Chapter 1
PROBLEM AND ITS SETTING

Introduction

Agriculture is the most important sector of Indian economy providing maximum contribution to the national income. At the time of independence the country inherited a stagnant economy. The period of 27 years has been a period of long struggle to increase the total food production and to meet the ever growing demand of our population.

Foodgrain production in India is a problem that concerns all those who are associated with the growth and development of the nation. Although during the last few years we have been able to increase production, still substantial and quality food is not available per capita-wise because of the population explosion. Besides low production, the losses during post-harvest handling and storage are very high. It has been estimated that approximately 10 per cent of the annual produce is lost due to

1 Committee on "Losses of foodgrains during post harvest handling". Food & Agric. Ministry, Govt. of India, New Delhi, July 1967.
improper handling and storage of the grain. The loss of nutritive constituents, which has not been fully computed, is also high. Qualitative damage caused by insect pests is quantified on the basis that such affected kernel has on an average lost half of its food value. Surveys conducted in several parts of the country revealed that under-nutrition and malnutrition are prevalent in large sections of population. The twin problems are very adversely influencing the Indian population and need to be tackled seriously and earnestly.

Agricultural economy in India is based mostly on family labour. The Census 1971\(^2\) indicates that 28 million women are engaged in rural work and among them 87 per cent are in agricultural activities. The farmwomen along with the household responsibilities share agricultural operations. It is observed that 50 to 60 per cent of the agricultural tasks, \textit{viz.}, sowing, transplanting, harvesting, weeding, manuring, field irrigation, storage of grain and seed, attending to cattle are performed by women only\(^3\). It has also been reported that during the peak seasons a farmwoman spends nine hours in agriculture and four hours in

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\item[\textsuperscript{2}] Census 1971. Govt. of India Publication.
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household chores as against five hours for each activity during ordinary days\(^4\). Besides the actual participation in agricultural operations, farmwomen also influence the process of decision making with regard to agricultural tasks as reported by Devdas\(^5\), and Sharma and Tej Ratan\(^6\).

Ever since the efforts made to develop agriculture, attention was given to educate the farmer only. The farmwoman, although having a significant role in agricultural operations, has for a considerable time remained neglected and never considered as an important and potential participant for extension activities. It was only after the introduction of the Farmers' Training and Education Programme (1967-68) that a systematic approach was made to educate this group. The farmwoman is an important component and, therefore, intensive efforts should be made to bring about the desired changes in her behaviour.

The womenfolk of rural India, specially of Rajasthan, are illiterate; the female literacy percentage in

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the State is as low as 8.46\(^7\). Therefore, tradition bound and by nature reluctant to change their old ways. Hence, carefully planned and sustained efforts are needed to overcome their age-old resistance to change. Scientific researches in the field of agriculture and Home Science are moving very fast. But despite this rapid development in knowledge much of the research findings are hardly translated into practice. Sufficient advancements have been made to reduce the losses during storage, but the technological know-how has not yet reached the grass root level where it can be put into practice. Similarly, to improve the nutritional standard and make vegetables available throughout the year, dehydration has been recommended but that too is not being used properly and extensively. There seems to be a wide gap between the knowledge developed and the knowledge which is made available to the farm family specially to the farmwomen. As a result, very poor and traditional way of living is being practised even after more than two decades of Planning. In such a situation communication which is the essential ingredient in a dynamic society becomes a basic necessity. This directly involves the process of teaching.

7 Rajasthan Year Book 1976. Samriddhi Publication, C/5 Bapunagar, Jaipur, page 70.
Effective teaching is the most necessary pre-requisite to effective and successful communication of improved knowledge and skills. The use of teaching aids, which are based on the principles of hearing and seeing makes the teaching more effective and permanent. The utility of the audio-visual material in teaching is manifold for rural women as they are illiterate.

Role of Audio-Visual Aids in Teaching-Learning Process

Learning is a process of acquiring new behaviour (attitude, knowledge, skills) through experience. The basis for all learning is sensory experience which represents the contact between the individual and the world around him. There are three ways of getting sensory experiences:

(a) Direct sensory experience with the original item through seeing, hearing, touching, tasting and smelling.

(b) Direct sensory experience with the representation or reproduction of the original through a drawing, a model or a photo, etc.

(c) Sensory experience with symbolic representation through oral and written descriptions.
Direct experience with the original object is mostly not possible because of lack of concrete, direct and first-hand experience. In the absence of this, mostly the learner or the teacher has to resort to direct sensory experiences with representations. The representations may be in the form of illustrations, diagrams or models. Sensory experience with symbolic representation through oral and written description is ineffective under Indian conditions as the majority of rural people are illiterate. The written symbols cannot be read while verbal symbols are very abstract and ineffective. There is, therefore, a need for the extension worker to use audio-visual aids for communicating the ideas which are more effective. This view is supported by the following statement of George Bernard Shaw:

"The number of people who can read is small, the number of those who can read to any purpose, much smaller, and the number of those who are too tired after hard days' work to read, enormous. But all except the blind and deaf can see and hear."

