CHAPTER 1

INTRODUCTION

1.1 Introduction

1.2 Challenge of Rural Development in Junagadh District Through The Watershed Program

1.3 Selection of Research Problem

1.4 Problem Statement

1.5 Objectives of Study

1.6 Hypothesis

1.7 Variable

1.8 Research Methodology

1.9 Importance of Research

1.10 Limitations of the Research

1.11 Planning the chapters
CHAPTER 1

INTRODUCTION

1.1. INTRODUCTION

Research taken up in any field or area is of utmost importance and needed for social development and also for the welfare of mankind. Research is totally a scientific procedure through which verification of data is done of facts and statistical figures using scientific methodologies. The areas of research are comprehensive as well as diverse.

Research is regularly happening in various fields of medicine, management, technology and social sciences. These researches have changed the direction and status of the human development even in the past or history. Whether it was Archimedes or Newton who conducted research in Physics or Louis Pasteur who did research in the field of medicine, these researches have been of immense value to the whole mankind or we may say have imparted invaluable knowledge to the human welfare.

Of the numerous definitions that are available for the term “Research” the Webster dictionary is the most accurate and detailed. As per the Webster dictionary it is diligent inquiry or examining of the facts or situations or principles by systematically observation of phenomena in a very controlled manner and in a careful manner.

There is lot of scope for research not only in social sciences but also humanities. Among the wide array of social sciences areas like Sociology, Economics, Political Science, Palaeoanthropology, Social work and Labour welfare are included. Whereas in the field of Humanities areas of Philosophy, Anthropology, Education and Ethics are involved. In the all the above mentioned areas the process of research has been on-going continuously. Even so there is still further opportunity and vast possibilities for research to be undertaken in the field of social sciences like Sociology, Economics, Political Science and Social work.
1.2. CHALLENGES FACED WHILE IMPLEMENTING WATERSHED PROGRAM IN JUNAGADH AS PART OF RURAL DEVELOPMENT PROGRAM:

Presently the situation in India is such that of the total water source which is 16.6 crores hectare/meter only about 6.6 crores hectare/meter is utilized for irrigation purposes. We have seen a lot of progress than compared to the period when India had just gained independence and the Five year plans were yet to be made. When the Five year plans were introduced in the year 1951, at that time only about 97 lakhs hectare/meter of water sources was used for irrigation. By 1973, this figure had gone up to 1.84 crores hectare/meter and now it stands at 6.6 crores hectare/meter. The advantage of this increase in water source is that the amount of land under farming and cultivation has also escalated immensely. In the year 1951, India had 2.26 crores hectare/meter of land under farming or cultivation.

When we compare India with other countries, it has more population density in proportion to the total land area. Due to high density in population India’s need of water is also more when compared to other countries. On the other hand, the need of proper water management facilities is not only essential but also inevitable. On the account of its climate also India needs more water.

Since India has got a very warm climate where it remains hot for more than six months in a year. Due to these very reasons, Indians need more water to satiate their thirst and also for other general uses like washing and cleaning. One significant reason for India’s greater need for water supply is due to the fact that it is a country where farming is a major occupation. India’s economy is dependent on its agriculture and though it is considered as one of the most fast developing nations in the world with regard to industrial growth; its backbone remains its agricultural growth. Of its total population around 70% of the population resides in rural areas and is involved in farming.
Thus every citizen of India should become responsible towards water irrigation and saving water.

1.3 SELECTION OF RESEARCH PROBLEM:

“A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME. “

Just as Air is extremely vital for human existence similarly water is also equally imperative for proper functioning of not only human beings but all forms of life that exist on the planet. Water is one of the main components which make up the human body. Nearly 65% of a healthy person’s body weight is formed of water. It is as we know equally essential for the growth of flora and also the fauna. Generally the nutritional value of water is not measured but without it no life form can exist. Thus it is crucial that we cultivate the habit of conserving water from now so that people start to develop the habit of saving water in the future. Saving water is the key to save not only human race but life on Earth.

Presently, for studying the areas where Watershed Development program has been implemented the following critical points are to be considered:

1. Based on the various scientific studies done in the area of water scarcity and water sources the problems pertaining to water shortage are not only due to natural causes but also due to manmade ones. Careless usage of water coupled with mismanagement of water distribution is the actual root cause of this problem.

2. In order to upgrade the quality of life of people living in rural areas it is needed to improve their economic as well as social aspects. And in order for this to happen it is essential to increase the agricultural income. And this can only happen if there are better irrigation facilities.

3. The agriculture of 59.4% land in India and 68.4% of agricultural land in Gujarat is dependent on rains for its irrigation. This data is as per the
Socio-economic review – 2003-04. If the irrigation systems are developed further it can significantly contribute to the Indian economy.

