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WOMEN IN DEVELOPMENT: A.I.D. INTERVENTIONS  
IN THE  
HEALTH, EDUCATION, AND AGRICULTURAL SECTORS IN FEDSO/EA

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## INTRODUCTION

AID, host countries, and other international development agencies, for the past several years have placed highest priority on program thrusts encouraging national economic and social progress while also improving integration and equality of access of groups at the lower end of the development scale. Scores of studies have verified the rather grim realities of women's economic and social conditions in this regard. They will be highlighted in this paper only as they serve to increase understanding of the need for fuller integration of women's concerns and needs into Agency programs and projects.

It is necessary to point out that as a population group, the quality of life for women relative to men has deteriorated over the past decade. Women are currently and, for some time to come, will be a significant factor in what has been referred to as "the mass poverty problem" in developing countries. Output levels are decreasing and living standards are worsening. Improving these realities depends on the skills and abilities of the total labor force in a given country. Theory as well as much practical experience leaves little doubt that development of human resources plays an important role in raising incomes and improving the quality of life.

A decade ago, Danish economist, Ester Boserup pointed out that if modernization with development is to succeed, new sex patterns of productive work must emerge which do not deprive women of their productive economic functions. In 1977, she again pointed out that numerous projects and activities devoted to the theme "Women and Development" reveal the peculiarity of the position of women in the labor market, especially in rural areas: on one hand they are overburdened with work, and on the other, their efforts partly go to waste since they have even less training and use even more primitive equipment than the male labor force in rural communities (Boserup, p. xi, SIGNSa). Women and development research issues must become a part of overall studies of manpower resources as it relates to the total development process.

Women's positions and problems in Africa today are inseparable from the larger issues of dependency (both economic and political) and indigenous African socio-economic norms (e.g., in food production, family ideology, property rights, perceptions of respect and human dignity, etc., insofar as they continue to regulate social behavior, according to Achola Pala (p. 9, SIGNSb)). An important point for consideration is that in designing development plans to favorably impact on entire socio-economic communities it is only when: (a) there are great discrepancies among and between groups; (b) groups and individuals organize to voice recognition of these problems; and (c) services and opportunities of existing programs fail to reduce these discrepancies, that strategies such as Women in Development are introduced. Improving women's integration and assuring equality of access requires a more profound knowledge of the sweeping nature of the changes transforming the subregion's societies and economies.

Purpose and Use of Assessment-Review

The purpose of this Assessment-Review is threefold: (1) to contribute to the systematic acquisition of more specific data relevant to women's increased and broadened integration into AID sector programs, as well as to improve the state of knowledge on women in East and Southern Africa; (2) to briefly review other studies in order to specify findings of immediate utility for policy and program design at national, regional and/or sectoral level, with major emphasis on the rural sector; and (3) to provide background material for East/Southern Africa missions for use by project personnel, evaluators, PVOs, etc. Hopefully, it will be especially useful to contract design teams (who are usually under time constraints and tend to address the issue of project impact on target group women as if they exist in static environments).

Section I describes major development-related problems and issues as they affect women and girls in health, education and training, non-wage and wage employment, the law, political participation, energy and science and technology. Section II discusses development interventions and females in three sectors: health, agriculture, and education. Section III consists of programmatic recommendations regarding AID's impact strategy for improving women's equity of access to the benefits of Agency projects. Reference is also made to selected social and economic trends within countries in the REDSO/EA subregion. A selected bibliography is included.

The usual caveats are in order: first, this Assessment-Review is not intended to be comprehensive in its focus on the progress and modalities for increasing women's equity in the distribution of development benefits. Second, coverage of issues has been determined by my access to more recent material, and constraints of time and logistics imposed as a result of the service orientation of a regional AID office.

Why the Focus on Promoting Women's Interests?

The mass of men and women in East and Southern Africa are extremely poor. Worldwide, more women than men are poor; this would appear to hold true for the subregion.

Every society utilizes money to a greater or lesser extent in meeting even traditional responsibilities. However, few development-related opportunities exist to help women and girls earn money. Modernization has not meant positive development for females.

East and Southern Africa societies have widely varying customary views about women's wage employment. Cultural norms frequently determine whether a woman may or may not freely select non-traditional or socially innovative work outside the home. Also, in some societies men's training for specialized 'modern sector' work has left women at home with less help, and utilizing traditional, usually unimproved tools.

For women in societies across the continent variables have been added to the modernization equation resulting in maintenance of increasingly anachronistic gender-specific resource allocations (based on

traditional--and at one time generally complementary--group survival mechanisms). In other words men's outputs in the modern sector usually mean a relative decline in total family average productive income, fewer if any savings, and a weakened national tax base. Ultimately, there is either a reduction of women's economic contribution or a decrease in the social and subsistence value of their domestic production (1).

Adaptive responses of males to the new conditions brought about through modernization (especially of the agricultural and transportation sectors) have included large-scale rural to urban migrations which continually increase the negative ripple effects on family and large group structures. The women are everywhere overrepresented in domestic production systems and therefore suffer to a greater degree from the decreasing productivity and diminishing earnings.

In addition to the three Rs, formal education institutions still stress traditional social behavior for each sex. Females still are expected to transmit their knowledge to others. Restated, the family is their social universe while males use their knowledge to increase individual economic opportunities. Even so, it is ironic that for the majority of females it is usually in classrooms that they perform as individuals rather than as adjuncts to father, husband, or children.

No society is static if it is to survive. For example, historically, African indigenous education practices have traditionally focused on community coherence and maintenance, i.e., survival. Formal Western-style education (according to contemporary theories of educational sociology) is concerned with development of the community. Production systems in rural areas have not adapted to modernization primarily due to lack of attention to this coherence factor. Negative changes have occurred as market trade and home industries have been replaced by 'modernized' industry and trade patterns. Since the 1960s, African women have begun to migrate in larger numbers to urbanized areas, usually to establish their own households, and often to avoid marriages with village men. AID-contracted as well as independent studies are indicating that they too have serious economic motivations for migrating.

#### Types of Impediments to Women's Fuller Integration

Restricted communication with women (or with those knowledgeable about their activities) has resulted in their being development afterthoughts as program participants--especially, for example, in provision of services traditionally within their scopes of responsibilities and in those education and training programs designed to encourage expansion and improvement of agricultural production. Males have gradually become:

"...specialized producers of some agricultural or non-agricultural goods or services while all or most women continue to produce a variety of traditional products and services for family use.... As long as the specialized crafts or agricultural

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(1) The study of women and development is not a simplistic endeavor. Rather, it tries to take into account significant political and economic forces that relate to emerging and ongoing transformations of women's status in the context of their geopolitical settings. See Martha Mueller's article on "Women and Men, Power and Powerlessness in Lesotho," SIGNS; Journal of Women in Culture and Society, 1977, Volume 3, Number 1, pp. 154-166. Here, Mueller notes that strategies open to

worker is trained within the family, differences in male and female productivity remain relatively small, since girls are given some training by their mothers in household or other duties. But the gap in productivity between the two sexes widens considerably at the stage when boys get ... systematic training in schools or in workshops, while girls continue to be taught only by their mothers... receiving traditional initiation into their roles as housewives and mothers with now limited means of providing their traditional economic contribution (Boserup, p. 23)."

Urban-educated girls (and Africa is experiencing huge increases in female transmigration and outmigration from rural areas) are not usually provided the types of education to qualify them for 'modern sector' employment. Vocational training for boys, however, has sharply increased in almost every African country. Thus, there are important and serious impediments to female education for competitive income-generation, modernization, and increased national self-reliance. This is closely tied to historical and sociological conflicts surrounding attitudes of what girls need to learn. To date there has been greater emphasis on practical information for daily life (for use of family and community) to the detriment of marketable skills education. Practical education for daily life tends to be group- and region-specific. Education systems which can successfully mesh this type of education program with basic skills training for modernization of the traditional sectors will ultimately encourage community coherence--especially in rural areas--and possibly help to draw back some of the younger people who would otherwise migrate to urbanized areas.

The seriousness caused by the lack of education is further indicated by the fact that illiteracy averages 84.96% for the adult female population in 45 African countries according to Unesco data. Females in the 10-14 age group average an illiteracy rate of 89.9% in 38 countries, and it is 80.2% for the ~~20-24~~ age group in 42 countries. Unesco data also indicate that drop-out and fall-out rates for girls exceed the rates for boys by grade three in many of the countries of the subregion, and by grade 4 in Mozambique and Zambia. By grades 5 and 6, female participation drops below that of males in the countries in general. In Tanzania female participation does not appear to drop until grade 7.

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Basotho women and men are determined primarily by Lesotho's extreme dependence relationship with the RSA. Thus, valued objects and means of attaining them are defined from outside the country in light of its use as a labor reserve. This does not mean that there is no pattern of female subordination. It means that additionally, male and female roles, strategies, and status are strictly delimited by South African hegemony. In southern Africa, as elsewhere, race is a more powerful factor than sex in determining social relations.

6.

Another observation is that women represent a segment of LDC populations with discrete needs requiring particular approaches beyond the scope of customary development strategies. While this observation is supported by measurable, and quantified data, it has not really modified popular Western and African attitudes and reactions to the need for focusing special attention to a particular population segment which comprises the bulk of the poor majority.

Having noted above some of the impediments, it follows that, due to the scope and complexity of developing systematic strategies, assistance planners have tended to assume women's ad hoc participation in programs and projects without conscious attention to their special needs and aspirations. Too often, AID documents merely note that this problem exists. However, they fail to outline concrete and quantifiable steps to improve the situation within the target communities.

The field of challenge is to design projects based on strategies which insure measurable improvements in the quality of life for women in the various project target groups, and to obtain host government working support to increase and diversify women's multi-level involvement in socially innovative and non-traditional activities, as well as in the more traditional activities (which vary by country) targeted for women.

#### National Growth with Equity and Women: AID and Country Strategies

Official strategies designed to support national growth with equity will be successful only to the extent that Agency planners/practitioners can accept that specific population segment project actions are just one of a variety of interlocking strategies for accelerating national development, or policy tool.

A concomitant is that host country development counterparts must do more in support of increasing women's meaningful participation in the modernization process. Every government in the REDSO/EA subregion supported the rationale for the 1975 UN International Women's Year and its programs. Most have voiced support for the Decade of the Woman as an extension of national policies to assure full universal participation in national life, with full and universal benefits from the privileges and rights of citizenship.

Reducing the growing gaps between men and women in Africa will require that:

— planning documents (including PIDs, PPs, mid-project evaluations, etc.) specifically note program and project implications for women and on their work in the target communities. Presently, this requirement is not consistently enforced, in part because of resistance to utilizing non-standard approaches.

— increasing attention be paid to intrahousehold factors which impact on women's access opportunities for modernization with development. This means increased activity in the monetization processes associated with development. (Researchers in the subregion are moving toward such studies at the intrahousehold level rather than merely the household or family-level. As indicated in Table 14, this leads to more detailed information regarding time allocations, nutritional levels, earned income, and productivity for males and females.

— specific attention be paid to the growing number of female-headed households. These households will constitute the nucleus of the mass poverty problem over the coming decades. Thus far, there are few baseline and output indicators to show that planners are systematically factoring in this marginalized group. (This holds true even for programs in the southern African nations affected by male wage labor migrations to the Republic of South Africa.)

— the consultant services of African nationals, especially females, be utilized to a greater extent. In this regard Jacobs has quoted Baron von Ehrenfels, "...feminism all over the world, ... especially in Afro-Asiatic countries, is ... widely neglected, even though it is in the Afro-Asiatic countries that some of the most striking changes in the conditions of women are now occurring (quoted in Jacobs, p. x)."

A growing number of African scholars (Achola Pala, Marie-Angélique Savané, Laketch Dirasse, et. al) have written and spoken of the need for development assistance agencies to utilize the knowledge of African nationals in order to provide a clearer perspective on the needs and problems of women in local societies.

— a more realistic examination of the problem of teen-age pregnancies must take place. These are on the increase and the situation is exacerbated by increases in the relative and absolute numbers of female migrants. (At the Lusaka Conference it was noted that during the '60s and '70s, in East and West Africa there was increased movement of women over 45 years of age and especially over 50, who migrated to urban areas. At the same time Kenya, Lesotho and Rwanda experienced rural outmigrations of mostly younger females aged 15-19. Further, in 1970, 43% of all emigrants leaving for residence in other countries were women. When one considers that Africa has the largest number of refugees in the world, that in East and Southern Africa roughly 70% are women and children, and that one-half of the continent's refugees are under the age of 15, it becomes clear that programs to reduce absolute numbers of pregnancies will be only partially successful so long as attention is focused largely on females.)

Problems and issues concerning male fertility patterns are indeed more difficult for scientists to address, both socially and in the laboratory. The obvious fact is, however, that teen-age girls do not produce infants by themselves and that more funds are needed by family services agencies to train workers to reach adolescent males. It should be noted that according to 1975 Population Council statistics, 29 sub-Saharan and 12 Northern African and Middle Eastern countries did not have population policy statements as a part of basic health care services. The Council has also pointed out over the years that in countries where birth rates declined, the average was 10 points per decade, or one point per annum. These declines were usually attributable to: 1) changes in age structure and marital patterns; and 2) changing marital fertility. This means that even at only replacement levels, the already large proportions of children and adolescents will continue to result in substantial population increases before there is any significant leveling off.

A final point is that family planning organizations require more data on adolescent, male partners, their levels of education, what their problems are, the degree to which adolescent rural, urban and refugee couples remain together, etc. Social service intervention strategies must be modified and adapted to include the entire socio-economic target group where population and family planning programs are concerned.

-- more complete synthesis of data concerning the impact of the on-going social and economic transformations on males and females. What is the impact on availability and use of human resources as related to:

- a. the steady losses in productivity (domestic and commercial) which have led to decreasing non-wage earnings and cash income?
- b. the accelerating pace of technological change which requires higher skill levels? Industrialized countries' experiences and experiences in West Africa indicate that those displaced may qualify one time out of ten to take advantage of the new opportunities.
- c. manpower policy determinations in the face of the phenomenal rate of urbanization and its link to increased female prostitution as a survival mechanism in the absence of other employment opportunities?
- d. projected monetary and fiscal measures being developed for the blueprints of future economic policies?

Flexible Training Programs for Women and Adolescents

AID must develop more flexible training programs than what exists currently. Such endeavors have been supported in Latin America successfully. The



## SECTION I

### MAJOR DEVELOPMENT-RELATED PROBLEMS AND ISSUES

This section briefly describes problems and issues affecting girls and women in health, education and training, non-wage and wage employment, the law, political participation, science and technology, and energy.

As of late January, 1980 (based on UN Division for Economic and Social Information data) the situation of women worsened during the first five years of the Decade for Women--especially in the areas of employment and education for rural and peri-urban dwellers.

#### Education and Training

Illiteracy rates are increasing among females (88% of all African and Asian women are illiterate), according to UNESCO data. In 1970, the adult illiteracy rate in Africa was 85% for females and 63% for males. The greatest numbers of illiterates among females in Africa are in the 17-23 year old age group (Alasebu, p. 26). Non-formal education programs are reaching only the tip of the iceberg insofar as rural females are concerned. Employment is not available for those who have achieved the higher academic levels.

Reasons for the lower attendance rates of girls are well known (i.e., family responsibilities, loss of potential assistance to mothers, distances from homestead to school which might encourage rape, lack of transport, early marriage, negative parental attitudes toward female education, lack of adequate facilities to service all school-age children, loss of brideprice due to delay in marriage age, etc.). Since girls will continue to leave school much earlier than boys by and large, strategies must be revised to more efficiently reach school-age girls with more than just literacy and numeracy training.

Ultimately, the question must be asked, "education for what purpose?" Because rural and peri-urban children have the highest drop-out/fallout rates, averaging about four years of schooling, vocational (skill) training and academic education must not be viewed in traditional fashion (i.e., alternative ways to prepare for wage employment. The subregion's vocational and technical institutions only began opening their doors to girls to any great extent in the early 70s. This was largely for secretarial and other clerical support staff training for urbanized areas. More realistic education policies aimed at providing relevant basic skills would

benefit greater numbers, generate income, and strengthen rural economic structures. An objective of several African countries is, in fact, to establish priorities to increase and diversify education and training programs for women and girls and to plan and execute them within the framework of overall vocational planning. In addition to mass literacy programs in Ethiopia, Somalia, and Sudan, efforts are underway to expand technical education facilities at the secondary levels. Unfortunately, most of these efforts are limited to teacher-training home economics courses. (Two national efforts which bear watching are those of Tunisia and of Jamaica. In Tunisia girls and women are taking courses in electricity, graphic arts, math and science, leatherwork and bookbinding. In Jamaica female participation is being actively encouraged through on-job-training programs, as well as special guidance facilities with modified training centers for day care. Courses include woodworking and welding in residential technical training facilities. A media project has been established to encourage female participation in technical education. UN updates on the 1980 World Conference on the Decade for Women indicate that the area of technical and vocational training showing the greatest percentage point increases is entrepreneurial and management training. Participation rates approached men's in Lesotho (50.5%), and in Swaziland (45%). However, in Kenya, women's participation rates in this area represented only 10% of the students receiving training.

In the area of industrial training, Lesotho indicated a 15.2% increase in the numbers of women participating, Swaziland, 5%, and Botswana, 3.2%. Female participation in agricultural training in 1978 rose to about 4% in Swaziland, 0.7% in Madagascar, 25% in Lesotho, and 30% in Kenya (A/CONF/.94/10).

In light of the above, teacher-training institutions ultimately will have to broaden their scope to reflect the environments outside of the schools. There is no point to the continued jeremiads over the superfluous numbers of inappropriately educated youth in the absence of viable alternative curricula in the primary schools (e.g., vocational agriculture, trades and rural industry, non-traditional home economics (human ecology), fishery occupations, etc.).

Between 1970 and 1975, women teachers at the first level equalled 28-31% of Africa's primary school instructors. During the same period there were declines in terms of absolute levels across the continent.

### Health

Health services tend to favor urban areas and while life expectancies are increasing and maternal and infant mortality rates are decreasing, the latter remain the highest among the world's eight regions. Efforts are underway by most international assistance bodies to more effectively combine traditional health care and international health care techniques.

Throughout the subregion women's health status, especially in rural areas, is lower than that of men due to women's heavier workloads, and most of the points noted in the education section above. In addition to problems caused by childbirth, women suffer especially from conditions such as prolapse, malnutrition, and anemia.

Cultural practices for women such as food taboos imposed during pregnancy, food restrictions caused by social status within the family, etc., are issues which can be dealt with more effectively through upgrading the training of traditional health practitioners and other paraprofessionals. Poor environmental conditions such as severely inadequate sanitary conditions, unsafe water supplies, poor shelter are also critical problems facing women in the subregion. Misapplication of technology is negatively affecting their health status as well as employment possibilities. This in turn places more stress on rural and urbanized women. Women's health problems in cotton mills in the Gezira, Sudan, are a case in point.

In the area of family planning, infertility is becoming a major "social and demographic problem" in sub-Saharan Africa. In some areas up to 40% of the women reportedly have completed their reproductive years without bearing a child (Plan of Action, A/CONF.94/9, p. 23). Kenya and Mauritius are in the process of increasing rural and urban access to family planning and spacing services for women. Illegal abortion attempts are on the rise among young girls, however, who face the probability of dismissal from school, rejection by their families, social ostracism, etc.

Women's participation in the health services is concentrated in the lower status occupations and very few reach the senior administrative and policy-making levels. General management problems and poor distribution of resources exacerbated by poor infrastructure will continue to plague most of the countries health services systems. Problems caused by poor nutrition will continue to negatively affect women as long as agricultural production levels continue to decrease.

#### Non-Wage and Wage Employment

Health status, education and employment are all intricately related. Presently, poor global economic conditions (which are likely to continue) has meant higher unemployment levels for women than for men.

Women are working longer hours than men with respect to non-wage employment. They provide roughly 60-80% of all agri-

cultural work but are invisible in relation to most economic statistics. However, if home production is included in the definition of market production, women's and children's household activities (i.e., employed time) exceeds men's. (In Botswana women work 20% longer and have 20% less leisure time than men daily; in Burundi they rise one-half hour earlier daily and have over one hour less leisure time per day than men (ICRW, pp. 2, 15). A consistent report for all regions of Africa is that women have significantly less leisure time than do men on average. This evidently holds true for both non-wage and wage employed females.

Development planners seem to expect a number of fundamental changes in human nature when confronting the issue of reducing women's labor burdens. Take Rwanda as an example: the same Western planners who condemn the fact that so many bananas are used yearly for beer production and who note that Rwandan women do the bulk of the agricultural work are the same individuals who design and execute projects as if women were not the majority of the agricultural work force. Nor do these individuals factor in, except under pressure, components which make it easier to carry water, develop or modify agricultural tools, make it easier to carry heavy loads in hilly-to-mountainous terrain, or even prepare meals with modernized, locally adapted equipment which would require less fuel, reduce the time spent hauling wood and dung, and therefore leave more time for other activities.

The phenomenon of single parent households is not considered when employment strategies are devised. Roughly 42% of all the households in Botswana and 18% in Kenya are headed by women. There are definite links between absolute poverty and households managed by single females.

It was pointed out at the 1978 UNIDO Preparatory Meeting on the Role of Women in Industrialization in Developing Countries that industries oriented to household labor-saving devices and infrastructure projects that would increase women's free time and facilitate access to wage employment should be given high priority by national governments. While such activities are being implemented it would also be useful to gather data or develop profiles of women already active in small- and medium-scale industries in rural and urbanized areas. Further, it was suggested that pilot projects be formulated in areas of rural industrialization where women could be employed, such as agricultural modernization, raw material and agricultural processing, and construction materials supply. UNIDO has an Industrial Development Fund for this purpose. At present, women's involvement in industry is usually in areas such as food processing, textiles, animal products, paper and cardboard, and standardized handicrafts. Their participation tends to be confined to activities requiring low technology, low capital requirements and low productivity, or capital-intensive industries which are highly labor-intensive (ID/WG.283/23, pp. 6,9).

At least one recent UNICEF document notes the following income-producing activities as practical for the bulk of rural and peri-urban females who are largely illiterate. The examples are considered to be superior to what is extant for functional literacy and nonformal education and training:

Rural Women: canning, food preservation; preparation of food-cooking oils, thermal decomposition of wood and changing simple by-products from charcoal production (wood tar for wood preservation and road construction, bio-products, etc.), water cropping or cultivation filtration, development of local modes of transport, fish farming, developing animal feed, fabrication of sun-dried bricks, soya and other bean powders for fortification of toddler and infant foods.