These observations are further corroborated by psychological studies where it has been observed that one learns

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11 per cent through hearing, and 83 per cent through sight. Only 20 per cent is retained of whatever is learnt through hearing, while 50 per cent is retained of what is heard and seen. The percentage may differ from situation to situation but it is an established fact that one learns efficiently and effectively when seeing and listening take place simultaneously.

The audio-visual aids provide two channels of access to the mind through ears and eyes. An important aspect of visual education is the use of eye and mind which produces a sense of richness of meaning in the individual who has an eye to see and mind to understand. This mental reaction is both intellectual and emotional. It is this that the high value and efficiency of audio-visual aids is established in the field of education.

Number of researches have proved that audio-visual materials provide concrete basis for conceptual thinking and hence reduce verbalistic responses of the learner. They create a high degree of interest and make learning more

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permanent. Reality of experience which is offered by audiovisual aids stimulates self activity on the part of learner. The aids contribute growth, depth and a variety to learning.

In India several research studies have been conducted to find out the extent of usage of audio-visual aids and their comparative effectiveness. Rao\textsuperscript{11} conducted a nationwide survey. He concluded that most of the Blocks had adequate supply of information literature, photographs, charts, and facilities to conduct the demonstration, however, about 90 per cent of extension personnel reported that visual aids were not at all used. About forty per cent of the Blocks were provided with flash cards, flip books, slides, filmstrips and flannel graphs. Three out of every four extension personnel wanted training in the use of audiovisual aids. Reddy\textsuperscript{12} stated that "audio-visual materials were put to a very limited use by the extension workers for communicating the ideas."

In planning the learning situations and arranging teaching activities the teacher draws upon a variety of teaching approaches. The judgement exercised in selecting


the most appropriate method for the particular teaching situation and the skill with which the working tool is used, has a direct bearing upon the amount and quality of the learning resulting from the teaching efforts. The teacher has a wide variety of teaching methods. There is a need for him to understand the peculiar characteristics, purpose, advantages and disadvantages of each method in order to choose the one in each situation that will most effectively serve the needs of the learners.

The extension worker is constantly faced with the practical problem of selecting the teaching method or the combination of methods and aids best suited to a specific situation. Teaching job with certain people under the special circumstances exist at the given time. No one existing teaching method will reach all people nor will it influence all whom it does reach. Thus existing teaching method should be considered from the standpoint of effective combination. By and large, rural people are influenced to make changes on their farm in their home and in their community in relation to the number of different times, when they are exposed to information through different methods. It has been suggested that if wider response is desired they should be exposed to suggestion for improvement in several different ways and over periods
of time. Extension teaching, therefore, must build among people a background of ideas and suggestions of facts. This requires more than simply telling the people what they should do. To get an idea well established in the minds of people, to develop their vision of the need for change, calls for continuous and right type of teaching using a variety of methods.

The following considerations are taken into account in selecting teaching methods:

(a) The nature and complexity of the subject matter.
(b) The educational changes expected in people as specified in teaching objectives.
(c) The relative economic and social importance of the educational changes desired.
(d) The extent to which people already know about and are practising the recommended changes.
(e) The amount of time extension worker expects to devote to this phase of the programme.
(f) The number of people to be reached.
(g) The economical, social and educational status of the people to be reached.
(h) The relative effectiveness of the methods or aids used.
(i) The manner in which the methods selected complement each other in attaining the teaching objectives.
A large variety of teaching aids are available in the field. Generally the extension worker depends on lecture and discussion method for communicating the message, since it is easy but relatively less effective. The audio-visual aids have been classified differently by several authors. Edgar Dale has classified audio-visual material in the following categories:

1. Audio-Materials - Radio, tape and disc recordings, telephone, etc.
2. Visual Materials - Pictures, flipbook, chart, filmstrips, slides, etc.
3. Audio-Visual Materials - Film, television, sound filmstrips, etc.

He further says that sometimes audio-visual materials may be classified as projected and non-projected aids. In India and other developing countries where costs of materials are extremely important, classification into high cost and low cost materials are also made.

Besides, the aids classified above many traditional aids like Puppet, Kavadi, Pad, folk songs, etc. have been in use since generations for communicating religious sermons.

in various parts of the country which have lot of impact on the rural masses. Extensive review of literature has shown that no efforts have been made to find out the educational value of these aids.

