanese encephalitis. In the Philippines, the water buffalo is a reservoir-host for the japonicum form of schistosomiasis. *Secondly*, the presence of cattle may tip the balance either in favour or against disease transmission by its mere presence: with an expanded source of blood meals, vector densities may rise, but where local vectors prefer animals to humans as a source of food, vectors may actually be diverted away from their humans host.⁴

Multiple cropping can reduce the need for pesticides. In fields where crops are rotated regularly, pests (weeds, insects, and pathogens) cannot adapt themselves to a single set of environmental conditions and, therefore, do not increase as quickly. Biotechnology and new irrigation techniques also offer a prospect for reduced fertilizer and water use. Developing plants that "fix" nitrogen in the soil would lessen the demand for nitrogen fertilizers and incorporating genes from pest-resistant plants into commercial crops could reduce the need for pesticides and possible problems associated with salt buildup.⁵

Pesticide residues, a long-term environmental and health risk,

⁴FAO, Paper 53, 1995. p. 61. ISBN 92-5-103731-0.

⁵Tietenberg, T. *Environmental Economics and Policy*. Harper Collins College Publishers, New York, 1994. p. 399.

⁶FAO, Paper 53, 1995, p.61.

LAND DEGRADATION

For thousands of years, people have modified, degraded and destroyed natural ecosystems. In 1950, some 115 million km² of the Earth's surface were undegraded, vegetated land. Just 40 years later, almost nine million km²—an area as large as China—were classified as "moderately degraded", with greatly reduced agricultural productivity. A further three million km² were "severely degraded", having lost almost completely their original biotic functions. Almost 100,000 km² are beyond restoration".¹

¹ FAO-UNEP "Our Land Our Future", 1996, ISBN 92-5-103906-2.

may also lead to a rapid induction of resistance in disease vectors. Organic pollution of surface waters may create favourable conditions for the breeding of culicine vectors of filariasis. Groundwater may be polluted with pesticide residues and fertilizers. As a consequence, high levels of nitrates may end up in drinking water which may lead to severe illness or even death for some bottle-fed infants. The eggs of intestinal helminths (roundworm, tapeworm—the latter requiring passage through cattle or pigs) are the most persistent risks of waste water for use in irrigation. They require quality control even where treatment is sufficient to eliminate bacterial risks of pathogens.⁶

The India Today report focuses on the Punjab area where most of the field work is done by men. In the south of India, as well as in West Bengal, much field work is done by women, usually low caste or untouchable (or tribal), often from landless or semi-landless households. In some regions

women from these households constitute close to one third of the population. Not only are they exposed to pesticide residues in the food they eat, but they also stand barefoot in muddy soil where pesticides may have been sprayed and fertilizers applied. They do this for many days during each agricultural season as they ready the embankments, transplant seedlings, weed fields, apply some of the fertilizers, and later on, when harvesting the paddy. Because of the way cultivation is conducted, teams of male sprayers might be spraying pesticides in an adjacent field, while women are working. There is no concern about whether women are up or down wind. The only protective clothing used is a handkerchief across the men's nose and mouth and even these are only sporadically used. Women do nothing except occasionally cover their head with a sari if the wind blowing the pesticide towards them is very strong. As if the pesticides were not

enough, landowners' use of petrol based fertilizers and herbicides contribute to the pollution these women are exposed to. Furthermore, many of the pests are now developing a tolerance for pesticides. In some areas, the amount of pesticide being used keeps on increasing and yields continue to decrease.

As mentioned before, the article in India Today points out the investigation on the link between high amounts of pesticide in fatty tissues and breast cancer. However, it does not mention the link between the period of exposure and the latency period for cancer development which can run from 15 to 40 years. The article goes on to explain that the reason why integrated pest management has not been taken up seriously is due to the fact that pesticide usage falls between ministries. This is definitely one factor but not the whole picture. Another dilemma inhibiting policy makers is the uncertainty surrounding the scientific evidence on which regulation is based. Effects uncovered by laboratory studies on animals do not perfectly correlate with effects on humans. Large doses, administered over a three-year period, may not produce the same effects as an equivalent amount spread over a twenty-year period.

⁷Earth Summit, Agenda 21, Chapter 10, Para. 10.1, United Nations, 1992. ISBN 92-1-100509-4.

"Looking for the El Dorado"

"Land is normally defined as a physical entity in terms of its topography and spatial nature; a broader integrative view also includes natural resources: the soils, minerals, water and biota that the land comprises. These components are organized in ecosystems which provide a variety of services essential to the maintenance of the integrity of life-support systems and the productive capacity of the environment. Land is a finite resource, while the natural resources it supports can vary over time and according to management conditions and uses. Expanding human requirements and economic activities are placing ever increasing pressures on land resources, creating competition and conflicts and resulting in the suboptimal use of both land and land resources. By examining all uses of land in an integrated manner, it is possible to minimize conflicts, to make the most efficient trade-offs and to link social and economic development with environmental protection and enhancement, thus, helping to achieve the objectives of sustainable development. The essence of the integrated approach finds expression in the coordination of the sectoral planning and management activities concerned with the various aspects of land use and land resources".⁷

There are, and have been for quite a while, some fascinating organic farming projects in

India, as is the case of a permaculture farm run by an NGO outside of Hyderabad. The MS Swaminathan Institute is carrying out some experimental programmes in Pondichery on this subject, and other organic farms may be seen in the Chengleanna and Pudokottai Districts of Tamilnadu. There are also several such projects in Maharashtra. So far all organic farming in India has taken place in selected niches, as all the agricultural universities claim it is unsustainable.

Certainly, organic agriculture is unsustainable if one only takes into account traditional forms or traditional knowledge with secure but limited yields, or unsustainable farming, which overdraws and degrades natural resources to maximize production. Clearly, there is a need for increased yields. But, there is good science as well as bad. What is needed is a melding of science and tradition, looking for ways to increase yields without introducing petrochemicals by making use of a wide variety of organic inputs. This has been unsuccessful due to the fact that few, if any, members of the established scientific research institutes devote any attention to improving organic and sustainable agriculture by bringing in mixes of technology from different sources. However, "each year, agricultural practices erode mountains worth of topsoil, drain continents of their groundwater reserves, and

eliminate plant genetic material in what is essentially colossal resource borrowing from future generations"⁸

Today's farming uses many renewable resources at well beyond their rate of replenishment. Because little effort is made to replace them, agricultural resource debt continues to mount. The borrowing, however, cannot continue indefinitely. As this century draws to a close, clear signs of lender fatigue are evident: five decades of resource over-exploitation have drained reserves of natural capital in many regions and have limited agriculture's opportunities for future growth and resource borrowing.⁹

According to FAO there are 5,500,000 km² degraded by agricultural mismanagement.¹⁰

"The increasing demand for resources and for food supplies are beginning to outgrow the capacity of the earth's natural systems. Evidence of the damage to the earth's ecological infrastructure takes the form of collapsing fisheries, falling water tables, shrinking forests, eroding soils, drying lakes, crop-withering heat waves, and disappearing species".¹¹

⁸Brown L.R. et al, *State of the World*, W.W. Norton & Co. New York, 1996. p.78.

⁹Ibid, p. 78.

¹⁰FAO-UNEP *Our Land, Our Future* 1996. ISBN 92-5-103906-2

¹¹Brown, L.R. et al *State of the World* W.W. Norton & Co. 1996. p.4 ISBN 0-393-31339.

¹²Tietenberg, T. *Environmental Economics and Policy*. Harper Collins College Publishers, New York, 1994. p.399.

To meet the growing consumption needs of the global population, the challenge is not only to increase food supply, but also, to significantly improve food distribution while simultaneously developing more sustainable agricultural systems. Much of this increased productivity will need to take place in developing countries. It will require the successful and environmentally safe application of biotechnology in agriculture, in the environment and in human health care.

There are numerous techniques for reducing pests which limit exposure to pesticide. A system employed in Central America since pre-Columbian times intermixes maize, beans, and squash. The maize provides a trellis for the beans; the beans enrich the soil with nitrogen; and the squash provides ground cover, reducing erosion, soil compaction, and weed growth. Trees can also be used in multiple cropping. In West Africa, leaf litter from the *Acacia alba* enriches the soil for the benefit of various grain and vegetable crops grown between them. In the African Midwest, farmers are experimenting with growing corn with other, low-growing plants. In one experiment in Nebraska (USA), two-row corn windbreaks were spaced every 15 rows through a field of sugar beets. The wind shelter provided by the corn increased sugar production by 11 per cent. The great access to sunlight and carbon dioxide increased corn yields by 150 per cent.¹²

In the US (Federal Environmental Pesticide Control Act - 1972) all registration and certification procedures for pesticides marketing have a five-year period of validity. It would be advisable to also subject all pesticides and herbicides exported to developing countries to such a control. The implementation of FAO Integrated Pest Management profile has been successful in Indonesia (because of support from the top). Similar profile was tried in Tamil Nadu, in India, with very little impact. However, most of the central and state agriculture ministries have been lukewarm about pushing IPM on anything resembling an urgent footing. Furthermore, there are other traditional measures used, from biocides like neem, which go way back in time, to making use of the insects' natural enemies, to traditional pest-removing operations usually performed by women. These all tend to be played down except when outsiders try to patent neem. The more labour intensive types of pest removal tend to be resented by landowners who want to cut down on labour costs. Where land reform has really worked and where land is in the hands of the actual labourers, perhaps the results would be different. But even in Kerala, after land reform, most work on the land, especially in paddy growing areas, is done by hired labour and by women. Clearly, land tenure systems are

one of the factors that reinforce the use of impersonal chemicals as opposed to labour intensive processes.

Women's organizations, environmental NGOs, policy-makers should ask themselves: Why are successful models of organic farming not spreading? What are the forces involved that keep them from becoming models and eagerly copied? How can they be used to provide realistic solutions to food scarcity, rural poverty and unemployment, and unsustainable farming practices? Technically we know how to make use of IPM techniques as well as other crop management techniques which would eliminate over-dependence on agro-chemicals such as: increasing the efficiency of nitrogen fixation and mineral absorption by the symbiosis of higher plants with micro-organisms, thereby encouraging environmentally sustainable agricultural practices.

In the case of India, in order to answer these questions, one must look back to the 1960s. During this period, India was suffering from a lack of food and there was a big movement afoot to improve grain production, making use of "improved" seeds

and bringing in chemical fertilizers. The "improved" seeds were selected from varieties particularly sensitive to fertilizers, pesticides, and herbicides. At the same time, a move was made to setup factories to manufacture fertilizers, pesticides and herbicides, while simultaneously creating a large force of young men (usually with BA or BS degrees) to go from village to village selling the products. By now the number of people who get work from the manufacture and sale of fertilizers, pesticides, and herbicides is enormous.

Agricultural universities and government agricultural departments, all modeled after the US system, have poured billions of dollars into research that completely ignores traditional uses and follows the set formula of using large amounts of petro-chemical based inputs while totally ignoring labour intensive, complex farming systems approaches which might be sustainable. It is clear that even in countries with a large number of semi-educated or uneducated workers, often in dire need of more work,¹³ a great deal of work has been generated for large numbers of middle-class households as part of the pesticide, chemical fertilizers sales force and in related services. The government officer who makes local policy (at the state level) often has relatives employed in these jobs. All of this makes it very difficult to make them seriously consider

the enormous health problems and long-term issues related to sustainability.

Similar phenomena can be noted around the world, including countries like the United States which has pushed people off farms into urban slums where they cannot always find work. Developing countries cannot solve the urgent needs for health services, energy, safe water, education, employment and financial resources of its increasing population. The heavy debt burden, falling prices for their raw materials and food export products, and the flight of local capital which could be used to create jobs and income, are all too significant barriers to sustainable development.

