CHAPTER 5
CONCLUSIONS AND SUGGESTIONS

The important conclusions and suggestions emerging from the study are discussed under the following heads.

5.1 Production of redgram - Farmers
   5.1.1 Agricultural land and Tur cultivation
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Marketing of Redgram

Major problems and prospects in cultivation, processing and marketing of Redgram
CONCLUSIONS

5.1 Production of redgram: Farmers

Gulbarga district is famous for the production of Redgram. It is the largest producer of red gram in the country. Redgram is the main and important pulse crop of this region. Production of Redgram plays a vital role in the agricultural economy of this district.

Gulbarga district normally receives less annual rainfall and faces uncertainty of rainfall. The climatic conditions of this district are relatively warm and dry. Redgram being a draught tolerant crop is best suited for cultivation in Gulbarga district.

Most of the farmers of this district are cultivating Tur as a main crop and is an important cash crop of the farmers of this region.

Tur was found to be cultivated by farmers with all sizes of land holding irrespective of the type of agricultural land - dry, irrigated, both dry and irrigated.

5.1.1 Agricultural land and cropping pattern of Tur

Two third part (73%) of the agricultural land was dry in nature and depending totally on the rainfall (table 4.1).

Farmers of all sizes cultivated Tur in their agricultural land. 42% of the total agricultural land was under the cultivation of redgram. 20% of the respondents utilized their complete agricultural land for the cultivation of Tur (table 4.2). Redgram cultivation played a vital role in the agricultural economy of this region and was an important source of earning for the farmers.

Majority of the farmers cultivated redgram in the Kharif season. 93% of the respondents cultivated Tur in Kharif season (table 4.3). Farmers cultivated other crops in the rabi season. The other important crops cultivated by the farmers were Jowar, bengalgram, urad, groundnut, sunflower, maze and paddy etc.

This cropping pattern was followed by the farmers due to the uncertainty of rainfall in Kharif season compared to the assured rainfall in rabi season.

Different varieties of redgram were cultivated by farmers based on the suitability to the soil and other qualities like resistance to diseases, pest resistance
and quantity of yield etc. The important varieties of redgram cultivated by farmers were: maruti, benur, BSMR, Gulellu and Kempu gulellu (table 4.4).

For analyzing production of Tur, it is important to know the area under the crop in which Tur is cultivated. Overall increase in the growth rates for major crops is the outcome of extended area under these crops. The hypothesis is suggested that there is a positive relationship between the area under crop and the production of Tur. The result supported the hypothesis. It was found that the production of Tur is positively related to the area under crop. It shows that the production of Tur can increase 0.823 quintal per acre of the area under the crop. The result showed that 33.8% of the variation on production be expanded by the area under the crop. The other factors which affect the production of the crop could be scanty rainfall, availability of irrigation facility, pest infestation etc.

Redgram suits very well to the climatic conditions of Gulbarga district and can be conveniently produced. As it is convenient to grow Redgram during kharif season farmers are recommended to cultivate Tur in more part of their land during kharif season. In rabi season farmers can take other crops which require water on regular basis, as there is comparatively assured rainfall during rabi season.

5.1.2 Yield of Tur cultivation

A major part of the yield was contributed by small and medium farmers. The Tur cultivated in 1 to 10 acres of land was found to yield more quantity. The productivity of small farmers was observed to be the highest compared to medium and big farmers. Small farmers were having lesser area of agricultural land under them but were able to produce more quantity of Tur compared to the medium and big farmers (tables 4.5 & 4.6).

The hypothesis is tested to find out the influence of the area under crop on the variety of Tur production, though the area under the crop are different there is a significant influence of the area in producing variety of Tur like Benur, BSMR, Gulellu, Maruti and Kempu Gulellu.

Farmers should realize that the best result of production necessarily differ according to the land under the crop.
The area under the crop plays a major role in the production of yield. This has revealed that the major land holding of farmers are 1 to 10 acres. The hypothesis is tested to find out the influence of the area under crop on the proportion of yield. There is a significant influence of the area under the crop in the yield of the product. The implication of these findings is the dominance of farmers with 1 to 10 acre of land.

