

Resource Management in Raising Household Kitchen Garden

By

J. VIJAYALAKSHMI



A THESIS SUBMITTED TO THE AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND
HIGHER EDUCATION FOR WOMEN (DEEMED UNIVERSITY) COIMBATORE - 641 043
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE

MAY 1995

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IN FAMILY RESOURCE MANAGEMENT**

MAY 1995

Certified as bonafide research work

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Contents

ACKNOWLEDGEMENT	
TABLE OF CONTENTS	
LIST OF TABLES	
LIST OF FIGURES	
LIST OF APPENDICES	
I. INTRODUCTION	1
II. REVIEW OF LITERATURE	7
A. MEANING AND CONCEPT OF MANAGEMENT	7
B. RESOURCE MANAGEMENT PRACTICES	10
C. KITCHEN GARDEN A LEISURE TIME ACTIVITY	11
D. FACTORS INVOLVED IN MANAGEMENT OF RAISING KITCHEN GARDEN	14
III. METHODOLOGY	23
A. HOUSEHOLD SURVEY	23
B. ACTION PROGRAMME	25
IV. RESULTS AND DISCUSSION	34
A. BACKGROUND INFORMATION OF THE FAMILIES SURVEYED	34
B. RESOURCE MANAGEMENT BEHAVIOUR OF SELECTED FAMILIES AFTER RAISING KITCHEN GARDEN	43
V. SUMMARY AND CONCLUSION	76
REFERENCES	80
APPENDIX	85

LIST OF TABLES

TABLES	PAGE NO
1. AGE LIMITS OF THE HOMEMAKER	35
2. EDUCATIONAL STATUS OF THE HEADS OF THE FAMILIES AND HOMEMAKERS	36
3. OCCUPATIONAL STATUS OF THE HEADS OF THE FAMILIES	37
4. AREA FOR RAISING KITCHEN GARDEN	39
5. TIME USE PATTERN OF THE HOMEMAKERS FOR VARIOUS HOUSEHOLD ACTIVITIES	41
6. AVERAGE TIME EXPENDITURE PATTERN OF THE HOMEMAKERS ON VARIOUS ACTIVITIES	46
7. LEISURE TIME ACTIVITIES OF THE HOMEMAKERS	49
8. TYPE OF ADJUSTMENTS MADE IN WORK PATTERN	51
9. USE OF LABOUR <i>SAVING DEVICES</i>	55
10. FOOD EXPENDITURE PATTERN	59
11. AMOUNT SPENT AND QUANTITY PURCHASED ON VEGETABLES PER MONTH	60
12. CRITERIA FOR PURCHASE OF VEGETABLES	66
13. OPINION OF THE HOMEMAKERS TOWARDS VEGETABLES PURCHASED FROM MARKET	67
14. YIELD PARTICULARS	70
15. SATISFACTION DERIVED FROM KITCHEN GARDEN	75

LIST OF FIGURES

FIGURES	PAGE NO
1. LAYOUT FOR A KITCHEN GARDEN	29
2. THE SEEDS BEING DISTRIBUTED TO A HOMEMAKER	31
3. HOMEMAKER SOWING THE SEEDS	32
4. AVERAGE TIME EXPENDITURE PATTERN OF THE HOMEMAKERS ON VARIOUS ACTIVITIES	48
5. TYPE OF ADJUSTMENT MADE IN WORK PATTERN	53
6. USE OF LABOUR SAVING DEVICES	57
7. FOOD EXPENDITURE PATTERN	61
8. KITCHEN WASTE WATER UTILISED FOR RAISING AMARANTHUS	63
9. THE USE OF LAND BEFORE AND AFTER INTRODUCING KITCHEN GARDEN	65
10. KITCHEN WASTE WATER DIVERTED FROM KITCHEN OUTLET FOR RAISING KITCHEN GARDEN	69
11. LADIES FINGER IN THE GROWING STAGE	72
12. THE YIELD OF VEGETABLES IN THE HOUSEHOLDS	73

LIST OF APPENDICES

APPENDICES

PAGE NO

1. QUESTION^NAIRE_X TO ELICIT INFORMATION ON RESOURCE
MANAGEMENT IN RAISING HOUSEHOLD KITCHEN GARDEN
2. CULTIVATION DETAILS OF DIFFERENT VEGETABLES

85

93

Introduction

INTRODUCTION

Vegetables play an important role in meeting the needs of human beings for vitamins and nutrients. Moreover, majority of people in India are vegetarians and every person can afford vegetables easily because vegetables are cheap and available in abundance (Mahalingam, 1994). The importance of vegetables as a protective food and adequate supply of carbohydrates, fibre, minerals and vitamins is a well known fact (Shanker and Garg, 1975). Vegetables are given a very important place among human food by modern dietetic scientists. The awareness to consume more vegetable has increased and spread among the public. Vegetables occupy an important place in our daily life (Jawaharlal et al, 1994).

The consumption of vegetables has increased day by day due to their high nutritive value. Vegetables are important protective food and play a pivotal role in maintaining the well being of the human system, besides being able to provide necessary roughage which the body requires (Naik, 1968). Growing vegetables is not only an art but also a continuous training for the women and the family members. The fresh vegetables ensures a balanced diet. Kumar(1986) affirms that there is a delicate psychology behind the taste as every one appreciates the produce obtained by their own effort.

The diet of an average Indian is unbalanced and poor from the point of view of nutrition. In Indian households, there is an excessive use of cereals, while the consumption of fresh vegetables, which are essential for the maintenance of good health is meagre (Saravana,1983). For vegetarians in particular, vegetables are only source to increase the nutritive value of food stuff and palatability. Due to high cost, middle class families find it extremely difficult to purchase the vegetables and to satisfy their daily requirement. Moreover, the supply of necessary vegetables that the housewife gets in the market are seldom fresh.

To produce food for all the Indians has been the greatest problem baffling the Indian planners. In spite of the Green Revolution, India still has to import food from outside to feed it's hungry millions. The difficulty in getting atleast the fresh vegetables can be overcome by growing one's own kitchen garden. This would ensure to the family a ready supply of fresh vegetables which are of good quality as well as cheap. Having a kitchen garden will thus be good for both the health and the economy of the household(Somdutt, 1993).

Vegetables obtained from the kitchen garden are well known as they are less likely to carry harmful residues of insecticides. The development and management of vegetable garden provides wealth, individual experience, learning and appreciation.

Further by growing vegetables at home one can help to put a check on the raising prices of vegetables in the market and this will prove beneficial to society as a whole.

Kitchen garden is a small home garden intended to supply the daily requirements of fresh vegetables for the household(Venkataraman, 1976). Kitchen garden, as the name implies, is the garden around or near the house. Homegarden or kitchen garden refers to raising of vegetables in the backyard of a house. Raising a kitchen garden is a fascinating experience. The greatest satisfaction a family gets from it is that vegetables produced in the home garden are used in their most fresh stage. Besides producing food for the family the kitchen garden beautifies the house with its trees, flowering shrubs, creepers, grass and flower plants. The kitchen garden is not a new innovation as even in the olden days and in backward areas families grew some vegetables near the house for household consumption.

Historians believe that it was women who first domesticated crop plants and there by initiated the art and science of farming(Swaminathan, 1985). Women have played and continue to play a key role in the conservation of basic life support systems such as land, water, space, flora and fauna.

The participation of women in economic activities, or their visibility in economic sphere, can be considered a best measure of the status of women in society(Unni,1992). Family ration as well as income from the sale of surplus produce highlights the importance of the role of women.

An efficient homemaker keeps her family's health in mind while drawing up her budget. Atleast 280gms of vegetables are needed per day per person for adequate intake of proteins, carbohydrates, minerals and vitamins(Shakuntala, 1994). Homegarden program ensures effective utilisation of homestead and production of vegetables, thus encouraging consumption of vegetables by family members and promoting health and nutrition and utilization of family labour. Although women work for longer hours and contribute substantially to family income, they are not recognised as workers either by their family members or by the society. Women's involvement in vegetable growing and nursery training has been respected but not recognized.

Modern technology has brought about many improvements in the Indian agriculture. It has tried to touch this important aspect on kitchen garden of the Indian home. Agricultural Universities in India have been taking a tremendous effort on kitchen gardening. Kitchen gardening has also been encouraged by the use of other media such as Homescience Extension Education for the villages.

Services of All India Radio, Newspapers, Kisan Divas and Melas have organized to extend education in kitchen gardening. Television is also being used for televising relevant programmes for the people.

Even with the commendable efforts the rural women have not raised the kitchen garden in a scientific way. In order to develop raise kitchen garden in an organized form in their households, it was found necessary to motivate the rural women. In addition, in rural areas lack of drainage facilities has lead to stagnation of waste waters. This poses problems such as producing fowl smell, which is nauseating and intolerable, and also becomes a breeding place for mosquito, fly and other insects which are causative agents for spreading disease.

Raising kitchen garden can aid in contributing towards income to the family and at the same time make proper use of available land and water, (Shakuntala, 1994). The waste water diverted to kitchen garden facilitates the prevention of unused water to stagnate and be used for the production of vegetables. Hence, it is imperative to motivate rural women to use the waste and garbage waste for kitchen garden and making compost pits and also help them to use their resources properly for the garden to produce more yield of vegetables.

Realising the need, the investigator has taken up this study with the following objectives.

1. To study the resource management practices of the rural women.
2. Motivate the women towards raising kitchen garden.
3. To analyse the resource management practices of rural women after introducing kitchen garden.

It is hoped that this study would be of immense help to homemakers to understand the importance of raising kitchen garden resulting in definite source of income apart from meeting the daily requirement of fresh vegetables to the entire family.

Review of Literature

II. REVIEW OF LITERATURE

The literature pertaining to the study is reviewed under the following headings.

- A. Meaning and concept of management.
- B. Resource management practices.
- C. Kitchen garden - a leisure time activity.
- D. Factors involved in management of raising kitchen garden.

A. Meaning and concept of management:-

Management is a process. It involves the responsibility of guiding, supervising and controlling. According to Lundy (1983) management is principally, a task of planning, co-ordinating, motivating and controlling the efforts towards specific objectives. Management according to Nickell and Dorsey (1988) is said to be planned activity directed towards accomplishing desired ends. Sheldon, Srinivasan and Chunawala (1993) state "Management is doing function". Drucker (1975) also justifies by saying that management is work and as such, has its own skills, tools and techniques. Deacon and Firebaugh (1988) define management as a basic tool for creative living for achieving desired goals and purposes by using, resources to advantage.

Management is not a general, rigid set of rules and actions but is a set of flexible responses to a particular situation. It's actions are goal oriented and are related to available or obtainable resources. Management for Terry, stated by Nickell and Dorsey (1988) is a distinct process consisting of planning, organizing, activating and controlling performed to determine and

accomplish stated objectives by the use of human beings and other resources. Varma (1993) opines that management is utilization of human talents and material resources to achieve a desired result. According to Laldecota (1982), management is the art of getting the best out of available resources - human physical and financial.