It could be argued that for sustainable agricultural programmes to work, more funds for scientific research in agronomy with a focus on successful organic farming, a major socio-political movement is needed. The first step however, might be for nations to commit themselves to allocating even 10% of their agricultural research budgets to work on sustainable organic agriculture. Simultaneously, there is a need to begin to think of new ways to deploy the people who have found employment in the spread of petro-based commercial pesticides, fertilizers, and herbicides.

Unfortunately, at present, where research focusses on using new techniques of molecular biology and creating new types of seeds, one of the

¹³Research done by one of the authors of this article, Dr. J.P. Mencher in Tamil Nadu and Kerala over the past 30 years has shown that agricultural workers are getting less and less work every decade (more than can be accounted for by population increase) and that they have no alternative sources of work in most cases. They are not the sellers of chemicals, only the victims of pesticide poisoning.

things that is being done is creating varieties that are more responsive to chemical fertilizers and pesticides.

Clearly there is greater profit to be made from the use of artificial inputs than from organic ones. As long as profit

is the only force driving agriculture, it is unlikely that there will be a turn towards organic farming on a large scale. That is, unless there is a large up-swelling from below.

Continued mismanagement of the Earth's natural

resources can only lead to ever greater land degradation and human suffering. An urgent strategy is needed that will permit both development and conservation. The starting point of that strategy is the land itself.



SUSTAINABILITY ENERGY DEVELOPMENT

• "Women and Energy: Household Energy for Developing Communities, South African Experience"¹

by **Dr. Flora Mosaka-Wright**. Energy Development Specialist, Development Bank of Southern Africa. Holds a Ph.D. in Administration and Policy Studies of University of Pittsburgh. Recognized as "Energy Personality of the Year 1996", see section Letter to the Editor in this issue.

*"Defend the fatherless, do justice
to the needy.
Deliver the poor and needy;
rid them out of the hand of the wicked."*

Psalm 82.

Synopsis

The purpose of this analysis is to promote a change in attitudes and perceptions which may contribute towards a gender-sensitive approach in

the development, management and utilization of energy, whereby women's needs and interests are taken into account, their role is fully recognized and their participation enhanced. This approach addresses the major societal constraints imposed upon women in the integration of their needs as a whole, with specific emphasis on energy planning and the formulation of energy policies.

The argument is that a gender-sensitive approach concerns women and the conditions they face, economically, socially and sexually; realities which cannot simply be dealt with by introducing a bit of an off-and-on revisited sensitivity. It entails a continuous and consistent policy

planning and evaluation process. Equity and social development cannot be attained if power and gender dynamics at household and community levels and the impact these have on control over resources continue to be overlooked. In addition, women are not a homogenous group, intra-household distributional differences and considerations must be taken into account.

Women have traditionally played a secondary role in society, staying on the fringes of power, always helping rather than initiating. (emphasis added). Today, this secondary position is being challenged. Women are moving out of these restrictive "helpmate" roles towards a better realization of their potential as full persons.

¹This case study is extracted from a paper entitled "Women and Energy in South Africa" produced by Dr. Flora Mosaka-Wright, Development Bank of South Africa, presented at an Energy Conference held in South Africa on 17-18 July 1995.

Women and Poverty

Women tend to be over-represented among the poor and their experience of poverty is often more acute (Whiteford et al, 1995). Their disproportionate share of the poverty burden reflects their disadvantaged position of less access to waged employment and their overcrowdedness in low-paying jobs within the labour market. In addition, they are more likely than men to be poor because of how resources are allocated within households.[...] The table below gives evidence of this scenario.

Table 1:
Percentage of women and men living in poverty in South Africa

LOCATION	WOMEN	MEN
Rural areas	63.2	57.4
Urban areas	31.6	28.1
Total South Africa	48.3	43.5

Source: Whiteford et al. HSRC. *A Profile of Poverty, Inequality and Human Development*, 1995, p. 6.

The percentage of people who are poor is far higher among rural dwellers than among people living in urban areas due to adverse social and economic conditions in rural areas, and particularly, the absence of basic infrastructure, land constraints and fewer income earning opportunities. [...] Since women in rural areas, in particular, face fewer income earning opportunities, rural female-headed households stand at a higher poverty risk than men. (Whiteford et al, 1995).

Table 2:

Poverty: female and male headed households

	FEMALE Headed rural	FEMALE Headed urban	MALE Headed rural	MALE Headed urban
Total Households	1,665,762	1,180,116	2,224,688	3,110,672
% poverty	66.7%	39.8%	42.8%	18.4%

Source: Whiteford et al. HSRC. *A Profile of Poverty, Inequality and Human Development*, 1995, p. 6.

Women and Energy

Women are collectors of various energy sources, they are disseminators, users, family educators, motivators and agents of change. In this regard they are responsible not only for themselves, but also for family members and the community at large (INSTRAW, June 1990). Notwithstanding, the majority of women worldwide occupy the lowest rung of the socio-economic ladder. Although they put in two thirds of the total working hours and contribute one third of the total labour force, they only receive one tenth of the total remuneration, earn one per cent of the world's material goods and their rights to ownership is far less than those of men (United Nations Report on Women, 1980).

With specific reference to Sub-Saharan Africa (United Nations, 1991) this situation has not changed much in the reduction of gender inequalities in most social, economic, rural and political

contexts. Overall development strategies as well as those in energy, tend to marginalise women in policy formulations (Killaird and Moursen, 1993). Some of the most obvious global constraints are: *disregard for women's role in the overall and the energy decision-making process; failure to recognize the impact of traditional values and practices; failure to take the level of education and awareness into account when choosing suitable technologies, especially in the energy sector; lack of awareness among users of energy; illiteracy with regard to modern fuel uses; lack of coordination between authorities and users of energy (i.e. women); and lack of commitment in the implementation of affirmative action in the energy sector* (INSTRAW, June 1990).

The South African Case

The Office of Reconstruction and Development Programme (RDP) has been mandated to spearhead a broader

empowerment programme for women, bearing in mind the fact that women often represent the poorest, most exploited and most marginalised sector of society. The government will formulate an integrated and suitable rural development policy in consultation with rural people, their organizations and stakeholders. Particular attention will be given to broadening access to services and support to small-scale agricultural producers by ensuring access to land, appropriate markets, credit facilities, training and support. The capacity to implement development programmes in rural areas is a serious bottleneck, to be addressed as a priority (RDP White Paper).

As a consequence of the legacy of apartheid, South Africa is a country with high levels of inequalities in wealth and access to basic services (Wilson and Ramphela 1989). The post-apartheid diagnosis of a democratic society calls for an immediate redress of these discrepancies. This requires a serious look at development strategies so as to accommodate basic services such as housing, education, health, water, sanitation and energy, amongst others. *A fundamental contradiction is that while South Africa produces 60% of Africa's total electricity output, the majority of South Africans, over 60% of the population (80% of whom are black) do not have access to this basic*

service (Wilson and Ramphela, 1989).

Concerning *gender issues in energy*, South Africa does not fare well either, especially on the situation of black women, who due to *their situation, systematically worsened by apartheid, generally face a triple oppression by virtue of their class, race and gender. Effective energy planning needs to recognize these complex dynamics and address the particular needs and interest of women at the grass-roots level.* It should ensure that women are involved and represented at the policy research, planning and implementation levels. This means that women should directly influence policy (Anita Makan, Paper No.3.EDRC, 1994).

Nevertheless, current development approaches in South Africa indicate genuine attempts to resolve the domestic energy crisis. The South African Energy Policy Research and Training Programme (EPRET) has, as its primary objective, to design policies to widen access to adequate and affordable energy services for poor urban and rural households and to develop energy policy options which should redress racial and gender inequalities. Indicators are that EPRET's approaches have, nevertheless, remained gender blind (Anita Makan, EDRC, 1994) because of the quantitative nature of its research and statistical methodologies employed. Only

nominal attention is being paid to qualitative investigation in order to ascertain women's needs and interests concerning energy usage (Anita Makan, 1994).

The Integrated Energy Planning (IEP) method, which underlies EPRET (Eberhard, 1992), is progressive and innovative in the framing of an integrated energy plan for South Africa. It examines energy usage from the perspective of the consumer, with specific focus on end-uses and services required by the consumer (Van Horen et al, 1993). In this methodology, due cognizance is given to the basic needs approach (BNA), an element of emphasis in the South Africa Reconstruction and Development Programme (RDP), to ensure that the poor have some control over their lives. This approach, however, does not focus on issues of redistribution of land or wealth within societies, nor does it question the sexual division of labour within households and, as such, ignores important intra-household dynamics such as gender and the implications they have in power and control over resources (Moser, 1993). Since women are the primary users and managers of energy at the household level, neglecting this represents a failure to accommodate women's needs or preferences within IEP's framework. Agarwal (1988) argues that the "household" is an inadequate methodological tool for estimating poverty

since it overlooks systematic sexual biases in intra-household distribution of income and consumption.

The South Africa women's chapter called "**Women Energy Group**", initiated during the pre-election period (April 1994) an association of women technicians, researchers and community political leaders, housed at the University of Cape Town, Energy for Development Research Centre, committed to: *redress gender imbalances in the energy sector, to put science and technology at the service of South African women, especially those who are disadvantage socially and economically; and to promote women's access to information about energy.* This is a very encouraging initiative, that can be an example of a "best practice".

This group maintains that rural households, predominantly headed by women, are energy hungry. Yet discussions of this situation continue to be dominated by white male technocrats whose vision cannot address the needs of the majority of South Africa. Although this group is still undergoing a process of organization, it sees its role as: *advocating women's participation in energy policy formulation, bridging the gap between energy/technology research and the actual needs of the end-users, who are predominantly women, acting*

as a resource group for building women's capacity towards involvement in energy planning and delivery at the national, provincial and local levels; making information and education about energy/technology women-friendly; and encouraging young women to develop careers in technical fields.

AFFIRMATIVE ACTION IN THE ENERGY SECTOR IN SOUTH AFRICA

Definitional Issues

The term "**Affirmative Action**" has become a commonplace term in South African institutions today. It is conceptually used to mean different things to different people and differs from user to user. Whatever the terminology, it is "a process or strategy to achieve greater employment equity or equal employment opportunity" (Ruiters, EDRC 1995). The advancement of specific groups is the strategy to achieve it, whilst greater employment equity or equal employment opportunity becomes the desired end-result. *Section 8 of the interim Bill of Rights in South Africa prohibits discrimination directly or indirectly on the grounds of gender, race, sex, ethnicity, to name only a few. Affirmative Action is not only politically imperative but critical in order to redress the backlog in*

human resource development and training as a consequence of the legacy of apartheid.

Pertinent Energy Sector Issues for Consideration in Affirmative Action

- Black women are generally under-represented in the energy sector (refer to Tables 3 and 4).
- Managerial positions are almost exclusively occupied by white men (illustrated by Tables 5a-5f in original paper).
- White men are still predominant in supervisory/skilled positions, although more white women and black men are represented at this level than in management.
- In the oil companies women are generally employed in supervisory/skilled and semi-skilled positions. In the nuclear industry, women are mainly in semi-skilled positions (Ruiters, 1995).
- One third of all black South Africans have no formal education, 80% have not been to high school (Lerescche, 1993), and 60% of the economically active population in South Africa are functionally illiterate (Innes, 1993).
- South Africa is deficient in the area of human resources development, and is characterized by an inverse skills profile, with 76% of the work force located in the semi-skilled/unskilled categories, compared with the international norm of 40% (Bowmaker-Falconer, 1994).

Table 3:
Affirmative Action

	Total Men	Total Women	Total White	Total Black
1. DME A (utility)	57%	43%	100%	—
2. Electricity Department				
• Eskom	87%	13%	48%	52%
• Municipal Electricity Departments	97%	3%	36%	64%
3. Petroleum	90%	10%	47%	53%
4. Coal	No usable data submitted in this section			
5. Nuclear	84%	16%	86%	14%

Source: W. Ruiters: Affirmative Action in the Energy Sector, Paper No. 21, EDRC, 1995, pages 18-24.

