Rural Women Participation in the Irrigated Agricultural Development

A comparative Case Study of Rural Women Farmers in the Gezira Scheme and Shendi/Matammah Localities Irrigated Agricultural Sector

By

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Dedication

To my father,
To my mother,
Brothers, sisters,
and to my wife and kids.
To all my friends with deep love and respect.
Acknowledgement

I acknowledge, with deep gratitude, the support which I received from my supervisor professor Ali Mohayad Bannaga who provided me with guidance and encouragement throughout this research.

My thanks and gratitude are extended to my colleagues and friends in the University of Khartoum and Shendi University.

Thanks and respects are also extended to my friends Dr. Moeiz Molah and Ustaz Shazali Digna for their encouragement and sincere help during the completion of this study.

I also wish to thank Dr. Hussain Yousif, Dr. Ibrahim Bagadi Ustaz Shehab Elbager, ustaz Mahgoub Ishag, Ustaz Mohmed Hamad, Ustaz Awad Elkariem Bakheit, Ustaza Laylla, Ustaz Faiez Ieisa, Ustaza Asia Hafyan, Ustaza
Malak Salih Lor their encouragement and support. Also thanks to Ustaz Mohamed Hassan for his typing and preparation of the thesis in final formatting.

Finally my thanks and respects to all my colleagues and friends whom I did not find an opportunity to write their names, especially those who have helped and encouraged from behind the curtain.
Abstract

This study is designed to assess the rural women participation in irrigated agricultural development. A comparative case study between women farmers in the Gezira Scheme and women farmers in Shendi/Matammah irrigated area in agricultural participation.

The sample of respondents was selected from 10 villages in the two areas of study (The Gezira & Shendi area).

Quota sampling procedure was employed for selection of 200 women in the two areas, 100 women from each area.

The primary data were collected by use of structured interview schedules. The secondary data were obtained from the previous studies (research, papers), and official reports and documents of the Sudan Gazira Board (SGB), Shandi/Matammah localities and other relevant sources.

A number of analytical techniques for data presentation and testing of the hypotheses of the study were employed, descriptive statistical analysis including (tables, frequencies and percentages), differences of means, analysis of variance, chi-square and t-test of statistical significance.

The result showed no significant differences between the respondents of the Gezira area and respondents from Shendi/Matammah area in terms of age, education level, marital status, family size, participating in work other than agriculture, attending training courses, courses duration and knowledge of agricultural research.

Also the use of chi-square and t-test analysis revealed that there are a high significant differences between women farmers from the Gezira and
women farmers from Shendi|Matammah area in terms of agricultural participation, daily working hours, interest to participate in agricultural activities, daily home activities, contact with extension, use of fertilizers, farm productivity and the main agricultural problems facing by respondents.

Moreover, the results revealed that women farmers in the Gezira area were more aware of agricultural practices, and had more contact with extension and research. In addition they were more interested in practicing agricultural activities, beside participating in other activities other than agriculture compared to women farmers in Shendi/Matammah area.

The study suggested a set of recommendations that focused on ways of improving rural women participation in agricultural development as a whole, together with availing services for agricultural production (fertilizers, seeds, pesticides, etc..) and increasing access for social services for women in the two areas of study such as (educational services, health services, drinking water etc…).
ملخص الدراسة

أجريت هذه الدراسة لتقييم مشاركة المرأة الفريدة في التنمية الزراعية في المناطق المروية. شملت دراسة حلقة مقارنة لمناطق مشروع الجزيرة و المنطقة المروية في محليتي شندٌي والمتمة.

اختيرت عينة الدراسة من عشرة قرى، خمس قرى لكل منطقة، واستخدمت طريقة الكوتش

لاختيار 200 أمرأة يمثلن عينة الدراسة.

المعلومات الأولية جمعت عن طريق المقابلة الشخصية باستخدام استبانة معدة لذلك الغرض، والمعلومات الثانوية تم الحصول عليها من الدراسات السابقة (البحوث والأوراق)، وكذلك من إدارة مشروع الجزيرة ومحليتي شندٌي والمتمة اضافة إلى المصادر ذات الصلة، وكذلك تم استخدام الملاحظة.

وتم استخدام عدد من الطرق الإحصائية لتحليل المعلومات واختيار فروض الدراسة من بينها الجداول والتركزات، إحصاء فرق المتوسطات، مربع كاي، تحقيق التباني واختبار T-test

اختيار المعنى الإحصائي للفروق بين عينات الدراسة ومنطقتي الدراسة.

النتائج التي تم الحصول عليها من اختبار T وت اختبار مربع كاي أوضح أنها وجدت فروق ذات دلالة غير معقولة بين المبحوثين بمناطق الدراسة من حيث الفن العمري، مستوى التعليم، حجم الأسرة للمبحوث، المشاركة في النشاطات غير الزراعية، حضور الدورات التدريبية، وكذلك معرفتهم بالبحث الزراعية.

وذلك نتج عن اختبار T واختبار مربع كاي أن هناك فروق ذات دلالة معقولة عالية بين المبحوثين بمناطق الدراسة من حيث المشاركة في العمل الزراعي، ساعات العمل اليومية في الزراعة، المشاركة في العمل الزراعي لغير المزارعين من المبحوثين، الأعمال اليومية (غير مدفعة الأجر للمرأة)، مدى الاتصال بالارشاد الزراعي، مستوى استعمال الأسمدة في الزراعة، وأهم المشاكل المزرعية التي تقابل المبحوثين.

ومن النتائج التي توصلت إليها الدراسة أن النساء المزارعات بالجزيرة أكثر خبرة في أداء العمليات الزراعية، كذلك أكبر صلة بالارشاد الزراعي والبحث الزراعي، اضافة الي رغبتين في ممارسة العمل الزراعي، وكذلك ممارستهن للاعمال غير مدفعة الأجر مقارنة بنظيراتهن بمنطقة شندٌي/المتمة.

واستلمت الدراسة تأسيسا على نتائج البحث على عدة توصيات من شأنها أن تسهم في تحسين مشاركة المرأة في التنمية الزراعية بصورة عامة، بجانب توفير الخدمات الزراعية للنساء.
وأهمها المدخلات (أسماحة، نقاوي ومبيدات) إضافة لتوفر الخدمات العامة للمرأة الريفية حتى لخفض من الأعباء المنوط قيام بها، كخدمات التعليم، الصحة وتوفر مياه الشرب.
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**Acronyms**

DAWN        Development Alternatives with Women for a New Era
FAO       Food and Agricultural Organization of the United Nations
GDP            Gross Domestic Product
ILO             International Labour Organization
MCH           Maternal and Child Health Care
WCW          Word Conference on Women
WPAAWD  World Plan of Action for the Advancement of Women in Development
NGO            Non-Governmental Organization
OECD        Organization for Economic Co-operation and Development
SAP            Structural Adjustment Programme
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNHCR</td>
<td>United Nations High Commissioner for Refugees</td>
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<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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<td>SGB</td>
<td>Sudan Gezira Board</td>
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<td>RIS</td>
<td>Rahad Irrigated Scheme</td>
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<td>AID</td>
<td>Agency for International Development</td>
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<td>SDA</td>
<td>Sex Discrimination Act</td>
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<td>EPA</td>
<td>Equal Pay Act</td>
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<tr>
<td>IWY</td>
<td>International Women’s Year</td>
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<td>UNDW</td>
<td>United Nations Decade for Women</td>
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<tr>
<td>MDC</td>
<td>Mid-Decade Conference</td>
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<tr>
<td>HRC</td>
<td>Human Rights Conference</td>
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<tr>
<td>DEC</td>
<td>Development &amp; Environment Conference</td>
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<td>PDC</td>
<td>Population and Development Conference</td>
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<td>WID</td>
<td>Women In Development</td>
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<td>AOAD</td>
<td>Arab Organization for Agricultural Development</td>
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<td>IRDP</td>
<td>Integrated Rural Development Programmes</td>
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<td>BNP</td>
<td>Basic Needs Programmes</td>
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<td>RDA</td>
<td>Rural Development Approaches</td>
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<td>IA</td>
<td>Improvement Approach</td>
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<td>PA</td>
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<td>ECA</td>
<td>Economic Commission for Africa</td>
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<td>EHRA</td>
<td>Equity and Human Rights Approach</td>
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<td>WPA</td>
<td>World Plan of Action</td>
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<td>EA</td>
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APA Anti-Poverty Approach

UNAPCWD United Nations And Pacific Centre for Women and Development

ADSs Area Development Schemes

WCED World Commission on Environment and Development
Chapter One
The Introduction

1-1 Background:-

Women contribute about one third of the total number of hours worked throughout the world. The majority of this work is done by rural women in the agricultural sector (Rod Rowsky, 1980).

Women receive one-tenth of the total world income and own less than one percent of world property. In spite of this fact women represent (50%) or half the population of the world (Farah, 1987).

Most of the female labour input in the agricultural sector is involved in the production of food. Most of the produce is for domestic consumption. In the developing world women’s production of food is in the range of (50-90%) .

The majority of women’s production is outside the established cash economy. A growing number of women provide the main means and support for their families; about one-third of the rural household in the developing world are de-facto served by women. However the facts regarding low income women are generally as follows: they are in most cases illiterate, care for large families, have less access to means of production e.g land, water, capital, technology, credit and extension. Poor women either completely lack or receive less benefit from their labour. This is reflected in their poor resource bases and consequently their poor position in the decision-making process (ibid).

Women’s agricultural labour in most developing countries has probably been consistently under-counted and undervalued (Ahmed, 1976). An economist in Pakistan (Ahmed) remarked that men acknowledge the women’s contribution (in their heart of hearts) but not in
the sense that world permit female participation in institutions or
decision-making. In Bangladesh

“a farmer is valued on the basis of the rice he grows, but his wife’s
part in processing it is not considered as economic activity. Nor is her
role in poultry raising, growing vegetables, fruits, making household
clay utensils, mats fans, and preservation of seeds, pickles, dry fish,
dehydrated rice, etc … is never taken into account” (Ibid)

1-2 Problem Statement:

Women’s role in agricultural production in the third world is
substantial. In the rural areas of the developing world, female labour is
the most important factor of production that had been under-estimated.
Almost 87% of the female labour force are working in the agricultural
sector and most of the food produced for domestic consumptions is
produced by women. In Sudan women represent 49% of farmers in the
irrigated sector and 57% in the rain-fed traditional sector (FAO,
1994).

Women in the rain-fed traditional sector are primarily subsistence
farmers but they also work as seasonal wage labourers in the rain-fed
mechanized sector. In the irrigated sector, women play bigger roles
according to the studies of the (Arab Organization for Agricultural
Development, 1987) which stated that women spent about 41% of
their daily working hours in farming activities. Women contribution to
the agricultural labour in the irrigated sector in Sudan takes four
forms:

1. Family labour (unpaid) where women work on their husband’s or
father’s farm.
2. Women farmers, these represent 12% in the Gezira scheme and
10% in the Rahad scheme.
3. Permanent migrant labour, where the women are hired to do seasonal operations.

4. Seasonal migrant labour, who works in cotton picking where the women represent 80% of this labour force.

Women play also an important role in the field of animal production & animal rearing inside the house (Arab Organization for Agricultural Development, 1997).

Rural women in the Gezira play an important role in agricultural production. They work beside men in most of the agricultural operations that follow land preparation.

However, the main operation in which women contribute significantly to farm labour, is cotton picking (Gussm Elseed, 1983).

This study is intended to investigate women’s participation in irrigated agricultural development. Although women play a sizeable role in agricultural activities in the modern irrigated agricultural sector, this role is not acknowledged.

As a result, women contribution have to be recognized by considering them as a special target group that have the ability and potential to improve the general prosperity and quality of life of the rural family.

1-3 Objectives of the Study:

The general purpose of this study is to assess women contribution to the irrigated agricultural work in the Gezira Scheme and Shendi/Matammah area and their off-farm work and the constraints that affect their participation in agricultural development.

Within this context the study will attempt to achieve the following specific objectives:
1- To delineate the different activities performed by rural women in the studied areas including:
   a- participation in agricultural activities.
   b- domestic participation within the household.
   c- income-generating activities.
   d- livestock activities.
2- To determine and compare the main factors and constraints that influence women’s participation in the agricultural work in the Gezira Scheme and Shendi/Matammah area.
3- To describe the existing social services provided to women in the studied areas by governmental and non-governmental organizations.
4- To investigate women access in the two areas to:
   a- Technology
   b- Land ownership.
   c- Extension work and training.
   d- Cooperatives and credit.
5- To identify women’s technology needs in the light of the tasks performed.
6- To develop some policy recommendations for policy makers, institutions and relevant bodies on women need for technology and possibilities through which women’s can gain access to farm basic technologies to improve the rural household situation.

**1-4 Hypotheses of the Study:**
1- Women’s decision making is not related to their participation in the house or outside the house.

2- There are many rural development programs provided by governmental and non-governmental organizations, but women have no interest to engage in any of those programs.

3- No female extension workers to reach the women clients, and no consideration for women in governmental agrarian programs and plans.

4- Women’s economic incentives are not related to their labour input and many social constraints are facing recruitment of women worker.

5- Women in the Gezira and Shendi/Matammah are not engaged in work from dawn till dusk.

1-5 Research Methodology and Methods of Data Collection and Analysis:

The research used the case study as a method for research. A questionnaire and interviews of respondents, officials, elites of the society who were selected by quota sampling were used in a systematic selection procedure. In addition to that previous studies (research, papers), observations are used. A descriptive analysis is also used to compare means and percentages using tables and frequencies, difference of means, analysis of variance, chi-square and T-test analysis are also used to identify the significant differences between the variables if any.
1-6 Research Population:

The population of this study is the rural women who are resident in the Gezira and Shendi/Matammha localities, areas whose work is in irrigated agriculture or in the livestock raising in addition to being housewives (settled and nomads) in the areas of the study.

1-7 The Area of the Study:

The first area selected for the study is the Gezira scheme which lies between the White and Blue Niles, extending from Sinar Dam in the southern boundaries of the State to the end of the main irrigation canal at the northern part of the Gezira State, and from the bank of the Blue Nile at the east to the boundaries of the Gezira scheme at the western side adjacent to the eastern borders of the White Nile State. The second area, is the main Nile banks and islands constituting the agricultural irrigated and flooded lands of Shendi/Matammah localities.

1-8 Organization of the theses:

The theses is composed of six chapters; each chapter is devoted for specific section of the study as follows:

1. Chapter one is an introductory chapter and it includes (the background, problem statement, objectives of the study, hypotheses of the study, the research methodology, research population, area of the study and organization of the theses).
2. Chapter two is devoted for the literature review.
3. Chapter three is devoted for literature review also(about rural development) consists of:
   (a) Development approaches and concepts.
(b) Approaches for integrating women in development.

4. Chapter four carries the methodology and description of the area of study:
   (a) Methodology of the study.
   (b) Geographical site demography and social services of the Gezira Scheme.
   (c) Shendi/Matammah area.

5. Chapter five devoted for results, discussion and analysis.

6. Chapter six includes the summary of the thesis chapters, conclusion of the study and recommendations.
Chapter two
Literature Review

(Part 1)

A- The Agricultural Sector

2-1-1 The Agricultural Sector in the Sudan:-

Agriculture is the dominant sector in the Sudanese economy and is likely to remain so for a long time. At present, it contributes about thirty percent (30%) to the Gross Domestic Product (G.D.P) at factor cost and contributes over 45% of export earnings. It generates over 50% of government revenues directly, and it provides income and employment for the majority of the population. Not only does agriculture contribute to food production, raw materials for local industries, foreign exchange earnings and employment, but a large proportion of value is added from the non – agricultural sectors like processing, transportation….etc (Bank of Sudan, 1997).

Irrigated agriculture which is largely run by the public sector receives maximum attention from the policy makers and contributes about half of the agricultural out-put. Blessed with the Nile water, ample good land and sunshine, the country now has about 4 million feddans under irrigation, of which about 2.3 million feddans are cropped annually. About 2.1 millions feddans are managed by the Sudan Gezira Board (S.G.B) making it one of the largest single enterprise in the whole of Africa. Some 400.000 feddans are irrigated by gravity in Khashm Elgirba Scheme and 300.000 feddans in the Rahad Irrigated Scheme (R.I.S) (Ibid).

As emphasized by Simpson and Simpson (1990) the agricultural sector holds the key role to growth and welfare in the Sudan because of the vast land resources, variable climatic
conditions and water resources from the River Nile and its tributaries.

Agriculture accounts for about 30% of Gross Domestic Product, 61.7% of the exports, and provides livelihood for over 80% of the total population. Agriculture contributes appreciably to food production and hence to national food sufficiency (Ministry of Finance, 1997; Bank of Sudan, 1997).

In central Sudan, irrigated agriculture depends on water drawn from the Blue Nile and White Nile, and from the main Nile after their confluence in Khartoum. Irrigated agriculture tends to be organized in relatively large schemes, each with its own irrigated region and crop rotation (Simpson and Simpson, 1990).

2-1-2 Agricultural Extension in Sudan:-

Sudan is a developing country and as in the case of most developing countries it depends on agriculture for its development. Education, research and extension in agriculture are expected to gear and accelerate efficiency in agricultural production for the well being of the population. Agriculture is expected to provide subsistence for the population plus a surplus for export to draw revenue needed for further development. Agricultural extension in Sudan is one of the agencies called upon by the government and people to promote production of food, cash crops and to help in improving the standard of living of rural people (Matoug, 1981). A strong extension organization is considered pivotal to the development of Sudan’s agriculture, because over 70% of the population of the country work in agriculture of whom 75% or more are engaged in traditional agriculture.

Agricultural extension services are provided by a variety of governmental departments and corporations. Agricultural extension administration of the Ministry of Agriculture and Forestry is the main
governmental body responsible for providing a widely diffused extension service. Other corporations offering extension are Sudan Gezira Board, the Mechanized Farming Corporation, Rahad Agricultural Corporation, and New Halfa Corporation and White Nile Pumps Scheme. There are 456 extension staff members in Sudan according to the official statistics, whose services cover most of the states. The extension ratio to farmers is one to 1000 farmers in intensive production areas, while the ratio is one to 5000 farmers in Darfur and Kordofan. Still there are some areas uncovered by extension services, mostly in the Red Sea State and the places where the rainfed traditional agriculture is predominant, in addition to some places in Kordofan and Northern Darfur. (Federal Agricultural Extension Administration, 1994).

2-1-3 Historical Background of Agricultural Extension Services in Sudan:

Noah (undated) pointed out that prior to 1958 little had been done to ward introducing modern farming methods and improved hand tools to the bulk of farmers throughout the Sudan. Early in 1958 a program of US Economic and Technical Assistance to Sudan based on the Mutual Security Act was established. In October 1959, the Sudan government on the invitation of US government agreed that the agency of the US government known now as Agency for International Development (AID) send a mission to Sudan to help with the country’s many and varied agricultural problems. Early in 1958 a program of US economic and technical assistance to Sudan base on the mutual security act was
established. The extension program was among the early efforts of the mission where the department of agriculture was provided with technicians (Who worked in close collaboration with Sudanese counterparts) and educational facilities.

The first provisional extension unit was set up in the second half of 1959 and operation during those early stages was limited to district level (Abdel Rahman et al., 1972).

The extension services was not a national demand originally and was viewed for a long time as strange activity and was placed as a result at the bottom of the government agencies for a long time. The major consequence of such situation were: a) that the extension system remained as a lower priority, and b) an ineffective delivery system (Ahmed, 1994)

2-1-4 Agricultural Extension and Women Farmers:-

Associated with the failure of many programs to reach the majority of smallholders, is the tendency for agricultural extension services to focus their attention on male farmers. Women often contribute a major proportion of the family farm labour, usually in the production of food crops and to specific tasks such as weeding. In many traditional societies it is the custom for the women to provide the major support for themselves and their children, either by supplying the family with home-grown food or by obtaining cash through the sale of their own produce. Perhaps an even more important indication of the women’s role in agriculture is the fact that a large percentage of rural households is headed by women in the Third World.

Agricultural extension programs have frequently overlooked the importance of the roles of women, both as major contributors to the farm
labour supply and as significant family bread-winners. This oversight can be attributed most readily to a tendency among project planners and authorities to see African women in Western terms, i.e. essentially as domestic workers whose primary responsibility should be in the home and not in the fields. Thus the goal of extension services has frequently been not the increase in farm level productivity of women but rather finding ways to reduce their participation in agriculture through promotion of more homebound activities. Often such efforts have the opposite results. Some farming innovations may result in increasing the burden of labour on women. Further, if emphasis is on developing male-oriented cash crops, the income from which the men often monopolize, this can divert female from food production with subsequent effects on the welfare of the family. Alternatively, other innovations especially mechanization of agriculture, may eliminate female agricultural jobs and thereby also reduce female income. In all instances neglect of women’s role in agriculture may act as a drag on economic growth and contribute to imbalances in the distribution of the benefits of the growth that does occur.

Too often women extension programs have been exclusively oriented toward domestic science and home economics. Of course improving nutritional value in food preparation, fostering hygienic practices, introducing means to conserve labour in the home, and so forth are of significant social and economic value and should not be abandoned in most cases. However, there is a need to supplement beneficial home-related programs with efforts to preserve or to improve upon women’s more strictly economic functions (Ilele, 1975).

It is worth mentioning that gender relations and responsibilities are undergoing rapid change, typically with rural women becoming more responsible for household food security and children’s welfare. The
incidence of the female headed–household, which is in increase in most
developing countries is an indicator of this rapid change. According to
reports of World Bank (1992), FAO (1993) in sub-Saharan Africa,
women head an estimated 45% of rural households in Kenya, and 15
percent in Nigeria. Typically female-headed households are among the
poorest with the lowest level of food security.

It is now widely demonstrated that rural women as well as men
through-out the world, are engaged in agricultural production and
economic growth. Yet women’s substantial contribution continues to be
systematically marginalized and undervalued in conventional and
economic analysis and policies, while men’s contribution remains the
central and often the sole, focus of attention. Women are typically and
wrongly are still characterized as economically inactive in statistical
surveys of agriculture (Jiggins et al, 1997).

Even where women and men share the agricultural land women
bear the greater burden. Taking into account the respective contribution
of men and women working together as husband and wife teams women
are responsible for twice as many tasks as men (African farmers, 1990).

Agricultural extension services still do not attach much importance
to reaching women farmers or women on the farm. Policy makers and
administrator typically still assume that men are the farmers and women
play any supportive role as farmers wives (Samarta, 1994). It is
sometimes called the extension gap. Throughout Africa extension
workers almost all of whom are men, can be seen teaching new skills and
introducing new seeds to male farmers passing the women by various
reasons have given for this practice as cited by Saito (1990).

2-1-5 Extension programmes for rural women in Sudan :-

Since the intervention of agricultural extension in Sudan, it involved
the categories of the rural community (farmers, women and youth). The
first extension unit stated in Mareedi in (Southern Sudan), then the extension services focused on male farmers, rural women and youth. Unfortunately these three categories were not implied in the activities of other extension units in Sudan, i.e the extension services targeted only the male farmers. This is mainly attributed to the planners who allotted no money to the other two categories.

Hence the extension services are extend to include the women by (1973) by establishing the home economic unit at the headquarter of agricultural extension accordingly, some female graduate were recruited and trained in the field of women extension.

**The women extension services now include the following units :**
Khartoum, Kosti, Shendi, El Damer, Wad Madani, and El obeiud units.

The total staff working in these units is (18) extensionist. Nine of them are graduate, four are general agriculture diploma holders, and the other five hold Sudanese certificate.

In (1975) the Federal Ministry of Agriculture established a new home care administration. The main purpose of this administration is assisting both the central and regional extension agencies improving the performance of their food and agricultural programmes and promoting the efficiencies of extension services, with more emphasis on the field of children (breast-feeding ) and pregnant women (Ministry of Agriculture,1992).

In (1978) the home economic and food extension subdivision were joined together forming the division of rural women development.

**Some of the main objectives of the rural women development :-**
1- Formation of co-operatives, (especially in agriculture) and home garden, specifically to meet the basic needs in the villages.
2- Diffusion of nutritive awareness within the rural community members, with special emphasis on women.
3- Improving the living standard and welfare of the rural women, that is by means of developing rural industries and formation of local marketing cooperatives in the villages level.
4- Training of the women local leaders in the proposed training centers.
5- Training of the women extensionist engaged in the field of rural women basic needs, through organizing periodical training courses at the center of regional level (Ministry of Agriculture, 1992)

B- Women and Work

2-2-1 Women Work and Job Segregation:

It is now very evident that the majority of working women undertake different jobs from men. The movement of women into the labour force described here has not been evenly distributed and for the most part of women are concentrated in certain jobs and certain industries. In part this has reflected patterns of economic growth. Job growth has occurred in private services (for example, in finance distribution and retailing) and in public sector services (health, education and social services).

It is here that female employment is concentrated. But more than this, women are concentrated in industries and occupations which are predominantly female, with patterns of horizontal and vertical segregation which, Hakim (1979) has argued, has remained unchanged
over a span of more than eighty years. Horizontally, women are segregated in low status types of work which are commonly associated with women. Secretarial and clerical work accounts for over half of all women’s non-manual work, whilst manual services, especially cleaning and catering, and the (caring) professions, teaching, nursing and social work are the other main occupations of women. Hakim suggests that if horizontal segregation has diminished slightly since the introduction of the Sex Discrimination Act (1975), it is because of the movement of men into women’s work, rather than the other way round. Vertical segregation on the other hand is increasing (Hakim, 1979).

Where men and women are employed in similar occupations men are increasingly found in higher grades. Hakim concludes that women are more evenly represented in managerial/administrative grades in 1911 than now and that it is wrong to believe that the position of women in the labour force has improved over century - on the contrary it has deteriorated quite markedly in some respects. Segregation within single firms, rather than across sectors, is likely to be even more complete. It is more likely to have increased since the introduction of the Equal Pay Act (1975) as segregation has been a major employer strategy for evading Equal Pay. Given that there exist whole areas of work which, are exclusively male or exclusively female, it is hardly surprising that women’s and men’s perception of their work reflects this reality.

Martin and Roberts found that the majority of women regarded their work as women’s work (Martin and Roberts 1984).

2-2-2 Women, The New Workforce:-

One of the most far-reaching forces for social and economic change in the United kingdom over the last three decades has been women’s participation in paid employment. By 1986 over a million women were in employment, representing 44.5% of the total labour force.
This is now a very well documented long term trend which began in a period of economic growth from the late 1950’s onwards and have continued despite subsequent economic recession. Indeed in the period of deep recession in the U.K, 1979-1986, women’s representation in the workforce increased by 3% (from 41.4% to 44.4%) whilst, in the same period, men’s economic activity rates decreased by 3.1% (from 58.6% to 55.5% of the workforce).

Paid employment for women in the U.K became normal for women themselves, their families and their dependants. It makes plain women’s important economic contribution to family income. The male as sole family bread-winner, is a dying breed; only 18% of households in the U.K are now supported by a male wage earner. The most typical households pattern is that of joint income earners (with 1 in 7 women earning more than their partner) whilst an increasing proportion of women (1 in 4 households) are now the main family bread-winner. It has been estimated that one in three families would be living in poverty had it not been for the contribution of women’s earned income (Royal commission on the distribution of income and wealth, 1978).

2-2-2-1 Women Labourer:–

Women represent almost half of the society in any country. Their social status in all the developing countries is relatively lower than men, since they have less access to education, carry more work load, affected more by malnutrition, and adherence to old customs and traditions (Mahgoub, 1999).

Women in the developing countries usually divide their time between home and farm activity, using local tools in both. Although they carry out heavy duties and responsibilities, they do not get the recognition they deserve and the opportunities to improve and develop their skills by which they can change their status.
In African developing countries, two main types of rural communities can be identified. One in which wage labourers are few, and women are very active in agricultural work, and the other type where women take little part in agricultural work and the male cultivators employ more hired male labours. In some countries, where hired workers are men termed as male farming, have little female participation. In other countries a more intricate social and sex pattern exist where women work as casual labourers for male cultivators as traditional norms allow (Boserup, 1970).