4. In order to combat issues like Insufficient rain, farming techniques dependant on irrigation, use of water pipelines to grow crops, increase in barren land on the coastal areas owing to rise in sea level the Watershed Development Programs has played an very decisive role.

Keeping the above points in mind the researcher has taken up this study titled, “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME. “

After the selection of the topic, the researcher held meetings with his research guide at regular intervals in order to gain his guidance and suggestions. Certain areas of this “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME. “ especially increasing the water volume in the groundwater sources during every monsoon through artificial recharging techniques and ensuring that this message percolates till the common man. Since this study, “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME. “ has different dimensions, the researcher had many discussions with his guide to know how the various problems faced during this study could be segregated, prioritized and listed down.

During these meetings of discussions and deliberations with the research guide regarding the topic the researcher also got valuable guidance and tips from his guide. During this phase of discussions the researcher was continuously getting assistance from his research guide regarding selection of respondents, research population, preparing interview schedules, objectives, pretesting and its evolution and analysis.

The research guide gave his expert comments and suggestions during the phase of data collection for this thesis. Every discussion was explored
with new angles of thought and thus new windows opened up to understand the issues coming up. Even when the tabulation of data was being carried out, the guide gave invaluable contribution in data interpretation. More importantly he gave his support and advice while establishing the co-relation between different variables. He devoted hours of his invaluable time on the various aspects of this research and due to his remarkable support the findings of this research could be more fine-tuned, have clarity and accuracy.

Water is as important a component for human existence as air. Water is deeply weaved into the different aspects of human life. Many work or chores in a man’s life are dependent on himself but have we ever thought of how the human civilization can carry on without presence of water?

There are various uses of water. Water is needed mainly in areas of farming, construction, cooking, cleaning, health related services, fire extinguisher etc. Water has been one of the most decisive factors in human civilization. It has been the driving force because it has kept the human existence on-going and history proves that all civilizations have flourished only on river banks or when they have be set up close to water bodies. During the Aryan civilization it developed on the banks of Sindhu and gave rise to the Sindhu culture, later on it flourished on the banks of Ganga, Jamuna. In ancient Egypt it developed on the river banks of the mighty Nile and Mesopotamia civilization came up on Tigris river. In Russia, European countries during the Middle ages, wherever the human civilization came up, it has always been developed close to river banks. This example proves that water is very crucial for man’s existence and for his identity.

It is accepted fact that water is imminent for human society and their existence and so in this situation or context there needs to be change in the way the present day people think about its availability, its conservation and rationing. For man’s subsistence on this planet depends on three main geological factors which are Air, water and food. As such the proportion or amount of air present on Earth is uncertain and any variation in the amount
doesn’t matter much. What matters though is when the amount of oxygen in air depletes or when the proportion of Carbon dioxide increases due to pollution. This has a negative effect on the balance of the much needed oxygen present in air. Keeping the multi-dimensional need of water in mind, if we do not take up sufficient planning measures right away to conserve and save water, it shall be a challenge for man’s existence. While glancing through history it can be observed that civilizations had been created in areas where water accessibility was not an issue. Though water is present in abundance on the Earth, 97% of water is present in the Oceans and 12% of water is present in the form of frozen water of ice. Only about 1% of water is available for usage by Man which is used in numerous ways.

Farming, Transport, Industries, all these areas cannot function without water similarly man also has multiple tasks or uses of water. It is important to procure more water sources for the ever increasing population, increasing farms and for the increasing industries and other occupations. Among the natural forms of water sources, rainfall is very important factor.

In countries like India, rainfall may occur throughout the year. And rainfall is considered to be of major significance. The proportion of rainfall in certain areas of India like Kutch, Northern Gujarat, Madhya Pradesh and Rajasthan is quite erratic. Under these circumstances, if some measures are taken to conserve water during rains, and the next monsoon has deficit rainfall, then the stored water can be used for irrigation and other work.