Table 4:
Affirmative Action

	TOTAL MEN		TOTAL WOMEN	
	white male	black male	white female	black female
1. DME A (utility)	57%	—	43%	—
2. Electricity Department	(83 % of 12.76)		(17 % of 12.76)	
• Eskom	37.41%	49.83%	10.59%	2.17%
• Municipal Electricity Departments	35.97%	63.36%	1.1%	0.64%
3. Petroleum	39.19%	50.81%	7.81%	2.19%
4. Coal	No usable data submitted in this sector			
5. Nuclear	70.5%	13.5%	15.20%	0.8%

Source: W. Ruiters: Affirmative Action in the Energy Sector, Paper No.21, EDRC, 1995, pages 18-24

Affirmative action is failing by and large because of internal resistance to transform the institutions towards the realization of the ideas of equal employment opportunities; failure to address white fears versus high expectations from the African majority; failure to recognize that the development and progress of those to be affirmed depends in large part on the assessment, re-

education and training of white managers and white cadre in people management and a paradigm shift.

Women and Energy: A Way Forward

Based on the above analysis, one concludes that the majority of women worldwide occupy the lowest rank of the socio-economic ladder. Future

development policies in South Africa therefore need a gender perspective to be highlighted in development strategies. We cannot easily assume that women will automatically benefit from development activities directed to the poor. The benefits of development are not passed onto lives and certainly not to the female headed households. Unless the specific needs and interest of woman are addressed, development can actually result in increased inequality between men and women (Border Rural Committee, 1993).

Towards a gender sensitive energy strategy

The question is: what must be done in order to incorporate women into the energy policy formulation process? We need to:

- look at the contents of policy;
- scrutinize who participates in the formulation of policy;
- look at who is involved in implementation.

Although efforts made for women in the energy sector are relatively recent, there is little evidence of support for women from within the corresponding departments in the energy sector in South Africa. It is therefore, imperative to develop a concrete strategy to involve women, and to ensure that some real change will be made to start-up the process. Some of the measures adopted from the INSTRAW Training package on New and Renewable Sources of Energy, are: a) develop an appropriate

overall strategy compatible with traditional patterns, cost-effective, easy to maintain and operate, offering possibilities for community involvement, especially for women; *b)* establish an adequate information-base on the role and status of women (habits, attitudes, values, day-to-day facts); *c)* learn from the experience to date; *d)* experiment with new initiatives; *e)* encourage and support the appointment and training of female staff; *f)* practice "positive discrimination"; *g)* promote a positive image of women's role in programmes or projects.

Conclusion

The issues relative to "Women and Energy" should concentrate on participatory, interactive, holistic approaches based on qualitative gender needs assessment. Domestic energy policies should go beyond the household so as to take into account the gender power relations within the household; to encompass the needs arising from the productive and community roles in which women engage. This approach addresses the problem of women's empowerment; access to affordable and adequate energy supply; improvement of women's quality of life as well as contributing to stop further environmental degradation.

The goal of any nation is social and economic development. Energy is a prerequisite for the proper

functioning of nearly all subsectors i.e., agriculture, industry, transport, services, housing, and other areas. The interconnection of all those sectors means that problems in one will spread to other areas, especially as regards to the issue of ecological balance.

Women are directly affected by the problems of energy. At the household and community levels, women are the primary users of energy. Their roles in agriculture, domestic work and income generating activities require the utilization of energy. The use of wood, as the main source of energy is becoming increasingly scarce. It also poses problems ranging from the drudgery associated with such activity i.e., from health hazards to the overexploitation of such resources, which have detrimental effects on the environment.

There is a need, therefore, to create awareness on the role of women in the energy sector in both rural and urban areas. National energy policies should address the problem of rural and urban women and should consider the issue of women and energy a priority in the allocation of financial resources.

References:

- Agarwal, B (ed). Structures of patriarchy: The State, the community and the household in modernising Asia, London: Zed Books, 1988.
- Agenda, A Journal About Women and Gender No. 18, 1993.
- Bowmaker, Falconer and Frank Horwitz, 1994: Enhancing Competitiveness through Strategic Human Resources. In People Dynamics 12(8) 15-20.
- Eberhard, A 1994. Integrated energy planning: a methodology for policy analysis and research. In Theron, P. and Eberhard, A. (eds) International experience in energy policy research and planning. Alan Press: Cape Town, South Africa.
- Killaire and Moursen, 1993. In Anita Makan: A gendered perspective of the development context for energy planning in South Africa, EDRC, 1994.
- Makan, A. Paper No. 3, EDRC, 1994, A gendered perspective of the development context for energy planning in South Africa.
- Moser, C. 1993. Gender planning and development theory, practice and training. In World Development, Vol. 17, No. 11, pp. 1799-1825, 1989.
- National productivity Institute, May 1994: Guidelines for Productive Affirmative Action.
- Penny Hoets (Marketing Consultant): Electrification of townships – exploring some myths: "My coal stove is my life, without it my life will be meaningless".
- RDP White paper.
- Ruiters, W. Paper No. 21. EDRC, 1995. Affirmative Action in the Energy Sector, South African Energy Policy Research and Training Project. Widening access to basic energy services for the urban and rural poor.
- United Nations International Research and Training Institute for the Advancement of Women (INSTRAW) *Women, New and Renewable Sources of Energy* 1990, in cooperation with ILO/TURIN Centre.
- United Nations Development Programme (UNDP) 1990. Human Development Report, 1990. Oxford University Press: London, 1990.
- Van Horen, C. 1993. Household energy and environment. EPRET paper 16, EDRC, University of Cape Town.
- Viljoen, R. and Palmer, R. Department of Mineral and Energy Affairs: The Role, Use and Distribution of Traditional Hydrocarbon Domestic Fuels in South Africa.
- Whiteford et al. HSRC. *A Profile of Poverty Inequality and Human Development*. 1995
- Wilson, F. and Ramphela, M. 1989. Uprooting Poverty. EPRET paper 16, EDRC, University of Cape Town.

• Energy Efficiency as an Instrument for Environmentally Sound Social Development and Economic Growth¹

by Martha Dueñas Loza, INSTRAW Acting Director

"Democracy is not a matter of sentiment, but of foresight.

*Any system that doesn't take the long run into account will burn itself out in the short run."*²

C. Yost.

The Development Issue

One of the major problems of developing countries is the creation of the necessary capital investment and infrastructure which make possible social development and economic growth. Another problem is the choice and selection of the technologies and systems required to create an environmentally sound infrastructure. Another problem constitutes the divergence (phase out) between population growth (geometrical) and the creation of infrastructure and services (arithmetical). An additional

problem is the heterogeneous training and education level and the very little technical and scientific research and indispensable know-how for creating the sound ground basis for solving these problems.

From this perspective, the main question is: can transfer and development of environmentally sound technologies become an instrument for addressing these questions? If the answer is yes, the immediate question will be: how to establish the priorities in Environmentally Sound Technologies (EST) selection and for what sector. It is clear that all the very complex problems affecting the social and economic situation of developing countries should be addressed in an integrated and coherent process. However, all these problems cannot be simultaneously solved.

While giving due recognition to the very important contribution of technology, there is a fundamental need for criteria for the selection of priorities for innovative policies, for an integrated resource planning and for institutional and financial reforms. Thus, the concept of sustainability acquires special significance when dealing with the two main sectors which have been generally left out of

the global socio-economic analysis, namely, investments for food production (the agricultural process) and energy services, which have been dangerously below the minimum required to sustain society. Furthermore, there is an exacerbated tendency to bypass these aspects when general policy, budget distribution and technical interventions are considered.

Agriculture and rural activities involve almost 70% of the total population of developing countries. One estimate done by UNDP, mentions that 80% of the poor in Latin America, 60% in Asia and 50% in Africa live in marginal lands characterized by low productivity and high susceptibility to environmental degradation.³

The seriousness of the social and economic deterioration that at present all countries face, developing countries in particular, where nearly two billion people live in poverty, going from misery to the subsistence level and the starvation level, requires concrete and highly committed government action, beyond the conventional development paradigm that has proved inadequate.

More than two hundred years of industrialization have created highly sophisticated societies

¹Position paper presented by the author at the UNCTAD Workshop on the Transfer and Development of Environmentally Sound Technologies, Oslo, Norway, 13-15 October 1993, a full report of which is to be found in UNCTAD/ITD/TEC/13 (Sales No. F.94.II.D.1, ISBN 92-1-212231-0).

²Yost, Charles. *The Age of Triumph and Frustration*, as quoted in Tietenberg, T. *Environmental Economics and Policy* Harper Collins College Publishers: New York, 1994. ISBN 0-673-46974-3.

³UNDP. *Human Development Report 1992*. Oxford University Press: New York, 1992. ISBN 0-19-507773-3.

with extraordinary scientific and technological knowledge which has supported progress in conceptual and legal terms on essential human issues. Against this background it is almost inconceivable that poverty is still a very present problem, that it has even dramatically increased to the point that social deterioration and poverty have reached extreme levels undermining the possibility of those populations to become self-reliant in a sustainable manner.

Another aspect should be considered. This has philosophical, ethical, economical, and environmental implications: *de facto* recognition that invaluable assets to the very existence of life considered infinite, such as air, soil, water and climate, are now under serious menace, not only from scarcity and contamination, as in the case of water, deterioration and degradation, as in the case of soil, but also from pollution, as in the case of air and from change, as in the case of climate.

This implies that along with the natural progressive evolution of our planet, human activities and their impact have the capacity of modifying the natural trend of evolution and exposing mankind in a manner that could be irreversible. Therefore, sustainability should become the fundamental

criterion guiding every individual and collective action.

Today's environmental trends are a consequence of the twentieth century's exponential growth rates. In 90 years, world population has tripled, the global economy has grown twenty-fold, and fossil fuel use tenfold. The population curve shows that it took 50,000 years to reach a population size of 2.5 billion people in 1950, but only 37 years to double it to 5 billion people. The present trend will add nearly one billion people per decade.⁴

Governments and decision makers at both public and private levels have a very challenging task in the decision and adoption of the technologies and development strategies that will affect present and future populations. In this respect, particularly for developing countries, three of the most critical problems to solve are: *i*) production and distribution of food; *ii*) access to potable water; and *iii*) supply and energy services. Questions related to: sanitation, health and population growth; training and education; employment; transport and communications; will be much easier to deal with if the first three are confronted in a sustainable and reliable form. Thus, step by step, empowering the poor population, particularly women, to meet their immediate needs and demands, becomes part of the solution process and, at the same time, gives them a sense of purpose and value as well as confidence in their abilities to help themselves.

Beyond general considerations, in this paper I would like to address energy and energy efficiency as one of the three critical problems to be solved, being in part, one of the main infrastructure requirements for sound environmental social development and economic growth.

Energy was one of the areas of intensive debate at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in June 1992. In Agenda 21, chapter 9,⁵ it was agreed that energy is currently produced and consumed in ways that cannot be sustained. One of the objectives of the energy sector in promoting sustainable development is to reduce adverse effects on the atmosphere by stabilizing emissions in order to reduce the atmospheric concentration of CO₂. At the Earth Summit, two directions for the evolution of the energy system, were identified: (a) a more efficient use of energy in production, transmission and distribution, and end-use; and (b) a growing reliance on environmentally sound energy systems, particularly new and renewable sources of energy.

Social development, economic growth and poverty alleviation will imply an increase in the demand of energy services, both on a per capita basis and on a collective basis, due to population growth. This will translate into higher levels of demand for primary energy, to an

⁴UNFPA, United Nations Population Fund Report 1991. United Nations: New York, 1991.