Women’s economic activities are considered in any society as a significant factor for the improvement of family income. In general, illiterate rural women contribute more labour for agricultural production and animal husbandry than educated females who tend to take up non-farm employment as teachers, nurses, midwives...etc when available (Ministry of Finance, 1996).

Women’s contribution to agricultural production in the Sudan is very substantial based on statistical evidence. However, this contribution varied from one area to another depending on the variation in socio-cultural and economic factors (Ahamed, 1992).

Modernization is often a factor, which reduce women’s contribution in agriculture (Basher, 1987).

2-2-2-2 The Significance of Women Labour in Agriculture:-

In rural areas of the developing world, the most important factor of production that had been underestimated in most of the censuses, is the female contribution in agricultural production, although female population accounts for more than one third of the rural population (Khidir, 1981).

Also women contribute two thirds of all hours worked through-out the world. Much of these hours worked are done by rural women in the
agricultural sector. Almost 87% of the female labour force are working in the agriculture sector. Most of the food produced for domestic consumption is produced by women. They are involved in all production activities. Many of the women provide the main support for their families. About one third of the rural household in the world are de-facto served by women (Ceres, 1983).

2-2-3 The informal Sector:-

Informal sector is invariably known by different terms such as small scale production, casual work, hidden economy etc. As cited by Rahama, 1991 from Adham’s study (Adham, 1989) it includes all types of activities which are not known as formal, and does not require a government investment. It is mostly out-side the organized formal sector and does not need a big capital, example for men are traders handicrafts, builders, welders, street vendors and for women paid domestic work, food selling, handicrafts, embroidery, sewing, ghee making, vegetable selling, and roasted groundnuts selling.

Small scale production includes several activities such as food selling, handicrafts embroideries and cottage industries.

As cited by Gism Elsid, 1990 from Sarin’s study (Sarin, 1979) the food sellers figure out an important category which includes selling food and drinks.

The type of food sold in Sudan vary from row material such as vegetables and spices to ready made local food such as kisra (national Sudanese bread), Moulah (kisra or Asida Stew) grilled and roasted meat, Taamia, dough nuts, roasted groundnuts, pea nut sauce, ice cream.

Salih (1985) found that women working in food selling mostly lack educational skills and capitals and that much of them come from poor family backgrounds.
Also Elnagar (1988), pointed that female who are engaged in small scale production display certain socio-economic characteristics for example several writers who pointed out that many of those working in domestic services and petty trading activities, are poor, unskilled and engaged in low paid jobs, and jobs which involve difficulties in working conditions.

Gism Elsid 1990, found that most street food-sellers are old, uneducated, unskilled and married with low level of capital and in come and small profit (Gism Elsid, 1990).

She also found that food is always sold near it’s customers weather around primary schools in souk area or near a bus station for example. And most of the food is cheap and locally made.

Also her study shows that such activities required larger hours in work low capital and have low profit and labour is not found in this sector. Food sellers are met with many constraints, from the nature of work, i.e. kisra making is very hard to prepare and requires relatively younger age. And also lack of shelter and license, as Adham puts it “In Sudan like most African countries”, street food-selling is considered as an illegal activity and although this sector has been expanding rapidly, it was neglected by the government.

2-2-4 Women in the Informal Sector in the Sudan:-

Sudan is a vast country with dominant agricultural economy. Commerce industry and services play a minor role in it’s national economy. Sudan is characterized by a so-called “dual economy” and “charity economy”. Dual in terms of the fact that both traditional and modern sectors are existing side by side and charity as for a long period Sudan rely on foreign aids.
Historically, women have not been allowed to participate fully in the development process. They have been held back by outmoded traditions and practices which have limited their access to education and training, thus limiting their chances of productive employment. As well the conditions continue to exist in Sudanese social values and norms still emphasis on child bearing and rearing in addition to domestic work. Even when women are allowed to work away from home, preferences are given to work involving seduction of female from male.

In spite of these views, Sudanese women are active in the productive process. In rural areas and specially in kordofan, Darfur and the Southern regions women are engaging in all agricultural activities such as land tillage, hoeing, weeding and harvesting. Besides they do hand crafts, build houses, dominate cottage industries and are engaged in marketing agricultural and domestic products.

In pastoral system, women often guard the farm they also have to tend the goats, cows at suckling age, sick and weak animals.

They also sell and process their milk. Beside these they make nice leather crafts. Weave and spin different types of wool and staw mats, carplets and the like.

In Urban areas women are engaging in embroidery and other modern handicrafts. Educated women working in special jobs such as a nursing and teaching and recently in modern jobs as engineers, lawyers, bankers etc (Rahama, 1991).

No wonder that Boserup (1970), as well as may studies assert that women are active participants in economic activities. She also points that colonization, capitalist development and modernization in agriculture, displace many rural women from effective participation as in irrigated schemes of Gezira. Rural-urban migration, and the recent famine and drought, on the other hand did the same. Add to that the deterioration and
economic stagnation of the eighties and government instability lead many women to join the informal sector.

Hence in considering the changing economic conditions and the backward position of women in the developed world, the discussion of women participation in labour force and in particular informal sector will become a significant issues.

Among women, many cannot join technical jobs, so they are forced to take part in pottery trading or any other type of informal sector activities.

In a study about women in production, Elngagar 1989, and many other studies confirm that educational facilities and the improvement in the work laws have their favorable contribution to raising the rate of female participation in the labour force. However, this may not be generalized for all regions or all levels of education as other factors usually intervene. Out of the illiterate females, 14% are in the labour force where as 54% of the university female are economically active.

Despite the capitalist growth, the growing market economy, and the expansion of commercial activities that opened greater opportunities in urban jobs for women, they still remain as a source of cheap industrial, agricultural work and service. But as illiteracy is very high among women, many cannot join technical jobs. So they are forced to take part in poetry trading or any other type of informal sector activities.

In the informal sector the majority of women work as traders, domestic servants and tailors. Some women generate income from alcohol brewing, decoration and singing.

The self-employed women in this sector are predominantly petty traders, because they have very small capital. They sell mostly products originally associated with women, traditional bread, foods and tea in the market place of large congregations.
They also deal with handicrafts, vegetables, sometimes fruit. The exception are women in western Sudan who sell grain millets, meat and a larger variety of products but also in small scale. Recently, many women generate income by selling pastries and cakes. Furthermore there are women who sell by credit a wide range of items including clothes, shoes, cosmetics, kitchen utensils, bed sheets and different items needed by families. A women in such activities is refer to as “dallalia” (Rahama, 1991).

2-2-5 The Availability of Jobs for Women:-

When assessing information on women in the economically active group in all Arab countries by size, and by the percentage currently or once married, illiterate and in employment, we note in particular the large size of this age group and the fact that the vast majority are currently outside the labour force. These observations have often raised the fear that jobs are not available for absorbing this large potential addition to the labour force. However, the key factors here are, one: the high proportion of women who are or have been married, and two: the large percentage who are illiterate. It follows that the women will not be ready or able to enter the labour force all at once. As support mechanisms are instituted, married women will be encouraged gradually to enter the workforce. Many of them will be handicapped, however, by their low level of education. Thus policies to expand the entry of women into the labour force must provide both the support mechanisms and the opportunities for productive employment consistent with the present levels of skill. This is the short-term solution. In the longer term, the market demand for labour should be carefully assessed and developed, and both men and women must be adequately prepared to meet that demand (Schuster, 1981).

2-2-6 The Level of Skills of Women:-
Data on labour-force participation of women in the Arab world show the same or slightly higher rates of labour-force participation for females in the age group 15 to 24, who are mostly single, as for succeeding age groups. This result reveals that entry of women into the labour force is restricted not only by marital and reproductive responsibilities but by other factors such as education.

Azzam et al. (1985) have shown that labour force participation of women in Arab countries is positively related to levels of literacy. We can also illustrate this relation with data from a survey consisting of a sample of 2,752 households in Beirut city in 1983-84 (Zurayk and Armenian, 1985). That sample shows that in most age groups the participation rate of women rises with education, for the single, married and separated/divorced/ widowed groups. The participation of women of low education is very weak except for single women.

Data on illiteracy rates for males and females 15 years of age and older in Arab countries in 1985 shows very high rates of illiteracy for females, with only Bahrain, Jordan, Kuwait and Lebanon showing less than 50 percent illiteracy. Nevertheless, the rate of illiteracy is still close to one third of adult females in these four countries. At other extreme, it reaches over 85 percent for Mauritania, Somalia, Sudan and Yemen Arab Republic. Illiteracy among females is also shown to be higher than among males for all Arab countries (Ibid).

Information on levels of education, including the level of attainment for the literate population, is available only for the proportion that is 25 years of age or older. Data shows that, with the exception of Kuwait and Qatar, 15 percent or less of females in this age category have received secondary education. The situation of males is again better than that of females.
In projecting the skill levels of future generations, we look to data on school enrolment of females and males. We find school enrolment in primary level for female to be over 50 percent for most countries, and to have reached over 75 percent for almost half of the countries, in 1992. Yet for the Yemen Arab Republic the rate is very low, in stark contrast to what has been achieved for males in that country. Mauritania, Somalia, Sudan and Morocco also suffer from low rates of enrolment of females in primary education. As for secondary level the proportion of females enrolled was less than 50 percent in most countries in 1992. It thus seems that, with regard to future generations of adult women, high rates of illiteracy will persist in a few countries. On the other hand, adult women in most countries will have improved their educational level, while the proportion attaining the secondary educational level will remain modest. One must be careful, however, to examine the quality of education that females are receiving. It is probable the education they receive is not of a kind that develops women’s view of themselves and mobilizes them to enter the labour force. It is even more probable the education does not prepare them for the needs of the labour market in Arab countries.

In terms of the current generations of adult women, it is apparent that education a major enabling factor to entering the labour force is at very low levels. This forms an obstacle to the entry of women into the labour force, and it is partly responsible for the low levels of participation that we observe (Ibid).

2-2-7 Women as Mobilizers of Human Resources in Arab Countries:-

The role of women in development had become an important issue for planners in developing countries because of the potential untapped human resource that women represent. Whereas the role of men as a human resource that most be developed and used efficiently in production
is never questioned, the participation of women in the labour force is complicated by the fact that the women is the child bearer and carries the major responsibility in the child-rearing process. In Arab society, these functions of women in the family are given a very high value.

Much has been written about the role of women in development, and on the need to increase the economic participation of women in developing countries. There is general agreement that women’s labour-force participation is important from a macro-economic perspective. Moreover the labour-force participation of women is considered to be beneficial from micro-perspective, as it contributes to the welfare of the family for the poor, who forms the majority of the developing world’s population. Work is also seen to develop a woman’s personality as well as to increase her status in society (Schuster, 1981).

The role of mobilizer includes influencing positively both the quantity and the quality of the labour force. The avenue for increasing quantity is to encourage women’s entry into the labour force. The avenue for increasing quality is to influence the efficiency of the process of organization of the labour force, and the degree of productivity.

2-2-7-1 The Economic Activity of Women:-

That the economic activity of women in Arab countries is low. Latest estimates of rates of economic activity by sex in Arab countries show that these countries have different levels and patterns of socio-economic development, yet there is a consistency in terms of the level of economic activity of women. In all countries the participation rates of women are much lower than those of men, and in a majority of countries the participation rates of women are less than 15 percent. In fact within this low level of participation, rates vary from less than or close to 5 percent in democratic Yemen, Egypt, Saudi Arabia and United Arab Emirates to over 20 percent in Lebanon, Sudan and Mauritania in 1992.
These low levels of female participation are due to a misleading conceptualization of economic activity, to which we shall return later, as well as to a problem in measuring women’s work. The measurement problem arises from the nature of the economic activity of women and from the cultural values attached to the work of women in Arab society. The standard definition of economic activity is “that activity which is directed to the production of goods or services which is measurable in economic terms and in which generally speaking people are gainfully employed” (UN, 1974).

Many of the activities of women particularly in agriculture, are of this nature but are not easily recognizable as much because they are not organized on a full-time basis.

These confusing quantities in addition to the negative cultural values attaching to women’s work, lead to an undercount of the economic activity of women in censuses and labour-force surveys. The woman respondent who is not a full-time wage earner, or the male household member answering for her, may not report the work she does, considering it part of household duties, or may be ashamed to admit to her work. Similarly the interviewer, male or female may be too ready to accept a woman who does not work full time outside the home as a housewife, and to record her as such without probing to find out whether she does part-time or family or seasonal work and/or work that may not fit within the standard classification of occupations (Zurayk, 1985).

Because of these measurement problems, the statistics on economic activity do not tell us about women’s economic activity in its totality. Special efforts are therefore called for to attempt to capture statistically the different dimensions of women’s work. The statistics however, probably cover fairly accurately the full-time participation of women. As such the observations made about the low level of women’s economic
activity do at least describe accurately their full-time contribution. They point to the need for mobilization efforts to stimulate a more systematic entry of women into the labour force. Such mobilization efforts should be based on a clear understanding of the obstacles that stand in the way of a fuller labour-force participation of women (Ibid).

2-2-7-2 The Household Activities of Women:-
2-2-7-2-1 The Marital and Reproductive Patterns of Women:-

As a result of certain demographic and social characteristics in Arab countries, we find a large proportion of women in the role of child bearers and child rearers. First because of past pattern of fertility and mortality, a substantial proportion of females (35-45 percent) in all Arab countries are in the reproductive age range of 15-44. This condition is likely to continue, even if fertility were to decline, because of the momentum of growth in the Arab region resulting from past pattern of reproduction (Sirageldin, 1986).

Second, marriage is early and universal at least in those Arab countries for which information is available. In most Arab countries, close to 50 percent or more of the age group 15-24 are married. Moreover, the proportion married in the age group 25 to 34 reaches 85 percent or over for all countries except Lebanon. Very few women remain single beyond the age of 35.

Third the level of fertility in Arab countries remains very high. The total fertility rate seems to be highest among Arab countries and in sub-Saharan Africa. It is interesting to note that the fertility levels are high irrespective of the levels of socio-economic development. We can thus summarize with three observations: a substantial proportion of females in Arab countries are in the reproductive age group of 15 to 44; the great majority of these women are married, and they are reproducing at high rates of fertility. These observations indicate that women are
occupied in the household and in family responsibilities resulting from their marital and reproductive patterns for a large proportion of their adult life (Ibid).

2-2-7-2-2 The Economic Value of a Household Activities:-

The fact that women spend a large proportion of their adult life in household activity contrasts with the reality that the economic value of this activity is not recognized in the statistical accounting systems. This lack of recognition is responsible for the profile presented by statistical systems of women as low contributors of economic value to society. In fact, household activity fulfils all the criteria used to define work. It involves an expenditure of energy and a contribution, direct or indirect, to the production of goods and services which, if it were not for the activity of women, would have had to be bought on the market by the family (Stevens and Boyd, 1980). What produced by women in their household activity has economic value and as such should be accounted for as part of active labour (Beneria, 1981).

Hence before we speak of encouraging the entry of women into the labour force, we must adequately measure their economic contribution in household activity, mainly for the difference it makes to women’s lives. One difference is that it counteracts the misleading profile presented of women due to the under evaluation of the economic contribution of their work. Recognition of the long hours of labour that women spend in household activity would serve to improve their image of themselves, raise their status in society, and possibly provide them with some of the benefits associated with working status, such as insurance and retirement benefits. Measuring women’s economic contribution in the household is also important for delineation of the periods of “underemployment” in their marital and reproduction life those periods when it is possible for women to be free from home production sufficiently to be drawn into the
labour market. Finally recognizing the amount of the effort a woman spends in household duties may underline the need for a greater contribution in those household activities in which men and adult children can equally play a role. It may also underline the need to reorganize the entry of women into the labour market, allowing for part-time employment and for leave. With such modification in the organization of household and market activity, the woman would no longer have to face the equally difficult choices of either restricting her life to home production or of being overburdened with a double load of home and market production (Beneria, 1981).

2-2-7-2-3 Accommodating Women in their Double Role:-

In addition to its economic value, there is tremendous social and family-life value in the household activity of women in Arab society. However, because of the importance of drawing women into the labour force, there is a need to develop the reorganization strategies and the support mechanisms that can accommodate women in their double role.

Sorenson (1983) has categorized the pattern of employment of married women into four types: the first is the conventional pattern in which a woman who is working before marriage ceases to work either at marriage or at the birth of her first live child and never returns to work. The second is the interrupted pattern in which a woman stops working at marriage or at the birth of her first live child and returns to work some time after the birth of her last child. The third is the double-track pattern, which can be “pure” in that the woman continues to work throughout her reproductive span, or “not pure” in that the woman stops working at marriage or at the start of reproduction but returns to work before the birth of her last child. The final type is the unstable pattern, which refers to a woman who moves in and out of the labour market at different periods.
In Arab societies, the conventional pattern, in which a woman ceases to work at marriage or at the start of reproduction, is the most prevalent. In fact examination of the labour-force participation rates in terms of age and sex groupings reveals that adult females tend not to work even before they enter marriage. For married women, the “pure” double-track pattern produces a heavy burden and is not compatible with Arab values that encourage the presence of women in the home during childbearing and childrearing. Women of high education and professional women may choose to follow this pattern, and in that they deserve the support of society and of their families. However, a preferable pattern for married women in general may be the “not pure” double-track or the interrupted pattern. It is not sufficient, however, simply to register the preference for these patterns.

There is a need to develop support mechanisms that will make it possible for-and, indeed, encourage-married women to follow these preferred patterns.

The discussion above suggests the need for support mechanisms which can be summarized under three headings:-

a) **Mechanisms that assist women to enter the labour force during or following the reproductive period:** these include provision of nursery and day-care centers, the application of societal pressure on employers to employ women on an equal-opportunity basis, and the introduction of refresher courses in various specialized subjects for women to regain lost and acquire new knowledge and skills.

b) **Reorganization of time-basis employment:** this includes introducing part-time or shared employment of women, as well as acceptance of maternity and other leave for women.
c) **Re-organization of the process of housekeeping:** this includes increasing the contribution of husbands and adult children toward housekeeping activities, as well as encouraging extended family living, which is a traditional pattern in the Arab heritage and can provide support for the mother in childbearing activities.

**2-2-8 The Woman as a Mobilizer in the Family:-**

The family is the primary institution in society in which children are socialized, and in which values are nurtured and developed. The woman is the main person in the family responsible for childbearing and as such she is potentially able to exert considerable influence over her children’s attitude towards work and productivity in general, and towards the work of women in particular.

One of the most effective avenues of influence is the woman’s own behaviour in terms of work and productivity inside and out-side the home. It has been shown that women whose mothers have worked are themselves more likely to join the labour force, and that their occupations are likely to resemble their mothers (Stevens and Boyd, 1980). The impact of the example a working mother sets is not, however, restricted to her family, but propagates itself through the family’s network of contacts. Its mobilization effect depends on the positive profile projected of working woman’s life. As such the example of the Western working woman does not provide appositive model because her situation has, in concert with other social and economic factors, served to undermine family living. The lesson learnt is not therefore, to oppose women working, but to emphasize the importance of implementing support
mechanisms that can help promote both a healthy and happy family life and the participation of women in the labour force.

In Arab countries, women’s low rate of participation in the labour indicates that they do not at present generally play a sufficiently strong mobilizing role through example. Their main effort at mobilization in the family is, therefore, through childbearing activities. However, even in these activities the effect is not likely to be great, for three main reason: First, the data have shown the women in Arab countries are largely illiterate and of low education, so the potential of introducing a change in values through childbearing is limited. Second, women in Arab countries have a low level of awareness of the various life options that could exist for them, and of their right to choose among these options. Third, even though it is in the woman’s own interest to encourage the transformation of social values, the conflict that such action may create in the family might discourage her from directing her efforts to this issue.

In addition to the options of setting an example of childbearing, a third way that women can play a mobilizing role in the family is through their full participation in the process of deciding how many children to have. The fewer children she has, the easier it is for a woman to enter the labour market following the birth of her last child. However, the same three reasons of low level of education, inadequate awareness and fear of conflict may again prevent the woman from fully exercising her potential in this regard (Ibid).

2-2-8 The Working Woman:-

We will examine here the mobilizing potential of women through their economic activity outside the household. The ability of women to exert influence in the workplace comes both from the type of occupation they have and form seniority of their positions. Examining the employment of females in the various occupational categories, we note
that women from a substantial proportion of professionals in almost all Arab countries, and that except for Egypt and Syria, they are severely underrepresented in administrative and management occupations. The proportion of women in clerical occupations in Egypt, Jordan, Lebanon and Tunisia, was over 20 percent in 1992. Their role in agriculture is subject to undercount and is likely to be substantial in all countries with a large agricultural sector.

The association between level of education and rates of economic activity can explain why females are relatively numerous in the professional occupations. Here women are likely to come into contact with many people, and would have earned their status and power of influence through example and reputation. On the other hand we find relatively few women in occupations that are directly involved with organization and productivity of labour, or in administrative and managerial positions. It is these occupations that women must seek to enter in greater numbers because of the opportunity they provide for influencing the organization of the labour force, particularly as it relates to the contribution of women (Azzam et al, 1985).

The contribution of women to service occupations has been noted to be mostly in the occupations of teaching and nursing. The occupation of teachers are very valuable, for it provides women with a second avenue of influence, other than their role in the family, over the attitudes of children toward work, and a specially women’s work. The women’s serving as teachers are, moreover, educated women who are expected to be more aware than many mothers of the obstacles to productive work, and to the work of women in Arab society. Thus through their role as teachers, women have the opportunity to influence children from all backgrounds. The out-come is not as positive as may be desired, however, because of the low quality of education. The teachers
themselves received in some cases, and because of the relative safety of propagation society’s values rather than motivating for change.

Other service occupations with the potential to influence values are in the sphere of mass communication, such as journalism or scriptwriting for television or radio programs. Although no detailed information is available on the availability of jobs in such occupations, it is probably accurate to say that women play a relatively small role in those sectors of the mass communications system relating to programming and the determination of content, where influence is the greatest. Women must attempt to occupy such positions because of their strategic importance in mobilizing human resources.

We come finally to the role of women in clerical occupations. Here women tend to be employed mostly in the secretarial sector. This serves to reinforce the secondary position of women vis-a-vis men, who are inevitably found in the boss’s position.

We consider next the position of women as mobilizers in terms of age seniority on the job. Comparison of the distribution of the economically active males and females by age indicates that in almost all countries a larger proportion of working males, as compared to working females, are in the age group 35 and above. The fact that the male labour force is larger in this age range means that the number of women achieving age seniority is small relatively to men. Thus the working women’s potential for wielding influence through age seniority on the job seems rather limited (Ibid).

2-2-10 The Woman in the Volunteer Work:

In most Arab countries, educated women have entered the field of volunteer work in non-governmental organizations, and have attained high positions in these organizations their work is not recognized as economic activity because it does not fit the standard definition of an
income-earning contribution. Nevertheless, through their volunteer work many women have become public figures and are therefore in a position to influence attitudes towards work and the work of women (Zurayk, 1983).

2-2-11 Society’s View of Women’s Work:-

Another factor which influences the entry of women into the labour force is the generally negative view that Arab society has of women’s work. This result in part from the value system that encourages the segregation of the sexes, and that considers the married women’s duty towards her family to be the priority. Nevertheless in many Arab countries restrictions against women’s entry into certain professions are now relaxing. However, much still needs to be done in terms of changing the value system relating to women’s place in society (Azzam et al., 1985).

Values can be influenced through the following institutions: the family, school, religion, political parties and the mass communication system (Zurayk, 1983). Schooling and mass communication have particularly wide application, and can be used to install new values in terms of women’s role in society. Unfortunately, studies have shown that these systems continue to project the traditional view of the accepted sphere of women’s activities (Kallab, 1983 and Abdel Kader, 1982). In textbooks and mass communication programs, we generally see the woman as mother and house-wife, and sometimes she appears is the traditionally accepted jobs of teacher and nurse.

C- Women and Development

2-3-1 Historical Evolution of the Women in Development (WID) Movement:-
The movement which is known as women’s movement was carried out and sustained by women themselves and it has an earlier origin than the United Nations Charter, which in the 1940’s guaranteed equal rights to all (Bekele, 1997). Recently the women’s concern came to the surface of the global development agenda. Different perception of women, women concern and policy approaches to address women’s role in and benefit from development have been adopted.

Moser (1993) stated that in the 1950’s, and 1960’s women issues were seen as social and humanitarian efforts. In African countries programs supported the social welfare, family life, education and home economics directed to women as wives and mothers more than producers. Until the 1970’s women concerns were addressed basically on the assumption that women were objects of development. Boserp (1970) revealed that new perceptions about women as resources came to be embraced in the early 1970’s, with the realization of their contribution to development. It was advanced that their efforts should be enhanced through the necessary material and technical support. At this period and in order to integrate women efficiently in the development process the strategies adopted focused on improving women situation through providing basic needs such as nutrition, health, education, childcare, family planning and skill training (Sen and Grown, 1987).

Since the 1970’s many conferences with plan of action focused on women’s issue were held. First the World Conference on Women in Mexico (WCW) and the World Plan of Action for the Advancement of Women in Development (WPAAWD), the International Women’s Year (IWY) and the declaration of the 1975–85 as UN Decade for Women (UNDW) all had their impact on the global strategies and programs for women. Furthermore, there were agreements for canceling all

The UN Decade for Women (UNDW) had increased the awareness about the importance of addressing the needs and interests of women. The positive and negative impacts of the development project lead to the realization of making women the focus of attention and ignoring their relation with men through women specific projects and women components adopted by WID could not ensure expected positive impact and sustainable development. Since then the gender concept has been adopted, but it does not replace women (Bekele, 1997).

2-3-2 Women and Development:--

Women are playing increasingly a vital role in international, national and household economics. In 1994, approximately 45 percent of the world’s women between the ages of 15-64 were economically active. But they still have a disadvantaged economic position relative to men and also face serious discrimination (Lim, 1996). Boserup (1970) agreed that women work on average more hours than men do. Most of this work is in agriculture or other family run business, in the domestic economy and else-where in the informal sector.

It is now widely demonstrated that rural women, as well as men, throughout the world are engaged in a range of productive activities essential to household welfare, agricultural productivity, and economic growth. Rural women contribute to social and economic development at the levels of society, state, households, and the coming generations, but
still they are the poorest segment in the society (Arab Organization for Agricultural Development, 1997).

In Africa women work 15-20 hours a day, growing 80% of Africa’s food and ensuring the health, education and overall well being of their families and communities (Gellen, 1994). In Sudan, in the traditional sector, women constitute 80% of the farmers, women farmers represent approximately 49% of the farmers in the irrigated sector, and 30% of the food in the country is produced by women (FAO, 1994).

Because of the importance of women in production and development, then their inclusion in the development programs must be seen in such context.

Women represent half of the population and they are important agents in the process of development. The international focus on women constitutes an important part of human resources and as such have a role to play in national development (Badri, 1983).

Our focus on women was directed by our realization of the importance of their role especially in rural areas where people have potentials that can be mobilized to improve social welfare on all counts (Abdel Gader and Hassan, 1989).

In FAO report (1985), studies showed that Sudanese women play a crucial role in the subsistence household economy. They are not only nurtures of families, but they are often the principal producer of the family food. Rahama and Hoogen Boom 1988 estimated that women are responsible for at least 70% of the stable food production in Africa. They went further to state “Female economic participation in food production, processing, storage, handicraft and trade is significant although this role differs from one certain age category to another. However, this participation should be considered as vital to economic development, so the policies, plans and actions should be directed to-wards it”. Baxter
(1981) agreed with this and defined the different role of Sudanese women in production. She argued “Sudanese women have traditionally been home-makers and nurturers bearing and rearing children and performing all the tasks needed to maintain family well-being i.e. taking the burden in domestic work. In addition, they are very active in food production from raising domestic animals to being sewers, cultivators, harvesters in subsistence as well as cash crop production”. Thus the key is to recognize that women are an integral part of the solution to increase agricultural productivity and household food security (Gittinger et al 1988).

So the integration of women’s productive and reproductive roles, within the private sphere of home and the public sphere out-side must be considered if we are to appreciate the dynamics of women’s role in development (Mansen 1983).