Urbanized Women: papier mâché products made from scrap printing press paper, printing cloth, canning vegetables and fruits for supply to urban-peri-urban organizations such as crèches, MCH centers, development of small industrial production of items on demand by households and which may help to conserve foreign currency, e.g., skin and hair oils (Alasebu, pp. 51-52).

None of the above listed income-generating activities can be truly successful if they are perceived by African women to increase their work loads. If a target community happens to feel that it has greater need for piped water, instead, then it would be difficult to firmly establish a project aimed at improving nutritional intake through poultry production, for example. In other words, increased community participation of women can only be achieved if they feel that their wishes are taken into consideration before an activity is designed.

Social and Legal Status of Women

Many conflicts affecting women's status still exist between customary/religious and statutory laws for most of the countries in the subregion. Botswana has evidently taken steps to minimize such variances. The Second Regional Conference on the Integration of Women in Development held in Lusaka, December, 1979, noted that:

"...customary and traditional values affected women's acceptance of certain practices, and that few women have access to legal information or fully understand their rights under the law. To remove those, among other barriers, it was professed that women leaders should bring to light social practices which subjugated women, that conflict between customary and written laws be reconciled and that free legal aid and family courts be established. (Draft Report, p. 13)."

Inequitable practices include: different rules concerning property rights between men and women; the question of legal capacity (e.g., in Mauritius and Swaziland); right to movement (e.g., in Swaziland, unmarried women have equal right of movement with men, but once married they require their husbands' consent); rights during marriage and at dissolution (in Botswana, Mauritius, and Swaziland there is no equality for personal and property rights); In Kenya, such equality exists with variances depending on the

legal regime under which a marriage is contracted); retention of family name (e.g., women have no such rights in Kenya, Mauritius, or Swaziland).

African and Western social scientists have also noted an increasing trend among younger--especially professional--women to forego marriage in order to have children, since single women are technically regarded as adults under most civil laws.

Women obtained the most widespread equality in the area of nationality rights over the past decade, especially as these rights relate to acquiring, changing, or retaining nationality (with the notable exception of Swaziland where marriage to a foreigner means loss of nationality until dissolution of the union).

Based on information from the 1979 Agrarian Reform Conference, in no country in the world has land use or tenure rights been modified to the benefit of the women who work the land.

### Political Participation

Increased participation of women in political and civic activities is central to advancement in other areas, notably education, employment, health, and access to supporting institutions and services. Women's ability to use politics as a development lever to address their discrete needs has not been successful. It is still difficult for a woman to run and be elected for office. This is the result of women's perceptions of other women's capabilities as contrasted to those of male candidates, efforts on the part of males to maintain the status quo, and media reflection and shaping of perceptions of women's capabilities as office holders.

Delegates to the Lusaka Conference noted that many of their countries are trying to promote women's political involvement as more than voters and grass-roots participants within parties. Further, a conclusion of

the Conference was that there is no direct correlation between women's economic contributions and their status in society. The full participation of women in all spheres of national life as yet only involves a minority.

### Science and Technology - An Overview

Africa is one of the richest of the world's eight regions, accounting for: 90% of all diamond deposits, 90% of all chromium deposits, about 50% of the world's cobalt, 10% of the iron ore, 55% of all manganese, 40% of all bauxite, 20% of all copper, 50% of the world's phosphate rock, 50% of the world's thorium and uranium and roughly half of the world's gold. Africa produces roughly 26% of the world's cobalt ore, 81% of its gold, 74% of its diamonds, 26% of its phosphate rock, 19% of its copper ore and about 7% of its iron ore. So, on the one hand, future development in many countries will continue to depend on the soil.

On the other hand, over the past 25 years, the continent as a whole has been unable to show significant growth rates or satisfactory indices of well-being among the populations:

-- 18 of the 25 poorest countries are in Africa. A high proportion of the 800 million absolute poor are also in these countries.

-- For every thousand children born, 400 die of starvation or malnutrition. Africa is a net importer of foodstuffs (see section on Agriculture and Women).

-- While some progress has been made in the manufacturing sector, the growth target fixed at Lima was 12%, (in light of the fact that Africa's share in world manufacturing reaches 2% annually) but the maximum peak for the entire continent was 5%, according to the "Africa, Year 2000" report of the Monrovia symposium of 1979.

Few countries have clearly formulated science and technology policies. Rather, the majority of countries have "an agglomeration of many partial and implicit science and technology (S/T) policies which, coordinated to a greater or lesser extent at the center, have only very slight impact on the national process of policy formulation (TCDF/AF/7, p. 4)." Among those countries with such coordinated policies are Ethiopia, Kenya, Tanzania, Sudan, and Zambia.

Institutional Problems. Sectoral-level institutions having S/T responsibilities tend to be the sectoral planning departments and offices of the ministries of agriculture, health, housing, industry, transport, public works, etc., as well as financial and State corporations. Operational policies are generally executed within the production units themselves (i.e., companies, technological institutes or departments created in the sectoral-level institutions.

Two central problems appear to plague most of these institutions.

National Shares in Africa Region GDP, 1976\*

Less than 1% : 27 countries including Botswana, Burundi, Comoros, Lesotho, Malawi, Mauritius, Rwanda, Seychelles, Somalia, Swaziland

1 - 3.5% : 17 countries including Angola, Ethiopia, Kenya, Madagascar, Mozambique, Sudan, Tanzania, Uganda, Zambia, Zimbabwe

National Levels of GDP Per Capita, 1976\*  
(in constant 1970 dollars)

Less than \$100 : 13 countries including Burundi, Comoros, Ethiopia, Malawi, Rwanda

\$100 - \$250 : 23 countries including Angola, Kenya, Lesotho, Madagascar, Mozambique, Seychelles, Somalia, Sudan, Tanzania, Uganda

\$250 - \$500 : 11 countries including Botswana, Mauritius, Swaziland, Zambia, Zimbabwe

National Growth Rates in GDP Per Capita, 1970-76\*

Less than 0% : 20 countries including Angola, Burundi, Comoros, Ethiopia, Madagascar, Mozambique, Sudan, Uganda

0 - 2.5% : 15 countries including Kenya, Rwanda, Seychelles, Tanzania, Zambia, Zimbabwe

Over 2.5% : Botswana (12.9), Lesotho (6.9), Malawi (3.4), Mauritius (9.4), Somalia (4.6), Swaziland (8.7)

\* Source: UNIDO General Economic Indicators, 1976

National Shares in Regional MVA, 1976\*\*

Less than 1% : Angola, Botswana, Burundi, Malawi, Mauritius, Rwanda, Somalia, Swaziland and 15 other countries

1 - 4.5% : Ethiopia, Kenya, Madagascar, Mozambique, Sudan, Tanzania, Uganda, Zambia, Zimbabwe and 7 other countries

Proportion of GDP Accounted for by MVA, 1976\*\*

Less than 8% : 19 countries including Angola, Botswana, Malawi, Mozambique, Rwanda, Somalia, Uganda

8 - 12% : Burundi, Ethiopia, Sudan, Tanzania, Zambia

12 - 15% : 8 countries including Madagascar

Over 15% : 6 countries including Kenya (15.5), Mauritius (18.3), Swaziland (18.9), Zimbabwe (15.1)

MVA Growth Rates, 1970-76\*\*

Less than 0% : 10 countries including Angola, Mozambique, Uganda, Zimbabwe

0 - 5% : 14 countries including Ethiopia, Madagascar, Malawi, Sudan, Tanzania, Zambia

5 - 10% : 9 countries including Burundi, Kenya, Rwanda, Somalia

Over 10% : 10 countries including Botswana (11.9), Mauritius (14.4), Swaziland (19.4)

\*\* Source: UNIDO General Economic Indicators, 1976. Lack of data prevented inclusion of Comoros, Lesotho, and Seychelles

1. Those institutions responsible for formulation and implementation of S/T policy focus primarily on science policy and only incidentally on technology policy.

2. "Even in the absence of an explicit institutional framework for technology policy in these countries, there has been and is an explicit form based on institutions directly linked to production and economic and social planning. These institutional problems are being tackled in some countries, and the inadequacy of existing framework has been recognized. (CDC/AF/7, p. 5)."

Another major recognition of most countries is that while a significant scientific infrastructure has been built up with strong research and extension activities, these have been based on foreign institutions ill-adapted to most LDCs. Continued cooperation with non-African institutions will only be useful within the context of stronger, locally-focused national institutions.

Although women's economic and social problems cannot be addressed separate from other rural development problems in East and Southern Africa, efforts are obviously needed to increase the number of opportunities (economic and social) available to them as well as youth in rural and peri-urban areas.

Modern Industry. There are good reasons why more commercial and rural industries are not in non-urban locations: geographic inaccessibility to produce markets, poor road networks, lack of economic conveyances, dispersed settlement patterns, low average incomes which support only limited markets, increased strain on already overextended central government treasuries, problems of replicability since only limited numbers are available for work and training at a single point (due to the dispersal patterns), etc.

The circle is vicious. More income-producing opportunities must be provided in non-urban areas or living standards will remain low--a grim situation at best. But without skills improvements in this segment of the labor force it is not likely that industrial and commercial development can proceed. Besides illiteracy and minimal command of the official language(s), a major obstacle is the great variety of languages and dialects which require modifications for commercial and industrial terms. These obstacles are not impossible to overcome however, as has been proven in other parts of the continent and in Latin America in communities of minimally-educated rural people. Further, in the southwest United States (e.g., Shiprock, New Mexico), instruction, procedures, and industrial terms or approximate translations have been added to some of the Indian languages--especially among the Navajo groups.

Industrial Production. As of 1970, industrial production in Africa was confined to a limited range of largely undiversified traditional manufactures reflecting internal demand requirements and simple technologies requiring relatively high labor intensities (UNIDO/ICIS. 117/1979). Food, beverage and textile manufactures tended to be the largest components

of MVA (Manufacturing Value Added). The situation is a cause for concern in light of the fact that industrialization, as it has been structured in the rest of the world, requires intermediate and capital good industries, "since they ... shape productive capacities such as skill and technology development and supply the means of production not only to themselves but to other sectors of the economy as well (TCDC/AF/7, p. 24)." It has been noted already that Africa produces many of the raw materials necessary for a vast number of intermediate goods, which, in turn are utilized in manufacturing in the continent (TCDC/AF/7, p. 24).

Both traditional and more technologically advanced manufactures have tended to grow at high rates. However, these high rates occurred only for types of manufactures starting from a low production base.\* In many countries the first and easiest phase of industrial development, based on more obvious examples of import replacement, is almost complete.

Trade in Manufactures. There is a continuing trend of increasing imbalances of imports over exports for most countries. As a whole the continent is a net importer of leather for shoes, wood pulp for paper, metal products for non-ferrous metals, tanning materials for leather, dyeing products for textiles, etc. From 1970-71, to 1975-76, exports of manufactures increased in all groups of developing countries outside the Africa region (UNIDO/ICIS. 117/1979).

Excluding food products, the level of processing of African exports is markedly less than that of other developing regions, especially for the imported items listed above. However, Africa as a whole is a net exporter of hides and skins, furs, sawn wood and cork, basic non-ferrous metals (i.e., copper, tin, zinc, lead and aluminum, etc.), pigments, indigo, coal-tar dyes and other tanning and dyeing materials which are all used for corresponding imported intermediate goods which could be produced in-country from local materials for domestic use as well as for export at higher MVA (Manufacturing Value Added). For several food products, (i.e., fish, cereals, sugar and coffee, tea and cocoa, the level of processing is roughly equivalent to other developing regions.

African Women in National Industrialization. The annual average growth rate of the female labor force in Africa was 1.9% as of September, 1978 (based on ILO data--it was not possible to obtain separate figures by country). In most countries, only 4-10% of the female labor force is involved in industry. The number of educated women in managerial and technical posts is negligible (UNIDO id. 78-7693). Standard definitions for labor force participants is unsatisfactory. A more comprehensive and accurate method of defining labor activities must be developed as present definitions overlook categories such as: (a) unpaid family labor with respect to market and non-market activities--this type of labor is presently counted in most censuses according to differing criteria; and (b) agricultural activities which involve both farm and house work. This lack of precision in turn affects current concepts of what constitutes employment and underemployment.

The reality which consistently emerges even from traditional definitions, however, is that women workers are greatly overrepresented in a narrow

\* Examples include production of wooden furniture in Malawi.

range of jobs which are low-income, low in productivity, and which require minimal skills. Following industrialized country models, African women workers are also the first to lose jobs during economic or environmental crises. Multinational corporations, subsidiaries, etc., exacerbate the situation by not providing information on company training programs.

Regarding Small Industries Development, several countries (e.g., Malawi, Botswana, Tanzania, Kenya, Lesotho) are identifying industries suitable for selected areas, determining training needs, developing market studies, and in a few instances providing small business entrepreneurs and their workers with technical training through extension services. Using Malawi as a case in point, however, few efforts are being made to look specifically at female entrepreneurs and their special credit problems.

Agroindustry. There is a general awareness that females suffer to a greater degree from inadequate nutritional intake, that they lack access to the most basic social and health facilities, and child care facilities as well. In the agricultural sector, conditions must be created to modify the basis of the integration process to lessen women's burdens, and to increase social and economic equity. One part of any successful strategy involves more detailed micro-analyses of each national economy in terms of different production modes, since women are involved in both the 'traditional' and modern agricultural sectors, with the latter increasingly overshadowing the earlier but still functioning modes (Flegg, UNIDO id. 78-5894). Another necessary step would be to examine evaluations of current activities being undertaken within the countries to determine the ways in which female participation is being increased and expanded in scope (2).

Planning for Increased Industrialization. As of 1975, UNCTAD data indicated that there was no difference between large versus small country

(2) Again, in such a short document it is not possible to detail the various agricultural sector activities which could increase women's economic and social opportunities in each country. A partial listing may be useful, however:

Botswana--The Botswana Meat Commission (BMC) cannery which has the capacity to produce 500 tons of meat/week. As milk production is a by-product of beef production due to low milk yields, to what extent and how are females involved in export activities related to other beef production by-products, such as tanners, bone meal, carcass-meal, blood-meal tallow, horns, hide trimmings, ear and tail hair, and ox gall, etc? What lessons are being learned from activities of the rural technology institutions involved in research and development (i.e., Rural Industries Innovation Center, Pelegane Village Industries, and the Brigade Movement? Assistance to small-scale farmers in Ngamiland in the isolated North-West district through FAO's research project on swamp soils and exploitation of molapog (seasonally flooded valley lands bordering the Okavango Delta?

Lesotho--What is the scope of the women's program at the Thaba Kupa Farm Institute? The Institute's Intermediate Technology Unit has developed several agricultural tools and implements (e.g., hand hoe, hand weeder, push hoe, for greenhouse and interrow cultivation use, horse cart production). Are females involved in this type of training or is the focus largely on

dependence on imports of capital goods; but there was a tendency for that dependence to increase with rising per capita GDP levels. In terms of the structure of future manufacturing output and trade, there is scope for a higher degree of processing for several of Africa's natural resources before export. Export of unprocessed resources would not cease altogether, however. For example, export earnings can be increased by further processing of items noted earlier. However, a certain amount of long-staple cotton would continue to be exported without further processing due to the expected continuing strong demand on the world market. (Africa is a net exporter of cotton fiber, exporting over 50% of output in unprocessed form. An increase in domestic processing of raw cotton would require increased imports of, or increased domestic production of synthetic fibers due to world demand for mixed cotton/synthetic fabrics rather than pure cotton fabrics. In 1975, Africa produced only about 10,000 tons of synthetic fibers--in Egypt--compared with the world total of 10.5 million tons (UNCTAD data).

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crafts and demonstration kitchens to the exclusion of technical training? In production of the non-traditional cash crops (e.g., asparagus), in what ways are women farmers involved? Men farmers?

Mauritius--The Sugar Industry Research Institute (MSIRI) is the only well-established Africa-based bilingual research and training center, involved in all aspects of applied research on sugar cane and sugar production. Countries interested both in utilization of by-products and of cane-producing land for food crops as secondary production include Burundi, Ethiopia, Madagascar, Seychelles, Sudan and Swaziland. To what extent do females become involved in training activities as a step toward decreasing their concentration in the low technology activities?

Somalia--The GSRI plans to expand vegetable oils processing; how will women be involved in this and other planned activities to test and monitor adaptation of foodstuffs? Burundi is also planning to establish laboratories to adapt locally-grown foodstuffs. As central links in the food chain, will women farmers continue to be viewed mainly as beneficiaries of such activities rather than as active participants?

Tanzania--How are rural women being involved in UNIDO-assisted smithing training aimed at providing technical/equipment support to enable rural people to manufacture simple, locally-adapted agricultural tools?

Zambia--The Technology Development and Advisory Unit (TDAU) advises on local design and production of agricultural and household equipment with the objective of replacing imported models. To what extent, if any, does this Unit's program impact on GRZ articulation of a technology policy (since a major problem in-country is that more than half of women's total incomes are derived from agricultural incomes while men's incomes are derived largely from wage labor and other sources in many parts of the country [Spring and Hansen, pp. 19-22]) which could encourage rural industrial and commercial development?

There is potential for further development of cotton textiles as well as other sectors of the textile industry. Also, an expansion of the clothing industry, for export and for local markets, is feasible. The hides, skins, and leather sector can be greatly upgraded since many countries have abundant raw materials and export a significant amount (21 countries in 1977, whose exports of six products, [i.e., hides and skins, leather, manufactures of leather, travel goods such as handbags, leather apparel and accessories, and leather footwear] amounted to one million or more).

... And Women's Fuller Participation. In terms of the future, educational systems need to emphasize beginning at the pre-school level, that women can be equally important in industrial development as men, that women should not be limited to homemaking and other domestic labor, as these activities are only part of nation-building. National policies must be formulated to improve the conditions of women in family laws, in politics and in public service, in labor as well as in business. Certain points cannot be discussed in this paper, owing to time constraints. However, it should be borne in mind that the developing countries of Africa are not able to generate sufficient capital from their own economic resources to industrialize. So they receive generally large investments from multinational groups. Thus, to discuss the effects of industrialization on women in Africa, one must review the various national government economic structures as well as the international industrial system and its component international labor divisions since these have major bearings on national governmental strategies and policy constraints (Elegg, p. 5). Strategies for expanding nonagricultural employment for rural women is critically discussed in Professor Ruth B. Dixon's Jobs for Women in Rural Industry and Services (AID, September, 1979). Very briefly, Professor Dixon details a six-step approach for planners to create employment for rural women:

1. define the range of economic activities in which these women are currently engaged, with a view to raising their output and wage earning capacity or shifting from less productive to more productive activities
2. determine needs for technology to reduce domestic burdens
3. locate indigenous social networks around which groups of women could be mobilized to work together
4. establish sources of credit, technical assistance, and training to reach these traditionally ineligible groups
5. identify and overcome other cultural or structural obstacles denying women control over the products of their labor
6. identify groups of women who are most in need of wage employment (particularly the landless, stigmatized racial, religious, or ethnic groups, and households headed by women)

Professor Dixon points out that these tactics would have to be linked to agrarian reform policies to reduce major inequalities in access to material

and social sources within rural areas as well as between the rural and urban sectors(3).

Scientific and Technological Training of Female Nationals. UNESCO's publication SC/CASTAFRICA/ref. 1 is the most recent international study on research and development manpower in Africa related to S/T. Based on UNDP document TCDC/AF/7, the situation in Africa is as follows:

-- most countries have only about one-half to one-third the numbers of scientists, engineers, and technicians found in Asia and Latin America and only one thirtieth of those in Europe

-- the Second UN Development Decade in the World Plan of Action indicated a target of 200 research workers per 1 million inhabitants by 1980. Very few countries have achieved this target; those achieving or closest to the target in the subregion are: Mauritius--219; and Kenya--113(4).

-- Part-time scientific personnel make up a large proportion of total numbers of scientists and engineers in research and development (i.e., 48% average for all countries surveyed). Natural sciences represent the largest group of E and D personnel (i.e., 37% in total). Agriculture accounts for 33% of the total. Engineering, a major group required for development and technological adaptation, accounts for only 9% of the total. Only 20 of 36 countries replying mentioned engineering personnel.

-- the majority of research and development scientists and engineers are employed in the higher education subsector (55% of the total number). The productive sector employs 36%, and the general

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(3) General unemployment is one of the major reasons for the low percentages of women in wage-sector employment. ILO studies, as of 1978, placed the level of unemployment in developing countries worldwide at almost 20% of the available work force. In all countries of the world it has been estimated that over 55% of the 300 million unemployed are women--many heading households. In Africa, as in other parts of the world, promotion of women's employment is too often considered as depriving men of potential employment.

Two other major constraints to women's fuller participation relate to lack of finance (particularly rural women), and lack of proper organization among women.

During the period 1980-1985, it is even more important to review how women have been and are being integrated into overall development processes, and most importantly, how to increase the degree of integration in a more equitable manner in terms of labor inputs and distribution.

(4) Other countries include: Egypt (500), Ghana (474), Tunisia (257), Senegal (221), Ivory Coast (125), Libya (85), Central African Republic (71). Figures include expatriates who in some countries represent up to 70% of the number of scientists and engineers.

service sector only 9%.

--- Ratios of technicians per research and development scientist and engineer are different in the various sectors. In higher education, the ratio is 0.6, in the productive sector 1.6, and in the general service sector 1.5. The average for all sectors is one technician per scientist or engineer. This is low and highlights the shortage of technicians who can effectively support higher level personnel.

--- Regarding R and D institutions, facilities and equipment, the UNESCO survey indicated that there were 722 institutions with a total of 6,048 full-time and 5,045 part-time researchers (11,903 total) at the time of the survey. Agricultural R and D institutions are fairly numerous, while those engaged in industrial R and D are extremely rare. Those in existence are apparently involved in quality control activities, rather than industrial research as such. Parent firms outside Africa still provide industrial enterprises the necessary research and development facilities.

From 1960 to 1970, school attendance in Africa almost doubled at the primary level and it more than tripled at the secondary and tertiary levels (total school enrollment increased from 21.4 million to 57 million). However, this increase was smaller than expected at the primary level, while it was much larger at the secondary and tertiary levels. National concerns center around the fact that the courses, especially at the tertiary levels are still oriented toward requirements of more advanced industrialized societies. Despite the 1961 first conference of African Ministers of Education held in Addis Ababa which called for a shift of emphasis to technical, vocational and teacher training courses, the proportion of enrollment in technical and vocational courses seems to have dropped. At the same time, students enrolled in general education have increased in numbers and the proportion of those in teacher training has remained about the same on the average. Similarly, efforts have generally failed to substantially increase the proportion of science and technology students at the higher education levels. This is partly due to minimal efforts to interest girls in these untraditionally female vocations. It would seem that the words of the final report of the 1976 Lagos Conference aimed more at male students:

"The time is no more when Governments feel that educational development can be achieved through the numerical expansion of enrollment in institutions of a conventional nature which would reproduce and perpetuate the aims, content and programs inherited from the previous generation and from the colonial past. What is now at stake and underway is fundamental rethinking of educational systems so that they can mould the African man of tomorrow, rooted in the culture of his continent, but prepared for participation in the building of a modern and prosperous Africa, contributing toward(s) the establishment of the new world order with the rest of the international community (quoted in TCDC/AF/7, p. 12)."

