CHAPTER III

Conceptual Approach to Training, Entrepreneurship Development and Sericulture Industry
Introduction:

The world is rapidly changing; we should get well equipped to cope with our attitudes and approaches for the change. Application of modern scientific techniques in agriculture has also become imperative for providing a sound base for rapid growth of employment and income to the rural people. Thus, there is need to train the farmers for new, promising and higher income generating activity using available resources with low investment. Apart from land, labour and capital, there is a greater need for entrepreneurs to strive for achieving greater heights.

In India, tremendous latent entrepreneurial talents exists, which if properly harnessed, could help in solving many of the serious problems of the country facing. Our country is so rich in material resources, but there is abundance of human resource. So there is need to identify individuals from all segments of the population, who have the requisite entrepreneurial skills and train them so as to get self-employed and also provide employment to others. This process is termed as Entrepreneurial Development.
Sericulture is one of the agro-based rural Industries. The activity starts with mulberry plantation followed by silkworm rearing for production of cocoons to make beautiful silk sarees.

The present chapter deals with the following three important concepts viz. Training, Entrepreneurship Development and Sericulture Industry.

A. TRAINING:

Training is a process of educating people to make them qualified and proficient in doing a Job. It is a planned process to modify attitudes, knowledge & skills or behaviours through learning experience to achieve performance in an activity or range of activities. Such training is a short-term process of utilizing a systematic and organized procedure by which persons learn technical knowledge and skills for definite purpose. Thus, it is said, training is a short-term exercise for achieving long-term objectives.

Training refers to human Resource Development, as such, Training as a process of changing attitudes, improving knowledge and developing skills of the persons / employees of an organization to enable them to do the job effectively.

The essence of entrepreneurship training aims to effect change in individual in terms of knowledge, attitude and skills relevant to the entrepreneurship functions. Persons may be trained for entrepreneurial
careers so as to increase their level of confidence and achievement orientation as well as to improve management development skills to enable them to run their business successfully.³

3.1. **Objectives of Training:**

Training bridges the gap between existing performance ability and desired level of performance. It brings about a permanent change in individual's performance by improving his skills, knowledge, attitude or social behaviour and to bring about improvement in quality of work.

Following are the important objectives of training⁴:

1. To acquire knowledge of the subject matter.
2. To bring about a change of the attitudes and behaviour among trainees towards a particular programme or problem.
3. To bring theory into practice.
4. To understand individuals' abilities and develop their potentials and work skills.
5. To learn from each one's experience by working & living together.
6. To enhance the capability of the trainees so as to enable them to increase their problem solving capacity.
7. To introduce the process of learning and developing.
8. To bring down the gap between expected level of performance and actual level of performance.
9. To discharge role and responsibilities effectively.
3.2. Training Methodology:

Training method/methodology is a systematic procedure or technique used in a training programme. It is said, to make communication effective, training should be based on fundamental principles and on the basis that, people learn through seeing with their own eyes, hearing with their ears, speaking with their mouths and doing with their hands. The training method/methodology effective, the training programme should be the combination of both theory and practice session. There are various methods and techniques and are in use. However, the training methods/methodologies are classified as.

1. Instructive - Academic strategy to provide information, which requires less time also.

2. Interactive - Interaction among individuals, group discussions and sharing of knowledge.

3. Participative - To augment something to enlarge knowledge, development and improve skills. It is effective but time consuming.

Sericulture practicing farmers are generally low in education, can understand better by demonstration in the field. Therefore, the participative method/methodology of training is more useful to sericulture farmers.
3.3. Training Technique:

Training technique defined as a device or communication services by which learners are stimulated and directed towards learning the objectives. There are various techniques; however, the number of participants to be trained greatly influences the choice of technique.

The choice of training techniques is shown in the chart 3.1.

### Chart 3.1

**Choice of Training Techniques**

<table>
<thead>
<tr>
<th>The Group size</th>
<th>No. of persons</th>
<th>Training Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Individual</td>
<td>1-5</td>
<td>Project assignment, Discussion, Self-study, Programmed learning, etc.</td>
</tr>
<tr>
<td>2. Small Group</td>
<td>6-15</td>
<td>Discussion, Role play, Group assignment, Exercises, etc.</td>
</tr>
<tr>
<td>3. Medium group</td>
<td>17-25</td>
<td>Syndicate, Case-study, Brain storming, Conference, Lecture-cum-discussion, etc.</td>
</tr>
<tr>
<td>4. Large group</td>
<td>25 and above</td>
<td>Lecture, Panel discussion, Syndicate, Question-Answer, Case study, etc.</td>
</tr>
</tbody>
</table>

Thus, the trainer should adopt the proper technique of training depending upon the size of the participants and the objective of training programme.

3.4. Adult Learning - Andragogy:

Andragogy is the art and science of helping adults to learn.
**Adult learn better:**

1. When they want or need to learn something - there is the motivation to learn.
2. In comfortable learning environments that foster mutual trust and respect.
3. When their individual learning needs and learning styles are catered for.
4. When their previous knowledge and experience are valued and used.
5. When they have some control over the learning content & activities.
6. When there is a focus on dealing with realistic problems and applying learning.
7. Through active mental & physical participation in learning activities.
8. When sufficient time is provided for learning – assimilation and application of new information, the practice of new skills, or changes in attitude.
9. When there are opportunities to successfully practice or apply learning.
10. When there are some measures of competence or performance so that people have a sense of progress towards their goals.