Louffi (1982), Gruen Boam (1986) agreed on the fact that women participation in social, political and economical life is a means to the attainment of appropriate economical and social objectives of felt needs, material and non-material so bearing this in mind when planning for development strategies for displaced women so many social, economical, and environmental factors must be taken into consideration.

Although women are the main contributors to the family unit in terms of their participation in all aspects of life, their work is not generally regarded as productive in economics sense (Ibrahim 1983). This ignorance noted by Ibrahim and Notld (1987) in societies where certain groups are discriminated against, discrimination usually is aggravated in times of crisis and this is the fact that the reasons behind the starvation disaster, of 1982-84 leading to the displacement of large numbers of people from their homeland, and had had a greater toll among women than among men. This is confirmed by Akilu (undated) studies, who showed that women efforts was neglected especially during crisis where
they are considered as the “fragile, vulnerable, and the dependent human factors”. But Jiggins (1985) studied household survival strategies, and found that women contribution during crisis, is a significant factor in the survival capacity of their families.

There is a relation between culture and freedom where the behavior is the main indicator to the women share in development.

The women behavior, especially the poor women, is not directed to seek for what she owns and her right, but to keep searching for food for their children. No time for rights but they only want to work and get more income to survive with their families.

The political and social culture had a great effect on women. Collier (1993), is discussing the impact of structural adjustment, suggested four distinct reasons why women face differential constraints on economic activity. First, women may encounter discrimination outside of the household. Second, the different directions in which the tendency is to imitate or copy models role attracts men and women. Third, within the household there are a symmetric rights and obligations. Finally, women also have the burden of reproduction, (Bamberger and others, ed., 1996).

Charmes (1998) identified that, as men became unemployed and underemployed, households increasingly depended on women’s incomes from jobs that were often considered marginal or degrading.

Participation in the informal labour force ranged from 20 percent to 80 percent form country to country. Globally women were not the majority employed in the informal sector, but they produced the majority of informal GDP. This was because they took on multiple income-generating roles within the sector (Narayar and others, 1990). Bamberger and others (1996) stated that the spiral rural change in sub-Saharan Africa has tended to increase labour intensity and drudgery of work for some of
the present rural women, without necessarily increasing their income. Therefore, their recommendations to provide women with training, organizational skills and credit needed to retain activities over which they already had some control, were particularly pertinent.

The rural women engaged in agriculture are the most invisible development resources. Despite the fact that they have been recognized as producers, they are still largely ignored by agricultural development institutions. Women in rural areas do not carry out such heavy work for long hours under the sun by choice or because of necessity and the need to survive. The poor traditional production methods and the environmental crisis have increased their burden. Women are forced to perform varieties of tasks crucial to the survival of their families (Blumberg, 1981).

In the early phases of development, jobs in the modern sector in developing countries usually employ only 5 to 15 percent of women. A comparison with industrialized countries shows the sex distribution within the modern sector to be around 30 percent women and 70 percent men. This is almost invariable proportion, which holds for industrialized countries in all parts of the world, including North America, Western European countries, Japan and New Zealand (Boserup, 1971). There are more women than men in bazaar and service occupations, and in a number of other developing countries in Latin America as well as in Africa and South East Asia, women account for 40 to 50 percent, or even more, of the total Labour force in these occupations. When a country is moving from a primitive to a more advanced stage of economic evolution, bazaar and service occupations play the peculiar role of intermediate step between agriculture and the modern occupations. Sooner or later, the bazaar and service sector will begin to feel
competition not only from imports but also from a growing modern sector (Boserup 1989).

In the Sudan, rural women’s participation in the development extends through the entire agricultural production and food system plus their domestic roles in the household and other sectors.

It is time that women’s needs are recognized and included in the development plans and policies as being basic to development not only integrated in development plans and policies or welfare programs. Women are excluded from development programs that would help to improve women’s productivity at both the farm and home levels (Boserup, 1977).

Some national and international agencies have shown concern about development issues, but their efforts are largely limited to urban development concerns rather than to rural development. Women’s roles are at the center of development and part of the solution. If development problems can be solved first, then people can start to worry about how women benefit from development. It is expected that development will benefit women in a broader sense but disproportionately in some instances.

2-3-3 Development Needs from Gender Perspective:-

Development interventions through projects and programs focus on identification of needs and problems and improvement of existing conditions to-wards better quality of life. The gender perspective of development is concerned with how the development agents perceive the needs of the target groups. Knowing the practical and strategic gender needs of women, their differences and the importance of participation in identifying and meeting these needs are important to the success of development interventions (Bekele, 1997).
2-3-3-1 Practical Gender Needs:-

Practical gender needs are the needs women identify in their socially accepted roles in society. Practical gender needs do not challenge the gender division of labour or women’s subordinate position in society, although rising out of them. Practical gender needs are a response to immediate perceived necessity, identified within a specific context. They are practical in nature and often are concerned with inadequacies in living conditions such as water provision, health care and employment (Moser, 1993).

Practical gender needs are derived from women’s triple roles, productive, reproductive and community functions. Women triple roles are summarized below according to Bekele (1997):

**Productive functions** are women’s day-to–day livelihood, the production of goods and services essential for family living. The practical needs of women that intended to enhance their productivity and benefit from work are often in stereotype benefits and values.

Women and men are involved in **reproductive functions**, but women contribution to and needs associated with child bearing, rearing and family living in integral to their roles as mothers and wives. Project with component of health care, family planning, nutrition education, immunization, technology for labour saving, credit to increase productivity, basic infrastructure aim to address women practical gender needs.

**Community functions** are related to women’s role in public life such as participation in ceremonies, membership in cultural and religious organizations and services in community. Most WID projects are aiming to satisfy gender practical needs.

2-3-3-2 Strategic Gender Needs:-
Strategic gender needs relate to the structure and nature of relationship between men and women. They represent those needs that are formulated from the analysis of women’s subordination to men. Moser (1993) clearly stated that as the following:-

Strategic gender needs are the needs women identify because of their subordinate position to men in their society. Strategic gender needs vary according to particular contexts. They relate to gender divisions of labour, power and control and may include such issues as legal rights, domestic violence equal wages and women’s control over their bodies. Meeting strategic gender needs help women to achieve greater equality. It also changes existing roles and therefore challenges women subordinate position.

The strategic gender needs vary depending on the different cultural and socio-political contexts. Molyneux (1985) identified the strategic gender needs and said that they include all or some of the following:-

The abolition of the sexual division of labour, the alleviation of the burden of domestic labour and childcare, the removal of institutionalized forms of discrimination such as rights to own land or property, or access to credit, the establishment of political equality, freedom of choice over childbearing, and the adoption of adequate measures against male violence and control over women.

2-3-4 Incorporating Gender In Development:-

The fact that women and men have systematically different access to and control of resources has significant implications for development theory and practice. In the public domain, women have markedly lower access to productive resources. Reinforced by traditional notions of the sexual division of labour, they are frequently consigned to the less stable
and poorly paid sectors of the economy. Unequal power relations in the family and restrictions on women’s mobility mediate the impact of production-centered and poverty-alleviation policies and programs. Often resources meant for women do not reach them within the confines of the household. Or, because of a failure to recognize gender difference or the lack of political will to act on this knowledge, resources that are relevant to women’s productive work are often misdirected to men. In some settings, this has led to a marked deterioration of women’s income earning and educational prospects, health and nutritional status. These detriments to women are frequently passed on to their children. Because women’s labour contributions at the household and project levels are overlooked and their need for economic incentives not always understood, large-scale projects and development policies fail to meet their goals. One strategic response to this situation has been the introduction of training programs in the First and Third Worlds to sensitize planners and program to women’s roles and to gender differences in development (The population council, 1986).

Jiggins et al. (1997), reported that women’s substantial contribution continued to be systematically marginalized and undervalued in conventional agricultural and economic analysis and policies and they are wrongly characterized as economically inactive. While men’s contribution remains the central and the focus of attention. According to FAO (1998), the lack of gender-disaggregated data is one of the underlying causes of the neglect of women’s contribution to agricultural development research and policies. Another root cause of this neglect is the lack of women’s participation in policy-making and decision-making bodies at national and international levels. The consequence of invisibility of women’s work is serious. If women are not recognized as workers, they will certainly not be given access to training, credit,
technology of modern societies and the other means and services that make women effective participants in development (Elfaki, 1998).

Recently development policy-makers and planners are becoming increasingly aware of the crucial contributions of women in development and especially in agricultural production and food security. Nevertheless, development policies on the whole still do not address the needs of women adequately. And when the roles and needs of women are recognized in policy this tends not to be adequately translated into practices in development programs and planning (FAO, 1998).

2-3-5 Women and Poverty:-

Mohamed (1996) mentioned that, the poorest of the poor are those rural and urban households headed by women.

There are some basic definitions of poverty from U.N perspective, the first one is for income poverty:-

1- Extreme poverty: - lack of income necessary to satisfy basic food needs usually defined on the basis of minimum calorie requirements (The calories need to sustain the population at normal levels of activity and health, taking account of age and sex distribution, average body weights, and physical environment), often called absolute poverty.

2- Overall poverty: - lack of income necessary to satisfy essential non-food needs- as well as for clothing, energy and shelter- as well as food needs (often called relative poverty).

The second definition for poverty is human poverty: lack of basic human capabilities: illiteracy, malnutrition, abbreviated life span, poor maternal health, illness from preventable diseases. Indirect measures are lack of access to goods services and infrastructure, energy, sanitation, education, communication, drinking water necessary to sustain basic human capabilities.
Climatic disasters including droughts, locust invasion, the floods of 1988, and recently changing weather patterns, as well as politico-economic factors, have negatively affected agriculture and household food security. Men have had to migrate to the larger towns and even overseas in search of jobs, leaving the women responsible for rural households and take over jobs traditionally undertaken by men. Men are still culturally acknowledged as household heads, whether they are physically present or capable of executing the responsibilities attached or not.

While women are as reluctant to initiate cultural changes, they are concerned that agricultural resources, particularly land and capital, are accessed by households rather than by persons as individuals. Women know that they are educationally and experientially handicapped to carry on the productive roles they have inherited. They know that these affected capabilities of insuring food security (Stergaurd, 1992).

a) Poverty clusters of disadvantages:

A description of the condition of poor rural people might start with communities or with individuals. Starting with communities would have the advantage of distinguishing two types of situations: those where the poverty of whole communities is linked to their remoteness or inadequate resources or both; and those where there are marked differences of wealth and poverty within the same community. Starting with individuals would have the advantage of pointing to the disadvantages of females in many societies, sometimes from the moment of birth. These two dimensions of location and resource base, and of gender, are significant and qualify all that follows: some communities are much poorer than others, and more uniformly poor; and women are usually, but not always, poorer than men.
It is however, households that are the common and increasingly distinct economic entities for production, for earning, and for sharing consumption. The approach here is to try and identify clusters of disadvantage of households, separate them, and then see whether, and if so how, they are connected. This could be done in many ways, and no particular merit is claimed for the categories, which follows. Readers can list their own. But it is useful to dissect evidence and not to allow the term poverty to cover all aspects of disadvantage, but only those- lack of wealth assets, and lack of flows of food and cash to which is properly refers. To make a start, five clusters of disadvantage can be described- poverty, physical weakness, vulnerability, isolation, and powerlessness, these can be presented as a composite sketch of the household.

i) The household is poor. It has few assets, it’s hut, house or shelter is small, made of wood, bamboo, mud, grass, reeds, palm fronds or hides, and has little furniture: mats or hides for sleeping, perhaps a bed, cooking pots, a few tools. There is no toilet, or an unsanitary one. The household has no land, or has land which does not assure or barely assures subsistence or which is rented or share cropped. It has no livestock, or has only small stock (hens, dugs, goats…) or a few weak cattle. The household borrows from neighbours, kin and traders, and is in short- term or long-term in debt. Clothes are few and until they are very old. Family labour has low productivity: if it farms, it’s land is marginal or small; if it does not farm, it has little or no control over the means of production, and it’s main, often only, productive asset is the labour of it’s members.

The household’s stock and flows of food and cash are low, unreliable, seasonal and inadequate. The household is either locked into dependence or one patron, for whom most work is done, contrives a livelihood with a range of activities which reflect tenacious ingenuity in the face of narrow margins for survival. Food or cash obtained meet
immediate needs and are soon used up. All family members work when they can, except the very young, the very old, the disabled, and those who are seriously sick. Women work long hours both at domestic tasks and out-side the home. Returns to the family’s labour are low, and in the slack seasons often very low, if indeed there is any work at all.

II) **The household is physically weak.** There is a high ratio of dependents to able-bodied adults. The dependent may be young children, old people, the sick, or handicapped. The ratio of dependents to able-bodied adult is high for one of several reason: because there is no man and the household head is a woman with responsibilities for child care, for processing, cooking, drawing water, collecting fire wood, marketing and domestic chores, besides earning a livelihood for the family; or because of the stage of the domestic cycle when there are small children demanding time, food and care but not yet contributing economically; or because adults have been permanently weakened or disabled by accident or illness; or because of early death of other adults: or because active adults have dispersed or migrated to escape poverty or debts or to survive. The adults are seasonally or continuously pressed for time and energy. The household is seasonally hungry and thin, and it’s members weakened by interactions of parasite, sickness and malnutrition. Pregnancy, birth and death are common. Birth weights are low. All have small bodies, stunted compared with either genetic potential.

III) **The household is isolated.** The household is isolated from the out-side world. It’s isolation is peripheral, either in an area remote from town and communications, or remote within the village from the center of trading, discussion and information. Often illiterate and with-out a radio, it’s members are not well informed about events beyond the neighborhood. Its children do not go to school, or go and drop-out early, its members either do not go to public meetings, or go and do not speak.
They do not receive advice from extension workers in agriculture or health. They are tied to their neighborhood by obligations to patrons, by debts, by immediate needs that must be satisfied, or by lack of means for travel.

**IV) The household is vulnerable.** The household has few buffers against contingencies. Small needs are met by drawing on slender reserves of cash, by reduced consumption, by barter or by loans from friends, relatives and traders. Disasters and social demand, crop failure, famine, a hut burning down, an accident, sickness, a funeral, a dowry, bride price, wedding expenses, costs of litigation or of a fine-have to be met by becoming poorer. This often means selling or mortgaging assets, land, livestock, trees, cooking pots, tools and equipment, ration books, jewellery, a standing crop, or future labour, often on distress sale or usurious terms. Vulnerability is heightened during wet seasons when food shortages, sickness and agricultural work coincide, and is acute when rains and agricultural seasons fail. The family is especially prone to sickness and death.

**V) The household is powerless.** Ignorant of the law, without legal advice, competing for employment and services with other in a similar condition, the household is an easy victim of predation by the powerful. It has inherited or descended to low social status. It’s position is weak in negotiating terms for use of it’s labour or the sale of it’s produce or assets. It is easily exploited by moneylenders, merchants, landlords, petty officials and police. Aware of the power of the richer rural urban people and of their alliances, the household avoids political activity which might endanger future employment, tenancy, loans, favours or protection. It knows that in the short term accepting powerlessness pays (Chambers, 1983).

**b) The Deprivation Trap:-**
Still examining poor households and their immediate environments we can see that these clusters of disadvantage interlock. This is variously described as the “Vicious Circle of Poverty”, “the Syndrome of Poverty” and the “Poverty trap”. We can go further than saying people are poor because they are poor. Linking the five clusters of deprivation gives twenty possible causal relations, which in their negative forms interlock like a web to trap people in their deprivation. The strength of these linkages varies, but they can be illustrated by starting with each cluster in turn.

The deprivation trap

Source: (Chambers, 1983)

- Poverty is a strong determinant of the other four clusters of deprivation. Poverty contributes to physical weakness through lack of food, small bodies, malnutrition leading to low immune response to infections, and inability to reach or pay for health
services; to isolation because of the inability to pay the cost of schooling, to buy a radio or a bicycle, to afford to travel to look for work, or to live near the village center or main road; to vulnerability through lack of assets to pay large expenses or to meet contingencies; and to powerlessness because lack of wealth goes with low status: the poor have no voice.

- The physical weakness of a household contributes to poverty in several ways: through the low productivity of weak labour; through an inability to cultivate larger areas, or to work longer hours: through lower wages paid to women and to those who are weak; and through the withdrawal or weakening of labour through sickness. It sustains isolation because of lack of time or energy to attend meetings or to seek information, especially for women because children make travel difficult. It accentuates vulnerability by limiting the ability to overcome a crisis through harder work, new activities, or negotiations for help. It contributes to powerlessness through the lack of time or energy for protest, organization or political activities: sick and hungry people dare not bargain hard.

- Isolation (lack of education, remoteness, being out of contact) sustains poverty: services do not reach those who are remote; illiterate cannot read information for economic value, and find it difficult to obtain loans. Isolation goes with physical weakness: remote households may have a high level of migration of the able-bodied to towns or to other rural areas. Isolation also accentuates vulnerability- remote marginal areas are more liable to crop failures, and are less well provided with services to handle contingencies like famine or sickness; illiterate also find it harder to register or acquire land and are more easily cheated of it. And
isolation means lack of contact with political leaders or with legal advice, and not knowing what the powerful are doing.

- Vulnerability is part of many of the links. It relates to poverty through the sale or mortgage of productive assets; to physical weakness because to handle contingencies, time and energy to be substituted for money; to isolation through withdrawal whether spacial (to a more distant marginal area) or social (to fewer reciprocal relationships)- following shocks and contingencies; and to powerlessness through the dependence on patrons to which it gives rise.

Finally, powerlessness contributes to poverty in many ways, not least through exploitation by the powerful. It limits or prevents access to resources from the state, legal redress for abuses, and ability to dispute wage or interest rates; and it entails weakness in negotiating the terms of distress sales, and only feeble influence on government to provide services for the poorer people and places. It reinforces physical weakness, because time and energy have to be devoted to queuing for access, because labour obligations to patrons reduce labour available for household production or other earning; and because relief food supplies in time of famine may never be obtained because people are powerless to demand what is meant for them. Isolation is linked with powerlessness through the inability of those who are powerless to attract government aid, schools, good staff, or other resources. Powerlessness also makes the poor more vulnerable to sudden demands for the repayment of loans, to threat of prosecution and fine or imprisonment, or to demands for a bribe in a dispute (Seckler, 1980a: 1980b).

2-3-6 Status of Women and Access to Rural Services:-
The extent to which national and local government provide services to rural areas varies widely between and within countries. Some governments supply mainly health and educational services, others large investments in rural transport and communications, large scale water control, and major land improvement schemes. Some governments, have established extensive networks of agricultural services, including research, training, and extension facilities. Of course agricultural development is much more successful where government investment is higher, with the result that private services and private investment in ancillary rural crafts and industries are also larger in these areas.

Rural women benefit indirectly from agricultural investment and services because of improved family incomes, but the direct benefits of the research, training and extension facilities have virtually all accrued to men. In this field as in many others, the lower status of women has been the main cause of the uneven distribution of resources. Male extension agents address themselves only to male heads of households, neither female producers nor female family workers benefit from their advice. Research activities focus on the cash crops produced by men, the secondary crops subsistence food produced by women are neglected. Finally, trainees have virtually all been men.

The passing on of skills from parents to children is an important part of agricultural training in most developing countries, but when women are by-passed by the extension agents and the recruiters to training courses, they have no knowledge of modern methods to pass on to their daughters, while the sons learn readily from their fathers. Everywhere the male status in agriculture is enhanced by reserving formal training for men and male youth, women are refused access, or only a token number are admitted. In many countries agricultural work has little prestige among young men, and attendance at agricultural schools courses is often
low. In spite of this, the concern for male status among local personnel and foreign advisers prevents women from obtaining agricultural training, even in countries where they do most of the agricultural work. Where courses for rural women exist, they provide instruction in health nutrition, family planning, and domestic skills, not in agriculture or other income-earning skills.

The exclusion of women from agricultural training and extension has been discussed and lamented at numerous international conferences and meetings. As a result, some national governments and multinational and bilateral donors have set up rural projects aimed at better integration of women in agricultural modernization. Some of these projects have been directed at “women only” others have been “general” projects meant to take special account of women. Some projects have been sabotaged by local communities or by governments or donors. In other cases there have been no open resistance, but women have hardly benefited. Few “women only” projects have been outstandingly successful, and in most of the “general” projects the benefits accrued mainly to men.

It is difficult to avoid the conclusion that these projects failed either because the male decision makers were convinced that women were unable to learn, or because they wanted to preserve the gap in status and prestige between men and women. The projects were unable to stem the general trend toward a widening distance between male and female agricultural qualifications, resulting from the sex discrimination in training in modern methods and in access to modern equipment and other inputs. It seems that general improvement in female status by means of political action, legal reform of family organization, and female education are preconditions for substantial changes in women’s position in the agricultural sector.
If women have few benefits from agricultural services, the situation is quite different with respect to social services. The most important improvement in the lives of the rural women was the decline in maternal and child mortality resulting from the spread of medical and sanitation services. The physical and psychological strain on women is reduced when they produce fewer children for the graveyard. Also access to modern means of birth control in rural areas of many developing countries reduces the strain of frequent motherhood and of induced abortion.

Health improvement and mortality decline for women and girls have been large nearly everywhere and girls use of education services have increased rapidly. In some countries boys still represents a large majority of students at rural schools, but the gap between the rates of school attendance for boys and girls has been narrowing everywhere. In regions where women do much of the agricultural work, however, they pay a high price in terms of labor input forgone for the education of their children, “especially girls”.

Many African mothers have been willing to forgo help from their school-age daughters and to pay their school fees in order to improve the girls future earnings. Under the optimism prevailing in Africa in the period immediately following independence, parents did not view a large family and education of children as incompatible goals. Only later did economic crisis radically change the prospects for the growing numbers of educated young people. It remains to be seen whether the shortage of jobs for the educated will influence the attitude of rural parents toward education or toward fertility control.

As a result of the rapid spread of education age- power relations between women are changing. Illiterate mothers and mothers-in-law have less authority over literate daughters and daughters-in-law than they did
over illiterate ones. But it is uncertain to what extent increasing school attendance of girls contributes to greater equality between the sexes. Most of the development literature concerning female education focuses on the quantitative aspects. How many girls go to school, and for how many years?, it is tacitly assumed that school attendance helps to improve women’s status whatever the ideological content of the curriculum. But indoctrination in national culture is usually an important element in the curriculum of rural schools, and if the principle of female inferiority is an important feature of the national culture, the influence of school attendance on the attitudes of boys and girls to the status of women is not what might be hoped for. Young women may be more inclined to use their educated status to justify withdrawing from agricultural work that to compete with educated young men for more prestigious employment on farms or in rural services. And women who want to improve their position may be more inclined to migrate to towns than to face the rural community’s position to changes in the status of women.

The occupational choice of female rural school leavers depends not only on the national ideology, but also on the opportunities for female non-agricultural employment in rural areas. Development of rural services and small-scale industries possibilities for accommodating a large family and small landholding. In parts of Asia many girls add to family income by means of nonagricultural work in rural areas. They earn money to pay their own dowry, and this may give them more say in the choice of a marriage partner as well as contribute to a rise in the age at marriage, thus reducing fertility (Boserup, 1980).
A. Rural Development Concepts and Approaches

B. Approaches of Integrating Women in Development

A. Rural Development, Concepts and Approaches:

3-1-1 Concepts and Definitions of Development:

The term development has many different concepts, which are difficult to be articulated. Many scholars and writers said that development means different thing to different people. As indicated by Itorong (1995), development is conceived as a condition to be attained, as the capacity to “grow” and “change” and “develop”. Although, Lundstrom (1990) described development as changes which the participants in the process consider as considerable.

These three ideas of development are combined together in efforts to understand and deal with the phenomenon of development. Chaiman (1978), defined development as: “a process of enabling people to accomplish things that they could not do before, that is to learn and apply information, attitudes, values and skills previously unavailable to them”.

By this definition it is clear that Charirman focused his views on the need for education to achieve the development. Todaro, (1985) defined development as: “a multi-dimensional process involving the organization and reorganization of the entire economic and social system, in addition to the improvement of income and out-puts. It typically involves a radical change on institutional, social and administrative
structures, as well as popular attitudes and sometimes even customs and beliefs”. This definition indicates three main aspects, to achieve development, that are the organization, improvement and change of the economic and social system.

Okley, (1983) stated that the concept of development includes the following:

1. Introducing new ideas in the social system in order to produce higher per capita income and improve the standards of living through modern production methods.
2. Implying the total transformation of traditional or pre-modern society into types of technology and associated social organizations.
3. Building people capacities, enabling them to choose, participate, decide and create development programs freely.

According to the mentioned-above points Okley clearly directed his view on the concept of development towards the social system.

Sinah (1963) stated that “developed” and “underdeveloped” terms are not free from ambiguity and do not enable us to make rigid classification of the different countries of the world. Yet they broadly indicate the status of countries. The words “developed” “undeveloped” “underdeveloped” and “lessdeveloped” are often used to denote the social and economic conditions of the people in a given country or a given region.

3-1-2 Rural Development:

Rural development is a broad concept that means policies, strategies and practices of projects and/ or programs, which are directed to the rural people with the assistance of both governmental and non-
governmental organizations in order to alleviate poverty and hence to improve the standard of living of those residing in the rural areas. Thus, rural development projects and/or programs focus on the people's needs and their income opportunities to achieve acceptable level of living. The concept of rural development has been defined by many scholars and institutions. It is defined by the World Bank as:

“Strategies designed to improve the economic and social life of specific group of people of the rural poor. It involves extending the benefits of development to the poorest among those who seek a livelihood in rural areas. The groups include small scale farmers, tenants and landless” (In: Chamber, 1983).

This definition considered rural development as strategy to help the people of different classes, sexes, ages and groups to express their needs and to participate and gain benefit from future development.

According to lele, (1975), the concept of rural development is defined “as improving living standards of the mass of the low-income population residing in the rural areas and making the process of their development self-sustaining”. In her definition she emphasized on some important features, the first of which is improving the standard of living, which involves mobilizing and allocating of the resources. The second feature is the participation of rural population in the development process in designing, implementing, monitoring and evaluating the development activities. The last one is that, development projects or programs should be built on a sustainable manner and self-reliance through enabling rural people to have more contribution in the process of development. Mohamed (1996) stated that in formulating the concept of rural development the following fundamental elements and changes are necessary:-
1. A growth in agricultural production and the creation of marketing institutions and services.
2. More employment opportunities in both farming and agro- industries as well as the non-farm activities in rural areas.
3. Fair distribution of income through structural changes such as improvement of the land tenure system to provide security and incentives to producers.
4. Investment in health, education, nutrition, family planning, home economics and the environment to better people’s living conditions.
5. Integration of government resources and services and farmers organization in one program to implement integrated rural development (IRD) with local machinery at the village level.
6. Encourage and institutionalize the active participation of the rural population in decision making at local and district levels.

3-1-3 Principles of Rural Development:

Oakley, (1983) stated six of the rural development principles, it should be considered in rural development programs:-

1. **Access;** programs and benefits should be related to those who are in need.

2. **Dependence;** rural development should not be dependent upon the development programs for the livelihood. Thus, it
must include provision of training, learning and participation.

3. **Sustainability;** programs plans and solutions should be relevant to the local economic and social administrative situation through long-term programs.

4. **Going forward;** technical aspects of rural development programs should help rural people to take the next step in their development and not demand on to take huge technological leaps.

5. **Participation;** rural people should be fully involved in rural development programs through participation on data collection, project-design, implementation, monitoring and evaluation.

6. **Effectiveness;** rural development programs should be base on effective use of land resources and not necessarily of their most efficient use.

### 3-1-4 Some Categories of Rural Development Programs:

Programs of rural development are designed to achieve many objectives, nowadays, rural development programs are classified into many categories of which are the community development programs.

These programs involve the efforts of the local people to improve their communities, through utilization and improvement of local skills and abilities to encourage the local people to take part and shoulder some responsibilities for supporting and implementing a variety of physical infrastructures. It also builds community base organizations and promotes literacy campaigns (UNDP, 1993).

