CHAPTER - II

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An attempt is made in this chapter is to present the theoretical framework and empirical studies on economic viability of alternative crops in India. The researcher has reviewed relevant literature pertaining to the topic such a review of literature will provide a useful background for the study and also helps in understanding various issues relating to the research problem. Many theoretical and empirical studies, here there is a need for understanding of the research problem. Thus, review of literature is more important in order to understand the research problem. Various review of available literature have been thrown light on the particular issue, helps in identifying the research gap and even focus on various dimensions of the research problem.

2.1 Theoretical Framework

Tobacco companies center their arguments on employment and trade benefits of tobacco for developing countries and the losses that these economies would likely incur if consumption were to be discouraged. Yet, the World Bank (2) shows that the arguments and the data on which their arguments are based misrepresent the facts. Of concern is the return to farmers, who, the tobacco industry argues, greatly benefit from its production. On the contrary, studies have revealed that this is not necessarily the case. In line with Articles 17, 20, 20.1(a), 22.1(b) and 26.3 of the WHO Framework Convention on Tobacco Control (WHO FCTC), a study group on alternative crops was established in February 2006 by a decision of the Conference of the Parties (decision FCTC/COP1(17)) (1). The study group aims, among other objectives, to analyze the issue of
tobacco growing and explore possible viable alternatives. This study is in line with the outcome of that decision.

India also stands third place in production of tobacco. Use of tobacco poses a important threat not only to health but also to social and economic fabric of societies. Besides, undesirable environmental influences of tobacco farming at the local level lead to deforestation and soil degradation. Both supply side and demand side interferences are significant to achieve effective tobacco control in India. Global commitment in the form of approval of the World Health Organization Framework Convention on Tobacco Control by the Indian Government shall spur the agricultural community to seriously ponder on the economically viable and supportable crop diversification options for tobacco growers. A lot of effort has gone into making proof on economically viable alternate crops to tobacco in India. Various projects and programmes for alternative incomes to tobacco rising have been started globally. Nevertheless, the creativities on provisioning feasible alternative crop options for tobacco growers in India are generally limited to sporadic trials carried out in study settings. In the Indian scenario, shift by the tobacco growers to alternative crops in near future seems impractical. Nevertheless, concentrated efforts on part of the agricultural community in India coupled with timely consequence creativities from other stakeholder subdivisions may convert today’s dissent in to tomorrow’s new model.

2.2 Review of Empirical Studies

The review of literature not gives an opportunity to understand different dimensions concerning an issue but also help in identifying the conceptual and methodological issues relevant to the study. This will enable
the research to gather information and data sources and subject them to sound rezoning and meaningful interpretation.

Gumus (2008) in his study on economic analysis of oriental tobacco (Turkish tobacco) production under contract farming in turkey revealed that labour accounted for the highest percentage of the production cost. The net return from tobacco growing was 0.49$/kg. The results indicated that tobacco was a non profitable cash crop for growers. Many commercial growers have diversified sources of income, and most small scale tobacco growers lessen their dependence on tobacco at the same time they grow other crops for their lively hood.

Kollurmath et al. (2008) carried out a study on Structural changes in cost of production of rice and maize in Karnataka, due to changes in the quantity and quality of inputs associated with technological process and due to their prices and globalization. They found that the total cost of cultivation of rice increased from Rs 9008.95 in pre WTO to Rs. 23,482.68 per hectare in post WTO period. In case of maize the cost of cultivation of maize had gone up from Rs. 5970.67 in pre WTO to Rs. 9192.88 per hectare in post WTO period. These increases in cost of production of rice and maize were attributed to increase in quantity of inputs used and their prices.

Kaur (2002), in his article was discussed the various issues about the cultivation of tobacco in India including origins, the problems it causes to the environmental, farmers and potential alternatives. The study finds that tobacco is not a native crop in India and suggests that just as other cropping patterns have been changed for various reasons. So, tobacco cultivation could be reduced in favour of more beneficial alternatives. Finally writer conclude that plant ago is a suitable alternative as it required mild
temperatures and can be encouraged by the government potential also lies in switching to other crops already being grown in the respective areas with support from the government under the blue box or the green box strategies.

Jaisani (1989), found that in parts of Gujarat and Karnataka where tobacco is grown extensively, the soil and weather conditions also supported the cultivation of cotton, chillies and grain crops. He reviewed the net returns of tobacco in comparison with other crops grown in the state of Gujarat and Karnataka found the net returns for castor and cotton considerably higher than those for tobacco.

Ravicahndran.S, R.Mahender Kumar and V.Ravindra Babux (2008) in the joint study of “Climate Change and Rice Production” have rightly opined that India basically an agrarian economy, depends on agriculture and allied activities for the economic well being of its more than one billion populace of whom nearly 70% lives in rural areas. Rice cultivation is one of the major economic activities of our people. Since the availability of land for cultivation reduces year after year, and with the availability fewer resources, especially water being a main constraint with the successive failure of monsoons, it is indeed a stupendous task to achieve higher yield in rice cultivation. Effort should be accelerated to achieve higher returns in agriculture by way of innovations in agricultural crop production. Modeling and forecasting of rice yield would help the planners in formulating appropriate strategies to overcome eventualities of shortage of food grains due to failure of monsoons, occurrence of drought and incessant floods in some parts of the country usually in east and north eastern regions of India, and also fall in productivity due to various shortfalls.
Sharma (2000), in his article found that in the state of Andhra Pradesh, tobacco cultivators were forced to consider alternative crops in the wake of severe drought. Here pulses, gingelly, maize and soya bean were considered alternative Khariff crops. These crops were significantly cheaper to cultivate.