**3.5. Learning Needs and Styles:**

Every learner has his own individual needs. Every individual has his own preferred style of learning. The experience of learning is affected
by hemisphere of brain. The characteristics of a person associated with each hemisphere of his brain presented through a figure.9

Figure 3.1

Hemisphere of the Brain

The logical, rational, sequential analysis of information that we call ‘thinking’ is associated with the left hemisphere; whereas free flow of creative ideas are associated with the right hemisphere. Experiences shows that people who tend to use or have been trained to use one side of the brain more than the other find it difficult to switch when necessary. When the weaker side of the brain is stimulated and encouraged to cooperate with the stronger side there is a great increase in ability and effectiveness. Thus, trainers and training course should provide activities that encourage learners to use both hemispheres of the brain.
3.6. Considerations for Training:

Training to be effective, following factors are to be considered:

a. Matching the literacy level of farmers:

Literature indicates that, majority of farmers worldwide do not have a basic minimum education. Therefore, training methods/techniques applied to the farmers should match the literacy level. Visit to field, demonstration, tours, discussions etc. are most effective means of training to the farmers.

b. Matching the demographics of farmers:

The farmers have varied demographic factors such as age, education, ownership of land, extension participation, extension contact etc. An understanding of these factors of trainees will help the trainer for effectiveness of training programme.

c. Matching Social and Cultural Expectations:

The farmers have varied social and cultural factors such as village, friends, community, farm organization, work group, family, cooperatives, and religion etc.

Generally Sericulture farmers join training programme to improve their job-related skills and knowledge, but they hesitate to participate actively due to low education. Therefore, while training farmers, the above be given due consideration.
3.7. **Training and Education:**

The terms, training and education are used interchangeably. In all Education, there is 'Some Training' and in all Training, there is 'Some Education'. Further, Education is for capability and academic excellence, whereas training combines with excellence in work while coping with problems of day-to-day life. Education deals with knowledge and understanding while training helps participants to improve their performance. Training is personality development. It improves confidence, sharpens the ability to make decisions and solve problems and leads to sustain self-generating development.

3.8 **Training and Development:**

Training and development are often synonymously used. Training is the application of knowledge, rules and procedures related to work, and steps taken for change in behaviour. Training attempts to improve the performance on current job or prepare one for the intended job. Development on the other hand, is an understanding of concepts, sharpening of specific skills of communication, decision-making, problem solving, and other related interpersonal skills for team work, coordination and conflict resolution. It moulds mental attitudes and prepares a person for higher responsibilities. It aims at growth of personality and progress towards maturity.

Thus, Training is viewed as a process by means of which the aptitudes, skills and capabilities of an individual enhanced, whereas,
development involves the nature and direction of change induced through the process of education and training.

Training is the short-term process utilizing a systematic and organized procedure, whereas development is a long-term educational process utilizing a systematic and organized procedure by which the persons learn conceptual and theoretical knowledge for general purpose.

Training refers only to instruction in technical and mechanical operations, while development refers to philosophical and theoretical educational concepts. But both are related to personality characters.

Following chart shows the difference between training and development.11

Chart 3.2

<table>
<thead>
<tr>
<th>Learning Dimensions</th>
<th>Training</th>
<th>Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who</td>
<td>Non managerial personnel</td>
<td>Managerial personnel</td>
</tr>
<tr>
<td>What</td>
<td>Technical and applied operations</td>
<td>Theoretical and latest conceptual ideas</td>
</tr>
<tr>
<td>Why</td>
<td>Specific job related purpose</td>
<td>General Knowledge</td>
</tr>
<tr>
<td>When</td>
<td>Short term process</td>
<td>Long term process</td>
</tr>
</tbody>
</table>

It is clear from the above table that training is for meeting short-term objective while development is for long-term objectives.
B. ENTREPRENEURSHIP DEVELOPMENT:

Entrepreneurship development is a systematic and organized effort of human development. It is a process of enhancing the motivation, knowledge and skills of the potential entrepreneurs arousing and reforming entrepreneurial behaviour. In Entrepreneurship development, persons are prepared to face business uncertainties and risks. Entrepreneurship Development is not merely training, and assisting them in developing their own ventures. Thus, it is said that, Entrepreneurs are not born; they can be developed through training.

Entrepreneurship development mean inculcating entrepreneurial traits into a person, imparting the required knowledge developing the technical, financial, marketing and managerial skills and building the entrepreneurial attitude.

Entrepreneurship in India is as old as human civilization, particularly in case of handicraft. Indian handicrafts enjoyed worldwide reputation and the artisan industries flourished till the end of 18th century. The Swadeshi Movement gave a much-needed fillip to indigenous entrepreneurship. After Independence, Government of India, in its Industrial Policy Resolutions/Statements and also during various Five Year Plans, emphasized the need of entrepreneurship. Thus, the Industrial Policy 1991, proposed to support First Generation Entrepreneurs through training and help them to establish their own ventures.
The well-known Kakinada experiment conducted by Mc.Clelland and pioneering entrepreneurship promotion work done by Gujarat Industrial and Investment Corporation and Centre for Entrepreneurship Development, Ahmedabad, made clear that, it is possible to train first generation entrepreneurs through systematic training intervention.

Thus, it is said that, all entrepreneurs are self-employed but all self-employed persons are not entrepreneurs. Thus, still there is a gap in the pedagogy of training and development of entrepreneurship in India.

3.9. **History and Growth of Entrepreneurs:**

The term ‘Entrepreneur’ is defined in variety of ways. Yet no consensus has been arrived at on the precise skills and abilities that make a person a successful entrepreneur.