Community development is defined by Holdcraft, (1984) as a strategy aiming to promote popular participation to enable the targeted people to participate in the process of the development and to handle
local problems with support of appropriate technology needed to foster development process. Also he comments the following:-

“A process method, of programs which involve people participation at community basis in the solution of their common problems teaches and insist upon the use of democratic process and joint solution of community problems and activities, that facilitate the transfer of technology to people for more effective solution of their common problems”.

Nevertheless, Augstin, (1989) defined community development as:
“Implementing a variety of programs aiming at improving infrastructure, economic, education, hygienic and social aspects such as: drinking water, health, nutrition to weaker section of society”.

Generally this definition indicates that community development programs target all communities in all aspects of life (economic, social and environmental aspects). Thus such programs mostly depend on participatory approach to attain their objective.

3-1-4-1 Integrated Rural Development Programs (IRDP):-

Integrated rural development is a comprehensive program of action which targets removing constrains or promoting services (i.e. education., health and other fundamental human need). Such programs include greater access for poor through credit, extension of technical assistance to farmers, economic, and environmental aspects (i.e co-operation, sanitation and gender equity) are considered through full participation of beneficiaries, to guarantee their sustainability.

According to Bello, (1998) the IRDP aiming to offer better employment opportunities and equitable income distribution among the
targeted communities. Thus such programs attempt to provide the majority of the poor with accessibility to development activities. This will be achieved through the utilization of the local resources (both human and non-human resources) supported by appropriate technology and scientific research.

It is worth mentioning that the IRDP aiming at increasing beneficiaries, participation on problems identification, project design, implementation, monitoring and evaluation. In turn such programs are managed by both, the services provider and the beneficiary through relevant institutions specially build to promote community participation. These institutions include (village committee, development committee, extension committee, income generating activities committee and others), to enable the beneficiaries to participate effectively in the process of their development.

3-1-4-2 The Basic Needs Programs (BNP):

The basic needs are the minimum requirements that maintain people. They include (food security, water, health, education, sanitation, shelter and clothing).

As indicated by Bello, (1998) the BNP assumed that a certain minimum level of personal consumption and access to public services can be regarded as essential needs at standard levels. When the basic needs are met, self-reliance will be accessible through bottom-up approach, which enable beneficiaries to better identify the needs and means of their satisfaction more better.

3-1-5 Rural Development Approaches (RDA):

In order to achieve development in developing countries, there are some rural development approaches which have been adopted and used to improve the situation of different rural communities. There are different approaches used by the government and national and international
agencies to achieve socio-economic changes. There are two broad approaches of rural development, each of them is divided into many approaches (Long, 1977).

3-1-5-1 Improvement Approach (IA):-

This approach aims to encourage agricultural development within existing peasants production system. It attempt to foster community development through mobilization of non- human resources and promote popular participation, which is necessary for successful rural development programs.

According to the World Bank (1960) the improvement approach is described as follows:-

“programs aiming at the progressive improvement in peasants methods of crop and animal husbandry by working on the peasants on both the psychological and technical plans to induce an increase in his productivity without any radical change in traditional, social and legal systems” (In: Long, 1977).

This approach allows for the continuity of existing social institutions and land tenure arrangement as well as improving them.

Bello, (1998) emphasized that this approach attempt to foster development in the existing production system. It takes the existing social and economic structures and used to bring change through diffusion of green revolution techniques (i.e Seeds, fertilizers, extension and other inputs), to small farmers.

The IA takes wider coverage in the different aspects of rural society such as health, education, water, income generating activities and capacity building.

Improvement approach may take many forms, one of which is the participatory approach.
The PA may take different forms, it’s a bottom-up approach, which aiming at creating of popular participation of the targeted population in all the phases of the development process through the relevant bodies introduced in the area (village committee, development committee, etc). The term participatory is defined by the World Bank as:-

“A process where-by illegitimate interest in project, influence decisions which affect them” (Oxfam, 1992).

There are various forms and degrees of grass-roots participation. They are considered as prerequisites for available development process. The concept of popular participation, as an alternative to the top-down development, has proceeded effectively achieving sustainable development.

Community participation in rural development programs is a process of activating and integrating beneficiaries through problem identification (data collection), project design (planning), implementation, monitoring and evaluation. Therefore, participation must be seen as an exercise of giving the rural poor the means to have direct involvement in development projects and as an important activity in itself, which results in empowering the rural poor (economic benefits, significant improvement in production, income, employment and living standards) (Okley, and Marsden, 1984).

George, (1977) cited that participation includes the following levels:-

1. Information-sharing which enables the beneficiary community to have a good and proper involvement level in development activities.

2. Consultation makes crisis, risks and obstacles-problems available.
3. Decision-making which is visible in project design and implementation, monitoring, evaluation and the whole management by beneficiary.

4. Initiating action is one of the results of participation is that community i.e organized in their own way rather than just responding to out interventions.

3-1-5-2 Transformation Approach (TA):-

The TA differs from IA, that TA focuses of radical change in the production and social system of the targeted communities.

Long, (1977) cited that TA attempts to establish new forms of agricultural and social organization, which make a radical break in terms of scale of operation, production techniques, and socio-legal structure. Thus, it may involve implementation of new land tenure of systems or the establishment of new types of settlements of farms, which necessitate very substantial capital outlay.

Generally the TA has many examples and it includes the resettlement projects, land reform programs, co-operative farming system and establishment of plantation or capitalist farming system such as the Rahad Scheme and New Halfa Scheme (i.e. resettlement Schemes).

Another example of TA is the Ujamaa development Scheme for settlement, in Tanzania which is characteristically small-scale, involve a relatively low level of capitalization and aim at establishing socialist forms of production (Long, 1988).

3-1-6 Sustainable Development:-

Sustainable development will be the key issue for the next decades (FAO, 1989). It can be defined as the management and conservation of the natural resources-base, and the orientation of the technological and institutional changes in such manner as to ensure the attainment and continued satisfaction of human needs for present and future generations.
Such sustainable development, which conserves water, land, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable, (David Pearce et al, 1990). Sustainable development is a development strategy that manages all assets, natural resources, and human resources, as well as financial and physical assets, for increasing long-term wealth and well-being. Sustainable development as a goal rejects policies and practices that support current living standards by depleting the productive base, including natural resources, and that leave future generation with poorer prospects and greater risks than our own (WCED, 1987). Sustainable development is a process which, uses the world’s resources in a way sustainable in the long-run. Some writers have attempted to define sustainable development as a process of changes in which exploitation of resources, the direction of investment, the orientation of technological development, and institutional changes are all in harmony and enhance both current and future potential to meet human needs and aspirations (Ibid).

3-1-7 Agricultural Development:-

Herman et al, (1967), indicated that the theory of agricultural development includes three inter-related parts:-

1. The role of agriculture in economic development.
2. The economic nature of traditional agriculture.
3. The economic process of modernization of agriculture.

Agriculture is the dominant sector in employment of resources and generation of income. Consequent interdependence of agriculture and non- agricultural sectors limits the full development of either in isolation from the others. Because agriculture is an industry of major proportions at the start of economic development, its development is a process of modernization rather than the creation of a new industry (ILACOB,
1981). In the 1960’s agricultural development was seen as the result of the correct application of technical know-how and capital in the production process, yielding higher outputs, and consequently, higher incomes. Research aimed at new varieties and methods. Much capital was invested in irrigation and in drainage, and extension services were established especially in developing countries in order to provide the farmer with know-how and inputs. This approach to agricultural development is sometimes described as centralistic, capital intensive, and large-scale. Attention to these programs caused an increase in agricultural production. They also gave a rise in increasing inequality and disguised or open unemployment. It would be easy as well as cheap to discard this vision, with the benefit of high sight, as naive. Although a new view on the required approach to development is now evolving, a new marked by terms such as self-reliance, basic needs, preferential support of poorest, etc., a manual on how these goals can be reached is not yet available. The experience needed for this will be gathered in the next few years. The new view on agricultural development is based on the desire to lessen or to prevent future introduction of extreme socio-economic differences, which are the result of non-guided entry into the market economy. This will require the involved groups in the agrarian population to direct and to control their own development themselves much more than was formerly the case. This is only possible when they are organized and when are, in one way or another, they participate in the decision-making at higher levels where it concerns their own development (ibid)

B- Approaches of Integrating Women in Development:

There is now wide spread agreement about the fact that women are all but excluded from access to and control over national and international resources. There is less agreement among theorists about the
approaches that should be taken to resolve that problem. We will identify and examine seven of those approaches:

3-2-1 The Welfare Approach (WA):

As the oldest approach to women and development, the “welfare” approach is founded on the theory that women are solely passive recipients of development benefits because their major roles are reproductive ones—(motherhood and childbearing) whereas men’s work is identified as productive. This approach follows the Western social welfare model, and was common in colonial times. It dominated United Nations assistance through the 1970s, going hand in hand with modernization theory. In the 1970s, it was an aspect of the basic needs activities described above. The United Nations Children’s Fund (UNCEF) has consistently and effectively employed the welfare approach, as has the UN High Commission for Refugees (UNHCR).

Writers on women and development usually identify population programs with the welfare approach. An awareness of the world’s exploding population and of its limited natural resources occasions a massive flow of monies to family planning programs. Some countries resisted these in the 1960s and 1970s, but over time the programs were widely accepted by governments in Africa as elsewhere.

Initially the population approach emphasized the goal of reducing the world’s population and showed little understanding of or consideration for women’s health and family responsibilities. Gradually, as in the ECA Women’s programs, that strategy was revised so that family size and its relation to women’s health and family well-being became integral to a variety of training programs. (Snyder and Tadesse, 1995).

In fact it was First World welfare programs, widely initiated in Europe after the end of World War II, specifically targeted at ‘Vulnerable
groups’ which were among the first to identify women as the main beneficiaries. As Buvinic (1986) has noted, these were the emergency relief programs accompanying the economic assistance measures intended to ensure reconstruction. Relief aid was provided directly to low-income women, who in their gendered roles as wives and mothers, were seen as those primarily concerned with their family’s welfare. This relief distribution was undertaken by international private agencies, and relied on the unpaid work of middleclass women volunteers for effective and cheap implementation.

The creation of two parallel approaches to development assistance—on the one hand financial aid for economic growth; on the other hand relief aid socially deprived groups—was replicated in development policy towards Third World countries. This strategy had critical implications for third world women. It meant that international economic aid prioritized government support for capital-intensive, industrial and agricultural production in the formal sector, for the acceleration of growth focused on increasing the productive capacity of the male labour force. Welfare provision for the family was targeted at women, who along with the disabled and the sick, were identified as (vulnerable) groups, and remained the responsibility of the marginalized ministries of social welfare.

In most countries these ministries and the profession of social planning, frequently seen as their mandate, were from the outset dominated by women, particularly at the lower levels. Consequently welfare policy was, and still is frequently identified as women’s work, serving to reinforce social planning as soft-edged and of lesser importance than the hard-edged areas of economic and physical planning. Further assistance was then also provided by NGOs, such as the mother’s clubs created in many Third World countries, and to a lesser extent,
bilateral aid agencies with specific mandates for women and children, such as the United Nations Children’s Fund (UNICEF). The welfare approach is based on three assumptions. First, that women are passive recipients of development rather than participants in the development process. Secondly, that motherhood is the most important role for women in society. Thirdly, that child-rearing is the most effective role for women in all aspects of economic development. While this approach sees itself as ‘family-centered’ in orientation, it focuses on women entirely in terms of their reproductive role, it assumes men’s role to be productive, and it identifies the mother-child as the unit of concern the main method of implementation is through ‘top-down’ hand-outs of free goods and services, and therefore it does not include women or gender-aware local organizations in participatory planning processes. When training is included it is for those skills deemed appropriate for ‘non-working’ housewives and mothers. In their mothering roles low-income women have been the primary targets for improving family welfare, particularly of children, through an increasing diversity of programs, reflecting a broadening of the mandate of welfare over the past three decades. With its origins in relief work, the first and still the most important, concern of welfare programs is family physical survival, through the direct provision of food aid. Generally this is provided in the short term often such as natural disasters as earthquakes or famines. However, food-aid has increasingly become a longer-term need for refugees seeking protection. Although the majority of refugees in camps are women, left as heads of households to care and often provide for the children and the elderly, they usually do not have refugee status in their own right but only as wives within the family (Bonnerjea, 1985). Projects implemented by the United Nations High Commission for Refugees (UNHCR) and NGOs most often focus on these women in their reproductive role, with special attention
given to those pregnant or lactating. These are identified as a ‘vulnerable’
group in the same category as the elderly, orphans and the handicapped
(Weeda, 1987).

In the extensive international effort to combat Third World
malnutrition, another emphasis of welfare programs is nutritional
education. This targets children under five year, as well as pregnant and
nursing mothers. Since the 1960s. Maternal-Child Health Programs
(MCH) have distributed, cooked or rationed food along with giving
nutrition education at feeding centers and health clinics, in linking
together additional food for children and nutrition education for mothers,
MCH focuses on the mother-child, and the reproductive role of women,
on the assumption that extra provisions will make them better mothers.
Although by the early 1980s considerable criticism had been expressed
about the use of food aid to guarantee nutritional improvement of
children, the focus on women in their role as mothers was not seen as
problematic.

Most, recently especially since the 1970s, welfare policy towards
women had been extended to include population control through family
planning programs. Thus development agencies responding to the world’s
population ‘problem’ identified women in their reproductive role, as
primarily responsible for limiting the size of families. Early programs
assumed that poverty could be reduced by simply limiting fertility, to be
achieved through the widespread dissemination of contraceptive
knowledge and technology to women. Only the obvious moment of this
approach led population planners to realize that variables relating to
women’s status, such as education and labour-force participation, could
affect fertility differentials and consequently needed to be taken into
consideration. By 1984 the World Bank’s World Development Report,
for instance, identified reducing infant and child mortality, educating
parents (especially women) and raising rural incomes, women’s employment and legal and social status, as key incentives to fertility decline (World Bank, 1984). However, recognition of the links between women’s autonomy over their own lives and fertility control is not widespread and women continue to be treated in an instrumental manner in population programs. The lack of satisfactory birth-control methods, and the introduction of more invasive techniques, is making birth control even more women-centered; As DAWN (1985) has argued, this lets men off the hook in terms of their responsibility for birth control, while increasingly placing the burden on women. Their ambivalence toward contraceptive technology will only be removed when the technology is better adapted to the social and health environments in which they are used.

Although welfare programs for women have widened their scope considerably over the past decades, the underlying assumption is still that motherhood is the most important role for women in Third World development. This means that their major concern has been with meeting practical gender needs relating to women’s reproductive role. Intrinsically, welfare programs identify ‘women’ rather than lack of resources, as the problem, and place the solution to family welfare in their hands, without questioning their ‘natural’ role. Although the top-down handout nature of so many welfare programs tends to create dependency rather than assisting women to become more independent, they remain popular precisely because they are politically safe, not questioning or changing the traditionally accepted role of women within the gender division of labour. Such assumption tend to result in the exclusion of women from development programs operated by the mainstream development agencies which provide a significant proportion of development funds (Germaine, 1977).
The major weaknesses in the welfare approach can none-the-less be devastating because it lacks a development perspective. **First** it fails to consider women’s productive activities and their economic responsibilities. **Second**, and this is implied in the term welfare, it tends to foster dependency rather than self-reliance (Synder and Tadesse, 1995).

3-2-2 **The Human Resource Development Approach (HRDA):**

The human resource development approach takes an opposite stance. It leads to profound and lasting changes for women by recognizing not just their reproductive roles but also their productive roles, that is their active participation in the economy. Using a contextual framework, it argues that:

“Women’s needs are intricately bound up with the priority needs and aspirations of the nation, and must necessarily be viewed as features of overall national development and the advancement of the total society”.

This approach underscores the point that development, at the highest level, cannot be achieved without women.

The goal of human resource development is identical to the goal of development itself, namely “creating better lives, with greater freedom and well-being, for members of the family, the local community and the society as a whole”.

The strong development component of this approach rose out of women’s engagement in liberation of their countries and their subsequent readiness to participate in shaping their new nations.

The Economic Commission for Africa (ECA) pioneered the human resource development approach as early as 1971 by identifying women as economic producers and community managers.
This approach challenges modernization theory premises that the benefits of development would ‘strike down’ to women and others. It made women’s access to productive resources a development issue, bringing with it self-reliance and a voice in setting priorities. At the same time, the strategy reduced the likelihood of resistance on the part of member states to programs for women. It avoided being identified with extremist elements within the Western women’s movements for equality, liberation, and status, elements that carried with them a connotation of being against men.

Relying on the fact that women comprise more than half of the productive human resources of a country, the approach sets conditions of their full participation in development. These include ways to lessen women’s burdens and to increase their productivity by providing access to resources such as education, technology, and income, often through women’s own solidarity groups. An important condition calls for women’s active participation in planning and policy-setting.

The human resource development has been given little attention by feminist scholars, who began their analysis of women and development in the second half of the 1970s when other theories and approaches dominated the donor community and the UN (Snyder and Tadesse, 1995).

3-2-3 Equity and Human Rights Approach (EHRA):--

Equity is the original ‘WID’ approach, introduced within the 1976-85 UN Women’s Decade. Its purpose is to gain equity for women in the development process. Women are seen as active participants in development. It recognizes women’s triple role and seeks to meet strategic gender needs through direct state intervention, giving political and economic autonomy to women and reducing inequality with men. It challenges women’s subordinate position, has been criticized as Western feminism, is considered threatening and is unpopular with governments.
By the 1970s studies showed that although women were often the predominant contributors to the basic productivity of their communities, particularly in agriculture, their economic contribution was referred to neither in national statistics nor in the planning and implementation of development projects. At the same time new modernization projects, with innovative agricultural methods and sophisticated technologies, were negatively affecting women. These were displacing them from their traditional productive function, and diminishing the income, status and power they had in traditional relations. Findings indicated that neo-colonialism, as much as colonialism, was contributing to the decline in women’s status in developing countries (Boserup, 1970).

Tinker (1976) in her documentation of development projects that had widened the gap between men and women, argued that development planners were unable to deal with the fact that women must perform two roles in society where as men perform only one. She attributed the adverse impact of development on women to three types of planning error: First, errors of omission or failure to acknowledge and utilize women’s productive role, Second errors that reinforced values which restrict women to the household engaged in childbearing and childrearing activities and Third, errors of inappropriate application of Western values regarding women’s work.

The original WID approach was in fact the equity approach which recognize that women are active participants in the development process, who through both their productive and reproductive roles provide a critical, if often unacknowledged, contribution to economic growth. The approach starts with the basic assumption that the economic strategies have frequently had a negative impact on women. It acknowledges that they must be ‘brought into’ the development process through access to employment and the market place. It therefore accepts women’s practical
gender need to earn a livelihood. However, the equity approach is also concerned with fundamental issues of equality, which transcend the development field. As Buvinic (1986) had described, its primary concern is with inequality between men and women, in both public and private spheres of life and across socio-economic groups. It identifies the origins of women’s subordination not only in the context of the family, but also in relations between men and women in the market place. Hence it paces considerable emphasis on economic independence as synonymous with equity.

In focusing particularly on reducing inequality between men and women in the gender division of labour, the equity approach meets an important strategic gender need.

Equity programs are identified as uniting notions of development and equality. The underlying logic is that women have lost ground to men in the development process. Therefore, in a process of redistribution, men have to share in a manner, which entails women from all socio-economic classes gaining and men from all socio-economic classes losing (or gaining less), through positive discrimination policies if necessary. The rational consequence of this is seen to be greater equality with an accompanying increase in economic growth (Buvinic, 1983). Although the approach emphasized ‘top-down’ legislative and other measures as the means to ensure equity, gendered consultative and participatory planning procedures were implicitly assumed. This was particularly the case since the introduction of the equity approach itself had been the consequence of the bottom-up confrontation of existing procedures by feminist women’s organizations.

In fact, the theme selection for the 1975 International Women’s Year (IWY) Conference showed that the equity approach, despite its identification as “developmental” in many aspects was more concerned to
reflect First World feminist preoccupations with equality. Third World delegations, while acknowledging women’s problems, identified development as their main concern, maintaining that this would increase women’s status. Second World delegates were more concerned with peace, claiming that the capitalist system and its associated militarism was responsible for women’s problems—hence the theme of Equality, Development and Peace (Stephenson, 1982).

The World Plan Action (WPA) for the implementation of the objective of the IWY firmly reflected the equity approach. It called for equality between men and women, required that women should be given their fair share, of the benefits of development, and recognized the need for changes in the traditional role of men as well as women (UN, 1976). The plan set the agenda for future action for the Women’s Decade, with the common goal of integrating women into the development process. In reality, the interpretation of the agenda varied.

This was reflected in the language used, which ranged from the definitely expressed aim to integrate, increase, improve, or upgrade, women’s participation in development to the more tentatively worded desire to help create a more favorable climate for improving women’s options in development (World Bank, 1980).

Despite such rhetoric, equity programs encountered problems from the outset. Methodologically, the lack of a single unified indicator of social status or progress of women and of baseline information about women’s economic, social and political status meant that there were no standards against which ‘success’ could be measured (USAID, 1978). Politically, the majority of development agencies were hostile to equity programs precisely because of their intention to meet not only practical gender needs but also strategic gender needs, whose very success
depended on an implicit redistribution of power. As Buvinic(1982) has commented:-

Productivity programmes for women usually require some restructuring of the cultural fabric of society, and development agencies do not like to tamper with unknown and unfamiliar social variables. As a rule of thumb they tend to believe in upholding social traditions and thus are reluctant to implement these programs.

3-2-4 The Anti-poverty Approach:-

The anti-poverty approach to women can be identified as the second WID approach, in which economic inequality between women and men is linked not to subordination but to poverty. The emphasis thus shifts from reducing inequality between men and women, to reducing income inequality. Women’s issues are separated from equity issues and linked instead to the particular concern for, the majority of Third World women as the poorest of the poor.

Buvinic (1983), has argued that this is a toned-down version of the equity approach, arising out of the reluctance of development agencies to interfere with the manner in which relations between men and women are constructed in a given society. However, this shift also coincided with the end of the unsuccessful First Development Decade, and the formulation of alternative models of Third World economic and social development.

By the early 1970s it was widely recognized that modernization theory, with its accelerated growth strategies based on maximizing GNP, had failed either to redistribute income or to solve the problems of Third World poverty and unemployment. Contrary to predictions about the positive welfare effects on rapid economic growth, financial benefits had not “trickled down” to the poor. An early initiative was the International Labour Organization (ILO) World Employment Program in which employment became a major policy objective in its own right. The
‘working poor’ were identified as the target group requiring particular attention, and the informal sector with it’s assumed autonomous capacity to generate employment was seen as the solution (Moser, 1978, 1984). In 1972 the World Bank officially shifted from a preoccupation with economic growth to a broader concern with the eradication of absolute poverty and the promotion of redistribution with growth. Integral to this was the basic needs strategy, with its primary purpose to meet basic needs such as food, clothing shelter and fuel, as well as social needs such as education, human rights and participation in social life through employment and political involvement (Ghai 1978; Streeton et al. 1981). Low-income women were identified as one particular ‘target group’ to be assisted in escaping absolute deprivation: first because the failure ‘trickle-down’ was partially attributed to the fact that women had been ignored in previous development plans: and secondly, because of the traditional importance of women in meeting many of the basic needs of the family (Buvinic, 1982).

The anti-poverty policy approach to women focuses mainly on their productive role, on the basis that poverty alleviation and the promotion of balanced economic growth requires the increased productivity of women in low-income households. Underlying this approach is the assumption that the origins of women’s poverty and inequality with men are attributable to their lack of access to private ownership of land and capital, and to sexual discrimination in the labour market. Consequently, it aims to increase the employment and income-generating options low-income women through better access to productive resources. The preoccupation of basic needs strategies with population control also resulted in increasing recognition that education and employment programs could simultaneously increase women’s economic contribution and reduce fertility.
One of the principal criticisms of employment programs for women is that since they have the potential to modify the gender division of labour within the household, they may also imply changes in the balance of power between men and women within the family. In anti-poverty programs this redistribution of power is said to be reduced, because the focus is specifically on low-income women, and because of the tendency to encourage project in sex-specific occupations in which women are concentrated, or to target only women who head households. The fear, however, that programs for low-income women may reduce the already insufficient amount of aid allocated to low-income groups in general means that Third World governments have remained reluctant to allocate resources at the family or household level, despite the fact that they generally remain in the hands of the male head of household.

While income-generation projects for low-income women proliferated since the 1970s, they have tended to remain small in scale, to be developed by NGOs (most frequently all-women in composition), and to be assisted by grants, rather than loans, from international and bilateral agencies. Most frequently they aim to increase productivity in activities traditionally undertaken by women, rather than to introduce women to new areas of work, with a preference for supporting rural-based production projects as opposed to those in the service and distribution sectors, which are far more widespread in the urban areas of many developing countries.

Considerable variation has been experienced in the capacity of such projects to assist low-income women to generate income. Buvinic (1986) has highlighted the problems experienced by anti-poverty projects in the implementation process, due to preference to shift towards welfare-oriented projects. However, such projects also experience considerable constraints in the formulation stage. In theory ‘basic needs’ assumed a
participatory approach, yet in practice anti-poverty projects for women rarely included participatory planning procedures; mechanism to ensure that women and gender-aware organizations be included, remained undeveloped. In the design of projects, fundamental conditions to ensure viability are often ignored, including access to easily available raw material, guaranteed markets and small-scale production capacity (Schmitz 1979; Moser 1984). Despite widespread recognition of the limitations of the informal sector to generate employment and growth in an independent or evolutionary manner, income-generating projects for women continue to be designed as through small-scale enterprises have the capacity for autonomous growth (Schmitz, 1982; Moser, 1982).

In addition, the particular constraints that women experience in their gendered roles are also frequently ignored. These may include problems of perception in separating reproductive from productive work, as well as those associated with ‘balancing’ productive work alongside domestic and child-care responsibilities. In many contexts, there are cultural constraints that restrict woman’s ability to move freely outside the domestic arena and therefore to compete equally with men running similar enterprises (Moser, 1981). Where men control household financial resources, women are unable to save unless special safe facilities are provided (Sebsted, 1982). Equally where women cannot obtain equal access to credit, such as through lack of collateral, they are often unable to expand their enterprises unless non-traditional forms of credit are available to them (Bruce, 1980; IWTC, 1985). Finally the tendency to distinguish between micro-enterprise projects for men, and income generating projects for women, is indicative of the prevailing attitude, even among many NGOs, that women’s productive work is of less importance than men’s and is undertaken as a secondary earner or ‘for pocket money’.
Anti-poverty income generating projects may provide employment for women, and thereby meet practical gender needs, by augmenting their income, but unless employment leads to greater autonomy it does not meet strategic gender needs. This is the essential difference between the equity and anti-poverty approaches. In addition, the predominant focus on the productive role of women in the anti-poverty approach means that their reproductive role is often ignored. Income generating projects, which assume that women have ‘free time’, often only succeed by extending their working day increasing their triple burden. Unless an income-generating project also alleviates the burden of women’s domestic labour and child care for instance, through the provision of adequate socialized child caring - it may fail even to meet practical gender need to earn an income.

3-2-5 The Efficiency Approach:-

Efficiency is the third, and now predominant WID approach, particularly since the 1980s debt crisis. Its purpose is to ensure that development is more efficient and effective through women’s economic contribution. Women’s participation is equated with equity for women. It seeks to meet practical gender needs while relying on all of women’s three roles and an elastic concept of women’s time. Women are seen primarily in terms of their capacity to compensate for declining social services by extending their working day.

Although the shift from equity to anti-poverty has been well documented, the identification of WID as efficiency has passed almost unnoticed. Yet, the efficiency approach is now the predominant approach for those working within WID framework. Indeed, for many, it may always have been. In it, the emphasis has shifted away from women and towards development, on the assumption that increased economic participation for Third World women is automatically linked with
increased equity. This has allowed organizations such as USAID, the World Bank and OECD to propose that an increase in women’s economic participation in development links efficiency and equity together. Amongst others, Maguire (1984) has argued that the shift from equity to efficiency reflected a specific economic recognition of the fact that 50% of the human resources available for development were being wasted or under-utilized. Although the so-called development industry realized that women were essential to the success of the total development effort, it did not necessarily follow that development improved conditions for women. The assumption that economic participation increases women’s status and is associated with equity has been widely criticized. Problems such as lack of education and under-productive technologies have also been identified as the predominant constraints affecting women’s participation.