Training Institutions. Following is a listing of government-to-government efforts to increase collective self-reliance through staff training. While statistical data are difficult to come by, travel to of the countries in the subregion coupled with informal discussions with nationals indicated that women are not being encouraged in this aspect of S/T:

### University exchanges

- University of Botswana and Swaziland instruction to students from neighboring countries
- University of Lesotho receiving students from Zimbabwe and South Africa
- Fourah Bay College in Sierra Leone offering education from students from West Africa, Zimbabwe, Namibia
- University of Zambia provides training for students from Zimbabwe, Namibia, etc.
- University of Abidjan, Ivory Coast, has students from a number of French-speaking African countries (e.g., Rwanda, Burundi, Madagascar)
- University of Dar es Salaam accepts students from all parts of the continent

### Specialized Educational Institutions

- Medical Training Center and Faculty of Medicine in Kenya
- Lerothoii Technical Institute, Lesotho
- Faculty of Agriculture and Veterinary Sciences, University of Nairobi and Department of Home Economics and Agriculture, Egerton College which serves students from 15 countries
- Bunda College of Agriculture, Malawi

### Training and Research Institutions

- Kenya-Burundi Coffee Research Foundation
- Njoro Plant Breeding Station in Kenya which provides assistance to Morocco, Algeria and Egypt
- Cooperative Development Center, Botswana
- Kenya Institute of Administration (providing training to students from Angola, Mozambique, Swaziland, Sudan, Tanzania, Uganda, and Zimbabwe)
- Institutes of Development Studies in Botswana and Kenya

### Personnel Exchanges - Teachers

- between Tanzania and Burundi
- between Mauritius and Mauritania

### Personnel Exchanges - Agriculture

- regular consultations on soil conservation and soil erosion between Burundi and Rwanda
- joint ventures between Burundi and Tanzania in development of the Malagarazi Valley for sugar cane cultivation
- joint development of peat bogs of Kanyaru between Burundi and Rwanda
- cooperation on improved potato varieties between Kenya and Sudan
- between Kenya and Ethiopia in sorghum crops
- between Madagascar and Tanzania in cotton production
- between Madagascar and India for small-scale sugar production
- between Tanzania and Zambia in water and land resources, fishery research and training of development personnel

### Personnel Exchanges - Health

- cooperation between Zambia and India in exchange of medical personnel
- exchange of health personnel between Rwanda, Burundi and Tanzania

Personnel Exchanges - Animal Health

- cooperation between Zambia and Mozambique in animal disease control
- joint veterinary services between Burundi and Rwanda
- cooperation between Botswana and Zimbabwe in animal disease control (especially hoof and mouth disease)

The above listing appears in TCDC/AF/7 (pp. 14-16), to illustrate trends of a technical cooperation nature. When one considers: (a) the extremely small numbers of women participating in such programs; (b) the percentages of technically-trained women who have retired from the salaried work force; and (c) the predominant areas of concentration at high school and university levels (i.e., the humanities, education, and to a growing degree general law and the social sciences), one observes in the subregion a negative pattern of exclusion often caused not by explicit oversights, but rather the tendency to relegate to a fifth burner any serious consideration of women as active participants in all aspects of national development.

"...It is a cardinal error to relegate the woman question to a ghetto in terms of research, planning and policies (emphasis mine)... The tendency to do so reflects...tokenism... It also reveals the failure to comprehend the totality of economic systems in which women's labor...plays an integral and crucial role (Alegg/UNFDO, pp. 10-11)."

Energy - An Overview

Noncommercial (5) use of energy in rural areas now accounts for two-thirds of (non-human or animal) energy used in Africa according to AID and other development agency documents. Wood is the major cooking and heating fuel with dung and straw also being used as fuel wood becomes more difficult to obtain. Globally, over 2.5 billion people rely on traditional energy sources.

National energy accounting until recently focused solely on commercial uses of oil, coal, natural gas, hydroelectricity, and nuclear fuels. Africa's non-renewable energy resources include the fossil fuels. Renewable resources include solar and wind energy, hydro-power, forest energy, biogas production, etc. As of the first quarter of 1980, only about 10 of the 49 ECA Member States were crude oil producers. But most countries are searching for hydrocarbon deposits and it is believed that more oil may be discovered as a result. 1.3% of the world's coal reserves are found in Africa; further, Africa has about 27-40% of total world hydroelectric power potential.

Based on four major AID-funded documents (6), U.S. experience in energy conservation and conversion to renewables is still new and limited in scope. Various factors (e.g., adverse socio-economic factors in LDCs and low-level technology requirements in some instances) would minimize the efficiency of generalized U.S. bilateral energy assistance at present.

Noncommercial demand projections for LDCs are based on population estimates multiplied by minimum population subsistence per capita consumption levels. Despite high energy prices, between 2000 and 2020, LDC total oil demand is projected to exceed the current U.S. consumption rate of 18 million barrels per day. In fact, oil will account for 55% of total energy demands in LDCs in 2000, despite exploitation of other fuel sources. Demand

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(5) Traditional energy sources are also referred to as noncommercial energy and are widely used in so-called pre-industrial economies. They are energy sources that are not usually bought and sold. Traditionally, they include: (a) woodfuels--firewood and charcoal; (b) crop residues--rice and millet straw; (c) animal dung--especially cow dung; and (d) animal draft power--both for land preparation such as plowing and for transport. Solar energy for drying and 'metabolic' energy, i.e., human muscle power are now included in the traditional energy category. Wind and small-scale hydro power increasingly come under this heading as well. (However, small-scale hydropower falls into this category if it is for direct mechanical power, or less than 500 kilowatts in size. The terms commercial/noncommercial are not accurate, however, since all of the above energy forms will be entering the market.

(6) Marilyn Hoskins, Women in Forestry for Local Community Development and Community Participation in African Fuelwood Production-Transformation and Utilization; Brookhaven National Laboratory Developing Countries Energy Program, Energy Needs, Uses and Resources in Developing Countries<sup>(a)</sup> and Programmatic Areas for U.S. Assistance for Energy in the Developing Countries<sup>(b)</sup>.

will increase for noncommercial fuel use as well.

Noncommercial Energy Supplies. Fuelwood availability is decreasing in some rural areas as a result of its diversion to urban markets due to kerosene price increases. Overseas Development Council data indicate that a doubling or tripling of energy use will be necessary in order "to bring the lowest income LDCs up to the level...for an adequate life with some opportunity for emergence to improved health and well-being (Brookhaven (a) p. xx)." Currently, 300-400 kilograms of coal equivalent (kgce) per capita annually are considered the minimum energy input needed to provide subsistence-level food and shelter in rural agrarian areas.

Forests. The long-term trend for forest resources is that around the year 2000, "virtually all humid tropical forests will have been transformed into desert or unproductive wasteland (ibid, p. xx)." Roughly one-third of the world's original tropical forest areas has been destroyed within recorded history.

Dung and Straw. A traditional soil fertilizer, dung is being used more and more as a fuel in the absence of fuelwood. One side effect of the technological advancement in development of higher yielding cereal strains is that they produce less straw, thus reducing agricultural waste for use as fuel or to maintain soil quality.

Solutions to current energy problems involve: (a) modifications in social, regional and economic development patterns; and (b) primarily technical--and therefore easier--modifications in existing energy support systems to permit greater use of indigenous or bountiful energy resources and alternative energy conversion and end-use technologies.

#### Rural Women and LDC Energy Problems.

"Underlying all these solutions is a fundamental, and as yet unanswerable question.... are there less energy-intensive strategies of growth which can generate employment and higher incomes among the poor?"

"Most...measures of development, based on historical data, show correlations both with increased commercial energy use per capita and greater reliance on more sophisticated energy support systems. Given the urgency of current energy problems, governmental decisions must be made before we have a very good understanding of the role of energy in development.... (Brookhaven [b], p. 3)."

Cooking accounts for over 80% of rural household energy use. Estimates are that more than half of the energy source is firewood, followed by charcoal, cow dung, crop residues, and limitedly, commercial fuels such as kerosene. Open fires are generally used for cooking, consuming approximately 5-6 times the energy of a gas stove to produce equivalent useful heat (Brookhaven (a), p. 103). Further, one estimate is that twice as much energy is used in cooking and space heating as is found in

the food that is cooked (ibid, p. 103). Lack of sufficient energy to pump water for domestic use is the cause of many health problems. This growing shortage of nearby fuelwood means that girls and women must travel longer distances and must often supplement what is used with animal or vegetable wastes that were formerly used to fertilize food crop areas.

"...energy is important only as it satisfies social and economic needs (Brookhaven (a), p. xxiii)."

Creative responses to rural energy problems include appropriate technology designs such as inexpensive cooking stoves, solar cookers and ovens, simple 'passive' solar cooling designs developed to keep tropical homes cooler, etc. Further, there has been increased cultivation of fuelwood plantations, village woodlots, and increased use of secondary forest fuels to show how LDC renewable wood energy cycles can be developed and maintained. At the experimental stage also are biogas systems utilizing animal dung for production of methane and fertilizers.

Problems are not being solved, however, due to a number of complicating factors, for example fuelwood plantations and village woodlots are usually monocultures, a fact that makes them more susceptible to disease. Further, unless women have locally-produced and adapted carts for hauling wood (thereby gaining more time), they tend not to participate in nursery activities, etc. There is also a great difference between experimentation and dissemination-demonstration.<sup>\*</sup> Without a sensitivity to the distinction it is difficult to introduce more efficient fuel burning practices or even more efficient cooking devices to the rural women. There must be an awareness of socio-cultural, climatic and economic factors involved in introduction of new ways of doing personal things such as cooking. A well known example involves the introduction of model solar cookers in Somalia. Women in Somalia do not care to cook in the hot sun, especially since they are engaged in other animal husbandry and household activities during this part of the day. Further, cooking in the evening provides an opportunity to talk to other women, in a cooler setting, with less aggravation from flies, dust, birds, etc.

An alternative which is being tested in Asia as well as in Africa is to make small changes in the design of traditional cooking devices to increase fuel efficiency (such experiments are being carried out in Kenya). In India, such changes have increased efficiency by as much as threefold, thereby lowering consumption of firewood and other traditional fuels.

Another problem is that most villages cannot finance, construct, operate or maintain community energy systems. Then too, the next problem step, i.e., distribution of the energy produced indicates the extent to which energy issues are related to education and training, and the discrete social, economic, and institutional structures in the various countries. For instance, the Brookhaven documents point out that major population transfers generally are accompanied by shifts from handicrafts to manufacturing industries (which has a direct energy impact). This increases transport energy burdens.

\* Marilyn Hoskins, Community Participation in African Fuelwood Production, Transformation, and Utilization. (1979)

### Health Sector Issues and Females

As a general rule the three most important health-related factors affecting females in all parts of the developing world are nutrition, childbearing, and changing living patterns (Newland, 1978). Effective health care cannot be separated from other development strategies aimed at improving the quality of rural life. AID and other donors are just beginning to elaborate policies which are integrated, multidisciplinary, and multisectoral in approach. The World Health Organization has noted that for health schemes to be fully effective, they must provide a range of training for health staff as well as any others directly or indirectly involved in improving the living standards of a target population.

Dr. Barbara L. K. Pillsbury (AID, March, 1979) has noted that in most LDC countries official health services reach only a fraction of the population and that the pattern is likely to persist into the foreseeable future. She has also noted that international health specialists are beginning to challenge

"...the biomedical model and calling for new models (biopsychosocial, psychosocial, ethnomedical, and so on) to guide the provision of health care assistance in both the developed and developing countries." (p. 2). "

Population Council figures indicate that:

- Roughly 75% of all developing country health expenditures are allocated to highly sophisticated, disease-oriented institutional care of individual patients (leaving large numbers underserved, if at all)
- 80% of all medical doctors live in large cities whereas 80%+ of the population live in rural areas
- Less than 15% of the rural population live within walking distance of any kind of health facility

Population growth is highest in rural areas, an important factor when discussing female health. Again, according to the Council's data:

- Less than 10% of the 105 million children born each year in the LDCs are ever seen by health workers
- 35% of all village health needs can be dealt with by auxiliary health workers

### Data on Female Health Issues

The problem of inadequate data bases for women as economic producers

is not nearly as great as it relates to female reproduction and fertility. However, these issues are just beginning to be linked to larger social and economic problems in East and Southern Africa. Development policies have reflected the data inadequacies and imbalances to the extent that women are focussed upon in health programs because of their reproductive and childbearing capacities--not because of their requirements for improved health care as economic producers. Increasing their productivity (wage and non-wage) is crucial to improving national and rural economies but the majority of AID's current health activities aimed at females of childbearing age (15-49) are not tied to economic development of the target communities within a particular demographic area, i.e., there are usually no related income-generating activities for the women. As recently as 1978, the U.S. Foreign Assistance Bill made reference to women strictly in terms of their reproductive role. Section 103 (Population and Health) only noted women in terms of pregnancy and finding alternative roles to motherhood (Buvinić and Yousseff, 1979). There was no note taken of the fact that living environments, including nutrition and access to sanitary water supplies, are totally substandard for most women and their children (7).

#### LDC Governments

As a matter of policy women-targeted programs in national health services are being strengthened in every country through pre-natal, post-natal and delivery services, and preventive health services for infants, under-fives, and school children. Despite these developments

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- (7) Inadequate sewage systems and lack of sanitary water supplies increase disease and death rates for millions, especially children who are hardest hit by diarrheal and other intestinal diseases. According to the Population Council fewer than 35% of LDC people have reasonable access to reasonably sanitary drinking water or hygienic waste disposal. The WHO estimates that as much as 80% of the world's diseases are traceable to contaminated water. In East and Southern Africa women and girls are the drawers of water for the household and to a lesser extent for livestock.

Population Council percentages for inhabitants of 58 LDCs served by sewerage facilities about 1970 show that of 22 African countries accounting for 43% of the total population 18.2% had access to a public sewerage system; 32.2% of the households had some type of system. In rural areas, however, only 14.3% of the population had an adequate disposal system.

In terms of nutrition, poorly nourished mothers suffer fetal deaths and stillbirths or bear children of low birth weight which increases infant health hazards.

the lack of focus on the upgrading of indigenous health practitioners means that (a) the majority of pregnant women do not receive prenatal care; (b) most rural people have limited access to either curative or preventive health care services; and (c) this lack of access bears heavily on infant mortality, child health, and pressure on women to have more children.

According to ECA data Africa has the world's highest death rates for the two groups as indicated in Tables 1 and 2 below. Preventive care for infants and children is vital in view of the fact that nearly two-thirds of all deaths in most of Africa are those of children under five (based on WHO, Division of Family Health statistics). Further, malnutrition is the principal mortality factor among women and children (8). Mothers and children continue to die in such large numbers because, national efforts notwithstanding, medical researchers make too few linkages between other women-specific health problems and socio-cultural conditions in given areas. Unfortunately, this problem is global in nature. Very few countries in the world have even begun to explore the linkages between national social development, determinants of women's physical health, and effectively lowering infant mortality rates (9).

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- (8) Low life expectancies result partly from high infant death rates. For example, in Malawi in the early 1970s, a boy could be expected to live to age 41 at birth. Surviving to one year, the expectancy rate would increase to 49. Average life expectancy in developed countries remains about the same at older ages as it is at birth.

Survival Rates for Females and Males Reaching  
Age:

	Kenya (1969)	Malawi (1970-72)	Chad (1963-64)	Liberia (1971)
0	F: 51 M: 47	F: 44 M: 41	F: 35 M: 29	F: 44 M: 46
1	F: 58 M: 54	F: 50 M: 49	F: 41 M: 35	F: 54 M: 53
5	F: 62 M: 59	F: 63 M: 66	F: 45 M: 39	F: 59 M: 57
20	F: 66 M: 63	F: 75 M: 72	F: 52 M: 46	F: 63 M: 61

Source: Population Reference Bureau Data, 1979.

- (9) Numerous researchers in various fields have shown that women's health problems arise from social differences in the ways in which they are treated by the family, community, and society. Socially, there is the possibility of greater physical abuse within their own families, more neglect, and higher proportions of undernutrition and malnutrition. Overwork also takes a greater toll on poor rural women than men. Another special problem concerns the estimated 10 million women and girls who have been 'circumcised'.

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TABLE 1: Life Expectancy at Birth in REDSO/EA Countries, 1975

<u>Country</u>	<u>Average</u>		
Botswana	56	AFRICA-WIDE	46.6
Burundi	42	Northern	52.0
Djibouti	--	Western	42.0
Ethiopia	42	Eastern	45.0
Kenya	50	Middle	42.0
Lesotho	50	Southern	52.0
Madagascar	46		
Malawi	43		
Mauritius	63		
Mozambique	44		
Rwanda	43		
Seychelles	65		
Somalia	41		
Sudan	49		
Swaziland	44		
Tanzania	47		
Uganda	50		
Zambia	46		
Zimbabwe*	--		

Source: 1979 World Population Data Sheet, UN Demographic Yearbook, 1977.

TABLE 2: Infant Mortality Rates (IMR) in REDSO/EA Countries, 1975  
(Deaths under one year per 1,000 infants)

<u>Country</u>	<u>IMR</u>		
Botswana	97	WORLD-WIDE	99
Burundi	150	AFRICA-WIDE	147
Djibouti	---	Northern	128
Ethiopia	162	Western	158
Kenya	119	Eastern	146
Lesotho	114	Middle	164
Madagascar	129	Southern	119
Malawi	84		
Mauritius	-4		
Mozambique	91		
Rwanda	133		
Seychelles	---		
Somalia	177		
Sudan	141		
Swaziland	168		
Tanzania	167		
Uganda	160		
Zambia	159		
Zimbabwe	122*		

Source: World's Children Data Sheet, 1979. Population Reference Bureau. As an indicator of level of national social development, the high IMRs also highlight the low economic, health, and educational status of African women.

\* 1977 figure. =

(Comparisons of developed and developing country IMRs indicate that for the Africa region--including the majority populations in Namibia and South Africa--IMR levels will approach parity with developed countries only over a period of several generations. Deterioration in traditional family structures will also have a marked impact on adolescent girls who will continue to become pregnant in increasing numbers. Worldwide, roughly 10-15% of all births (122 million annually) are to mothers under 20 years of age. With the world's highest fertility rate, the African female population averages 46 births per 1,000 population. Most evidence points to a strong correlation between high mortality and fertility rates. These in turn restrict women's opportunities for training and education.

Early teenage childbirth has many negative consequences for the mother and the child. In some countries, especially among pastoral and nomadic groups, females marry as early as 11 years. In the area south of Mombasa, Kenya, Peace Corps volunteer teachers have remarked that girls as young as 9 years are still being married off to rich and much older village men. The average age seems to be 15 in the subregion, however. Nomadic and pastoral males generally do not marry before 20, with the decision being made by elder male relatives. In agriculturally-based societies early marriage is also fairly common with girls marrying around 15 years of age. Somalia, with a 70% nomadic population, appears to be an exception to the rule of very early teenage marriage. This may be the result of a law passed in January, 1975, prohibiting marriage of females under the age of 16 and of males under the age of 18. 1978/79 statistics on deliveries at the Mogadishu Maternity Hospital indicated that there were no deliveries to females under the age of 14 years.

### Traditional Health Care

Traditional and indigenous health care are generally considered to be synonymous. However, in terms of narrower definitions traditional developing-country health care is that system which originated prior to contact with a Western system. The WHO defines traditional medicine as

"...the sum total of all the knowledge and practices, whether explicable or not, used in diagnosis, prevention, and elimination of physical, mental, or social imbalance and relying exclusively on practical experience and observation handed down from generation, whether verbally or in writing (WHO, 1978, Cited in Pillsbury, p. 7).

Indigenous health care is narrowly defined as practices

"...deriving from and existing within a unit of reference, whether of ancient or relatively recent origin (Pillsbury, p. 7)."

A related term 'folk' refers to traditional or indigenous practices existing outside the context of formal institutional transmission of knowledge, e.g., an illiterate bonesetter who has acquired skills solely through practical experience (Pillsbury, p. 7).

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A related term, 'folk' refers to traditional or indigenous practices existing outside the context of formal institutional transmission of knowledge, e.g., an illiterate bonesetter who has acquired skills solely through practical experience (Pillsbury, p. 7).

Healers and midwives are the two major categories of indigenous practitioners. Healers include traditional physicians, herbalists, pharmacists, bonesetters, folk ophthalmologists, folk psychiatrists, snake and scorpion bite experts, etc. Preventive and curative services are provided for conditions such as arthritis, diabetes mellitus, hypertension, paralysis, psychiatric ailments, and functional disorders. Healers also act as marital and domestic counselors.

Village midwives are also referred to as TBAs, that is, traditional birth attendants, and deliver about two-thirds of all babies in the world according to the World Health Organization. They regularly provide pre- and post-natal care, take over household duties during the post-natal period, etc. They too counsel 'clients' on sexual behavior, conception and contraception, diet, and minor health problems (Pillsbury, p. 8).

Because of factors such as distance (physical as well as cultural), time constraints and limited finances, an estimated 2.3 billion people (55% of the total world population in 1979) continued to rely on indigenous health practitioners and healing techniques according to Pillsbury (p. 4). Primary health care delivery could be vastly improved through intensified efforts to strengthen national health personnel infrastructures by means of increased participation of endogenously-oriented practitioners. (See Tables 3 and 4). Pillsbury notes that such practitioners form the basic core of health workers for roughly 90% of LDC rural populations and increasingly for urban communities (10). Many of them work only part-time in the health field as they are also farmers, artisans, teachers, and small-scale entrepreneurs. In essence, health practitioners include indigenous healers and midwives, pharmacists, herbalists, government health workers, and Western-style private practitioners.

Indigenous health practitioner performance and therapies are informally evaluated by rural communities, based on combinations of accessibility, availability, acceptability, and dependability (Pillsbury, p. 16).

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(10) Pillsbury cites an AID-contracted study of Botswana (by Osborne and Balintulo, 1978) which notes how urbanization has meant the establishment of new categories of practitioners and practices as the urban poor try to cope with social stress and poverty.