Panchamukhi (2000), in his micro-level study found that the area under tobacco cultivation and production are more sensitive to fertilizer subsidy rather than irrigation. These results indicate that the farmers tend to bring land under tobacco cultivation if they expect to receive subsidy of different types. The most interesting point here is that provision of irrigation does not induce farmers to shift from tobacco to other crops requiring more irrigation. He suggested that if farmers receive proper education and if they are suitably sensitized to the adverse effects of tobacco, they may reduce tobacco production. Interaction with farmers in the selected villages also showed that they may be initially encouraged to grow tobacco with sugarcane where irrigation is available and tobacco with soyabean where irrigation is not available. If full shifting is recommended, then the combination of sugarcane with soyabean in irrigated areas and soyabean with groundnut in unirrigated area may be accepted as alternatives to tobacco cultivation.

Nagarajan, et al., (2001), in their article found that mono-crops were not as profitable as tobacco across a variety of agro-climatic zones. Moreover, single or mono-crop replacement of tobacco is not profitable and there is support for crop sequences and inter – cropping.
Chari and Kameswara Rao (1992), in their study conducted the following results were seen with regard to a number of alternative crops. In the states of Andhra Pradesh and Gujarat, cotton and chillies were less profitable than tobacco. In addition, cotton is vulnerable to pests, and has a lower yield. Although some crops (e.g., chickpea, mustard, coriander and safflower) can be successfully cultivated in the black soils of Andhra Pradesh as a substitute to FCV tobacco, they are less attractive on account of market price fluctuations. In contrast, cultivators are more confident of the economic returns from tobacco.

Hadi, Kustiari and Anugrah (2008), have done a study on comparative profitability of growing tobacco versus other crops to understand the reasons why farmers continue to grow tobacco or switch to other crops, to provide suggestions for helping farmers to shift from tobacco to alternative crops. To give broader view, this study also makes a review on changes in world and Indonesia tobacco economy. The study shows that two major tobacco producing regencies were selected for field survey, namely Jember Regency in East Java representing regions with ordinary tobacco variety planted wet land and Temanggung regency in central Java representing regions with special tobacco variety planted on dry land. Respondents are composed of farmer’s currently growing tobacco and other crops (multi-commodity farmers) and former tobacco farmers. Focus group discussion approach was employed for gathering data. The study reaches the following conclusions. The shifts of production and consumption from developed to developing countries were triggered by: a) More intensive anti-tobacco movement in developed countries. (b) Faster decreased government support in developed countries, (c) Higher growth rate of population and per capita income in developing countries, (d) Lower
production cost in developing countries, (e) Lack of more profitable alternate crops in developing countries, (f) Improved infrastructure conditions in developing countries and (g) Factory relocation from developed to developing countries. Farmers who maintain tobacco cultivation are justified by the high and profit of the crops compared to wetland rice, hybrid, corn, red chilli and soyabean, tobacco cultivation offers much higher profit in Jember Regency. In Temanggung Regency on the other hand, potatoes cultivation for producing seeds give comparably high profit with tobacco.

**FAO (2003),** study carried out in stated that at present there is no alternative crop is known that can compete with tobacco as a cash crop on the same scale of production and the tobacco cannot be excluded as a crop in any diversification strategies. “In most countries, there is no crop which can substitute from tobacco with the same level of profitability. Thus, other crops can only be supplementary fro tobacco”.

**Borrelli (2009),** “Alternative crops to tobacco for inland Campania”. In his study a brief details are provided to experiments conducted by CRA-CAT in Benevento and caserta areas of the Compania region of southern Italy on growing ornamental foliage plants as alternatives to tobacco crops. When Eucalyptus pulverulent cv. Baby Blue, Aspargus pyramidalis (A. Setaceus Pyarmidalis), A Medeoloieds (A. asparagoides). Aspidistra elatior and Aralia siebodldi (Fatsia Japonica) was grown in the field in 2005-08 in benevento, satisfactory commercial results in terms of foliage quality were only obtained with Arealia and Eucalyptus. In the reials conducted over the last 2 years at S. Felice a Cancello in Caserta, with plants of A medeoloieds, Aucuba japonica, Myrtus communis, M. tarentina (M. communis subsp. Tarentina) and pittosporum tenuifolium c.v. silver queen being grown either
in the field or in tunnels with 50% shade netting (75% for A. medeoloides), satisfactory results were obtained only when Aucuba, Myrtus and pittosporum were grown under shade netting.

**Sandhya Rani.G. (2006)** has carried out study on “Women and Sericulture – An alternative dry land agricultural practice” has opined that it generates a chain of economic activities providing employment to the people in rural, urban and semi-urban areas. Through sericulture, the incidence of unemployment, disguised unemployment and seasonal unemployment is relieved to a great extent. Specially in the agricultural sector, the human labour involvement in the various activities of silkworm rearing is high when compared to mulberry cultivation. Further the involvement of female labour is present both in mulberry cultivation and silkworm rearing. Silkworm rearing provides high employment opportunities to both hired and female labour, silkworm rearing is a peculiar activity can be done more efficiently by women.