The water conservation program that was initiated by Government of India aiming to conserve water available from the natural source has been functioning in Gujarat also. This is more commonly known as the Watershed development program. This research has been carried out in order to know how this worthy and result oriented program has been functioning in the villages falling under the jurisdiction of Junagadh district. It attempts to know the changes that have happened in the different arenas of life like education, social and economic status.
1.4 PROBLEM STATEMENT

Whether in India or Gujarat, the management of water requires colossal efforts. The issue of water scarcity is a global one and many underdeveloped nations are suffering already due to the acute shortage of water. Some parts of South America, certain African states, middle and western Asia and some states of India are facing much distress due to water scarcity. It is a fact that any rise in population means rise in demand for water, more food, more crops need to be grown and this needs more water for irrigation. The availability of water, its conservation and careful utilization, all needs accurate management. As the water sources are limited, it is people’s responsibility to use it sparingly. During monsoons, the water that gets wasted by flowing into the oceans can be easily conserved and used later whenever there is water crisis. The different techniques of storing or conserving water are called as water conservation techniques which are given below:

The channels or brooks which surround the fringes of the village can be broadened, check dams can be built at regular intervals and the ponds can be deepened so that more water can be conserved. Embankments can be built at the farms and the wells in the farms can be recharged. Thus today if we take care to conserve each drop of water and let it not go waste, then the future generations can use that.

Since the watershed program is a multi-faceted one and which emphasis a lot on people participation and community involvement, the government is not able to run this program by itself or rather independently. In this program which is quite foocussed and result oriented, one of the requirements for its success is the community offering its support to the program. It is necessary to lend support to this program in which local NGO’s, religious based organizations, occupational agencies and Panchayat bodies etc. make coordinated efforts to conserve water and reduce its scarcity as well as wastage. The society should not forget that whenever and wherever
there had been water crisis, the human civilizations had been destroyed. This research aims to find out the people’s active role in the difficult task of water management and what changes have occurred in them after the program implementation.

Whether the improvement in farming has been due to the watershed program or due to other water sources or water, if the cause for increase in crop production can be attributed to it, the increase in economic status of the farmers, etc. all these speculations can be addressed and it shall be the criteria for measuring the success of the watershed program.

1.5 OBJECTIVES OF THE STUDY

Under the watershed development program, the study of water sources becomes very imperative and appropriate. On account of the increase in areas under watershed program, it has definitely boosted the overall growth in the country’s agricultural sector. Moreover the watershed development programs are also very significant due to the roles it plays in protecting the environment, in addressing the issues regarding water crisis and also in raising the economic standards of the rural population which mainly remains dependent on agriculture.

What is the role of the Watershed Development Program implemented through the Government in the field of agriculture? Moreover due to this program what is the effect on the crop production per hectare? What has been the effect of this water shed program on the socio-economic status of the families who are dependent on agriculture in the rural areas? Due to these questions that came up and other related questions, the objectives of this study on the watershed development program have been planned to address these issues accordingly:

1. Due to the watershed development program the social and educational changes that have occurred in the farmers who have been the beneficiaries of this program.
2. The change that has occurred in the groundwater table depth on account of the watershed development program.

3. To check out the changes that have happened in the planning of crops after the watershed development program was implemented.

4. To know about the changes that have occurred in the levels of income, production and employment after the watershed program was executed.

5. To study about any changes that occurred, in the situations faced by the farmers before and after the implementation of the watershed development program.

6. To know about the awareness level of the farmers who have benefited from this watershed development and their involvement or participation in the watershed development program.

7. After the implementation of the watershed development program if the feeling of responsibility and unity has developed among the beneficiaries.

8. To know from the beneficiaries of the watershed development program their opinions and comments regarding the program.

**1.6 HYPOTHESIS**

In the study on “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME.”, the researcher has put forth his hypothesis which is mentioned below:

i. Through the watershed program water is available to the people as per their requirement.

ii. In the villages, there are different options of irrigation available with the people.

iii. Due to the implementation of the watershed development program the farm production has increased.
iv. The people in the rural areas would be aware and conscious about the need of using water carefully.

v. There is community participation involved during the implementation of the watershed program.

vi. The migration among the rural folks would have decreased significantly or stopped owing to the execution of the watershed development program.

vii. There would be a functional water management committee in the villages which would work on increasing the awareness level of the villagers regarding water crisis.

viii. Due to the implementation of the watershed development program there would be a visible increase in the income levels of the villagers.

ix. The number of available working days for the farm labourers would be more after the execution of this program.

x. The extra income gained by implementing the watershed program is spent by the beneficiaries on developing their farms, animal husbandry and settling old debts.

xi. Afforestation has increased after this program's implementation

xii. Due to the implementation of the watershed program other rural development programs and its related activities are also carried out.

xiii. There would be a better understanding about the structures in place and detailed methodologies regarding the watershed development program.

xiv. There is social change that has occurred due to the execution of this program.

1.7 VARIABLES
Variables are those which are subject to change. In the process and the techniques of research variables play a very important role since it can affect any particular situation or event.