Traditional media of communication have vast potential of conveying information in the familiar symbols and language of these farmers. Many of these traditional media of communication are in the form of folk songs, folk dramas and folk story-telling.

According to Bose audio-visual aids can be conveniently classified into the following categories:

1. Modern audio-visual aids.
   (a) Those which require for their presentation some mechanical means - films, slides, radio, etc.
   (b) Those which do not - visual aids, flash cards, charts, flipbook, etc.

2. Mechanical visual aids are called as projected aids.

3. Non-projected

4. Traditional media - has not only entertained the common people in every land throughout ages, but have often exercised a powerful educational influence on them.

14 Ghildyal, V.C. Folk forms of communication and their use for community development. Community, Sriniketan, No. 2 & 3.
Review of literature shows that several research workers have selected various teaching aids to study their effectiveness individually or in combination but no real logic has been propounded for their choice. In order to study the relative effectiveness it was decided to select some of those aids which are popular and prevalent in the area with the extension personnel and can be conveniently used under field conditions. At the time of planning this study the investigator devoted considerable time with the subject matter specialists from the two respective areas as well as communication experts and extension field workers. The following aids have been selected for the present study:

- Modern — Radio
- Traditional — Puppet and Kavad
- Projected — Slide
- Non-projected — Flip book

Statement of the Problem

Several studies have revealed that farmwomen play an important role in the production functions on the farm and are instrumental in influencing the farmers to take sound decisions in favour of new technology. Even before the attainment of independence efforts for increasing the economic standards of the farmers were made, but then did not yield satisfactory results because either these
efforts were made in a piece meal and half hearted manner or they were not fully coordinated. So far, only the farmer, an isolated individual from the family, has been taken as the target audience while the farmwoman has been kept out of this. Some slight efforts that were made to educate the farmwomen did not prove of much significance as most of them were illiterate. Concentrated approach has now been taken to conduct training programmes of different kinds to educate women. There have been some encouraging results but a great deal has yet to be done in this direction. There is an urgent need on the part of extension agencies to develop innovations applicable under rural conditions, simple to be understood by the farmwomen with their level of understanding and compatible in the existing culture. As far as the first part is concerned lot of new things have been developed but there is a tremendous gap between the knowledge developed and knowledge available at the individual’s level. This gap is to be bridged by communicating effectively the information developed to the farm family. This calls for an effective educational approach and the use of effective teaching aids to do this task efficiently and precisely. There is, therefore, a need to understand the relative effectiveness of some of the selected teaching aids in relation to selected practices to be taught. A good amount
of work has been done in the field where a number of combinations of teaching aids have been studied but the situation keeps on changing and, therefore, there is a need to specifically understand their effectiveness in a given situation.

**Purpose of the study**

In the context of fast developing agricultural technology and the indispensable role assumed by the farmwomen it is necessary to focus the attention on educating the farmwomen and make them adopt innovations, useful and applicable to them. The problem today is that women are more tradition bound, conservative and illiterate and, therefore, it is difficult for them to understand and use the new techniques. Under the circumstances, there is a need to develop and use teaching aids, traditional or modern which can effectively teach. Lot of work has been done in the field, studying the effectiveness of teaching aids with respect to gain and retention of knowledge, but most of the work has been done on modern aids, while the traditional aids which are in use for generations have been left out. For generations, traditional aids have been in use to entertain people and have become a part of the total culture, but very little is known regarding their teaching value. With the purpose of knowing the relative effectiveness with respect to gain and retention of knowledge of some of the selected teaching aids—modern as
well as traditional—projected and non-projected—this study was planned. An endeavor has also been made to find out the effect of some of the personal characteristics on learning.

Objectives of the Study

The following specific objectives were formulated:

1. To find out the existing knowledge of the farm-women regarding the home-making practices to establish the benchmark.

2. To study the comparative effectiveness of selected audio-visual aids in terms of gain in knowledge regarding the home-making practices.

3. To study the comparative effectiveness of selected audio-visual aids in terms of retention of knowledge regarding the home-making practices.

4. To study the effectiveness of selected audio-visual aids in terms of gain and retention of knowledge on various aspects of subject matter.

5. To study the effect of the age of the respondent on gain and retention of knowledge.

6. To study the effect of the socio-economic status of the respondent on gain and retention of knowledge.

7. To compare projected aid (slide) with other selected non-projected aids in relation to effectiveness.
Research Hypotheses

H₁ - There is significant difference in effectiveness of selected audio-visual aids with respect to gain in knowledge in drying of vegetables.

H₂ - There is significant difference in effectiveness of selected audio-visual aids with respect to gain in knowledge in grain storage.