As far as the categories of farmers are concerned, most of the farmers in the study area are small and medium sized farmers having 1 to 15 acres and 16 to 50 acres of land respectively. The proportion of total yield is higher for medium farmers followed by the small farmers. The hypothesis suggests that proportion of yield differs significantly due to the different categories of farmers. It was revealed that the significant influence of categories on the proportion of yield of Tur.

It has been observed that the yield of Redgram is positively related to the area under cultivation. So the farmers can utilize more part of their agricultural land for the cultivation of Tur to earn more profits.

5.1.3 Disposal or sales pattern followed by farmers

Farmers stored the final product redgram with them for certain period of time for selling it at appropriate or required time. Farmers were found to sell their produce of redgram to wholesale agents through market intermediaries like village merchants etc.

Some farmers stored a small portion of the yield of redgram for domestic use (for seeds or for kind payments or for own consumption). It was observed that all the farmers stored Tur in their houses packed in gunny bags. They stored it for a maximum period of 12 months. No chemicals were used for preservation during storage. Farmers did not spend any money on storage/there were no storage costs as the place of storage was own house so no rent was to be paid and no chemicals were purchased for preservation. Farmers usually did not undertake required processing of redgram (table 4.8).
In the markets sales prices of Tur were found to vary in the range of Rs2900 per quintal to Rs3400 per quintal. Majority of the farmers were able to sell their produce at the price nearer to the average sales price of Rs3108 per quintal. It was observed that there was not much deviation in the prices of Tur in the markets. Majority of the farmers sold Tur at a price nearer to the average sales price. Farmers were selling their produce in the range of Rs +100 to -100 of the average sales price in the market.

The hypothesis suggested that there is a positive relationship between the quantity of sale of Tur and the production of the product. The result supported the hypothesis; it was found that the sale of Tur is positively related to the production of the produce. It shows that the sale of Tur can increase of 0.985 quintal for the production of the crop. The result showed that 99.8% of the variation in sale of the produce could be explained by the production of the Tur. Also notable is the fact that farmers sell major portion of produce almost immediately after harvesting. This could be due to immediate need for cash or lack of storage facility. Hence an increase in production will see higher quantity of Tur sold.

The hypothesis is suggested that the sale of Tur is positively related to the price per quintal. The assumption was made because price per quintal influences the sale of the product. The result is not supported. It was found that the sale of Tur is positively related to the price per quintal. The result showed that 0.08% of the variation in sale of the produce could be explained by the price fixed per quintal. The other factors like non price factors do influence the sale of product.

It is observed that sales/marketing of Redgram is positively related to the production. This shows that there is a good demand for Redgram. Considering the good market demand of Tur farmers are recommended to grow more quantity of Redgram for more returns.

5.1.4 Cultivation and marketing costs:

Cultivation costs of redgram consisted of the expenditures on land preparation, FYM, seeds and sowing, fertilizers, Plant Protection Chemicals and
their application, weeding and hoeing, harvesting, threshing, winnowing and bagging.

The money spent on purchase and application of seeds, fertilizers and plant protection chemicals constituted a major part of the cultivation costs followed by harvesting, threshing and winnowing and bagging operations (table 4.9).

The other costs like land revenue, purchase of different kinds of equipments for field operations etc. added to the costs of the production of redgram.

Apart from cultivation costs, farmers spent money for marketing/sales of redgram. The marketing costs incurred by farmers consisted of the cost of transportation, loading/unloading, cleaning, weighment, gunny bags, commission of market intermediaries and personal expenses. Among these the costs of transportation and the commission of market intermediaries formed a major part.

The commission of market intermediaries amounted to 46% of the marketing costs incurred by farmers.

Farmers sold Tur at an average price of Rs3108 per quintal. The cultivation costs and marketing costs incurred were Rs1788 and Rs220 per quintal respectively, the gross returns of the farmer was about Rs1100 per quintal.