In the words of D Ameto, “The characteristics or traits which measures any events or things or individuals are known as Variables”

There are two main types of Variables:

1. Independent Variable
2. Dependent Variable

Independent variable is the one which can be controlled or manipulated by the researcher. This means that this variable can be adjusted, increased or decreased as per the desire of the researcher. The effect of the Independent variable always falls on the dependent variable which is studied by the researcher in his study. The dependent variable is not controlled by the researcher but it depends on the Independent variable in question.

- Independent Variables:

In the present study, the rural development programs, work or activities done related to water conservation, bore wells present in villages, number of wells and ponds in villages, irrigation facilities as well as formation of watershed association are all Independent variables. And these independent variables influence the below mentioned dependent variables.

- Dependent Variables:

Increase in employment opportunities, increase in vegetable selling and profits, income got by selling milk, income gained from selling farm products, afforestation activities taken up in village all these are dependent variables.

1.8 RESEARCH METHODOLOGY
When the Universe or population of the study is very large then usually the survey method is employed to do the research. But in the field of social sciences, from the total population or universe, a sample is selected for conducting the study. This is called as sample study. There are two famous methods of selecting a proper sample size for your study.

1) Non probability sampling

2) Probability sampling

When there is no deliberate or specific process or calculation followed for sample selection, this method is called as Non probability sampling. This is also called as convenience sampling since the researcher will take samples based on easy accessibility and personal judgement. When a particular process or calculation is followed for finalizing the sample selection, it is known as the Probability sampling. In this research, from the total number of blocks of Junagadh district where the watershed development program is being implemented, the universe of the study was all the villages where the program was running. The researcher has selected the final villages from the total list of villages in those blocks. Thus the type of sampling method used has been the Non probability sampling technique.

In the study, “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME. “ from the number of villages that were selected, 400 respondents were finalized to be interviewed for the study.

SAMPLE SELECTION PROCEDURE
In the field of social sciences or social work research, of the various sampling techniques available, any one sampling technique is selected based on the Universe or research population.

With regard to the Saurashtra Watershed program implementation, Junagadh district was shortlisted for this study. From this district, of the total 9 blocks 5 blocks were selected, from each of these 5 blocks 5 villages were selected using the simple non probability technique. Of the total 25 selected villages, 16 respondents were selected from each of the village thus adding up to a total of 400 respondents. These 400 respondents were met individually and their views and comments were recorded by using the interview schedule.

THE UNIVERSE

1. In the field of research, the Universe or Population means the entire aggregation of individuals or objects from which samples are drawn. Thus it is of absolute importance and a very decisive factor in the research procedure. It is basically the well-defined collection of individuals who are having same characteristics or facing the same issues. All the individuals or objects within the population shall be bound by common issues or traits. A sample is simply the subset of the whole population. Whenever the government conducts any survey on important areas it takes into account the total population.

2. In the present study regarding the watershed development program being implemented wherein the universe is the Gujarat state, the sample area was Junagadh district. This program is being executed in the villages which fall under the various blocks of Junagadh district. The names of the blocks which come under the jurisdiction of Junagadh district is given below:
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Block Name</th>
<th>Population (2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Junagadh</td>
<td>380872</td>
</tr>
<tr>
<td>2</td>
<td>Bhesan</td>
<td>73737</td>
</tr>
<tr>
<td>3</td>
<td>Visavadar</td>
<td>132853</td>
</tr>
<tr>
<td>4</td>
<td>Vanthali</td>
<td>97325</td>
</tr>
<tr>
<td>5</td>
<td>Manavadar</td>
<td>127516</td>
</tr>
<tr>
<td>6</td>
<td>Mendarda</td>
<td>66068</td>
</tr>
<tr>
<td>7</td>
<td>Malia</td>
<td>144975</td>
</tr>
<tr>
<td>8</td>
<td>Mangrol</td>
<td>189053</td>
</tr>
<tr>
<td>9</td>
<td>Keshod</td>
<td>176099</td>
</tr>
</tbody>
</table>