The concept of Entrepreneur was introduced by Richard Cantillion, an Irishman living in France, referring to the risk taking function of establishing a new enterprise. He defined as, “The agent who buys means of production at certain prices in order to combine them to a product that he is going to sell at prices that are uncertain at moment at which he commits himself to his costs”. J.B. Say, an Economist held that, an agent who unites all means of production, the labour of one and the capital or land of the other and who finds in the value of products his results form their employment ................. Further, he added that, entrepreneur is speculator of a business enterprise. The entrepreneur
lifts economic resources out of an area of lower into an area of higher productivity and greater yield.

The new Encyclopedia Britannica considering an entrepreneur as an individual, who bears the risk of operating a business in the face of uncertainty about the future condition. Joseph a Schumpeter writes, the entrepreneur in an advanced economy is an individual who introduce some thing new in the country. A method of production, products with which the consumers get a new source of material or a new markets and the like. Further, his function is to reform or revolutionalise the pattern of production by exploiting an invention or more generally an untried technological possibility for producing a new commodity.

Another Economist Francis A Walker, is of the opinion that, entrepreneur is one who is endowed with more than average capacities in the task of organizing and co-coordinating the various other factors of production. He should be a pioneer. Entrepreneur is one who brings an overall change through innovation for the maximum social good. Human values remain sacred and inspire him to serve society. He has a firm belief in social betterment; he accelerates personal, social as well as human development. The entrepreneur is a visionary and an integrated man with understanding leadership qualities with a desire to excel; he works for the well being of the society. More importantly entrepreneur gives top priority to research and development. More importantly
entrepreneurial activities encompass all fields / sectors and foster a spirit of enterprise for the welfare of the mankind".12

3.10. Classification of Entrepreneurs:

In India, in all government-sponsored schemes, the entrepreneurs are classified as:

a. First Generation Entrepreneurs (FGEs):

The first generation entrepreneurs are those, who have no business background. First Generation Entrepreneur is one who owns a unit either individually or in partnership or in the form of private limited company which has been started / purchased / leased by him and not inherited13. The First Generation Entrepreneurs are new comers to the business field and no previous experience, but they can be trained and become successful.

The First Generation Entrepreneurs are identified as14:

(1) School dropouts    (2) Rural youth seeking employment
(3) Technocrats        (4) Retired Civil Servants
(5) Women              (6) Ex-serviceman
(7) Prisoners          (8) Physically handicapped
(9) Rural artisans     (10) Rural underemployed
(11) Technical graduates (12) SC/STs, and
(13) People with marketing or business training and expertise willing to set up their own business.
b. Second Generation Entrepreneurs (SGEs):

Second Generation Entrepreneurs (SGEs) or Subsequent Entrepreneurs (SEs) are those who takeover an already established industrial enterprise from the members of the family but does not include buying an ongoing enterprise.

3.11. Qualities of Successful Entrepreneurs:

The entrepreneurial qualities are to some extent innate and some can be enhanced by training, or simply by experience. A successful entrepreneur recognizes the commercial potential of a product or service.

Behavioral Science Centre, Delhi identified the following qualities of a successful entrepreneur.

1. High level of Motivation
2. Risk-taking ability
3. Self-confidence and positive self-concept
4. Leadership qualities
5. Business acumen
6. Managerial competences
7. Problem solving
8. Flexibility
9. Realistic approach to planning
10. Independence of thought and action and
11. Ability to perceive opportunities and threats.
Thus, today the persons selected for entrepreneurial training, instead of conventional methods like interview and questionnaires, modern methods like IQ tests, Blood tests and Management games are using.

3.12. Entrepreneurship:

Entrepreneurship is the propensity of mind to take calculated risk with confidence to achieve a predetermined objective. It is a composite skill, the resultant of a mix of many qualities and traits. McClelland identified the two characteristics of entrepreneurship i.e., doing things in a new and better way. It is knowledge base. The stimulation of entrepreneurship is a function of both internal and external variables. In developing countries there is no dearth of ideas but there is scarcity of men with the right blend of vision and practical sense and to become successful entrepreneurs.

A man who has an urge to do or create something new, organize production, undertakes risks and handles the economic uncertainty involved in running an enterprise is called entrepreneur. The set of such attributes the entrepreneur possesses is called entrepreneurship15.

The term “Entrepreneur” is often used interchangeably with “Entrepreneurship”, but conceptually they are different, yet they are just like two sides of a coin. ‘Entrepreneur’ refers to a Person while ‘Entrepreneurship’ refers to the function. Entrepreneur and Entrepreneurship are positive and value oriented concepts.
The entrepreneurship is flowering in agriculture among the cultivators is seen by all today. Tremendous advances in science and technology requires entrepreneurs. Entrepreneurs who have toiled hard to reach the pinnacle of success could be considered to be possessing entrepreneurship abilities.

3.13. Rural Entrepreneurship:

Rural Entrepreneurship simply defined as, Entrepreneurship emerging in rural areas. There is need to develop rural entrepreneurship through rural industry because:

1. Rural industries are labour intensive and high potential for employment generation.
2. Rural Industries have high potential for income throughout the year.
3. They encourage dispersal of economic activities in the rural areas and thus promote balanced regional development.
4. They help, protect and promote the art & creativity i.e., age-old heritage of the country.
5. They fosters economic development in rural areas, thus curbs rural migration to urban areas.
6. Rural Industries are environment friendly, lead development without destruction.
Like any business entrepreneur, a farm entrepreneur also takes initiative, organizes and manages the factors of production and bears the risk of uncertainty in his agriculture/agri-related activities. Therefore, it is said, farm entrepreneurship involves the same basic functions as entrepreneurship in business.\textsuperscript{16}

The problems faced by rural entrepreneurs differ from urban entrepreneurs. The problems of rural entrepreneurs are:

- Inadequate finance & working capital
- Inefficient arrangement for marketing
- Shortage of raw materials
- Heavy competition
- High cost of production
- Obsolete technology
- Lack of information & skilled manpower
- Limited demand in rural area

If appropriate policies are made, many of the rural entrepreneurs problems will be solved and restricts the migration of rural youth to urban areas.