**Rajesh (2011)** in his study of production and marketing of Bidi tobacco crop in Belgaum district, Karnataka revealed that the per acre net return realized under inter cropping was higher (Rs. 72,281) compared to sole crop (Rs. 58,904). In both the cases, the major items of marketing cost were deduction of weight, commission charges and transport charges. The per quintal total marketing cost incurred was higher in case of sole tobacco farmers (Rs. 611.37) compared to inter crop farmers (Rs. 605.68). The producer’s share in processors rupee is more.

**Loughoton,A (1988)**, Dilemma of finding alternative crops to tobacco in southern Ontario” in his paper discussed for much of the 1970s and early 1980s, flue-cured tobacco was Ontario’s most valuable cash crop.
Since then, market pressure has caused a reduction in targeted output by approximately 50% leaving, in 198, about 560 000 ha available for alternative crops, This paper briefly discusses possible alternative crops, the problems involved and considers the adaptation of existing machinery and labour resources. Agronomically, the range of potential alternative crops is large, but marketing constitutes the biggest single obstacle to diversified expansion.

Chari, M.S Rao et al (1998) Evaluation of alternative crops for F.C.V. tobacco black cotton soils of Andhra Pradesh. In their study focused with continuous cropping of tobacco was compared with use to alternate crops of groundnuts pigeonpeas or soybeans pigeonpeas. Compared with continuous tobacco. Growing soyabeans with pigeonpeas in a 5:1 ratio gave increased net returns and improved soil fertility.

Tang- Liu-LiFang et al (2009) Effect of flue –cured tobacco intercropping with sweet potato on quality and economic benefits of flue-cured tobacco leaves, this study reveals that field experiment were conducted to investigate the effects of flue-cured tobacco and sweet potato intercropping on quality and economic benefits of flue-cured tobacco leaves. The study were as follows: compared with monocropping, flue-cured tobacco intercropping with sweet potato the yield of flue-cured tobacco leaves were increased 117.99 kg per hectare and increased by 4.26%, the proportion of superior and middle tobacco leaves were increased by 3.24% 14.53% and 4.54%, respectively meanwhile the proportion of low-grade leaves was decreased by 10.08% and 25.28%. The average price of flue-cured tobacco leaves were increased by 0.50-053 yuan per kilogram and the rise range was between 4.38%. in addition the sweet potato tube and bushrope yield were increased by 3226-7856 and 19-351-36 520 kilogram.
per hectare, respectively, income respectively increased by 3871-9427 and 5805-10956 yuan per hectare, the total economic income were increased 16368-18 133 yuan per hectare and increased by48.82%-56.40%, the different of producing value is significant at 5% level.

Surender Kumar et al. (2013) the study revealed that 80 per cent of the respondents are satisfied with the financial assistance for the production and 70 per cent of the respondents are satisfied with the pesticide for sugar cane supplied by the industry. It was observed that 70 per cent of the respondents are not aware about the training facility provided by the industry to farmers. It was observed that 71 per cent of the respondents said that the behavior of the sugar mill employees is poor. 17 per cent said that the behavior is average. Only 10% said that behaviour is good and 2 per cent said that behaviour is excellent and 93 per cent of the respondents are not satisfied with the price of sugar cane and 82 per cent of the respondents are satisfied with the payment of sugar cane through Bank Account.

Murthy et.al., (2002) they are studied “Economic viability of cropping systems under North Bengal conditions”. This a systems cropping experiment was conducted during 1995/96-1997/98 in a 6.0x4.5 m plot at the Central Tobacco Research Institute’s Research Station in Dinhata, West Bengal, India. This cropping systems experiment included 6 cropping sequences. They are namely (1) sunflower-rice-tobacco; (2) sesame-rice-tobacco; (3) maize-rice-tobacco; (4) rice-rice-maize + potato; (5) sunflower-rice- potato + garlic; and (6) maize-rice-mustard + wheat. The highest net returns (Rs. 78 421 ha 1)were recorded for cropping sequence 5, with a maximum cost-benefit ratio of 1:2.62, followed by cropping sequence 4 with net returns of Rs.46217 ha 1. Among the tobacco-based
sequential cropping systems, the best was cropping sequence 3, with a net profit of Rs.36 336 ha-1 and cost-benefit ratio of 1:2.50.

**Krishnareddy et al (2001)** “Economic viability of various alternative crops in burley tobacco growing agency area of Andhra Pradesh” in their field experiments found that an operationally and economically viable alternative crop to white burley tobacco. The experiment was laid out in a randomized block design replicated thrice with 12 treatment combinations. The crops grown consisted of 9 sole crops, i.e., tobacco, niger, cotton, sunflower, chillies, gingelly [sesame], groundnut, hybrid maize, soyabean, and 3 intercropping systems, i.e., castor+blackgram in 1:2 ratio, red gram+groundnut in 2:5 ratio, and redgram+rice in 2:8 ratio. Burley tobacco gave the highest net returns of Rs 31 201/ha, indicating that it is the most profitable crop in the area. However, if burley tobacco has to be regulated, intercropping of redgram+groundnut can be profitable, followed by intercropping of redgram+rice and sole cropping of cotton.