This approach assumed that women have no time constraint, and can participate in the development process if they are just given access to capital and skill. This may lead to a negative impact on women well-being due to the long work hours. It failed to address strategic gender needs of women and, with cuts in resources for essential services under the SAPs, it may fail to meet even practical gender needs (Bekele, 1997).

3-2-6 The Empowerment Approach:-

Empowerment is the most recent approach, articulated by Third World women. It’s propose to empower women through greater self-reliance. Women’s subordination is seen not only as a problem of men but also of colonial and neo-colonial oppression. It recognizes women’s triple roles, and seeks to meet strategic gender needs directly through bottom-up mobilization around practical gender needs. Its potentially challenging, although it avoids the criticism of being western-inspired feminism. It is unpopular except with Third World women’s NGOs and their supporters.
The sixth policy approach to women is that of empowerment. It is still neither widely recognized as an ‘approach’ nor documented as such, although its origins are by no means recent. Superficially it may appear synonymous with the equity approach, with references often made to a combined equity/empowerment approach. In many respects empowerment developed out of dissatisfaction with the original WID as equity approach, because of its perceived co-option into the anti-poverty and efficiency approaches. However, the empowerment approach differs from the equity approach. This relates not only in the origins, but also in the causes, dynamics and structures of women’s oppression, which is identified, and in terms of the strategies it proposes to change the position of Third World women.

The origins of the empowerment approach are derived less from the research of First World women, and more from the emergent feminist writings and grassroots organizational experience of Third World women; it accedes that feminism is not simply a recent Western urban middle-class import. As Jayawardena (1986), has written, the women’s movement was not imposed on women by the United Nations or Western feminists, but has an independent history. The empowerment approach acknowledges inequalities between men and women, and the origins of women’s subordination in the family. But it also emphasizes the fact that women experience oppression differently according to the race, class, colonial history and current position in the international economic order. It therefore maintains that women have to challenge oppressive structures and situations simultaneously at different levels.

The empowerment approach questions some of the fundamental assumptions concerning the interrelationship between power and development that underlie previous approaches. It acknowledges the importance for women to increase their power. However, it seeks to
identify power less in terms of domination over others (with its implicit assumption that again for women implies a loss for men), and more in terms of the capacity of women to increase their own self-reliance and internal strength. This is identified as the right to determine choices in life and to influence the direction of change through the ability to gain control over crucial material and non-material resources. It places far less emphasis than the equity approach on increasing women’s ‘status’ relative to men. It thus seeks to empower women through the redistribution of power within, as well as between, societies. It also questions two underlying assumptions in the equity approach: First that development necessarily helps all men; and secondly, that women want to be ‘integrated’ into mainstream of Western designed development, in which they have no choice in defining the kind of society they want (UNAPCWD, 1979).

The empowerment has become popular in development field particularly in relation to women. In Sudan the ADSs, programs adopted this approach and the participatory approach as main strategies to achieve equitable improvement in life for both men and women (Hamad Elnil, 2000).

3-2-7 The Emancipation Approach:-

This approach is related to socialism development. It aims to increase women political participation and direct their activities to fulfill the needs of national development. It recognizes women’s productive and political roles in the society. It seeks to meet women strategic needs through improving women social and political status, as well as meeting the practical needs through availing essential commodities and services equally for both men and women (Rahama, 1998).
Chapter Four
Methodology and the area of study

Part one :
4-1 The Methodology:-

The study was depending on twenty nine variables namely are:-
1- Age
2- Marital status
3- Educational level
4- Work in agriculture
5- Marital status
6- Family size
7- Number of years of work in agriculture
8- Farm ownership
9- Type of agricultural work they do
10- Number of daily hours spent in work
11- Means of transportation
12- Types of crops grown
13- Farm productivity
14- Reasons affecting farms productivity
15- Adequacy of farms income to satisfy their needs
16- Methods used to increase their farms incomes
17- The degree of interest in agricultural work
18- Participating other work than agriculture
19- Unpaid activities
20- Type of part-time work beside agriculture
21- Kind of kept animals
22- Participation in community social activities
23- Source of finance agricultural inputs
24- Who determines the type of crops grown on the farm
25- Aware and interaction with extension and research
26- Source of agricultural information
27- Use of fertilizers
28- Attendance of the training courses
29- The main agricultural problems

4-1-1 Sample Selection Procedure:

This study was conducted in two areas namely Gezira Scheme and Shendi/Motammah areas, 5 villages were selected from each area. In the Gezira Scheme the villages were:- El soreeba, Elhoosh, Wad Elnaeem, Wadi Shaier and Um magaad. While in Shendi/Matammah the selected villages were: El magaweer and El sayal on the Western bank of the River Nile (Matam.mah) and Eltragmah, Elmisaktab and Gandato on the Eastern bank of the River Nile (Shendi).

Quota sample (an equal representative sample from each of selected areas (villages)) were used to select the respondents, 20 respondents selected from each of the selected villages, to give a sample size of 200 respondents.

4-1-2 Data Collection Procedure:-

The primary data was collected through the use of structure interview of the respondents by researcher (in March-April 2004)s. This method was used because most of respondents were uneducated enough to fill the questionnaire by themselves, and also because some questions needed explanation.
The secondary data were obtained from agricultural extension stations libraries, reports and journals, key persons and other relevant sources.

4-1-3 Data Analysis Procedure:-

Data analysis involved the use of computer soft-ware Statistical Package for Social Sciences (SPSS). Different statistical procedures including descriptive analysis (tables, frequencies and percentages), T-test analysis, chi-square, difference of means and analysis of variance were used to analyze and interpret the data.

Part two :

4-2 The Areas of Study (the Gezira and Shendi/Matammah areas):-

4-2-1 The Gezira Scheme:-

4-2-1-1 General Description of the Gezira Scheme:-

The Gezira Scheme is the largest irrigated agricultural scheme in the Sudan. It covers a net cultivable area of 2.12 million feddans (0.9 million hectare). It constitutes about 10 percent of the total cultivated area and slightly more than 50% of the total irrigated area of the Sudan.

The Scheme comprises the main Gezira Scheme 1.1 millions feddan gross area and the Managil Extension of one million feddans. The Gezira main is divided into eight groups and 54 blocks (Yassin, 1996).

The Scheme plays an important role in Sudan’s economy. It produces about 55%, 65%, 20%, and 10% of the total country production of cotton, wheat, groundnut, and sorghum, respectively (SGB, 1994).

4-2-1-2 Social Formation in the Scheme:-
The Gezira area is a microcosm of the Sudan. It embraces more people of different social, economic, cultural and ethnic backgrounds than any other area in the country. It is the integration formula which, over time shaped the nature and direction of Sudanese culture.

In summation, the social formation in the Scheme reflects an apparent formation of three distinct groups. One represents the huge number of seasonal workers who do not own land and have only their own labour power to sell as a commodity. Another group is the majority of tenants whose income is so low that it is difficult for them to reproduce their own labour power let alone being able to accumulate capital. A third group, a small yet emerging one, is that of rich farmers. This group is composed of a small group which has been able to accumulate capital, acquire land through lease or purchase from poor farmers, engage in trading and money-lending activities to expand it’s capital. Some of these rich farmers, occupy influential positions in the “Gezira Tenants Union” (Ahmed, 1994).

4-2-1-3 Climatological Environments:-
4-2-1-3-1 Climate:-

The local climate of Gezira area belongs to the semi-arid type. The relative humidity, is high during the rainy season and falls to about 10% at it’s lowest value in March and April. The minimum temperature occur in January, ranging from a daily average of about 34°C as a maximum and 13°C as a minimum. In March and April, temperatures range from about 20°C and 41°C, as a daily average, respectively. The mean temperature is about 29°C. The natural vegetation of the Gezira ranges from semi desert in the North to poor Savannah in the South.

4-2-1-3-2 Rainfall:-

The rainfall comes almost entirely during the months of June to October with an average annual rainfall of about 350mm. The total
annual rainfall ranges from 250mm in the Northern to about 450mm in the Southern Gezira. i.e the rainfall decreases from South to North in amount and distribution.

In this respect, rainfall is found to have the greatest effect on the annual abundance of insect pests. The high rain witnessed in June- July favours the multiplication of cotton White Fly and the American Bollworm, but suppresses the cotton Jassid and Ricvarsa (Osmon and El Tayb, 1986).

According to Jackson (1982), the variation in rainfall and temperature from year to year, having their respective effects on the level of pest attack, cause the major variation in economic yield. The pest complex which, varies between season and location as a consequence of rainfall being the main factor for pest infestation and the determining factor for the number for the required spraying applications.

4-2-1-4 Soil:-

The soils of the Gezira area are mainly sediments brought down by the river flow from the higher lands of Ethiopia. They vary from place to place. The soils are essentially dark cracking clays which, tend to be more salty in the northern limits.

Saline and alkaline soils being concentrated in the north and west where other soil characteristics are also some-what poorer. The plant nutrient status of the Gezira soils is satisfactory although it is low in organic matters. The most important characteristics of the Gezira soils under irrigation is their low permeability (Adam, 1988 and Faki, 1982) reported that there are two main characteristics of the Gezira soils which render the Scheme technically and economically feasible to be irrigated: (1) the heavy cracking vertisols allow for little loss through percolation and at the same time enable irrigation water to reach the plant roots on
account of the swelling and shrinking properties of the soil under wetting and drying; (2) the very gentle slope of the plain from South to North and West reduce heavily the needs for investment in leveling and simultaneously enables the cheap water supply by gravity.

4-2-1-5 The Irrigation System:-

The Gezira Scheme is laid out in 90 feddan fields (Nimar) each is a rectangular block of 1350 meters by 280 meters. Each of these blocks is subdivided into plots (Howasha) which, are allocated to individual tenant farmer. Each Nimra receives canal water from a friend outlet pipe. The water passes into the field channel (Abu 20) from subsidiary channel (Abu 6) supply nine 10-feddan Howashas. The Howashas are separated at intervals of 40m by a low ridge (Tagnet) with a final water channel (Gadwal) half-way between these. The area bounded by a Tagnet and a Gadwal is a unit of 0.714 feddan (0.3 hectare) and this is referred to as an Angaya, often used for determining piece-work wage rates. The (Angaya) is subdivided by minor ridges into small areas known as Hods (Rubat). The Gezira canals were designed for night-time storage. Watering was carefully controlled by the tenant or his labourer who regulates the flow from Hod to Hod to ensure even distribution, even when the ground level was uneven. The normal interval between irrigation was fifteen days with watering taking three to four days (Craig, 1991).

4-2-1-6 Social Services:-

4-2-1-6-1 Adult Education:-

Literacy campaigns nearly covered all the irrigated area, for those who missed their chance of education from both sexes. The teachers played an effective role in the eradication of this social blemish of illiteracy from large numbers of people in the Gezira. Those honorable teachers had in fact been greatly instrumental in transmitting to the farmers what was happening inside and outside
the Gezira. The adult education officer was always in permanent contact with the farmers and their families. He used to listen to their complaints and suggestions to convey them to authorities. He was in all respects the active channel between the villagers and the different governmental department.

Women welfare programs were the major factors leading to village development.

4-2-1-6-2 The Co-operative:-

To encourage the co-operatives in the Gezira, the social Development Department agreed to offer the co-operative officers who were seconded from the department of co-operation means of transport, residence and fees to run the work. Many multi-purposes co-operatives were established in areas of agriculture trade, rural industries and other societies of similar services.

4-2-1-6-3 Forests:

The population of the Gezira had always been suffering from the scarcity of fire-wood caused by land clearance operation to prepare for cotton and other plantations.

Nearly most of the forests were brutally cut down, and the remaining few were reduced to mere fire-wood by the villagers.

The social development department considered this problem as an imminent threat and started a forestation programs as early as 1951 in different parts of the Scheme. The department of forest helped the social services by providing the expertise who would advice on how best to look after the new plants.

4-2-1-6-4 The Apprenticeship Classes:-
In caring for the schools drop-outs, Social Department in collaboration with ministries of Education and the Local Government opened many classes of apprenticeships for the farmers sons, who were for different reasons unable to continue their education to be trained, as builders, carpenters, blacksmiths and other crafts.

The idea was to provide for skilled labour which, was desperately needed in the villages.

**4-2-1-6-5 Health Services:-**

The Department helped the Ministry of Heath by building two wards with a capacity of 40 patients in Wad Medani hospital which were assigned to the Gezira tuber cullosis (T.B) patients together with an out-patient clinic at the same hospital. These services greatly encouraged the Ministry of Health to add tow more wards at Wad Medani Civil Hospital. The Department had also took the responsibility for building a two-story ward for children’s patient. All these projects were carried out beside supporting many health-care projects in the irrigated area. For creating a healthy environment by fighting Malaria and water–borne diseases, it had also paid hundreds of thousands of pounds yearly for spraying insecticides over villages and for availing healthy drinking water to protect the population against fatal diseases, such as Bilharzia and Diarrheas. Through several experiments, the Department was convinced of the possibility of digging deep bore-wells, and for this purpose launched a program in 1951 which was able to dig 600 wells and 120 filters by the year 1981 (Yousif, 1997).

**4-2-2 Shendi/Matammah Area:-**

**4-2-2-1 Geography:-**

Shendi/Matammah area is one of the areas of the Nile Province. Lying 176 km north of Khartoum and 110 km south of Elddamer, the
capital of River Nile State, on the eastern and western banks of the River Nile with a total area about 28147 km$^2$. The area is bounded by Elddamer locality to the North, Khartoum State to the South, North Kordofan State to the West and Gadarif State to the East. The area is on the Khartoum-Atbara highway which, will eventually be linked to Port Sudan after building the Atbara bridge and the Atbara–Haia Section that will link it with the Khartoum-Gadaref-Haia-Port Sudan highway.

Topographically, the area lies on a flat mud-sandy area adjacent to the River Nile on the two banks (East and West), with a few scattered mountains in the eastern and western parts of the area.

The area is one of the oldest civilizations in Sudan, with a history from about 4000 B.C. It is very close to Bajrawia, the capital of the ancient Pharoic Kingdom of Merowe.

The area lies in the arid zone of Sudan with an annual rainfall ranging between 0 and 250 mm annually. It is situated on the main River Nile which provides the water with which to irrigate its narrow, very fertile alluvial agricultural land. The main plantings are cash crops such as white beans, onions, wheat and sorghum as well as horticultural crops such as vegetables and fruits. Animal husbandry to raise cattle, sheep, goats and camels is practiced both by the few nomadic “Rashaida, & hassania” and the settled farmers(Shendi locality,2003).

4-2-2-2 Population:-

Culturally, the population of the area is a mixture of the various cultures that occur in Sudan through the Northern Tribes. Particularly ElGaalien, are the dominant.

The total population of the area is estimated at about 357000 of whom 281627 live in rural and 75373 in urban centers. Adult females represent 35% of the population. 78% of the population depends upon subsistence agriculture, while the rest are traders, teachers and handcraft
workers including spinners, weavers and other artisans. About 60% of the population is rated as “poor”. The literacy rate is high in the towns and villages, more than 80% of the female population can read and write. Shendi University was established in the early 1990s. The University appears to be very interested in aligning some of its courses with regional rural development plans of the area. Of particular interest is the B.Sc. course within the Faculty of Community Development in which all aspects of the students studies are based upon the field surveys that they carry out in the area.

The growth rate: 2.3%
Male % 48.7%
Female 51.3%
Average family size: 6 members

The area has been affected by the outward migration to the Gulf countries and Khartoum State of most of its educated elite and by inward migration of Internally Displaced Persons (IDPs) from east, south and west Sudan as a consequence of drought and war (Shendi locality, 2003).

4-2-2-3 Environmental Health and Sanitation:

Environmental Health and Sanitary activities are carried out by the Environmental Health staff who are supervised technically by the Ministry of Health (River Nile State) and administratively by Shendi and Matammah localities.

Environmental health services are divided into central facilities stationed in the capital of Shendi locality and Matammah locality.

The small number of qualified staff, lack of training courses, numerous administrative activities and the shortage of equipment are the major constraints facing the environmental and sanitary services. These are exacerbated by long distances between the center and the extremes of
the two localities as well as by the lack of supervisory staff and the huge
population that needs to be served (Shendi locality, 2003).

4-2-2-4 Health Facilities:

Shendi, Matammah localities are among the first localities to
implement the primary health-care strategy and to adopt the health area
system. Health teams were formed in all the administrative units and
trained in different fields of Primary Health Care (PHC) activities.

The community in the localities participate positively in health care
activities, as reflected in the organization of the health system.

There is excellent coordination between the staff of the Ministry of
Health and the Faculty of Medicine and Health Sciences at Shendi
University with regard to the delivery of health care.

In the area there are 4 hospitals namely: Shendi Teaching Hospital,
Shendi Military Hospital, AL-Mac Nimer University Hospital and
Matammah hospital (Shendi locality, 2003)

Other Health Facilities:

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Hospital</td>
<td>7</td>
</tr>
<tr>
<td>Health Care Center</td>
<td>43</td>
</tr>
<tr>
<td>Dispensary</td>
<td>23</td>
</tr>
<tr>
<td>Dressing Station</td>
<td>31</td>
</tr>
<tr>
<td>PHC Unit</td>
<td>16</td>
</tr>
</tbody>
</table>

There are many medical training facilities in the area including:-
1. Faculty of Medicine and Health Sciences at Shendi University.
2. Faculty of Community at Shendi University.
3. Faculty of Community Development at Shendi University.
4. Other Faculties at Shendi University (Faculty of Science and Technology, Faculty of Education).
5. National Training Center for Illiteracy Teachers.
8. Youth Training Center, and others.

4-2-2-5 Agriculture:-

The area (Shendi and Matammah localities) depends upon agriculture for food and for the income from cash crops.
-Total fertile area 1035000 feddan.
-Total cultivated area 252000 feddan.

There are many managerial and promotion institutions for agriculture in the area, including:
1. Agricultural Directorate.
2. Agricultural Research Center.
3. Forestry Department.
4. Agricultural Education Center (Extension).
5. Horticultural Department (Matammah agricultural sector, 1994).

4-2-26 Education:-

Percentage of illiteracy rate of the population in the area was unknown accurately. Because the percentage differs from one area to another, but it ranges between 6% to 19% approximately. Illiteracy in females is higher than in males.

General Education Facilities in the Area (2003):

<table>
<thead>
<tr>
<th></th>
<th>Schools</th>
<th>Mixed</th>
<th>43</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Females</td>
<td>42</td>
</tr>
</tbody>
</table>
Basic Education

<table>
<thead>
<tr>
<th></th>
<th>Teachers</th>
<th>Males</th>
<th>445</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Females</td>
<td>1071</td>
</tr>
<tr>
<td>Students</td>
<td>Males</td>
<td>22103</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Females</td>
<td>21212</td>
</tr>
</tbody>
</table>

Secondary Education

<table>
<thead>
<tr>
<th></th>
<th>Schools</th>
<th>Mixed</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Females</td>
<td>11</td>
</tr>
<tr>
<td>Teachers</td>
<td>Males</td>
<td>129</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Females</td>
<td>262</td>
</tr>
<tr>
<td>Students</td>
<td>Males</td>
<td>2447</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Females</td>
<td>2633</td>
</tr>
</tbody>
</table>

(Shendi locality, 2003)

4-2-2-7 Community Organizations:

The community is organized through Governmental Act into local communities at the village, Al Ahya and Squares levels (in the towns).

There are also informal community organizations formed by the different tribes, for each of which there is a key official bearing different titles. e.g. Omeda, Shiekh, Nazir, Soltan (displaced southern and western tribes) and Mac. Each one of these key persons has significant direct or indirect authority over his tribe.

In addition there are many voluntary civil community organizations, including:
- Sudanese Students Union (and its societies).
- El Shaheed Organization.
- Sudanese Worker’s Union
In the area the Youth Union, related to the political party has a legally established executive committee and general assembly but is not functioning. At a meeting with a number of organizational representatives it was interesting to notice that there were no young people present, even the youth union being represented by old men.

At a meeting in Shendi it was proposed that a local enterprise development organization be set up, but the general mood was strongly in favour of this being within the “Healthy City Project” umbrella for which the locality already organizing itself. The concept of ‘community Chain Associations’ was positively received (Shendi locality, 2003).

4-2-2-8 Farmer’s Union:

The leaders of the Farmer’s Union in the area met with the government and gave an elaborate explanation of the problems facing agricultural production in the area. The main constraints are the lack of spare parts and skilled mechanics to repair and maintain water pumps (usually 15 hp Indian Lister types) and shortages of improved seeds, better fruit seedlings, extension services, plant protection, storage facilities, packing materials and good marketing channels. They indicated the existence of surpluses of fruit, particularly mango, grapefruit and Lemon, and of vegetables particularly okra, tomatoes, potatoes and onions. There are three, one thousand tons capacity potato cold-stores in Shendi town one for seed potatoes belonging to the Department of Horticulture and was erected by a Dutch Aid Program in the mid-1990s.
The other two are privately owned and do rent out space, though this is limited to the surplus capacities not required by the owners themselves.

The farmers claimed that post-harvest losses in fruit and vegetables can be up to 50%. The estimated area planted with onions each year is 60,000 feddan, producing sufficient quantities to supply more than 60% of Sudan’s onion requirements. The average yield of onions per feddan is reported to be 200 sacks weighing 90 kg each. About 20,000 feddan are planted with potatoes giving a reported average yield of 200 sacks per feddan weighing 90 kgs each (Shendi/Matammah localities 2003).

Tomatoes are harvested from January to May and potatoes from January to March, some of the surplus potato harvest may be held in the cold store for as long as seven months. Unsold crops are often thrown into the river as waste. Watermelons are cultivated on the river islands and depressions (Ahwad) following the annual flood. During the January to March harvest season, 20 truckloads per day are sent to Khartoum, where they are all sold.

The farmers are concerned that they are still using traditional tools as well as some newer machines and about the wastage of their crops left in the field or the market, partly because they cannot compete with Khartoum farmers in Khartoum markets. There are considerable harvest losses, for example of potatoes and onions, arising from the use of primitive or inadequate equipment such as the insufficient and fallible Turkish harvesters. Harvesting the mango crop is difficult because of the height of the trees, though this is beginning to be addressed by replanting with new shorter varieties from South Africa (Ibid).

The potential exists locally for the processing of tomatoes, onions, mango, lemons, and okra. From the farmers point of view potatoes and onions are the highest priority. Their initial perception was a need for additional storage facilities, but they agree that processing would be a
perfectly acceptable solution to their glut problems. However, the Women’s Union views the market for tomato paste as the strongest potential income-generation opportunity for its members.

The marketing of fruit and vegetables is monopolized by middle men. Farmers normally sell their produce through known middlemen, locally called “Sababa”. A direct commercial connection between farmers and women processors could probably be established, if it is arranged through negotiations between the two Unions, Farmers and Women (Ibid).

4-2-2-9 The Women’s Union:-

The area Women’s Union is a voluntary organization established two decades ago that appears to be fairly organized. The registered membership of the Union is 18,000 women (through all adult women in Shendi, Matammah Mahaliat are considered to be members), of whom 60% have been trained in a number of (fairly standard) income-generation activities including agro-processing such as juice making and fruit drying, tailoring and knitting. The Union operates a number of consumers goods cooperatives. Women were also trained through a UNFPA project during the late 1990s when about forty women’s groups were formed. Each group had ten or more members who trained in one or more enterprise, e.g tailoring, fruit drying, tomato paste making, cheese and ghee making, fruit juice extraction, embroidery, spinning, knitting, basket weaving and poultry keeping etc, but the consultants have been led to understand that since the end of the project and Reproductive Health funding the forty centers have been locked up with equipment inside them.

The Union is now mainly active in awareness-raising for child care, literacy classes and providing limited financial help for destitute families.
The Union representative spoke of considerable surplus of milk in the rural area, where the excess milk is just wastes. They suggested access to micro-finance and technical assistance for women as that they could produce cheese and ghee (clarified butter). In general they had a very positive attitude towards gaining access for women to income generating opportunities, local women’s groups having borrowed and successfully repaid credit in the past. They believed that many women would be able and prepared to work from 11:00 to 12:30 each morning in a center or production unit and for a further two hours per day in their own homes (Shendi locality, 2004).

4-2-2- 10 The Industrial Area:-

The industrial area in Shendi town comprises many vehicle repairers and welder/ fabricators whose principal products are welded steel windows and furniture.

Most of the welder/ fabricators use welding machines made locally in Shendi. Through they are not as adjustable as industrially manufactured machines they generally have three power steps arranged by alternative connection points. The quality of welding is uniformly poor, almost invariably done without appropriate welding masks. The tools and consumables shop in the industrial area does sell welding masks but they are goggles don’t protect the face and have plastic instead of glass which deteriorates rapidly in use as a result of contact with red hot sparks.

There are few engineering workshops. The principal work is the repair of irrigation pumps and other agricultural machinery.

Most of the work consists of repairs, but some spare parts are manufactured, for example pumps shafts. New equipment are normally made but the engineers are confident of being able to do so, as they have in the past made milling machines and pumps of up to 12 inch bore.
All the workers in these workshops have been trained by apprenticeship, as were the owners. Skill levels are not high and the owners complain of a lack of information regarding the repair of new designs and technologies. They see a need for training and better access to current information. Generally the quality of the work seen appeared rough, but compatible within its limitations.

A carpentry workshop in which the work was competent has a power circular saw and planer in acceptable condition and the hand tools were sharp. Such a workshop would be quite capable of making wooden equipment needed for activities such as bee-keeping. The engineers claimed that they could make a circular saw for about 300,000 SD ($1150) as opposed to the 400,000 SD ($1530) cost of an imported one.

There is a need for training in trade skills for young people e.g. as welders, blacksmiths and carpenters. There are an estimated 1500 unemployed boys/young men and slightly more young women. Trades considered suitable for women are tailoring and computing (Shendi locality, 2004)

4-2-2-11 Textiles:-

A modest mechanized textile mill producing unbleached cotton cloth of a fairly loose weave. The products are sold domestically throughout Sudan but has difficulty competing with imports in the current policy climate and conditions of production and is therefore expected to decline.
Among the 500 Coptic Christian families in the area about 100 of them depend upon hand weaving, with one or more looms per family. An employed weaver making 18 feet of 36 inch wide cloth in a 06:00 to 17:00 (11 hours) day earns 400 SD ($ 1.5) per day, the loom owner paying for the material and providing the equipment (Shendi locality, 2004).

Chapter five
Results and Discussion

This chapter covers the results of the study in the two areas and its discussion, and the results of application of T-test analysis for
determining the significance of the observed differences between the respondents of the Gezira and Shendi area.

**Table (5-1) Frequency distribution and percentage of the respondents by age:—**

<table>
<thead>
<tr>
<th>Age category</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage %</td>
<td>Frequency</td>
<td>Percentage %</td>
</tr>
<tr>
<td>(20-29) years</td>
<td>17</td>
<td>17%</td>
<td>13</td>
<td>13%</td>
</tr>
<tr>
<td>(30-39) years</td>
<td>27</td>
<td>27%</td>
<td>28</td>
<td>28%</td>
</tr>
<tr>
<td>(40-49) years</td>
<td>23</td>
<td>23%</td>
<td>29</td>
<td>29%</td>
</tr>
<tr>
<td>(50-59) years</td>
<td>23</td>
<td>23%</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>60 years and above</td>
<td>10</td>
<td>10%</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Source: Field survey April (2004)*

Table (5-1) shows the distribution of the respondents according to their age groups. It reveals that about 90% of the respondents in the two areas (The Gezira Scheme and Shendi) were in their productive and reproductive age group, between 20-59 years of age. This indicates that most of the respondents in the two areas were young and able to put more efforts in the agricultural activities. However fewer of them, (not more than 10%), are in the old age and may not be able to produce actively in agriculture (their age more than 60 years), this confirms the fact mentioned previously that most of the respondents are in the active age categories.