3.14. Women Entrepreneurs:

Women entrepreneurs may be defined as a woman or group of women who initiate, organize and run a business enterprise. Women entrepreneurship is a recent phenomenon. Due to the spread of
education, favourable government policies and opening of new avenues, more and more women are found coming forward to venture their own enterprise/undertake economically useful activity.

The Government of India defined women enterprise as an enterprise owned and controlled by women, having a minimum financial interest of 51 per cent of capital and giving at least 51 per cent of the employment generated in the enterprise to women.

Women Entrepreneurship in India has come a long way right from cottage industries like Papads and pickles to the latest modern engineering and electronics too. Good Number of institutions/agencies have been set up in India to develop entrepreneurship among women by providing training, financial and marketing assistance.

In India, women entrepreneurs are influenced by two factors viz. Pull Factors and Push Factors. Pull factors are those, which encourage women to become entrepreneurs like a desire to do something new in life, need for independence, availability of finance, provision of concessions and subsidies. The push factors are those, which compel them to become entrepreneurs, such as death of husband or father, financial stringencies, responsibility in the family etc.

Women are equally competent with men, in certain cases they perform better than men. It is found that, women entrepreneurs generate more income than the male, owing to dynamism of the women in selling the captured fish in the open market.
3.15 **Classification of Women Entrepreneurs:**

The Women Entrepreneurs are classified into four groups, they are:¹⁸

1. **Natural Entrepreneurs** - are those who undertake business as a profession on their own, either earning profit or keeping them busy.

2. **Created Entrepreneurs** - are those who have been encouraged and trained through specialized training program to set up an independent business.

3. **Forced Entrepreneurs** - are those who are compelled by the circumstances to become entrepreneur, such as the death of father or husband with responsibilities falling on them to take over the existing business.

4. **Bename Entrepreneurs** - those who are acting as a facade for business of their husband or brother.

3.16 **Problems of Women Entrepreneurs:**

Though the government and the society support women entrepreneurs in India, still they are facing many problems. Further, they are more serious than those of men entrepreneurs. However, following are persuasive and common:

1. **Lack of Independence:** In India the status of women is of subordination to male in all walks of life and no independent authority.
2. **Social Restrictions**: Generally, there is restriction of free movements by the women, made to live within four walls. Naturally they are deprived of undertaking training to establish a new enterprise or expand/modernise the business.

3. **Low literacy**: Lack of education is the handicap for the women entrepreneurs to get technological and marketing knowledge.

4. **Dual responsibility**: A woman has both the responsibility of managing the family and the business. Consequently there is a conflict between home and working place.

5. **Low Risk Bearing Capacity**: Risk bearing capacity, which is a crucial factor in running an enterprise, is low among women.

6. **Impact of loss**: The impact of loss is severe on women, since they lack social support.

7. **Financial Constraints**: The banks and financial institutions show negative attitude while providing finance to women entrepreneurs due to want of security. As a result, they rely on their own funds and loans from family friends, which is inadequate to run the business.

8. **Marketing problems**: The rural women entrepreneurs lack marketing knowledge and synchronize their products with market requirement.
9. **Limited Mobility**: Women entrepreneurs are handicapped by their inability to travel from one place to another for business purposes. Further, the attitude of officials makes it miserable for women.

It has also come to know that, women entrepreneurs face stiff competition from male entrepreneurs and discrimination in selection for entrepreneurial development training, making women remain backward. Thus, government introduced the reservation of seats in all training programmes.

The problems of women entrepreneurs are more serious than man. It is found that, of the many problems they feel frustrated at times they because they need to spare their energy both towards their business as well as domestic affairs. At times they may not be able to attend both the duties because which they are dissatisfied the progress of their venture. Thus, it is suggested that market support and preferential treatment to be given to the women entrepreneurs by the government by taking over the products and selling it through the government showrooms. Further, it is suggested to provide adequate information and formation of National organization to solve the problems of women and develop entrepreneurial qualities.

To help women entrepreneurs, the Government of India, during 6th Five Year Plan, introduced a sub-scheme called “Development of Women and Children in Rural Areas (DWACRA)” for developing entrepreneurship among rural women in the country.
Research studies to be made to examine individual and cultural barriers to understand the psychology of rural women. Provide chance to think about her own interest and potential. Make her self-reliant and provide an opportunity to catch up with the changing time, thereby strengthening their position in the society and increasing their contribution to the economy of the country.\textsuperscript{21}

3.17. Entrepreneurship Development Programme (EDP):

Entrepreneurship Development Programme refers to a programme designed to help a person in strengthening his entrepreneurial motive and in acquiring skills and capabilities necessary for playing his entrepreneurial role effectively\textsuperscript{22}.

The fundamental objective of the entrepreneurship development programme is to transform the potential entrepreneurs into actual entrepreneurs. However, the other objectives are:

- To identify and train potential entrepreneurs
- To develop necessary knowledge and skills among the participants
- To impart basic managerial understanding
- To provide post-training assistance

An EDP is based on the belief that individuals can be developed, their outlook can be changed and their ideas can be converted into action through an organized and systematic programme. EDP is primarily meant for developing those first generation entrepreneurs, who
on their own cannot become successful entrepreneurs. EDP is not merely a training programme but it is a process of:

a. Enhancing the motivation, knowledge and skills of the potential entrepreneurs.

b. Arousing and reforming the entrepreneurial behaviour in their day-to-day activities.

c. Assisting them develop their own ventures or enterprise as a sequel to entrepreneurial action.