## Health and Living Environments

Since the mid-1950s, the WHO has defined health as "the state of complete physical, mental and social well-being and not just merely the absence of disease and infirmity." It is accepted by development planners that improvement of maternal and child health as well as health service delivery in Africa require policies strategically linking health, education and employment activities. In fact, a number of studies have underscored that the best indicator of the rate of health improvement is the literacy level of a given population.

In 1978, doctors in East Africa estimated that:

- Of 20 live births
  - 3 children would die before one year
  - 2 others would die before 5 years
  - 5 would be undernourished and suffer permanent development damage
  - 10 would grow as normal, health children

Implementation of four preventive health care actions would mean only one child dying before age one, and 19 growing as healthy children. These actions are:

- = -- provision of clean water and environmental sanitation
- food improvement to avoid malnutrition
- immunization and control of preventable diseases such as measles, whooping cough and tuberculosis
- simple treatment and early diagnosis of common diseases

TABLE 3: Health Personnel per 10,000 Population

Country	Year	Medical		
		Nurses	Assistants	Physicians
Botswana	1969	3.6	0.8	0.6
Burundi	"	1.4	0.3	0.2
Ethiopia	"	0.3	0.1	0.1
Kenya	"	2.0	0.8	0.8
Lesotho	"	3.9	--	0.4
Madagascar	"	3.1	--	1.0
Malawi	"	1.1	1.1	0.3
Mauritius	"	11.0	--	2.1
Mozambique		--	--	--
Rwanda	1969	0.6	0.2	0.2
Seychelles	--	--	--	--
Somalia	1968	3.1	--	0.5
Sudan	1969	4.1	0.5	0.7
Swaziland				

Tanzania 1969			
(Tanganyika	2.2	0.2	0.4
Zanzibar)	6.1	--	-.2
Uganda 1969	4.2	0.4	0.8
Zambia 1969	3.4	2.2	0.7
Zimbabwe --	--	--	--

Source: World Health Organization  
 In: Alasebu, The Situation of Women in Africa: A Review, p. 44.

TABLE 4: Physicians per Population

Country	Year	Physicians/ 10,000 Pop.	Pop/Physician
Botswana	1975	1.0	9,580
Burundi	1974	0.2	45,430
Dkibouti	1976	5.1	1,960
Ethiopia	1976	0.1	84,350
Kenya	1974	1.0	10,390
	1976	1.1	8,840
	1978	0.9	11,400
Lesotho	1976	0.6	17,800
Madagascar	1976	0.9	10,780
Malawi	1975	0.2	48,500
Mauritius	1976	3.9	2,550
Mozambique	1971	0.6	16,680
Rwanda	1976	0.3	39,350
Seychelles	1975	1.6	2,760
Somalia	1973	0.6	15,560
Sudan	1976	1.0	9,760
Swaziland	1976	1.1	9,200
Tanzania			
Tangan.	1975	0.5	18,400
Zanzi.	1967	1.2	8,230
Zambia	1975	1.0	10,370
Zimbabwe	1976	1.4	7,110

Source: World Health Organization  
 In: Alasebu, The Situation of Women in Africa: A Review, pp. 44-45.

D. J. Bradley in Human Rights in Health (1974) has classified principal diseases found in LDCs as follows:

TABLE 5: Classification of Most Diseases Found in Developing Countries

NUTRITIONAL	COMMUNICABLE	
	Airborne	Water-related, vector-borne and fecally-transmitted
<u>Undernutrition and associated deficiencies</u>	1. <u>Viral</u> Influenza Pneumonia Measles Chickenpox Smallpox*	1. <u>Water-borne or Water-related</u> Cholera Typhoid Diarrhea, dysenteries and amoebiasis Infectious hepatitis, polio and intestinal worms
	2. <u>Bacterial</u> Whooping cough Diphtheria Meningitis Tuberculosis	2. <u>Water-washed</u> a. skin and eye infection Trachoma Skin Infection Leprosy b. skin infestation Scabies Lousborne typhus
		3. <u>Water-based</u> a. Penetrating skin Bilharzia (schistosomiasis) b. Ingested Guinea worm*
		4. <u>Water-related Insect Vectors</u> a. Biting near water Sleeping sickness b. Breeding in water Malaria Yellow fever* River blindness* (onchocerciasis)

\* Not found in Zimbabwe.

Airborne diseases spread by breathing airborne, respiratory secretions of infected persons. Water-borne diseases transmitted when pathogen (disease-causing organism) is in water, which is then drunk by person who may then become infected. Water-washed: disease whose prevalence falls when increased quantities of water are used for drinking and hygienic purposes, whatever the quality of the water because of disease present, for example, on cooking utensils, hands, etc., Water-based: disease where pathogen spends a part of its life cycle in an intermediate host or hosts which live in water.

Cited in Gilmurray et al From Rhodesia to Zimbabwe--The Struggle for Health, No. 7, 1979, pp. 10-11.

These nutritional deficiencies and communicable diseases generally act together and reinforce each other. They are considered to be problems of underdevelopment.

### Water

According to T. Adeyo Lambo, M.D., Deputy Director-General of the World Health Organization:

"It has been estimated that a child born in an African village or Indian village today carries not less than three parasites. So, rights from childhood its growth and development are completely stunted ('Health Priorities in the Developing World,' The Courier, No. 53, p. 41)."

As already stated, women are the drawers of water throughout Africa. Many LDCs have technically sound water sector plans related to agriculture and power development. However, these very activities have increased the spread of water-based disease through expanded irrigation, as an example.

Water purification components of health-related projects often do not factor in the need for greater amounts of fuel for boiling (which means travelling further for every scarcer firewood). Gloria Scott, World Bank Advisor on Women in Development has noted that in a study of the impact of improved rural water supplies on women in Kenya, more accessible water has meant that women receive less assistance from family members in carrying it.

"Without supporting programs, such as improving the efficiency of the water carrying system, improved access to water may hold no benefits for women. A survey instrument is in preparation to examine the various uses of water in the project area and the priority assigned to each use; alternatives for the productive use of women's time saved by having water more accessible; and relevant motivation/education, in particular with respect to preserving the quality of the water. Regarding the latter, many of the traditional methods for purifying drinking water (for example the use of porous jars, rice husks, and coconut filters) have been discontinued in the mistaken belief that the water from the modern well is automatically safe (Scott, p. 17)."

In the case of new or improved water supplies which are properly maintained and operated, contamination during transport or in the home offsets the health benefits gained from the

higher quality water. Also, health benefits are diminished in the absence of simultaneous improvements in sanitation (Burton, p. 10).

Integrated sanitation and water activities have proven successful in Lesotho, Malawi, and Kenya through national campaigns to encourage community participation. Quite a few such efforts have failed in other countries because of a failure to maximize community involvement, especially that of the women.

#### Increased Involvement of Women in Decision-making

"Frequently the role and influence that women and women's groups have within communities is not sufficiently considered. In most countries women participate only to a small degree in water supply and sanitation programs. And yet, in their role as wives and mothers, women have a critical influence on family health...they usually bear the direct burden of collecting water and often have the responsibility of maintaining sanitary facilities and household environment. Furthermore, when the men of the community are involved in migratory labor, total responsibility for the household rests with the women and children (Unicef/WHO Secretariats, Assignment Children, p.23)."

AID and other development agencies have obviously acquired some practical knowledge relative to rural water supply and sanitation schemes over the past several years. According to Burton such experience has been mixed at best and "at times downright discouraging (p. 12)." He does not, however, discuss the strong linkages between target group identification (in terms of particular needs of mothers, children and the larger family unit) and inadequate analysis of social situations which provide information on constraints to total community participation.

"Enough is known that we can be safe in the assertion that... (the) schemes are much more complex and difficult to carry off successfully than it first appears....projects often do not remain viable at the local level....they fall into disrepair or are abandoned. It has been recently claimed, for example, that 'from 35-50% of the water taps in rural areas are out of order 3 to 5 years after their construction (Imboden 1977).' The accuracy of this... estimate cannot be assured but it is symptomatic of a widespread and genuine concern based upon experience in many countries (Burton, p. 12)."

Burton does provide a good overview of the dimensions of developing nation water and sanitation problems for those wishing

more detailed information.

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## EDUCATION AND TRAINING

Overview

The critical education problem facing governments in the subregion (and across the continent) is one of more closely linking present education development systems to national manpower needs. More than ever gaps are widening between national supplies of relevantly educated, adequately trained and skilled people and actual manpower demands.

Indigenous Traditional Education, Colonial and Post-Independence Education. Traditional education throughout Africa was almost universally non-literate (with major exceptions of the Vai of present-day Liberia and the Mum of present-day Cameroon who invented their own writing systems). However, acknowledged writing systems are not the sole measurement of social development. Throughout East and Southern Africa indigenous education systems among all groups (pastoralists, shifting cultivators, and nomads) took a variety of forms. Each system had specific social preparatory roles for individuals and sex/age groups in society. These ranged from children's initiation and emulation of adult accomplishments, through age-grade institutions similar to the Western "university 'class of'" concept (Brown and Hiskett, p. 22), through utilization of folklore (i.e., myths, legends, and folk tales). Apart from esthetic and entertainment values folklore generally served to provide youth with moral instruction in proper behavior and the tenets of group cohesion (e.g., awareness of duties and responsibilities and respect for elders). Indigenous education also involved often highly formalized and institutionalized initiation rites, apprenticeship schemes, and a degree of adult education geared toward community development and leisure activities.

While all of the above features would not be found together necessarily, most systems had common features, i.e., gradual socialization, informal education, and more formalized practices (usually taking place from 6 through 12 years of age). The community was the primary education agent; and all accepted adult members were expected to become involved in children's socialization. Thus, the concept of orphaned children (or solitary old age, for that matter) was generally alien.

The community-individual relationship was considered indivisible (Brown and Hiskett, p. 23) almost virtually throughout the continent. Women's position in indigenous African life varied greatly. Paulme could thus state in 1953 that marriage was viewed as an "active association to which the woman (had) her daily contribution to make-- an idea which is so recent in the West that it is still only accepted in some sections of society (Paulme, p. 15)." Despite this observation, the feet of traditional anthropologists,

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were on African women as childbearers and as preservers of tradition.

Informal education for females generally was and still is provided within this social context. For rural girls today this translates into life education within the confines of mothering and housewifery. Housewifery in the African context includes domestic duties such as hauling water, fetching firewood, pounding grain, livestock raising, washing, in some instances shelter construction, etc. Formalized indigenous education practices for female adulthood traditionally have involved segregation by sex, sexual education, and isolation from the community. These have been accompanied by rites of passage (sometimes involving clitoridectomies). Formalized education for boys, in addition to the above, and tests of endurance and courage, also involved apprenticeship schemes. These prepared boys to become community office holders, craftsmen, and artists.

Sub-cultural Barriers to Adaptation of Indigenous Education for Females.

Male apprenticeship schemes for the shifting cultivators, nomads and pastoralists in present-day Botswana, for example, have been carried over into the 'modern sector' since they were so similar to the European guild system. Unfortunately, little if any emphasis was placed on modifying formalized indigenous education for girls to assure its continued relevance to subsequent career development and community participation.

Thus, indigenous education mechanisms helped to explain the past (thereby providing a sense of continuity) and conditioned and justified behavior as well as sex-based roles (in the interests of group survival). They also have deeply influenced the character and structure of institutions created by colonial powers. These institutions have, in turn, established social patterns and intellectual outlooks. The dichotomy occurs because African women have not benefitted from the partial synthesis of indigenous principles for group maintenance and coherence (i.e., local adaptation to contemporary social situations, self-help, and social patience), with the major theoretical principle of Western-style education (i.e., individual development and improvement of the community).

During the pre-independence period missionary and colonial schools stressed the learning of practical skills for African males, that is, carpentry, agricultural innovations, and to a lesser extent teaching. African females when they did receive schooling, were strongly encouraged to upgrade vocational skills such as homemaking, cooking, sometimes dressmaking, etc., in preparation for marriage. Scant attention was paid to other, continuing responsibilities within their communities (e.g., farming and livestock raising, improved building construction, etc.). Males with basic education often could gain employment as messengers, junior clerks, etc., within the systems as lower level support staff for colonial administrations. Those lucky enough to receive secondary-level education or higher were few. Advanced education, therefore, was perceived by Africans as the key to higher socio-economic status.

Hence, in the immediate post-independence period manpower training for localization of higher level positions was viewed through the

region as a means of reducing dependencies on former colonial powers. Expansion of primary level education to the rural areas was subordinated to increasing absolute numbers of university-trained nationals to take over mid- and executive-level positions. Following traditional indigenous educational practices and colonial trends, the small numbers of women and girls able to gain at least the first education cycle routinely were confined to service-oriented training programs. The idee fixe was, and to a somewhat lesser extent is, that women were the upholders of tradition, that as maintainers of the home and traditional values they required no formal education.

Consequences of Diversely-educated Female Populations. In Botswana, traditional roles remain sex-based (with women often taking on men's traditional roles--due to significant outmigrations--but men rarely doing the reverse) with little adaptive complementarity of roles and responsibilities for male and female partners. Economic development and achievement of social justice will gain momentum only to the degree that educational planners are prepared to frankly evaluate the strong interrelationships between presently acute manpower shortages and the need to change existing norms--which inevitably means fundamental value transformations within the societies.

Statistical data from Unesco, the World Council of Organizations of the Teaching Profession (WCOTP), etc., indicate small, steady increases in female enrollments in Africa. This is due largely to increased primary- and secondary-level facilities and staff as well as changing societal attitudes regarding formal education for females. In some countries rural education programs, where the majority of adult women and out-of-school youth live, have been introduced in an effort to contribute to rural transformation and improvement.

Figures regarding girls enrolled in primary and secondary schools as percentages of actual numbers in national populations are difficult to obtain. The Unesco Statistical Year Book for 1972 notes only percentages of females per total enrollment, somewhat disguising the extent of imbalances in access to educational opportunities for girls and boys relative to their absolute numbers within the populations.

(See Table 6 below).

Utilizing Population Reference Bureau World's Children Data Sheet (1979) information as of 1975 and the 1977 Unesco Statistical Year Book (data as of 1975):

- Africa-wide, only 43% of girls aged 6-11 were enrolled in schools as compared to about 59% of the boys in this group.
- In RECSO/EA countries (excluding Djibouti and Seychelles) almost 53% of the girls were enrolled as compared to 53% of the boys. The higher percentages were due to the higher numbers of enrollments in Kenya, Southern Africa, and in the Indian Ocean states. Exceptions were in countries where both male and female enrollment percentage rates (respectively) were low, i.e., Burundi--16 and 23; Ethiopia--11 and 19; Somalia--23 and 34; Sudan--20 and 38.

As for secondary school enrollments in 1975, Africa-wide only 23.5% of the girls aged 12-17 compared to 38.9% of the boys were enrolled.

In REDSO/EA countries (again excluding Djibouti and Seychelles) only 28.4% of the secondary-school aged girls were enrolled as compared to 37.3% of the boys. These girls become office workers, factory workers, etc., where possible. In at least one country (Malawi) there is an imminent excess of clerk-typists and filing clerks. Unesco projections for 1975-1985 indicate that disparities between male and female enrollments will increase (Unesco, Development of School Enrolment: World and Regional Statistical Trends and Projections, 1960-2000, p. 15). Again, this is consistent with the global pattern: while only two-thirds of all school age children are enrolled, the majority of unenrolled children are girls (Newland, p. 35).

TABLE 6: Female Enrollment as a Percentage of Total Primary and Secondary School Enrollments

Categories	Year		
	1960	1965	1970
<u>Primary Schools</u>			
A. Countries by per capita GNP			
I -- Up to \$120 (Botswana, Burundi, Ethiopia, Lesotho, Malawi, Rwanda, Somalis, Sudan, Tanzania) . . . . .	35	37	38
II -- \$121-250 (Kenya, Madagascar, Mauritius, Swaziland, Uganda) . . . . .	42	43	44
III -- \$251-750 (Zambia) . . . . .	43	44	45
B. Africa-wide . . . . .	37	38	40
<u>Secondary Schools</u>			
A. Countries by per capita GNP			
I -- Up to \$120 . . . . .	19	23	28
II -- \$121-250 . . . . .	27	30	29
III -- \$251-750 . . . . .	37	41	41
B. Africa-wide . . . . .	31	30	32

\*Complete equity between the sexes would imply a female enrollment ratio of 49%.

Source: Adapted from World Bank Education Sector Working Paper, December, 1974, p. 71.

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Primary and Secondary Enrollments. Female enrollments are highest at the primary level. As of 1975, Uganda was the only country where free and compulsory education had not been introduced. Technically, compulsory education is required for certain periods for all children in many of the other countries. In reality, this is not always possible due to lack of roads, overcrowded facilities, etc. Exceptions and variations are noted in Table 7 below.

TABLE 7: 1975 Primary and Secondary Enrollments

Country	Primary (Age 6-11)		Free/Compulsory	Secondary (Age 12-17)		Free/Compulsory	Segregated/Co-edcatnl
	% by Sex			% by Sex			
	F	M		F	M		
Botswana	76	66	Not Comp.	42	43	Not Comp.	
Burundi	16	23	Not Comp.	5	11	Not Comp.	
Djibouti	--	--	Not Comp.	--	--	" "	
Ethiopia	11	25	Not Comp.	9	21	" "	
Kenya	91	98	(F) but not (C)	40	58	Neither	
Lesotho	94	65	Not Comp.	77	53		Co-ed
Madagascar	64	72		28	38		
Malawi	39	49	Not Comp.	30	61	Not Comp.	
Mauritius	93	96	(F) but not (C)	48	57	" "	Co-ed with tracking
Mozambique	31	56		8	17		
Rwanda	43	51		11	14		
Seychelles	--	--	Not Comp.	--	--	" "	
Somalia	23	34		7	22		
Sudan	20	38	Not Comp.	12	25	Neither	Segregated
Swaziland	75	75	Not Comp.	55	59		Co-ed
Tanzania	35	49		21	35		
Uganda	37	55	Neither	17	27		
Zambia	70	75	Not Comp.	42	64		
Zimbabwe*							

Source: World's Children Data Sheet, Population Reference Bureau, 1979.

In Ethiopia and Sudan, lack of infrastructure, teaching staff, and close at hand facilities keep as many boys as girls out of school. In southern Africa high numbers of girls are enrolled as a result of several socio-economic and geopolitical factors. For example, migration of younger males from Botswana, Lesotho, Swaziland, and Malawi to the Republic of South Africa means that greater numbers of educated females are required for the domestic job market.

The situation in Zimbabwe is a bit different. Through 1979, only 75%

of all black children aged 7 began primary school (European, Asian, and Coloured children began from age 6). 45% of these dropped out by the end of primary school leaving 34% to complete the primary cycle. Only 19% of those completing this first cycle went on to the dual-track black secondary schools (i.e., 11% to F(1) and 7.7% to F(2) schools. Of this 19% who began secondary school, 42% dropped out before reaching Form IV (grade 11). Only 4% reached the lower Form VI.

Attrition Rates for 1,000 Black Children in Zimbabwe (1979)

250 never enroll

337 do not go on after completing primary cycle

60 enroll in secondary school

37 reach Form IV (grade 11)

<3 reach lower Form VI

36 times as many black children as white reach school age each year. But roughly the same numbers of each group has obtained four years of secondary education (Riddell, p. 15).

Black families living on white farms accounted for one million of the total population in 1977 and they were more badly off than other blacks in terms of educational access. A common practice of the parents has been to send their children to school in shifts: one child in 1975, for example, another in 1976 or 1977, and yet another in 1979 (Riddell, p. 25).

Between 1969 and 1976, there was a 22% increase (160,000) in the numbers of enrollees. However, Simson notes that during the same period it is estimated that the number of Africans between 6-16 increased by 1.65 million. This means that the absolute numbers of non-attendeess increased and was exacerbated by the closing down of many rural schools due to the war (Simson, p. 51). Also see Table 8.

University-level Enrollments. Africa-wide distribution of women students by faculty in the past tended to be concentrated in the faculties of arts and social studies or sciences (usually over 50%), then medical and health studies followed by administrative studies, home science, and law.

Statistical breakdowns are not easily available regarding the numbers of women enrolled in universities in the sub-region. Generally, however, technical programs such as agriculture, engineering, etc., are difficult for women to enter because of lower grades by and large, and less motivation to move into what is considered the male domain. Lack of encouragement by university advisors and instructors is also a factor. Another problem is that a high percentage of the relatively few technically-trained women remain economically inactive. In a number of countries this inactivity results from salary inequities for married women, social constraints, restrictions against husband and wife working for the same establishment, institution, etc., and also

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lack of initiative to push for changes.

TABLE 8: School Attendance for African Children by Sex, 6-16  
Zimbabwe

Age Attained in Census Year	Total Number Males/Females	Number Attending School Males/Females	% Attending Males/Females
6	M: 80,700 F: 83,680	M: 7,480* F: 7,400*	M: 9.3* F: 8.8*
7	M: 85,890 F: 84,830	M: 33,200 F: 31,430	M: 38.7 F: 37.1
8	M: 71,440 F: 69,960	M: 37,780 F: 35,080	M: 52.9 F: 50.1
9	M: 92,010 F: 88,970	M: 49,820 F: 45,930	M: 54.1 F: 51.6
10	M: 75,280 F: 73,700	M: 45,200 F: 41,670	M: 60.0 F: 56.5
11	M: 72,710 F: 71,500	M: 44,950 F: 40,500	M: 61.8 F: 56.6
12	M: 62,910 F: 60,650	M: 39,080 F: 33,910	M: 62.1 F: 55.9
13	M: 66,360 F: 66,760	M: 38,540 F: 32,210	M: 58.1 F: 48.2
14	M: 52,890 F: 54,850	M: 29,640 F: 22,810	M: 56.0 F: 41.6
15	M: 62,560 F: 59,780	M: 29,740 F: 17,600	M: 47.5 F: 29.4
16	M: 51,110 F: 50,500	M: 21,720 F: 11,000	M: 42.5 F: 21.8
TOTAL	M: 773,860 F: 765,180	M: 377,150 F: 319,540	M: 48.7 F: 41.8

\* In the school enrollment records most of these seem to be recorded as 7 years of age.

Source: Rhodesia, Census of Population, 1969, Salisbury, CSO, 1976.  
In: Simson, Research Report No. 53: Zimbabwe--a country study, T-39.