5.1.5 Constraints in the cultivation of Tur

Farmers faced many problems in the cultivation and marketing of redgram. The major problems were plant diseases, pests, availability and cost of laborers and marketing of redgram.

At different stages of its growth redgram crop is affected by various kinds of diseases and pests. For the control of plant diseases and pests farmers have to purchase plant protection chemicals and arrange laborers for the application of these. Farmers also need laborers for different field operations. All these arrangements have to be at proper time. So farmers have to arrange the required amount of money for the purchase of materials and payments of laborers. Farmers found it very difficult and put lots of efforts for making these arrangements.
For the marketing of redgram farmers put lots of efforts for getting good price for their produce. They spend considerable amount of money and put personal efforts for selling their produce at profitable price. Most of the farmers complained about the low returns.

5.2 Market Intermediaries:

From the producer/farmer the Redgram reached the end user through different channels/stages. In this process the producer sold Redgram to intermediaries and the processing units purchased Redgram from market intermediaries. The processing units or Dal millers after processing operations made it available to the end users in the form of Dal.

The market intermediaries acted between the producer/seller – farmers and purchaser – processing unit.

The market intermediaries/middlemen purchased redgram from the farmers. They stored it with them for sales at appropriate time. During this period they provided different facilities to farmers like free storage space, gunny bags and credit. Credit facility was provided by all middlemen, but this facility was based on certain terms and conditions. Middlemen provided credit to farmers on the condition that they should bring / sell full quantity of Tur to them only. The other terms were- the credit was provided for a maximum period of six months, the credit would be recovered after the sales of the quantity of Tur stored by farmers, and interest had to be paid till the credit amount was recovered. About 2% to 2.5% interest rate was charged on the credit amount.

In the activities of purchasing, storage and sales of redgram the market intermediaries earned profit in the form of commission.

Apart from the commission they were getting money from the farmers if they made arrangements for transportation, loading / unloading, weighment and cleaning facilities of redgram for them. They were also getting the interest on the credit (facility) provided to farmers.

The market intermediaries purchased redgram from farmers at Rs.3108 per quintal and sold it to processing units at Rs.3336 per quintal. The gross profit of the agents was Rs.228 per quintal.
5.3 Processing units / Dal millers:

Gulbarga district is the largest producer of redgram in the country. Redgram being the main raw material of Tur Dal processing units this district is attracting Dal millers to establish their processing units here. Many small and large scale processing units are situated in Gulbarga district.

The processing units purchased redgram and added value to it by converting it into Dal through various processing operations.

5.3.1 Establishment period and installed capacity of processing units

Both small and large scale processing units were situated in Gulbarga district and majority of them were large scale units. The easy, regular and adequate availability of the redgram in the district was the factor behind the establishment of many large scale processing units.

The rate of the number of newly establishing processing units showed an upward growth (table 4.19).

In Gulbarga district the processing units are getting the required quantity of Redgram at fair prices from nearby market places with convenient transportation facilities. So the business of Tur processing provides good prospects for the entrepreneurs to take up this business in Gulbarga district.

5.3.2 Employment of workers/laborers

The redgram processing units provided employment to many people including men and women. Processing units employed both men and women. On an average each processing unit was providing employment to 11 people of which 8 were men and 3 were women (table 4.20)

In the Redgram processing units some works are laborious and some are light and less laborious. The heavy and laborious works require more physical strength and can be performed conveniently by men. The light and less laborious works can be performed conveniently and more efficiently by women workers. Therefore both men and women workers were employed by the processing units.
5.3.3 Procurement of redgram (costs and constraints)

Processing units were procuring redgram through market intermediaries/middlemen. It was observed that none of the processing units procured redgram directly from the producers/farmers.

It was difficult for Dal millers to go from place to place and farmer to farmer for procuring the required quantity of redgram. The market intermediaries provided the required quantity of redgram at one place. So the processing units purchased redgram through the market intermediaries. For this they incurred some extra cost.