Thus entrepreneurial development programme have become imperative for exploiting vast untapped human skills and to channelise them into accelerating industrialization.

3.18. Entrepreneurship Development Training:

Entrepreneurship Development Training refers to identification and motivation of potential entrepreneurs and trains them in such a way that they should become capable to set up an enterprise, which is economically viable and technically feasible. The objective is to make the entrepreneurs more professional.

Most entrepreneurs lack managerial skills and techniques needed to deal with the management problems of the enterprise. Therefore, it is important not only motivate the trainee but also to provide them with all skills necessary to run the business successfully.
Entrepreneurship training aims to effect change in the individual in terms of knowledge, attitude and skills relevant to the entrepreneurial function. Persons may be trained for entrepreneurial careers so as to increase the level of confidence and achievement orientation as well as improve management development skill to enable them, successfully run their business. Thus, it is said, the Development of an entrepreneur means inculcating entrepreneurial trades in a person imparting knowledge, developing the technical, financial, marketing and managerial skills.

3.19. Developing Entrepreneurship:

Entrepreneurship being developed through a variety of interventions viz-

(a) Training,
(b) Finance,
(c) Consultancy,
(d) Resource support and Others.

The Entrepreneurship Development is not an individual effort, but it is a collective activity of various groups working together for the common purpose. A business or industry can rarely succeed unless it is able to view together and diverse support, promotion and protection from various corners and concerns working for the common endeavor.
In fact, several factors affect in making an entrepreneurship development. However, they are grouped into three major heads.

a. Stimulation   b. Support   c. Sustaining

Following Chart 3.3 shows how the entrepreneurship development factors affect and it cyclic nature.

**Chart 3.3**

ENTREPRENEURSHIP DEVELOPMENT CYCLE

The above Chart 3.3 clearly shows that, the three important factors that affect the Entrepreneurship Development and they act in a cyclic manner. They are supplementary to each other. Absence or inefficiency in one activity renders other activities in fructuous.

**3.20. Problems and Constraints of EDP:**

Entrepreneurship Development Programme is not free from problems and constraints. The following figure 3.2 shows the vicious circle of the EDP programme.
The figure 3.2 clearly indicates that there are various factors that are responsible for the poor performance of EDP programme. Further they are interrelated also.

The poor result in starting of the start up of an enterprise is mainly due to weak promotional activities, poor quality of trainers, poor training infrastructure and poor and weak follow-up measures. The improper selection of trainees and the poor performance of trainers were
also the reasons for poor performance. Thus, the trainees, trainers and follow-up measures are inter-related for the success of Entrepreneurship Development Programmes.

Several attempts were made to promote entrepreneurship in India. The entrepreneurs possess different traits; they are acquired through their experience, interaction with people and also inheritance. All these traits are to be applied at right time and place properly. Further, the entrepreneur should also understand that they cannot do today's job with yesterday's method and be in tomorrow's business.

C. SERICULTURE INDUSTRY:

Sericulture Industry can well be defined as, the agro-cum-industrial enterprise, the activity starts with harvesting of mulberry, proceeds with rearing of silkworms and production of cocoons for making a beautiful dress material or sarees. The climatic condition of India, particularly Karnataka is ideally suitable to undertake sericulture activities throughout the year, providing employment opportunity to rural people and help in enhancing the income level of the farmers.

3.21. Features of Silk:

Silk is the oldest textile, among the textile fibres. Silk has the longest and most beautiful, having the qualities of elasticity, softness, coolness and affinity to dyes. Elegant women's clothes are made out of fine silk, because it is smooth and shining. Silk fibres are exceptionally
strong having a breaking strength of 2290 kg/sq.cms. The fibre can be elongated to 20 per cent of its original length before breaking. The other property of silk is absence of protruding short fibres. The silk fabric gives up dust and dirt easily and hence can be cleansed easily. The average length of silk filament is about 4000 yards. Silk can be heated to a higher temperature without damage than wool. Silk is attracted by ultraviolet rays and is more sensitive to light than any other fibres. Silk can absorb moisture about 11 percent of its own weight. It is a poor conductor of electricity and heat. Therefore, it is used as insulator in electrical appliances. Thus, silk has attracted the attention of human being since last 4000 years.

3.22. Production Chain of Silk:

The production chain of silk begins with the planting of mulberry cuttings/saplings. The first harvest of leaves for feeding silkworms is obtained within 5-6 months. Eggs of silkworms are obtained from Grainages for hatching and indoor rearing in their premises. The practice of rearing is undertaken in controlled conditions. During rearing, silkworms grow and discard their skins four times.

A schematic diagram of production of mulberry silk fabrics is presented in chart 3.4.29
The above chart 3.4 shows how the silk is produced and the steps involved in it. To start the sericulture activity, the mulberry saplings to be planted in a land for the purpose of getting mulberry leaves. Mulberry leaves are the sole food plant of silkworms.
The caterpillars hatched from 25 grams of eggs consume roughly one tonne of leaves. After attaining full growth, the silkworms are ceased feeding and are transferred to a mauntage (Chandrike) to spin their cocoons.

The cocoons produced are sold in regulated markets established by the government. The cocoons are reeled to get the silk. On an average 1300 meters of silk is obtained from one continuous strand. The reeled silk will be twisted, weaved, bleached and printed in a silk industry. They are weaved and made into silk dresses/sarees/dress material to be sold in a domestic market or exported to other countries of the world.