3. Since the researcher was not able to cover all the 9 blocks of Junagadh district due to lack of time and certain other limitations he covered only 5 blocks in this study. From each of the block he selected 5 villages. The population and the family size of the village are given below:
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Block Name</th>
<th>Name of village</th>
<th>No. of Families</th>
<th>Population (2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Junagadh</td>
<td>Majevadi</td>
<td>1265</td>
<td>5901</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vadal</td>
<td>1557</td>
<td>7165</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bamangam</td>
<td>187</td>
<td>850</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Makhiyala</td>
<td>777</td>
<td>3687</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vijapur</td>
<td>685</td>
<td>3248</td>
</tr>
<tr>
<td>2</td>
<td>Keshod</td>
<td>Kevdra</td>
<td>1030</td>
<td>4513</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gelana</td>
<td>243</td>
<td>1081</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revdra</td>
<td>130</td>
<td>648</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meswan</td>
<td>1379</td>
<td>6191</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pankhan</td>
<td>478</td>
<td>2839</td>
</tr>
<tr>
<td>3</td>
<td>Mendarda</td>
<td>Najapur</td>
<td>136</td>
<td>622</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Samdiyala</td>
<td>607</td>
<td>2766</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rajesar</td>
<td>423</td>
<td>1411</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Khijdiya</td>
<td>128</td>
<td>639</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Barvala</td>
<td>271</td>
<td>1217</td>
</tr>
<tr>
<td>4</td>
<td>Mangrol</td>
<td>Divrana</td>
<td>448</td>
<td>2202</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Divasa</td>
<td>627</td>
<td>3469</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sultanpur</td>
<td>349</td>
<td>2096</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mankhetra</td>
<td>449</td>
<td>2526</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rudalpur</td>
<td>322</td>
<td>2167</td>
</tr>
<tr>
<td>5</td>
<td>Vanthali</td>
<td>Tikar</td>
<td>538</td>
<td>2709</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thanapipali</td>
<td>694</td>
<td>2999</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kanja</td>
<td>1092</td>
<td>5360</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kanjadi</td>
<td>327</td>
<td>1698</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tinmas</td>
<td>647</td>
<td>3190</td>
</tr>
</tbody>
</table>

4. In short, it can be summed up that Research Population or Universe is such a totality of which the sample is a part. The main reason for selecting Junagadh district for conducting the study on watershed development
program was because it is quite progressive in terms of farming. Along with food grains, cash crops and vegetables are also grown in the district. In Junagadh, groundnuts are grown quite extensively and thus even oil mills are also established there. And due to significant crop production cotton gin machines are also much in use there. Since cash crops are also grown regularly and since it reaps good profits in the market, the farmers have financially improved.

SCHEDULE FORMATION

In this study of “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME.” one of the important part is the formation of the schedule. Whether the study is in the field of social sciences or only a survey, but the interview schedule or questionnaire plays a very important role in the collection of data.

In this research, the researcher has made the interview schedule with a lot of precaution and care. In this study of “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME.” questions reflecting this topic were arranged in proper sequence. The rural population would have problems of varying nature pertaining to water conservation that would be addressed in the questionnaire. Thus though all the problems regarding water conservation was put up in the schedule, one should also look into the economic issues arising from these which are very serious. The total effects of this on water conservation in villages have to be accommodated. Thus the results availed from the watershed program is not very favourable but usually villages do have the problem of water scarcity. In order to address this problem of water scarcity the Indian Government along with the respective State functionaries and the district level agencies in charge of rural development are implementing the watershed program. The questions asked in the interview schedule would either get a oral or written reply of the
respondent. But these replies may not totally reflect the feelings of the respondents at all times. Thus the researcher has taken into account the body language and expressions of the respondents to get a better idea of what the true response would be.

**SELECTION OF RESPONDENTS FROM THE RESEARCH POPULATION USING SAMPLING TECHNIQUE**

The selection of respondents during the social research is of utmost importance in the whole process. The researcher can only gain the proper findings and conclusions of the study if he has made proper selection of the respondents, has developed the interview schedule after prior planning, and gets proper responses to the questions. In order that this study “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME.” gains more reliability a significant sample is selected from the study universe. A total of 400 respondents shall be selected to be part of this study. Of the total 9 blocks that make up Junagadh district 5 blocks shall be chosen for conducting the study. From each of these blocks, 5 villages are selected and from each of these villages, 16 respondents are chosen for the study. It is definite that the questionnaire shall reflect their problems based on their responses given to the queries regarding various aspects of watershed development program. But as of yet, there is no research technique or methodology in place which can accurately pinpoint the pain and the gravity of the issues being faced by the farmers. This could be termed as one of the limitations in this research.

**PRETESTING**

After the interview schedule has been set, a certain proportion of the sample or respondents are met and their information is filled up in the schedule in order to know the accuracy, meticulousness and precision of the tool. This procedure is called as pretesting. On basis of pretesting, it can found out if the interview schedule needs to redefined or modified and if it
can be further developed. Basically we can gauge its efficacy in the study and if the purpose is being met.

For this study, “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME. “ the researcher selected 400 respondents as his sample from the villages in Junagadh district that were implementing watershed development program and from them he interviewed 15 respondents as part of his pretesting. Based on their responses, the language as well as the questions was modified and the interview schedule took its final shape.