The following Table (9) indicates the total number of engineers, and technicians in 13 countries. It also highlights the dif-

TABLE 10: Illiterate Population 15 Years of Age and Over and Percentage of Illiteracy by Sex

Country	Survey Year	Age Group	%age of Illiterates		
				Female	Male
Botswana	1964	15+ Resident	67.3	65.2	69.9
Burundi <sup>a</sup>	1962	15+	86.1	93.0	79.0
Ethiopia <sup>a</sup>	1965	15+	94.3	96.0	92.0
Kenya <sup>a</sup>	1962	15+	80.5	90.0	70.0
Lesotho <sup>b</sup>	1966	15+	41.4	32.4	56.0
Madagascar* <sup>c, d</sup>	1953	14+ Indigenous Pop.	66.5	73.0	59.2
Malawi	1966	15+ Africans	77.9	87.7	66.3
Mauritius	1962	13+	39.2	50.0	28.5
Mozambique <sup>a</sup>	1962	15+	88.6	92.0	85.0
Rwanda <sup>a</sup>	1962	15+	83.6	91.0	76.0
Seychelles	1971	15+	42.3	40.2	44.4
Somalia <sup>a</sup>	1962	15+	98.5	100.0	97.3
Sudan	1966	15+	85.3	96.3	74.7
Swaziland	1966	15+	--	72.5	68.7
Tanzania	1967	15+	71.9	85.1	57.3
Uganda <sup>a</sup>	1962	15+	65.1	74.0	56.0
Zambia	1969	15+	52.7	65.5	39.0
Zimbabwe ex-Rhodesia <sup>a</sup>	1962	15+	60.6	69.0	52.0
South Africa	1960	15+ Bantu	59.0	59.0	58.0
		15+ Colored	31.0	30.0	33.0
		15+ Asian	26.0	40.0	13.0
		15+ White	2.0	2.0	2.0

\* Since 1953, this has decreased to 71% for women (as of 1975).

Code: a. Estimates published in Statistics on Illiteracy, Unesco, Paris, 1965.

b. Based on a sample survey.

c. Not including semiliterate persons.

d. Excluding population unspecified for literacy in percentage as follows: France 4%; Dominican Republic 8%; Iraq 10%.

Source: Unesco Statistical Year Book, 1977, pp. 42-44.

In: Alasebu, The Situation of Women in Africa: A Review, pp. 32-33.

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I am deeply grateful for the advice of Edward Greeley, Ph.D., of the Regional Office, who was able to review parts of the draft paper. Other colleagues -- Mission as well as Embassy -- also gave useful suggestions regarding the paper's focus, including George Rublee who suggested a structure which would provide clearer insight into those aspects of development planning which, at various stages, routinely reinforce the compartmentalization of efforts to increase East and Southern African women's participation in development activities.

This shortened final version represents a significant effort on my part to compress country- and group-specific data available from Africa-based sources. I therefore take full responsibility for gaps and weaknesses which will be apparent to individuals familiar with the countries in question (i.e., Djibouti, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Seychelles, Somalia, Sudan, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe).

have begun to factor in maternal education levels as significantly impacting on children's achievement levels.

At the secondary level there are generally sharply reduced percentages of females enrolled as indicated in Table 4. Wastage rates are even higher for girls in the rural areas although national data are not disaggregated by rural-urban classifications. Another generally valid fact is that secondary school subjects still tend to be gender-restricted, leaving girls with few skills (especially scientific and technical) of use in the national labor markets. Ester Boserup noted that in most developing countries, training in home science, crafts and home industries

"...is frequently offered to women as a sort of compensation for the refusal to give them jobs in the modern sector and as a deliberate method of reducing the number of women competing with men for employment in the modern sector. Roles and Education, AHEA, p. 34)."

The corollary, of course, is the migration issue and antional development. Systematically, impoverished rural communities are losing their educated and often bright young males to the more highly organized areas. Additionally, the once largely male rural outmigration pattern has been modified by a steadily increasing number of females seeking, among other things, economic advancement. While data indicate that males tend to retain fairly close ties, traveling back to the village from time to time, largely illiterate and unskilled women outmigrants are tending to cut family ties altogether, possibly negatively impacting on socialization patterns and educational achievement levels of their children.

#### Non-formal Education and Life-long Learning

While there is a growing concern in Africa regarding the 'educated unemployed,' approximately two-thirds of the world's one billion illiterates are female (as of 1977) according to World Bank figures. Non-formal education -- defined broadly as organized educational activities occurring outside the school, including adult literacy courses, agricultural extension services, etc., have been rather effective in some instances in providing women opportunities for literacy training and skills development, but there are inequities. Agricultural extension services are the most notable example, since more often than not, women labor in the fields and at home while the men attend classes to learn about new technology, cooperatives, credit and banking, etc., NFE has slowly

evolved into a program which widens the gaps between male and female income-earning skills. An example of this is the Chilalo Agricultural Development in Ethiopia in which women were only included in the training program to learn home economics extension work or to become assistant extension agents.

Also, female participation in non-formal programs related to the various major occupational sectors is usually minimal. It is even difficult for women and girls to find jobs as sales clerks, etc., regardless of experience as self-employed workers selling produce, handcrafted items, etc.; they are usually illiterate, when judged by international criteria. (Although Unesco maintains that four years of primary would be equivalent to adequate literacy, other data suggest that even six grades of primary education might not be adequate to get a high percentage of students to newspaper-reading level (IBRD Paper No. 188, p. 18). This, of course, leads to a questioning of the extent of the relationship between education, income and productivity, a central issue for the New International Economic Order. In referring to the growing potential for dualism in national labor markets, Derryck notes that

"There appears to be a four part, sequenced pattern (which is) . . . particularly clear in Morocco, but apparent in other LDCs as well. The first step is organizing the traditional handicraft skills of women. The second step is expansion of the range of female skills to include hygiene, hairdressing and personal service skills. The third step is incorporation of commercial sector skills such as typing, childcare and dressmaking. In the fourth step, governments begin to actively seek ways to meaningfully integrate women into national economies, usually through competitive industrial and commercial training programs.

"The problem is that women usually end up in the low paying jobs of Steps One through Three, without the promotion opportunities and relatively higher wages found in non-sex segregated or male dominated fields of Step Four. Moreover, women do not have access to the Step Four programs because of the lack of fundamental job skills or educational credentials requisite to participation (pp. 77, 79)."

Women achieve greater lifetime earnings in relation to the number of years of formal schooling. There are certain realities however, First, fewer females than males are formally enrolled in schools of all levels. Second, the bulk of the female students are in the primary grades, with numbers dropping sharply through the educational cycles. Third, females make up the bulk of illiterates in the world. While analyses of non-formal AID-funded programs have shown that there can be rapid increases in income, subsequent increases tend not to be on par with increments projected for formal workers. It should be noted, however, that net wages generally remain above national average monthly

wages (Derryck, 81).

TABLE 11: Area of Access to Non-formal Education by Sex for Africa

Area of Activity	Unit of Participation	
	Women	Men
Agriculture	15	85
Animal Husbandry	20	80
Cooperatives	10	90
Arts and Crafts	50	50
Nutrition	90	10
Home Economics	100	0

Source: Compounding UNDP-financed Africa regional projects executed by or in association with ECA and on behalf of OAU 1977-1981, 31 July 1979, p. 59.

In: Alasebu, The Situation of Women in Africa: A Review, p. 33.

### Technical and Vocational Education

Few women are enrolled in technical institutions and of those who enroll fewer still complete the course of studies. In the various vocational institutions women are the majority in courses such as dressmaking, and allied occupations, stenography, typing and cooking. Unfortunately, total and final-year enrollments are not consistent for most countries. Catering is also a growing area of attraction for women, as well as hotel services. In West Africa, however, a phenomenon is that there is a high dropout rate

"...among both men and women enrolled in public vocational training institutions, even in areas traditionally regarded as pertaining to their respective sexes.... It is apparent that the first stages of ... (the) educational system do not adequately prepare the future entrants to these vocational training institutions" (Anon-Nikoi, G. Women and Work in Africa, in Human Resources and African Development, p. 206). //

In the same vein Vivian Derryck has pointed out that statistically a woman's chances of getting into a vocational or technical program are one in eight. Education officers offer little encouragement to enter skills training programs arguing that it is useless to train women in vocational skills because they will not be hired due to cultural attitudes. While situations do vary from country to country, Derryck notes that

"...employers when presented with qualified women in usually tight labor markets, have invariably accepted the

females in nations as diverse as Morocco and Liberia (Comparative Functionality of Formal and Non-Formal Education for Women, p. 59)."

### AID Activities

Subject to information to the contrary from the AID Resource Center, it would appear that AID/W has not in the recent past conducted any Africa-wide analysis of education and training programs which would be helpful in devising (or refining) measures for assessing education and training programs/projects. Neither does anyone in the field seem to be aware of any systematic review and evaluation of the participant training components of AID projects in the three sectors.

It would be an error to regard the issue of training programs for women and youth as second- or third-level in terms of importances. Women and girls will make up the bulk of the non-schooled young through the year 2000. Unless provided other opportunities, young women and men will continue to widen the human resource gaps between rural and non-rural areas. Additionally, these ill-trained youth are usually at the center of social unrest in LDCs.

Following is an example of AID-financed training. While major emphasis is to remain on food and nutrition, population, rural development and now energy, it is interesting to note the areas in which women are being trained in relation to their responsibilities in their communities. These figures are taken from one of the REDSO/EA mission files on participant training.

### U.S. and Third Country Medium- and Short-Term Training Courses

<u>Agricultural and Natural Sciences</u>	<u>Males/Females</u>	<u>Sub-totals</u>
Agriculture	15/1	14
-- extension	1/0	1
-- agl journalism	1/0	1
-- agl research	0/1	1
-- rural development	1/0	1
-- seed improvement (agronomy)	1/0	1
Soils and Plants	1/0	1
Land Resources	1/0	1
<u>Health Services</u>	<u>Males/Females</u>	<u>Sub-totals</u>
Nursing	0/54	54
-- pediatrics	0/ 1	1
-- psychiatric	1/ 1	1
-- theater	1/ 1	1
Nutrition (dietetics and home economics)	0/ 1	1
<u>Education</u>		
Adult	1/0	1

Public Affairs/Services and  
Service-Related Technologies

	<u>Males/Females</u>	<u>Sub-totals</u>
Manpower Projections	1/0	1
Project Planning	1/0	1
Public Administration	0/1	1
Statistics	2/0	2
Tax Administration	2/0	2
Family Planning	0/1	1
Human Resources	1/0	1
Leadership Course	1/0	1
Rural Sociology	0/1	1

Mechanical and Engineering  
Technologies

	<u>Males/Females</u>	<u>Sub-totals</u>
Air Conditioning	1/0	1
Diesel Mechanics	3/0	3
Electricity Course	1/0	1
Engineering		
-- civil	2/0	2
-- diesel	1/0	1
Generators	1/0	1
Hydrology	2/0	2
Mechanical Fitting	1/0	1
Transport Management	1/0	1

TOTALS : Agricultural and Natural Sciences - Males 19; Females 2  
 Health Services - Males 2; Females 38  
 Education - Males 1; Females 0  
 Public Affairs & Related Techs - Males 9; Females 3  
 Mechanical and Engineering Techs - Males 13; Females 0

Long-Term Training (U. S. and Third Country)

<u>Agricultural and Natural Sciences</u>	<u>Males/Females</u>	<u>B.S./B.A.</u>	<u>M.S./M.A.</u>
Agricultural Economics	5/ 0	M: 2	M: 1
Agricultural Education	5/ 0	M: 2	M: 1
Agricultural Engineering	1/ 0	M: 1	
Agricultural Extension	1/ 0	M: 1	
Agricultural Extension Education	1/ 0	M: 1	
Agricultural Information	2/0	M: 2	
Agronomy	3/1	M: 3; F: 1	
Animal Science	1/0	M: 1	
Animal Science	3/0	M: 2	M: 1
Agricultural Industry Management	1/0		M: 1
Farm Management	1/0	M: 1	
Land Resources	0/1		F: 1
Plant Nutrition	1/0		M: 1
Poultry	1/0	M: 1	
Rangeland Management	1/0	M: 1	
Swine Technology	1/0	M: 1	

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<u>Health Services and Paramedical Technologies</u>	<u>Males/Females</u>	<u>B.S./B.A.</u>	<u>M.S./M.A.</u>
Health Administration	0/ 1	F: 1	
Health Education	0/ 1		F: 1
Nursing	0/ 6	F: 5	F: 5
Dental Nursing	0/ 1	F: 1	
Health Education: Nursing	0/ 2	F: 2	
Nursing Education	0/ 2	F: 2	
Family Nursing Practice	0/ 1		F: 1
Nutrition	0/ 2	F: 2	
<u>Education</u>			
Education	2/ 5		M: 2; F: 5
Rural Youth Education	1/ 0	M: 1	
<u>Mechanical and Engineering Technologies</u>			
Civil Engineering	8/ 0	M: 8	
Electrical Engineering	1/ 0	M: 1	
Mining Engineering	1/ 0		M: 1
<u>Public Affairs/Services and Service-Related Technologies</u>			
Civil Aviation Management	1/ 0	M: 1	
Personnel Management	0/ 1	F: 1	
Public Administration	1/ 0	M: 1	
Social Welfare	2/ 0	M: 2	
<u>Biological and Physical Sciences</u>			
Biology	0/ 1		F: 1 on to way F: 1*
Geology	1/ 0	M: 1	
Physics	1/ 0	M: 1	
<u>Other</u>			
Graphic Arts (Applied Arts)	1/ 0	M: 1	
Rural Sociology (Social Sciences)	0/ 4	F: 4	
<b>TOTALS:</b>	<u>Males B/A</u>	<u>Females B/A</u>	
Agricultural and Natural Sciences	19/ 5	1/ 1	
Health Services and Paramedical Techs	0/ 6	11/ 5	
Education	1/ 2	0/ 5	
Mechanical and Engineering Techs	9/ 1	0/ 0	
Public Affairs . . .	4/ 0	1/ 0	
Biological and Physical Sciences	2/ 0	1/ 1* same individual	
Other	1/ 0	4/ 0	

The point of this exercise is to demonstrate how even in AID-sponsored projects (Cal Martin of MEDSO/EA has determined that roughly 71% of the projects in East and Southern Africa pertain to agricultural development and food crops.) educational and training opportunities for women are minimal, thus reducing economic opportunity.



## AGRICULTURAL AND FOOD PRODUCTION

Situational Profile

It is in Africa that the slowest rate of expansion of food and agricultural production has taken place since 1970. The Second UN Development Decade (DD2) has as a basic objective the acceleration of developing country production to an average of 4% overall per annum. In 1970-77, with the bulk of the Most Seriously Affected (MSA) of the developing countries, Africa-wide increases in agricultural production averaged only 1.3% annually (as compared with 2.7% for the preceding decade, 1961-70).

Most MSAs in Africa had growth rates below 1.2%, with 10 out of 26 countries showing actual production declines. This was the lowest for all regions (i.e., 2.4% average in the Far East, 2.8% in Latin America and 3.8% in the NEar East). Per capita food production which was a very low 0.03% during the period 1961-70, became negative during the period 1970-77, and is estimated to continue declining at the rate of 1.4% per year, according to the FAO.

Population growth during the same 1970-77 period averaged 2.7% Africa-wide, thereby decreasing food supplies per caput. Considering factors such as wide-ranging drought conditions and global economic recession, other problems such as climatic conditions, and the world's highest population and urbanization growth rates, most international donor agencies predict serious food crises in the coming years. Increasingly important areas of international discussion will be food security and expansion of trade in food products. Part of the reason for this gloomy forecast lies in the fact that 15 of the 29 least developed countries (LDCs) and 26 of the 45 MSAs are in Africa. Table 12 below shows average annual changes in food production in the MSA countries.

Based on Population Reference Bureau data, per caput dietary energy supplies continue as the lowest of all the developing regions with as many as 32 countries out of 40 having per caput supplies below nutritional requirements. In the Africa subregions the food production picture has become bleaker and less uniform than during the 1960s. Growth rates have been particularly poor in western and central Africa while southern Africa increased production over the preceding decade.

Declines in per caput food production increased the volume of food imports by as much as 36% during 1970-76, while the volume of

Table 12

Average Annual Changes in Food Production  
in MSA Countries, 1970-76 (Africa)

East and Southern Africa	Annual Change (%)
Burundi	2.2
Ethiopia	-1.4
Kenya	0.4
Lesotho	0.0
Madagascar	1.0
Mozambique	-1.0
Rwanda	2.9
Somalia	-0.8
Tanzania	3.7
Uganda	1.2
West and Central Africa	
Benin P.D.R.	-2.6
Cameroon	1.1
Cape Verde Islands	6.8*
Central African Republic (ex-empire)	1.1
Chad	-1.2
Gambia	5.1
Ghana	-0.2
Guinea	-0.2
Guinea-Bissau	1.3
Ivory Coast	4.9
Mali	-0.4
Mauritania	-4.8
Niger	-1.7
Senegal	8.7*
Sierra Leone	1.4
Upper	1.3

\* Due to improved weather conditions during latter years of review period

Source: FAO, The State of Food and Agriculture, 1977. p.1-9.

agricultural exports declined by 9% during the same period. The value of agricultural imports increased almost twice as fast as that of agricultural exports. (Exports were worth approximately two and a half times as much as imports in 1970-71 but by 1975-76, they were worth only one and a half times the value.) If this trend continues FAO forecasts are that the Africa region--where 75% of the population is engaged in agriculture--could easily become a net importer of agricultural products. This would further deplete scarce foreign exchange necessary for social and economic development.

In the five African subregions: North Africa (which includes Sudan); the Sahel; West Africa; Central Africa; and East and Southern Africa, the total population in 1975 was 388.4 million. There were 230.3 million hectares of arable land of which 118.6 million hectares were under cultivation (i.e., 51.5%). Pasture land accounted for 711.3 million hectares and forest land 636.3 million hectares.

Total food imports throughout Africa trebled between 1962-64 and 1972-74, especially for wheat. The region's self-sufficiency ratio (SSR--which is determined by domestic production/domestic utilization x 100) declined from 98% in 1962-64 to 90% in 1972-74. Meat and sugar were the only major commodity groups for which the SSR did not fall.

#### The Agricultural Development Process in East and Southern Africa

There has been much emphasis placed on the role or contribution of the agricultural sector in the total development process, less discussion on the agricultural development process, and less still on women's roles and contributions. Economists and others have noted that low income national economies can increase productivity only through changes in technology--i.e., new husbandry techniques, improved seed varieties, more efficient use of power sources, cheaper plant nutrients, investment in agricultural research leading to the supply of new inputs, education of the farm people who are to use the new/improved inputs developed through research, etc. Women, because of their multiple economic and social roles, will have critical roles to play in modifying the agricultural development process through substitution of certain foods if maximum feasible production and demand (MPD) is to be attained. One of the strategies for averting disruption of social and economic development efforts would be to reduce the share of food imports from outside Africa, especially cereals. In drawing up a Regional Food Plan, the ECA and OAU in cooperation with FAO and WFC have noted that increasing consumer shifts from traditional staples to wheat and other imported foods can be controlled through development and promotion of locally-produced substitute foods (e.g., composite flours utilizing millet, sorghum, cassava, etc). Such action would reduce food imports if consumption patterns can be modified.

Additionally, governments must determine how resources are to be allocated to the input sub-sector and to the various activities therein since these inputs compete in the use of scarce resources. Such inputs include innovative farmers, research institutions involved in small farmer scientific and technological research, and agricultural material suppliers. This poses the problem of how to effectively communicate information concerning product demand to the suppliers of the new inputs, for example, 10-12 food commodities which improve the health status of the poor majority. There is also the issue of transforming economic institutions to enable the entire community to capture, with minimum sex-based differentiations, the economic and social gains implicit in new technical alternative (Hyami and Ruttan, p. 3). Another question concerns the relationship between technological, institutional and economic changes, and increasing production among female agriculturalists.

### Women's Role in the Agricultural Development Process

Despite an ominous food supply situation few national development strategies mention specific steps for increasing small farmer production. Until very recently even less attention was paid to the high labor input and low productivity characterizing food production--mainly the work of women (UNECA, 1977, p. 10). This is not a problem unique to the Africa region. Literature on women in developing countries and agricultural production continually documents that they comprise 50-90% of the agricultural labor force. They always have been food producers and make up the majority of the world's food producers. Apart from growing vegetables essential to a balanced diet, raising poultry and small animals, picking fruits, herbs and nuts, they also prepare and cook food in all countries of the world. However, they do not control food production. Titles are generally deeded to males (who are usually working away from the homestead), while actual labor on cash crops is provided by the women and children. High and increasing male migration rates leave greater numbers of women de facto, if not de jure, heads of rural households. (Table 13 on potential women heads of households in the developing world.) Most fertile land often is allocated for cash crops with agricultural incentives concentrated on them as well. Whether the male is absent or present, the female food producer bears an enormous burden (ISIS, p. 3). It remains to be seen how these issues will be addressed in the Africa region strategy paper which is to be distributed this year (1980) as a result of the November, 1979, FAO Conference. Table 14 indicates latest UNECA statistics on hours of female agricultural-related labor.

### Issues Related to Interventions in the Agricultural Production Sector

This paper will highlight some of the factors related to general

TABLE 13

Potential women heads of households in the developing world								
Region/country	Year	PHH <sup>a</sup> (1)	PWHH <sup>b</sup> (2)	% PWHH PHH (2) (1)	% Widows (2)	% Divorced (2)	% Separated (2)	% Single mothers (2)
Sub-Saharan Africa								
Mozambique**	1970	1,989,505	501,706	25.2	53.2	26.9	—	—
Niger**	1960	559,970	105,550	15.9	86.5	13.5	4	19.4
Reunion**	1967	77,579	14,638	18.9	87.7	12.3	—	—
Zimbabwe **	1969	73,781	12,095	15.5	71.2	19.6	—	—
Podriguez*	1962	8,414	435	12.1	77.1	.2	9.2	—
Rwanda**	1970	—	124,140	—	79.5	20.5	22.7	—
Tanzania*	1967	101,351	24,954	24.7	34.0	65.0	—	—
Topo**	1970	366,838	74,246	20.2	83.2	16.8	—	—
Uganda**	1969	2,103,278	427,575	20.3	57.6	42.4	—	—
Zambia**	1969	920,300	181,228	19.6	43.6	56.4	—	—
Botswana**	1971	136,381	62,693	45.9	32.3	18.0	—	—
Chad*	1964	627,510	151,440	24.1	—	—	2.1	47.6
Congo*	1961	146,300	31,000	21.3	—	—	—	—
Gabon**	1961	147,033	29,115	19.8	83.9	15.1	—	—
Kenya**	1969	2,118,417	396,922	18.7	76.2	23.8	—	—
Lesotho**	1966	189,886	70,553	37.1	90.0	10.0	—	—
Liberia*	1971	347,332	59,413	17.1	66.0	34.0	—	—
Madagascar*	1966	1,476,000	323,000	21.8	51.7	48.3	—	—
Mauritius*	1972	154,376	34,349	22.2	81.2	2.1	15.7	—

<sup>a</sup>PHH = Potential Heads-of-Households.