⁵Earth Summit, Agenda 21, Chapter 9, p. 77. United Nations ISBN 92-1-100509-4.

extent to be determined by the levels of energy efficiency, technologies applied, especially at the point of end use, and the corresponding institutional reforms and measures adopted to facilitate the adoption and application of these technologies.

The objective of an energy system and all energy supply and end-use activities, is to provide **energy as a service**, such as: cooking, comfortable indoor climate, refrigerated storage, illumination, transportation; or, when the **service is a product**, for instance, kilogramme of steel.

To deliver these services, the energy chain begins with the collection or extraction of the primary energy, which in one or several steps is converted into energy carriers suitable for the end-use. The energy sector (economic sector and industries extracting, converting, transporting energy carriers) has generally restricted itself to these supply-side activities.

The energy carriers (hot water, electricity, gas, gasoline) are used in energy end-use equipment to provide energy services. Thus, the energy system extends beyond what is conventionally considered the energy sector. Specific energy use is energy use per unit of an energy service, for instance, in the case of refrigeration, kw_e (kilowatt of electricity) per liter of refrigerated volume per year. Lower specific energy use for an

energy service, can be obtained through the use (application/installation) of more energy efficient technology. Efficiency improvements can be achieved at each step in the energy chain.⁶

Classifications of Opportunities for Energy Efficiency Improvements:

In formulating specific energy strategies as part of the overall socio-economic development strategy, actions to improve energy efficiency can be classified, as:

- i. more efficient primary energy extraction and conversion, for instance, in power plants and refineries;
- ii. more efficient transmission and distribution of energy carriers;
- iii. more efficient energy end-use in **existing** installations through improved operation, maintenance and replacement of some components; and,
- iv. more efficient energy end-use in **new** installations, equipment, etc., through systematic deployment of more energy efficient systems and technology. These systems and technologies may be introduced at the rate of capital turnover and expansion, i.e., at the rate of replacement and addition.

The energy performance of new equipment varies considerably. It is important to pay close attention to the specific energy use offered by different pieces of equipment for the same energy service. At this point, it is crucial that the

general and specific regulations and understanding encourage the installation of equipment and the adoption of energy efficient technologies. It is also necessary that the energy sector as well as the general industrial sector, consider energy efficient technologies as part of their integrated resource planning.

One important distinction should be made on the context of this paper. Here, only the measures that can be applied to use less energy to provide the same energy services are addressed. This very clear concept has very often been interpreted as a possibility for reducing energy use through reducing the level of energy services. The reduction of the level of energy services as a means to reduce energy supply levels is not dealt with here. While a reduced level of energy services would also influence the total use of energy, in developing countries it is associated with the unreasonable request to reduce already unacceptably low levels of energy services and in industrialized countries, the politically difficult task of asking affluent populations to decrease their affluence.

Potential Impact of Energy Efficient Technologies: the concept of technological leapfrogging

The quantitative potentials of a more efficient use of energy with already known technologies clearly indicate the large opportunities of

⁶J. Goldenberg et al. Energy for a Sustainable World, Wiley-Easton: , 1988.

energy efficiency improvements at the moment of deciding and implementing new investments. This is one of the criteria used by the more advanced and innovative industrial sector of the North. This criteria is also behind the concept of modernization of the productive sector.

These energy efficiency improvements are especially interesting for developing countries, where most investments in infrastructure and equipment are yet to be made, if economic growth and poverty alleviation are to take place. In fact, analysis shows that by shifting to high-quality energy carriers and by exploiting cost-effective opportunities for more efficient use of energy, it would be possible to satisfy basic human needs and to provide considerable further improvements in living standards without significantly increasing per-capita energy use above the present level. For instance, the energy requirements in a developing country that at some point in time will reach the West European standard of living of the mid-1970s could be 1 kW/capita, 20% higher than the present level used in developing countries, assuming that

presently known, highly energy-efficient technology could be used in that developing country.⁷ This is a remarkable result, produced by the present extremely inefficient use of energy, especially, traditional energy forms, and the high energy efficiency obtained by cost-effectiveness and available modern energy end-use technologies. With a development strategy that facilitates the use and implementation of technologies with such energy performance, energy supply need not become a constraint on development. The harmful environmental impacts from the energy sector would be significantly reduced in comparison with a business-as-usual future.

Of course, it should be noted that total energy use would grow somewhat faster than population particularly in rural areas where, at present, energy services are almost non-existent, and in marginal urban areas, where energy services are scarce and deficient.

Thus, for developing countries, there is an immense opportunity to formulate institutional measures to permit them to avoid the now obsolete stages of industrialization of the last 200 years and instead, pursuing a development process that makes use of and builds upon the technological know-how that at present exists in the world. This will allow them to become better prepared for changes and innovations along the requirements of their

specific needs of social development and economic growth in their specific environment.

Firstly, it is possible to make use of the most energy-efficient technologies available and applicable to the conditions of the South, for example, equipment for illumination and drives.

An illustrative example in rural developing areas is the switch from kerosene wick lamps to fluorescent tube-lights in villages. Experience from the Pura village in India shows that household expenditure for lighting was cut in half despite the fact that illumination increased by a factor of about 19, and the energy input decreased to one ninth of the kerosene originally used.⁸

Secondly, to make use of the potential for energy efficiency improvements, the concept of technological leapfrogging, meaning leaping forward, may be focussed upon. This should be a key element in any socio-economic development strategy. There is a close link between modernization and leapfrogging. There are several reasons for pursuing the latter option. Most of the technologies brought to commercial readiness in the North are developed for the conditions prevailing there, such as the requirements of a capital-intensive and labour-saving character. However, these characteristics are not well suited to conditions in most of the South. Additionally,

⁷J. Goldenberg et al. Basic Needs and Much More with One Kilowatt Per Capita. Ambio No. 14. *Journal of the Swedish Royal Academy of Science*, 1985.

⁸Ed T.H. Johansson et al. *Renewable Energy, Sources for Fuels and Electricity*, Chp. 18. Islands Press. 1993.

many countries in the South have access to low-cost hydropower and biomass resources. Furthermore, energy needs are different from those of the North, due to differences in climate, and because in the South satisfaction of basic human needs and infrastructure-building must be given paramount attention.

In regard to the "leapfrogging option", several misunderstandings may arise, depending on the point of view of the argument, or of the specific interests of some economic sectors. One of these arguments insists that "technological leapfrogging is only possible if other problems in society are solved and that energy efficiency gains cannot be treated in isolation from the efficiency of use of other inputs and resources in an economic system. For instance, a developing society is generally at a stage of lower development because it has not reached a level of efficiency in the utilization of its manpower, capital, and even natural resources."⁹

This argument fails to recognize that regardless of these problems, technical actions are taking place all the time in developing countries by many actors, in a step-by-step approach to development. As stated at the beginning,

underdevelopment problems cannot be solved simultaneously. There is an accumulated experience regarding these difficulties both in the United Nations system as well as in the countries concerned. The point is that when selecting the technologies and infrastructure, while purchasing equipment or setting up new factories in developing countries, the selection should be based on the best energy performance available. As indicated above, this would lead to considerable reductions in energy use, at no higher cost. This was the historic approach taken by industrialized countries.

It is sometimes argued that technological leapfrogging implies a larger level of risk for developing countries than the risk associated with just accepting technologies in vogue in the North. However, a sound project management would identify and avoid these perceived risks. This argument involves an ethical-information aspect: *a)* governments and decision makers in developing countries have the right and the obligation of being well informed and documented before deciding; *b)* the providers of technologies and their governments should make the moral commitment of restraining themselves from selling or donating obsolete or environmentally harmful technologies.

Other objections to energy efficiency improvements in developing countries include:

the argument that, because energy consumption is already so low, energy use cannot be reduced, that energy efficiency improvements are not possible, or that they would be too costly. These objections are not convincing. It is not the level of energy use but the level of energy services obtained that is low, and the more efficient technology, with costs of reducing energy use by 1 kWh being lower than costs of increasing supply by 1 kWh through investments in new energy supply equipment, is available in most situations where development is taking place. It is evident that a lack of adequate information and understanding of the process can provoke incorrect interpretation of both the technological opportunities and the energy efficiency concept.

A clear focus on the energy efficiency of new equipment creates a large opportunity to make better and wiser use of capital, human and natural resources, which otherwise would be destined to expensive energy infrastructure. The efficiency focus would liberate resources which can then be used for socio-economic development giving it a greater impetus.

The three most urgent problems: *i) sustainable production* (agricultural sector) and distribution of food; *ii) access to potable water*; and *iii) supply and energy services* in rural developing areas create a critical situation that must be

⁹R.K. Pacer, Energy and Development, World Energy Council, 15th Congress, Madrid, September 1992.

¹⁰FAO. Energy for Rural and Agricultural Development Report, 1989.

solved. According to FAO,¹⁰ conventional energy balances underestimate the actual total energy consumption of agriculture and of the rural sector as a whole and projections of future energy demand rarely consider the requirements for improving agricultural productivity and for enhancing the standard of living of rural populations in developing countries. Agriculture's share of a country's total energy consumption is normally in the range of 5%, while the entire system, from land preparation to processing and household activities may require 15% or more of the energy needs of developing countries.

Conclusions:

When comparing energy efficiency in agriculture alone, there are marked differences between developed and developing regions, which is also true for levels of output. There is, however, the question of how agriculture uses different sources of energy and how its needs are met from available energy resources. Then, the question that arises is, how to implement different energy options to solve specific problems of rural energy supply and demand.

The supply problems are concentrated in the lack of assessment of local and renewable resources, as well as the waste of these resources; geographic isolation of rural communities; almost non-

existent energy infrastructure and energy distribution; in addition to little or non-existing support services infrastructure.

Environmental considerations will not be part of any strategy if the proposed technologies are not economically viable for rural developing populations. Therefore, financial incentives and very concrete credit mechanisms aimed at encouraging the active participation of the concerned population and incorporating a gender perspective, as well as including the environmental and societal costs necessary to make a lasting impact on current patterns of rural energy services have to be developed.

From the technological point of view the main constraints are in the areas of high cost equipment, standardization and quality control of available equipment and infrastructure. This process will require closer cooperation between research and end-users.

In many countries, there seems to be an institutional authority vacuum in relation to rural energy development. Agricultural and rural energy development authorities rarely have the capacity or even the role to assess energy requirements and rely on the national utility companies to provide the necessary inputs. Besides, national energy authorities give very little, if any, priority to the rural sector because of its very limited

Some General Implications of Sustainable Energy Systems: WOMEN

Changes to a sustainable energy development model would have significant, positive impact for women in terms of labour, health, income generation and quality of life. Although energy is only one of the many factors determining gender equality, scenarios combining efficiency improvement and renewable sources do open new opportunities for women. For example, the emphasis on demand analysis and end-users should lead to: 1) a recognition of women's non-market labour time as "human energy" (fuelwood collection, cooking, water carrying, food processing, rural transport), and to the relief of this burden as a legitimate objective of energy policy; and 2) the involvement of women end-users in the policy formulation and planning of biomass and modern household fuels, efficiency improvements, and stoves and appliances. Concern for environmental sustainability addresses women's energy-related health concerns, such as smoke-related illness, etc.

Source: A. Reddy, R. Williams, and T. Johansson. *Energy After Rio, Prospects and Challenges Executive Summary* United Nations Development Programme (UNDP) in collaboration with International Energy Initiative, Energy 21 Stockholm Environment Institute and in consultation with Secretariat of the UN Commission for Sustainable Development. New York: UNDP, 1997. The Acting Director of INSTRAW, Martha Dueñas Loza is a contributor to this publication.

impact on the overall energy balance. Awareness about the very critical linkages between agricultural activities (food production and irrigation), rural socio-economic development and energy needs are of critical importance in order to find solutions to poverty.