COLLECTION OF DATA

The methods which we employ in a research hold an important place under the research procedure. It plays a prominent role in any kind of research that we undertake. If the researcher makes use of the methodologies very specifically it shall greatly aid in the success of the research.

The methods of research are specified below:

1) Library/Research/Scientific method

2) Survey method

3) Interview Schedule

1) Library Method:

As the name suggests, library method is the one where the researcher refers to the various books, studies, journals, magazines which are available in the library. The library is definitely a storehouse for the researcher in terms of knowledge and reference material since various books on varying topics are systematically classified and catalogued. It is a paradise for the researcher since he gains valuable guidance and information from this source.
It is a good place for the researcher where he can sit and study for the research topic he has selected. He has many different sources from which he can refer to for his research area like previous studies, journals, books and statistical data. In the present research, “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME.” he has referred to earlier studies undertaken by government, small studies or research previously done in this field of watershed management at postgraduate level and books on small researches conducted in this area.

2) Survey Method:

When the study or research has to be conducted on large area or if data is to be collected on huge scale, then survey method is the preferred choice. Government usually undertakes surveys to conduct studies on population census, list of voters etc. Usually agencies and government faculties make use of this method for their studies.

In this study, “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME.” the researcher has not made use of this method for his study since the area of study is limited and within specified boundaries.

3) Interview Method:

In the field of research, Interviews method holds a prominent place as well as role. During the interview procedure the researcher who asks the questions is known as the interviewer and the person who gives the interview is known as the interviewee or respondent. There is a direct or one to one meeting between the respondent and the interviewer. The meeting is usually pre-planned especially in terms of the timing of the interview and the place where it shall be conducted. The questions that the interviewer has to ask the interviewee are pre-set and are decided early and this format is called as the Interview Schedule. In this study, “A STUDY OF SOCIOLOGICAL
ASPECT OF FARMER'S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME. “the researcher has used the sampling technique in order to select the respondents. By arranging meetings with them, he has obtained the needed information as well as the statistical figures through the medium of interview schedules. Sometimes during the course of the interview the interviewees or respondents may sometimes not give their answers orally but their thoughts or views can easily be gauged from their body language. Thus even this type of non-verbal communication like their facial expressions can be included under the information received through the interview schedule.

RESEARCH AREA: INTRODUCTION AND SELECTION

In order to select any particular topic for the research the need of area definition is very important. Till the time the researcher is not able to reach the medium of area, he won’t be able to reach the root cause of the problem and know first-hand the various activities and situations on-going in the area. Thus without properly studying the area, it is not possible at all to conduct research. The foundation or base of the social research is the area, thus when the researcher is finalizing the topic for study, he should definitely be aware of the critical aspects of the area and conduct self-evaluation to see if he is capable of conducting research in the selected area. It should be clearly specified by the researcher if he intends to study the “total” area or only a definite part of the “whole” in his ensuing research. Whatever area or topic the researcher decides to conduct research on it should be clearly specified before undertaking the study.

❖ INTRODUCTION OF JUNAGADH DISTRICT

The district of Junagadh is present on the southern side of Saurashtra region of Gujarat state. The geographical coordinates of Junagadh are at: 21.52 degrees North latitude and 70.45 degrees East Longitude. On its northern side lie the districts of Rajkot and Porbandar. Amreli district is
present on its eastern side and on its southern side is Gir Somnath district and it is surrounded by sea on its western side.

**SELECTION OF STUDY FIELD/AREA:**

The different reasons for selecting the district of Junagadh for conducting this study are given below:

1) During winter season, due to lack of adequate irrigation facilities they face lot of problems in maintaining the agricultural produce.

2) Junagadh district is a coastal area and the sea water has percolated the ground water sources. Due to this, both water and land has been adversely affected. In order to address these problems more effectively, Watershed Development programs are being implemented at Junagadh.

3) The Researcher is a native of Junagadh district and moreover he himself is a farmer and owns agricultural land. Thus he has selected Junagadh as the place for his study.

In order to select the location for the study, many weather aspects that are connected with agriculture like land, amount of rainfall received, shortfall of water, less facilities for irrigation, coastal belt, water sources etc. were kept in mind while finalizing the geographical area.
DATA COLLECTION MECHANISMS

In the field of research, whenever problems arise while trying to get important information and statistical data within stipulated time period at such a juncture the mechanisms of data collection when applied prove useful. They have been explained as below:

1) Questionnaire:

When any type of data either statistical or informative needs to be collected on a large scale, then the questionnaire is an effective tool for the same. The researcher needs to prepare copies of the questionnaire and send it to the respondents who fill in their replies. On receiving the filled copies back, the interviewer or researcher shall classify and interpret the data and information that has been collected. Keeping the shortcomings of the questionnaire in mind, the researcher has opted to use the interview schedule while conducting interviews. This will be helpful in getting proper and authentic data by personally meeting the respondents.