Srinivasan and Chunawall (1983) are of the opinion that, management is a functional concept and persons performing management are usually designated as "Managers". Manager are challenged to use the resources namely time, energy, money and material goods along with knowledge, interest, abilities, skills and attitudes for purpose they consider important say Gross and Crandall (1973). Home management is the administrative side of family living. Home management deals with concepts and behavior which are widely observed in everyday life opines Rhoda Kotzin (1964). It is the force, the mental work and power that puts the machinery of homemaking into action and keeps it going. Hence home is Management said to be dynamic according to Nickell and Dorsey (1988).

Gross and Crandall (1973) and Mullick (1981) define home management as a mental process through which one plans, controls and evaluates the family resources to achieve family goals. Further Gross and Crandall (1973) are of the opinion that home management is concerned with the ways in which a family uses all its' resources. Home management consists of purposeful behavior involved in the creation and use of resources to achieve family goals. Home management makes significant contribution to family

relationship by providing a favourable background for family living (Gross and Crandall, 1973). Living involves a changing sense, a continuous sequence of events to which some response is required. The broader concept of home management centres attention on the fact that the process of management does not change, but becomes a rational and intellectual method of dealing with change (Nickell and Dorsey 1986).

Homemakers need to develop ability to anticipate change and to involve themselves in management process that gives direction to their daily lives. In a situation where management is required one has to observe, analyse, decide and then act. Family participation in decision about resources is also very essential for successful management. Home management is not mere performance of work, rather it is performance that is directed by conscious decision (Gross and Crandall, 1973). The essence of management is decision making. The essence of decision making is knowledge and understanding. The essence of knowledge and understanding is home work (Muldoon and Wild, 1982). Management involves weighing of values and the making of decision says Nickell and Dorsey (1988).

Management is action oriented and one must develop the abilities required to manage the resources to achieve the goals. In this concept, management becomes a means of using the resources for the attainment of family goals. The present day family is forced to consider its 'needs carefully and to choose wisely to get the greatest return from its' resources (Nickell

and Dorsey 1988). The need for conserving and augmenting resources through proper management gets an added impetus in present context.

B. Resource management practices:-

Home management is the judicious use of resources to achieve goals desired by the family (Knowles, 1945). Resources are tools of management and can be used to help the individuals and families to reach their goals (Mann and Mann 1982). Resources are what we have outside and inside says Raines (1964). Resource management consists of a series of decisions making up the process of using family resources to achieve family goals (Gross and Crandall, 1973).

According to Mullick (1984) home management is the administrative side of family living and is the planning, controlling and evaluating the use of resources of the family for the purpose of attaining family goals. Management is planning the use of resources and then implementing the plans to meet the demands. Management is a planned activity directed towards accomplishing desired ends (Nickell and Dorsey, 1986). Management of home like any other management require resources to work with (Mann and Mann, 1984).

Home makers are daily using resources at their disposal alternatively, time instead of money, knowledge or skill instead of time and hundreds of other combinations. The more thoughtfully the use of resources is planned for their use directed into planned channel, the richer will be life of family. According to Churchman (1986) resources are the supply reserves for use in the

specific actions. According to Deacon and Firebaugh (1975) resource is the means for achieving goals or for meeting the demands placed upon the family by certain events.

Resources are useful means which are available and recognized for their, potential in meeting demands (Randall, 1987).

Nickell and Dorsey (1973) have emphasized that the availability of life depends upon the management practices of time, money, energy and other resources. Managing the home requires an intelligent use of time, labour and money (Rhodes and Samples, 1959). Gross et al (1973) opine that managers are challenged to use their resources for purposes they consider important. Home management is a mental process of deciding the best use of family resources to achieve family goals. Hence resources play an important role in family management. Margarat (1966) defined Home Management "as a means of using resources to plan, to direct or control and evaluate the activities of the home. Each individual and family group has it's fountain for resources.

Effective resource management includes having wise decisions, achieving standards and meeting the demands effectively by using the major resources time, money and energy (Nickell and Dorsey 1967). Energy, abilities, skill, attitude and knowledge are human resources. Non-human resources include time, money, goods and community facilities.

C. KITCHEN GARDEN - A LEISURE TIME ACTIVITY

Leisure is a resource that provides opportunity to

pursue activities and promote physical mental and emotional health. (Goodyear and Klohr 1965). It gives one the chance to do things that are personally and socially satisfying and provides for relaxation and the development of interest and skills in cultural and creative areas, not touched in the daily round of work. Leisure spent not in idleness, but in creative way offers a rich, well balanced life. Activities assume a recreational significance when they provide for relaxation from the effort and tension involved in everyday or special tasks. Relaxation also occurs through physical activity. The choice in the use of leisure are result of the value one holds. They help determine the quality of one's life.

Good health is the first prerequisite to abundant energy. A balance between rest, recreation and work is essential for a well rounded-life. One of the most delightful leisure time activities is said to be gardening.

It constitutes a health hobby and helps in utilising the spare time of the family in a useful manner (Kumar, 1986). Provides space for exercise, play, all of which are beneficial to people of all ages. It ensures fresh air and privacy. The garden produces flowers for worship and decoration, vegetable and fruits for food. Fruits and vegetables fresh from garden produced, taste better and are fresher than, what are purchased from market. A garden is planned to serve beauty, utility and health. Even small areas and waste land

can be utilised for raising garden. A scientifically laid out nutrition garden helps to meet the entire requirements of vegetables for the family all the year round (Kumar, 1994). With a small kitchen garden person really becomes responsible and productive. It keeps one's leisure time to be meaningfully engaged for the production of vegetables. Therefore families should make greater use of the land available around the home and develop the art of gardening as an interesting hobby.

Importance of Kitchen Garden:

With the growing demand for the valuable land the city dwellers do not have any land adjoining their apartment. Yet the enthusiasts have interest in growing vegetables over the roof or in the varandah. Due to the rapid increase in population, there is an urgent need to step up the food supplies of our country from the available cultivable land. Kitchen gardening aims at an efficient and effective use of land for growing the essentials for daily diet.

The kitchen garden, occupies an important place in the organized life of any nation, for upon its efficient use, depends on the availability of one of the most important diet of population. The daily diet of modern communities normally consists of rice, wheat and vegetables. In this diet, no single constituent contributes, so largely to the health and general well being of human individual as vegetables do. Vegetables play an important role in meeting the

needs of human beings for vitamins and nutrients. To meet the non-availability of food stuff, to receive and consume fresh vegetables daily and to provide sufficient amount of protective and body building food stuff to the body kitchen gardening is the solution.

A person who devotes some his time and attention to his kitchen garden is not only able to produce enough vegetables for himself and his family but is also at the same time rendering a vital service to the community (venkataraman, 1976). The scarcity of vegetables coupled with their ever-increasing prices has contributed much towards making people aware of the importance of kitchen gardens especially because fresh vegetables have become rare in big cities (Shakuntala, 1994). By a planned utilization of the available land it will be possible to produce in a limited area adequate food in the form of vegetable.

D.Factors involved in management of raising kitchen garden:

Space :

Availability of space is the most important factor for raising a vegetable garden at home. A good deal of waste land has now come under vegetable cultivation and the quality of vegetables a kitchen garden is capable of producing has surpassed all expectations. A kitchen garden is raised in space where the vacant land can be utilised (Kachroo, 1975). To create a pleasant garden, we have to create a mental picture of our requirements. We have to seek inspiration from various sources including nature like water,

land etc (Beckett 1980). Five cents of land is said ^{to be} adequate to supply vegetables for an average family of husband, wife and three children throughout the year. However one to two cents is sufficient for the kitchen garden. (Kumar, 1994).

Vegetables need direct sunlight and enough plant food. Space selected for kitchen garden should be situated in an open place with abundance of sunshine and free from wide spreading roots of trees for the best result (Denisen, 1979). Houses with no open space can grow vegetables in the containers and pot which has to be kept in sunny place, and supports provided for the vines to be trained (Sarvana, 1983). Spacing between rows and between plants within a row varies from crop to crop and even between variety to variety. In a crop proper spacing has to be adopted for maximum growth & productivity (Kumar, 1986). Inter space between rows can be used for slow growing longer duration varieties such as pumpkin and ashgourd (Sow Dutt, 1993). In case the space available is limited it is best to cut out corn, squash and pumpkins, although a few vegetables grow very well in small spaces and even in containers (Abraham 1977). Most economic utilization of space can be obtained by making use of the fence on three sides for training cucurbits during summer and rainy season

Irrigation:

Water plays an important role in the growth of plants.

Water relations of the plants are of extreme importance both for vegetative growth and for fruit production. There is an imperative need for judicious use of water because of its limited availability (Shashi, 1990). The water relations of the plants are of extreme importance both from vegetables growth and satisfactory crops. Irrigation is a very important for plant growth.

A good supply of water is necessary for vegetables throughout the growing season. The plant food dissolves in water before it is used by the plant as food. The garden needs lot of watering especially during the dry seasons. The garden can be irrigated once a week, but the watering should be sufficient to soak the soil nicely.

It is important that source of supply should be placed where the water will have access to all parts of the garden (Macmillan, 1984). A backyard with a water source is suitable for nutritious garden. Considering the facts that vegetables can be grown in back yards using the available fresh water as well as the kitchen and bath room waste water for growing the vegetables (Jawaharlal ^{et al}, 1994).

Climatic condition:

Vegetable crops can be grouped as winter and summer vegetables according to their temperature requirement. Summer vegetables generally prefer a tropical climate. These crops cannot withstand frost. Successful production of these vegetables are favoured at a temperature range of 13 to 27 Deg.C. The plains of Tamilnadu offer a good scope for

the cultivation of most of the warm season vegetables grown throughout the year. The winter vegetables are generally grown in Tamilnadu only at an elevation above 1500m at which cool moist climate is available. These cool season vegetables can be raised in plains during the winter months from September to February (Kumar, 1994). June - July and December - January are the two main seasons for growing vegetables, Brinjal, Tomato, Ladies finger, Cluster bean can be sown throughout the year. They are not season bound. Similarly Amaranthus can be sown throughout the year (Devadas, 1979).

Layout:

The main aim in a kitchen garden is the maximum output and a continuous supply of vegetables for the table throughout the year. By following certain principles in the layout of kitchen garden, the above objective can be easily fulfilled.

* The perennial plants should be located on one side usually on the rear end to avoid shade on other crops.

* Adjacent to the foot path all around the garden and the central foot path may be utilised for growing different short duration green vegetables like coriander.

* The compost pits meant for garden wastes and kitchen wastes should be placed in two corners of the garden.

* Both the sides of the central foot path may be utilised to train tomato plants.

* The bunds separating the beds may be used for growing root crops.

The conveniently divided small plots may be utilized to produce as much as possible by following a very intensive method of cultivation (Kumar, 1994). Proper layout is important in planning irrespective of the size of the garden. (Biggs, 1977). Layout should be both convenient and attractive. It should be divided into plots to get plenty of sunshine and should be easily accessible. A rough layout of the garden plot should be prepared on a sheet of paper, indicating the various measurements and number of plots. (Srivastava, 1968). The plots can be distributed all over the garden keeping in mind aesthetics and convenience. The layout should make the garden look attractive and allow easy access to all the parts (Venkataraman, 1976).