**Table (5-2) Frequency distribution and percentage of the respondents by marital status:**
According to table (5-2) the marital status of the respondents shows that 64% of them in the Gezira and 62% in Shendi were married and most of them were living with their families. This indicates that they were settled and have the ability to participate in the agricultural work. The percentages of unmarried respondents were not exceeding 14% and 13% respectively in the two areas of study. The percentages of divorced respondents in the Gezira (5%) and in Shendi (7%) indicate that the communities in the studied areas are socially stable and have no marital problems. The widowed women in the sample in the Gezira are 17% and are 18% in shendi area.

<table>
<thead>
<tr>
<th></th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage %</td>
<td>Frequency</td>
<td>Percentage %</td>
</tr>
<tr>
<td>Unmarried</td>
<td>14</td>
<td>14%</td>
<td>13</td>
<td>13%</td>
</tr>
<tr>
<td>Married</td>
<td>64</td>
<td>64%</td>
<td>62</td>
<td>62%</td>
</tr>
<tr>
<td>Divorced</td>
<td>5</td>
<td>5%</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>Widowed</td>
<td>17</td>
<td>17%</td>
<td>18</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)
Moreover, chi-square test has been carried out to indicate if there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in the term of marital status.

The value of chi-square is 0.934 which is greater than 0.5 at the probability 0.001. This value is statistically not significant.

It means that there is no significant differences between the Gezira respondents and Shendi/Matammah respondents in their marital status.
Table (5-4) Frequency distribution and percentage of the respondents by their level of education:

<table>
<thead>
<tr>
<th>Education level</th>
<th>Gezira Frequency</th>
<th>Gezira Percentage %</th>
<th>Shendi Frequency</th>
<th>Shendi Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>39</td>
<td>39%</td>
<td>32</td>
<td>32%</td>
</tr>
<tr>
<td>Khalwa</td>
<td>11</td>
<td>11%</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Primary school</td>
<td>23</td>
<td>23%</td>
<td>23</td>
<td>23%</td>
</tr>
<tr>
<td>Intermediate school</td>
<td>6</td>
<td>6%</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>Secondary school</td>
<td>9</td>
<td>9%</td>
<td>22</td>
<td>22%</td>
</tr>
<tr>
<td>University</td>
<td>12</td>
<td>12%</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

As shown in table (5-4) the attainment of education among the respondents varies from illiterate to university (B.Sc) degree. Most of the respondents in both the Gezira and Shendi areas were uneducated (39%-32% respectively). Khalwa level of education was more in the Gezira (11%) than in Shendi area (5%). The respondents in the primary level were 23% out of the total in each of the two areas of study. Intermediate education was more spread in Shendi (10%) than in the Gezira (6%). This reflects that the girls in the Gezira are married earlier than in Shendi because of the local traditions in the Gezira, where the girls are forced to leave the schools in early teen-age to get married. Similarly secondary education is more spread in Shendi (22%) than in the Gezira (9%), for the same reasons related to the intermediate level of education. The university graduates are more in the Gezira (12%) than in Shendi (8%) because higher education spread earlier in the Gezira area than in Shendi. If we take into consideration the fact that the Gezira University was established in the mid 1970’s, we can explain why
access to higher education for girls in the Gezira is more easier than in Shendi area.

**Table (5-5) Chi-square test for education level between the respondents in the Gezira and Shendi/Matammah respondents:**

<table>
<thead>
<tr>
<th>Education Level</th>
<th>AREA</th>
<th>Shendi</th>
<th>Gezira</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uneducated</td>
<td>Count</td>
<td>32</td>
<td>39</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>35.5</td>
<td>35.5</td>
<td>71.0</td>
</tr>
<tr>
<td>Khalwa</td>
<td>Count</td>
<td>5</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>8.0</td>
<td>8.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Primary School</td>
<td>Count</td>
<td>23</td>
<td>23</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>23.0</td>
<td>23.0</td>
<td>46.0</td>
</tr>
<tr>
<td>Intermediate School</td>
<td>Count</td>
<td>10</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>8.0</td>
<td>8.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Secondary School</td>
<td>Count</td>
<td>22</td>
<td>9</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>15.5</td>
<td>15.5</td>
<td>31.0</td>
</tr>
<tr>
<td>University</td>
<td>Count</td>
<td>8</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>10.0</td>
<td>10.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>100.0</td>
<td>100.0</td>
<td>200.0</td>
</tr>
</tbody>
</table>

**Chi-Square Tests**

<table>
<thead>
<tr>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>10.192a</td>
<td>5</td>
</tr>
</tbody>
</table>

**Source:** data analysis

Moreover, chi-square test has been carried out to indicate if there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in term of educational level.

The value of chi-square is 0.07 which is less than 0.5 at the probability 0.001. This value is statistically significant.

It means that there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in educational level.
Table (5-6) Frequency distribution and percentage of the respondents by work in Agriculture:-

<table>
<thead>
<tr>
<th>Employment</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Working in agric.</td>
<td>79</td>
<td>79%</td>
</tr>
<tr>
<td>Not working in agric.</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Source: Field survey April (2004)**

As shown in table (5-6) the respondents who were engaging in agricultural work were represented by 79% in the Gezira, while in Shendi they were represented by 56%. It is clear that women in the Gezira were engaged in agriculture more than in Shendi because the agricultural work in the Gezira is more advanced due to the Gezira Board which was established in the colonial era since 1925. Also the growing of cash crops induced women more to engage in agriculture. In Shendi area the agricultural enterprises are small and men are more engaging in agricultural work and not giving chances to women, who engage in domestic work only. The respondents who are not working in agricultural are represented by 21% and 44% in the Gezira and Shendi respectively. They perform the roles of reproduction and the domestic work in their homes.
Moreover, chi-square test has been carried out to indicate if there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in the term of participation in agricultural work.

The value of chi-square is 0.001 which is less than 0.5 at the probability 0.001. This value is statistically highly significant.

It means that there is a highly significant difference between the Gezira respondents and Shendi/Matammah respondents in their participation in agricultural work.
Table (5-8) T-test of the general characteristics and participation in agriculture between respondents of the Gezira and Shendi area.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Mean</th>
<th>S.D.</th>
<th>Mean Diff.</th>
<th>T-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1</td>
<td>2.8200</td>
<td>1.2503</td>
<td>-0.08</td>
<td>-0.552</td>
<td>0.581</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2.9000</td>
<td>1.1474</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>1</td>
<td>2.2500</td>
<td>0.9031</td>
<td>-0.25</td>
<td>-2.096</td>
<td>0.037</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2.5000</td>
<td>1.0075</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education level</td>
<td>1</td>
<td>2.7100</td>
<td>1.7655</td>
<td>-0.33</td>
<td>-1.547</td>
<td>0.123</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3.0400</td>
<td>1.7301</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation in agric.</td>
<td>1</td>
<td>1.2100</td>
<td>4.094</td>
<td>-0.23</td>
<td>3.994</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1.4400</td>
<td>4.976</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family size</td>
<td>1</td>
<td>2.22</td>
<td>0.8151</td>
<td>0.1822</td>
<td>1.84</td>
<td>0.067</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2.04</td>
<td>0.8010</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: data analysis

Sig.
> 0.05 non significant
<0.05 significant
<0.01 highly significant

*Group (1) the Gezira
*Group (2) Shendi area
Table (5-8) shows that there were no significant differences between the respondents of the Gezira and the respondents of Shendi area in age, educational level, and family size, while there was a significant difference between them in term of marital status, and there was a high significant difference between them in agricultural participation. Also the table show that the means of Shendi respondents were higher than the means of the Gezira respondents in terms of age group, social status, education level, and participation in agriculture, while the mean of the Gezira respondents is higher than Shendi respondents in term of family size only.

The high significant difference in term of agricultural participation is due to the presence of land and the assistance of women farmers by The Gezira Board.

Table (5-9) Frequency distribution and percentage of the respondents by number of years of work in agriculture:-

<table>
<thead>
<tr>
<th>Number of the years</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage %</td>
</tr>
<tr>
<td>1-2 years</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>3-4 years</td>
<td>13</td>
<td>13%</td>
</tr>
<tr>
<td>5-6 years</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>More than 6 years</td>
<td>57</td>
<td>57%</td>
</tr>
<tr>
<td>Not working in agric.</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

Table (5-9) reflects the distribution of the respondents by number of years they have been working in agriculture. It reveals that 6% and 7% from the two areas the Gezira and Shendi spent 1-2 years, in practicing agriculture,
13% and 6% respectively were practicing for 3-4 years, 3% and 4% respectively were practicing for 5-6 years. The respondents practicing agricultural work for more than 6 years in the two areas (57% and 39%) in the Gezira and Shendi respectively are the farmers who are practicing agriculture for along time. We find also that their families are depending economically on the agricultural output.

**Table (5-10) Frequency distribution and percentage of the respondents by the kind of farm ownership:**

| The kind of farm ownership | Gezira | | | Shendi | | |
|---------------------------|--------|--------|--------|--------|--------|
|                           | Frequency | Percentage % | Frequency | Percentage % |
| Self-owned                | 22 | 22% | 17 | 17% |
| Family or husband’s       | 13 | 13% | 30 | 30% |
| cooperative or project    | 41 | 41% | 2 | 2% |
| A rented or shared        | 3 | 3% | 7 | 7% |
| Not working in agric.     | 21 | 21% | 44 | 44% |
| Total                     | 100 | 100% | 100 | 100% |

**Source:** Field survey April (2004)

Table (5-10) shows that self-owned farms were spread more in the Gezira than in Shendi area. This indicates that women in the Gezira were more active in agriculture than those in Shendi. Self-owned farms were represented by (22% and 17%) in the Gezira and Shendi respectively. Family or husband’s ownership is clear obviously in Shendi area more than in the Gezira, and is represented by 30% in Shendi compared to only 13% in the Gezira. This reflects the dominance of men’s farm ownership in Shendi area than in the Gezira. The cooperative system of ownership is more dominant in the Gezira (41%) compared to Shendi 2% only, because most of agricultural
lands ownership in the Gezira is considered a cooperative system because the government owns the agricultural land. Renting of farms is more spread in Shendi area (7%) than that in the Gezira because more of the agricultural land in Shendi area is owned privately. The number of those operating their own or family (household) farms represent a total of 35% in Gezira and 47% in Shendi area.

Table (5-11) chi-square test for kind of farm ownership between the Gezira respondents and Shendi/Matammah respondents:-

<table>
<thead>
<tr>
<th>AREA</th>
<th>self-owned</th>
<th>family or husband's</th>
<th>cooperative or project</th>
<th>a rented or shared</th>
<th>not working in agric.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>the Gezira</td>
<td>22</td>
<td>13</td>
<td>41</td>
<td>3</td>
<td>21</td>
<td>100</td>
</tr>
<tr>
<td>Expected Count</td>
<td>19.5</td>
<td>21.5</td>
<td>21.5</td>
<td>5.0</td>
<td>32.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Shendi</td>
<td>17</td>
<td>30</td>
<td>2</td>
<td>7</td>
<td>44</td>
<td>100</td>
</tr>
<tr>
<td>Expected Count</td>
<td>19.5</td>
<td>21.5</td>
<td>21.5</td>
<td>5.0</td>
<td>32.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>39</td>
<td>43</td>
<td>43</td>
<td>10</td>
<td>65</td>
</tr>
<tr>
<td>Expected Count</td>
<td>39.0</td>
<td>43.0</td>
<td>43.0</td>
<td>10.0</td>
<td>65.0</td>
<td>200.0</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>52.473a</td>
<td>4</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: data analysis

Moreover, chi-square test has been carried out to indicate if there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in term of kind of farm ownership.

The value of chi-square is 0.00 which is less than 0.5 at the probability 0.001. This value is statistically highly significant.

It means that there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in kind of farm ownership.
Table (5-12) Frequency distribution and percentage of the respondents according to family size:-

<table>
<thead>
<tr>
<th>Family size</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage %</td>
</tr>
<tr>
<td>2-3 persons</td>
<td>24</td>
<td>24%</td>
</tr>
<tr>
<td>4-6 persons</td>
<td>29</td>
<td>29%</td>
</tr>
<tr>
<td>7 persons or more</td>
<td>47</td>
<td>47%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

As shown in table (5-12) the largest group of the respondents belong to families consisting of more than 7 persons. In the Gezira the number were represented by 47% while in Shendi it were represented by 33%. The respondents whose families consist of 2-3 persons were more in Shendi than in the Gezira where the percentages stand as 31% and 24% respectively. Also it is observed that the families composed of 4-6 persons were more in Shendi area than in the Gezira with percentages at 29%-36% respectively. The study also revealed that the family size were bigger in the Gezira than in Shendi area. This fact may enable the women farmers to receive more help in their agricultural activities than in Shend.
Table (5-13) chi-square test for family size between the Gezira respondents and Shendi/Matammah respondents:

<table>
<thead>
<tr>
<th>AREA</th>
<th>the Gezira</th>
<th>Count</th>
<th>Expected Count</th>
<th>the Gezira</th>
<th>Count</th>
<th>Expected Count</th>
<th>Shendi</th>
<th>Count</th>
<th>Expected Count</th>
<th>Shendi</th>
<th>Count</th>
<th>Expected Count</th>
<th>Total</th>
<th>Count</th>
<th>Expected Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family size</td>
<td>2-3 persons</td>
<td>4-6 persons</td>
<td>7 persons or more</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-3 persons</td>
<td>24</td>
<td>29</td>
<td>47</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-6 persons</td>
<td>27.5</td>
<td>32.5</td>
<td>40.0</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 persons or more</td>
<td>31</td>
<td>36</td>
<td>33</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>65</td>
<td>80</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55.0</td>
<td>65.0</td>
<td>80.0</td>
<td>200.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.095a</td>
<td>2</td>
<td>.129</td>
</tr>
</tbody>
</table>

Source: data analysis

Moreover, chi-square test has been carried out to indicate if there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in term of family size.

The value of chi-square is 0.129 which is less than 0.5 at the probability 0.001. This value is statistically significant.

It means that there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in family size.
Table (5-14) Frequency distribution and percentage of the respondents according to the type of agricultural work:

<table>
<thead>
<tr>
<th>Type of agric. Work</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Participate in all agric. activities</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Participating in most agric. activities</td>
<td>34</td>
<td>34%</td>
</tr>
<tr>
<td>Participating in planting &amp; harvesting</td>
<td>25</td>
<td>25%</td>
</tr>
<tr>
<td>Participating in preparing food &amp; Inputs</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>Caring for livestock</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Not participating</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

Table (5-14) shows the distribution of the respondents according to the type of agricultural work they do reveals that women in the Gezira participate more in all agricultural activities than the women farmers in Shendi area. 8% and 5% of the respondents participate in all agricultural activities in the Gezira and Shendi respectively, this means that not working full hours in the field but may participate in some activities only. 34% from the Gezira and 9% from Shendi area out of total respondents participate in most agricultural activities in the farm. This indicates that women in the Gezira engage more in the field work than women in Shendi area. 25%-11% out of the respondents from the Gezira and Shendi area (respectively) participate in planting and harvesting only and women in the Gezira participate more in
cotton harvesting (cotton picking) which is a pure women activities, either in their farms or as daily- paid labourers. This later category is represented by migrant women.

The results also shows that 9% and 19% of the respondents from the Gezira and Shendi area (respectively) participate in the agricultural activities indirectly through preparing food and inputs. In this respect the women in Shendi area are more active because they do not participate fully in the main agricultural activities. Also 5% and 12% out of the respondent from (the Gezira and Shendi area) are caring for livestock only, and in this case women in Shendi area are more active than the women in the Gezira, because women in the Gezira are engaged in agricultural activities more directly than the women in Shendi area.

Table (5-15) Frequency distribution and percentage of the respondents by the number of hours spent in agriculture daily:-

<table>
<thead>
<tr>
<th>Number of hours worked</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>The entire day</td>
<td>24</td>
<td>24%</td>
</tr>
<tr>
<td>Six hours per day</td>
<td>40</td>
<td>40%</td>
</tr>
<tr>
<td>Less than Six hours per day</td>
<td>15</td>
<td>15%</td>
</tr>
<tr>
<td>Not working</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

As shown in table (5-15) most of the respondents are not engage in agriculture all the time, only 24% of them are engage all day in the Gezira and Shendi area respectively. Women in the Gezira are engaged more than those in Shendi (four times). This indicates that
women in the Gezira are more active in agriculture and they depend mainly on agriculture for generating income. Most of the women in the Gezira are engage in agriculture for six hours per day and are represented by 40% compared to the women in Shendi who are represented by 26%. Those engage in agriculture for less than six hours per day are represented by 15% in the Gezira and by 24% in Shendi. This indicates that women in Shendi area are working only partially in agriculture unlike the women in the Gezira, and in the farms. their work is mainly confined to preparing food and inputs for men working.

Table (5-16) chi-square test for daily hour of work spent in agriculture between the Gezira respondents and Shendi/Matammah respondents:

<table>
<thead>
<tr>
<th>AREA</th>
<th>Count</th>
<th>daily hours of work spent in agric.</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>the entire day</td>
<td>six hours per day</td>
<td>less than six hours per day</td>
<td>not working in agric.</td>
<td></td>
</tr>
<tr>
<td>the Gezira</td>
<td>22</td>
<td>40</td>
<td>15</td>
<td>21</td>
<td>98</td>
<td></td>
</tr>
<tr>
<td>Expected Count</td>
<td>13.9</td>
<td>32.7</td>
<td>19.3</td>
<td>32.2</td>
<td>98.0</td>
<td></td>
</tr>
<tr>
<td>Shendi</td>
<td>6</td>
<td>26</td>
<td>24</td>
<td>44</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Expected Count</td>
<td>14.1</td>
<td>33.3</td>
<td>19.7</td>
<td>32.8</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>66</td>
<td>39</td>
<td>65</td>
<td>198</td>
<td></td>
</tr>
<tr>
<td>Expected Count</td>
<td>28.0</td>
<td>66.0</td>
<td>39.0</td>
<td>65.0</td>
<td>198.0</td>
<td></td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>22.310</td>
<td>3</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: data analysis

Moreover, chi-square test has been carried out to indicate if there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in term of daily hours of work spent in agriculture.
The value of chi-square is 0.00 which is less than 0.5 at the probability 0.001. This value is statistically highly significant.

It means that there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in daily hours of work spent in agriculture.

Table (5-17) Frequency distribution and percentage of the respondents by means of transportation to the farm:

<table>
<thead>
<tr>
<th>O</th>
<th>Means of transportation</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>On foot</td>
<td></td>
<td>61</td>
<td>61%</td>
<td>48</td>
<td>48%</td>
</tr>
<tr>
<td>By donkey (animals)</td>
<td></td>
<td>14</td>
<td>14%</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>By car</td>
<td></td>
<td>4</td>
<td>4%</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Not going to the farm</td>
<td></td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

Table (5-17) shows the distribution of the respondents by the means of transportation they use to access the farms. Most of the respondents in the Gezira and Shendi move to their farms on foot. They are represented by 61% and 48% (respectively). About 14% and 5% in the Gezira and Shendi respectively, use donkeys. Very few women 4% and 3% in the Gezira and Shendi (respectively) arrive by cars. This reflects that women suffer to reach their farms, and they complain about this situation. When they reach the farms on foot they tired and cannot work full time on the agricultural work. When they use donkeys and cars, they have no problems in reaching the farms and could do more work than those who reaching the farms on
foot. This is in spite of the fact that many of them have their farms far from their houses in their villages.

Table (5-18) Frequency distribution and percentage of the respondents by the type of crops they grow.

<table>
<thead>
<tr>
<th>Crops type</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Vegetables</td>
<td>23</td>
<td>23%</td>
</tr>
<tr>
<td>Fruit</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Other farm crops (dura, maize, wheat, etc)</td>
<td>34</td>
<td>34%</td>
</tr>
<tr>
<td>Forage</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Mixture of different crops</td>
<td>15</td>
<td>15%</td>
</tr>
<tr>
<td>Not working as farmers</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

As shown in table (5-18) it is clear that most of the respondents are growing farm crops (dura, maize, wheat…etc) represented by 34% and 23% in the Gezira and Shendi respectively, because they use them in their main diets. The main crop grown is dura followed by wheat. Sometimes other farmers grow maize to use in their main diet as Kissra or Assida. The growing of fruit is not widely spread between the women farmers in the two areas of study because they were not depending on fruit economically. Fruit growing is represented by 3% only in both the Gezira and Shendi area. Growing of vegetables represents the second crop in the Gezira after cereals (23%) compared to Shendi (7%), vegetables are considered cash crops and quick income – generating in the Gezira and are more spread than in Shendi because to the higher density of population and good marketing opportunities. Growing of forage by women farmers is represented by 4% in
the Gezira and 2% in Shendi. They grow forage only for their livestock and not for the market, in the two areas the women farmers use the debris of the crops as forage for their livestock. As a result they find that there is no need to grow forage crops. The main forage crops in the Gezira are sorghum (Abu 70) and beans, but in Shendi Alfalfa and sorghum are also used as forage. In Shendi we find that the growing of mixture crops is more spread than in the Gezira, because in the Gezira the growing of crops is controlled by the Gezria Scheme and crops rotations. Women farmers have no chance to divert from the rotation and growing mixture crops is represented in the Gezria by only 15% while in Shendi it is 21%.

Table (5-19) Frequency distribution and percentage of respondents by productivity of farms:-

<table>
<thead>
<tr>
<th>Productivity</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Less than average</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>Average</td>
<td>26</td>
<td>26%</td>
</tr>
<tr>
<td>Above average</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>Very good</td>
<td>22</td>
<td>22%</td>
</tr>
<tr>
<td>Excellent</td>
<td>14</td>
<td>14%</td>
</tr>
<tr>
<td>Not working as farmers</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

Table (5-19) shows that the respondents in the Gezria attain average productivity in their farms (26%). Respondents in Shendi (16%) attain very good productivity, which is almost similar to the productivity in the Gezria that represented by (22%). As the excellent productivity in the Gezria (14%) is higher than that of Shendi (3%). It is obviously that the farms
Productivity at the Gezira is better than in Shendi. This may be due to the fact that the Gezira women are more knowledgeable about agricultural work than women in Shendi area.

Table (5-20) chi-square test for farm productivity between the Gezira respondents and Shendi/Matammah respondents:

<table>
<thead>
<tr>
<th>AREA</th>
<th>Gezira Count</th>
<th>Expected Count</th>
<th>Shendi Count</th>
<th>Expected Count</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than average</td>
<td>10</td>
<td>9.0</td>
<td>8</td>
<td>9.0</td>
<td>18</td>
</tr>
<tr>
<td>average</td>
<td>26</td>
<td>17.0</td>
<td>8</td>
<td>17.0</td>
<td>34</td>
</tr>
<tr>
<td>above average</td>
<td>7</td>
<td>14.0</td>
<td>21</td>
<td>14.0</td>
<td>28</td>
</tr>
<tr>
<td>very good</td>
<td>22</td>
<td>19.0</td>
<td>16</td>
<td>19.0</td>
<td>38</td>
</tr>
<tr>
<td>excellent</td>
<td>14</td>
<td>8.5</td>
<td>3</td>
<td>8.5</td>
<td>17</td>
</tr>
<tr>
<td>not working as farmers</td>
<td>21</td>
<td>32.5</td>
<td>44</td>
<td>32.5</td>
<td>65</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100.0</td>
<td>100</td>
<td>100.0</td>
<td>200</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>32.955a</td>
<td>5</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: data analysis

Moreover, chi-square test has been carried out to indicate if there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in term of farm productivity. The value of chi-square is 0.00 which is less than 0.5 at the probability 0.001. This value statistically is highly significant. It means that there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in farm productivity.
Table (5-21) Frequency distribution and percentage of the respondents by reasons affecting their farms productivity:

<table>
<thead>
<tr>
<th>The reasons</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>*Scarcity of inputs especially fertilizers</td>
<td>1</td>
<td>1%</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>*The problems of pests, irrigation and increase of the production cost.</td>
<td>2</td>
<td>2%</td>
<td>14</td>
<td>14%</td>
</tr>
<tr>
<td>*Fertility of the land and using of fertilizers.</td>
<td>24</td>
<td>24%</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>*The proper agricultural practices.</td>
<td>40</td>
<td>40%</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>*Small farm size and scarcity of financing.</td>
<td>11</td>
<td>11%</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>*Availability of inputs and good experience</td>
<td>1</td>
<td>1%</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>*Not farmers</td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

Table (5-21) shows the respondents distribution by the reasons affecting their farms productivity. Scarcity of fertilizers affect the productivity of 1% in the Gezira and 6% in Shendi, the problems of pesticides, irrigation and increase of the production cost affect the productivity of 2% in the Gezira and 14% in Shendi (In Shendi there is a problem of irrigation water in all the area, but in the Gezira no problem exists in the irrigation water as water is
provided from Sennar Dam. In Shendi area however farmer use pumps for lifting the water from the River Nile). Land fertility and the use of fertilizer affect in 24% of the respondents in the Gezira and 10% in Shendi, because land fertility in Shendi is higher than in the Gezira, in the Gezira where an intensive cropping system is used compared to that used in Shendi. Also the crops grown in Shendi are mostly horticultural crops (vegetables) with some cereals which are not exhaustive as cotton in the Gezira. The use of proper agricultural practices affects 40% out of respondents in the Gezira compared to Shendi where the percentage is not more than 12% only. We find that women in the Gezira have higher experience in the agricultural practices than the women in Shendi. Small farm sizes and scarcity of finance affect 11% of the Gezira women farms productivity and by 6% in Shendi area. This indicates that the farms sizes are small and the respondents in the two areas have limited space to practice intensive crops production in their farms. Women in the Gezira have available inputs and higher experience than Shendi women.

Table (5-22) Frequency distribution and percentage of the respondents according to adequacy of farms income to satisfy their needs:

<table>
<thead>
<tr>
<th>The farmers opinion</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Satisfying their needs</td>
<td>43</td>
<td>43%</td>
</tr>
<tr>
<td>Not satisfying their needs</td>
<td>36</td>
<td>36%</td>
</tr>
<tr>
<td>Not farmers</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)
Table (5-22) shows that 43% of the respondents in the Gezira have enough income to satisfy their needs and 36% out of them do not. While in Shendi, 33% of the respondents reported that their income from farming is satisfying their needs and 23% of them generate incomes not satisfying their needs. As we stated before women experience in agriculture is more in the Gezira than in Shendi. This explains why women farmers in the Gezira are satisfied by their farms productivity and income than the women farmers in Shendi.

Table (5-23) Frequency distribution and percentage of the respondents by methods used to increase their farms incomes to satisfy their needs:

<table>
<thead>
<tr>
<th>The way in which they increase their income</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Practicing commercial activities in home</td>
<td>17</td>
<td>17%</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>or market</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father, husband or sons do other work</td>
<td>17</td>
<td>17%</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Working for the government</td>
<td>-</td>
<td>-</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>Working in agriculture for others</td>
<td>2</td>
<td>2%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Their income satisfying their needs.</td>
<td>42</td>
<td>42%</td>
<td>32</td>
<td>32%</td>
</tr>
<tr>
<td>Not working in agriculture</td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Field survey April (2004)

Table (5-23) shows that most of the respondents 17% in the Gezira and 12% in Shendi respectively practices other activities than agriculture such as commercial activities in their homes or in market to supplement agricultural income to satisfying their needs. 17% and
3% from the Gezira and Shendi respectively, stated that they depend on the father, husband, and/or son working in other sectors outside agriculture to satisfying their needs. 9% of the respondents in Shendi area are working for the government in nursing, teaching, etc., compared to the Gezira where no women works for the government. This indicate that education is more spread among the women in Shendi than in the Gezira area. 2% out of the respondent in the Gezira stated that they work in agriculture as daily-paid labourers to increase their incomes. In Shendi, however no one of the respondent worked outside their own farm.