In the process of procurement of redgram the processing units incurred expenses on transportation, loading/unloading, gunny bags, market fees/charges and commission of the middlemen. Apart from the cost/price of redgram transportation charges and commission of middlemen constituted a major part of procurement cost.

Processing units were able to procure adequate quantities of redgram on regular basis at fair prices from the nearby market places with adequate transportation facilities.

(Tables 4.22, 4.23, 4.24, 4.25)

Problems in procurement of Redgram

Processing units faced various problems in the procurement of redgram. The major procurement problems were:

- Availability of redgram
- Availability of laborers in the market places
- Transportation facilities
- Market distance
- Prices of redgram in the markets
- Market fees / charges
Processing units were facing one or more of the above problems. It is evident from the study that the major problems the processing units faced were finding the required number of laborers at the market places, transportation facilities and market fees/charges/commissions.

Major part of the respondents opined that market fees/charges/commissions were high.

5.3.4 Processing Returns and Processing Constraints

Processing units earn profits by adding value to redgram by performing different processing operations on redgram and converting it into Dal.

The returns of processing included the main product-Dal, byproducts-chunni and husk. All the products of processing were sold. A small portion of redgram was lost due to wastages in the processing operations (table 4.26).

Constraints/problems in processing Redgram

Due to the lack of recognition of the potential of this business processing units had not received the necessary scientific, technological and government support.

There were no processing units in the district with completely modernized/automated facilities for processing operations. They depended largely on the human labor to carry out processing operations. The processing units were facing the problems like the lack of necessary infrastructure facilities and availability of resources. The processing units situated in the district were facing one or more of the following constraints / problems.

- Power
- Fuel
- Storage
- Laborers
- Finance

(Tables 4.27, 4.28, 4.29, 4.30)
5.4. Marketing of Redgram

Redgram reached the consumers/end users in the form of Dal, through the producer/farmer, market intermediaries/middleman and processing units/Dal mills. Following marketing channel was identified in the study area in marketing of Tur dal. This channel was the important channel in sale of Tur for the farmers in the study area because majority of the produce was marketed through this channel.

A recognized marketing channel was not found in the district for marketing of Redgram. Following marketing channel was found to be followed widely by the farmers, market intermediaries and processing units.

The producers/farmers sold redgram to the wholesale agents through village merchants. The processing units purchase redgram from/through the wholesale agents/middlemen.

After the harvesting operations farmers stored redgram with them for certain period of time as the sales or purchase activities did not take place directly on the field. They sold the stored redgram at appropriate time or at required time. For selling their produce farmers had to spend money and put efforts for getting good price. In the process of disposal of their produce farmers had to search for a proper market intermediary and then make arrangements for cleaning, packing, weighment, loading/unloading and transportation. Farmers spent money for all these activities and also put efforts for making the arrangements.

It is found that in the marketing process farmers spent about 7% (Rs.220) of the final sales price (Rs.3108) of redgram and the commission of intermediaries was about 41% (Rs.90) of the marketing costs (Table 4.10)
The wholesale agents were storing the produce of Farmers with them and were making payments to them after sales and in the meantime they were providing free storage facility to farmers. During this period the agents provided credit facility to farmers. Credit and other facilities were provided by all agents. For the credit provided the agents were getting the interest in addition to that they put condition that in future the farmers had to sell Tur to them only. At appropriate time the agents sold the stored quantities of redgram to the processing units. The processing units spent Rs.3676 per quintal to purchase redgram from agents.

In the marketing process of redgram the market intermediaries extracted commission both from the producer-seller (farmers) and purchaser – Dal mills/processing units.

Farmers sold their produce at the price of Rs.3108 and the approximate cost incurred by farmers for the cultivation and marketing of redgram was Rs.1788 and Rs.220 per quintal respectively. The gross return of the farmers was Rs.1100 per quintal of redgram.