It is estimated that to produce one kilogram (2.2 pounds) of silk, 1500 silkworms are required, which must have been fed with 250 kilograms of mulberry leaves. To produce one metre of a saree, 60 gram of silk is required.

The process of producing other silks like Tassar, Eri and Muga is the same with a difference in use of food plant, method of rearing silkworms and use of silks.

3.23. Sericulture:

The word sericulture is derived from the Greek word ‘Sericos’ meaning ‘Silk’ and the English ‘cul:ure’ meaning ‘rearing’. Sericulture refers to the continuous mass scale rearing of silk producing organisms in order to obtain silk from them. The sericulture activity will start from
planting the mulberry and getting the leaves for feeding the silkworms. The rearing of silkworms are made to obtain cocoons.

3.24. Mulberry- Food Plant of Silkworms:

Mulberry is the sole food plant of silkworm Bombyx Mori. Mulberry belongs to the family of "Moraceae". Morus' is the latin word of mulberry which is exploited for commercial production of silk. Mulberry is believed to be a native of India or China and originated on the slopes of Himalayas. Mulberry is cultivated in over 30 countries of the world. In India, mulberry cultivation area has increased from 56000 ha in 1951-52 to 3,42,764 ha. in 1992.

Mulberry is one of the plants having faster regeneration capacity next to bamboo. There are large number of mulberry varieties available and have been identified to be suitable for a particular climate and soil conditions. Sericulture Research Institute developed various mulberry varieties suiting both irrigated and non-irrigated lands. The well-developed mulberry leaves will have 75-80% watery and 20-25% protein. The yield of mulberry leaves depends upon the race, fertility of land, availability of water, application of fertilizers and manures etc.

Mulberry is a deep-rooted perennial long standing hardy and monoculture crop. It is grown in any variety of soil. However, it requires sufficient water and nutrients. Mulberry can be grown under various climatic conditions, ranging from low temperature to tropical atmosphere. However, temperature ranging from 24°C to 28°C is found
to be ideal. The rainfall ranging from 600 mm to 2500 mm and humidity of 65 to 85 per cent is ideal for its growth.

Researchers developed high yielding varieties of mulberry suiting all climatic conditions. The suggested varieties are: for rain-fed area - S13, S34, RFS135/175 and Vishwa and for irrigated land it is S30, S36, Vishwa (DD) and V1 varieties.

Mulberry has been rightly called as "Kalpa Vruksha" with its utility ranging from silkworm feed on one side to cattle feed, poultry, rabbits and also in pisciculture on the other. Increased milk yield was found in the mountain sheep when fed with mulberry leaves. Leftover leaves in the bed can be fed to milch cows and buffalos.

Mulberry is enriched with vitamins. The CSRTI developed ‘spoorthi’ a food item from mulberry and pakoda. The institute proposes to bring out 92 different kinds of food items made from mulberry.

3.25. Oldest Mulberry Tree:

The oldest known mulberry tree, located at Joshimath (Uttaranchal) bears the testimony of the same. This tree, estimated to be more than 1,400 years old with a girth of 28 feet belongs to M.Serrata. Shri Adishankaracharya is known to have meditated under this tree and later established one of the four Mutts of Adwaita cults at this place.30
3.26. Medicinal properties of Mulberry:

Mulberry is having tremendous medicinal properties in all its parts viz. root, stem, fruit and bark. Many researchers reverted the presence of biopharmaceutical components/molecules in mulberry against various human and veterinary researches. Mulberry is also reported as a "magical drug" in the scourge of 'AIDS'. Apart from leaves used as food for silkworm, other parts of mulberry viz. root, stem, bark, fruit and seed have been exploited as by-products in agriculture and medicines.

The juice from the roots of mulberry is administered to diabetic patient while decoction reduces blood pressure. The Stem has the capacity of healing wounded part of body. The Shoot can be used for extracting value added chemical and active drug materials. Leaf is used in preparation of syrup for moisturizing the skin. The Fruit can be used as juice for reducing high fever. Shoot-stem used for mushroom production and also for extraction of value-added chemicals.

In India, mulberries have been described (in Sanskrit) as "Madhuras" (metoedes/wine/flavour), "Guruguna" (venerable virtue) and "Sheeta Veerya" (cold valow). It has also been considered as "Vattapittahara" and decoction from its roots is prescribed as liver tonic31.

In Japan, tea is prepared from the powder of mulberry leaves, which is consumed as a traditional healthy diet. In China and Europe,
waste and pruned branches of mulberry are used in paper industries after treating with caustic soda and chlorine breaching.

The mulberry leaf possesses rich protein, fibre, ash, calorific value, calcium and vitamin C. High dosage of leaf powder is found effective in obese diabetics and hypertension.

3.27. Classification of Silkworms and Cocoons:

The silk cocoons are classified and graded on the basis of quality and reelability. Quality grade of raw silk is determined by the uniformity in size of the thread and frequency of distribution of knots. Larger length ensures better evenness and the higher the denier of the bave; the greater will be the size deviation with consequent impairment of silk quality.

Silkworm is the larva of the Silkmoth Bombyx Mori. Traditionally, one brood of eggs is laid in the year, and such silkmoth strain is said to be 'Univoltine' i.e., it undergoes one generation a year. Over the centuries, selective breeding programmes have resulted in the development of 'Bivoltine' (two generations per year) and 'Multivoltine' (several generations per year) strains. Bivoltine strains tend to produce the finest silk, which is required for the world market. Multivoltine strains, on the other hand, produce a coarser fibre and are preferred in India for domestic use. The Bivoltine silk worms can be reared only once in a year, but yield stronger and longer yarn, whereas multivoltine silk worms can be reared round the year, but yield less.
The Bivoltine silkworm races are originally from temperature zone. They are highly susceptible to diseases compared to multivoltine silkworms. The Bivoltine silkworms require more quantity and quality of feed and bed spacing compared to Multivoltine.

