Introduction
India is predominantly an agriculture based country. Agriculture contributes 34% to national income with nearly 68% of its total population engaged in agriculture.

In developing countries, agriculture and agro-based industries play a vital role in the improvement of rural economy. India is endowed with abundant natural resources and thus scientific agricultural development can contribute to the gross economic product to a greater extent. The limited availability of land, the limited cash returns and agriculture being confined to one or two seasons in a year have made villages to look for supporting rural industries such as sericulture. Among the agro based rural industries, sericulture occupies an enviable position from the point of view of providing gainful employment and additional income. Agriculture and sericulture are adapted simultaneously by the agriculturists in regions where the ecological conditions are favourable.

1.1 History of sericulture

Historically, sericulture was introduced for the first time into China by Hoshomin, the Queen of China. For a long time, sericulture was considered to be a national secret by the Chinese Government, and as an industry it was not known in other countries. Later, it was introduced into Europe and Japan as well. Sericulture is known to exist in India since vedic period and more intensive sericulture on more scientific basis was introduced to India 400 years back and the industry flourished as an agro-industry till 1857, with an annual production of two million pounds of silk fibre. The industry survived the onslaught of the Pebrine disease during the period from 1857 to 1895. However, after 1928, the sericulture industry showed a decline in its production owing to the fierce competition from advanced sericulture countries, such as Japan, China and European countries. After the
Independence, the industry is flourishing as an agro-industry, giving employment to over 3.5 million people in the country.

1.2 Sericulture for rural development

Sericulture, the process of silk production, is an agro based industry playing an eminent role in the rural economy of India. Sericulture plays a vital role in the Indian economy in transfer of wealth from rich to the poorer sections of the society. The affluent class mostly consumes silk products and the value of the final fabric is distributed among all the intermediaries such as farmers, reellers, twisters, weavers and traders. According to Jolly (1987), the major share goes to the cocoon growers (54.60%), followed by traders (17.80%), twisters (8.70%) and reellers (6.60%). Of late, sericulture has become the most important rural industry due to certain inherent advantages viz. minimum gestation period, constant and periodic returns throughout the year. Recently through the adoption of new technologies both in mulberry cultivation and silkworm rearing among sericulturists, the enterprise has become a major cash crop in rural India.

Sericulture being labour intensive industry, has engaged approximately 58 lakh persons in different phases namely mulberry cultivation, silkworm rearing, seed production and other post cocoon processes such as reeling, twisting, dyeing, weaving, printing, finishing etc. In addition to the employment generation, sericulture earns a foreign exchange to the tune of Rs.2880 crore (Central Silk Board, 2004-2005).

Mulberry sericulture has a high employment potential and provides supplementary occupation to large number of rural families. It is estimated that one hectare of mulberry garden generates employment to about 13 persons annually from mulberry leaf production to garment manufacturing.
1.3. World raw silk production

The world raw silk production (both mulberry and non mulberry) is about 1,25,629 metric tons during the year 2004. The lion’s share is mainly coming from the two countries namely China and India. China leads the world in raw silk production with a production of 1,02,560 MT accounting for 82% of global silk production followed by India producing 16,500 MT with 13% of the raw silk production (Table 1.1).

Table 1.1 Year wise World Raw silk Production (MT)

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<td>15544</td>
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<td>15857</td>
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<td>16500</td>
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<td>2580</td>
<td>1920</td>
<td>1080</td>
<td>650</td>
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<td>431</td>
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<tr>
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<td>2120</td>
<td>1821</td>
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<td>1485</td>
<td>1607</td>
<td>1563</td>
<td>1512</td>
<td>1.20</td>
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<tr>
<td>Korea (Republic)</td>
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<td>506</td>
<td>272</td>
<td>210</td>
<td>200</td>
<td>165</td>
<td>157</td>
<td>154</td>
<td>150</td>
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<td>0.12</td>
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<td>2500</td>
<td>2000</td>
<td>1500</td>
<td>923</td>
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<td>1260</td>
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<td>950</td>
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<td>955</td>
<td>1510</td>
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<td>2100</td>
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<td>1000</td>
<td>862</td>
<td>780</td>
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<td>2035</td>
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<td>Others</td>
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<td>2766</td>
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<td>1572</td>
<td>1250</td>
<td>1952</td>
<td>1692</td>
<td>3814</td>
<td>1500</td>
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<td>Total</td>
<td>95376</td>
<td>95892</td>
<td>86004</td>
<td>80989</td>
<td>78530</td>
<td>84403</td>
<td>90488</td>
<td>95858</td>
<td>117042</td>
<td>125629</td>
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Source: Sericulture and silk industry statistics-2003
* Provisional