**Krishna,S.K et al (2010)** “Agronomic and economic evaluation of alternative cropping systems for FCV tobacco (Nicotiana tabacum) on Vertisols of Andhra Pradesh” this study reveals that there is scope in tobacco growing regions for cultivation of maize and soybean during kharif on rainfed vertisols. Conserving soil moisture and reducing soil moisture losses during preparatory tillage and sowing of rabi crops is a great challenge for successful crop production on rainfed vertisols. Therefore, present field experiment conducted in kharif and rabi of 2002-03 to 2004-05 at Rajahmundry, to evaluate alternative cropping systems to FCV tobacco (Nicotiana tabacum L). Results revealed that the mean tobacco leaf-equivalent yield (TLEY) of system and net returns were higher by 28.6 and 65.2% in maize based sequences as compared to those in soybean based
sequences (777 kg/ha and Rs 26,389/ha). -Maize based crop sequences recorded significantly higher soil pH and available P, while soybean based crop sequences recorded higher organic C, available N and K. Minimum tillage recorded significantly higher TLEY and net returns than zero tillage. Amongst different rabi crops, fallow-tobacco and sequential tobacco recorded significantly higher TLEY of system and net returns. Among rabi sequential grain crops, highest mean TLEY and net returns were recorded in redgram followed by chickpea. It was concluded that fallow-tobacco is most profitable however; kharif maize with minimum tillage of. rabi crops viz. redgram, chickpea and horsegram best option in Vertisols of Andhra Pradesh.

Venkateshwara Rao.G (2008) in the study of “Ratoon Cane Management” has opined that by carefully adopting all the important packages of practice in the ratoon crop, it is definite and sure to get positive results in relation to cane yields benefiting the sugarcane grower and better sugar recovery to the factories.

Sankaranarayanan.P and S.Thanga Rama Krishnan (2008) in the joint study of “E-Agriculture: A new Trend in Indian Agriculture Sector” have opined that the government of India must come up with suitable policies and incentives for the farmers so that they may be motivated and encouraged to give their best. This must be supported by the use of information and communication technology that can do wonders for agriculture sector of India. Information and communication technology can be used to improve the lives of rural communities by leveraging of agriculture outputs through technological interventions.
Desai et al. (1997) studied about the constraint faced by farmers in acceptance of new technologies establish that non availability of improved equipment, inadequate capital for the purchase of seeds and fertilizers and non availability of improved seeds in time were the main constraints pertaining to the availability of resources. The cause for non application of suitable doses of fertilizer was the lack of facility for soil examination. With regard to the acceptance of crop production technology management, the main constraints were lack of awareness about profitable crop turning round and labour scarcity for performing timely operations. In acceptance of plant protection measures, non accessibility of plant protection appliances and lack of finance for the purchase of chemicals were cited as the main reasons for non acceptance.

Singh et al. (1982) studied economics of bidi tobacco production in Belgaum district of Karnataka. The study revealed that tobacco is an important cash crop of the region and occupied 37 per cent of the gross cropped area on sample farms. The study also revealed that average cost per hectare was Rs. 5961.96 on sample farms. It was found highest (Rs. 6407.28) on large farms and the lowest (Rs. 5334.89) on small farms. The higher cost on rental value of land accounted for 22.65 per cent of the total cost, while manures and fertilizers and marketing costs were 13.85 per cent and 7.60 per cent respectively. Per hectare estimated yield of tobacco was 7.74 quintals. Considering the total Cost ‘A’ and yield, per quintal cost of production worked out to be Rs. 951.39.

Nagarajan.S.S(2008) in his study of “Robusta Banana as intercrop in coconut orchards” has opined that inter cultivation of banana is common in coconut orchard and farmers always plant ordinary varieties using suckers. Farmers never used to plant tissue cultured plants in coconut
orchard and such practice has also not been recommended. The focus was on providing maximum sunlight and air circulation. This also facilitates the growing of intercrops and Mr. Sundaram has aptly shown the way in his coconut orchard.

Nagarajan S.S (2009) in the study of “Elathur Onion: Adding flavor to cuisine and the kitty” has opined that the harvested onion is cleaned to remove rotten and damaged and disease infected bulbs as well as foreign matter and shade dried to reduce the moisture content of the bulbs. Curing also aids in the development of colour and reduces the field heat before storage. The natural breeze of Elathur facilities the curing process and the bulbs are stored in bamboo huts. Hence it is worth recording that merchants from Tamilnadu and Kerala come here to buy the produce and store it at Elathur itself to market it later.

Gadre and Mahale (1988) worked out per hectare returns from cotton and its noncommercial competing crops in Vidarbha region and reported that the cost of cultivation (cost C) per hectare was Rs. 3,848 for hybrid cotton, followed by mung-safflower (Rs. 1,984) and tur as sole crop (Rs. 1,845). The same for desi improved cotton; mung-gram and mung-wheat were Rs. 1,541, Rs. 1,495 and Rs. 1,404, respectively. While measuring the profitability of different cropping systems on the basis of net returns per hectare, the authors reported that tur (sole crop) gave the highest returns (Rs. 2,905/ha), followed by mung-safflower (Rs. 2,627/ha) and mung-wheat (Rs. 1,805/ha). Net returns for hybrid cotton, desi improved cotton and mung-wheat sequence worked out to Rs. 1,062, Rs. 888 and Rs. 948, respectively. The authors inferred that, on the basis of net returns per hectare, all the substitute crops were more profitable than hybrid cotton (except mung wheat sequence) as well as desi improved cotton. They also
concluded that for cotton crop, there are economically good substitute crops like tur, mung-safflower and munggram available for Vidarbha region.