Only 42% and 32% of the respondents from the Gezira and Shendi respectively, stated that their income is quite enough and satisfying their needs. They represent the majority of the respondents who indicate that the agricultural income in the two areas of the study is good.

Table (5-24) Frequency distribution and percentage of the respondents by utilization of a surplus in their agricultural production:

<table>
<thead>
<tr>
<th>Utilization of surplus</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Sell it to consumers</td>
<td>13</td>
<td>13%</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Sell it to local village shops</td>
<td>12</td>
<td>12%</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Sell it to retailers in town</td>
<td>7</td>
<td>7%</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Sell it to whole sellers</td>
<td>6</td>
<td>6%</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>Give it to friends and relatives as a gift</td>
<td>1</td>
<td>1%</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>They have no surplus</td>
<td>40</td>
<td>40%</td>
<td>24</td>
<td>24%</td>
</tr>
<tr>
<td>Not working in agriculture</td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
</tbody>
</table>
Table (5-24) reveals that 13% from the Gezira and 8% from Shendi who have a surplus in their agricultural production sell it directly to consumers in the area, because their surplus is small and it is better to sell it directly to consumers. 12% of the respondents from the Gezira and 5% from Shendi found it more profitable to sell their surplus to local shops in their villages. On the other hand, 7% and 4% out of the respondents from the Gezira and Shendi respectively sell their surplus products to retailers. 6% and 10% from the Gezira and Shendi also sell their surplus products to whole sellers. Only 1% from the Gezira and 5% from Shendi stated that they give their surplus products to friends and relatives, this indicate that the social solidarity is stronger in Shendi area than in the Gezira area. 40% and 24% from the Gezira and Shendi respectively stated that they produce no surplus in their agricultural production.

Table (5-25) Frequency distribution and percentage of the respondents, who are not working in agriculture by the degree of their interest to work in agriculture:-

<table>
<thead>
<tr>
<th>Degree of interest to work</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
</tr>
<tr>
<td>Very interested</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>Interested</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>I will work if an opportunity is found</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Not interested</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Refuse to work in agriculture</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

As shown in table (5-25) 10% of the respondents from the Gezira and 7% from Shendi agreed that they are very interested to work in agriculture if they find a chance to do so. Only 5% out of respondents from the Gezira and 6% from Shendi reported that they are just interested. 2% of respondents from the Gezira and 11% from Shendi stated that they will work in agriculture if an opportunity is found. 3% of the respondents from the Gezira and 5% from Shendi area reported that they are interested in agricultural work. 1% and 15% from the Gezira and Shendi respectively, are not interested to work in agriculture at all. This result indicates that women in Shendi area are more interested to work in agriculture if they find an opportunity. The problem of scarcity in agricultural land, however, limit their participation. Although women in the Gezira are more engaged in agricultural work than women in Shendi area, we observe that women in Shendi are faced by many obstacles which make them to refuse the agricultural work.

<table>
<thead>
<tr>
<th>The reasons for lack of interest to work in agriculture</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture is socially unacceptable for women</td>
<td>-</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Agricultural work is very hard for women
Work at home is too time-consuming
Have no experience in agricultural practices
They are working and interested in agricultural work

<table>
<thead>
<tr>
<th></th>
<th>Shendi</th>
<th>Gezira</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural work is very hard for women</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Work at home is too time-consuming</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Have no experience in agricultural practices</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>They are working and interested in agricultural work</td>
<td>96</td>
<td>76</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>


Table (5-26) shows the distribution of the respondents according to their opinion why they are not interested to work in agriculture. As stated by 13% of the respondents in Shendi area, agricultural work is socially unacceptable for women because their main duties are the domestic work in their houses such as childbearing, rear and caring for their husbands. All the respondents in the Gezira stated that there is no problem for women to work in agriculture and also do their domestic work. In the Gezira the agricultural work is well accepted socially for women. 2% of the respondents from the Gezira and 4% from Shendi stated that agricultural work is very hard for women and when they work in agriculture their cosmetics and lotions affect their skin adversely if and when exposed to the direct sun light. 1% of the respondent from the Gezira and 5% from Shendi think that agricultural work is too time-consuming and as they are busy in domestic work, then have no time to work in agriculture. Moreover, 1% of the respondents from the Gezira and 2% from Shendi area stated that they have no experience in the agricultural work and as a result they are not interested in agricultural work. This result indicates that, women in the Gezira are more interested in agricultural work than the women in Shendi area.
Table (5-27) Frequency distribution and percentage of the respondents according to their opinions of how much additional (extra income) work they are doing.

<table>
<thead>
<tr>
<th>The opinions of how much they work</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Always participating other activities</td>
<td>13</td>
<td>13%</td>
</tr>
<tr>
<td>Many times</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Rarely</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Not practicing</td>
<td>29</td>
<td>29%</td>
</tr>
<tr>
<td>Not wanting to practice</td>
<td>40</td>
<td>40%</td>
</tr>
<tr>
<td>Not practicing any activities</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>


Table (5-27) shows that most of the respondent 40% from the Gezira and 28% from Shendi area are not practicing any additional work and they do not have enough time to do any additional work. 7% out of the respondents from the Gezira and 2% from Shendi are not practicing any activities and are not interest to do so, because they think that the work is mainly for men. At the same time 29% of the respondents from the Gezira and 33% from Shendi area, are not practicing any additional activities beside agriculture because they do not find any additional activities to practice. Also, 3% and 23% of the respondents from the Gezira and Shendi respectively, practice additional activities rarely, the women in the Gezira more active than those in Shendi. Those who practice many times are 8% and 5% of the respondents from the Gezira and Shendi respectively. This indicate women are ready to practice other activities but they are more busy in agriculture and domestic work. On the other hand, 13% of the respondents from the Gezira and 9% from Shendi always
practicing other activities. This result indicate that women in the Gezira have no free time like the women in Shendi and who are more active in practicing additional work.

Table (5-28) Results of T-test of significance of working hours per day, interest of participating in agricultural activities, other work than agriculture, and daily home activities between respondents of the Gezira and Shendi area.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Mean</th>
<th>S.D.</th>
<th>Mean Diff.</th>
<th>T-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work hours /day</td>
<td>1</td>
<td>1.9125</td>
<td>6971.</td>
<td>-.6003</td>
<td>-6.633</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2.5128</td>
<td>6374.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest in part. Agric. Act.</td>
<td>1</td>
<td>1.9565</td>
<td>1.2605</td>
<td>-1.1791</td>
<td>-3.640</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3.1356</td>
<td>1.4495</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other work than agric.</td>
<td>1</td>
<td>3.8065</td>
<td>1.4315</td>
<td>.1196</td>
<td>0.742</td>
<td>0.459</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3.6869</td>
<td>1.2061</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table (5-28) shows that there are no significant difference between the respondents of the Gezira and the respondents of Shendi area in participating other work than agriculture, while there are a high significant difference between them in terms of daily working hours, interest in participating in agricultural activities, and daily home activities (un paid). Also the table show that the means of Shendi respondents are higher than the means of the Gezira respondents in terms of daily working hours, interest in participating agricultural activities, and daily home activities, in the other hand, the mean of the Gezira respondents is higher than Shendi respondents in term of participating in other work than agriculture.

The high significant differences in daily working hours, interest in participating agricultural activities, and daily home activities are due to the fact that women farmers in the Gezira were engage more in agriculture than women farmers in Shendi area.

Table (5-29) Frequency distribution and percentage of the respondents by the type of part-time work beside agriculture

<table>
<thead>
<tr>
<th>Type of part-time work</th>
<th>Gezira Freq.</th>
<th>Gezira Percent. %</th>
<th>Shendi Freq.</th>
<th>Shendi Percent. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handcrafts and (selling and buying the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: data analysis

Group (1) the Gezira

Group (2) Shendi area
Table (5-29) shows that most of the respondents (78%) from the Gezira and (71%) from Shendi are not doing any part-time work. They work only in agriculture or in the domestic work. Also 9% of the respondents from the Gezira and 16% from Shendi are working in handcrafts activities in addition to selling and buying the products. It is clearly that women in Gezira are more active than those of Shendi where 7% of them compared to only 1% in Shendi are working in female beauty services (cosmetics, lotions and decoration by Henna and others). They also do domestic work in the houses of others. The high percentage in the Gezira compared to Shendi because of the spreading of migrant women in the Gezira who are ready to work in any type of jobs to generate income. In Shendi however, there are many social traditions which affect women when choose their work. 2% out of the respondents from Shendi and the Gezira are working as tailors at home beside their agricultural activities. They do this tailoring for the neighboring resident in their areas. Government jobs are not spread among the respondents in the Gezira (3%) only, where in Shendi area 10% of the respondents take government jobs beside farming. This indicate that women in the Gezira are engage more in agriculture than in other activities compared to the women in Shendi. Rearing animals is not spread among the

<table>
<thead>
<tr>
<th>Products</th>
<th>Gezira</th>
<th>Shendi</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female services and work in the houses for others</td>
<td>9</td>
<td>7%</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>Tailor</td>
<td>7</td>
<td>7%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Government official</td>
<td>2</td>
<td>2%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Rearing of animals</td>
<td>3</td>
<td>3%</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>Not working part-time</td>
<td>78</td>
<td>78%</td>
<td>71</td>
<td>71%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

respondents in both areas. Only 1% of the respondents from the Gezira and none from Shendi area are rearing animals.

Table (5-30) chi-square test for type of part-time work beside agriculture between the Gezira respondents and Shendi/Matammah respondents:

<table>
<thead>
<tr>
<th>AREA</th>
<th>Count</th>
<th>Expected Count</th>
<th>Count</th>
<th>Expected Count</th>
<th>Count</th>
<th>Expected Count</th>
<th>Count</th>
<th>Expected Count</th>
<th>Count</th>
<th>Expected Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gezira</td>
<td>9</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>78</td>
<td>100</td>
</tr>
<tr>
<td>Shendi</td>
<td>16</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>10</td>
<td>0</td>
<td>71</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>13</td>
<td>1</td>
<td>149</td>
<td>200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th>Pearson Chi-Square</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11.558*</td>
<td>5</td>
<td>.041</td>
</tr>
</tbody>
</table>

Source: data analysis

Moreover, chi-square test has been carried out to indicate if there a significant difference between the Gezira respondents and Shendi/Matammah respondents in term of type of part-time work beside agriculture.

The value of chi-square is 0.041 which is less than 0.5 at the probability 0.001. This value is statistically significant.

It means that there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in type of part-time work beside agriculture.

Table (5-31) Frequency distribution and percentage of the respondents by performance of unpaid activities:
<table>
<thead>
<tr>
<th>Unpaid activity</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>I have no activity</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Domestic home activities</td>
<td>19</td>
<td>19%</td>
</tr>
<tr>
<td>Caring for children</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Caring for animals</td>
<td>11</td>
<td>11%</td>
</tr>
<tr>
<td>Getting drinking water</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Caring for old people</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Fetching fire wood</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Home activities and caring for animals</td>
<td>24</td>
<td>24%</td>
</tr>
<tr>
<td>Home activities and caring for children and animals</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Caring for young animals</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>Home activities and caring for children</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>Fetching drinking water and fire wood</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Source: Field survey April (2004).**

Table (5-31) shows the distribution of the respondents by their daily unpaid activities. Very few of the respondents from the Gezira (5%) and Shendi (3%) have no responsibilities for any types of activities as there is always somebody working for them even in their domestic work. 19% of the respondents from the Gezira and 18% from Shendi are working in their domestic work which is the only unpaid activity they do for their children and husbands. Caring for children is an unpaid activity done by women in the study areas represented by 8% and 3% in the Gezira and Shendi areas respectively. On the other hand, caring for animals is practiced by 11% of the respondents in the Gezira and none of the respondents from Shendi is
practicing this activity, because of the social factors as mentioned before. 1% and 4% out of the respondents from the Gezira and Shendi respectively take care of getting drinking water as an unpaid activity, because water is not readily available in wells and canals and could be far from the homes. Caring for old people also is one of the unpaid activities of women in the study areas, 2% of the respondents in the Gezira and 3% in Shendi are doing this activity. 1% out of the respondents from both Shendi and the Gezira are fetching firewood as an unpaid activity for their families, because they faced by shortage of fuel for their cooking. Home domestic activity and caring for the animals is a combined unpaid activity practiced by 24% of the respondents in the Gezira and 21% in Shendi. combining three unpaid activities such as domestic home jobs, caring for children and animals are practiced by 11% out of the respondents from Shendi and none in the Gezira, because women in Shendi are engaged less in agriculture. 9% and 4% from the Gezira and Shendi respectively are caring for children and animals. Home activities and caring for children are combined as unpaid activities by 12% and 28% of the respondents in the Gezira and Shendi respectively. On the other hand, 8% and 4% out of the respondents from the Gezira and Shendi respectively combine getting drinking water and fetching firewood as unpaid activities. These results indicate that women’s burdens are very heavy to bear, and all the above-mentioned activities are considered additional and unpaid activities for the women in both areas of study.

Table (5-32) Frequency distribution and percentage of the respondents by the kinds of kept animals:-

<table>
<thead>
<tr>
<th>Kinds of animals</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table (5-32) shows the distribution of the respondents by the kinds of animals they have. 2% of the respondents from the Gezira and 10% from Shendi area have Goats. 4% and 10% of the respondents in the Gezira and Shendi respectively have Sheep. This reflects the fact that rearing of goats and sheep in Shendi was more spread than in the Gezira area. Also 13% of the respondents from the Gezira are responsible for cows and 1% only in the Gezira keep poultry. None of the respondents in Shendi area responsible for cows and poultry. Those responsible for more than one type of animals (cows, sheep and goats) are represented by 5% in the Gezira and 16% in Shendi area. Also 10% and 5% of the respondents in the Gezira and Shendi respectively responsible for cows and goats. At the same time those keeping cows and poultry are represented by 7% in the two areas of study. The results reveal that women are responsible for keeping the family’s animals, which increase their burden in addition to domestic work this affects their involvement in agriculture negatively.
Table (5-33) Frequency distribution and percentage of the respondents by their participation in community social activities:-

<table>
<thead>
<tr>
<th>The social activity</th>
<th>Gezira Freq.</th>
<th>Gezira Percent. %</th>
<th>Shendi Freq.</th>
<th>Shendi Percent. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not participating</td>
<td>61</td>
<td>61%</td>
<td>39</td>
<td>39%</td>
</tr>
<tr>
<td>Adult education classes</td>
<td>10</td>
<td>10%</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Heath services</td>
<td>5</td>
<td>5%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Area development committee</td>
<td>6</td>
<td>6%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Agricultural committee</td>
<td>3</td>
<td>3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Co-operative society</td>
<td>3</td>
<td>3%</td>
<td>13</td>
<td>13%</td>
</tr>
<tr>
<td>Women’s union</td>
<td>8</td>
<td>8%</td>
<td>15</td>
<td>15%</td>
</tr>
<tr>
<td>Farmers union</td>
<td>4</td>
<td>4%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Women’s union, farmers union, and development committee</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Participate in many activities but infrequently.</td>
<td>-</td>
<td>-</td>
<td>13</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>


As shown in table (5-33) most of the respondents of the Gezira (61%) were not participating in social activities compared to Shendi area where 39% are not participate in social activities. This clearly indicates that women in Shendi are more active in social participation than in the Gezira area. Participation in adult education classes are attended by 10% and 8% in the Gezira and Shendi respectively. This reveals that women in the Gezira were more active to engage in adult education classes than in Shendi area. Participation in health services is represented by 5% and 2% from the Gezira and Shendi respectively. This may indicate that the spread of diseases in the
Gezira is more than in Shendi area. The participation in area development committee in the Gezira (6%) is more than in Shendi where is (2%) only. This reflects the awareness of the Gezira women and their knowledge about the development committees programs. At the same time participation in the agricultural committee in the Gezira is represented by 3%, while in Shendi it is represented by none. This is because in the Gezira the agricultural committees are established by the Gezira scheme. Co-operative societies are more spread in Shendi (13%) than in the Gezira (3%). The awareness about women’s union is (15%) in Shendi which is more spread than in the Gezira (8%). Participation in farmers union in the Gezira is represented by 4% whereas there is no representation of women in farmers union in Shendi area. Moreover, women in Shendi participate in many social activities, but their participation is sometimes infrequently. On the other hand, women in the Gezira don’t participate in many social institutions at the same time compared to the women in Shendi.

Table (5-34) Frequency distribution and percentage of the respondents by their sources of finance and agricultural inputs:

<table>
<thead>
<tr>
<th>The source</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Source of Financing</th>
<th>Number</th>
<th>Percentage</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have no source</td>
<td>2</td>
<td>2%</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>From my own resources</td>
<td>50</td>
<td>50%</td>
<td>38</td>
<td>38%</td>
</tr>
<tr>
<td>From retailers in the area</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>From the agricultural bank</td>
<td>14</td>
<td>14%</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>From the owner of the farm (the scheme)</td>
<td>13</td>
<td>13%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Not farmers</td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
</tbody>
</table>

Total 100 100% 100 100%


Table (5-34) shows the distribution of the respondents by their source of financing and agricultural inputs. 2% from the Gezira and 9% from Shendi, have no financial source to support them. The percentage from Shendi high because they growing their crops privately and depend on their own resources. 50% of the respondents from the Gezira and 38% from Shendi indicated that they depend on their farms income. This reflects that their farms productivity is quite enough to support them financially to prepare for the coming season. On the other hand,, 2% of the respondents from Shendi depend only on retailers in their areas to give them the money for their season’s preparation with a contract to sell their products to them. The agricultural bank supports 14% of the respondents from the Gezira and 5% from Shendi up to the harvesting season through the supply of inputs (fertilizers, fuel, especially in Shendi area) etc.. and they return the debits after harvesting. The Gezira Scheme supported 13% out of the respondents and 2% are supported by their partners or farms owners, also they return the debits after harvesting the crops.

Table (5-35) Frequency distribution and percentage of the respondents by who determines the type of crops grown on the farm:-
<table>
<thead>
<tr>
<th>Who determines the type of the crops</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Father, husband or the head of the family</td>
<td>1</td>
<td>1%</td>
<td>29</td>
<td>29%</td>
</tr>
<tr>
<td>The partner</td>
<td>42</td>
<td>42%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Myself</td>
<td>17</td>
<td>17%</td>
<td>20</td>
<td>20%</td>
</tr>
<tr>
<td>The owner of the farm</td>
<td>8</td>
<td>8%</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>The scheme</td>
<td>11</td>
<td>11%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Not farmers</td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Source: Field survey April (2004).*

As shown in table (5-35) for most of the respondents in the Gezira (53%) the type of crop to be grown is determined by the partner (or the Scheme) because the growing of crops in the scheme determined by the crop rotation. In Shendi area only 1% of the respondents the types of crops to be grown are determined by the partner in the farm, because there is no crop rotation. In contrast for 1% of the respondents in the Gezira and 29% in Shendi area determination of the types of crops to be grown is a family affair (Father, husbands or the heads of the family). 17% of the respondents from the Gezira and 20% from Shendi determined the types of crops to be grown by themselves, because they have no partners and are operating their private farms. For 8% of the respondents from the Gezira the farms owners determined the type of crops to be grown, compared 6% in Shendi area.

**Table (5-36) Frequency distribution and percentage of respondents by interaction with agricultural extension:**
<table>
<thead>
<tr>
<th>Interaction with Extension</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Always</td>
<td>21</td>
<td>21%</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Many times (often)</td>
<td>9</td>
<td>9%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Some times</td>
<td>14</td>
<td>14%</td>
<td>15</td>
<td>15%</td>
</tr>
<tr>
<td>Rarely</td>
<td>8</td>
<td>8%</td>
<td>11</td>
<td>11%</td>
</tr>
<tr>
<td>No interaction with extension</td>
<td>27</td>
<td>27%</td>
<td>25</td>
<td>25%</td>
</tr>
<tr>
<td>Not farmers</td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
<td><strong>100</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>


Table (5-36) shows the distribution of the respondents by their interaction with agricultural extension where 21% and 3% of the respondents from the Gezira and Shendi respectively, indicated that their interaction is always. Those who interact oftenly are represented by 9% from the Gezira and 2% from Shendi area. On the other hand, 14% from the Gezira and 15% from Shendi interact with extension sometime. Also 8% from the Gezira and 11% from Shendi interact with extension rarely, and 27% of the respondents from the Gezira, 25% from Shendi do not interact with extension at all. These results, indicate that the extension services are weak in the two studied areas. Also awareness of the respondents of agricultural extension is equally weak. However, it is clear that awareness of the respondents about the extension services in the Gezira is more than in Shendi area.

Table (5-37) Frequency distribution and percentage of respondents by the source of agricultural information if not from agricultural extension:-
### Table (5-37) Frequency distribution and percentage of the respondents by the source of agricultural information other than extension services:

<table>
<thead>
<tr>
<th>The source of information</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Mass media (Radio and TV)</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Other farmers</td>
<td>29</td>
<td>29%</td>
</tr>
<tr>
<td>Owner of the farm</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Friends</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Not asking about information</td>
<td>60</td>
<td>60%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>


Table (5-37) shows the distribution of the respondents by the sources of agricultural information other than extension services. Most of the respondent from the Gezira (60%) and Shendi (68%), were not seeking agricultural information from anywhere, because some of them were not farmers and other were not aware of the available extension and agricultural information services. The main source of the information for 4% of the respondents from the Gezira and for 6% from Shendi is mass media (radio and TV). The awareness of the respondents from Shendi of the mass media is more than that of the respondents from the Gezira. 29% of the Gezira respondents and 22% of Shendi respondents, gain their agricultural information from the other farmers. 5% of the respondents form the Gezira obtain information from the owners of their farms. Only 2% and 4% of the respondents from the Gezira and Shendi respectively receive their information from friends. This reflects the weakness of extension services and the extension agents in the two areas of study.

Table (5-38) Frequency distribution and percentage of the respondents by their source of seeds:-
Table (5-38) shows most of the respondents from the Gezira (32%) and from Shendi (37%) obtain their seeds from their own farms, while 6% of the respondents from the Gezira and 3% from Shendi area receive their seeds from agricultural extension. On the other hand, 6% from the Gezira and 2% from Shendi gain their seeds from the ministry of agriculture. Agricultural bank gave seeds to 12% of the respondents from the Gezira and 10% from Shendi area. Partners gave seeds to 19% of the respondents from the Gezira and only 1% from Shendi area. 4% out of the respondents from the Gezira and 3% from Shendi get their seeds from the schemes administrations. These results indicate that the extension and ministry of agriculture do not offer enough seeds to women farmers in the two studied areas.

Table (5-39) Frequency distribution and percentage of the respondents by level of fertilizers use:-

<table>
<thead>
<tr>
<th>The source of seeds</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Agricultural extension</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>Ministry of agriculture</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>My own farm</td>
<td>32</td>
<td>32%</td>
</tr>
<tr>
<td>The partner</td>
<td>19</td>
<td>19%</td>
</tr>
<tr>
<td>Scheme administration</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Agricultural bank</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>Not farmers</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

As indicated in table (5-39) 39% of the respondents from the Gezira and 12% from Shendi area always using fertilizers in their farms, compared to 35% from the Gezira and 10% from Shendi who often use fertilizers in their farms. On the other hand, 2% of the Gezira respondents and 28% of Shendi respondents are sometime using fertilizers in their farms, compared to only 1% of respondents from the Gezira and 3% of them of Shendi area who rarely use fertilizers in their farms. Those not using fertilizers in their farms are represented by 2% and 3% from the Gezira and Shendi respectively. These results reveals that women farmers in the Gezira have good awareness of using fertilizers and know it’s benefits in increasing agricultural productively. In Shendi however, they are not aware enough of the benefits of fertilizers.

Table (5-40) Results of T-test of significance in participating social activities ,contact ability to extension , use of fertilizers , and training courses attended between respondents of the Gezira and Shendi area .
Group (1) the Gezira

Group (2) Shendi area

As shown in table (5-40) there is no significant difference between the respondents of the Gezira and the respondents of Shendi in term of attended training courses, while there are high significant differences between them in terms of participation in social activities, contact to extension, and using fertilizers. The table also show the means of Shendi respondents are higher than the means of the Gezira respondents in terms of participating in social activities, contact to extension, and using fertilizers.

The high significant difference in terms of participation in social activities, contact to extension and using fertilizers is due to the result that women farmers in the Gezira are more active than women farmers in Shendi area and also more aware of extension and fertilizers.

Table (5-41) Frequency distribution and percentage of the respondents by kinds of fertilizers used:-
<table>
<thead>
<tr>
<th>Kind of fertilizers</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal manure</td>
<td>7</td>
<td>7%</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>Chemical fertilizer</td>
<td>65</td>
<td>65%</td>
<td>14</td>
<td>14%</td>
</tr>
<tr>
<td>Animal manure and chemical fertilizer</td>
<td>6</td>
<td>6%</td>
<td>33</td>
<td>33%</td>
</tr>
<tr>
<td>Foliar fertilizer</td>
<td>1</td>
<td>1%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Not farmers</td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>


Table (5-41) shows that most respondents from the Gezira (65%) and 14% from Shendi area use chemical fertilizers on their farms. Animal manure, as fertilizer is used by 7% of the respondents from the Gezira and 9% from Shendi. The mixture of animal manure and chemical fertilizer is used by 6% of the respondents from the Gezira and 33% from Shendi. At the same time only 1% of the respondents from the Gezira are using foliar fertilizers. These results indicate that women farmers in the Gezira are more aware of chemical fertilizer, than in Shendi area. In contrast, women farmers in Shendi are using animal manure more than in the Gezira, but are not aware of foliar fertilizers at all.

Table (5-42) Frequency distribution and percentage of the respondents by the attended training courses:-

<table>
<thead>
<tr>
<th>Training</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Attended</td>
<td>10</td>
<td>10%</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>Did not attend</td>
<td>90</td>
<td>90%</td>
<td>90</td>
<td>90%</td>
</tr>
</tbody>
</table>
In table (5-42) most of the respondents (90%) in the two areas of study (the Gezira and Shendi) did not attend any type of training courses. On the other hand, only 10% from the two areas attended the training courses. These results reflect that no institutions either GOs or NGOs offered enough training courses in the areas of study.

Table (5-43) Frequency distribution and percentage of the respondents by course duration:-

<table>
<thead>
<tr>
<th>Course duration</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Less than one year</td>
<td>9</td>
<td>9%</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>1-2 years</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Not attending</td>
<td>90</td>
<td>90%</td>
<td>90</td>
<td>90%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>


Most of the respondents (9%) who attended the training courses did so for a duration of less than one year in both areas of study. While 1% from the two areas of study (the Gezira and Shendi) attended a courses with a duration of 1-2 years. These results indicate that there are no training courses with long duration in the two areas of study offered for the women farmers by either governmental or non-governmental organizations.

Table (5-44) chi-square test for courses duration between the Gezira respondents and Shendi/Matammah respondents:-
Moreover, chi-square test has been carried out to indicate if there is a significant difference between the Gezira respondents and Shendi/Matammah respondents in term of courses duration.

The value of chi-square is 1.00 which is more than 0.5 at the probability 0.001. This value is statistically not significant.

It means that there is no significant difference between the Gezira respondents and Shendi/Matammah respondents in courses duration.

Table (5-45) Frequency distribution and percentage of the respondents by the type of training courses attended:-

<table>
<thead>
<tr>
<th>The type of training courses</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Tailoring and needle work</td>
<td>2</td>
<td>2%</td>
</tr>
</tbody>
</table>
Table (5-45) shows that (7%) of the respondents from the Gezira attended the training course on primary health services which are attended by (4%) from Shendi area. Tailoring and needle work is attended by 2% and 4% of the respondents from the Gezira and Shendi respectively. Training courses on agricultural work are attended by 1% of the respondents from both areas of study. Moreover, the combination of courses on primary health services and child nursing is attended by only 1% of the respondents from Shendi, and no one attended from the Gezira. Only the above-mentioned courses were offered in both areas of the study and no other types of course were offered for the respondents in the two areas. Also it is observed that there is no enough training for women whose left the schools earlier in the two areas of study (especially the rural areas). Apprenticeship training was offered only for boys and not for girls. Also no enough training is offered for women to work in kindergarten or as midwives in their societies.