The definition of environmentally sound

technologies (EST) needs to be clarified, and should include the full effects from a complete life-cycle analysis of environmental impacts, giving particular considerations to gender inequalities. One element that should be incorporated in the evaluation of a specific candidate technology to be labelled EST,

is energy efficiency. Target levels for energy efficiency should be established for major end-uses by governments, in order to protect health and the environment from negative impacts from the energy sector that derive mainly from an excessive use of fossil energy.



SUSTAINABILITY WATER DEVELOPMENT

“ENGENDERING” AGENDA 21:

• Gender equality and water resource management: Five years after Rio

by **Carolyn Hannan-Andersson**. Is Head of the Policy/Gender Equality Group, of the Swedish International Development Agency (SIDA), Stockholm, Sweden.

“The Nation is in the position of a man, who, bequeathed a fortune, has gone on spending it recklessly, never taking the trouble to ask the amount of his inheritance, or how long it is likely to last.”

National Conservation Commission (US)
1908.

Agenda 21:
The approach to gender equality and its implementation

There is considerable consensus, at least at the level of rhetoric, that sustainable development is dependent on the involvement

of both women and men. The guiding documents from international conferences during the 1990s have pointed to the need of including both women and men in the development of environment policies and programmes. Agenda 21 acknowledges women's roles in natural resources management at the local level and stresses the need for more women in senior positions to contribute positively to the shaping and effectuation of environmental policy. After five years of implementation, it is important to reassess Agenda 21's approach to gender equality and its

accomplishment in order to identify the constraints and potentials which should be taken into consideration in setting goals and strategies for the coming five year period.

The approach taken in Agenda 21 gives evidence of inadequate understanding of the implications of equality between women and men for sustainable development. The fact that most attention to gender equality is contained in a separate chapter results in the marginalization of the issue. A gender perspective would need to be mainstreamed throughout the document. In addition, there are some general conceptual

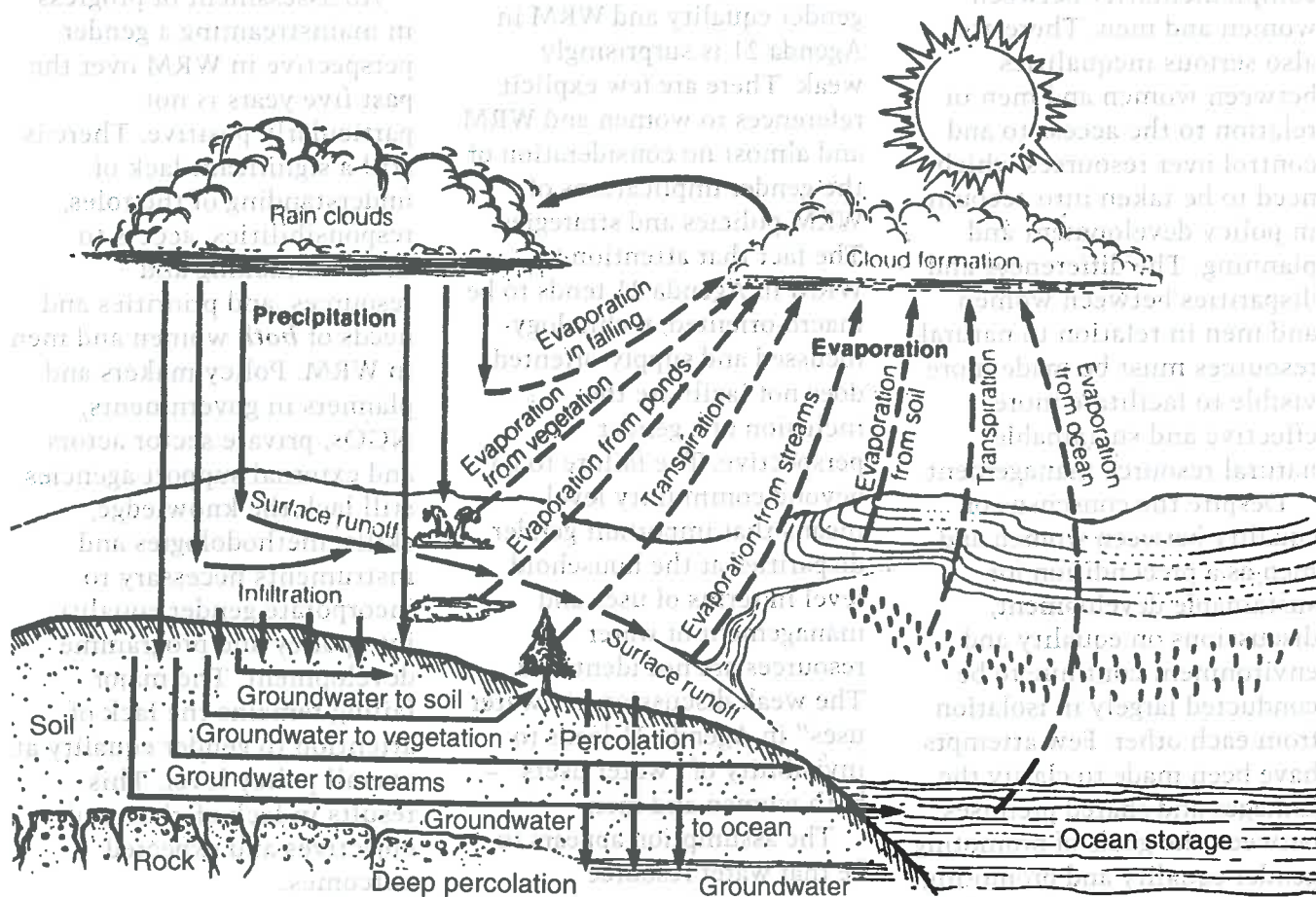
and methodological failings in Agenda 21 which make working with gender equality difficult. For example, the failure to go beyond the community level means that important gender implications

at household and individual levels go unmarked. The apparent assumption of the homogeneity of communities, as well as the notion of communities as intrinsically equitable, hides serious gender

differences and disparities in relation to access to and control over natural resources.

Women and men utilize natural resources in different ways and have different and complementary knowledge.

HYDROLOGIC CYCLE



Freshwater—the most precious of our planet's natural resources—is a basic ingredient for supporting all life, as well as the limiting factor for socio-economic development. Our freshwater resources must be characterized as precious, finite, and irreplaceable; the Earth has only a fixed supply of water and there are no substitutes! Our human existence and advancement over the long term, therefore, dictates that we ensure the sustainability of our freshwater resources over the long term as well.

Both women and men work to meet local and household needs and contribute to management of resources. They are also involved in different ways in resolving the constraints and conflicts which arise around natural resources use and management. It is important to note, however, that the issue is not only one of difference and complementarity between women and men. There are also serious inequalities between women and men in relation to the access to and control over resources which need to be taken into account in policy development and planning. The differences and disparities between women and men in relation to natural resources must be made more visible to facilitate more effective and sustainable natural resource management.

Despite the consensus on equality between women and men as a precondition for sustainable development, discussions on equality and environment continue to be conducted largely in isolation from each other. Few attempts have been made to clarify the linkages and shared premises between the goals of promoting gender equality and promoting environmentally sustainable development. The potential for merging the discussions of these two issues should be identified and utilized. This is essential if successful implementation of Agenda 21 is to be achieved.

Gender equality and water resource management in Agenda 21

Given the important roles of women in relation to water resource management (WRM), and the fact that international conferences on WRM in Delhi and Dublin in the early 1990s had already begun to give some attention to management roles for women, the attention to gender equality and WRM in Agenda 21 is surprisingly weak. There are few explicit references to women and WRM and almost no consideration of the gender implications of WRM policies and strategies. The fact that attention to WRM in Agenda 21 tends to be macro-oriented, technology-focussed and supply-oriented does not facilitate the inclusion of a gender perspective. The failure to go beyond community level means that important gender disparities at the household level in terms of uses and management of water resources are not identified. The weak discussion of "water uses" in Agenda 21 leads to invisibility of "water users" – both women and men.

The assumption appears to be that water resource management interventions are neutral in their impact on women and men. This is linked to assumptions of the homogeneity and equitable nature of communities in the face of evidence that communities are often

extremely hierarchical with very inequitable distribution of resources. It is extremely important to deconstruct the concept of "community" – using criteria of sex, class, poverty levels, race, ethnic group, and age – in order to identify all existing social groups with their different interests and decision-making and management structures.

An assessment of progress in mainstreaming a gender perspective in WRM over the past five years is not particularly positive. There is still a significant lack of understanding of the roles, responsibilities, access to decision-making and resources, and priorities and needs of **both** women and men in WRM. Policy makers and planners in governments, NGOs, private sector actors and external support agencies still lack the knowledge, skills, methodologies and instruments necessary to incorporate gender equality into policy and programme development. The major failing remains the lack of attention to gender equality at overall policy level. This results in lack of clarity of objectives and expected outcomes.

While some progress has been made at the level of individual projects, attention to gender equality continues to be a marginal rather than central issue in planning and decision-making – something which is added on to adjust

design or mitigate negative impacts *after* all the important decisions on goals, priorities, strategies and resource allocations have been made. The focus on gender equality is still too often seen as an optional "solidarity" input – more or less "to be nice to women" – rather than an essential approach for sustainable and effective WRM. The management roles and unique knowledge of women, so lauded in international statements, are not utilized effectively in policy and planning.

The organizational and institutional environments in WRM are dominated by men. Women are under-represented at all levels, at top policy and decision-making levels and in research institutions as well as in user associations and water committees on the ground. This contributes to the invisibility and/or undervaluing of women's roles, responsibilities, priorities and needs.

An issue of social justice and a precondition for effective, sustainable development

There are two levels of implications of gender-blind interventions in relation to WRM. Firstly, there is *the issue of social justice and rights*. Women should have the same rights and opportunities as men in relation to WRM, particularly given the important roles and

responsibilities women have. Failure to provide equal opportunities for women and men to participate, influence and benefit from development interventions in WRM often results in a diminishing of the little access to and control over resources women have. The undermining of women's roles and uses of water resources can lead to interventions which damage women's interests, for example, interventions that promote men's commercial interests at the expense of women's subsistence needs. Conservation policies in wetland development and catchment areas can restrict access to land and water for women because their uses are not recognized and/or properly valued.

The second level of implication is that *the negative impact of the neglect of gender equality on overall planning and success of interventions*. Failure to appreciate the diversity of water users, water uses and institutions involved in WRM, combined with non-consultative processes of land and water allocations leads to divergence of plans from reality, under-performance of agencies and increased conflicts over water. There is increasing evidence of negative implications of gender blind interventions in all areas of WRM – not only in domestic water supplies but also in water catchment development, wetlands development and irrigation projects.

The value-added of and increased focus on gender equality for water resource management

It is becoming increasingly clear that better understanding of the roles, responsibilities, priorities and needs of both women and men will increase the efficiency and effectiveness of WRM. Important inconsistencies between macro and micro-levels, between technical/economic and socio-cultural perspectives, and between the sectoral/supply-driven approaches of many WRM agencies and the more holistic needs-based approaches of communities and households can account for many of the weaknesses in programmes and projects. The inclusion of a gender perspective at policy and planning levels can facilitate the resolution of these inconsistencies.

Greater gender awareness would make visible all uses and users of water resources at different levels and promote a greater understanding of water resources and their availability and reliability. Knowledge of all water sources and patterns of use is essential for adequate policy development and planning which take into account the potential implications on the ground and are able to deal with competition and conflict over scarce water resources. Improvement and expansion of the knowledge of both women

and men is needed, to contribute to this greater understanding.