<sup>b</sup>PWHH = Potential Women-Heads-of-Households.

\*UN Demographic Yearbook, 1972, Table 26;

\*\*UN Demographic Yearbook, 1971, Table 12.

In: Alasebu, The Situation of Women in Africa: A Review, p. 54.

Table 14

Participation by women in the traditional rural and early modernizing economy of Africa

<i>Responsibility</i>	<i>Unit of participation</i>
<i>A. Production/supply/distribution</i>	
1. Food production	0.70
2. Domestic food storage	0.50
3. Food processing	1.00
4. Animal husbandry	0.50
5. Brewing	0.90
6. Water supply	0.90
7. Marketing	0.60
8. Fuel supply	0.80
<i>B. Household/Community</i>	
<i>1. Household:</i>	
(a) bearing, rearing initial education of children	1.00
(b) cooking for husbands, children, elders	1.00
(c) cleaning, washing, etc.	1.00
(d) house building	0.30
(e) house repair	0.50
<i>2. Community</i>	
Self-help projects	0.70

Table 8. Division of labour between male and female in rural areas

<i>Area of Activity</i>	<i>Percentage of Labour</i>	
	<i>Men</i>	<i>Women</i>
Land clearing	95	5
Turning the soil	70	30
Plastering	50	50
Hoeing and weeding	30	70
Harvesting	40	60
Transporting crops from farm to home	20	80
Storing crops	20	80
Processing food crops	10	90
Trimming tree crops	90	10
Marketing excess food	40	60
Carrying water and fuel	10	90
Caring for domestic animals	50	50
Feeding and care for children, men and the aged	5	95

Source: ATRCW. In: Alasebu, *The Situation of Women in Africa: A Review*, p. 36.

food and agricultural production problems in East and Southern Africa. They are also applicable to other parts of the region as well. Following is an illustrative listing of the scope of interventions necessary to improve food and agricultural production. These interventions often overlap and are not listed in any order of priority since all are critical to national and regional development:

- a. government expenditures on agriculture
- b. manpower
- c. agricultural price policies
- d. food and nutrition
- e. agricultural education
- f. research
- g. small farm agricultural development
- h. land utilization
- i. irrigation
- j. general agricultural strategies
- k. animal trypanosomiasis
- l. desertification
- m. agricultural trade
- n. agricultural productivity and technological change
- o. agricultural investment strategies
- p. agribusiness and rural enterprise
- q. national economic integration
- r. regional economic integration

#### Government Recurrent and Capital Expenditure on Agriculture

Direct government investment in agriculture has not been in proportion to the number of people dependent upon the sector for their livelihood even though capital formation in the sector has received increased emphasis in some of the countries. Comparable data are scarce. Total annual expenditure has simply not kept pace with inflation, causing the agricultural share of the budget to decline or, at best, to maintain its average share. In any event, while there is considerable variation between countries in East and Southern Africa, in recent years there has been a decline in real terms. This is because there is no uniform definition of what constitutes investment in agriculture. For example, some countries do not define irrigation expenditures as investments in agriculture. There are also wide differences between budgeted and actual expenditures. As an example, recurrent expenditure on agriculture in the 1977 budget for Kenya represented 7% in 1976-77, compared with 3% in the Ivory Coast, Mali, and Niger. Capital expenditure in 1977 amounted to 37% in Kenya and Mali, but only 2% in Gabon, according to government documents (source: FAO statistics, 1978).

Smallholder Agricultural Production and National Self-Sufficiency

In the subregion, major activities of women in agriculture include: clearing land, choosing seed grain, sprouting seeds, tending seedlings; storing seed grains; seed multiplication; weeding; threshing, winnowing, harvesting; storing food grain; processing grains (i.e., pounding and grinding); cultivating and preserving vegetables and fruit; aquaculture; fish-drying; caring for small livestock, poultry, ducks; gathering fuel and storing a water supply; and stripping fiber for housing construction and storage facilities. A significant amount of labor time spent on weeding, cultivating and harvesting is directed toward commercial crops, the returns for which are largely controlled by husbands, fathers, etc.

Professor Ruth Dixon has noted that growing landlessness, displacement of labor by mechanization, and increased population density make obvious the need for non-agricultural employment in rural areas. While agrarian reforms which increase overall employment will increase the demand for female labor, measures must be taken to ensure that women's special circumstances are taken into account and that women are not adversely affected by the reform. She has also noted (1979) that UN/ILO data from 56 countries classified on a regional basis indicate that women's proportional participation in the labor force is highest in sub-Saharan Africa, with a mean rate of 34%. (See Table 15.) Some censuses classify women's work as 'unpaid family labor,' which can be misleading since agricultural goods produced primarily for consumption rather than exchange are usually excluded.

Land and population density increase the tendency for women to seek cash income to supplement household income. Their situations are generally no better in urban areas, however, since rising food prices tend to justify increasing urban wage rates. (See Table 16 regarding changes in consumer prices.) This tends to decrease demand for labor, especially female. While the food prices may rise, these increases tend not to encourage people to remain in the rural areas due in part to distributional problems, i.e., the middleman, as well as problems with credit access, fertilizer costs, water availability, etc., which make it difficult to exploit rising prices. Government agricultural price policies directly affect: (a) the relative prices of capital and labor; (b) the relative prices of output and their effects on cropping patterns; and (c) the relative price of things agriculture buys and sells. These factors in turn impact upon rural employment levels.

Background: Wholly subsistence economies have been neither feasible nor practical in East and Southern Africa in part due to more extensive infrastructures, more sophisticated media networks, and increasing tax requirements. This lack of isolation extends to the

Table 16: Percentage of the Economically Active Population that is Female,  
by Employment Status and Occupation (where known), of Countries.

Region/ country/year	Employment status			Occupation (excl. family workers)							
	Total economically active	Employee	Self- employed	Unpaid family worker	Econ. active excluding unpaid fam.	Agriculture	Nonagric. production	Sales	Service	Min/mgr/ clerical	Professional/ technical
<u>Sub-Saharan Africa (10)</u>											
Botswana 64	50	23	55	33	50	52	9	19	57	14	39
Tanzania 67	48	9	53	46	48	52	6	10	18	3	24
Ghana 70	44	12	53	67	41	36	30	88	23	14	24
Sierra Leone 63	36	6	13	65	11	10	6	42	6	14	27
Liberia 62	36	6	18	76	14	16	3	33	13	12	27
South Africa 70	33	-	-	-	33 <sup>a</sup>	29 <sup>a</sup>	7 <sup>a</sup>	27 <sup>a</sup>	67 <sup>a</sup>	42 <sup>a</sup>	46 <sup>a</sup>
Zambia 69	30	-	-	-	30 <sup>a</sup>	12 <sup>a</sup>	4 <sup>a</sup>	14 <sup>a</sup>	10 <sup>a</sup>	19 <sup>a</sup>	21 <sup>a</sup>
Mozambique 70	26	6	33	63	-	-	-	-	-	-	-
Nigeria 63	24	-	-	-	24 <sup>a</sup>	10 <sup>a</sup>	23 <sup>a</sup>	60 <sup>a</sup>	26 <sup>a</sup>	9 <sup>a</sup>	15 <sup>a</sup>
Mauritius 72	20	21	14	46	20	23	6	13	52	19	37
Median	34	9	43	63	32	23	6	27	23	14	27
<u>North Africa/Middle East (10)</u>											
Turkey 65	38	10	4	73	6	5 <sup>b</sup>	9 <sup>a</sup>	1 <sup>a</sup>	7 <sup>a</sup>	13	21
Tunisia 75	20	13 <sup>c</sup>	20 <sup>c</sup>	55 <sup>c</sup>	16 <sup>a</sup>	6 <sup>b</sup>	24 <sup>a</sup>	3 <sup>a</sup>	28 <sup>a</sup>	19 <sup>a</sup>	22 <sup>a</sup>
Morocco 71	15	14 <sup>c</sup>	6 <sup>c</sup>	21 <sup>c</sup>	15 <sup>a</sup>	11 <sup>a</sup>	15 <sup>a</sup>	4 <sup>a</sup>	36 <sup>a</sup>	23 <sup>a</sup>	15 <sup>a</sup>
Kuwait 75	12	13	0	1	12	0 <sup>b</sup>	0 <sup>a</sup>	1 <sup>a</sup>	20	10	34
Syria 75	11	13	4	62	8	9 <sup>b</sup>	5 <sup>a</sup>	1 <sup>a</sup>	10 <sup>a</sup>	9 <sup>a</sup>	23 <sup>a</sup>
Iran 72	10	11	7	17	9	2 <sup>a</sup>	22 <sup>a</sup>	1 <sup>a</sup>	15 <sup>a</sup>	10 <sup>a</sup>	26 <sup>a</sup>
Libya 73	7	6	1	60	4	2 <sup>b</sup>	1 <sup>a</sup>	1 <sup>a</sup>	10 <sup>a</sup>	4 <sup>a</sup>	19 <sup>a</sup>
Jordan 61	6	6	4	16	5	5 <sup>a</sup>	4 <sup>a</sup>	1 <sup>a</sup>	11 <sup>a</sup>	5 <sup>a</sup>	30 <sup>a</sup>
Egypt 66	6	8	3	11	7	3	3	6	14	9	24
Algeria 66	4	5	2	9	4	1	4	1	13	11	21
Median	10	10	4	37	8	4	4	1	14	10	22
<u>South/Southeast Asia (11)</u>											
Thailand 76	38	32	24	66	27	20	30	31	46	27	44
Rep. Korea 76	38	29	27	69	28	21	29	33	56	21	24
Hong Kong 76	35	37	16	63	34	20	37	20	33	36	41
Philippines 75	34	39	22	45	31	10	32	59	67	42	59
Indonesia 71	33	28	24	52	27	32 <sup>a</sup>	27 <sup>a</sup>	44 <sup>a</sup>	43 <sup>a</sup>	10 <sup>a</sup>	32 <sup>a</sup>
Malaysia 70	32	24 <sup>c</sup>	63 <sup>c</sup>	63 <sup>c</sup>	32	20 <sup>b</sup>	16 <sup>a</sup>	16 <sup>a</sup>	32 <sup>a</sup>	22 <sup>a</sup>	34 <sup>a</sup>

nomadic pastoralists as well as to the hunter-gatherer groups of the equatorial rain forests and Kalahari desert. K. G. V. Krishna has pointed out that

"In the few situations where governments actively sought to encourage smallholder production -- either for political or socio-economic reasons -- through a combination of incentives and support services, there has been an amazing degree of responsiveness from the latter, thereby belying the myth that rural societies are stagnant and fatalistic or devoid of ambition and initiative. It has been a hard struggle, however, since there continues to be much skepticism and some ignorance, among governmental authorities with regard to the potential role of smallholder agriculture (Krishna, 1977)."

Past policies have helped to shape this situation. During the colonial era policies varied between: (a) active attempts to introduce expatriate capital and enterprises to develop the economies with the focus on promoting market-oriented production within the framework of traditional peasant agriculture; (b) encouragement of and assistance to European settler-farmers for development of technologically modernized farming and company plantations or estates. These entailed subsidies and privileges to settlers "out of proportion to their number, but it became apparent before long that there was a clear dichotomy between the role envisaged for the settlers and the potential role of traditional peasant agriculture (ibid)." Exemplifying this situation were white large-scale farmers and plantation companies in Kenya during the period 1950-1960 who accounted for as much as 90% of the total domestic and export market output. The existing government discouraged African subsistence farmer commercial production on the grounds that export-quality standards could not be maintained. This policy was adhered to until implementation of the Swynnerton Plan "for the Advancement of Africans in Cash Farming." Thus, African commercial production eventually rose to approximately 30% in 1962, the year before independence. In other countries, overseas-based plantation companies generally were not averse to sharing production with smallholder farmers, an important factor in stimulating smallholder participation in the market economy (Krishna, p. 15).

Women: While such changes were occurring, however, women smallholder farmers were being actively discouraged from participation in the modernization effort. Over a period of decades or in some instances, centuries, radical albeit slow changes in social divisions of labor became institutionalized. The European attitude that females belonged in the home came to be the viewpoint of African males as they were encouraged in commercial farming activities.

In some instances women were explicitly told not to cultivate commercial crops.

"...With the introduction of taxation and administration by the colonialists, men entered the newly created wage labor force. Schools were opened to prepare them for responsibilities as clerks and other low-level administrators.

Thus, men had been thrust into the cash economy while women, often left on the family farm due to male migration for wage employment on plantations, in mines or in towns, were known to take on both male and female tasks from the subsistence economy. Frequently women subsidized urban employment by keeping rural families supplied with their needs and at times sending agricultural surplus to relatives in towns. A critical factor during this period was the head start in education and exposure to life in the towns which were available to men and led in time to their playing the major roles in administration. Elements in traditional societies supported these trends (UNECA, 1977)..."

As this situation matured, incentives in the form of inputs to produce commercial crops were introduced to those who were considered as family heads, i.e., the men. The actual food producers and processors, i.e., the women, were implicitly and explicitly denied access to extension services, fertilizers, and credit in the absence of a male adult. Female labor inputs steadily increased while the value attributed to this labor decreased since cash was not involved.

In the post-independence period government policy thrusts have been twofold: (a) with agriculture constituting the largest sector, strategies were implemented to transform native African farming methods in order to increase yields and outputs; (b) this was accomplished through improved and expanded extension, marketing and credit, improved analysis and delivery of necessary inputs.

While agricultural transformation or modernization policies vary from country to country in Africa, they have featured combinations of the following:

- Policy actions directed principally toward rapid increases in export crop diversification and output unrelated to equity or nationalistic considerations such as extent of foreign involvement.
- Policy actions directed toward expanding the role of nationals while not excluding established foreign enterprises.

Major objectives were gradual and nondisruptive increases in the participation rates of citizens.

No specific emphasis was (has been) placed on expanding the role of the smallholders although actual technical packages were theoretically designed to improve agricultural sector output for development.

During the period just after independence heavy economic dependence necessitated continued provision of expatriates to handle the various technical, administrative, service and research offices in the agricultural ministries. Thus, western cultural attitudes were reinforced by foreigners and male African nationals trained overseas. Concurrently, formal and nonformal education systems provided scientific and technical training for men and boys while emphasizing basic home economics courses for girls and women.

-- Policy directed toward targeted assumption of responsibilities by nationals for food and cash crop production based on government views that those entities not directly involved in agricultural activities would be replaced in the near term by subsistence farmers who would be the principal government target groups.

Equity issues again are not explicitly addressed and current development indicators are inadequate measures of progress in the economies of the subregion, e.g., Kenya and Malawi which have dramatically increased African participation in production for domestic and export markets; and Tanzanian, Somali, and Ethiopian deliberate focus on smallholder concerns. While short-range diagnoses are of questionable value, (in the face of decreasing productivity levels and evidence of worsening living standards of the rural poor majorities) it appears that adequate focus has yet to be placed on the potential and unique constraints facing women smallholder farmers.

#### Agricultural Price Policies

Agricultural price policies also are directly linked to rural employment income distribution and the phenomenal rural-to-urban migration rates (i.e., 9.5% Africa-wide). Almost all developing countries have policy guidelines which recognize the need to provide farmers with remunerative services, while assuring that consumer interests also are taken into consideration. In practice, in some countries (e.g., Sudan, Zambia, Swaziland) price policies appear to support urban consumers at the expense of the small farmer through a number of different government agencies operating sometimes autonomously of each other.

Pricing policies generally (with the notable exception of Malawi relative to agricultural versus urban wage structures) are directed toward extracting economic surpluses from all segments of the agricultural sector as opposed to effective coordination of production decisions at the farm level and of intersector resource allocation decisions (Hyami and Ruttan, p. 253). Additionally, efforts to industrialize the agricultural sector have meant a failure to invest in the development of research necessary for growth of agricultural productivity and output.

Output-pricing structures aimed at self-sufficiency are the visible indicators of government biases against small farmers and related rural farm or off-farm employment. Cereal production throughout the subregion is a good example of the extent to which government support mechanisms discourage diversification and further expansion of acreage under vegetables, fodder for drying, pulses, etc. Cereals such as wheat also require low labor inputs, thereby markedly affecting aggregate labor demand. Viewed from this perspective, in most countries, agricultural development processes are practically biased against small farmers. This partially accounts for decreasing output. The added problem for women farmers lies in the fact that agricultural development programs and policies tend to be sex-biases (Staudt 1978, Boserup 1970). For example:

-- In some socio-cultural groups women do not have legal rights to own and inherit land as individuals but they do have clear use rights. Various researchers have suggested that planners view such

"...women as 'tenants' on their men's land. In this light, a woman's tenancy security and sharecropping rates would be considered in relation to production incentives and her willingness to make permanent investments on the land.... If insecure tenancy is recognized as a deterrent to tenant cultivator incentive and thus to increased productivity among male cultivators, then to the extent that women are also in the position of insecure tenants, their incentives and productivity may also be constrained (AID/WCRRD Working Group, p. 6)."

-- Agricultural mechanization schemes and increased commercial cropping increases competition for good quality land formerly utilized for food crop cultivation. This change will be reflected in lowered family nutrition levels to the extent that women were not already limited to farming depleted soils near the homestead.

-- Agricultural services aimed at farmer training usually have short, sex-tracked courses. Male farmers learn about cattle husbandry, cash crop production, etc. Female farmers

receive 'stitching and stirring' lessons such as child care, sewing, health and sanitation, nutrition, home management and improvement, cookery, and vegetable gardening. (1). Structured in this manner, less than 30% of traditional home economics courses deal with substantive agricultural issues (Staudt 1977). Small-farm processing and storage of food grains and training related to the agricultural responsibilities of rural women are only beginning to be suggested by donor agencies (e.g., food processing, participation in cooperatives, civic education, income-generating activities, fisheries, certain aspects of forestry, etc.).

-- Data on innovators (farmers willing to experiment with new ideas earlier than their neighbors) are indicating that female-managed farms tend to receive neither administrative advice nor support for such decisions, but that a minimal number of jointly-managed farms are so neglected. The paradox is that non-innovative farms with

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(1) Regarding agricultural and pastoral support services in the subregion some countries are in the process of designing agricultural development programs covering specific geographical areas based on economic and ecological areas rather than existing administrative divisions. An example is the clear Government of Botswana's definition of its rural development policy and related actions.

12

(6)

a man present receive extensive servicing (Standt 1978).

-- A critical problem related to agricultural price policies is the effect on overall food availability and food budgets. Documents presented at the AID-funded 1978 International Conference on Women and Food established that roughly 500 million people in the world do not receive enough food energy (calories) to meet daily needs. Another billion-plus receive adequate calories but live on diets inadequate in proteins and other essential nutrients. As prices are presently structured there are no great differences in developed and developing country food prices for most high quality protein foods. According to 1978 figures eggs cost almost one dollar per dozen but are generally smaller in developing countries. Cheese is very expensive and milk, while price-controlled in many areas, is often found in limited supplies. Even beans, one of the cheapest sources of protein, cost only slightly less in developing countries than in the developed ones.

"Even assuming other foods to be dirt cheap, it soon becomes apparent that the diet will be devoid of milk, meat, eggs, and poultry.... At the low income levels...the optimal diet contains a lot of corn, beans, and home-grown fruits and vegetables (Poyner 1978)."

#### Agricultural Policy Modifications:

General agricultural policy modifications (based on theory and accumulated empirical evidence from developing countries) aimed at increasing rural employment and equalizing distribution of income require:

-- adoption of methods to produce additional water supplies as a means of increasing agricultural growth and labor requirements. Women's multiple social and community roles means that they have special needs as farmers. In Africa they are the predominant drawers of water. To lighten their burden programs for producing additional water supplies should include the construction of cisterns and catchment tanks, and light carts which, depending on terrain, would be suitable for hauling water or even wood. Follow-up studies of various water projects reveals that there are usually maintenance and repair problems. This is partly due to the fact that women are not usually in attendance at initial

training courses nor do they receive advice on equipment upkeep.

- adoption of highly divisible inputs such as improved seed varieties, fertilizer, etc. In addition to an earlier cited example of the related problems for women it is critical to a program's success that there be adequate knowledge concerning post-harvest storing and processing. Many hybrid cereals and grains are highly susceptible to traditional milling and storage technologies, which as noted previously are handled by women.
- unqualified introduction of highly indivisible inputs such as tractors and combines involve price policies that discriminate against high labor use. Past foreign assistance activities also tended to minimize a recipient country's need to factor into its overall planning process the allocation of scarce foreign exchange for maintenance and replacement. An even more serious effect of these earlier programs lay in the fact that while technology may be sex neutral, agricultural mechanization became more firmly associated with males. Agricultural training programs still show evidence of this earlier bias.
- rural employment generation has not been significantly increased through adoption of intermediate technological inputs (this contention might be open to debate in some circles) such as pumps, motors, small tubewells, threshers, etc., but this may be partly because they have not really focused on lessening women's on-farm labor as part of an integrated program package.
- agricultural services organizations (credit, extension, marketing, etc.) and their positive impact on rural employment generation require further research. Indications are, however, that such programs fail in the absence of strategies to provide information on the more disadvantaged cultivators, both male and female. Such organizational services programs need to be neutralized because of internal bureaucratic pressures to minimize lending risks as well as the political influence of rural and urban elites. (Examination of loan repayments in several African countries indicates that female borrowers tend to be superior credit risks with relatively high repayment rates.)
- land redistribution could have a positive effect on economic growth but remains the most politically sensitive area of social change. However, no land reforms in developing countries have yet made explicit provisions that land may be allocated to women in their own right. This paper will not attempt a discussion of land reform policies in socialist-oriented East and Southern African countries. Problems of land resource reallocation are exemplified by the Kenya situation, where statutory law governs procedures for registration and adjudication of reform lands. However, customary laws and practices govern disposal and succes-

sion. Court cases have established that women are expected to take possession of land only as trustees or guardians, retaining use rights during their lifetimes or until male children make inheritance claims. In Tanzania and in Malawi, patrilineal land rights have been introduced through World Bank-funded settlement schemes although matrilineal rights were customary for the communities involved. Also in Kenya, daughters may not formally inherit land under customary law. In some countries, under Islamic law widows with children may inherit land, but daughters have legal access to only half the amount received by their brothers. This religiously-based code is supported by greco-roman 'Western' codes which have established that women are to be maintained and should not have the responsibility for maintaining others. Similarly in this context, widows with children are deemed capable of assuming temporary responsibility for family maintenance, but daughters are not assumed equally responsible.