2) Interview Schedule:

Interview schedule is such a tool which acts as a bridge in between the interviewer and the interviewee. In the field of research the researcher dons the role of the interviewer while the interviewee is the respondent who is part of the selected sample. While they meet face to face, the interviewer asks questions from the schedule and fills it up as per the comments of the respondent.

For the study, “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME.” the researcher had prepared the interview schedule and based on the responses given by the respondents, during the visits he did on one to one basis with them he collected information as well as statistical data.
DATA ANALYSIS:

During the research lot of information is collected by either using the interview schedule or questionnaire as the tool. This information by itself cannot lead us towards the findings that emerge from the study. For that to happen, we first need to categorize, classify the information and sort the information into different tables. Using the coding method, the information is fed into the tables. The classification of the information collected is done using variables like age, sex, religion, caste, income, occupation etc. The frequency of the variable that is arrived at is also shown in terms of percentage in the same table.

In this research, the researcher has analysed the information availed from the respondents into tabular format using variables and also utilizing the technique of coding. You can refer to the tables that have been prepared in the initial part of this thesis.

DATA ANALYSIS AND INTERPRETATION

The informative data that has been sorted into different tables using tabulation is analysed. Invariably, analysis and tabulation are two sides of the same coin. They are correlated with each other. In this research, the researcher has first analysed the information and the statistical figures he collected through the interview schedules and then put them in tabular form.

In the field of research, along with tabulation the process of data interpretation is also very crucial. This is so because only if one is able to interpret the data correctly shall the true picture or rather authentic findings emerge from the study. This is nothing else but trying to read the statistical figures that are present in the tables. It basically refers to the process of appraising and determining the significance of important information, such as survey results, experimental findings, observations or narrative reports. While experimental scientists base their interpretations largely on objective data and statistical calculations the social scientists interpret the results of
written reports that are having detailed descriptions and may not have much of mathematical calculations.

When these figures are converted into descriptive language it is called as qualitative data interpretation. In this research, each table carries below it the qualitative interpretation of data. In short, the frequency variables and numerical figures that are reflected in the tables are described in words at the end of each table.

In this research, the researcher has taken lot of precautions and care to ensure that the data analysis and its interpretation has been properly carried out since it has a direct effect on the ensuing conclusions and findings of the study.

Based on the responses filled in the interview schedule, the data is further classified and based on the variables or factors tabulation of data is done. The data of each table included in the tabulated data is interpreted. In social sciences, during research the tables that are created when the information gained is being analysed they are interpreted further and if needed graphs are also prepared. Due to this much clarity emerges in reading and understanding the data.

1.9 IMPORTANCE OF RESEARCH

Research holds much significance and is a requisite too in the field of water conservation programs and especially the watershed development programs. The reason for this is that it is directly connected with the human society and more so with the rural areas. Majority of the rural people like farmers and farm labourers are connected to various occupations like farming, horticulture, afforestation, animal husbandry which rely on water availability. Mainly in rural areas, community life is deeply connected with water conservation. Especially the new techniques of water conservation like
deepening the ponds, recharging of wells, digging of soak pits, making embankments, creating naala plugs, underground tanks etc. are very necessary so that water can be stored at all costs and not wasted.

In developing countries, the farming sector holds a prominent place in its economy. The contribution of agricultural sector towards the country’s economy and exports is quite noteworthy. Water conservation plays a very important role in increasing the farm yield and its production, producing variety of crops, bettering the intensity or growth of crops, prevent occurrence of drought and utilizing the water resources available in the country in a favourable manner. In order to increase amount of irrigated land the water is a very important natural resource. The total area of land in India as well as Gujarat which is under cultivation and land under irrigation is given below for reference.

**TOTAL LAND AREA OF INDIA AND GUJARAT**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Details</th>
<th>Area(in hectares) 2003-04</th>
<th>Area( in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>India</td>
<td>Gujarat</td>
</tr>
<tr>
<td>1</td>
<td>Total geographical area</td>
<td>3287263</td>
<td>196022</td>
</tr>
<tr>
<td>2</td>
<td>Total net area under cultivation</td>
<td>141231</td>
<td>9443</td>
</tr>
<tr>
<td>3</td>
<td>Overall irrigated area</td>
<td>76336</td>
<td>3627</td>
</tr>
<tr>
<td>4</td>
<td>Net irrigated area</td>
<td>57238</td>
<td>2980</td>
</tr>
<tr>
<td>5</td>
<td>Area without irrigation</td>
<td>64895</td>
<td>5816</td>
</tr>
</tbody>
</table>

The above table shows that in India around 59.47% and in Gujarat about 68.44% of land is dependent on rains for irrigation.