The changing context of water resources management

Recently developed common principles of WRM seek to direct changes in policies, processes and institutions. The basic starting point is the perception of water as a finite, vulnerable and non-substitutable resource – an “economic good”. This new vision of WRM should be an integrated part of the overall objectives of societal development and the socio-cultural and economic contexts in which WRM takes place. While these principles are seen as positive, a warning has to be raised that, because of the continued lack of gender awareness in WRM and resulting lack of recognition and valuing of women as users and managers of water resources, many of the changes underway actually disempower women in WRM.

The principle of water as an “economic good” may have negative consequences for women because of existing gender disparities in relation to the economy, markets and transboundary water geopolitics. The focus on economic aspects of WRM may be problematic for women given the fact that their subsistence uses of water are often termed “domestic”

and “non-productive” and may not be able to compete with male uses which are usually designated “productive”. The economic value of “domestic uses” must be recognized. Issues of pricing of water resources and questions of ownership create difficulties from a gender perspective because of existing gender disparities in relation to rights and access to and control over water resources at the national level. These problems and disparities become increasingly complex when international political considerations on access and utilization of water sources are applied. (see Table 1)

The principles of “management at the lowest level” and “management of demand” need also to be assessed from a gender perspective. Promoting women’s involvement in formal and informal management structures, even at the lowest level, can be difficult because of social norms and women’s subordinate position. (see box)

It is important to note that many of the risks outlined above do not only refer to women but may also refer to other social groups, for example, certain impoverished groups or ethnic groups. What is important is that when applying the principles of WRM, a socio-cultural and gender perspective is utilized so that all social groups, at both community and household levels, are assessed

“Claims on rivers are also becoming excessive, draining some rivers dry before they reach the sea. China’s Huang He (Yellow River) often runs dry before it gets to the Yellow Sea. At one point in early 1995, it dried up some 620 kilometers from the sea. Similarly, the Colorado River, the major river in the southwestern United States, rarely makes it to the Gulf of California; more often it disappears somewhere in the Arizona desert. The Amu Dar’ya, which originates in the northern Himalayas and once fed the Aral Sea, is now drained dry by Uzbek and Turkmen cotton farmers along the way.”

Source: Brown, L.R. et al. *State of the World* W.W. Norton & Co. 1996, p.5. ISBN 0-393-31339-5.

TABLE 1:**Ground water Depletion in Major Regions of the World, circa 1990.**

REGION/AQUIFER	ESTIMATES OF DEPLETION
High Plains Aquifer System, United States	Net depletion to date of this aquifer that underlies nearly 20% of all US irrigated land totals some 325 billion m ³ , roughly 15 times the average annual flow of the Colorado River. More than two thirds of this occurred in the Texas High Plains, where irrigated area dropped by 26% between 1979 and 1989. Current depletion is estimated at 12 billion m ³ a year.
California, United States	Groundwater overdraft averages 1.6 billion m ³ per year, amounting to 15% of the state's annual net groundwater use. Two thirds of the depletion occurs in the Central Valley, the country's vegetable basket.
Southwestern United States	Water tables have dropped more than 120 meters east of Phoenix, Arizona. Projections for Albuquerque, New Mexico, show that if groundwater withdrawals continue at current levels, water tables will drop an additional 20 meters by 2020.
Mexico City and Valley of Mexico	Pumping exceeds natural recharge by 50-80%, which has led to falling water tables, aquifer compaction, land subsidence, and damage to surface structures.
Arabian Peninsula	Groundwater use is nearly three times greater than recharge. Saudi Arabia depends on nonrenewable groundwater for roughly 75% of its water, which includes irrigation of 2-4 million tons of wheat per year. At the depletion rates projected for the nineties, exploitable groundwater reserves would be exhausted within about 50 years.
African Sahara	Vast nonrecharging aquifers underlie North Africa. Current depletion is estimated at 10 billion m ³ a year.
India	Water tables are falling throughout much of Punjab and Haryana states, India's breadbasket. In Gujarat, groundwater levels declined in 90% of observation wells monitored during the 1980s. Large drops have also occurred in Tamil Nadu.
North China	The water table beneath portions of Beijing has dropped 37 meters over the last four decades. North China now has eight regions of overdraft, covering 1.5 million hectares, much of it productive irrigated farmland.
Southeast Asia	Significant overdraft has occurred in and around Bangkok, Manila, and Jakarta. Overpumping has caused land to subside beneath Bangkok at a rate of 5-10 centimeters a year for the past two decades.

Source: Brown, Lester R., et al, State of the World, W.W. Norton & Co: New York, London, 1996. p.42.

before decisions are made on WRM interventions.

What next?

The major challenge for all actors –governments, NGOs, CBOs, private sector and donor agencies– is to develop a stronger focus on gender equality in WRM to ensure social justice for both women and men as well as effective and sustainable WRM. To achieve this there is a need to develop:

i. increased knowledge of the roles, responsibilities, access to and control over resources and decision making of women and men as well as their priorities, needs and potentials in relation to WRM –at both household and community levels;

ii. sensitization on gender equality for all actors in the sector;

iii. development of concrete goals, strategies, impact indicator and effective monitoring systems for mainstreaming gender equality;

iv. increased research on the importance of gender equality for WRM, particularly on the socio-cultural and gender implications of the common principles for WRM;

v. affirmative action to improve the gender balance in all areas of WRM but in particular at top management levels and in research and training;

vi. documentation of “best practices” at all levels for wide dissemination and replication.

A “best practice” from Botswana

To tackle the under-representation of women in the water sector as engineers and technicians as well as in policy development and planning the Ministry for Education, in cooperation with the Ministry for Water, prepared a gender-aware career guidance course on the water sector in 1994. A course book and a teacher’s guide “Work With Water –A Guide to Careers with Water, Waste Water and Environmental Protection” were developed. Gender-sensitive text and pictures as well as positive female role models of two women working at top level in the sector as an engineer and as chemist/bacteriologist, illustrate that there are career opportunities for both women and men at all levels within the water sector.

While some progress has been made... attention to gender equality continues to be a marginal rather than central issue in planning and decision-making.



Regional Implementation of Agenda 21

ECONOMIC COMMISSION FOR AFRICA (ECA)

Mainstreaming Gender Equality in the Sustainable Development Process: 1992-1996

The contribution of ECA in the mainstreaming of gender equality into the sustainable development process during the period in question has been curved out within its mandate to play a catalytic role with respect to policy formulation advocacy through technical publications and advisory services, etc.

In this context, one of ECA's major contribution was organizing the Fifth African Regional Conference on Women in Dakar, Senegal in November 1994, in which a comprehensive, consensus policy document was formulated and adopted by all African Governments at the highest level. The policy seeks to promote the advancement of women through sustainable development which is predicated on, *inter alia*, mainstreaming gender in all sectors of development. It is contained in a document entitled the African Platform for Action (APA) which was formulated on the basis of the findings of a comprehensive review of the current status of women's advancement. Its recommendations are being

implemented in tandem with the Global Platform for Action (GPA) which encapsulates all its concerns.

To ensure that the APA transcends being just an exemplary policy document to become a process, ECA has put special focus on the mechanism for monitoring the implementation of APA and GPA by facilitating the renewal of the African Regional Coordinating Committee (ARCC) which is mandated to monitor the process at the continental level. ECA has also ensured that the ARCC Bureaux at the subregional level are renewed and functional (the region is subdivided into five subregions). With regard to NGOs, ECA has collaborated in the strengthening of the implementation-coordinating structures such as African Women's Communications and Development Network (FEMNET), and other sectoral regional structures such as ABANTU for Development. Similarly, ECA participated in the creation and/or strengthening of various subregional coordinating mechanisms for the implementation of the APA and the GPA for NGO activities. The most recent contribution by ECA in gender

mainstreaming for sustainable development was facilitating through a series of activities, the creation of the African Women Committee for Peace in November 1996 which will monitor and ensure the participation of women in the peace process at the highest level.

Within ECA, in the context of the restructuring exercise, gender has been defined as a cross-cutting issue and as such all work programmes are expected to mainstream gender in their plans and activities. In turn, the ECA African Centre for Women has assigned the role of monitoring the effective mainstreaming of gender issues in all ECA activities. To this end, its human resource capacity has been strengthened. Besides, ECA has continued to prepare technical publications that highlight the state of gender equality as exemplified by the recently published *African Women Report 1995 : Participation in the Economic Sector* and the upcoming *Directory of Women's National Machineries* which will depict the extent to which African governments are responding to the recommendations of APA and GPA to provide appropriate structures for monitoring gender mainstreaming.

ECONOMIC COMMISSION FOR EUROPE (ECE)

Active Involvement of Women under ECE Environmental Conventions

Public participation including the participation of women in environmental decision-making processes helps to ensure that the decision maker has considered all relevant information and has taken into account all legitimate concerns. It enhances the advancement of women in sustainable development and also increases public support for the final decision, promotes the convergence of the views of the public, governmental authorities and industry on environmental priorities, as well as on the policies and practices necessary to improve the state of the environment. Public participation contributes, therefore, to the success of environmental policies. In turn, greater accountability on the part of Government and industry and increased trust in their actions reinforce democratic principles and mechanisms. Public participation, based on increased participation of women and public awareness of, and access to, environmental information as well as education and training, is crucial for the success of environmental policies.

The need of promoting public participation, environmental education, public awareness and cooperation with NGOs has been stressed at several high-level meetings such as the Bergen (1990), Dublin (1990),

Dobris (1991), and Sofia (1995) Ministerial Conferences known as the "Environment for Europe process". Principle 10 of the 1992 Rio Declaration on Environment and Development underlines that each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States are called upon to facilitate and encourage public awareness and participation in decision-making processes by making information widely available. States have also to provide the public with effective access to judicial and administrative proceedings, including redress and remedy. Agenda 21 emphasized the need for proper training and education, as well as operational institutional mechanisms, in order to ensure active public participation.

The public is generally understood to mean every individual, including women, group of persons or associations (e.g. women's and consumer associations and environmental non-governmental organizations - NGOs). In the context of the ECE Environmental Conventions, the public is understood to include those whose interests are directly affected, in particular women.

In this respect it may be expected that the sustainable development process will be

further strengthened through the participation of women in the implementation of the ECE Environmental Conventions.

The new ECE Convention on access to environmental information and public participation in environmental decision-making will further strengthen the role of women in this respect. The Convention is being elaborated and will be signed at the Ministerial Conference "Environment for Europe" in 1998 in Aarhus, Denmark. Approximately 40% of the delegations are headed by women or include women. The NGOs taking part in the elaboration of this Convention are also in contact with grass-root groups including women's organizations. The ECE hopes that the innovative environmental convention on public acceptance and participation will serve as a model to other regions. In such a case it would certainly increase the role of women in the environmental decision making all over the world.

Obstacles to access of women and other members of the public to environmental information and to involvement in decision making based on good information are widespread. Many environmental data collected by industry or Governments are not yet reported to the public. There is often a lack of public participation in decision making processes in part due to the absence of, or failure to

implement, legal provisions for such involvement. In the countries of central and eastern Europe participation of women and the public is hampered by the lack of adequate legal and administrative systems and the fact that the traditions of public empowerment and participatory democracy are not yet fully established. There are often restrictions on the ability of individuals or women's and other non-governmental organizations to seek an administrative or judicial review of environmental decisions taken by Government or industry.

ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN (ECLAC)

The Gender Dimension in Sustainable Development in Latin America and the Caribbean

In recent years, different initiatives have been carried out in Latin America and the Caribbean as consequence of the process of determining sustainable development as a common objective and identifying the existing relationship between environmental conditions and the living conditions of women.

Despite the theoretical and methodological difficulties in understanding said relationship and positively influencing it, the conditions of poverty that affect a growing number of women, women's central role in the demographical behaviour of

populations, the reproductive role that is assigned to them socially, and the obstacles that they confront to their participation in the decision-making processes have been the main axes that have guided development actions approaching this theme in the Region.