### Trained Manpower

National policies toward manpower training for the agricultural sector highlight government preferences for support of large commercial and state farms. Programs aimed at the largest number of producers--generally illiterate, predominantly female cultivators of non-contiguous plots totalling an average of 1.5-3 hectares--are usually viewed as being too slow, politically unattractive, and in the short run expensive due to poor infrastructure among other factors. The 1978 Project Design Conference participants noted that

"Most T.A.-oriented projects give at least lip service to the training of a target group. If this is part of a design, it is critical that the social analysis provide the needed insights as to the motivation of the target group to be trained.... Unless the trained individual perceives some economic, social or status benefits accruing from training the process is doomed....

"It is usually useful to look outside the specific technical ministries the project is attached to--administrative, management training can often be found, tailored if needed, within (the) LDC. Local certificate or diploma institutions and their staff may be supported to perform specific training.

"No matter how such training is done, the project design must be very sensitive to the need of the trainee to receive some formal credential acceptable within the personnel system of the LDC which permits access to a promotion. Without such incentives, few LDC staff will be motivated."

Newly trained agricultural technicians tend to view themselves as technical innovators, introducing new, or improved techniques. They invest the greater part of their time assisting those male- or jointly managed farms with the financial resources and basic knowledge to initiate

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and implement proposed innovations at the expense of the needs of female small farmers (Staudt 1977). The food subsector of subsistence farming needs to be viewed as a separate and critical developmental planning environment in its own right if production is to be increased.

Women small farmers are most negatively impacted by the lack of appropriately trained agricultural technicians. Studies document that they have significantly less access to technical assistance. Their output therefore has remained constant or has decreased in relation to male small farmers who remain on the land and who have greater access to factors of production which regularly improve in quality.

### National Efforts to Train Technical Personnel

The Association for the Advancement of Agricultural Sciences in Africa, established in 1968, is currently undertaking an in-depth survey of agricultural education systems and institutions in Africa. This survey will ultimately provide comparative information on curricula and methodologies, standards of attainment and comparability of awards, in order to facilitate institutional interchanges. Another aim of the survey will be to identify institutions which are developing strong research schools "in particular branches of agricultural science, and thus facilitate the training of research workers within the continent (TCDC/AF/6, p. 50)."

In the field of agricultural training it is generally accepted that three technicians should be trained for each graduate. This ratio has not been achieved in any of the countries of the subregion. In addition to the slow progress, there is still a serious neglect of girls and women in agricultural training programs (in the formal education systems). A major difficulty with existing nonformal programs is that they are usually quite small relative to their total potential clientele and "hardly scratch the surface of the total need (UNICEF/ICED, p. 22)". A significant example is the focus on women's specific needs in the area of agricultural technology being administered largely by the UNECA and UNICEF in the subregion. Both have programs for introducing village technology for women to alleviate the burdens of fuel and water collection, pounding and grinding grains, planting, weeding, harvesting and storing crops. However, without a well-integrated agricultural and food production strategy many such activities increase the notion that appropriate or even intermediate technology is merely a 'patching up' activity, and that women are not really central to the agricultural development process except as beneficiaries rather than also as change agents.

Agricultural training for women and girls relevant to science and technology as recommended by the American Association for the Advancement of Science Workshop would include:

- small-scale entrepreneurial activities
- food processing techniques and production of crops for commer-

cial purposes

- maintenance and repair of agricultural machines
- practical technical training with which women and girls might earn a living and which would not necessarily depend on literacy
- training to organize credit unions and cooperatives

These activities are all geared to reinforce group cooperation and women's self-actualization. Workshop participants pointed out that as women's horizons enlarge, they tend to increase their use of community resources already available to them. This in turn improves their families' and communities' health, nutrition, and education status.

## PROGRAMMATIC RECOMMENDATIONS

Overview

At the beginning of this paper it was noted that WID is one of a variety of interlocking strategies to assure efficiency of agency programs and services to help reduce discrepancies between and among target area populations. Field personnel as a group are quite familiar with general issues and problems regarding the situation of women in East and Southern Africa:

- These women spend roughly 60 hours a week only on household and social tasks such as food storage, processing and preparation, fuel and water portage, childbearing and rearing, small livestock husbandry, shelter construction, tool and housewares production, care of the elderly and the infirm, etc.
- Due to the pastoral nature of many of the communities there are varying estimates of the time females spend on different aspects of commercial/food crop, and livestock production.
- Women are responsible for roughly 60-80% of all agricultural-related work and this 'field' time more or less equals the time spent on weekly 'household activities.'
- While they are significant factors in the so-called "mass poverty" problem it is also acknowledged that women are responsible for implementing the larger part of all self-help activities in community development programs. Lack of contemporary skills and/or access to skills training dooms many such activities to eventual failure.

Field Sensitivity to WID Inquiries

My intention here is to point out in a general way some of the conditions modifying WID program efficacy in the subregion based on observation of REDSO/EA and mission staff/contractor responses to informal questioning.

What is the major problem confronting field personnel regarding WID initiatives? Essentially, it appears to be a lack of clarity on ways to meaningfully integrate women and development issues into all aspects of sector program planning. Health, nutrition, and family planning are now viewed less as pre-WID regular Agency assistance program activities. In certain instances, they appear to have come to represent a substantiation of mission commitment to WID issues. This happens because mission personnel continue to respond to health, nutrition, and family planning programs as basically sex-linked in terms of potential overall benefits to the community as a social grouping, while development of certain other activities (12)

(12) For example, mission-assisted smallholder credit schemes funneling loan funds through cooperatives societies to smallholder farmers, science and

implicitly results in maximum direct spread of overall benefits to the community as an economic unit. The fact that in the long run it is target community males who reap, relatively speaking, the most direct income-generating benefits from projects may indicate that mission personnel are viewing the acceptable "family" unit as being composed of a male head who satisfies the financial and sustenance needs of wife(ves), and children and other relatives. As a result of these attitudes projects are viewed as either technical or social in focus; and WID is ... compartmentalized and circumscribed.

Mission staff are interdisciplinary teams with each member having discrete responsibilities. Finalization of project documents appears to fall short of identifying structural changes in 'technical' sections of the documents (which ultimately would mean more profound impact on a target community). For example, in discussion regarding construction of facilities in rural areas:

- ask an engineer, project officer, or environmentalist whether attention has been given to women's needs, tastes and sense of esthetics and the response is usually "yes, within the context of this project."
- Further questioning can indicate, however, that no one felt that s(he) had responsibility for conferring with national counterparts on the necessity for including females among the participants in maintenance training. Thus, when the trained men leave the area in search of wage employment, the facilities fall into disrepair.
- Latrines are often part of construction plans. Since women usually have their younger children with them, Unicef-model stepped latrines (with two openings -- the smaller and lower one for children) could encourage acceptance of the use of non-traditional excreta disposal facilities and thus lessening reinfection and improving health. This may be a social concern, and a concern with women's invisibility. It is obvious, however, that this should also be a concern of the environmentalist and the engineer because of the impact throughout the cycle of water supply.

Technical personnel are not expected to be full- or even part-time social scientists. Conversely social scientists should not be expected to be familiar with cost implications of modifying a project's technical components to allow for increased participation of women. At this time, unfortunately, some field personnel (i.e., programmers, and other officers -- agriculture, education and human resource, economic, health, environmental, engineering, etc.) express impatience at questions regarding their inputs aimed at increasing the extent and level of female participation in sectoral activities. The reaction which usually follows is that questions concerning participation rates of females imply doubt that staff are concerned with the needs of the total community (read: not complying with AID/W directives).

Basic Needs Development - Remediation and Intervention

The concept of basic needs focuses on improving the quality of life and the factors necessary for making it available to greater numbers of the poor majority. AID development planning aimed at meeting these needs is predicated on constant, measurable improvement of project impact on the rural poor. Since U.S. concern with the social aspects of development is well known to government officials, field staff should be disabused of the notion that diversifying women's participation in program development and implementation means forcing views.

This is a responsibility of the Mission Director or the AID Affairs Officer (who may be sending out negative or at best neutral signals about structuring the WID issue into all technical areas). S(He) in many ways is under pressures similar to national government administrators (i.e., senior as opposed to executive managers) who recognize the need for basic needs development, but who feel that because of their country's relatively low level of development economic growth should be of concern before redistributive policies can be fully implemented. Pressures for the mission director or AID Affairs Officer arise in the fact that monies have to be obligated and structuring WID into all technical areas requires convincing national technical counterparts of the interrelatedness of continuing low levels of development and underutilization of a large sector of the population because of traditional and acquired attitudes.

Having observed increased acceptance by field staff of the WID concept, my feeling is that AID/W now must provide all mission specialists with discrete examples of situations where innovative suggestions to recipient country officials might result in more flexible projects which take into consideration women's community responsibilities in light of current economic trends.

Workshops and symposia are critical in order to facilitate information flows regarding development constraints impacting specifically on women (13). But such women-specific working meetings rarely take on enough importance

technology program packages, management training courses, etc.

(13) "if women had less access to resources prior to intensive development, and if development tended to exacerbate those differences, cumulative advantage and disadvantage is expected to heighten and quicken negative impact, a process similar to the dynamic posed in relations between unevenly developed countries in an international environment (known as the 'development of underdevelopment'). Yet...examination of impact, either negative or positive, direct or indirect, or obscured by class, is hampered by the lack of uniform and precise indicators of what development means for people's status, both men and women. In order to proceed, such studies must disaggregate household units and subsequently aggregate and compare them to one another (Staudt, p. 11)."

to attract the great mass of mid-level male administrators and managers in agriculture, education, health, rural development and manpower training positions. On the other hand, generally lacking at working AID-funded meetings involving largely male administrators and managers are explicit references to and linkages between the technical aspects of agricultural and other programs, and the human and economic costs of not adequately factoring in women. For example, how will expanded cultivation of crops in a target area affect the potential allocation of food versus commercial lands? How often do human resource development specialists and educators discuss female education in the specific context of what is referred to in the U.S. as 'earnings mobility' (i.e., the process of increasing prosperity through increased earning power due to the accumulation of, among other things, experience and skills in one's work setting)?

Further, there appears to be a lack of specificity (in AID field staff-focused working meetings) regarding ways in which to minimize differential marginalization of women as a group (14).

Today, this compartmentalization of technical versus social issues means that women in the subregion receive more of development's social benefits such as improved health, nutrition and even family planning options. At the same time, however, their economic opportunities (the capacity and ability to earn money) and education and training opportunities are minimal.

Major emphasis is to remain on food and nutrition, population, rural development and energy for the foreseeable future. Therefore, it would be useful to provide Africa field personnel with longitudinal and sex-specific data on the extent/success of participant and long-term training in these areas. Of course, such studies would have to be approached differently for the area of energy development in Africa.

Also useful would be a collaborative effort to undertake a participant training evaluation discussion paper in the agriculture, health, and education sectors. Collaborating offices would be WID/PPC, the Studies Division, Office of Evaluation/PPC, and Education and Human Resources, AFR/DR. Central to the evaluation should be an assessment of such programs to the present.

- AID-supported long-term training in the U.S. or a third country has decreased to such an extent that a 10-year impact evaluation could be set on a back burner in terms of immediate field needs. However, the extensive cut-back in long-term training has effectively reduced opportunities for many LDC women to advance within the ranks of the various ministries and other government offices. This is due to two factors: 1) a first degree, however ill-matched to particular development needs in a country, is viewed as essential to advancement and increased responsibilities; therefore 2) training obtained in less formal in-service settings, while practically-oriented, requires traditional kinds of validation. IIE data on international students (for the period 1978/79) indicate that the overall ratio of all foreign students studying in the U.S. is three males to each female in the four-year institutions. In 2-year institutions there is a slightly higher proportion of females. (IIE's last student census indicated that there were 265,958 students from 181 countries and territories studying in the U.S. African students constitute the smallest percentage (12.9 or 33,990) outside of the Oceania region(15).

(14) Kathy Staudt, in a study of farm services delivery in Kenya, noted that all women had less access to services; but low income women farm managers were the most disadvantaged, relative to men, of all economic strata. Further, low income farms with a man present had access to services similar to that of higher income female-managed farms (Staudt, p. 11).

(15) Nationality of African Students Reported in the U.S., 1978/79

<u>Country</u>	<u>Base Number</u>	<u>%age Distri- bution</u>	<u>Extrapolated Count</u>	<u>Percentage Change from 1977/78</u>
Botswana	36	--	--	--
Comoro Is.	1	--	--	--
Djibouti	2	--	--	--
Ethiopia	1,042	0.6	1,520	5.2 approx.
Kenya	1,075	0.6	1,570	9.8
Burundi	6	--	--	--
Lesotho	49	--	--	--
Madagascar	25	--	--	--
Malawi	47	--	--	--
Mauritius	29	--	--	--
Mozambique	7	--	--	--
Rwanda	6	--	--	--
Seychelles	5	--	--	--
Somalia	78	--	--	--
Sudan	285	0.2	420	25.5
Swaziland	34	--	--	--
Tanzania	360	0.2	530	47.2
Uganda	262	0.1	380	5.6
Zambia	132	0.1	190	26.7
Zimbabwe				
So. Africa	821	0.4	1,174	36.0
Unspecified	69			

Base Number: actual count of students by country of citizenship based on reports on 180,387 students by 1,562 institutions

Percentage Distribution: %age of the 180,387 represented by the base number for each country. Not calculated for those with fewer than 90 students reported.

Extrapolated Count: World Total figure of 263,940 represents actual count of all non-immigrant students reported in the survey. For countries with Base Number of 90 or more reported students, the Base Number was multiplied by 1.4631 and rounded to the nearest 10 to determine their extrapolated share of total student count of 263,940.

Percentage Change: Indicates percentage change between Extrapolated Counts for 1977/78 and 1978/79.

Source: Institute for International Education, International Students 1978/79, pp. 128-152. UN Plaza, NY 10017.

While the end of project status will indicate that the number of female female agents has, in fact, increased, services to women smallholders will not necessarily improve since graduates of the school will have lower status than other agents due to: a) the national university's refusal to accept the school's credits; b) male students do not have adequate practical knowledge of female-specific farming problems in the country; c) normal problems of all junior staff people; and d) a shortage of MinAg vehicles which will usually be at the disposal of senior and predominantly male co-workers. Final evaluation of project impact may not reveal that the project goal was not achieved (i.e., to strengthen the MinAg outreach service through expansion of trained technical staff) if women-specific questions were not posed at the CDSS/SPS stage. It would, therefore, be impossible to quantitatively measure benefits accruing to the women smallholders.

### ACCELERATING TRENDS

This section briefly covers: economic growth prospects, poverty levels, and functional areas.

#### Economic Growth Prospects

The 1978 World Bank report noted the following trends in the Low and Middle Income (17) countries of Sub-Saharan Africa during the next decade:

- income per person is projected to increase at an average of less than 1.5% per annum
- the population will continue to expand in part due to past growth rates (i.e., the high numbers of young adults coming of age sexually)
- "insufficient" agricultural research and negative conditions of the physical environment will continue to limit improvements in farm productivity
- physical and institutional infrastructural deficiencies will also continue to impede industrial development
- Middle Income country development prospects have been linked to continued access to international capital markets, and moderate recovery of earlier export performance
- in the future overall Middle Income country export expansion will be limited by their much higher share of slow growing primary export products

(16) CDSS/SPS are respectively the Country Development Strategy Statement and Small Program Strategy. They outline general country strategies and problems in areas of priority, based on the annual congressional submission. This supplies the logframe goal/purpose statement. The PID, or Project Identification Document, supplies purpose/outputs statements and project possibilities. The PP, or Project Paper, outlines in detail a project's design and the implementation strategy.

(17) World Development Report, 1978: Low Income countries in the subregion include Burundi (\$130); Comoros (\$190); Ethiopia (\$110); Kenya (\$270); Lesotho (\$240); Madagascar (\$240); Mozambique (\$150); Rwanda (\$150); Somalia (\$110); Tanzania (\$190); and Uganda (\$270). Middle Income countries

Poverty Levels

- In the year 2000, those living in absolute poverty could range between 360 million - 710 million depending upon a) sustained improvements in the international trade environment, which will decrease the likelihood of industrialized country protectionist policies against developing country exports.

It should be remembered that there are definite links between absolute poverty and households managed by single females. Also pointed out in the introduction was the fact that female-headed households will "constitute the nucleus of the mass poverty problem over the coming decades."

Energy Issues

- Deforestation and fuelwood shortages will continue to be critical problems ("the other energy crisis," in Sudan and in Tanzania, where 90% of energy needs are obtained from non-commercial sources.
- Shifts of research and development from disproportionate focus on mechanical power and electricity to more realistic focus on cooking needs and more efficient use of draft animals

Employment-Related Issues

- There will be significant increases in annual rates of labor force growth by the late 1980s.
- Increased emphasis will be placed on rural small-scale enterprise to provide jobs for rural labor (e.g., even now, non-farm activities in rural Kenya provide employment for roughly 20% of the population during agricultural slack seasons)
- There will be increasingly tighter controls and changing attitudes regarding international migration or transmigration.
- Increased efforts will be made to devise rural development strategies which strengthen the mutually beneficial links between agricultural and industrial development. Such strategies will include development of transportation and marketing infrastructures, reduction of inefficiencies in agro-processing industries (e.g., by means of land taxation and mobilization of rural savings to transfer some resources from agriculture to industry).
- Increased efforts to strengthen inter-developing country trade (e.g., the Southern African Development Coordination Conference group [18]) in manufactures and agro-industries due, in part, to inflation and deterioration of foreign exchange reserves, as well as geopolitics.

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in the subregion include Botswana (\$410); Djibouti (\$580); Mauritius (\$760); Seychelles (\$710); Swaziland (\$610); Zambia (\$450); and Zimbabwe (\$500).

(18) Based on information from the Political/Commercial Officer in Mbabane, Swaziland, at least one Commission has already been formed for Transportation and Communications. Countries involved are Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Tanzania, Zambia, and Zimbabwe. See

Education and Training Focus

- Although most development plans stress the importance of providing relevant education and training for youth, most immediate training focus may be on development of technological expertise through linkages between more advanced developing countries such as Argentina, Brazil, Peoples Republic of China, Republic of Korea, Mexico, etc., to the less advanced developing countries.
- World Bank documents note that the thrust will be toward strengthening the domestic engineering and metal-working sectors in order to further development of the expertise and to increase industrial efficiency. These are for differing reasons on a country-by-country basis, traditionally male-focused occupations (See earlier section on science and technology).
- Generally speaking, more organized efforts to acquire and master new technological processes, and development of the capacity to adapt and innovate technical and organizational changes in order to raise productivity.

Health

- Sharper focus on strengthening mid- and lower-level paraprofessional qualifications.
- More systematic efforts to integrate traditional healers and birth attendants into the formal health system.
- Increased shift away from large, urban medical facilities and encouragement of community efforts to construct local facilities.

PROGRAMMATIC RECOMMENDATIONS FOR QUALITATIVE EXPANSION OF AID ACTIVITIES

- A. Agriculture and Food Production
- B. Education and Training
- C. Employment
- D. Health and Nutrition
- E. Population
- F. Data Collection and Research
- G. Energy Research
  1. and food systems
  2. and domestic enterprises
- H. Policy Considerations

SADEX, Volume 1, No. 2 (1979), and Volume 2, No. 2 (1980) for more information of this Southern Africa economic bloc.

### A. Agriculture and Food Production

1. Review of the participant training component of all agriculture subjects with a view toward systematic incorporation of discussions on relevant female smallholder problems and needs (males will predominate in REDSO/EA agriculture ministries for at least another decade due to training lag times - see pages II-25 through II-27).
2. Development or redistribution of information on successful technical packages designed to improve food crop production.
3. Dissemination of illustrative information packages on successful efforts to train women in the preparation and marketing of locally-grown foodstuffs to schools, health establishments, etc.
4. The preceding recommendation should be undertaken in conjunction with country-specific studies of output-pricing structures which discourage increased smallholder production and related farm or off-farm employment.

### Education and Training

1. Unlike the REDSO/WA subregion--and for varying reasons-- REDSP/EA missions can point to relatively few examples of successful programs aimed at meshing basic skills training (for modernization of the traditional sectors) with practical information for daily life. (An example would be practical training for primary school girls in the preparation of locally-manufactured baby food Fikry(19)).
2. The Africa Bureau should undertake an areal review and evaluation of participant training, with subsequent dissemination of discussion papers on possibilities for increasing rates of participation in AID priority areas.
3. AID should increase its support of formal education programs at local institutions for all trained technical personnel (including economists) on data collection on women's activities in the sectors

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(19)

Mona Fikry. Preliminary Report on Traditional Maternal and Child Health Care and Related Problems in the Sahel A Bibliographic Study. March, 1977.

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and sub-sectors. (A frequent comment by mission personnel is that national counterparts in the various government offices are not really committed to equitable extension of services to women and marginalized groups.)

Assistance should be provided to the Arusha, Tanzania-based, East African Institute of Management, to review and revise required management courses with a view toward including sessions on management and development of industrial programs (for example, training programs) for illiterate or barely literate workers.

Additionally, courses in productivity studies, and marketing problems and strategies should have lessons included, for example, on problems of: informal markets; market research relative to women's production; rural enterprises and women's access to local, regional, national and international markets, etc.

#### Employment

1. Develop profiles of women engaged in small- and medium-scale industries in rural and urbanized areas as well as collecting information on existing surveys of potential household labor-saving devices and infrastructure projects that would increase women's free time and facilitate access to wage employment.
2. To avoid expensive duplication of efforts there should be a stronger collaborative link with U.S. Embassy Commercial Sections in order to systematically retrieve information on national activities related to small- to medium-industry development.

#### Health

1. Dissemination of information on existing research on basic solutions to localized health and nutritional problems\*
2. Determine what are culture- and gender-specific interpretations of parts of the body and their processes for the purpose of providing functional information on health, reproduction, and prevention of illness (e.g., instruction with appropriate local support, of older primary school-aged boys regarding certain venereal diseases and their symptoms--which are often first noticed by the male partner).

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Dr. Mona Fikry in her 1977 report to AID, notes that more information is available on health strategies and recommendations than information on research for basic solutions. (Traditional Maternal and Child Health Care..., p. 11.)

3. Continued encouragement of mothers to breastfeed babies coupled with information dissemination on the debilitating effects of anemia for lactating women.
4. How practical would it be for AID/W to investigate the feasibility of adapting the WHO-Tanzania training program briefly noted below to the skills of traditional health practitioners as well as mothers registered at health centers?