Table (5-46) Frequency distribution and percentage of respondents by the place of the training courses:-

<table>
<thead>
<tr>
<th>The place</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>At the school of the village</td>
<td>4</td>
<td>4%</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>At the Red Crescent building</td>
<td>5</td>
<td>5%</td>
<td>4</td>
<td>4%</td>
</tr>
</tbody>
</table>
At NGOs premises are not attended the courses. Table (5-46) reveals that most (5%) from the Gezira and (4%) from Shendi area attended their training courses at the Red Crescent building in their areas. In the Gezira 4% of the respondents and 5% of them from Shendi attended the training course in the schools of their villages. Only 1% of the respondents in the two areas attended their training courses in the NGOs premises in their areas. These results reveals that not enough training services are offered by NGOs in the two areas of study.

Table (5-47) Frequency distribution and percentage of the respondents by the organizations that organized the training courses:

<table>
<thead>
<tr>
<th>The organization</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
</tbody>
</table>

As shown in table (5-47) 4% of the training course are organized by women’s union in the Gezira and women’s union also organizes 3% in Shendi. The Red Crescent organized 4% of the training courses in the two areas of study. The schools of the village organized 1% of the training courses in Shendi area only. Also, the NGOs organized 2% of the training courses in the two areas of study. These results indicate that there are no enough institutions in the areas of study to organize enough training courses for the respondents at a time when agricultural extension is not organizing any type of training courses for the respondents in the two areas.

Table (5-48) Frequency distribution and percentage of the respondents by their awareness of agricultural research:-

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>4%</th>
<th>3</th>
<th>3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women’s union</td>
<td>4</td>
<td>4%</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Red Crescent</td>
<td>4</td>
<td>4%</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>The school of the village</td>
<td>-</td>
<td>-%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>NGOs</td>
<td>2</td>
<td>2%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Are not attending the courses</td>
<td>90</td>
<td>90%</td>
<td>90</td>
<td>90%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table (5-48) above shows that most of the respondents (62%) and (72%) from the Gezira and Shendi respectively are aware of agricultural research. On the other hand, only 38% and 28% of the respondents from the Gezira and Shendi are however, not aware of agricultural research. The results also reveal that women in Shendi are more aware of agricultural research than those in the Gezira, and most of those who are not aware of agricultural research are not farmers.

Table (5-49) Frequency distribution and percentage of the respondents by their perception of the frequency of the researcher’s visits:

```
<table>
<thead>
<tr>
<th>The researcher’s visits</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Always</td>
<td>15</td>
<td>15%</td>
</tr>
<tr>
<td>More times (often)</td>
<td>13</td>
<td>13%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>17</td>
<td>17%</td>
</tr>
<tr>
<td>Don’t visit</td>
<td>55</td>
<td>55%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>
```


Table (5-49) shows that 15% of the respondents from the Gezira and none from Shendi area stated that the researchers were visiting them
always. Also 13% of the respondents from the Gezira and 2% from Shendi stated that the researchers were visiting them oftenly. 17% and 30% of the respondents from the Gezira and Shendi respectively agreed that the researchers were visiting them sometimes. While most of the respondents 55% from the Gezira and 68% from Shendi area stated that the researchers don’t visit them at all. These results reflect that the shortage and the weakness of contacts of the researchers with the farmers in the two areas of study in spite of the fact that research activities in the Gezira are more advanced than that in Shendi area.

Table (5-50) Results of T-test of significance of knowledge about
Agricultural research, visiting by researchers, the benefits from researchers and the main agricultural problems between respondents of the Gezira and Shendi area.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Mean</th>
<th>S.D.</th>
<th>Mean Diff.</th>
<th>T-value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of agric. research</td>
<td>1</td>
<td>1.3763</td>
<td>6064.</td>
<td>0.0935</td>
<td>1.470</td>
<td>0.143</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1.3763</td>
<td>4515.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visiting by researchers</td>
<td>1</td>
<td>3.0659</td>
<td>1.1907</td>
<td>-0.6966</td>
<td>-5.586</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3.7625</td>
<td>7810.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benefits from researchers</td>
<td>1</td>
<td>1.1818</td>
<td>3917.</td>
<td>0.1448</td>
<td>2.311</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1.0370</td>
<td>1906.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main agric. Problems</td>
<td>1</td>
<td>7.4615</td>
<td>4.4216</td>
<td>2.794</td>
<td>4.429</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4.6667</td>
<td>4.0132</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: data analysis

Group (1) the Gezira

Group (2) Shendi area

Table (5-50) shows there is no significant difference between the respondents of the Gezira and the respondents of Shendi area in knowledge of agricultural research, while there is a significant difference between them in term of benefits from researchers, and also there are high significant differences between the respondents in the two area of the study in terms of visiting by researchers and their main agricultural problems. Also the table show that the means of the Gezira
respondents are higher than that of Shendi respondents in term of benefits from researchers and the main agricultural problems, while the mean of Shendi respondents is higher than the mean of the Gezira respondents in term of visiting by researchers.

The significant difference in term of benefits from researchers, and the high significant differences in visiting by researchers and the main agricultural problems are due to the fact that the research services are more advanced in the Gezira than in Shendi area.

Table (5-51) Frequency distribution and percentage of the respondents by their opinions on the benefits of researcher’s visits:

<table>
<thead>
<tr>
<th>Benefits of the visits</th>
<th>Gezira</th>
<th>Shendi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Valuable information</td>
<td>27</td>
<td>27%</td>
</tr>
<tr>
<td>No benefits</td>
<td>73</td>
<td>73%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>


Table (5-51) shows that most of the respondents (73%) from the Gezira and (74%) from Shendi thought that there are no benefits from the researcher’s visits. Only 27% and 26% of the respondents from the two areas respectively, think they receive valuable information from the researcher’s visits. These results are explained by weakness of the researcher’s visits to farmers in their homes and farms.
Table (5-52) Frequency distribution and percentage of the respondents by whom they go to if they faced an agricultural problem:

<table>
<thead>
<tr>
<th>Whom they go to</th>
<th>Gezira Freq.</th>
<th>Gezira Percent. %</th>
<th>Shendi Freq.</th>
<th>Shendi Percent. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension agent</td>
<td>9</td>
<td>9%</td>
<td>11</td>
<td>11%</td>
</tr>
<tr>
<td>Agricultural inspector</td>
<td>43</td>
<td>43%</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>The neighbour</td>
<td>4</td>
<td>4%</td>
<td>17</td>
<td>17%</td>
</tr>
<tr>
<td>The farm owner</td>
<td>20</td>
<td>20%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>The farmers union</td>
<td>3</td>
<td>3%</td>
<td>11</td>
<td>11%</td>
</tr>
<tr>
<td>The agricultural committee</td>
<td>-</td>
<td>-</td>
<td>11</td>
<td>11%</td>
</tr>
<tr>
<td>Not farmers</td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>


In table (5-52) it is clear that 9% of the respondents from the Gezira and 11% from Shendi stated that they go to the extension agents in their areas if they faced agricultural problem. Many respondents (43%) from the Gezira and a few only (4%) from Shendi said that they go to the agricultural inspector if they faced agricultural problem. Also 4% and 17% of the respondents from the Gezira and Shendi stated that they go to their neighbours if they faced an agricultural problem. At the same time, 20% and 2% of the respondents from the two areas respectively, stated that they go to the farm owner if they faced an agricultural problem. Those who go to the farmers union are 3% and 11% from the Gezira and Shendi area respectively. Only 11% of the respondents from Shendi stated that they go to the agricultural committee if they faced an agricultural problem. These results confirm the weakness of the agricultural extension services in the
two areas of study. The agricultural inspection is more active in the Gezira than in Shendi area and offered more services to the majority of the respondents. Also we observe that contacts with neighbouring and relations are more strong in Shendi area than in the Gezira. Farmers union is more active in Shendi area than in the Gezira. The agricultural committees in the Gezira don’t assist women farmers as reflected in the results.

Table (5-53) Frequency distribution and percentage of the respondents by the main agricultural problems faced.

<table>
<thead>
<tr>
<th>The agricultural problem</th>
<th>Gezira</th>
<th></th>
<th>Shendi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>Percent. %</td>
<td>Freq.</td>
<td>Percent. %</td>
</tr>
<tr>
<td>Pests</td>
<td>14</td>
<td>14%</td>
<td>18</td>
<td>18%</td>
</tr>
<tr>
<td>Shortage of inputs</td>
<td>7</td>
<td>7%</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Irrigation</td>
<td>3</td>
<td>3%</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Scarcity of information</td>
<td>5</td>
<td>5%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Cost of production</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Marketing</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Low income</td>
<td>7</td>
<td>7%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Pests and cost of production</td>
<td>4</td>
<td>4%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Pests and irrigation</td>
<td>28</td>
<td>28%</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Pests and scarcity of information</td>
<td>11</td>
<td>11%</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>Not farmers</td>
<td>21</td>
<td>21%</td>
<td>44</td>
<td>44%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>


Table (5-53) shows the distribution of the respondents by the main agricultural problems faced which are mainly related to the farms and the market and also to the availability of agricultural information. The results reflect that (14%) from the Gezira and (18%) from Shendi faced the
problems of pests, and 7% from the Gezira and 4% from Shendi faced the unavailability of inputs. Irrigation is not considered a main problem for both Shendi and the Gezira women farmers as it affects only (5%) and (3%) respectively. Scarcity of agricultural information affects 5% and 2% of the respondents from the Gezira and Shendi respectively. The high cost of production and the marketing problems affect only 8% in Shendi area and none from the Gezira. Also 7% and 1% of the respondents in the Gezira and Shendi face the problem of low income. The combined pest and cost of production problems affect 4% and 1% of the respondents from the Gezira and Shendi respectively, also pests and irrigation affect 28% in the Gezira and 8% in Shendi. finally pests and scarcity of information faced 11% in the Gezira and 7% in Shendi. These results indicate that pests are the major problems for most of the respondents in the two areas of study. Also irrigation and scarcity of information are considered problems in the two areas. Cost of production and marketing are not considered major problems in the Gezira, because The Gezira Board assists in solving these problems. In Shendi however, the respondents consider them major problems. The dominancy of pests as a problem for the respondents in the two areas, indicate the weakness of the plant protection services.
Chapter Six

Summary, Conclusions and recommendations

6-1 Summary of the Thesis Chapters:-

The thesis is composed of six chapters. A brief summary of the contents of the different chapters is given below:

Chapter One:-

Is an introductory chapter focuses on (the objectives of the study, hypothesis of the study, and the problem statement, also it includes the method of data collection and analysis, the research population, the area of the study and organization of the research).

Chapter Two:-

Focuses on a selective review of the literature. It consists of three sections. Section A covers the agricultural sector, it includes (the agricultural sector in the Sudan, agricultural extension in Sudan, historical background of agricultural extension services in Sudan, agricultural extension and rural farmers, and extension programs for rural women in Sudan).

Section B covers women and work, it includes (women work and job segregation, women the new workforce, the informal sector, women in the informal sector in Sudan, the availability of jobs for women, the level of skills of women, women as mobilizer of human resources in Arab countries, the women as mobilizer in the family, the working women, the women in the volunteer work, and society's view of women's work).

Section C about women and development. It includes (historical evolution of the women in development movement, women and development, development needs from gender perspective,
incorporating gender in development, women and poverty, and status of women and access to rural services).

Chapter Three:-

Focuses on rural development. It consists of two parts, part one covers the rural development concepts and approaches.

Part two covers the approaches of integrating women in development.

Chapter Four:-

Focuses on the methodology and the area of the study. It consists of two parts, part one includes (the variables of the study, sample selection procedure, data collection procedure, and the procedure of data analysis).

Part two covers the two areas of study generally, the Gezira area and Shendi/Matammah area.

Chapter Five:-

Contains the discussion of the results obtained from the study. It divided into two parts. Part one discussed the results of the study by means of using tables, frequencies and percentages.

Part two discussed the results by using T-test of significances, and chi-square.

The T-test results showed no significant differences between the Gezira respondents and Shendi respondents in terms of general characteristics (age, educational level, and family size), participating in work other than agriculture, attending the training courses, courses duration and knowledge of agricultural research.

Also the results showed a significant difference between the Gezira respondents and Shendi respondents in terms of participation in agriculture, daily working hours, interest to participate in agricultural activities, daily home activities, participation in social activities, contact with extension, use of fertilizers, the main agricultural problems, social status and benefit from researchers.
Chapter Six :-
Includes (summary, conclusions and recommendations).

6-2 Conclusions :-
This study was conducted in the Gezira Scheme and Shandi/Matammah area, is a comparative case study to examine the rural women participation in agricultural development in the Sudan.

Data was collected by using structured interview to implement a questionnaire for collection of the primary data. The secondary data was collected from the previous studies (research, papers) and other relevant sources.

The sample was selected by using quota sampling, 100 respondents were selected from each area of study (the Gezira Scheme and Shandi/Matammah area).

The main findings drawn from the study were:-

1- Most of the respondents (70%) in the two areas of study were in productive age.

2- 64% of the respondents in the Gezira area were married, while, 62% of them in Shendi area were married.

3- Illiteracy was more spread in the Gezira (39%) than in Shendi area (32%).

4- Rural women in the Gezira area (79%) participated in agriculture,

more than the women in Shendi area (56%).

5- Farm ownership were too poor in the two areas of study between the

Respondents (22% in the Gezira area and 17% in Shendi area).
6- Most of the respondents in the two areas of the study move to their farms on foot (61% in the Gezira and 48% in Shendi area).

7- The majority of the respondents in the two areas were growing Field crops (dura, wheat, maize, etc...).

8- The farms productivity of the respondents in the Gezira was better than that in Shendi area.

9- The main factor affecting the farm productivity positively in the Gezira area was the proper agricultural practices done by the women farmers, while in Shendi area the pests, deficiency of irrigation water and the increase of the production cost (affect the productivity negatively).

10- The majority of the respondents in the two areas of study satisfied their needs from their farms production.

11- Most of the respondents in the Gezira area (40%) have no surplus in their agricultural production, while in Shendi area 24% of the respondents do not have surplus production.

12- Women who are not working in agriculture, in the Gezira area have more interest to work in agriculture than in Shendi area.

13- The main reason for lack of interest to work in agriculture in Shendi area, was agricultural work were socially unacceptable for women.

14- Women in the Gezira participate in income-generating activities rather more than agriculture, compared to the women in Shendi area.
15- Most animals kept by women farmers in the study areas, were goats and sheep.
16- The majority of the respondents in the Gezira area (69%) do not participate in community social activities, compared to Shendi area where (39%) of them participate in social activities.
17- The main source of finance for the majority of the respondents in the two areas of study (The Gezira and Shendi) is from their own farms resources.
18- Types of crops grown in the farm are determined by the head of the family in Shendi area, and in the Gezira by the partner.
19- The awareness of the respondents in the two areas about extension is generally weak, but women aware in the Gezira are relatively more than in Shendi.
20- Most of the respondents in the two areas obtain their planting seeds from their own farms.
21- The respondents in the Gezira area were more aware of the benefits of fertilizers than the respondents in Shendi area.
22- Chemical fertilizers in the Gezira is more spread than in Shendi, but the women farmers in Shendi are more aware about animal manure than women in the Gezira.
23- The majority of the respondents (90%) in the two areas of study did not attend training courses.
24- Most of the attended training courses were organized by women's union and Red Crescent in the two areas of study.

25- The majority of the respondents in the Gezira area (62%) and in Shendi area (72%) were aware about agricultural research.

26- Most of the respondents (73%) from the Gezira and (74%) from Shendi area said there are no benefits from research.

27- The respondents in the Gezira go to the agricultural inspector if they faced any agricultural problem, In Shendi they asked their neighbors.

28- Pests are the dominant agricultural problem in the two areas of study, Irrigation represents a serious problem in Shendi area.

29- The T-test analysis and chi-square revealed that there are significant differences between the respondents of the Gezira and the respondents of Shendi area in terms of agricultural participation, kind of farm ownership, farm productivity, daily working hours, interest to participate in agricultural activities, daily home activities (un-paid), participation in social activities, contact with extension, use of fertilizers, and the main agricultural problems. While there are no significant differences between them in terms of the general characteristics (age, education level, family size and marital status), participating in other work than agriculture, attending the training courses, courses duration and knowledge of agricultural research.

6-3 Recommendations:-

The following set of recommendations is based on synthesis of the literature and the results generated by the study. The recommendations are focused on ways of improving and increasing rural women
participation especially in agriculture and other relative fields of concern by women in rural development.

1- The most important way to help rural women to contribute in development process and to achieve the development objectives is to enable them to raise their productivity income and dignity, this could be achieved through agricultural extension and services access to labour market, credit and support female entrepreneurs beside improving social health and child care services for rural women, is an important factor in mobilizing and supporting women's participation in development and after all rural women should be integrated in all aspects of development programs, policies and planning, monitoring and evaluation.

2- Generally women need to improve their access to control over production factors, services and infrastructure facilities, to reduce women's workload, to increase the involvement of women in decision making at domestic local, national and international level, to improve women knowledge and self awareness to improve the organizations of women at all levels, to encourage the exchange of information and communication between rural women's groups and change the stereotypical image of rural women.

3- Supporting and improving women's traditional types of production, and introducing viable and feasible new types of production considering the economic conditions and facilitating women access to resources (finance, production inputs, land, knowledge and technology) skills, training and leadership.

4- Establishing special credit programs for poor rural women (especially heads of households) that should be supported by simple and flexible procedures and easy terms of repayment.

5- Strengthening of the extension service and recruit female extension
workers to channel information on new technologies to rural women, and
train them in their use, maintenance and potential profitability, taking into
consideration women responsibilities and time constraints.

6- The creation of women's work organizations will have the advantage of easier access to credit as a body rather than on an individual basis. The need for women extension workers to train rural women in the process and the procedure of approaching credit institutions is also recommended.

7- Formulating organizations and institutions for empowering women through participatory methods, and ensuring that services including agricultural, education, research and extension are gender sensitive and responsive to alleviate poverty, poor marketing experience and lack of credit for them.

8- Attempts should be made to raise the income and status of rural women by involving them in sustainable production through vegetable home gardening, intermediate technology development to spare women effort especially in agricultural operations. This programme will be of great benefit to the rural women especially farmers and households.

9- Encouraging women to participate in farmers union, and launching their own groups which help in promoting traditional handicraft activities, storage and marketing of their products. Also encouraging women to take positions that influence decision making.

10- Establishing a department of rural women in the areas of study and launching departments in agricultural units (groups and divisions) to help in raising and developing rural women awareness in different fields.
11- Women active involvement in development process should be promoted that their economic independence and social self-reliance should be increased and they should be offered opportunities as means to influence the changes in the society.

12- Increasing women awareness through the provision of extension services that train rural women in the different related fields. This could be attained by increasing the number of females in the rural extension staff in rural societies to help in promoting rural women abilities in agricultural production, child care and others.

13- There is more need to women studies and information bureau, with a section specialized on rural women and technology to be established with the objectives of continuously monitoring the assessment and dissemination of appropriate technologies and their evolution whenever possible, to further rural women’s economic involvement.

14- Transactions on studies to identify training needs, concerning the rural women in all fields in order to put suitable programs for the future focusing on income generation.

15- Marketing policies and strategies should take into consideration women’s agricultural activities, their peculiarities, and respond accordingly.

16- The potential economic benefits from the time they saved in fetching (water, fire wood) and closely related to the extent of women involvement in domestic, economic and community development work, so time and energy gains from reduction in water and fire wood collection may be used in community self-help projects, educational activities and development.
17- Synchronization and coordination of the government and non-government efforts for the benefits of the rural women and developing rural women’s concerned institutions.
Bibliography

Abdel Gader, A. & Hassan, F. (1989) Towards Community Based and Women-Centered Health Intervention Programmes
In new Halfa Anote.


FAO (WFP) Report (1985) A report to the government of the Sudan on the Assessment of Food and Agriculture Situation. No. S 20 Rome, Italy.


Gruenboam, M. E. (1986) Nuer Women In Southern Sudan, Health,
Reproduction & Work. In Women and Environment, Baxter
(ed.) IES.

Labour Participation in the Rahad Irrigated Scheme. M.Sc thesis,
University of Khartoum, Sudan.

Department of employment, London, HMSO.

Hamad Elnil, N. M. (2000) Assessment of the socio-economic impact of
North Kordofan area development scheme (ADS) on women.
M. Sc. Thesis, Department of Extension and Rural Development,
Faculty of Agriculture, U of k, Sudan.

Herman, M. Southworth, B. and Johnston, F. (1967) Agricultural

Holdcraft, M. (1984) Credit for rural poor, the experience of Grameen
Bank in Bangladesh. Bangladesh Institute of Development
Studies,
Daka.

Western Sudan and Measures to improve their condition. In population &
women in development NPC. Sagayron (ed).

in the Republic of Sudan, Al Tassahur Vol Khartoum.


Noah, S.(not dated) Agricultural Extension in Sudan, Sudan Pamphlet Vol. 82.


and Access to Government Projects. Journal of Development
1988
Vol. 4.
Samarta, R. (1994) They Reap Less than Sow. The Hindu, April No.7, Madres India.

Sebsted, J. (1982) Struggle and Development among Self-Employment Women,
A report for SEWA, Washington. DC: USAID.
Seckler, D. (1980a). ‘Small but Healthy’ Ford Foundation’ 55 Lodi Estate,
New Delhi.
Agricultural Economics, December 1980.
central Sudan and Khartoum”. In “The agriculture of the Sudan”
edited by Carig, G.M. Published in conjunction with the center for
agricultural strategy, University of Reading.
Decade of Women, women’s Studies International Forum, 5.
First: Meeting Basic Human Needs in Development Countries,


The population council (1986), paper Incorporating Gender Issues in Development Training (Bangkok, Aruna Rao).


United Nations Asian and Pacific Centre for Women and Development


Source (Sudan Gezira Board)

(2004)
Source (Shendi /Matammah Localities)

(2004)

Appendix (3)
The respondents questionaire
University of Khartoum
Faculty of Agriculture
Department of Agricultural Extension and Rural Development
Questionaire for data collection for Ph. D. degree
Under the title: Rural Women Participation in Irrigated Agricultural Development
A comparative case study of rural women farmers in the Gezira Scheme and Shendi/Matammah irrigated sector
1- The respondent age (20-29 years) (30-39 years)
   (40-49 years) (50-59 years) (more than 60 years)
2- Martial status
   Un married
   Married
   Divorced
   Widowed
3- Education
   Un educated
   Khalwa
   Primary school
   Intermediate school
   Secondary school
   University
4- Are working any agricultural work?
   Yes
   No
5- If the answer yes—what is the number of years you have been working in agriculture?
   1-2 years
   4 years
   More than 6 years
6- In which kind of farm you are working?
   Self-owned farm
   Family or husband farm
   Cooperative farm or project
7-The family size
- 2-3 persons
- 4-6 persons
- more than 7 persons

8-What is the kind of agricultural work you do?
- All agricultural activities
- Participating in most agricultural activities
- Participating in planting and harvesting
- Participating in preparing food and inputs
- Caring for livestock

9-How many hours you are working in agriculture daily?
- Entire day
- Six hours per day
- Less than six hours per day

10-What is your means of transportation to reach the farm?
- On foot
- By donkey (animals)
- By car
- Other

11-What is the kind of farm ownership in which you are working?
- Own by me
- Co-owned with an other person
- A rented farm
- Inherited farm

12-What is the type of crops you are growing?
- Vegetables
- Fruit
- Mixture of different crops
- Other farm crops
Forage

13-In which type your farm productivity, if you comparing with others?

Less than average
Average
Above average
Very good
Excellent

14-What are the reasons affect your farm productivity?

Scarcity of inputs especially fertilizers
Problems of pesticides, irrigation, and increase of the production cost
Fertility of the land and using of fertilizers
Proper agricultural practices
Small farm size and scarcity of financing
Availability of inputs and good experience

15-Is your farm income enough to satisfy your family needs?

Satisfying my needs
Not satisfying my needs

16-If your agricultural income not satisfying your needs, how you increase your income to satisfy your needs?

Participating commercial activities in home and/ or market
Father, husband, or sons do other work
Working for the government
Working in agriculture for others

17-If you have a surplus in your agricultural income, what you do with the surplus?

Sell it to consumers
Sell it to local shops in the village
Sell it to retailers
Sell it to whole sellers
Give it to friends and relatives

18- If you are not working in agriculture, which interest you have to work in agriculture?

Very interested
Interested
I will work if an opportunity is found
Not interested
I can not work in agriculture

19-What are the reasons, if you are not interest to work in agriculture?

Agriculture is socially not acceptable for women
Agric. practices is a very hard work for women
Work at home is too time consuming
I have no experience in agricultural practices

20-How much additional (extra income) work you are doing?

I always practicing other activities
Many times
Rarely
Not practicing
Not wanting to practice
Not practicing any activities

21-Which type of part-time work beside agricultural activities?

Handcrafts (selling and buying some products)
Female beauty services and working in the houses for others
Tailor
Government official
Rearing of animals
22-What are your daily unpaid activities?
- I have no any activities
- Domestic work (in home)
- Caring for children
- Caring for animals
- Getting drinking water
- Caring for old people
- Carrying fire wood
- Home activities and caring animals
- Home activities and caring for children and animals
- Caring for children and animals
- Home activities and caring for children
- Getting drinking water and fire wood

23-If caring of animals is one of your responsibilities, which kind of animals?
- Goats
- Sheep
- Cows
- Poultry
- Sheep and goats
- Cows, sheep & goats
- Cows and goats
- Cows and poultry
- Mixture of many kinds

24-In which type of social activities you are participating?
- Not participating
- Adult education classes
- Health services
Area development committee
Agricultural committee
Cooperative committee
Women’s union
Farmer’s union
Women’s union, farmer’s union & area development committee
Participate in many activities, but infrequently
25-What are the source of financing and agricultural inputs?
   I have no financial source
   The farm’s resources
   Retailers in the area
   Agricultural Bank
   The farm owner (the scheme)
26-Who is determining type of the crops grown on your farm?
   Father, husband, the head of the family
   The partner
   My self
   The farm owner
   The scheme
27-Are you interact with agricultural extension?
   Always
   Many times (often)
   Sometimes
   Rarely
   No interaction with extension
28-If you did not interact with extension, what is your source of information?
   Mass media (radio & TV)
Other farmers
Owner of the farm
Friends

29- What is your source of seeds?
   Agricultural extension
   Ministry of agriculture
   My own farm
   The partner
   Scheme administration
   Agricultural Bank

30- Are you using fertilizers in agriculture?
   Always
   Many times (often)
   Sometimes
   Rarely
   Not using fertilizers

31- If you are using fertilizers, which kind of fertilizers you use on your farm?
   Animal manure
   Chemical fertilizers
   Animal manure & chemical fertilizers
   Foliar fertilizers

32- Are you attending any training courses?
   Yes
   No
33-If you are attended any training course, what is the course duration?
   - Less than one year
   - 1-2 years
   - More than two years

34-What is the type of training courses you attended?
   - Tailoring and needle work
   - Primary health services
   - Primary health services & child caring
   - Agricultural work

35-Where you attended the training courses?
   - The school of the village
   - The Red Crescent building
   - NGOs building

36-Who is organized the training courses?
   - Women’s union
   - Red Crescent
   - The school of the village
   - NGOs

37-Are you know the agricultural research?
   - Yes
   - No

38-Are the researchers visit you?
   - Always
   - More times (often)
   - Some times
   - Does not visit

39-What you benefit from the researchers visits?
   - Valuable information
No benefits

40- If you faced an agricultural problem, to whom you go to?

- Extension agent
- Agricultural inspector
- The neighbour
- The farm owner
- The farmer’s union
- The agricultural committee

41- What are the main agricultural problems you are facing?

- Pests
- Scarcity of inputs
- Irrigation
- Scarcity of information
- Cost of production
- Marketing
- Low income
- Social problems
- Transportation to the farm
- Pests & cost of production
- Pests & irrigation
- Pests & scarcity of information