Most studies and development projects initially centered on the gender impact of environmental degradation on the population and on the important role of women in the use and management of natural resources for achieving sustainability. In addition, the need to analyze how gender relations produce environmental changes is currently being set forth.

Along these lines, various NGOs have carried out projects leading towards improving the social condition of women while empowering their participation in the conservation or the improvement of the environment. At first, the activities centered mainly in rural areas through programmes of reforestation, alternative uses of forests, agro-silviculture, the cultivation of medicinal plants and organic horticulture. Later, the growing importance of urban problems led to an increasing number of programmes in these areas on waste management and recycling, access to potable water, sanitation and hygiene, and environmental education, in which women have an active participation.

In the Regional Action Programme for Women, 1995-

2001 (ECLAC, 1995), the relationship between women and the environment, from an integral focus, is specified in Strategic Objective II.6: "To reach an equitable participation of women in the formulation and management of environmental policies", and eleven Strategic Actions which can make possible the fulfillment of this Strategic Objective are presented.

In agreement, although still in a very timid fashion, governments of the Region have begun to design and implement some public policies, which prompted by the Plans of Equality, lead synergetically to gender equity in decisions, responsibilities and benefits of development and to environmental and economic sustainability in the style of development adopted by the countries.

At the VII Regional Conference on the Integration of Women into Economic and Social Development of Latin America and the Caribbean scheduled for November of this year in Santiago de Chile, one of the priority themes to be debated will be sustainable development and poverty. This could mean a more in-depth and broader analysis of policies in the future in order to speed up the process of mainstreaming gender thereby assuring compliance with recommendations proposed for international action such as those emanating from Chapter 24 of Agenda 21.

ECONOMIC AND SOCIAL COUNCIL FOR ASIA AND THE PACIFIC (ESCAP)

Activities in Water Supply and Sanitation

In 1992, the Economic and Social Commission for Asia and the Pacific (ESCAP) held a regional workshop in Bangkok, Thailand, based on the training modules on Women, Water Supply and Sanitation in collaboration with the United Nations Department of Economic and Social Development (DESD) and INSTRAW. The workshop aimed at demonstrating how women's involvement at all levels and stages of environmentally sound and sustainable water supply and sanitation programmes and projects could be made more effective, easier and more productive. INSTRAW was one of the major contributors to the workshop as the modules were originally developed in a collaborative effort by the United Nations, INSTRAW, and ILO Training Centre in Turin. The workshop was highly appreciated by participants from the region and many requested that national workshops be organized in their respective countries in order to train a larger number of trainers in this field.

Efforts have continued since the regional workshop and in 1995, external funds were secured to hold four national workshops utilizing the same modules with much flexibility to meet the country context. The first workshop was conducted in the Philippines in cooperation

with the Local Water Utilities Administration. The second and third national workshops were held in cooperation with the Lao National Mekong Committee in the Lao People's Democratic Republic (PDR) and with the Centre for Rural Water Supply and Environmental Sanitation of Ministry of Agriculture and Rural Development in Viet Nam. The last national workshop of the series was held in Thailand in cooperation with the National Committee on Health and Environment of the National Commission on Women's Affairs.

In implementing the project, ESCAP has been able to solicit strong support from the Department of Development Support and Management Services (DDSMS) in providing the training materials, the UNDP-World Bank Water and Sanitation Programme (UNDP-WB Watsan), WHO and especially UNICEF in providing resource persons to assist in the training, particularly at the first national training workshop in Manila. The participation of these specialized agencies at the workshops provided the participants with additional information for a more complete picture of past achievements and ongoing efforts of the UN System in water supply and sanitation and women's participation, especially those activities in the respective countries. On the other hand, their collaboration also indicated interest of these UN agencies in the follow-up

actions in this sector. Prominent outcomes and experiences of the four workshops includes:

a. The National Commission on the Role of Filipino Women has expressed its intention to adapt the modules for the Philippines and UNICEF-Manila has indicated its interest in providing financial support for this work.

b. In the Lao PDR, the participants proposed three project ideas aiming mainly at assisting the Lao Women Union to gain practical knowledge on integrating participation of women in planning, implementation, operating and management of water supply and sanitation projects/programmes at the national level (especially hygiene education and support for implementation and management of the sector's national strategy), regional level (mainly on planning, choice of technologies and development) and project level (with emphasis on management).

c. In Viet Nam, three main directions for action were identified to promote close and active cooperation between the two key agencies in this sector: the network of the Rural Water Supply and Environmental Sanitation Centres, on the one hand, and the system of the Women Union of Viet Nam, on the other hand. These project ideas were aimed at enhancing awareness of women on water supply and sanitation (WSS), standardizing women's participation in WSS development and management, and formulating national strategies in WSS and

subsequent implementation and management.

d. In Thailand, at the recommendation of the workshop participants, the National Committee on Health and Environment of the National Commission on Women's Affairs indicated its willingness to seek budgetary allocation through the National Committee on Water Resources to hold a national workshop in 1997 on promotion of women's role in water resources toward a consensus national policy. It also indicated its intention to formulate and undertake a pilot project on promotion of women's role in water supply and sanitation in selected provinces to aim at strengthening the mechanisms to link women's participation with the national water resources programmes and among the central, organizational and local levels.

Apart from the above outcomes, ESCAP regards these workshops as opportunities to strengthen or establish respective national networks on Women, Water Supply and Sanitation as well as to improve cooperation among the regional agencies in this sector.

ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA (ESCWA)

Statement to the Commission on the Status of Women – March 1997

In recent years, some social progress was achieved in the ESCWA region, but this was offset by several factors that

impacted negatively on overall economic and social development in the ESCWA member States. These factors include the state of political relations among the countries of the region, the extent and nature of regional cooperation in various socio-economic fields, general trends in the oil sector, the economic sanctions on Iraq, the investment climate prevailing at the regional and national levels, and the Middle East peace process. All these led to a modest economic performance of the ESCWA member States. Economic reform and structural adjustment programmes continued to be implemented in most ESCWA member States. These programmes were used to correct internal and external imbalances as well as enhance efficiency and productivity, leading to some evidence of the increasing role of the private sector, with an accentuation of negative impact on the social sector.

Social problems faced by ESCWA member States are related mainly to the inequality in income distribution, resulting in disparities in standards of living and in the emergence of pockets of poverty. High population growth, limited employment opportunities, intensive rural to urban migration and the content of the educational system have all exacerbated the poverty situation. Such social problems threaten to destabilize the social structure of the region by creating marginalized groups with frustrations that lead to waves of violence and extremism. Other

rapidly growing social problems faced by the member states are related to a relative rise in crime, family disintegration, drug abuse and the marginalization and alienation of certain social groups.

ESCWA has redirected the focus of its activities so that it can better respond to the emerging challenges facing its member countries and to expand its role as a forum for regional policy coordination and programme implementation. It also changed the traditional sectoral programming to a more thematic approach, thus expanding its multidisciplinary activities in response to the complexity of the social and economic challenges facing development in the member States.

Based on this new approach, the work of the Women and Development Unit for the biennium 1996-1997 focuses on the above issues. Within the overall theme of capacity building and downstream intervention, a major activity deals with the policies and measures for improving the status of Arab women. ESCWA is in the process of compiling a textual database on national policies and measures adopted by member States under the critical areas of concern as spelled out in the Platform of Action of the Fourth World Conference on Women and the Arab Regional Plan of Action to the year 2005. This activity is particularly important since it is part of a social policy

database which, once completed, will include policies in the area of population, social development, housing and women. The database on population policies is quite advanced in its preparation through the support of UNFPA and will be the model for the other sectors, within an overall framework. Such a comprehensive database, the only one in the region, will be useful for governments, international and regional organizations, funding agencies, NGOs and researchers, since it will provide material for comparative analysis of policies, identification of gaps, formulation of policies, and provision of technical assistance to member States for capacity building.

Within the above-mentioned context of policy formulation and intergovernmental consultation, ESCWA will convene in March 1997 the first session of the Committee on Social Development. It will review ESCWA's proposal for implementation of the mechanism for the Integrated Regional Follow-up to Global Conferences. Naturally, the central position of gender in the plans of action of the four global conferences held in between 1994 and 1996 (ICPD, WSSD, FWCW, and Habitat) will allow for a special focus on policies for the advancement of women.

As regards the theme of partnership between governmental bodies and

institutions of civil society, an important multidisciplinary activity relates to the field assessment of the institutional capacities of NGOs in the West Bank and Gaza Strip under the Palestinian Authority, and their capacity for networking for development, an upstream intervention. The results of the survey will be presented to an expert group meeting scheduled for November 1997. The recommendations of this meeting will determine the content of ESCWA's support to these NGOs which are instrumental as actors for improving the quality of life of people in the West Bank and Gaza Strip.

With regard to the overall theme of poverty eradication, ESCWA is also involved in identifying and quantifying the extent of the feminization of poverty in the ESCWA region, using already tested methodologies. Central to this activity is the development of a gender index that is region specific.

As a follow up to the Fourth World Conference on Women, ESCWA provided substantive backstopping to the Arab Regional Conference on One Year Beyond Beijing/Meeting of Ministers of Social Affairs, which was convened in September 1996 by the League of Arab States and hosted by the Government of Jordan. The meeting adopted three areas of concern as priority areas for action: poverty alleviation (economic dimension),

partnership in the family (social dimension) and participation in the decision-making process (political dimension). The importance of this event lies not only in the adoption of clearly identified critical issues, but also in the fact that the Inter-Agency Task Force on Gender (comprised of agencies located in Amman) worked with the National Jordanian Women's Committee to prepare for this regional event with each agency providing its support within the overall plan. In addition, ESCWA through its Regional Adviser for Social Development and its UNFPA Population Expert, assisted the National Jordanian Women's Committee to adopt a national plan of action that is multi-sectoral and inter-ministerial and it was presented to the meeting as a model for other national plans.

In addition to the regular work programme, ESCWA was an active member of the Inter-Agency Task Force on Gender, which was convened by UNIFEM after being set up in October 1995 by the Inter-Agency Coordination Group. However, as of February 1997, ESCWA is the Convenor. The work of the Task Force deals with exchange of information, especially on follow-up action to Beijing and on formulating a joint programme of work for specific inter-agency follow-up action for implementing the Platform of Action and the Regional Plan of Action to the Year 2005.



Letter to the Editor



From: Dr. Flora Mosaka-Wright*
South Africa, dated 11/2/1997

SUBJECT:
*recognition of INSTRAW 'Women and Energy'
training material*

My correspondence to you is to let you know of my most heartfelt appreciation concerning our most inspiring meeting in November, 1996. I was delighted to meet someone from INSTRAW. Your Agency has been inspirational to me in various ways because it gave me a start in the direction of a better focus on issues concerning the needs of Women and Energy in the most astounding manner! Thanks also for the other reading materials that I

Dr. Mosaka. C.V.
Education:
*Doctor of Philosophy
(PhD) (Administrative
and Policy Studies)*
Work Experience:
*from 1993 to present –
Energy Subject
Specialist, Policy
Analyst, Human
Resource Development
Project Leader,
Affirmative Action
and Gender, at the
Development Bank of
Southern Africa.*

am sharing with other women here at home to carry out the most arduous task of the advancement of the marginalised in our societies. [...] My awareness of INSTRAW was introduced to me accidentally by a colleague who travelled to the USA, [...] She picked up one of your **brochures on Women and Energy**, [...] that initiated the interest in me to pursue the subject matter [...] and purchase your training materials. You will be surprised to know that this **culminated in the enclosed research paper on 'Women and Energy' which I presented at a Conference on 'Household Energy for Developing Countries'**. Since then, the world has surely opened up for me! [...] The contacts and efforts are expanding by the day. You will also be delighted to know that, these activities have earned me a **'Recognition Award'** with the Southern African Institute of Energy as the **'Energy Personality of the Year, 1996'** a revolving trophy which is awarded to any person who comes up with innovative foci on a subject matter related to the upliftment and empowerment of the disadvantaged household communities in the energy field".