— Based on 1977, DAC documents, in an experiment undertaken in 1976 by the Government of Tanzania in collaboration with the WHO, basic diagnoses were carried out by staff (trained for three years). According to the Chairman's report for 1977 (OECD, DAC Chairman's Report, pp. Vi-11) workloads averaged 150-200 patients each morning. "To increase accuracy, repeatability and rapidity of diagnosis, a set of charts," was designed and field-tested by a WHO collaborating center on educational technology in the U.K. The flow charts covered 150 of the most common national health problems. The model was slated for field testing and adaptation to the different diseases in three other countries.

Is it possible to adapt such a program for rural people especially, with a view to reducing infant mortality from diarrhea-related dehydration through more widespread use of locally and cheaply produced salts for oral rehydration? A small pilot program might give an indication of the impact of such an activity on water supply and sanitation, education and training, limited small industry development related to health needs, etc.

### Population

1. AID should direct some of its program funds to support family services agencies and planning organizations to develop profiles of adolescent males and females, in rural, urban and refugee settings so that social service intervention strategies to meet the needs of entire communities.

### Data Collection and Research

1. Field dissemination of the status of other international agency and foundation initiatives in the area of women and development (The information should be arranged by function area to encourage field staff to read the document.)
2. Investigate the feasibility of arranging for block grants, etc., to national university researchers to investigate intrahousehold factors impacting on women's access opportunities for modernization with development. (For example, see information on the University of Zimbabwe's Centre for Applied Social Sciences as an illustration of field data which could be maintained— upon advisement from the Regional Legal Advisor — and systematically updated with a view toward meaningfully increasing female national participation in AID program activities. See III-14.)

3. Related to recommendation number one, the WID office should also include in a comprehensive information packet for the field guidelines for university-affiliated and local organizations to become involved in contracts to provide specific data collection services relevant to mission strategy statements and selected problem areas.
4. Collection of data, in collaboration with U.S. embassy commercial sections, on in-country training programs of multinational subsidiaries, and the feasibility of using such staff members for selected technical or vocational training courses (as a means of offsetting increasingly higher costs of U.S. and Third Country training—with adequate provision to make sure the courses have an acceptable status).

#### Energy Research

1. AID-financed studies indicate that the cooking and transportation sectors of rural economies merit individual attention. (See pages I-16 through I-18.)
2. Demand/supply analyses should be undertaken which integrate rural analysis with urban industrial analysis into overall national energy pictures.
3. Rural economy and resource studies are needed to define the dynamics of energy supply and demand in rural areas.

#### Energy Research and Food Systems

4. Data are needed on:
  - specific energy technologies that are environmentally sound and conducive to development of rural economies including:
    - a. reforestation
    - b. simple cooking stoves
    - c. food storage facilities
    - d. soil and water conservation
    - e. training in appropriate use of power technology to reduce time spent plowing, planting and harvesting crops (thereby increasing agricultural production and expanding employment)

#### Rural and Domestic Energy Uses

5. Assistance should also be provided in the areas of technology, planning and training (this area is especially important, e.g., women will neglect to boil utensils used by family members with communicable diseases if fuel and water are scarce or too far away).

Policy Considerations

1. A statement on female circumcision should be included in the next AID/W health strategy paper, in keeping with U.S. commitment to the 30-year old Universal Declaration of Human Rights.  
A statement would serve as an indication that AID is not oblivious either to the physiological and mental health problems caused by this procedure in its several forms, or to the efforts by several governments to eradicate the practice of such operations.
2. Efforts should be made to strengthen coordination of data collection efforts with the missions and RHUDO (Regional Housing and Urban Development Office) in Nairobi. In many instances RHUDO files contain more recent information on social conditions in given areas of a country.
3. In regard to USAIDs in the subregion, a review should be made of the numbers of female African nationals employed, and their job advancement training opportunities compared with African male co-workers.
4. Improvement of coordination with the USDA's International Training Programs in Agriculture staff to develop more balanced across the board focus on discrete problems of female smallholders

and rural-based female-headed households. This type of sensitization is not effective if it is more explicitly discussed in the women's program but not in those programs where men predominate.

N.B. THE FOLLOWING IS MERELY ILLUSTRATIVE OF INFORMAL DATA COMPILATION

University of Zimbabwe (Rhodesia) [1977 - to be updated]  
Centre for Applied Social Sciences  
P. O. B. M.P. 167  
Mount Pleasant, Salisbury  
Zimbabwe

(The Centre is a problem-oriented research unit which focuses especially on issues related to national development, e.g., a fairly recent manpower inventory survey. The WID Research Unit was formally established in 1978 with Carnegie Corporation funding. Most recent study was on urban women.)

\*\* Names supplied 1977, by Joan May and Farisai Chiraura

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P. O. Harare

Graduate (UK) and secondary school teacher. Rhodesian representative at Geneva conference on the Status of women. Especially concerned with status of African women. Much committee work.

Mrs. Dorcas Madzivra  
c/o Harare Hospital  
Box ST14  
Southerton

Physiotherapist at hospital. Trained in U.S. Young, rather reserved but definite in her ideas. Chairman of the African Women's Association, and active member of African Paraplegics and other committees.

Mrs. Mavis Moyo  
c/o R.S.C.  
Box 9048  
Harare

Television personality and radio announcer. Particularly concerned about problems of unemployed school leavers.

Mrs. Muchatuta  
c/o Epworth Mission

Primary school teacher. Active in Rhodesian Teachers Association. Is prepared to speak out and hold her own "even in mixed—male and female—congresses." (May and Chiraura)."

QWELO

Miss Mary Nongouza  
Qwelo Teachers' College  
P. Bag 9055

Lecturer at College. Served on National Executive of the YWCA for many years. Highly respected and active worker for women's rights.

Mrs. Agnes Dhlula  
St. Patrick's Mission  
P. Bag 9030

Educated at Adams College. Wife of principal of St. Patrick's Mission. National President of the YWCA for six years.

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BULAWAYO

Mrs. G. Lupepe  
Municipality Housing and Community Services Dept.  
Box 2034

M.A. degree in Australia, where she served as warden of a women's hostel.  
Has taught, now a social workers.

FORT VICTORIA

Mrs. B. K'tero  
c/o Roger Howmann Hall  
Box 595

Trained as social worker in West Germany. Community development (women's section) officer. Commissioner of guides.

UMTALI

Mrs. S. Dangarembwa

Graduate teacher. One of first women graduates from Fort Hare.  
Master's degree from overseas. Very active in women's organizations.

Such informal data compilation includes descriptive data on individuals, male and female suggested by national, international organizations, government officials, ect. National university staff are also able to compile listings of documents written by the individuals in question. This is especially important in the Southern African states, Sudan, and Somalia, where community development specialists, those who have worked in former tribal trust land areas, and those with close links to church-affiliated organizations may not be easily accessible to AID design team members working within a fixed time frame.

## ANNOTATED AND SELECTED BIBLIOGRAPHY

(Readers should direct their requests for available information on WID activities to WID/PPC. The following listings are meant to give an idea of the types of documents easily available to field personnel. The social analysis section of most project papers also provides some information regarding the females in a socio-economic community.)

APTHORPE, Rayjond. Rural Cooperatives and Planned Change in Africa--An Analytical Overview, Volume V. Available from the UN Research Institute for Social Development, Geneva.

Cooperative achievements and failures with accounts of the historical background and of the various ideologies determining African cooperative objectives and targets (including economic gains such as improved productivity and marketing, but also social aspects including more equitable income distribution).

DERRYCK, Vivian Lowery. The Comparative Functionality of Formal and Non-Formal Education for Women. Available from WID/PPC.

Paper examines options for WID efforts in formal and non-formal education (NFE). Well documented, the study points out that formal education, instead of serving as a social and economic equalizer in LDCs, presently widens the gaps between income groups, the literate and illiterate, university graduates and the unschooled. NFE programs, "like formal ones, generally suffer from a lack of equal access for women, and tend to track women into 'female-appropriate' programs. For example, ECA data show that in the agricultural sector (where they perform up to 80% of the labor) women had access to only 15% of the NFE education slots, while in home economics (and performing 70-100% of the labor) they had access to 100% of the seats.

Derryck's conclusions are 1) that there should be greater complementarity between formal and non-formal programs; 2) at various stages of life women have different learning needs, based on different environments, and specific responsibilities associated with different ages. This fact is often overlooked in program planning; 3) status and power accrue to those who are formally educated, thus, girls should be encouraged to enroll in formal programs; 4) NFE is a logical alternative to reach and effectively serve LDC women.

ELMENDORF, Mary. Women, Water and Waste: Beyond Access. Available from draft the Equity Policy Center, 1502 18th Street, NW, Washington, DC 20036.

Presents the case for assessing the social impact of interventions in water supply and the effects of sanitation on women and children, whose health is disproportionately affected by negative conditions. Though a draft, the paper makes some solid recommendations: 1) the relationship of water availability to latrines should be studied with a view toward redesigning facilities to break the

fecal-oral reinfection cycle; 2) behavioral mapping as well as participant observation of variations among villages and sexes in the same country are required in order to design culturally acceptable solutions to problems caused by unhygienic practices; more attention must be "given to matters of pride and esthetics" with respect to the introduction of excreta disposal facilities. For example, she notes that in Tanzania it is felt that the excreta of fathers and daughters should not be mixed. In other world regions privacy and convenience more than decrease in disease has assured adoption.

GULICK, John and Margaret E. An Annotated Bibliography of Sources 1974 Concerned with Women in the Modern Muslim Middle East. Princeton Near East Paper, Number 17. New Jersey. 26 pp.

Emphasizes works easily accessible to average U.S. university students on contemporary situations.

MUELLER, Martha. "Migrants and Women Who Wait: Women and Men, Power 1977 Powerlessness in Lesotho," in SIGNS—Journal of Women in Culture and Society, Volume 3, No. 1, pp. 154-166. SIGNS is available from the University of Chicago Press, 5801 Ellis Avenue, Chicago, IL 60637. Individuals \$20.00 for one year.

Article discussed male and female Basotho social relations in the context of Lesotho's pervasive economic dependence upon the Republic of South Africa.

O'BAHR, Jean. Third World Women: Factors in Their Changing Status. 1976 Occasional Paper Number 2. 94 pp. + selected bibliographies on women. Available from Center for International Studies, Duke University, 2101 Campus Drive, Durham, NC 27706. \$3.50.

Paper outlines most important factors shaping women's roles in non-Western societies of most direct interest to individuals teaching courses (in economics, politics, history, anthropology, and sociology) dealing with developing countries.

PAOLUCCI, Beatrice et al. Women, Families and Non-formal Learning Programs. 1976 100 pp. + bibliography. Supplementary Paper Number 6, Program of Studies in Non-formal Education. Michigan State University, East Lansing, MI 48824.

Paper reports a study examining roles of women and families in social and economic development as a means of identifying learning needs and developing appropriate non-formal learning programs. The usual approach to non-formal education (NFE) research related to women and families centers on agencies and their delivery systems (e.g., in areas of health, literacy, family planning, nutrition).

The report presents a family ecological framework for identifying "competencies needed by families to facilitate their social and economic functioning. It attempts to provide basis for needs

and resources assessment for supportive NFE programs at community and national levels. Summaries include women's status and roles in social and economic development, some of the critical development-related socio-economic functions of the family, its education role, and contributions to human resource development. 'Family' in this paper represents a generalized social group from single-parent to extended kinships.

PILLSBURY, M.D., Barbara L. K. "Reaching the Rural Poor: Indigenous Health Practitioners are There Already." AID Program Evaluation Discussion Paper No. 1. Available from The Studies Division, Office of Evaluation, Bureau for Program and Policy Coordination.

ROSS, Harold and Jan Bouwmeesters. Management in the Developing Countries A Field Survey. Available from the UN Research Institute for Social Development, Geneva.

Surveys problems of management development along with policy recommendations. Major problems in Africa include failure of delegation of authority, insufficient information flows, lack of enterprise achievement orientation and greater participation. Distinction between economic and social objectives is paramount in judging program success or failure. While quick economic benefits may be feasible for certain groups under certain conditions, and necessary to attract new members and retain old ones, social benefits are generally on a different time dimension and more difficult to achieve.

Major document weakness is that it fails to specifically discuss the problem of increasing participation rates among marginalized groups such as women professionals in developing countries.

PALMER, Ingrid. Food and the New Agricultural Technique. UN Research Institute for Social Development. Geneva.

Nutritional status of populations is perhaps one of the most fitting of measurements of development, particularly in LLDCs; and an agricultural policy which leaves a large part of the population in a subnormal condition of health and vitality cannot be pronounced a success as regards either the ends or the means of development.

"Market forces' are not a feasible means of preventing hunger when consumer families have neither the resources nor the information about the nutritional value of available foods. Thus, for example, the enhanced profitability of high yielding varieties of rice and wheat may have led to abandonment of pulse production in certain areas, and so have impoverished rather than improved diets."

TENDLER, Judith. "Rural Electrification: Linkages and Justifications." 1979 AID Program Evaluation Discussion Paper. Available from the Office of Evaluation/PPC.

Impact studies of rural electrification (RE) have focused mainly on household use, as opposed to its industrial, commercial and public uses. (even when the relevant projects had a production-consumption focus). Promoting local supply of RE projects requires

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an overhaul of the specifications for RE projects similar to what is underway for road construction specifications as part of the effort to introduce labor-intensive methods of construction.

Extremely useful, this paper makes the recommendation that AID direct greater attention to evaluating the non-household potential of its rural electrification projects, "not to provide them with a better justification, but so as to learn how to design them in a way that assures that ... potential is realized...." Possible approaches would include in RE projects: a) credit and/or technical assistance for rural light industry, or other features that increase the probability of RE resulting in the establishment or expansion of employment-creating uses.

Additionally, AID could try increasing the probability that rural-targeted electricity-based municipal services benefiting the poor be introduced with electrification projects (e.g., a health-clinic component as part of a RE project, or special consideration for hookups and rates to municipalities organizing such efforts on their own.

Finally, AID could: 1) identify technical alternatives to RE as traditionally viewed and their differing development impacts; and 2) ascertain whether non-adopters of RE cannot afford the capital costs of electrification -- or the operating costs. If the latter, then financing other approaches for extending benefits of electrification to the rural poor has greater potential. Where RE actually reaches the truly poor households, "usage is virtually limited to lighting." at present.

Also useful would be a focus on facilitating local procurement of equipment/materials for RE projects, and for all AID-financed infrastructure projects in light of the fact that many local supply operations are labor-intensive.

UNITED NATIONS WORLD CONFERENCE ON THE DECADE FOR WOMEN. Review and  
1979 Evaluation of Progress Achieved in Health. Available from UN  
Headquarters, One UN Plaza, New York, NY 10017. Request  
documents A/CONF. 94/9. Series runs through 94/1-12.

One of a series of documents assessing extent of progress (in all world regions) on the parts of national governments and international bodies in improving women's access to preventive health care. Other documents in series assess improvements in education, income generation, agriculture and food crops, etc.

WORLD HEALTH ORGANIZATION. "The Epidemiology of Infertility." Technical  
1975 Report Series No. 582. Geneva.

Discusses increasingly serious problem of infertility pockets in Sub-Saharan Africa, where in some areas up to 40% of the women reportedly have completed their reproductive years without bearing a child.

ZEIDENSTEIN, Sondra, editor. "Learning About Rural Women." Studies in Family Planning, Volume 10, Number 11/12. Available from Publications and Information Office, The Population Council, One Dag Hammarskjold Plaza, New York City, 10017.

Special issue focuses on ways in which roles and status of rural women in different societies can be better understood as individuals performing vital roles. Approaches for learning about rural women described herein include standard sociological and demographic methodologies as well as anthropological techniques. Aim is to help improve program design and management of family planning as well as other development efforts. Authors include Achola Pala Okeyo on women in the household economy, Brenda McSweeney on rural time use data collection and analysis, as well as other articles on methodological issues such as measurement of rural women's work and class position.

BROOKHAVEN NATIONAL LABORATORY DEVELOPING COUNTRIES ENERGY PROGRAM.  
1979 Energy Needs, Uses and Resources in Developing Countries. 145 pp. Available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161. \$9.00.

Identifies energy needs, uses, and resources in developing countries and examines energy options available to them for continued social and economic growth. Points out that most LDCs have not "adequately explored and developed their own indigenous resources; in virtually all energy conversion and utilization processes there are opportunities for improvements in efficiency and substitution of renewable energy forms." Also notes that in the absence of major actions to replace noncommercial fuels or to increase their effective utilization, a large proportion of the 3-4 billion LDC rural populations in the year 2000 will not be able to raise their energy usage above subsistence levels.

Of special importance because of women's roles and responsibilities in East and Southern Africa are the chapters on: noncommercial energy supplies; energy for basic human needs; energy system solutions; stabilization of the rural and handicraft sector; and an 'alternative' development strategy.

BROOKHAVEN NATIONAL LABORATORY DEVELOPING COUNTRIES ENERGY PROGRAM.  
1979 Programmatic Areas for U.S. Assistance for Energy in the Developing Countries. As above. Price \$7.25.

Report identifies 28 programmatic areas for assistance activities. 22 areas cover development of conventional and renewable energy resources and technologies; 6 assessment and planning, energy institutions, and training and education.

With reference to women's needs for improved services planners should note the sections on storage of energy, improved cooking devices, motive power for agriculture, rural transportation, soil and water management and irrigation, food loss prevention, village extension training, and identification and assessment of conventional resources.

KAUFMAN, Herbert. Administrative Feedback--Monitoring Subordinates' Behavior.  
1975 Available from The Brookings Institution, 1775 Massachusetts  
Avenue, NW, Washington, DC 20036. \$2.50.

Administrative feedback is not often studied empirically. It covers all the processes by which bureau leaders are apprised of subordinate behavior down to the lowest organizational level. Administrative feedback is different from 'substantive feedback' which is the flow of information advising headquarters how close the activities of the organizations come to the substantive targets set by the leaders. Through 'substantive feedback' it is often possible for an organization to miss its targets badly "for the very reason that subordinates faithfully comply with erroneous directives issued by their leaders."

Chapters of chief interest in relation to mission compliance with WID directives are: a) The Character of Feedback about Compliance; The Bounds of Receptivity: Screened-, Browned-, and Discredited Signals; The Probabilities of Undetected Noncompliance; and Survey Research on Subordinate Behavior.

de PLEMPONT, I. Small Enterprises in Africa: Their New Role in Industriali-  
1979 zation. Available from International Labour Organization Regional  
Regional Office for Africa, P. O. Box 2788, Addis Ababa, Ethiopia.

The ILO Regional Adviser for Development of Small Enterprises outlines the changing perceptions of the role of small enterprises in Africa. Issues for discussion include encouragement of extension service systems; new methods for management training; problems of measuring impact of direct assistance to small enterprises; centralized assistance versus the grass-roots approach experiences in The Gambia and Tanzania (which have been successful); relations between management training projects and other projects (various institutions generally start work with this sector, overlapping in the process); and how to avoid duplication of institutional efforts.

MURDOCK, Muneera Salem. Impact of Agricultural Development on a Pastoral  
1979 Society: The Shukrvia of the Eastern Sudan. Available from  
AID Sudan Desk Officer.

This is a preliminary analysis of the impact on rural populations of a large capital-intensive irrigated agricultural scheme. Murdock is the first to explore its effects on pastoral herdsmen, whose access to pasture and water is severely attenuated by expansion of hydraulic cultivation. Regarding women, scheme assessments are shown to have almost never factored in costs and benefits. Benefits have been unequally distributed, both between major ethnic units involved, and within these units.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION. Report: Preparatory  
1979 Meeting on the Role of Women in Industrialization in Developing  
Countries. Available from UNIDO, P. O. Box 707, A-1011 Vienna, Austria.

Highlights findings of the 6-10 November 1978 Meeting, which was called to discuss women's roles in LDCs with reference to the Lima Declaration and Plan of Action.

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SCOTT, Gloria L. World Bank Projects and Women. Available from World Bank, 1979 1818 H Street, NW, Washington, DC 20036. 18 pp.

Report describes some economic and social factors affecting women's participation in development, with illustrations of some Bank approaches to improve opportunities for women. Caveats are that many of the projects are recent and thus cannot be assessed. Also, citing the examples should not lead reader to assume all Bank projects effectively take account of women. Purpose of the report is to stimulate discussion of how Bank activities can be made more effective regarding women and development activities.

PROTEIN-CALORIE ADVISORY GROUP (PAG) of the UN. Women in Food Production, Food Handling and Nutrition, with Special Emphasis on Africa. 1977 Available from UN Research Institute for Social Development, Palais des Nations, CH 1211, Geneva, Switzerland.

The Study was initiated in 1975 and concluded in June, 1977 and provided data from nutrition, sociology, history, social anthropology, and UN research and policy documents. A major conclusion of the Group was that funds should be made available to study the feasibility of collective local food processing along with a research element in nutrition education programs (to identify what is being conveyed and whether it is compatible with local resources and opportunities for implementation).

SPRING, Anita and Art Hansen. "Women's Agricultural Work in Rural Zambia: Gtom Bslusyion yo Dumotfinsyion." University of Florida. Paper available from African Studies Association, 218 Shiffman Center, Brandeis University, Waltham, MA 02154.

Paper sets out general hypotheses and conclusions drawn from literature on what happens economically to rural African women during the process of agricultural development. Body of paper is devoted to examination of changes that have occurred since the 1950's in the agricultural and economic systems of the Luvale-speaking peoples of Zambezi District in northwestern Zambia. Conclusions from this particular case are then compared with the general ones. The caveat is that the issue of whether either or both sexes have improved their living standards relative to earlier rural conditions is mentioned only briefly.

BUVINIC, Mayra, Jennifer Drndysf and Sondara Zeidenstein. Credit for Rural Women: Some Facts and Lessons. Available from the International Center for Research on Women, 2000 P Street, NW, Washington, DC 20036. 1979

One of the few recent studies which also presents guidelines for improving rural women's access to credit. Six priority questions for research are identified as well.

UN INDUSTRIAL DEVELOPMENT ORGANIZATION, Manual on the Use of Consultants in Developing Countries. Available from UN Sales Section, 866 UN Plaza, New York, NY 10017. Price \$3.00. 1972

Covers all aspects of utilizing LDC nationals as professional consultants, steps to be taken in selection, contracting procedures, cost factors involved, review of different systems developed for remuneration with illustrative material on fee scales, etc. Of special

interest is the section on development of local consultant capabilities in LDCs. Special attention is focused on questions relating to training and remuneration, the importance of creating a proper professional environment, types of assistance which should be considered in the establishment of local consulting activities, etc.

Functional classifications which are reviewed are: integrated consulting services; technological services; economic services; management services; and training programs.

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