If water conservation mechanisms like tube wells, wells, ponds, check dams are adopted and developed further, the uncertainty regarding water availability can be addressed fruitfully. In order to gainfully utilize the runoff water for use in irrigation that is otherwise wasted and for beneficially
conserving rain water the watershed development programs is of paramount importance.

1.10 LIMITATIONS OF THE RESEARCH:

When the research work is undertaken by the researcher there is absolutely no idea about the various limitations that may come in during the course of the study. It is quite difficult to complete the study within the stipulated time period as planned earlier as some or the other limitations are faced by the researcher. This respondent also faced some problems during the course of his study and this has been jotted below for reference:

1. Since the watershed development program is being implemented in mostly all the villages and the blocks it was very difficult to complete the interviews of the respondents in the given time frame.

2. Just like time frame is one important aspect of the research process the second important component is the budget. If the interviews with the respondents are not completed within the given time limit, then more time is lost in getting the statistical data.

3. When the researcher is able to devote complete time to the research then it can do better justice to his role and study. In this case as the researcher was also working as a lecturer, thus he was not able to dedicate total time for this research owing to other work responsibilities.

4. Since the villages as well as blocks selected for the study were far away from the residence of the researcher it consumed more time and thus the study could not be completed within the fixed time period. This fact cannot be ignored.

5. While the researcher is totally committed to and interested in presenting the findings to the society at large, this same understanding and attitude is not seen with the respondents. They would not understand the significance or value and importance of this research.
6. It is also worth debating as to how much of the responses given by the respondents to the different queries can be termed as proper, truthful and factual.

EXPERIENCES:

In the present times, we are facing many types of issues, problems and conflicts of which the main three are water crisis, pollution and population explosion. As the world population goes on increasing the necessity of water to satiate the needs of the people also increases. But water being a natural resource, Man has no control over it and moreover the human identity is dependent on water. The main pertaining issue is regarding the availability of sweet water or rather drinking water. It is high time we think about planning for water management in the areas of water sources and water conservation since water holds a prominent place in our lives. Since we cannot do without water in so many areas of our life, be it cooking, cleaning, gardening, horticulture, farming, it becomes all the more crucial to save this natural resource and we need to understand this harsh reality at the earliest.

The findings of this study, “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME. “ have been narrated in Chapter no. 7 of this thesis. The findings throw light on the various features of this watershed program and its effects on the rural life in terms of economic and social changes.

The researcher has faced and undergone lot of experiences during the time he was involved in the research. As we all know the process of research by itself is quite hard and needs persistence and we also have to meet different kinds of respondents; those who belong to different religion, creed and caste. After taking their prior appointment the researcher gave them an introduction to the research topic and then recorded their views and comments in the interview schedule.
During the course of this research, the researcher had some interesting experiences with the respondents. Most of the respondents gave their views and responses to the researcher very enthusiastically though some of them may not have understood totally the purpose or significance of this research topic. Moreover, quite a number of respondents were interested to know about the program in further detail regarding its functioning and its results. It was also experienced that it was not very easy to visit the villages selected for this research in Junagadh block owing to lack of time and other limitations. To get the responses regarding watershed program which is a fundamental and very important, from the respondents is not an easy task.

1.11 PLANNING THE CHAPTERS

In the research process, this is the last but important step. Report writing is an important crux of the procedure and also the gist of the whole research. And due to these very reasons, the researcher has to write it very cautiously and skilfully. The researchers overall report writing, the tabulation, analysis, interpretation and the findings and suggestions emerging from it depends a lot on the report writing. In any kind of educational branch, since report writing is an important document one needs to keep some points in mind while attempting to write the report:

In this study of “A STUDY OF SOCIOLOGICAL ASPECT OF FARMER’S FAMILY BENEFICIARIES OF WATERSHED DEVELOPMENT PROGRAMME.” one of the important milestone is planning which chapters need to be included in the thesis. In the field of social sciences research the way we decide the arrangement or inclusion of chapters is detrimental to the way we present the topic and it needs to be done with infinite care and planning. Keeping all the above written points in mind the researcher has planned the chapters in the following manner.
Chapter 1  Introduction

Chapter 2  Outline of Study Area

Chapter 3  Water Management and Water Conservation

Chapter 4  Review of Literature

Chapter 5  Socio-Economic Background Of Respondents

Chapter 6  Tabulation of data and its interpretation

Chapter 7  Conclusions, Findings and Suggestions