**Kulshreshtha et al. (2000)** took a study on carbon sequestration in protected areas of Canada. Average value of carbon in this study was based on the replacement and substitute cost method. An average cost of $ 16.25 per tonne was estimated for this option. The 39 national parks in Canada sequestered a total of 4.43 giga tonnes of carbon in various pools. Total economic value of stored carbon in the national parks was estimated to be $72-78 billion. However, the value ranges from $ 12 to $ 2,216 billion depending upon society valuation of carbon sequestration function of the protected areas.

**Dieter and Elsasser (2002)** conducted a study on quantification and monetary valuation of carbon storage in the forests of Germany in the framework of National Accounting. Total carbon stocks were estimated at 1,081 m. t. C (4 m. t. CO2) in the wood biomass, or 2,249 m. t. C (8,254 m. t. CO2) including humus layers and soils. Combining these quantity estimates with the price estimates, the annual carbon sequestration service by German forests was in between 55 Mio and 547 Mio €/year at prices between 1 and 10 €/t CO2; the mean price estimate of 5 €/tCO2 would accordingly give a value of about 270 Mio. €/year.

**Abubacker.A.T.N (2008)** in the study of “Vanilla – The Princess of Spices” has opined that in India the cultivation of vanilla started with British. At Kutrallam in Tamilnadu in the species garden owned by the East India Company, Vanilla cultivation was started. Farmers in India turned to cultivate vanilla commercially only since the early 1990. In India it is mainly grown in the states like Karnataka, Kerala and Tamilnadu. Vanilla
stands out as an exception in the world of agricultural crop for the only reason that it is a commodity, which has a direct bearing on the health and flavor. The vanilla extracts could be used for beverages and flavoured milk products. It is also used in hot chocolate and tea. It is also considered that addition of vanilla may reduce the use of sugar in syrups. Vanilla usage is receiving great attention amongst consumer due to the eco-friendly nature of the product.

Kundan et al. (1997) observed a steady growth of exports of floricultural products from India during the period from 1980-81 to 1995-96. The exports during 1982-83 were the lowest (worth Rs. 32 lakh), reached Rs. 18 crores during 1993-94 to 1995-96 there by showing a huge increase of 68.13 per cent during 1995-96 over 1980-81.

Abhishek Shukla and P.R.Patel (2010) in the study of “Banana Pseudostem Weevil and Its management strategies” has opined that banana is one of the most important fruit crops of India. In banana there are more than 15 insect pests which cause damage at different growing stages. Among them, banana oliver is considered as a major pest causing considerable damage. The pest is distributed throughout banana growing states of India viz., North Eastern hills region, west Bengal, Assam, Tamil Nadu, Kerala, Andhra Pradesh, Karnataka and Gujarat. Banana cultivators such as Poovan, Karpuravalli, Nendran, Red vanana, etc., are found to be highly susceptible to this pest.

Subba Rao (1984) examined market structure of FCV tobacco in Andhra Pradesh before the introduction of auction marketing. Under the traditional marketing system farmers sold bulk to tobacco in the farm yard and the rest in the purchasing points at the premises of the companies. The
tobacco trade was by and large controlled by the private traders characterized by under-weighment, deferred payment in addition to lower price realization.

Galab.S and E.Revati (2006) in the joint research paper on “Changing agrarian relations in dry land agriculture: Some emerging hypotheses” have analyzed that the economically viable unit of cultivation could be explored into, which can provide livelihood to a family of four. In continuation with the debate of which step of the farmers community is able to slide up or down and what could be the step from which they cannot slide down or the thresh hold step, there is unison in the opinion of the farmers that a unit of 5 acres, with irrigation, and low cost or institutional credit and input and output markets would suffice the livelihood for a family.

Mahesh (2000) studied the performance of Indian tea with regard to growth in quantity, value and unit value of exports for the period 1979-90 to 1998-89 using exponential growth model. The results revealed that the export quantity of Indian tea exhibited a negative growth rate of -1.15 per cent, where as the export value and unit price recorded annual growth rates of 8.82 and 7.65 per cent respectively.

Yellaiah.B (2007) in the study of “Agricultural Lands: An Observation of Telangana” has opined that agriculture is main occupation for the people of Telangana like any other region in this country. Though Andhra Pradesh is known as the grain bank of south India, lacks of acres of land is becoming redundant and fallow due to lack of water facilities. It is resulting in large scale of migration of its people. Majority of the people may not know this hard reality. But eh governments and local people are very much aware of this fact. Telangana remained fallow though major
rivers like Godavari, Krishna and their tributaries flow from every district of Andhra Pradesh. Even then Telangana districts are becoming semi-arid zone as there are no irrigation facilities. The migration of farmers, agricultural laborers to other regions for and abroad for survival shows the down fall of the development of any region.

Madhuri.S and Y.V.Ramanaiah (2006) in the study of “Agricultural land use intensity and diversity for sustainable agricultural development – A Case study of Rayalaseema Region, Andhra Pradesh” has observed that the present agricultural system of the region is highly specialized in crop production but least in livestock production. The region has enormous livestock wealth. At the level of individual holding, farmers often engage in a variety of enterprises, competitive as well as supplementing enterprises. Therefore, diversified agricultural economy is the prime need of the hour to avoid environmental and socio economic problems created by monocultures, and also to make maximum use of the available bio-diversity and to adapt agriculture to the changing environment and adverse natural conditions.