Compost:

Compost is a soil amendment made from decomposed organic matter. Compost is a decayed mixture of soil, manure, leaves, grass, seeds and crop residues (Devadas, 1968). Composting is utilising "waste" materials to provide organic soil conditioning material for mulching & for potting mixes. Composting is one of the oldest of all gardening practices. On most uncultivated lands, composting is the natural process. Leaves, grasses and animal remains gradually decompose through the combined efforts of micro-organisms and weather. The compost should always be kept moist. While many gardens

still successfully prepare, compost has revealed ways which are quicker and often involve less work (Cleveland and Soleri, 1991).

If cowdung is available, it should be sprinkled over the heaped up plant material to hasten the decay. Compost is primarily used in improving the physical condition of the soil (Mann and Mann 1982). A minimum size for a compost pit is 2m x 2m (6' x 6' squares, with a completed height of 1.5m (5 ft), 3m x 3m (10 ft square) is to be preferred. The critical mass for composting is a pile of 3 feet square and 3 feet tall. Composting is probably the cheapest and most preferable way to create humus.

Compost should be used in the same way as well-rotted farmyard manure, that is, dug in or applied as surface mulch for the worms to incorporate in their own good time. Almost any waste products will make compost. Vegetable peelings and trimmings, coffee grounds, tea leaves and fish waste etc (Drysdale, 1963).

A plastic garbage container may also be used to compost vegetable peelings and various other kitchen wastes. Dried materials such as the waste leaves should be placed at the bottom of the container and the kitchen wastes added daily. During the summer chopped leaves saved from the previous fall should be added periodically to cover the kitchen wastes to prevent flies and odour (Splittstoesser and Watter 1984).

Care and Maintenance:

Maintaining a good kitchen garden is no joke. It requires lot of care. A well looked after vegetable garden can yield more vegetables of better quality than a big but uncared for garden. Care of the garden requires knowledge on type of soil, type and amount of fertilizer required for different vegetables and information regarding sowing. Care is required to remove all type of weeds from the garden which has to be done regularly. Weeds if not removed will use most of the nutrients from the soil. Besides weeding the other main function included care are controlling various types of pests and diseases which attack the plants says Mann and Mann (1982).

The garden crops should be watched everyday. Stirring of soil and removing of weeds is an important work in the kitchen garden. The best method of controlling the pests is to handpick the insects as soon as they are noticed. Some of the pests however cannot be hand picked. For such pest chemical method of control should be used. Considerable care should be taken in using the chemicals for controlling pests and diseases because most of them are poisonous to animals and man Aggarwal, 1963).

Natural shelter from prevailing winds, commanding views, a constant and liberal water supply be regarded as the centre of the scheme and care should be taken while watering the plants (Macmillan, 1984).

A few minutes each day checking your garden carefully will usually be all that's needed to keep the pest out.

Money, time, skillful practice of homemakers in raising kitchen garden:

The contribution of home gardens to family ration as well as income that may accrue from sale of surplus produce highlights the importance of the role of women. This contribute to improve self-esteem among the women. (Chadha, 1992). To supply oneself with the necessary vegetables proves a big drain on one's income. An efficient homemaker keeps her family's health in mind while drawing up her budget. (Shakuntala, 1994). Besides saving money, a lot of intangible satisfactions come from gardening who knows the value of being able to say,

" I raised it myself" (Kneown, 1977).

Vegetables take away a good portion of the family budget. Housewife can help to reduce this burden of her husband by growing vegetables in the open land and increase savings. (Denisen, 1979). The home garden, supplies the need of the family with surplus for a sale if possible (Naik, 1968). Kitchen garden saves a great deal of money for the family members opines, (Stanelyschule, 1970).

The value of kitchen garden is not only in what they can do but in how they can do it. Improving the nutritional economic condition is the goal of the kitchen garden. The term economy is based on a Greek word meaning the skillful

management of household resources for the benefit of the household. Even small amounts of saving or income from selling garden produce can make a big improvement in household wellbeing (Cleveland Soleri 1991).

Vegetables in kitchen garden, is not only an art but also continuous training for the person and the family. The spare time of the family is well utilised profitably in this way. The home makers need to be urged to raise kitchen garden and maintain health of the family and clean surrounding. The multifaceted approach would facilitate towards better health of family living (Devadas 1979).

The multiple roles played and the productive inputs made by the women in terms of work houses contributed or equivalent income generated for the family (Verma 1992). The homemakers who devoted some of her time and attention to the kitchen garden is not only able to produce enough vegetables for herself and for her family members but also enjoys mental satisfaction. Nearness to the house is also of important in gathering of vegetables, since this is usually done by the women of the family. Growing vegetables is a simple pass time for the homemaker where one needs, just a little extra time, interest and energy. Once we pass through the initial stages everything comes easily after that.

Methodology

III DESIGN OF THE STUDY

The procedure pertaining to the study on "Resource Management in Raising Household Kitchen Garden" comprised of the following major aspects.

A. Household Survey

B. Action Programme

A. Household Survey:

According to Gupta (1988) survey is the process of collecting data from existing population units with no particular control over factors that may affect the population characteristic of interest in the study. A household survey which was carried out to find out the background information of the families and their resource management practices include the following steps:

- (1) Selection of area
- (2) Selection of sample
- (3) Selection of tool
- (4) Preparing an Interview schedule
- (5) Conducting the survey
- (6) Consolidating and analysing the data

1. Selection of area:

The village Ghandhinagar in Perianaickenpalayam Panchayat Union, located about 16 kms from Coimbatore city was selected by the investigator. Approach, co-operation, interest exhibited in raising kitchen garden and water facility were the main reasons for selecting this area.

2. Selection of sample:

One hundred families residing in Ghandhinagar who had sufficient space for raising kitchen garden were selected purposefully for the conduct of the survey. Among the various sampling method, purposive sampling method was selected by the investigator considering the nature and scope of the study, the availability of samples and time limitations (Sidhu, 1984). In the purposive sampling method, the investigator of the enquiry deliberately chooses certain particular items from the universe (Shukla and Gulsan, 1983). A desired number of sample unit is selected purposely depending upon the objects of the enquiry (Gupta, 1982). Gupta (1991) says that purposive sampling aims at making the best use of stratification without incurring high cost involving in following any probabilistics method of sampling.

3. Selection of tool:

Interview schedule was the tool used for gathering information from the respondents, since it is possible to exchange ideas and information from any group. According to Devadas (1976) interview methods is the effective tool for collecting data. According to Agarwal (1975) interview is a two way method which permits the exchange of ideas and information. It is also possible through personal interview to collect supplement information which prove useful while interpreting results.

4. Preparing an interview schedule:

An interview schedule refers to a set of statements or questions to be answered by the respondent in a face to face interview and filled in by the interviewer (Chaudhari, 1976). An interview schedule was carefully formulated to collect details such as socio-economic background of the families, resource management practices, water management and land use. Appendix - I

5. Conducting the survey:

The investigator established good rapport with the respondents by frequent visit to the area. Self introduction, informal conversation and the purpose of the study explained to the respondent helped in gathering information.

6. Consolidating and analysing the data:

The data gathered was consolidated tabulated and analysed and the results discussed under the chapter results and discussion.

B. Action Programme:

The action programme involved the following aspects.

- (1) Selection of households.
- (2) Motivating the rural households to raise kitchen garden.
- (3) Raising kitchen garden in selected households
- (4) Evaluating the resource management of the selected rural households after raising kitchen garden.

1. Selection of households:

The investigator identified and selected suitable households for raising kitchen garden based on the findings of the household survey conducted. Fifty households were selected for raising kitchen garden. The common criteria for selecting these households were availability of space, water facility, interest, co-operation of the family members, time availability and knowledge regarding kitchen garden.

2.Motivating the rural households to raise kitchen garden:

Though interest was exhibited by the selected homemakers, it was essential to motivate them towards raising kitchen garden. Frequent visits and personal contact explaining the importance of kitchen garden and the ill effects of the pesticides on vegetables purchased from the market, stimulated the homemakers to raise kitchen garden at home. Free distribution of seeds adequate for home gardens, purchased from TamilNadu Agricultural University and labourer for ploughing in and preparing the area for raising kitchen garden were the main motivation provided by the investigator.

3.Raising kitchen garden in selected households :

To raise kitchen garden in selected rural households, it was imperative to educate the homemakers on the steps involved in raising kitchen garden. This aspect include the followings items.

a. Selection of area:

Area free from shade and with sufficient sunlight to stimulate the growth of the plants was selected.

b. Preparation of the plot:

Certain specifications were considered with regard to plot selection.

* Households having minimum area, one to two cents were selected (436 to 872sq. Feet).

* The area for garden cultivation should be free from shade and have sufficient sunlight to facilitate the growth of vegetables.

* Based on the above mentioned specifications the investigator selected the areas in the households for raising kitchen garden.

The plot selected required preparation before sowing the seeds. Digging and weeding were the main activity performed for preparing the plot. Stones and unwanted materials were cleared. The plot was made into good tilth by giving required diggings and then levelled. Ridges and furrows were formed leaving channels for irrigation.

c. Planning kitchen garden and the cropping arrangements :

Dieticians recommend under our condition to consume 300gm, of vegetables daily for an adult and based on this a kitchen garden should supply 1.5kg of fresh vegetables to an average family size of two adults and three children. This quality of fresh vegetables can be assured from a kitchen

garden laid out in an extent of 5 Cents (2000 sq.ft) following the above principles. Due to urbanization, the availability of land has become minimum for raising kitchen garden. Kumar (1994) suggests that a minimum of one cent(436 sq.ft) is sufficient for raising kitchen garden. However two cents are advisable.

It is advisable to make a plan before undertaking the planting. The location of plots, crops to be grown, the probable date of planting should be clearly indicated in the plan. These will guide the gardener to get constant supply of all kinds of vegetables avoiding a glut of any one crop. Fig.1 shows the layout of a household kitchen garden. Appendix.II presents the details of the cropping arrangements.

d. Selection of seeds:

The kit containing certified and improved seeds provided by Tamilnadu Agricultural University for home gardens were purchased by the investigator. The kit contained seeds of common vegetables such as tomatoes, brinjal, amaranthus, lady's finger, chillies and mixed seeds of climber varieties namely pumpkin, bitter gourd, snake gourd. The kit contained six varieties of the above mentioned seeds, each individual packet weighing 5gm respectively. In addition to the kit, seeds of raddish, carrot, beans, beetroot were also purchased and distributed to the homemakers, based on their request.