Following chart 3.5 shows the comparison between Multivoltine and Bivoltine silk cocoons.

**Chart 3.5**

**Comparison between Multivoltine & Bivoltine**

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Multivoltine</th>
<th>Bivoltine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Silk quality</td>
<td>B-Grade</td>
<td>2A – 4A</td>
</tr>
<tr>
<td>2. Renditta</td>
<td>10</td>
<td>5-3</td>
</tr>
<tr>
<td>3. Cocoon weight (gm)</td>
<td>1.8 – 1.9</td>
<td>1.9 – 2.2</td>
</tr>
<tr>
<td>4. Shell ratio (%)</td>
<td>16-17</td>
<td>23-24</td>
</tr>
<tr>
<td>5. Filament length (m)</td>
<td>750</td>
<td>1,150</td>
</tr>
<tr>
<td>6. Average Yield (Kg/100 dfls)</td>
<td>50</td>
<td>70</td>
</tr>
</tbody>
</table>

Since 96 percentage of raw silk produced in India is of multivoltine, which is not suitable for warp. Therefore, import of silk takes place. Initially, a target of 500 tonnes of Bivoltine raw silk production was set during Fifth plan period, and it raised to 6700 Tonnes by the end of Tenth plan.
3.28. Silkworm Seed:

Quality Silkworm seed is the backbone of the sericulture Industry. "What we sow is what we harvest", literally it means that the quality of seed we use, determines the quality and yield of harvest. Thus, the quality of seed is a vital aspect that decides the success of silk crop. In India, silkworm seeds are generally called layings. Silkworm seeds (eggs) are produced in grainages, which maintain high standards of hygiene and cleanliness. Therefore, while distributing the parental seed cocoon to producers (seed farmers) in the seed area for large-scale multiplication the following norms to be followed.

The Parental Seed Cocoons (P1) raised should be:

a) Free from Pebrine Disease.

b) Uniform in size, shape, colour etc. with minimum defective cocoons.

c) High pupation rate (>80% good pupae).

d) Seed crop should be as per norms of ERR (785%) cocoon weight (1.6669), shell weight (0.3669) shell ratio (22%) and overall cocoon harvest (>50 kg. per 100 dfts).

The silkworm seed productions are: Department of sericulture in different states, National silkworm Seed Project through a network of basic seed farms and Silkworm Seed Production Centres. About 1000 licensed seed producers are located in the scattered range of Karnataka, Andhra Pradesh, Tamilnadu and west Bengal. The major chunk of the
production of seed (about 72%) comes from private sector, while NSSP contributes 7.3% and remaining 20.7% comes from the department of sericulture of various states. Of the total requirements of hybrid x cross breed layings, 22% are from Govt. and the rest from the private.

It is found that the silkworms have medicinal properties. The Chinese Medical Book of 1597 A.D. enumerated that silkworm powder was used for keeping human body healthy; active and energetic.

In, March 1998, the Japanese Government registered its patent rights on international level for getting recognized as silkworm powder an agent for reduction of sugar content in the blood and for its processing rights in Japan.

Silk protein is marked as 'Silkprotein' which is used in cosmetics and skin care products. Silks high amino acids contribute benefits of greater endurance, stamina and energy muscle tone, help in the metabolism of sugars.

Silkworm pupae and larvae - a protein-rich food is used for commercial food item. Its powder is used in preparation of soups and sauces. The pupae are also used in the feed of poultry, fish and pigs. Pupae oil can be used in the manufacture of paints, soups and candles.
3.29. Contributing Factors for Success of sericulture:

The contributing factors for the success of sericulture activity have been categorized into major & subsidiary. The contributing factors for success of cocoon crop presented through a chart shown below.\(^{32}\)

**Chart 3.6**

**Contributing Factors for Success**

```
\begin{center}
\includegraphics[width=0.5\textwidth]{chart.png}
\end{center}
```

The above chart clearly indicates that seed, feed and breed are the major contributing factors for success of cocoon crops, while cocooning, rearing and pathogen control are subsidiary. Both these factors interrelated and they depend upon one another.

3.30. Strategies for Sericulture Development:

For the middle and big categories of farmers, sericulture is an ideal sideline activity, but for small and marginal categories of farmers it is an income generating and employment generating activity. Generally
the farmers are low in education, poor economic resources to establish an independent rearing house for silkworm rearing. Thus, to help those who are interested to undertake sericulture activity, the government should frame the policies to develop sericulture in all areas as the sericulture industry not only helps in improving the economic level of farmers but also it contributes for earning foreign exchange.

Following Chart 3.7 shows the strategies to be followed for the development of sericulture in the country.33

**Chart – 3.7**

![Diagram showing strategies for development promotion](chart)

The above chart clearly indicates that, the strategies of mass policies like input supply, transfer of technology, guaranteed price for the products will help the farmers in production of both multivoltine and bivoltine cocoons, in addition to establishment of sophisticated...
processing units/finished units. It makes contribution of employment to family members, higher returns, economic security, women's power and economic disparities to be removed. In addition, earn foreign exchange to the country.

3.31. Sericulture Extension:

Over the years, agriculture technology has changed rapidly and new ideas and developments are taking place continuously. Such development and ideas are made available through extension personnel.