Saraswati et al. (2012) studied the growth in the area, production and productivity of different crops in Karnataka for the period from 1982-83 to 2007-08. The results revealed that a significant positive growth in area under pulse, spices, nut, vegetables and fruits while cereals showed significant negative growth. Similarly the production of cereals, pulses, vegetables and fruits showed a significant positive growth. The productivity of oilseeds recorded moderately positive growth, whereas commercial crops recorded insignificant positive growth and for vegetables the growth in productivity was insignificant and negative.


Alezzy Ahmed and H.Nagaraj (2007) in the study of “Agricultural Competition Crops and its impact on Yemen Economy: A Case Study” has opined that Yemen was a famous country in coffee cultivation. The productivity has been very less, it is important to find out reasons for the low productivity and give solutions to this problem. It is also important to identify the areas, which are ideal for the cultivation taking into account the various Geospatial. This study forms as a guide for public decision making regarding of coffee cultivation with other competing crops like Qat.

According to Goyal S. K., et.al., (2004), tobacco industry in India is one of the major in the world with India having the major area under tobacco cultivation. It plays an significant role in the country’s economy, in more ways than one. India has well incorporated tobacco cultivation, processing and supply facilities. Tobacco is an agro based item produced and consumed both in the unmanufactured and manufactured form in India. Tobacco processing falls under both structured and unorganized sectors: manufacture of cigarettes can be classified under ‘organized sector’ and the ‘in unorganized’ sector consists of beedis, and other forms of tobacco products like pan masala, zarda, etc. The industry makes a sizeable contribution to seasonal and around the clock employment and has important export possible.

Maikasuwa and Ala (2013) carried out a study to estimate trend in area and productivity of sorghum in Sokoto state, Nigeria from the period 1993 to 2012. The study results revealed that the computed growth trend for area was negative (-0.015) and for the productivity was positive (0.035).
Dinesh Kumar, M. D. Channa Naik, S. Sridhara, T. S. Vageesh, G. K. Girijesh And S. Rangaiah (2010) in the joint study of “Investigation on economically viable alternative cropping systems for FCV tobacco (Nicotiana tabacum) in Karnataka” have observed that the cropping systems, hybrid cotton+chilli+groundnut and hybrid cotton+chilli+french bean can be economically viable alternatives to FCV tobacco for the farmers of Karnataka. None of the alternative sole crops tried were comparable to sole crop of FCV tobacco in terms of net returns. However, chilli was the next best remunerative crop.

Ranganadhan S. (2014) in the study of “Tobacco and Alternate Crops in Karnataka - A Management Perspective” has opined that Flue-Cured Virginia (FCV) tobacco is the major commercial crop in Southern Transitional Zone (STZ) 7 of Karnataka. FCV tobacco is being grown in kharif as rainfed crop with more institutional support and sustained demand in the international market. The various crops cultivated include Ragi, maize, Paddy, Jowar (Cereals), Red gram, Cowpea, Field bean, Horse gram, Sesamum, Niger (Pulses and Oil seeds), FCV tobacco, Cotton, Sugarcane, Turmeric, Chillies, Ginger, Potato (Commercial Crops), Coconut, Areca nut, Banana, Mango, Tamarind, Sapota (Horticulture and plantation crops). India is a signatory to the Framework Convention on Tobacco Control and is under obligation to halve tobacco cultivation in the country by 2020. The present communication deals with various management initiatives involved in the process of finding an alternate or substitute to tobacco in some pockets with demand driven crops. The present paper deals with various factors and issues to be studied for substituting tobacco in micro-zones. An attempt is to identify domains for developing protocols to study the agro-system and priorities for stakeholders for joining hands with Government of
India’s initiative to halve the crop size from 100m Kg by 2020. As a precursor to sustain the rural development possible areas for CSR activity have also been discussed. The protocols developed help in the management initiatives for substituting the crop in pockets.

Udo Kienlea, Basil Manos Thomas Jungbluth (2015) reported that, the alternatives for tobacco farming is a very opposing substance as it strikes into the mind of the tobacco industry which is the tobacco leaf. The plan of the paper is to contribute to this conversation and sustain the policy makers. To this end, the paper provides a proof based move toward for modeling the phasing-out of tobacco which describes the likely effects on farm income, labor demand and environmental impacts. In the context of the EU Research Project DIVTOB a model was developed to study the impacts of tobacco phasing-out on a precise region move toward. The methodological move toward can support the policy makers to overcome constraints associated with the future completion of alternative livelihoods to tobacco farming on the basis of confirmation. In the broader context of tobacco control, the study presents a process for an successful execution of articles 17 and 18 of the WHO Framework Convention of Tobacco Control (FCTC). The study also shows a translucent approach to overcome in an efficient way the doubts spread by the tobacco industry and their allies about phasing-out of tobacco especially in low-income and middle-income countries. The submission of the proposed model to four case studies in Greece and Spain achieves, under different scenarios, significant results useful for policy makers and policy implications.

Satvinder Kaur (2003) discusses a range of issues concerning the farming of tobacco in India, counting its origins, the problems it causes to the surroundings and farmers, and possible alternatives. The writer finds
that tobacco is not a native crop in India, and suggests that just as other cropping patterns have been distorted for various reasons, so tobacco cultivation could be abridged in favor of more useful alternatives.