1.4. Sericulture in India

The total raw silk production in India is 16,500 MT. The total area reported under mulberry cultivation was 1.72 lakh hectares with a production of 120,027 MT of cocoons during 2004-05. The major share of the Indian raw silk production is constituted by mulberry silk (14,620 MT/ 88.61%) and the remaining is Vanya silk (1880 MT/ 11.39%). Statewise production of mulberry and non mulberry silk is presented in the Table 1.2.
Sericulture has attained a significant growth in the past five decades in India. The mulberry area increased steadily from 0.83 lakh hectares in 1960-61 to 3.42 lakh hectares in 1993-94, but there was decline in the mulberry area in the ensuring years and reduced to 1.79 lakh hectares during 2005-06.
The raw silk yarn production was stagnant and was hovering around 2000 MT in sixties and seventies and from there after increased considerably in the eighties and reached nearly 12000 MT in 1990-91. Even though there was a reduction in the mulberry area, still there was an improvement in the total raw silk production due to increased productivity and the silk production reached to 15,445 MT in 2005-06.

The cocoon production per hectare of mulberry garden has also shown a linear increase from 451.72 kg in 1997-98 to 698 during 2004-05 and the raw silk production per hectare also has increased from 49.77 kg during 1997-98 to 85.07 kg during 2004-05. Although a break-through in technology has contributed for higher yield in sericulture, the quality of silk produced is not of international level.

It is necessary to adopt the modern scientific practices of sericulture to give boost to the industry and to sustain it in the long run. India has taken rapid strides in sericulture development in the last two decades mainly due to the introduction of new varieties of mulberry, silkworm and their associated cultural and rearing practices. In parallel, extension network has been strengthened at national, state and village level to educate and motivate sericulturists about the new practices. Inspite of the continuous efforts made by the states and the Central Silk Board, for the transfer of technology, the technology package is yet to receive and adopted by the farmers as recommended.

1.5. Sericulture development programmes implemented in the country

By considering the ground realities, the Government of India has launched many programmes in association with Central Silk Board to improve the quality of silk produced in the country and to meet the domestic demand. In this regard Government of Karnataka has launched Karnataka Sericulture Project and Central Silk Board launched National Sericulture Project during 1980s and 1990 respectively by giving much emphasis to transfer of
technology from lab to land. Such projects have been able to help in the creation of infrastructure including trained manpower for technology transfer.

During 1991 to 1997, Government of India with the assistance of JICA (Japan International Co-operative Agency) implemented "Bivoltine Sericulture Technology Development Project" (BSTDP) which resulted in development of comprehensive package of technology for bivoltine sericulture through research institutes of Central Silk Board. In the second phase, "Project for Promotion and Popularization of the Practical Bivoltine Sericulture Technology" (PPPBST) was implemented for a period of five years from 1997-2002. During this project, the technologies developed under BSTDP were verified with the farmers’ conditions and demonstrated. The trials revealed that it is possible to produce international grade silk (2A - 4A) in the range of 5.5 to 7 renditta with an average cocoon yield of 70 kg per 100 dfls.

The overwhelming response received for the PPPBST Project resulted in implementing the third phase of the project, "Project for Strengthening Extension System for Bivoltine Sericulture" (PEBS) in the states of Karnataka, Andhra Pradesh and Tamil Nadu. The Project was implemented from August 2002 to July, 2007 for strengthening the extension system for effective transfer of technology in the field of sericulture. With the combined efforts of all the above, Karnataka stands first in the country’s raw silk production contributing 44.24 % to the total and provides employment to nearly 33 lakh people for their livelihood.

Inspite of the efforts made to transfer the technology in the field of sericulture, still there exists a difference in the way how the things have been received and perceived at field level as compared to the recommended technical know how. Apart from many other reasons, communication is the main reason for this wide variation in the acceptance of technical know how between and among the farm community. Hence, the success of any sericulture development plan depends on effective and efficient exchange of ideas between technology innovators and the ultimate users of the technology.
1.6. Transfer of technology

Effective communication is very important for transfer of technology as the clientele is very complex in nature and the client group consists of both literate and illiterate groups. Communicating with rural population is both complex and challenging task due to the existence of illiteracy, heterogeneity in socio-cultural and economic background and traditional outlook. There is an urgent need to think about appropriate and effective information linking system. Therefore, it is necessary to understand the existing sources of information, their extent of use, availability and time taken as well as the site of their use. It is essential to rediscover the effective channels of communication in rural India. A combination of media is the most effective way of reaching people with new ideas in agriculture in general.