The agents purchased redgram from farmers at Rs.3108 per quintal and sold it to processing units at Rs.3336 per quintal. The gross return of the agents was Rs.228 per quintal.

Processing units procured redgram at Rs.3676 per quintal and sold the processed redgram at Rs.4047 per quintal. The gross return of processing units was Rs.365 per quintal of Redgram.

For marketing of Redgram there is a need to find a convenient, cost effective and recognized marketing channel which should facilitate the farmers to easily sell their produce of redgram at good prices and facilitate the processing units to purchase the required quantity of redgram at fair prices.

An alternative to the existing channel was proposed/recommended where the market intermediaries are replaced by the co-operative societies or Government agencies. The marketing efficiency of the existing channel was found to be 2.49 whereas the marketing efficiency of the proposed channel is 4.11 and the marketing margins would be less than to the existing channel which would result in better efficiency of marketing of Tur compared to the existing channel.
Major problems and prospects in cultivation, Processing and marketing of Redgram

Problems:

1. The increasing cultivation cost and fluctuation in prices of red gram, and the indifferent attitude of the Union and the State governments towards the problems of farmers have become a cause for concern.

2. The problems faced by red gram farmers in the region differ from year to year. The vagaries of weather and the dreaded "Helicoverpa" pest are common. The fall in prices of red gram at the time of harvest and new arrivals in the market have affected the farmers.

3. Although red gram growers constitute a sizeable chunk of the population of the region, lack of unity among them and favourable situation in other States where the crop is grown on a large scale have prevented them from launching a struggle for remunerative prices for the produce. Farmers in North India are happy with the current prices of red gram as the cultivation cost is low and the yield they get compared to their counterparts in the Gulbarga region is high. Moreover, there is no demand from red gram growers all over the country to increase the minimum support price (MSP) fixed by the Union Government.

4. A major portion of red gram production is confined to Uttar Pradesh, Madhya Pradesh, and other States in North India. They contribute nearly 60 per cent of the country's total production. The cultivation methods followed by farmers of the Gulbarga region and those in North India differ. The delay in the onset of monsoon in North India this season helped red gram growers there to take up sowing while their counterparts in the Gulbarga region began sowing in July and completed it by August. Usually, the "Helicoverpa" pest attacks the red gram crop in the flowering stage in October-November and the cloudy climate during these months helps the pest thrive on it.

5. Besides, red gram is being imported from Burma, Thailand, Tanzania, and Kenya, which is available at a cheaper rate. This also contributed to the fall in prices of the produce. Unless the Government increases the minimum support price for red gram and imposes heavy import duty, the future appears to be bleak for farmers in the Gulbarga region.
6. Distress sale: Due to financial crisis, farmers are forced to sell their produce just after harvesting. During this period, farmers get lower price due to glut in the market. The producers cannot withhold or store their produce for some period to get better price since the farmers have to meet urgent requirement of money.

7. Unstable price: Generally, the price of Red gram prevails low in the early post harvest period due to more arrivals in the market and later on prices go up. Due to this unstable price, the farmers get lesser price.

8. Lack of marketing information: Due to lack of information regarding arrivals and prices prevailing in other markets, producers market the Red gram in the village and nearby market at lower price, which can be avoided.

9. Adoption of standards: Farmers usually do not grade their produce, as a result they do not get remunerative price in the market.

10. Inadequate storage facilities: Due to inadequate storage facilities in rural areas, farmers lose a substantial quantity of their produce by way of drayage, spoilage, rodents etc. Farmers are also forced to sell their produce just after harvest due to lack of storage facilities. Hence, rural godowns are must to avoid the sale immediately after the harvest.

11. Transportation facilities at producers’ level: Due to inadequate transportation facilities at village level, producers sell their Red gram to traders directly from their farm or in the village, which offer them lesser price than prevailing in the markets.

12. Training to producers: The training to producers regarding marketing of their produce is essential. It improves their skill for better marketing of their produce.