LAY-OUT FOR A KITCHEN GARDEN

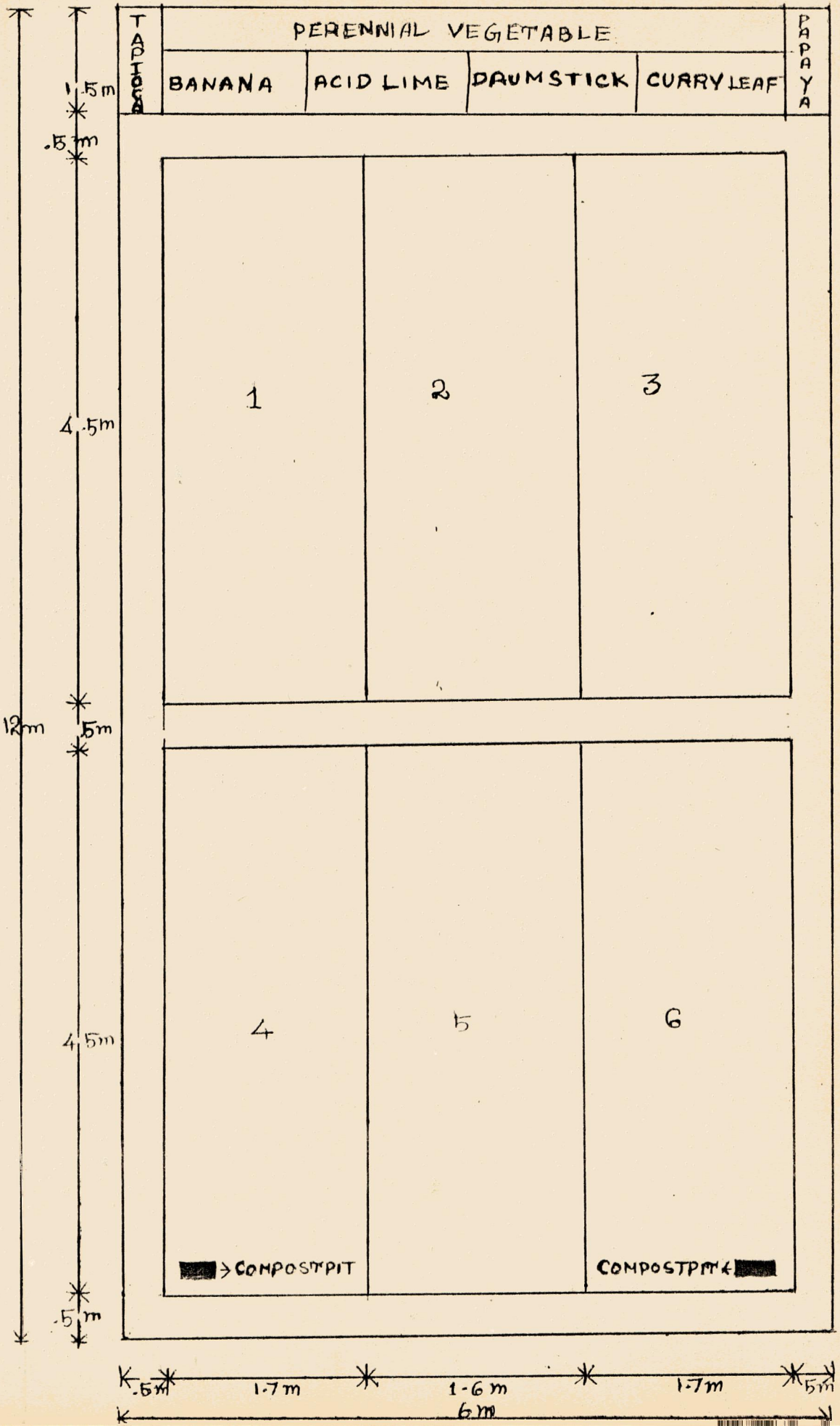


Figure 1

Fig.2 shows the seeds being distributed to a homemaker.

e.Sowing:

The investigator explained the method of sowing seeds and also raising seeds in beds. Keen interest was taken to show the method of sowing seeds by demonstrating to the homemakers, individually Fig.3 shows the homemaker sowing the seeds. With regard to the climber, the location and provision of pandals' were explained. The sowing was done thrice during the months of August, December and also during the month of January.

f.Manuring:

The investigator placed special importance on manuring aspect. The home makers were educated on preparing compost pits and using the same for the plants. Avoiding pesticides and applying commercial manures were discouraged. Application of manure was described and demonstrated.

g. Irrigation:

The home makers were asked to irrigate on alternative days. The investigator supervised and checked that the plots were irrigated as per instruction. The irrigation was done from the time of sowing, transplanting till harvesting.

h. Harvesting:

The investigator constantly visited each of the selected households and checked the growth and yield of the plants. As and when the vegetables were ready for harvest, they were collected, quantity were measured and recorded the

SEEDS BEING DISTRIBUTED TO A HOMEMAKER



FIGURE 2

THE HOME MAKER SOWING THE SEEDS



FIGURE 3

equivalent money value. The investigator regularly visited the households to observe and study the resource management practices of the homemakers.

4. Evaluating the resource management practices of the selected rural households after raising kitchen garden:

In order to evaluate the resource management practices of the selected households, the investigator used the schedule to find out the resource management practices after raising the kitchen garden.

The details regarding resource management practices after introducing kitchen garden, benefit accrued, problems faced in maintaining, ways and means adopted to overcome problems were recorded.

Results and Discussion

IV. RESULTS AND DISCUSSION

The findings of the study on "Resource Management in Raising Household Kitchen Garden" are presented and discussed under the following headings.

- A. Background information of the families surveyed.
- B. Resource management behaviour of selected families after raising kitchen garden.

A. Background information of the families surveyed.

The data collected regarding the background information of the families surveyed are discussed under following headings such as type of family, age, family size, educational and occupational status of the heads of the families and homemakers, income, type of house, water supply and space for raising kitchen garden.

Type of family:

The survey indicated that 90 per cent of the families were of nuclear type whereas the rest of them belonged to the joint family system. This clearly shows the disintegration of joint family system even in rural areas.

Age:

Agewise distribution of the home makers is presented in Table I.

TABLE I
AGE LIMITS OF THE HOMEMAKER

SL.NO.	Age Range in years	Percentage
1.	20 - 30	62
2.	30 - 40	30
3.	40 - 50	8
	Total	100

Agewise distribution of the home makers show that majority of the respondents, 62 per cent were in the age group ^{of} 20 - 30 years followed by 30 per cent who were in the age group of 30 - 40 years. Only eight per cent of the home makers were in the age group of 40 - 50 years.

Family Size :

According to Devadas (1985) small family comprises of 1-3 members, medium family 4-6 members and large family above 6 members.

Among the surveyed families about 87 per cent belonged to the medium family group having 4 - 6 members, and 13 per cent of the families belonged to the small family group. However the family planning programme launched by the Government of India did have an influence on the people to adopt small family norm.

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Educational status :

Table II presents the details of the educational status of the heads of the families and the homemakers surveyed.

TABLE II

**EDUCATIONAL STATUS OF THE HEADS OF THE FAMILIES AND
HOME MAKERS**

Sl. No.	Educational level	Homemakers percentage	Heads of the family percentage
1.	Illiterates	55	39
2.	Elementary School	6	17
3.	High School	20	24
4.	Higher Secondary	15	16
5.	College	4	4
	Total	100	100

It was heartening to note that about 39 per cent of the heads of the families and 55 per cent of the home makers were illiterates. Twenty four per cent of heads of the families and 20 per cent of home makers had education upto high school. On an average fifteen per cent had education upto higher secondary level. Seventeen per cent of the heads of the families and six per cent of the home makers

had elementary school education and only four per cent of the heads of the family and the home makers were graduates respectively.

Occupational status:

Table III depicts the occupational status of the heads of the families surveyed.

TABLE III

OCCUPATIONAL STATUS OF THE HEADS OF THE FAMILIES

Sl.NO.	Occupation	percentage
1.	Labourer	86
2.	Clerk	6
3.	Supervisor	2
4.	Watchman	2
5.	Farmer	4
	Total	100

Regarding the occupation of the heads of the families a majority of the 86 per cent were employed as labourers in industries and six per cent were employed as clerk working in offices. Two per cent were involved in occupation such as supervisor and watchmen respectively. Only four per cent were farmers working in their own fields. However none of the home makers were employed outside and were full time home makers.

Income :

Regarding the income level of the families surveyed about 32 per cent of them were in the low middle income group earning an income which ranged between Rs.2,000-3,000. Thirty six per cent of the families belonged to the middle middle income group earning Rs.3000-5000 and 4 per cent belonged to high middle income group earning Rs.5000-10000. However 16 per cent belonged to the low income group earning between Rs.500-1000 per month. Twelve percentage of the household surveyed had additional income from land produce, house rent and supply of milk.

Type of house :

Among the houses surveyed all the inhabitants lived in their own houses which were either tiled or thatched and Ninety Eight per cent of the houses had concrete roofings atleast for one room. The owners expressed that owning house secured social prestige and satisfaction in the community besides security. All the families surveyed in Gandhinagar belonged to Hindu religion as this was predominant in that particular locality.

Water facility :

With regard to water facility it was observed that in Gandhinagar road side taps at easy approach were provided for fetching water for household purposes. However private

wells were also present in 20 per cent of the households. The supply of water was on alternative days. Fetching water and carrying home were considered as a burden by 25 per cent of the home makers whose houses were located far away from the source.

Availability of area for kitchen garden :

Table IV shows the details regarding the availability of space for raising kitchen garden in the households.

TABLE IV

AREA FOR RAISING KITCHEN GARDEN

Sl.No.	Area In Sq. ft.	Percentage
1.	350 - 450	43
2.	450 - 550	30
3.	550 - 650	12
4.	650 - 750	12
5.	750 - 850 & above	3
Total		100

It was observed from the survey that all the families surveyed had some space which ranged between 350 sq. ft to 850 sq.ft for raising kitchen garden. A majority of 43 per cent of the house holds had an area of about one cent (436 sq.ft) available which could be used for raising

clothes consumed maximum time. On an average two hours was spent on cooking. The home makers expressed that break fast and lunch were normally prepared simultaneously. The curry (Kulumbu) was prepared sufficient enough to meet the requirement of the day, including dinner. Rice alone was cooked once again at night. Their normal diet included rice, kulumbu and a vegetable preparation and any one type of tiffin item for the breakfast. No elaborate cooking was done except on special occasions.

Majority of the homemakers expressed that washing clothes also consumed a maximum of two hours. The other routine house hold activities namely cleaning utensils, household maintenance, catering to the needs of the children and helping the children in studies consumed one to one and half hours respectively. In twenty two per cent of the families where the children were quite young, on an average four hours were devoted towards care of children. However family members and neighbours rendered help.

Since water supply was on alternative days and within a specific time the home makers were involved in fetching water for households task during stipulated time on alternative days. All the homemakers expressed that fetching water consumed one to two hours on alternative days and considered this as a tiresome activity.

Marketing was done once a week. The home makers expressed that vegetables were mainly purchased from the "Shandy". However to meet the days requirement the men folk, normally rendered help. Occasionally to meet the urgent requirement, the local shop was approached. The homemakers expressed that since only one small shop was available in their area, regular purchase was avoided as the cost of the materials and items were high and expensive.

B. Resource management behaviour of selected families after raising kitchen garden :

This heading presents the details regarding the families selected for raising kitchen garden, the resource management practices, details regarding kitchen garden and yield particulars.

Details of the families selected :

Fifty families were identified and selected for raising household kitchen garden based on the criteria such as availability of space, water facility, interest, co-operation of the family members, time availability and knowledge regarding importance and advantage of kitchen garden.

All the families belonged to nuclear type of family. Eighty percent of the home makers selected belonged to the age group between 20 - 30 years, and the rest were in the age group between 30 - 40 years. This shows that age

factor plays an important role. Young homemakers were more energetic and interested in doing the task. It was encouraging to know one homemaker who had lost one arm, showed overwhelming interest in raising kitchen garden in her house. All the homemakers had space of one to two cents in their respective household. Easy access to water and willingness to divert kitchen waste water towards garden showed the interest towards raising kitchen garden in their respective households.