Sericulture has not only influenced every walk of farmers' life but also holds the strings in Indian economy today. In order to compete in the international market with quality silk the central and state governments stepped up their efforts to increase the quality and quantity of silk production. This in turn lead to invention of several new technologies. The objective of new technologies is to upgrade sericulture in several key areas like cultivation, new varieties of mulberry and silkworm, fertilizer, disease control, mountages etc. Technologies were given adequate attention in this regard. A tradition bound farmer had to change his attitudes and shift to new methods of silkworm rearing. It is at this crucial stage of planning that sericulture communication and extension system assumes importance.

1.7. Importance of Extension communication

Today several number of information sources are used to disseminate improved sericultural technologies to the farmers. Even though the farmers have come across number of information sources, they perceive only a few of them. Therefore source of information plays a major role in the diffusion of innovation.
The information sources are classified as formal, informal, interpersonal, mass media, localite, cosmopolite etc. In order to bring about rural development, there is an imperative need to make available the required information through these different channels of information. There is an imperative need to make use of these available information sources effectively. Thus existence of active source of information within and outside the village plays an important role in the development of sericulture.

Communication on improved technology is a basic input and plays an important role in sericulture development. Present extension network employs various communication strategies to change the traditional practices into modern technology package. In this process, communication passes through different stages and channels. The communication of reliable and needed information is a necessary prerequisite for triggering of adoption by individual farmers and consequent diffusion to fellow farmers. Farmers are selective in their information consumption. Some sources of information are better at persuasion than others. The reasons for this can be the better delivery of information, their competency in particular information, trustworthiness and availability. The term used to refer such a valence of source is “Credibility”.

Several researchers in the area of attitude have shown that credibility of the source of information has a direct influence over change in attitude of the audience. It has been found that formal sources when they are credible can influence, the rationality of decision making in farmers. So the knowledge of credibility attached to different sources by farmers will be of immense value to the information flow among them.

There are many empirical evidences to show that there is definite relationship between source credibility and effectiveness of communication. The accessibility of sericulturists to these communication stages and channels will differ in the social system depending on the credibility that they have attached to these sources of information.
Even though many organizations are involved in transfer of the state-of-art technologies in sericulture, there exists a huge gap between the practices recommended and the actual practice by the farmers. This gap raises doubt about the understanding and practice of technology by the stakeholders. Knowledge of the recommended technologies is a pre-requisite for adoption of practices. A greater knowledge of technical nature leads to higher adoption level because knowledge is not inert. Thus, knowledge influences the human behaviour producing both favourable and unfavourable responses. It is understandable that all the improved farm practices cannot be adopted by all the farmers under natural condition and sericulturists are no exception to this universal truth. The adoption of the improved practices is influenced by cost, compatibility and local availability. Apart from this, personal and socio- psychological factors also play a major role on the adoption of improved practices.

1.8. Training in sericulture

Training efforts are essential for improving the technical capability of sericulture farmers. Training is important in all spheres of activity. It is the organized procedure by which people acquire knowledge or learn skills for a definite purpose. Sethu Rao (1969) stated that “Farmers training is an intensive learning activity for a group of selected farmers, assisted by competent trainers to understand and practice the skills required in adoption of new agricultural technology at a place where appropriate facility exists and at a time and duration considered suitable by the farmers”.

Training of farmers and extension functionaries is a critical input for the rapid transfer of technology. Extension workers training is especially considered to bear paramount importance in guiding the farmers in the adoption of improved technologies for achieving higher productivity.

Need based training programmes that impart practical training for farmer in skills are essential. Skill training of farmer in the identified technology can further hasten the diffusion process of technology. The skill
training is considered as an effective tool for speedy transfer of technological information to the grass root level. Hence, a thorough investigation on the existing knowledge and adoption of sericulture technology at grass root level will provide an insight into the areas in which the farmers need support. Thus, it will direct the training organization to frame their curriculum.

Hence, there is a need to understand and study the different communication strategies followed, credibility attached to the source, utilization of these sources of information, effectiveness of different extension communication methods, knowledge and adoption of improved practices at farmers level and training needs of the farmers. With this background, the present study is proposed with the following specific objectives.

1.9. Objectives

1. To find out the consultancy pattern of sources for technical information by the sericulturists;
2. To study the information source credibility pattern of sericulturists;
3. To analyze the source consultancy pattern and credibility in relation to the socio-economic characteristics and extension related variables of the sericulturists;
4. To find out the knowledge and adoption level in relation to personal characteristics of the farmers;
5. To document constraints faced by the rearers in adoption of improved practices;
6. To identify suitable information sources for transfer of technology in sericulture; and
7. To identify the training needs of the sericulturists in the study area.