(extracted from a three-page letter
from Dr. Mosaka-Wright to INSTRAW's Acting Director)

* See article by Dr. Mosaka in this issue entitled "Women and Energy: Household Energy for Developing Communities, South African Experience"



INSTRAW Highlights

SEVENTEENTH SESSION OF INSTRAW BOARD OF TRUSTEES

17-21 February 1997

The INSTRAW Board of Trustees met at its Seventeenth session from 17 to 21 February 1997 at INSTRAW Headquarters in Santo Domingo. During the session, the Board praised the work undertaken by the Institute in the implementation of its work programme of the 1996-1997 biennium, despite the constraints due to financial limitations and vacant posts at the senior level. The Board also suggested that the girl-child be included into the Institute's research programme and that high priority be placed on women in armed conflicts, violence against women and follow-up to the Habitat II Conference in the areas of human settlements, natural resources and environmental issues. At the same time, the Board suggested that INSTRAW capitalize on the expertise already acquired and continue to work on the four existing thematic areas: Economic and political empowerment of women; Women, environment and sustainable development; Women, communications and media; and Gender Statistics and Indicators.

The Board decided to hold a two-day resumed session of the seventeenth session on 8-9 September 1997 in order to discuss and approve the research and training agenda and preliminary programme budget for the 1998-1999 biennium.

A short farewell ceremony for five members of the Board of Trustees whose terms end on 30 June 1997 was held at the end of the session. Wooden boxes engraved with the INSTRAW logo were presented to each of the out-going members as a small token of the Institute's great appreciation for the time and dedication which they devoted to the INSTRAW during their terms. Members whose terms end on 30 June are: Gail Saunders (Bahamas), Sudarsono (Indonesia), Fatima Benslimane Hassar (Morocco), Renata Siemienska-Zochowska (Poland), and Selma Acuner (Turkey).

ECOSOC ELECTION OF MEMBERS OF THE INSTRAW BOARD OF TRUSTEES

During a resumed organizational session of the Economic and Social Council (ECOSOC) for 1997 held 1-2 May, elections for INSTRAW Board of Trustees were held.

As a result, four new members were elected and one member re-elected to serve their terms commencing 1 July 1997. The new members are: **Ms Zakia Amara Bouaziz** (Tunisia) – President-Director General of the Centre de recherches, d'études, de documentation et d'information sur la femme (CREDIF) – [Center for Research, Studies, Documentation and Information on Women]. Elected Vice-Chairperson of the 41st session of the United Nations Commission on the Status of Women held in 1997; **Ms Norica Nicolai** (Romania) – Secretary of State, Ministry of Labour and Social Protection; **Ms Glenda P. Simms**, (Jamaica) – Executive Director of the Jamaica Bureau of Women's Affairs; and **Ms Amaryllis T. Torres** (Philippines) – Professor of Community Development, University of the Philippines. Re-elected to a second term on the INSTRAW Board of Trustees is **Ms Selma Acuner** (Turkey) – Adviser to the Prime Minister on international cooperation with respect to women in development (WID), gender and development and family issues and on the formulation of WID projects in Turkey. President of the INSTRAW Board of Trustees 1997-1998.

INSTRAW WEB PAGE LAUNCHED IN NEW YORK FOR INTERNATIONAL WOMEN'S DAY

<http://www.un.org/instraw>

INSTRAW joined the celebration of International Women's Day and the Fiftieth Anniversary of the Commission on the Status of Women by launching its page linked to the United Nations Web site on the World Wide Web. Visitors to the INSTRAW Web page can get information on the Institute's mandate, its Board of Trustees, its research and training programmes, and its publications as well as its information on its network of focal points.

The INSTRAW Web page is also linked to the WomenWatch project which is a joint effort of INSTRAW, DAW and UNIFEM and was also launched in celebration of International Women's Day. WomenWatch is a gateway to UN information and data on women worldwide and an evolving electronic forum on global women's issues in the follow-up to the Fourth World Conference on Women (FWCW). The Web site provides up-to-date information on the UN's work on behalf of the women of the world and on the global agenda for improving the status of women. It is designed to serve as an important contribution to the outreach programmes of its collaborating partners, providing a cost-effective means to expand outreach and networking, and

streamlining access to information.

WomenWatch can be accessed through the World Wide Web at **<http://www.un.org/womenwatch>**, as well as through other Internet tools such as gopher – **[gopher://gopher.un.org](http://gopher.un.org)**.

CELEBRATING INTERNATIONAL WOMEN'S DAY AND LAUNCHING OF SPANISH VERSION OF INSTRAW PUBLICATION

Gender Concepts in Development Planning – Basic Approach

On 18 March 1997, INSTRAW launched the Spanish version of its publication *Gender Concepts in Development Planning – Basic Approach* (ISBN-92-1-127050-2, Sales No. E.96.III.C.1, US\$5.00) at its Headquarters in Santo Domingo. As part of the event, four panelists, representing the governmental, non-governmental and international cooperation sectors, were invited to comment on the book. The remarks of each panelist were presented in a different fashion but all concurred in the usefulness of the publication, citing in particular the following characteristics: concise, easy to read (and understand), and practical information. In sum, all of the panelists stressed that the book contained everything one needed to know about gender concepts for development planning in just a few pages.

Immediately following the panel presentation, several organizations announced their intentions to acquire more copies of the publication for use in their training activities. The representative of Helvetas – Swiss Association for Development and Cooperation informed that her organization planned to make it a required publication for all personnel at Headquarters (Switzerland) and all field offices. The Deputy Director of the Dirección General de Promoción de la Mujer [General Office for the Advancement of Women] stated that the publication would be used in training seminars in which officials of public offices would participate. A programme officer of UNDP announced her intentions to utilize the publication in training sessions with project personnel. According to an announcement made by the Coordinator of the Gender Studies Center of the Technological Institute of Santo Domingo, the publication will also be used as support material for the Masters programme in Gender and Development.

The INSTRAW publication is also available in Portuguese thanks to the INSTRAW focal point in Brazil, Conselho Nacional dos Direitos da Mulher [National Council for Women's Rights] which provided the translation services.

Acronyms and abbreviations used in this issue

ACC	Administrative Committee on Coordination	IEP	integrated energy planning
ADB	African Development Bank	IFAD	International Fund for Agricultural Development
APA	African Platform for Action	ILO	International Labour Organisation
ARCC	African Regional Coordinating Committee	IPCC	Intergovernmental Panel on Climate Change
BNA	basic needs approach	IPM	integrated pest management
CBO	community-based organization	kg	kilogram
CO₂	carbon dioxide	km²	square kilometers
CRÉDIF	Centre de recherches, d'études, de documentation et d'information sur la femme [Center for Research, Studies, Documentation and Information on Women]	kW	kilowatt
CSD	Commission on Sustainable Development	kWh	kilowatt hour
DAW	United Nations Division for the Advancement of Women	LCA	life cycle assessment
DDSMS	Department for Development Support and Management Services	m³	cubic meter
DESD	United Nations Department for Economic and Social Development	NGO	non-governmental organization
DPI	Department of Public Information	NRSE	new and renewable sources of energy
ECA	Economic Commission for Africa	PDR	People's Democratic Republic
ECE	Economic Commission for Europe	ppmv	parts per million by volume
ECLAC	Economic Commission for Latin America and the Caribbean	RDP	South African Reconstruction and Development Programme
ECOSOC	Economic and Social Council	SEI	Swedish Environment Institute
EPRET	South African Energy Policy Research and Training Programme	SIDA	Swedish International Development Agency
ESCAP	Economic and Social Commission for Asia and the Pacific	TCDC	Technical Cooperation for Developing Countries
ESCWA	Economic and Social Commission for Western Asia	UN	United Nations
EST	environmentally sound technologies	UNCED	United Nations Conference on Environment and Development
FAO	Food and Agricultural Organization	UNCTAD	United Nations Conference on Trade and Development
FEMNET	African Women's Communications and Development Network	UNDP	United Nations Development Programme
FINNIDA	Finnish International Development Agency	UNEP	United Nations Environmental Programme
FWCW	Fourth World Conference on Women	UNESCO	United Nations Educational, Scientific and Cultural Organization
g	gram	UNFPA	United Nations Population Fund
GAD	gender and development	UNHCR	United Nations High Commissioner for Refugees
GNP	gross national product	UNICEF	United Nations Children's Fund
GPA	Global Platform for Action	UNIFEM	United Nations Development Fund for Women
Gt C	giga tonne of coal	WB	World Bank
HABITAT II	Second United Nations Conference on Human Settlements	WED	women, environment and development
IBC	International Bioethics Committee	WEDO	Women's Environment and Development Organizations
ICPD	International Conference on Population and Development	WFP	World Food Programme
ICRW	International Center for Research on Women	WID	women in development
IDWSSD	International Drinking Water Supply and Sanitation Decade	WRM	water resource management
		WSS	water supply and sanitation
		WSSD	World Summit on Sustainable Development

The Board of Trustees

Ms Selma Acuner

Adviser to the Prime Minister on
Women's Issues, the Family and Social
Development
Turkey (1994-2000)

*Vice-President of the Board
of Trustees*

Ms María Esther Ashton

Chargé d'affaires, e.p. of Bolivia
Bolivia (1995-1998)

Ms Ishan Abdalla Algabashawi

Minister of Health
Sudan (1992-1998)

Ms Zakia Amara Bouaziz

Director General
Centre de recherches, d'études, de
documentation et d'information sur la
femme
Tunisia (1997-2000)

Ms Mona Chemali Khalaf

Assistant Professor of Economics
Lebanese American University
Lebanon (1996-1999)

Ms Maria Jonas

Consultant - Women's Issues
Austria (1996-1999)

Ms Noëlie Kangoye

General Secretary
Ministry for Social Action and the
Family
Burkina Faso (1993-1999)

Ms Norica Nicolai

Secretary of State
Ministry of Labour and Social Protection
Romania (1997-2000)

Prof. Els Postel Coster

Institute for Cultural and Social
Studies
Leiden University
Netherlands (1992-1998)

Ms Glenda P. Simms

Executive Director
Jamaica Bureau of Women's Affairs
Jamaica (1997-2000)

Ms Amaryllis T. Torres

Professor of Community Development
University of the Philippines
Philippines (1997-2000)

Ex-Oficio Members

A representative
of the Secretary-General

The Director of the Institute

Representatives of the five
United Nations
Regional Economic
Commissions

A representative
of the Government
of the Dominican Republic

United Nations International Research
and Training Institute
for the Advancement of Women

INSTRAW

The main purpose of INSTRAW News is to report on the work of the Institute and, in doing this, to record research trends, disseminate training materials, and promote networking on women in development issues at a global level. The editorial policy of INSTRAW is to select events, news and items linked with its programmes and related activities. INSTRAW News is published in English, French and Spanish, with a circulation of 9,000, distributed to governmental and non-governmental organizations, research centres, women's groups and individuals in over 120 countries.

Letters and comments of readers are most welcome.
Please address all inquiries on distribution and changes of addresses to:
INSTRAW, P.O. Box 21747, Santo Domingo, Dominican Republic
Telephone (809) 685-2111 Facsimile (809) 685-2117

E-mail instraw.hq.sd@codetel.net.do

INSTRAW Support Office in New York:
DC1-1106, United Nations, N.Y., N.Y., 10017, USA
Telephone (212) 963-0834 Facsimile (212) 963-2978 E-mail bulajic@un.org

Articles may be reproduced elsewhere provided the source is quoted as
INSTRAW News.

INSTRAW, an autonomous body of the United Nations,
conducts research, training and information activities
to integrate women in development.

P.I./026/4,500/English 1997