Resource management practices in raising kitchen garden:

The out-come of the survey conducted on selected rural families showed the resource management before introducing kitchen garden and improvement in the resource management pattern after introducing kitchen garden in the households. Time management practices of the selected homemakers are discussed under the headings on the aspects such as time schedule, time expenditure pattern and leisure time activities.

Time Plan :

With regard to the time plan, the homemakers expressed that none of them had a written plan for executing the regular household work. But they were quite conscious of the time especially during the morning hours which were considered as the most busiest part of day and were laid with heavy peak load. However they were very conscious in completing the task and were time conscious especially

during the morning hours since the men folk had to go for work early and children to school. It was reported that all the homemakers tried to have a mental plan and followed the same as far as possible. The homemakers expressed that they never bothered, to evaluate the work performed, since the homemakers selected were not employed outside and had sufficient time to execute and complete the household task as and when they desired. Moreover the homemakers expressed that their daily work performance was routine, except on days of special occasion, functions, festivals or unexpected events.

Time expenditure pattern :

The daily activity pattern of the homemakers reflect the interests, workhabits, and personal needs of the family.

The table VI presents the average time expenditure pattern of the selected homemakers on various activities before and after introducing kitchen garden.

TABLE VI
 AVERAGE TIME EXPENDITURE PATTERN OF THE HOMEMAKERS
 ON VARIOUS ACTIVITIES

Sl. No.	Activities	Before	After
1.	Personal activities	25 mts	20 mts
2.	Cooking	2 hrs	2 hrs
3.	Washing utensils	1 hr	50 mts
4.	Fetching Water	1 hr	1.15 mts
5.	Washing Clothes	2 hrs	2 hrs
6.	House keeping activities	1 hr	1.15 mts
7.	Rest	25 mts	30 mts
8.	Marketing	30 mts	40 mts
9.	Religious activities	10 mts	10 mts
10.	Recreation	1.30 hrs	1 hrs
11.	Watching Television	4.30 hrs	4 hrs
12.	Sleep	8 hrs	8 hrs
13.	Care of Children	1 hr	1 hr
14.	Gardening	30 mts	1 hr
Total		24 hrs	24 hrs

The homemaking activities of a homemaker include a variety of responsibilities and household task. All the

ahomemakers have 24 hours at their disposal. Among the various activities of the homemakers, cooking and washing clothes consumed maximum time, almost two hours respectively. Activities namely washing utensils, fetching water and care of children consumed on an average an hour and personal activities, marketing and gardening consumed about 30 minutes per day respectively. A thirty minutes nap was welcomed by the homemakers. The time spent on sleep at nights however was the highest, nearly eight hours per day.

The introduction of kitchen garden had a positive impact towards better resource management practices of the homemakers. Though much differences was not seen, improvement was observed in their time management practices. The time spent on viewing Television was on an average four hours thirty minutes during day time. A significant improvement was seen in reduction of time for viewing T.V.programme. On an average 30 minutes were reduced and utilised for gardening activities. It was encouraging to know introduction of kitchen garden had an impact on the homemakers. Fig 4 shows the average time expenditure on various household tasks before and after introducing the kitchen garden Carefully thought-out time and activity plans are useful tools, to save their time and energy.

Leisure time activities:

The way in which homemakers spent their leisure time shows a wide variety of leisure time activities.

AVERAGE TIME EXPENDITURE PATTERN OF THE HOMEMAKERS ON VARIOUS ACTIVITIES

Key
1cm = 1/2 hour

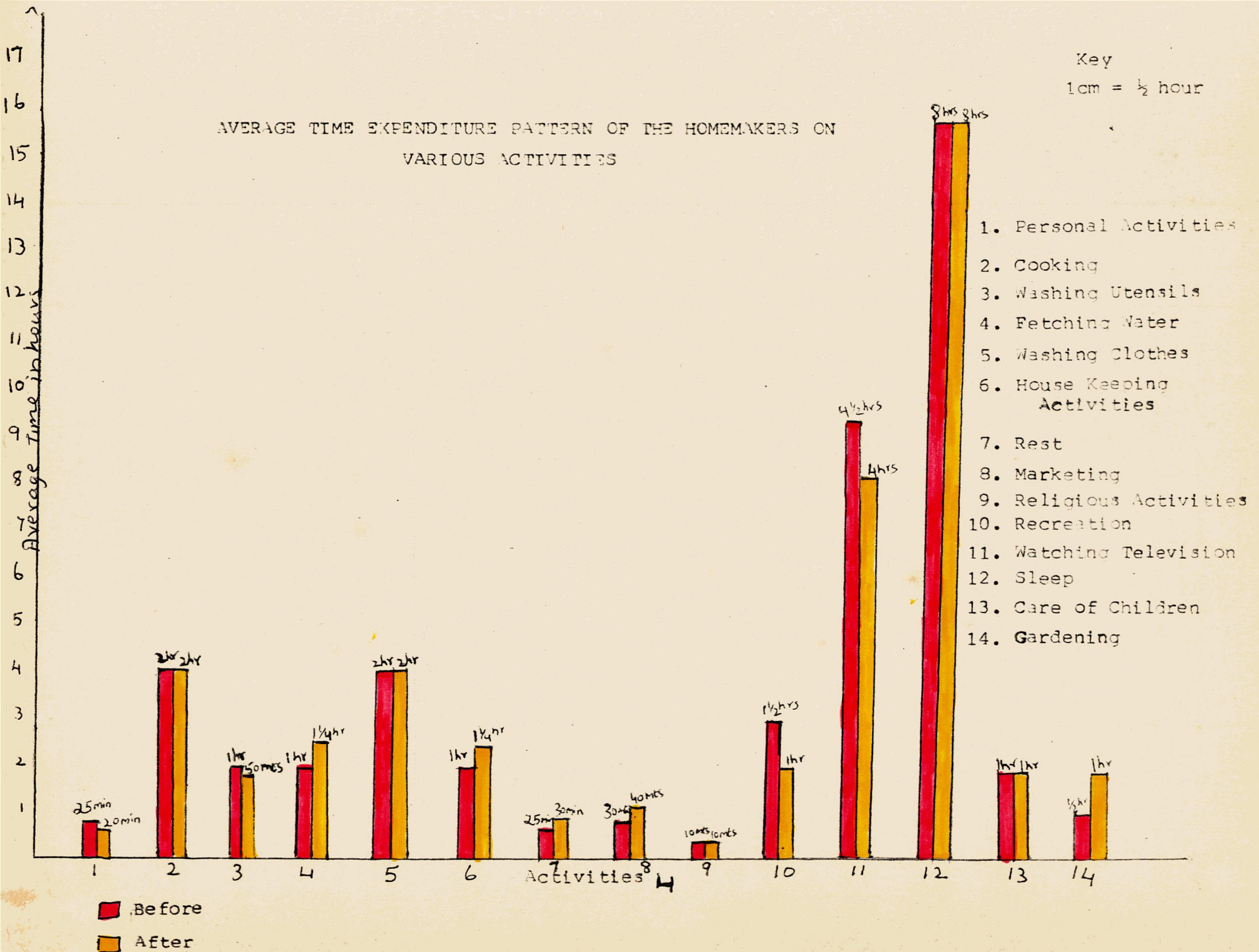


Table VII presents the leisure time activities of the selected homemakers.

TABLE VII
LEISURE TIME ACTIVITIES OF THE HOMEMAKERS

Sl. No.	Activity	Time in Hrs	Percentage
1.	Reading	1/2	30
		1	38
2.	Listening to music	1/2	36
		1	34
		1 1/2	34
3.	Gardening	1/2	24
4.	Tailoring	1/2	10
5.	Watching T.V	2	4
		3	76
		4	10
		5	10
6.	House visits	1	58
		2	28
		3	14

Leisure time is an important part of the total pattern of living.

Full time homemakers spend approximately four to five hours of the day in community and other leisure activities. The above table shows that watching T.V. occupied the most important place as a leisure time

activity. Much enthusiasm, importance and interest was shown towards this by all the homemakers irrespective of age. A minimum of two hours and maximum of five hours was spent per day for watching T.V. A majority of 76 percent of the homemakers viewed T.V. nearing for three hours every day.

House visits were the next enjoyed leisure time activity, where a minimum of one hour was spent everyday which was reported by 58 percent of the homemakers. Fourteen percent of the homemakers said that even three to four hours were spent on chatting. All the homemakers felt that watching T.V. and chatting with friends were the most enjoyed and cherished leisure time activities. Listening to music was stated to be the next enjoyable leisure time activity by all the homemakers. Gardening activity was enjoyed by 24 percent of the homemakers and tailoring by ten percent of the homemakers.

It was encouraging to note that after motivating the homemakers to raise kitchen garden all the homemakers had kitchen garden as their most important and enjoyable leisure time activity. Leisure time gives greater opportunity for creative and satisfying recreation.

Adjustment in work pattern:

The managerial aspect of time and energy throws light on the type of adjustment made by homemakers in

household work. It was observed that all the homemakers made certain type of adjustments in their work pattern to watch Television Programmes.

Type of adjustments:

Table VIII shows the type of adjustment made in work pattern by the homemakers.

TABLE VIII
TYPE OF ADJUSTMENTS MADE IN WORK PATTERN

Sl. No.	Type of adjustment	Percentage	
		Before	After
1.	Postponing the work	100	-
2.	Using work simplification methods	80	90
3.	Pre -Preparation	-	100
4.	Using labour saving devices	45	80
5.	Getting help from family members	40	75
6.	Organizing work	10	83
7.	Avoiding activity	78	-
8.	Starting the work earlier	15	32
9.	Getting up early	10	27

Postponing the work (100 percent) and avoiding doing work (78 percent) was very common among all the homemakers especially when the programmes on T.V. were

interesting. Drastic change was observed after introducing kitchen garden and educating the homemakers on work simplification methods, ^{pre-}preparation, use of labour saving devices and carrying out work in an organized manner, to enable them to accomplish the task. Getting help from family members in completing the task was reported by 75 percent of the homemakers after introducing kitchen garden. Starting the work earlier, and getting up early were also reported to be improved methods in accomplishing the routine task. It was encouraging to note that the homemakers showed positive attitude towards better management in performing work and devoting time at the same time for kitchen garden. Fig 5 shows the type of adjustments made in work pattern.

Change observed in leisure time activity:

Viewing television was the main leisure time activity for majority of the homemakers. However other activities such as reading story books, listening to radio, chatting with friends, and occasionally visiting neighbours were the other leisure time activities reported by the homemakers.