**Murugan D. and E. Kanagaraj (2016)** in the study of “Factors Determining Energy Consumption in Agricultural Production: A Comparative Economic Analysis in Tamil Nadu” have observed that energy inputs like diesel, seed, mechanical and phosphorous are found to be statistically significant. The higher use of diesel energy by the farmers is mainly due to the application of mechanical methods. Further, the farmers excessively apply of phosphorous input energy due to lack of adequate knowledge in the application of recommended dose of phosphorous by the farmers and hence it is negatively correlated to the per acre value of output energy. It is also interesting to note that the farmers use more mechanical power in the place of human and bullock labour, as the size of land holding increases. This is possible due to wealth and social status of the medium and large land holders. The human and animal labour input energies are not found to be statistically significant at the pooled irrigated farms, because of the influence in insignificant co-efficient of human energy in the small farms and animal energy in the large farms.

**Sandeep (2002)** in his study on cropping systems in Bidar district of Karnataka revealed that under irrigated conditions the per hectare net profit was found highest in sugarcane cropping system in case of both small (Rs.52016.66) and large farms (Rs.42217.04) with a benefit cost ratio of 3.36 and 3.12, respectively. Under rainfed conditions, the net profit was highest in redgram cropping system in case of both small (Rs.12595.00) and large farms (Rs.12491.25) with a benefit cost ratio of 2.40 and 2.34, respectively. The ratio of MVP to MFC was greater than one for human
labour, bullock labour, seeds, FYM and fertilizers indicating the scope for using additional units of these inputs to increase gross income.

Singh (2004) in his study on economics of efficiency in vegetable business system reported that cost of cultivation for tomato, onion, arvi, okra, brinjal and potato was estimated at Rs.12,599.00, Rs.13,338.10, Rs.9,742.10, Rs.10,046.40, Rs.11,274.60 and Rs.13,480.20 per hectare, respectively. Further, it also showed that about 95 per cent of the cost of cultivation of these vegetables constituted human labour and working capital cost. The cost on bullock labour for these vegetables ranged from 4 to 5 per cent. The per hectare net profit of vegetable growers for tomato, onion, arvi, okra, brinjal and potato were estimated to be Rs.31470.25, Rs.2644.34, Rs.22015.90 and Rs.31353.60, Rs.29205.40 and Rs.25328.25, respectively.

Rajeshwari (2004) made an attempt to study the cost and returns of coconut based farming systems in Tumkur district of Karnataka. The farmers following Farming System comprising coconut, arecanut, ragi and dairy were getting the highest net farm income of Rs.85,600 per farm and the cost of cultivation was Rs.1,59,645. The major components of cost of production were amortized establishment cost, operational cost, rental value of land and material cost.

Ramachandra, V.A. Rajashekhart. Basanayak, Renuka Salunke and Munji Ravusaheb (2013) in the study of “Growth in area, production and productivity of major crops in Karnataka” have observed that the analysis of growth is usually used in economic studies to find out the trend of a particular variable over a period of time and used for making policy decisions. The necessary secondary data were collected for a period
of 26 years from 1982-83 to 2007-08. The growth in the area, production and productivity under different crops were estimated using the compound growth function. Growth rates showed a significant positive growth in area under pulses, vegetables and spices and fruits and nuts while cereals showed significant negative growth. The area under jowar, bajra, ragi and minor millets were experiencing a substantial annual decrement. The area under rice has recorded a mild annual increment. The growth in area under oilseeds and commercial crops were negative and insignificant. Similarly, the production of cereals, pulses, vegetables and fruits showed a significant positive growth rate. The production of oilseeds and commercial crops registered insignificant positive growth. The productivity of different crops registered significant growth in the case of cereals, pulses and fruits. Productivity of oilseeds recorded moderately significant positive growth. The productivity of commercial crops registered insignificant positive growth and for vegetables, the growth in productivity was insignificant and negative.

Saikumar (2005) studied the cost and returns structure of major farming systems in tank commands of north eastern Karnataka. The study revealed that, of the three major farming systems identified in the study area, dairy enterprise was found to be most common as a complimentary enterprise. The highest net returns realized was Rs.53,404.59 per hectare and per hectare cost of cultivation was Rs.84414.21 in Farming System comprising redgram+ kharif jowar+ groundnut+ followed by bengalgram+ rabi jowar+ dairy.

Vishnu Shanker Meena Shirish Sharma And Vishal Dagar (2016) in the joint study of “Production and Growth in Pulses in India” have opined that Growth in the agriculture sector may well be judged by the
increase in agricultural production over time. The area under pulse has been fluctuating between 22 and 24 million ha however; there was improvement in production, which is mainly on account of increase in productivity as result of generation of new varieties or technology of their cultivation. The production was 2243.02 in Maharashtra which is less than the Madhya Pradesh's by 1200 million tonnes, while in the 1980s Madhya Pradesh produced 2561.00 million tonnes followed by the Uttar Pradesh and Rajasthan which produced 2119.07 and 1633.55 million tonnes respectively. The area had increased up to 3546.94 lakh hectares in Maharashtra which is less than the Madhya Pradesh by 1000 lakh hectares while in the 1980s Madhya Pradesh area was 4841.22 lakh hectares followed by the Uttar Pradesh and Rajasthan which had an area 2981.33 and 3240.89 respectively. There was huge decline in the area of pulses in Orissa, Punjab, Haryana and Bihar. Madhya Pradesh shows an increasing rate of growth in terms of area and production in comparison to the other states. Orissa shows a negative growth rate in area in all three decades while the production shows a negative level of significance along with a decreasing growth rate of production. In 1981-90, it was 7.77 per cent level of significance decreased to -8.58 per cent in 1991-2000 further it was decreased. Punjab shows a declining growth rates for area and production in all three decades. Rajasthan show a positive growth rate for area and production in all three decades, in 2000-14 it was 6.24 per cent and 5.90 per cent for area and production respectively while it was 1.44 per cent and 3.33 per cent for area and production in 1991-2000 which indicates a good level of significance.