Extension personnel are critical link in the effective transfer of ideas and technology from research stations to farmers and back. The extension agents were given the tasks of convincing the farmers to make those changes and training the farmers to implement those changes. He acts as a communication link between the government, research station and the farmers. The farmers hesitate to relate their problems, as large numbers of farmers are of low education. Therefore, there is need to educate, train and update with technical and professional skills of rearing of silkworms. Extension personnel of the department undertake such promotional activities. Thus, for the development of sericulture, the extension personnel play a very important role.

Conclusion:

Entrepreneurs play an important role in the development of progress of a society. The inventions of the great entrepreneurs have revolutionised the life style of the people of the society.
Entrepreneurship facilitated large-scale production and distribution of goods and services. Thus, the small-scale sector, particularly rural based industrial activity of sericulture be given priority in the national development, entrepreneurship flourishes.

The Central Silk Board, with the support of Government of Traditionally Multivoltine growing states of Karnataka, Andhra Pradesh, Tamil Nadu and West Bengal, introduced Bivoltine silkworm rearing during the fifth five year plan period with a view to phasing out the import of raw silk as well as to enter the highly competitive export market for raw silk and quality of fabrics.

Thus, there is need to motivate people to undertake sericulture activity through extension personnel of the department of sericulture, train them, provide support to adopt new technology. However, the farmers should get the proper returns for their produce. This need Training on Entrepreneurship Development rather than skill oriented training.

References:


varieties, modern methods of grainages, silk farm works and hybridization were set in operation by the virtue of services of the Japanese expert Yonemura. The Second World War gave an impetus to the silk industry. During this time, all cocoons produced in the state were taken to the Mysore Silk Filatures Ltd. and all these filatures were turned to war production (to produce parachutes). This resulted in an increase in production of silk and the area under mulberry; the technique of filature reeling was also improved.

There was considerable increase in mulberry plantation and production of raw silk during the five-year plan periods. The Fifth Plan witnessed a growth rate of 7.5 per cent in sericulture and several special schemes were also taken up (introduced). Sixth plan had a larger budget allocation to the sector. However, during this period, the industry suffered due to the attack of a fly called 'Uzi' which spread from Hoskote taluk to other rearing centers and later to other parts of the state.

4.2. Sericulture Farmers:

In Karnataka, the Sericulture farmers are categorized on the basis of their mulberry plantation area holding. They are: a. Marginal farmers, b. Small c. Medium and d. Big farmers. The category-wise sericulture farmers as on 31-3-04 in the state are shown in Table 4.1.
Table 4.1 and Graph 4.1

Category-wise Sericulture farmers as on 31-03-04

<table>
<thead>
<tr>
<th>Farmers Category</th>
<th>Total (No.)</th>
<th>Percent age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Marginal</td>
<td>90058</td>
<td>47.24</td>
</tr>
<tr>
<td>2. Small</td>
<td>75722</td>
<td>39.71</td>
</tr>
<tr>
<td>3. Medium</td>
<td>16930</td>
<td>08.89</td>
</tr>
<tr>
<td>4. Big</td>
<td>7933</td>
<td>04.16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90643</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

**Source:** Annual Report, 2003-04, DOS, GOK.

The above table 4.1 and graph 4.1 reveals that as on 31-3-2004 there were 1,90,643 sericulture farmers in the state of Karnataka. Of the total farmers, the highest number of farmers i.e., 90,058 (47.24 per cent) were found in marginal category, and 77,722 (39.71 per cent) are in small farmers category. Marginal and small farmers categories together constitute 1,65,780 i.e., 86.95 per cent. Only a few 16,930 (8.89 per cent) of medium categories of farmers and 7,933 (4.16 per cent) big categories of farmers are engaged in sericulture activity in the state.

Thus, it is very clear that, most of the sericulture farmers in Karnataka are marginal and small categories. However, there is need to motivate big and medium categories of farmers to produce silk in bulk and achieve the targets set by the state.
4.3. Caste-wise Sericulture Families:

There is no specific caste of people to undertake sericulture activity. However, all caste/categories of farmers get involved in sericulture activities, as it is a farm oriented industrial activity suiting their requirements.

Table 4.2 shows the category-wise sericulture families in the state by the end of March 2004.

Table 4.2

Sericulture Families on 31-03-04

<table>
<thead>
<tr>
<th>Caste</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Scheduled Caste</td>
<td>19210</td>
<td>10.07</td>
</tr>
<tr>
<td>2. Scheduled Tribe</td>
<td>7081</td>
<td>03.71</td>
</tr>
<tr>
<td>3. Minorities</td>
<td>2586</td>
<td>01.36</td>
</tr>
<tr>
<td>4. Others</td>
<td>161766</td>
<td>84.86</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>190643</td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

*Source*: Annual Reports, DOS. GOK.

Graph 4.2

Sericulture Families (caste-wise) as on 31-03-04
The above Table 4.2 and Graph 4.2 clearly indicate that majority of farmers i.e., 1,61,766 (84.9 percent) belongs to General Category, while 19,210 (10.7 percent) Scheduled Caste, 7081 (3.7 percent) Scheduled Tribes and the remaining 2586 (1.33 percent) are in Minority category.

Thus, it is very clear that all castes/categories of farmers have shown interest in sericulture activities in the state.

4.4. Raw Silk production:

Only Mulberry variety of raw silk is produced in the state.

Following Graph 4.3 and Table 4.3 shows the mulberry raw silk production in Karnataka and its share in India since 1980-81.

Graph 4.3

Mulberry Raw Silk Production in Karnataka and in India


16. C.B. Gupta and N.P. Srinivasan (1997), Entrepreneurship development in India. Sultan Chand & Sons, New Delhi, 4.18-4.27