13. Infrastructure facilities: Due to inadequate infrastructure facilities with producers, traders and at market level, the marketing of Red gram is affected adversely.

14. Malpractices in markets: There are many malpractices prevailing in markets like excess weighment, delay in payment, large quantity of samples from the produce, different kinds of arbitrary deductions for religious and charitable purposes from producers, high commission charges, delay in weighing, loading, unloading and weighing charges from producers.
15. **Superfluous middlemen**: The existence of a long chain of middlemen reduces the share of the consumer’s price received by the producer-seller.

**Prospects**:

1. Freshly sprouted seed eaten raw or cooked when the sprouts are about 2 cm long. Sprouting improves the nutritional composition of the seed, and reduces the flatulence suffered by consumers.
2. Temple made with a combination of pigeonpea and soyabean. Tempe is traditional Indonesian food that is prepared by fermenting soaked, dehulled and cooked legume seed with a Rhizopus mould.
3. Pigeonpea sauce (Ketchup) is a replacement product for Soya sauce in Indonesia. It is made by fermenting pigeonpea with Aspergillus oryzae, A. Niger, and Rhizopus sp.
4. Canned whole dried seed is a popular product in parts of the Caribbean as it reduces the amount of fuel housewives need to cook pigeonpea. The canning process involves soaking the seed for 24 hours and then pressure – cooking it in brine in the can. For this product the processors normally use seed with white seed coat.
5. Pigeonpea flour can be used after mixing it with wheat or rice flour, to improve the protein level of baked products. Tests in Indonesia with rice: pigeonpea flour has shown that up to 30% pigeonpea is acceptable to consumers mainly because the texture is improved although the colour, taste, flavor and appearance are not so good as pure rice flour when made in to cookies(Damardjati, 1989).
6. In southern and eastern Africa, pigeonpea constitutes an important component of dry land production systems where its dry, whole seeds are used for making soup mixed with or without meat and the green, mature seeds as a vegetable. Pigeonpea is a drought tolerant plant, and its seeds and forage have over 20% protein. Experience in several Asian and other African countries have shown the importance of pigeonpea in sustaining rain-fed and semi-arid cropping systems. In South Africa, only 10% of the total arable area receives an annual precipitation of more than 750 mm. Maize, the major cereal produced in South Africa is the staple
food of the majority of its population. Although maize production is technically advanced among commercial farmers, the semi-arid environment and marginal soils found in areas where disadvantaged smallholder farmers operate, results in frequent maize crop failure. The crop failure coupled with nutritional inadequacies of the maize based diet for the rural households result in poverty and malnutrition. Under these circumstances pigeonpea could find a place to enhance sustainability and profitability of the drought-prone cropping systems and to alleviate rural poverty.

7. The nutritional quality of pigeonpea in terms of its chemical constituents, amino acids, and digestibility has received increasing attention in the past. Although there appears to be a small variation in chemical composition among cultivars, few efforts have been made to show the effect of environment on such constituents. More efforts are needed to study the effects of genotype and environment, and their interaction on the chemical constituents of pigeonpea.

8. Pigeonpea is consumed in various food forms and thus receives various types of treatments for such food preparations. Knowledge of the nutritional changes that occur due to various types of heat and other treatments; e.g., fermentation and germination would be very useful.

9. As animal feed, green plants for forage, leaves, pod walls, and the soft sticks of mature plants, grains, and by-products of dhal mills are commonly used. While the use of pigeonpea meal in monogastric animal diets seems to be technically feasible, its use will ultimately depend on the price of pigeonpea in relation to alternative proteins and energy sources.

10. Presently agriculture is heavily focused on use chemical pesticides. This is not only resulting in high cost of cultivation to the farmers but also in extinction of predatory insects resulting into several ecological problems. The food that we are consuming is getting loaded with pesticide residue. One of the proven and viable alternatives in addressing this problem is practicing Non Pesticidal Management (NPM) methods. This method primarily focuses on replacing external inputs with locally available resources. It utilizes farmer’s knowledge and skills apart from traditional pest management practices.
SUGGESTIONS

Considering the entire research work and the conclusions drawn, the researcher would like to put forth the following suggestions.