With reference to the introduction of the kitchen garden it was observed that 80 percent of the homemakers

TYPE OF ADJUSTMENTS MADE IN WORK PATTERN

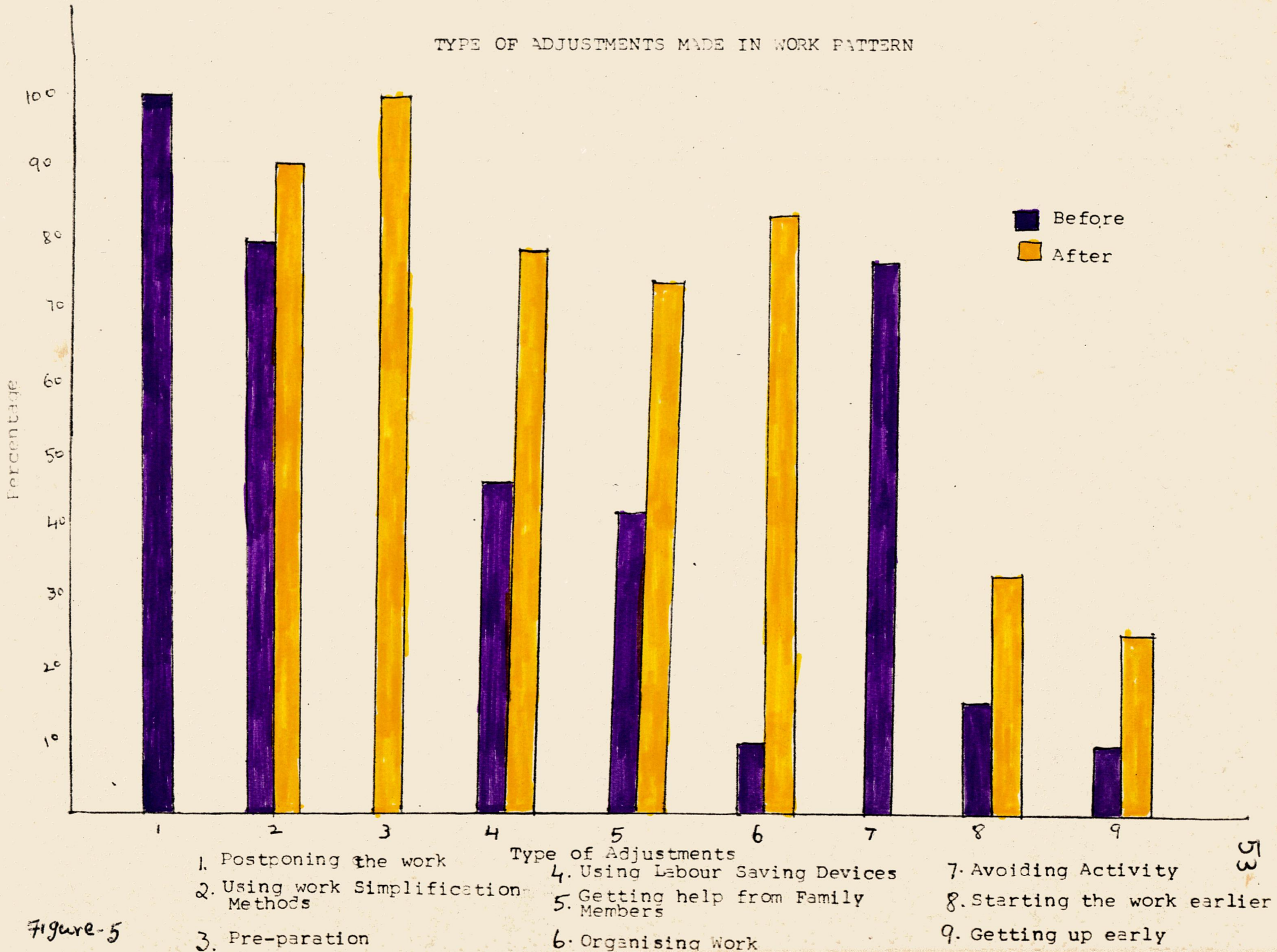


Figure-5

made change in their work pattern and devoted time for kitchen garden. Effort taken to motivate women folk towards raising kitchen garden, and reducing the duration for watching T.V. proved successful among 60 percent of the homemakers. It was observed that watching television did have a tremendous effect in attracting the homemaker and neglecting their house work. It would be a herculean task to divert and deviate the attention of the homemakers from watching television.

Energy management"

The energy management practices of the selected homemakers are discussed under aspects such as energy management practices and role of labour saving devices in the households.

Energy management practices:

The homemakers even in rural areas preferred to possess labour saving devices. But the use of the device was limited. The homemakers did not express much stress and strain in carrying out their routine activities, since they had enough time for completing the household chores, since, all the homemaker selected were, full time homemakers. .pa.

Labour saving devices:

The observation indicated that the homemakers who possessed labour saving equipment such as pressure cooker mixie, grinder and gas stove did not use them regularly

even though it's use was required. They were instructed to make use of the equipment and save their time and energy and utilise this time and energy for raising kitchen garden. Table IX shows the impact of raising kitchen garden towards using the labour saving equipment in the selected households. The details regarding the possession and use of the labour saving devices is presented in the table below:

TABLE IX
USE OF LABOUR SAVING DEVICES

Sl. No.	Devices	Possessed	Before	After
1.	Gasstove	26	20	26
2.	Pressure Cooker	48	30	48
3.	Mixie	6	2	6
4.	Grinder	8	3	8
5.	Refrigerator	2	2	2
6.	Iron Box	10	10	10

Labour saving devices such as gas stove, pressure cooker, mixie, grinder, refrigerator and iron boxes were the common labour saving devices found in the selected households. The observations showed though the households possessed these equipment, their use was very limited. Possession of such equipment were considered as prestige and status in the society.

Pressure cooker and gas stove was used regularly by 30 percent and 20 percent of the families respectively. Similarly only grinder was used in three percent of the families and mixie in two percent of the families. Refrigerator was used regularly. Iron box was a very useful equipment and was made use of in all the houses (10 percent) who possessed it. It was interesting to note that after introducing kitchen garden, all the homemakers started using the labour saving equipment possessed by them regularly. This showed that a little stimulus, motivation and encouragement was required to be given, to gain confidence in using the equipments. Fig.6 shows the use of labour saving devices by the home makers before and after introducing kitchen garden.

Money Management :

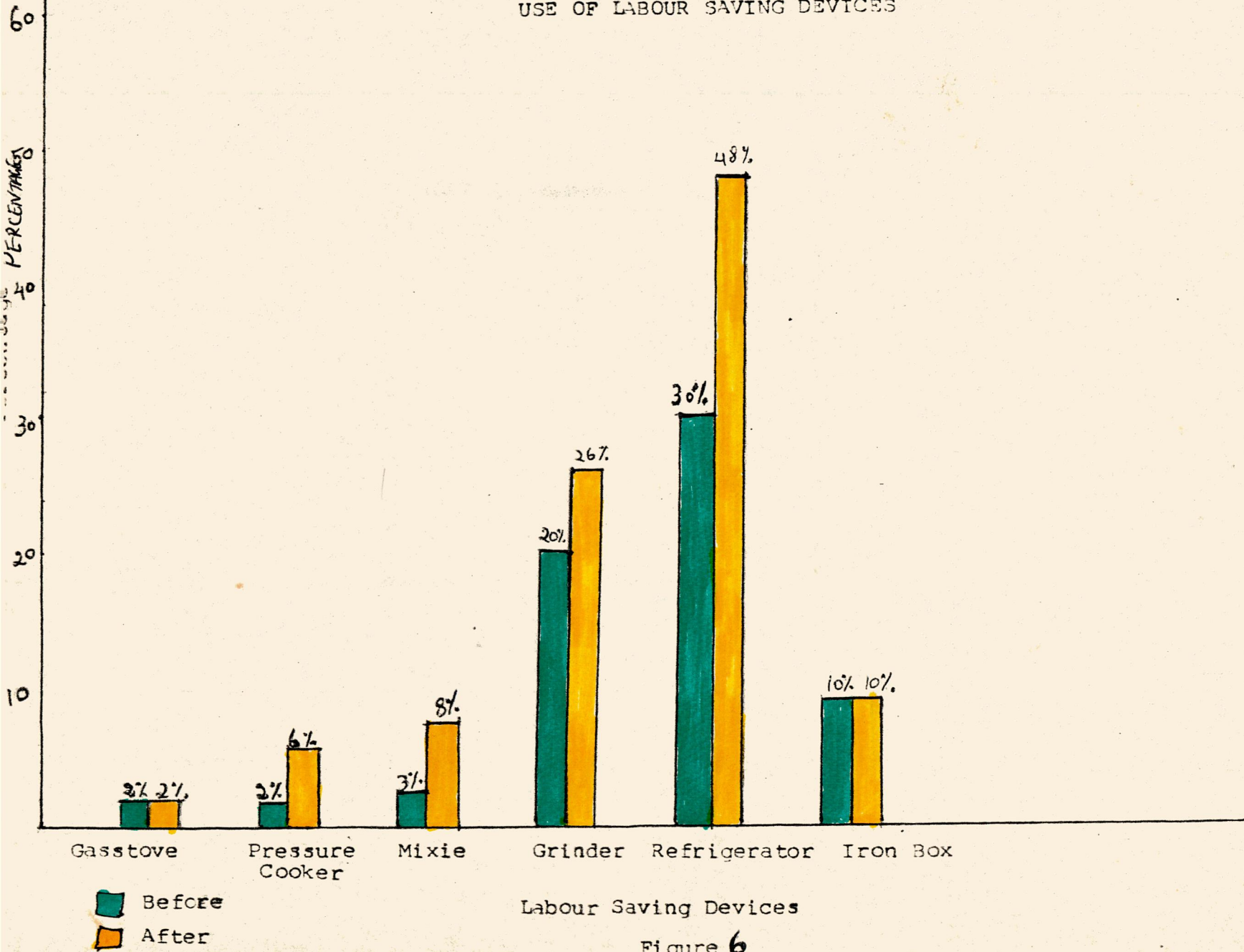
The money management is discussed under aspects related to budget, and food expenditure, pattern.

Budget:

Among the selected families, it was noted that all the homemakers had mental picture drawn in mind with regard to their monthly expenditure. They expressed that they could not stick on to the framed mental budget but it did

Key
2.5cm = 10 percent

USE OF LABOUR SAVING DEVICES



Labour Saving Devices

Figure 6

help them to evaluate and realize the over expenditure and at times the unexpected expenditure which occurred due to unexpected events and occurrence. Deficits were found mainly in the low and middle income families. Some of which would have been avoided by careful planning.

Savings:

With regard to the savings pattern, the homemakers did not have regular, savings in any of the nationalized banks. The homemakers preferred in joining the local chits, run by the local persons or institutions: As and when there was crisis for money they either withdrew from chit or took a loan from this savings and paid interest for the amount. For urgent need small amounts were borrowed from neighbours and returned in a few days.

Food expenditure pattern :

With regard to the expenditure pattern of the families it was observed that an amount which ranged between Rs.1,000 - 1,500 was spent on food items by all the selected families. This was on an average 50 percent of the family income. A study conducted by Manimozhli supports this statement.

The details regarding the expenditure on various food items is presented Table X.

TABLE X
FOOD EXPENDITURE PATTERN

Sl.No.	Items	Percentage
1.	Cereals	15
2.	Pulses	10
3.	Vegetables	16
4.	Fruits	8
5.	Milk and milk products	15
6.	Fats and Oil	13
7.	Meat, fish and poultry	6
8.	Spices and condiments	6
9.	Miscellaneous	11
Total		100

The food expenditure pattern of the selected household revealed that 25 percent of the total amount spent on food was towards cereals and pulses. The next being vegetables (16 per cent). On an average 14 percent of the amount was spent for milk and milk products and for fats and oils respectively. Eight percent of the amount was spent on fruits followed by six per cent for meat, fish and poultry items and for spice and condiments respectively. On an average 11 per cent was utilised for miscellaneous items.