H₃ - There is significant difference in gain in knowledge with respect to different aspects of drying of vegetables.

H₄ - There is significant difference in gain in knowledge with respect to different aspects of grain storage.

H₅ - There is significant difference in effectiveness of selected audio-visual aids in retention of knowledge in drying of vegetables.

H₆ - There is significant difference in effectiveness of selected audio-visual aids in retention of knowledge in grain storage.

H₇ - There is significant difference in retention of knowledge with various aspects of drying of vegetables.

H₈ - There is significant difference in retention of knowledge with various aspects of grain storage.

H₉ - There is significant relationship between gain in knowledge and retention with respect to drying of vegetables.
H_{10} - There is significant relationship between gain in knowledge and retention with respect to grain storage.

H_{11} - There is significant effect of age on gain in knowledge.

H_{12} - There is significant effect of socio-economic status on gain in knowledge.

H_{13} - There is significant effect of age on retention of knowledge.

H_{14} - There is significant effect of socio-economic status on retention of knowledge.

**Importance of the Study**

In the last decade intensive efforts have been made to develop agricultural innovations useful for farming communities and the number is increasing very rapidly. The body of knowledge is doubling every ten years. Despite the enormous outpouring of new findings and discoveries and new researches in Agriculture and Home Science, most of the findings never enter into practice. Study conducted by Dharmapal Singh\(^{16}\) reveals that not more than 20 per cent of

available technology had so far been adopted by the farmers and 10 per cent of the farmers have been benefited. This indicates that there exists a wide gap between the available technology and its utilization at the farmers' level. Guba while supporting the same view suggested that knowledge utilization could not be spanned either by producer or utilizer and, therefore, there was a need for new mechanisms and agencies using special techniques were required to successfully perform this task of bridging the gap.

This calls for the development of educational programmes for the farming community and the focus of such programmes should be on educating the farmwomen since they play a significant role in agriculture development process. To perform this function, extension agencies have come into existence and are working effectively. However, the impact has not been clearly visible. With the time limitation, limitations of financial resources, nature of duties and apathy towards audio-visual aids, the extension workers have to call back upon the lecture method in educating the farming community. The role of audio-visual aids in increasing the efficiency of learning is indisputable.

although there is a need to find out the relative effectiveness of audio-visual aids with respect to a given situation and subject matter. Several studies have been conducted in India and several developed western countries to categorize the audio-visual aids on the dimension of their effectiveness. However, there is a need to study the relative effectiveness for a specific subject matter. From the standpoint of this study the farmwomen have been selected as the target audience; grain storage and drying of vegetables have been selected where maximum time is devoted by the farmwomen; some of the traditional aids with other modern projected and non-projected popular aids have been selected which are easily accessible to the extension worker. The findings of this study may, therefore, prove useful for the extension worker working in the field and having the direct responsibility of educating the farmwomen.

Basic Assumptions

1. Audio-visual aids are known to provide realistic experience and therefore are more effective than lecture.

2. The audio-visual aids differ from each other, in terms of their effectiveness with respect to knowledge gained and knowledge retained.
3. The extent of effectiveness is measurable and can be calculated both with reference to knowledge gained and knowledge retained with the help of scores obtained by the respondents.

Limitations of the Study

1. This research project has been planned to study the relative effectiveness of only a few selected audio-visual aids which are cheap, easily accessible, useful under the field conditions, and can be easily prepared and handled by the extension workers with ordinary skills.

2. Only the farmwomen have been taken as subject of study rather than farmers because of their vital role in agriculture industry.

3. Only two homemaking practices have been selected which are important for them in view of their participation.

Definition of the Terms

Teaching: Teaching is the process of arranging situations that stimulate and guide the learning activity towards the goals that specify desired changes in the behaviour. Teaching consists of situations in which the important things to be learned are called to the attention of the learner, their interest developed, desire aroused and action promoted.
Learning: Learning is defined as the process by which an individual through his own activity, changes his behaviour.

Teaching aid: Any device, that assists a teacher to transmit to a learner, facts, skill, attitudes, knowledge, understanding and appreciation.

Visual aid: Any instructional device that can be seen but not heard.

Audio aid: Any instructional device that can be heard but not seen.

Audio-visual aid: Any instructional device that can be heard and seen as well.

Initial knowledge: It refers to the basic knowledge (benchmark) or the knowledge of the farmwomen about the subject matter before the exposure to the aid.

Knowledge gained: It refers to the difference of scores in the final and initial scores of a farmwomen on the same knowledge test as an effect of the use of a particular aid.

Knowledge retained: It refers to the difference of scores obtained by a farmwoman after 15 days of exposure and initial score. This refers to the extent of knowledge retained on the same knowledge test as the effect of aid.