1. In order to generate appropriate, profitable, environmentally safe, sustainable and cost effective technology to reduce the damage of pests and also to augment productivity, eco-friendly methods of pest management on the basis of integrated pest management principles has to be assessed in farmers’ field. Farmers have to train on method of preparation of neem solution and spraying. As the cost of chemical insecticide is not affordable to all categories of farmers and they have to be motivated to collect the neem seeds, as neem plants are abundantly found in this area and have to be trained to prepare 5% Neem Seed Kernel Extract (NSKE) solution. Through this method they can get higher yield as well as protect the environment and ecology.

2. The use of the Nucleus Polio Hydel (NPV) virus for management of pests in pulse crops is a blessing for farmers as pests had developed resistance to conventional chemical pesticides. "Maruti" variety of Red Gram which was introduced in 1985 after successful laboratory and field trials is a successful variety. It continued to remain a popular variety among farmers as it was resilient to the problem of Wilt. However there is a problem of Sterile Mosaic Disease (SMD) in Red Gram noticed in the district in the past few years. There is a need to come out with an SMD-resistant variety.

3. Pigeon pea is mostly grown in dry lands as subsistence crop. Fertilizers are rarely applied to this crop. Availability of soil testing facilities inoculation with Rhizobium culture and application of phosphate and potash fertilizers need to be promoted in order to increase the production. Short duration intercrops like sorghum, green gram, black, Soya bean etc need to be popularized in Pigeon pea cropping system to optimize the land utilization and as a security to the dry land farmer in case of pigeon pea crop failure.

4. Organizing both on campus and off campus training programmes by agriculture department and Krishi Vignyan Kendra’s (KVK) for the practicing farmers, farm women and rural youth on skills like soil-conservation, improved production
technology of various agricultural crops, fertilizer management, plant protection, post harvest technology, value addition to the produce, vermiculture, nutrition & health and other income generating activities will help the farming community. Frontline demonstrations (FLD’s) has to be conducted under real farm situations, the productivity potentials and profitability of the latest crop production technologies, improved variety / hybrid/ seed treatment/ fertilizer / plant protection etc. recommended for different agro – ecological and crop growing situations . Apart from it other extension activities are also mandatory to reach more numbers of beneficiaries.

5. Non-availability of quality seeds in adequate quantity is one of the major constraints in pigeonpea production. Increasing seed replacement rate, production and distribution of quality Certified seed, establishment of seed bank to ensure availability of seeds at the time of natural calamities, involving farmers’ organization, NGOs and other private organizations with incentive package for seed production, promotion of Seed Village Scheme, Training of agricultural graduates, progressive farmers and seed societies for quality seed production are essential.

6. Transfer of improved pulse production technologies remains the most neglected component and consequently the benefit of improved varieties and production technology could not be harnessed. Aggressive transfer of production technologies through Frontline demonstrations and Block demonstrations involving SDA, KVKs, NGOs, SAUs and private sectors.

7. Poor drainage/water stagnation during rainy season causes heavy losses to pigeonpea on account of low plant stand and increased incidence of plant diseases. Ridge planting has been found effective in ensuring optimal plant stand and consequently higher yield.

8. Development and supply of short duration varieties to escape the Pod borer incidence, development of High yielding, tolerant varieties to drought and water logging in flood prone areas, development of resistant varieties to pod borer, wilt and Sterility Mosaic disease, research on Integrated Pest Management, development of storage structures and control of storage pests are the thrust areas.
9. Usually the prices of Redgram rule above the minimum support price (MSP) declared by Government of India. The benefits of these prices are taken up by the trading lobby whereas the same processed Redgram products becomes very costly and beyond the reach of the same producer. To minimize the price gap in the chain of producer to consumer it is important to have the intervention of the Government of India through the active role of some institutional buyer like National Agricultural Cooperative Marketing Federation of India (NAFED).