Shelke .R.D and A.M.Degaonkar (2008) in the study of “Agro-Processing industries in India” has observed that there is a need to
strengthen the backward linkages with the growers by the processing units by establishing separate extension wing with field officers. The government should formulate a long term national Policy on food processing incentives to encourage their proper growth.

**Neelappa Shetty (2002)** studied the technical and allocative efficiency of paddy production in Tungabhadra project area. The per hectare cost of paddy cultivation was Rs.26,192 and Rs.25,938 in Bellary and Raichur districts, respectively. The variable costs (85%) constituted the major portion of the total cost of cultivation. The expenditure on human labour was found to be the major item of variable cost. The fixed cost per hectare was estimated to be Rs.33,896 and Rs.33,746 respectively, for Bellary and Raichur district farmers. Rental value of land formed the major component of fixed cost. The gross returns realized by the farmer in Bellary and Raichur districts for paddy was Rs.42,842 and Rs.40,735 per hectare.

**Navadkar D. S. and A. J. Amale And R. B. Naik (2016)** in the study of “Econometric Analysis of Arrivals and Prices of Black Gram in Western Maharashtra” have opined that The study pointed out that the seasonal fluctuations in monthly arrivals and prices of black gram were not uniform over a year and throughout the time series. It can be concluded from the seasonal indices analysis of arrivals and prices of black gram that "when bulk of the produce reaches in the market, prices reach at their lowest level". It is apparent that the prices of black gram at Barshi market have been increasing rapidly over the time span of the years ending 2011-12 and at a faster rate. The market arrivals of black gram in Barshi could not increase at the similar rate by which the prices of black gram increased during this period, where they otherwise could show a casual increase. The
arrivals in Barshi market are inversely correlated to prices. The fluctuations in prices were unrelated with the arrivals.

Murthy.C (2007) in the study of “Development o Grade Standards for Tomato: A Study” has observed that scientific grading should be based on important test factors so that the sellers would be able to describe the quality that they are offering and the buyers should understand what is being offered. Grading and standardization protect the farmers to some extent from exploitation by improving his bargaining power. Grading not only promotes the international trade but also improves national credentials in the international market.

Chockalingam. S.M and P.Nagarajan (2009) in the study of “Sugarcane Cultivation in Namakkal District” have opined that the government as a stakeholder is responsible to protect the interests of the primary stakeholder’s viz., farmers. Hence, it has to make concerted efforts with the help of agricultural department. Such integrated effort of Government would solve most of the problems. If these problems are solved or minimized not only the primary stakeholders viz., the sugarcane farmers but also all other stakeholders will enjoy the benefits and the rural economy would ultimately prosper.

Grover D.K., Sanjay Kumar, J M Singh And Jasdev Singh (2016) in the joint study of “Possibilities and Constraints in Adoption of Alternative Crops to Paddy in Punjab” have observed that Remunerative price of the produce is the main force to motivate the farmers to grow the alternative crops to paddy. The farmers are selling fine varieties of paddy at minimum support prices to the government agencies. The results showed that the returns over variable cost fetched from the most of the competing
crops, were less than fine varieties of paddy except for basmati-paddy, which was mainly due the higher average price of Basmati-Paddy (Rs. 3673/q) during the year. The returns over variable cost on per hectare basis were the least for maize crop as the average price realized by the farmers was only Rs. 860/q, which was only about 70 per cent as compared to the MSP announced by the government (Rs. 1310/q). Although, the Government announces MSP for maize and cotton, there is procurement of cotton by the government agencies, but only negligible quantity is procured. For the competing crops, the farmers are dependent upon the private traders for disposal of their produce. The market prices for these crops decrease tremendously, when there is gult in the market. The farmers left the need for effective procurement of produce by government agencies at MSP and better market intelligence so that the farmers may get the remunerative prices for their produce.

Manu V. K and S.Mokshapathy (2014) in the joint study of “An Analysis of Production and Marketing of FCV Tobacco in Mysore District” have observed that Tobacco, in India, makes a significant contribution to the national economy by earning about US$ 900 million of foreign exchange, besides accruing US$ 3.4 billion to the central exchequer by way of excise levies on manufactured tobacco. Tobacco is an important commercial crop that provides employment to nearly 36 million people, who are engaged in the various process of tobacco cultivation, curing, grading, manufacturing and marketing. The government is thinking to ban on tobacco cultivation, in this connection, the tobacco growers has to think over alternative crops like sericulture, and other commercial crops which yields equal income in the study area.
2.3 Research Gap

From the above studies it is clear that several studies have been done on subjects covering area, production and economic viability of alternative crops to tobacco. Few numbers of scholars have been studied on an economic viability of alternative crops to tobacco in India in general and Karnataka in particular. In the present context it is worthwhile to study in detail the economic viability of alternative crops to tobacco in Mysore district. Therefore this study has been carried out to fulfill that research gap.
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