Which include ready to consume food items, bakery products etc. Fig 7 shows the food expenditure pattern.

Expenditure pattern on vegetables :

Under this heading aspects related to amount spent, quantity of vegetables, quantity of vegetables purchased, satisfaction derived with regard to vegetables purchased from market are discussed.

Amount spent :

Table XI shows the amount spent on vegetables and quantity purchased per month by selected families.

TABLE XI

AMOUNT SPEND AND QUANTITY PURCHASED ON VEGETABLES PER MONTH

Sl.No.	Amount in Rs.	Quantity Purchased in Kg.	Percentage
1.	100 - 150	25 - 30	38
2.	150 - 200	30 - 35	24
3.	200 - 250	35 - 40	28
4.	250 - 300	40 - 45	10
<i>Total</i>			100

On an average 38 per cent of the selected households spent Rs. 100 - 150 and purchased 25 - 30 kgs, of vegetables per month. Twenty eight percent of the families spent an amount which ranged between Rs. 200 - 250 for 35 - 40 kgs of vegetables. Twenty four percent of the families spent Rs. 150 - 200 for 30 - 35 kgs, of vegetables. Only 10 per cent of the families spent up to Rs. 300 and above for 40-45 kgs, of vegetables.

FOOD EXPENDITURE PATTERN

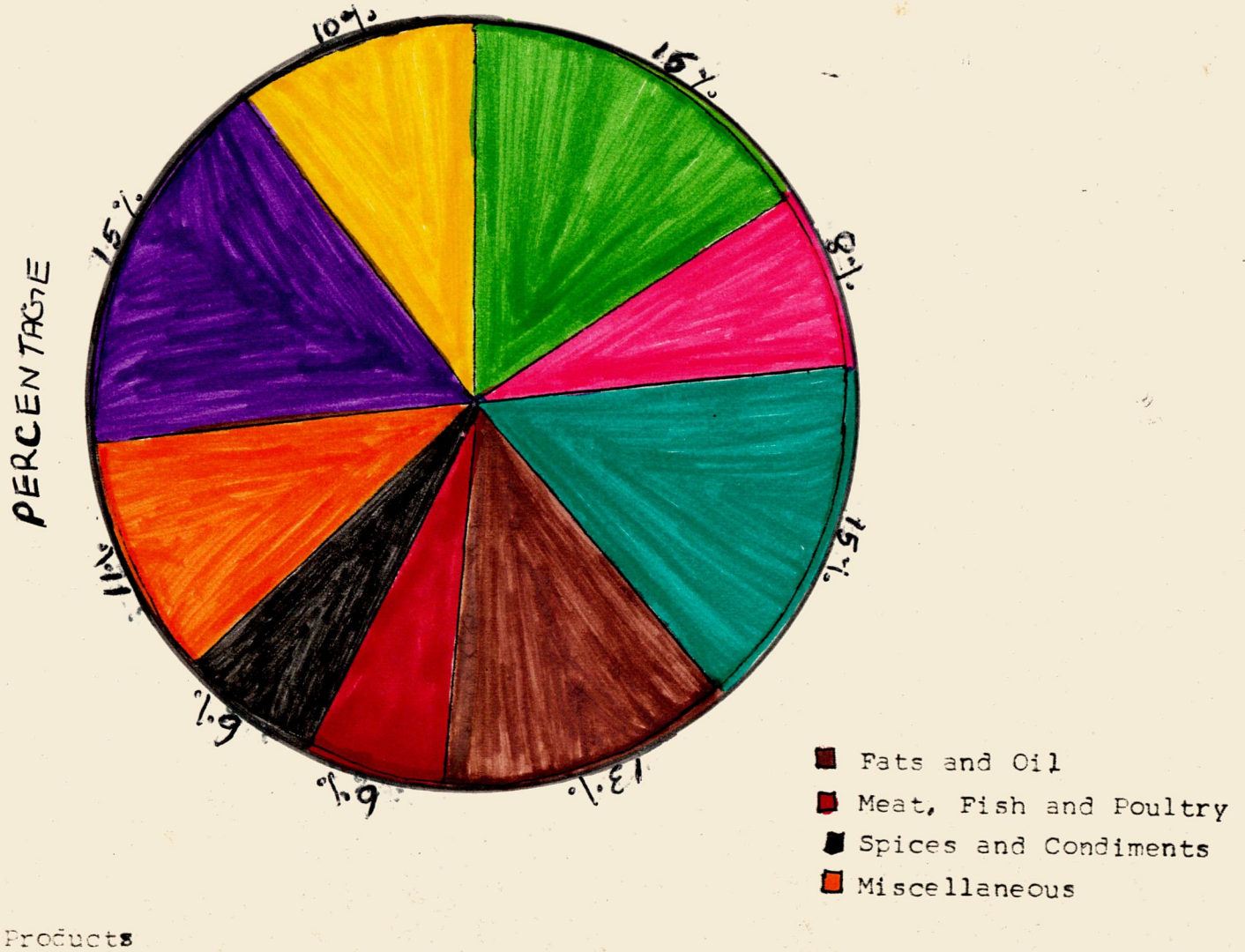


Figure 7

This shows the place of vegetables had an important place in daily diet and homemakers purchased vegetables which were cheap and low cost to suit their budget. Family members preference also had a role in purchase of vegetables in 32 per cent of the families.

Use of water for raising kitchen garden :

The survey observation showed that in 80 per cent of the selected households the water that was used for various household purposes such as washing clothes and vessels and water from kitchen were not utilized usefully instead were diverted to the streets, creating a public nuisance and unhygienic surrounding. However the education provided for raising kitchen garden proved fruitful out come showing that all the homemakers utilized especially the kitchen waste water and water from washing vessel for raising kitchen Fig 8 shows kitchen waste water being utilized for raising amaranthus just outside kitchen out let. The water used for washing clothes were however not wasted but utilized for washing and cleaning the bathroom and toilet and the front and backyards.

Land use pattern:

All the households who were selected for raising kitchen garden had a minimum of one to two cents of land available at their disposal. The observation on land use showed that 25 per cent of the homemakers had vegetable

KITCHEN WASTE WATER UTILISED FOR RAISING
AMARANTHUS



FIGURE 8

which were common, easy to grow and which required less care and maintenance. No definite plan or layout was followed for raising vegetables. It was grown in a hapazard manner. However all the households selected had planted some type of tree such as papaya banana, coconut, drumstick, and curry leaves. Very few households had mango, pomogranate and some medicinal value trees and shrubs. This shows the interest in raising kitchen garden. The knowledge imparted on importance of kitchen garden, lay-out planning, sowing seeds, watering, manuring harvesting and place for compost in kitchen garden showed significant change in land use in the selected households. It was interesting to observe the interest and enthusiam shown by the homemakers in use of the available land are for raising vegetables at home in a proper layout. Fig 9 shows the use of land before and ater introducing the kitchen garden.

Knowledge on kitchen garden :

All the homemakers who were selected were aware of the importance of kitchen garden and its advantages. However motivation was required to be given to raise kitchen garden.

Criteria for purchase of vegetables :

The homemakers expressed that vegetables were purchased based on the likes of the family members mainly. The criteria mentioned with regard to purchase of vegetables is presented in the table XII below :

THE USE OF LAND BEFORE AND AFTER INTRODUCING
KITCHEN GARDEN



FIGURE 9

TABLE XII
CRITERIA FOR PURCHASE OF VEGETABLES

Sl.No.	Aspect	Percentage
1.	Cost	100
2.	Availability	70
3.	Appearance	67
4.	Preference of family members	65
5.	Freshness	65

Cost was considered as the highest priority in purchase of vegetables by all the homemakers. Availability and appearance being the next important criteria mentioned by 70 percent and 67 percent of the homemakers respectively. Preference of family members and freshness of vegetables were also considered by 65 percent of the homemakers.

Opinion of the homemakers towards vegetables purchased from market :

The details related to this aspect is presented in the table XIII below :

TABLE XIII
 OPINION OF THE HOMEMAKERS TOWARDS VEGETABLES PURCHASED FROM
 MARKET

Sl.No.	Aspect	Percentage
1.	High cost	100
2.	Default in weight	100
3.	Non availability of fresh vegetables	87
4.	Application of pesticide	85
5.	Loss in nutrients	80
6.	Insect infestation	75

High cost and default in weight were reported by all the homemaker. Non availability of fresh vegetables and application of pesticide being next reported by 87 percent and 85 percent respectively. Insect infestation was also reported by 75 percent of the households. However the opinion regarding the vegetables purchased from market was not satisfactory.

Illeffect of pesticides :

The homemakers were well aware of the application of pesticides on the vegetables. All the homemakers mentioned washing the vegetables thoroughly well before use was the only measure taken by them to prevent the harmful effect of the pesticides.

Awareness on use of waste water and solid waste :

Twenty seven percent of the homemakers had kitchen garden in their households. Except watering no extra care was taken to increase neither the yield nor to have a healthy plant. All the homemakers selected were aware that waste water could be utilised for raising kitchen garden. After introducing kitchen garden in their household, eighty percent of the families diverted waste water from kitchen through outlets towards the kitchen garden. Fig 10.

With regard to use of solid waste for making compost the homemakers were ignorant. Eighty three percent of the homemakers expressed their willingness to have compost pit dug in their backyard for raising household manure which in turn could be utilised for their plants. Their eagerness to have compost pit was very encouraging and well appreciated.

Yield Particulars :-**Season :**

The seeds were sown in the month of August, December and January. The yield from the three seasons were weighted and equivalent money value recorded. The recording of the yield showed that seeds sown in the month of August and January produced good result. Whereas the seeds shown in the month of December showed stunted growth and produced

KITCHEN WASTE WATER DIVERTED FROM KITCHEN
OUTLET FOR RAISING KITCHEN GARDEN



FIGURE 10

very poor result. This was true to the statement "ஆடிப்பட்டல் தேடி விதை" and "தை பிறந்தால் வழியிக்கும்" to prove that seeds sown during these two months definitely produced satisfying results than seeds sown during any other month.

Quantity of Vegetables harvested:

The details regarding the yield collected are presented in table XIV below. The particulars regarding the yield produced by the household are discussed below.

TABLE XIV
YIELD PARTICULARS

S.No	Quality	Percentage
1.	Lady's finger	1/2
		52
		2-3 Kg
		47
2.	Brinjal	1-1 1/2
		54
		1 1/2-2
		25
3.	Tomatoes	1-1/2
		31
		1 1/2-2
		42
		2-2 1/2
		8
4.	Creeper varieties	2-4kg
		20
		4-6kg
		18
5.	Other Vegetables	1-1 1/2
		31
		1 1/2-2
		4
		2- 2 1/2
		5

The yield from Lady's finger was two to three kg, in 47 per cent and one to two kg in 52 per cent for Lady's finger and 54 per cent for brinjal respectively. About one and half to two kg of yield was recorded for brinjal in 25 percent of the households. With regard to tomatoes a very good yield was produced. One to one half kg was recorded in 31 per cent of the households. One and a half to two kg was produced in 42 per cent of the households. Among creeper variety (Pumpkin, Bitter gourd, snake gourd and ridge gourd) the quantity produced was high. Twenty percent of the homemakers reported that they got a yield which ranged between two to four kg and, eighteen percent said that they received four to six kg with regard to other vegetables, such as radish, beatroot, and beans,. Though the yield from amaranthus was satisfactory and good its yield was not recorded in terms of quantity but, its equivalent in money value was calculated. All the home makers were very happy with the result with regard to amaranthus and expressed that due to quick growth and more quantity they could consume more and also from health point of view the home makers said that they would grow amaranthus in their houses continuously as far as possible and consume more amaranthus and try to include in their diet regularly as much as possible. Fig 11,12 shows the yield of vegetables in the households.