10. Pigeonpea is traditionally processed into consumable forms by methods which can be broadly divided into two categories; primary processing or dehulling to form dhal and secondary processing that involves three major treatments – cooking, germination and fermentation. Dehulling pigeonpea reduces its cooking time and improves palatability or digestibility. Dehulling usually removes the germ along with its husk, thus important dietary nutrients such as protein, calcium, iron and zinc are lost. Efforts should be made to develop dehulling methods that reduce these nutritional losses.

11. Redgram suffer heavy losses due to stored grain pests. The quality of seeds stored in the traditional storage structures also deteriorates. Further, there are no small processing units to convert pulse grains into Dal and other byproducts. This compels the growers to dispose of their produce immediately after harvest at low price. Low cost Dal mill and metal storage bins should be make available to farmers.

12. Government credit is not easily and timely available and outreach of most public micro-finance institutions is limited, resulting in the farmers to depend on private money lenders/ input dealers with exorbitant interest rates. Need to extend liberal and timely credit facilities to pigeon pea growers.

13. The most significant characteristic of the pigeonpea market in India is the exclusive reliance on a single consumer product, dhal and the absence of market penetration by any innovative product. The economic conditions in India may explain the absence of product innovation in some part. Innovating entrepreneurs must be stimulated by profit opportunities. To reap the benefits from product innovation an entrepreneur must establish a product with a brand name.
recognizable on retailer’s shelves and the product must be promoted through advertising.

14. For marketing of Redgram there is a need to find a convenient, cost effective and recognized marketing channel which should facilitate the farmers to easily sell their produce of redgram at good prices and facilitate the processing units to purchase the required quantity of redgram at fair prices. An alternative to the existing channel was proposed/recommended where the market intermediaries are replaced by the co-operative societies or Government agencies. The marketing efficiency of the existing channel was found to be 2.49 whereas the marketing efficiency of the proposed channel is 4.11 and the marketing margins would be less than to the existing channel which would result in better efficiency of marketing of Tur compared to the existing channel.

15. This concept of direct marketing which involves marketing of produce i.e. Redgram by the farmer directly to the consumers/millers without any middlemen has to be popularized. Direct marketing enables producers and millers and other bulk buyers to economize on transportation cost and improve price realization. It also provides incentive to large scale marketing companies i.e. millers and exporters to purchase directly from producing areas. Direct marketing by farmers to the consumers has been experimented in the country through Apni Mandis in Punjab and Haryana. The concept with certain improvements has been popularized in Andhra Pradesh through Ryth Bazars. At present, these markets are being run at the expense of the state exchequer, as a promotional measure, to encourage marketing by small and marginal producers without the help of the middlemen. In these markets, mainly fruits and vegetables are marketed along with other commodities at present.

16. Though the Government has set up the Redgram Development Board (RGDB) at Gulbarga but its functioning is limited. It should be popularized and should be strengthened with more financial capabilities to buy the farmers produce more in quantity and should act as an alternative channel to the existing system of marketing channel. As there is no much involvement of Government agency in the processing of Tur, It is suggested that Government should come with the
proposed Dall mill which will run by the Government and will give a befitting completion to the private Dall mills.

17. The year 2009-10 has been one of the worst years for Karnataka’s tur growers. The farmers were first hit by the delay in monsoons and later by excess rains in September. As a result of this, the area under tur dal crop came down 39 per cent to 350,000 hectares in the state. This means a production loss of close to 50 per cent of the state’s total output or 1.6 million tonnes. Karnataka accounts for close to 20 per cent of the national area under tur cultivation. For the present year the sowing was done in 580,000 hectares in the districts of Gulbarga, Bidar, Bijapur, Bagalkot and Raichur among others. The drop in the prices of tur is not linked to production. It is mainly because of the nexus between the middlemen and traders, the prices have come down. There is an urgent need for the government to intervene and stabilize the prices, so that both farmers and the consumer will benefit.