LADIES FINGURE IN THE GROWING STAGE



FIGURE II

YIELD OF VEGETABLES IN THE HOUSEHOLDS



FIGURE 12

YIELD OF VEGETABLES IN THE HOUSEHOLDS



FIGURE 12

Satisfaction derived from kitchen garden :

The homemaker opinion regarding the satisfaction derived from kitchen garden is presented below.

TABLE XV
SATISFACTION DERIVED

Sl. No.	Aspect	Percentage
1.	Supplies fresh vegetables throughout	100
2.	Ensures better balanced diet	100
3.	Constitutes a healthy hobby	100
4.	Helps in utilising spare time properly	100
5.	Increases the savings of the family	100
6.	Helps in consuming fresh vegetable	100
7.	Protects from the harmful effected pesticides	100
8.	Provides psychological happiness	100
9.	Ensures proper use of land	100
10.	Increases interest of the family members	100
11.	Provides exercise to the body	100
12.	Helps in disposing the waste water in a proper manner	100
13.	Utilises solid waste for composting	100

All the homemaker expressed happiness towards raising kitchen garden in their respectives households. Kitchen garden were developed with utmost enthusiasms and interests.

Summary and Conclusion

V SUMMARY AND CONCLUSION.

The study on "Resource Management In Raising Household Kitchen Garden", included a household survey conducted in one hundred households in the village, Gandhinagar in Perinaickenpalayam Panchayat union in Coimbatore city. The tool used by the investigator was the interview method. The highlights of the survey are presented below.

1. The survey indicated that ninety percent of the families were of nuclear types whereas the rest of them belonged to the joint family system.
2. Age wise distribution of the homemakers showed that majority of the respondents, sixty two per cent were in the age group of 20-30 years.
3. Among the surveyed families about eighty seven percent belonged to the medium family group having 4-6 members.
4. Thirty nine per cent of the heads of families and fifty five percent of the home makers were illiterates.
5. Regarding the occupation of the heads of the families a majority of eighty six percent were employed as labourers in industries and others were employed as clerk, supervisor, watchman and farmer.
6. Majority of the family surveyed belonged to middle income group.
7. With regard to water facility, provision of road side taps were present.

8. Ninety seven percent of the households had a space which ranged between 350-750 sq feet.
9. Among the various household tasks cooking and washing clothes consumed maximum time of two hours. Other activities namely cleaning utensils, fetching water, catering to the needs of the children, house hold maintenance and teaching the children consumed on average one to one and a half hours.

The highlights of the fifty household selected for raising kitchen garden are presented below.

1. The criteria for selecting the fifty families were availability of space, water facility, interest, co-operation of the family members, time availability and knowledge on kitchen garden.
2. All the families belonged to nuclear type of family. Eight percent of the home makers selected belonged to the age group between 20-30 years and the rest were in the age group between 30-40 years.
3. With regard to the time plan, non of the homemakers had a written plan for carrying out the regular household work.
4. The homemakers selected were not employed outside. All were full time homemakers.
5. On an average two hours were spent on cooking and washing clothes by the home makers.

6. Among the leisure time activities watching T.V. and listening to music were the most enjoyed activity. Followed by house visits. The other activities being reading books, gardening and tailoring.
7. The time spent on watching T.V. ranged between four to five hours a day.
8. In order to watch the T.V. the type of common adjustments made were, postponing the work and using simple methods of cooking. After introducing kitchen garden the homemakers did not postpone the work (100 per cent) and used work simplification methods (90 per cent). The other methods adopted were (100 per cent) using labour saving devices (80 per cent) organising work (83 per cent) and getting help from family members (75 per cent).
9. Eighty per cent of the home makers devoted 30 minutes every day towards kitchen gardening by reducing 30 minutes in watching television.
10. Pressure cooker (48 per cent) and gas stove (26 per cent) were found commonly used in the selected households.
11. Mixer and grinder were used regularly after introducing kitchen garden to hasten the household activities.
12. None of the home makers had budget formulated. Fifty per cent of the family income was spent on food items. Out of which sixteen per cent was spent on vegetables.

13. Sixty two per cent of the families spent an amount of Rs.100-200 on vegetables, and 38 per cent spent Rs.200-300 per month.
14. Eighty per cent of the households used waste water for raising kitchen garden, after introducing kitchen garden.
15. Twenty five per cent of the households had a unplanned kitchen garden. All the households used the land available for raising kitchen garden in a planned and organised manner.
16. All the homemakers were aware of the advantages of the kitchen garden and also aware of the ill effects of the pesticides. All vegetables were purchased from the market. The default in weight and high cost were not appreciated.
17. All the home makers showed interest in raising kitchen garden diverting waste water for kitchen garden and preparing a compost pit for collecting solid waste for composting and reusing the same as manure for their own kitchen garden.

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Appendices

APPENDIX - I

QUESTIONNAIRE TO ELICIT INFORMATION ON RESOURCE MANAGEMENT IN
RAISING HOUSE HOLD KITCHEN GARDEN

Name of the village :
 Name of the Investigator :
 Date of Interview :

1. GENERAL INFORMATION

Name of the Interviews :
 Name of the head of the family :
 Name of the homemaker :
 Address :

Type of Family : Joint Nuclear

2. FAMILY BACKGROUND

No.	Name of the family members	Relation -ship to head of the family	Age in years	Sex	Educational Status	Occupation	Income/ Month in Rs.
					Stud -ied Stud -ying Ille -terate		

1.

2.

3.

4.

5.

6.

3. INCOME :

No.	Other Sources of of Income	Amount/Month	Annual Income in Rs.
-----	-------------------------------	--------------	----------------------

- | | | | |
|----|-------------------|--|--|
| 1. | Land | | |
| 2. | House Rent | | |
| 3. | Poultry | | |
| 4. | Dairy | | |
| 5. | Kitchen Garden | | |
| 6. | Other's Specially | | |
-

4. HOUSING :

General Details Regarding the House :-

Type of House

Detached

Semi detached

Row House

Any other

Type of ownership

Owned

Rented

5. Do you have space around your house?

If yes, mention the specific location

Front Yard

Area (in sq.mt)

Back Yard

Side of the House

6. Water facility :

- a. What is the main source of water?

Common Tap

Well

Individual Connection

- b. Do you have problem in fetching water?

Yes

No.

If yes mention the problem faced.

c. What is the duration of water supply?

Daily

Twice a week

Once a week

any other

How many hours do you spend in collecting water?
Mention.

TIME MANAGEMENT

7. What are the major house hold activities :

No.	Activity	Time Spent/day in hour and minutes
-----	----------	------------------------------------

1. Cooking

2. Cleaning utensils

3. Washing clothes

4. Catering to the needs of the children

5. Teaching children

6. House hold maintenance

7. Farm activity

8. Cattle rearing

9. Any other

8. Do you have a time plan

Yes

NO

If yes is it written, (or) mental

9. Are you able to follow the time a schedule

10. In case you are not able to follow the time schedule, how do you manage?

11. During Emergence (Unexpected, guest, unexpected event)
How do you manage?

Money Management

12. Do you have a budget?

Yes

NO

13. Do you follow the budget?

Yes

No

If no mention the problem in following the budget

19. The amount of vegetables purchased is if sufficient for your family?

Yes

No

REASONS

20. Do you follow any criteria while purchasing vegetables?

Yes

No

b. Mention the criteria according to priority

- * Cost
- * Availability
- * Appearance
- * Preference of the family members
- * Any other

21. Do you Examine the vegetables before you purchase?

Yes

No

If yes Mentions:-

22. What are your leisure time activities? List them?

No Activity-----Time Spent in hours minutes
Daily/Weekly/Any other

1. Reading
2. Listening to music
3. Tailoring/Gardening
4. Watching T.V.
5. House Visits
6. Attending function
7. Any others

Energy :

1. Are you able to complete the household task within the stipulated time?

Yes

No

If no what are the adjustment made for the completion of the task?

Do you posseses labour saving devices? Mention?
Do you use them regularly?

Yes No
Give reasons

23. Do you have a kitchen garden at house?

Yes No
If yes

Would you like to improve your kitchen garden

Yes No

24. What are the vegetables grown in your kitchen garden?
Mention.

VEGETABLE-----QTY.-----AMOUNT IN RS.

25. What measures do you adopt for increasing the yield?

Sl.No.-----Aspect

1. Attending to the garden regularly
2. Applying manure
3. Watering the plants
4. Applying pestiides
5. Any other

26. Details regarding raising kitchen garden :

1. Are you interested in raising kitchen garden?

Yes No

2. Do you have enough space to raise vegetable in your house?

Yes No

3. Do you have facility to water the plants?

Yes No

27. Would you like to raise kitchen garden during your leisure time?

Yes

No

If no how will you manage to water the the plants

28. Do you know the importance of having a kitchen garden?

Yes

No

If yes Mentions : -

29. Do you have any idea about usage of pesticides to control pest on vegetables?

Yes

No

30. Are you aware of the harmful effect of the pesticides?

Yes

No

31. In spite of knowing the harmful effect of the pesticides do you still like to purchase vegetables from the market.

Yes

No

REASONS

32. What measures do you take to prevent the harmful effect of the vegetables on your family members?

Mention them:-

Wash them thoroughly well

Soak in salt water

Soak in hot water

Remove the skin

Use after a day

33. What are the ways adopted for disposing household solid waste?

Mention

34. Are you aware that vegetable wastes can be used as a source of manure for kitchen garden?

Yes

No

How will you use them?

35. How do you dispose waste water? Mention

36. Do you have any idea regarding use of waste water for kitchen garden?

37. Are you interested in establishing a good home garden in your home?

Yes

No

38. Are you interested to learn simple technologies for raising a kitchen garden.

- Waste water treatment

- Composit pit

- Wormi compost

39. What are the advantage of having a kitchen garden at home?

List/Mention.

APPENDIX-II

CULTIVATION DETAILS OF DIFFERENT VEGETABLES IS GIVEN BELOW

Plot 1

Bringal, Radish
Cabbage
Bhendi

June - September
October - January
February - March

Plot 2

Cluster Beans
Beetroot
Amaranthus
Cowpea

June - September
October - December
January - February
March - May

Plot 3

Cowpea
Bringal
White bean

June - September
October - January
February - May

Plot 4

Bhendi
Cowpea
Radish
Amaran-thus

June - May
October - January
February - March
April - May

Plot 5

Chillies, Radish
Bhendi
Bringal, Tomato

June - September
October - January
February - May

Plot 6

Onion
Amaranthus
Radish

June - September
February - March
April - May