CHAPTER 6

SUMMARY OF FINDINGS AND CONCLUSION

Findings of the study are-

1. The annual change in production and productivity of banana per hectare of land is much lower in Assam and Meghalaya than that of Indian scenario. Its productivity per hectare in these states has been found very low.

2. Operational holdings for banana cultivation are prominently allocated in intermixed cropping in Assam and in multiple cropping in Meghalaya. Taken together in both the states these two cropping patterns share nearly 49 per cent and 38 per cent while mono cropping shares 13 per cent of the total land allocated in banana cultivation.

3. High intensity of horticultural crops planted along with various banana species under intermixed cropping has accounted for the lower yield of both small and large farmers compared to those of multiple cropping and mono cropping patterns. Moreover, intermixed cropping is found restrictive in the introduction of improved technique of production. The findings accord with our hypothesis that growing of different varieties of banana has an adverse effect on yield.
4. **Mono cropping** of banana has been found highly productive compared to those under intermixed cropping and multiple cropping.

5. In regards to costs incurred for productive factors, there is a difference according to farm size. The highest amount of expenditure both by small and large farmers is incurred on *human labour* followed by *fertilizers* in case of large farmers and miscellaneous expenditure in case of small farmers.

6. From cost and benefit analysis taken together for the small and the large farmers it is found that banana cultivation provides a benefit of Rs. 4.17 per hectare over and above an investment of a rupee.

7. OLS estimates show that expenditure on *labour, planting treatment* and *fertilizers* are significantly effective on productivity of banana. *Suckers* and *miscellaneous expenditure* are insignificant and are found excessively being used.

8. **Proximity** to the markets from the blocks of Goalpara district of Assam results a higher *marketed surplus* than that of East Garo Hills of Meghalaya.

9. As a cash crop a small part of banana is consumed by farmers at household level that results a *marketed surplus* amounting to nearly 95 per cent of the total output.
10. More than 90 per cent of the marketed surplus of banana is dispatched to the **national market** and the rest to the **local market**.

11. The price spread is prominently constituted by **margins** to the **intermediaries**, costs incurred for **losses/spoilages** and **storages**, thereby our second hypothesis is found rejected.

12. Absence of **improved connectivity, carriage and storage facilities** along with the presence of large number of **market functionaries** result in the higher price spread.

13. Marketing inefficiency is revealed in terms of marketing **costs and margins** and **price spread** in banana marketing. Due to marketing inefficiency farmers are found to receive less than fifty per cent of the **consumers’ actual price**.

14. Banana cultivation lacks **commercialization** due to absence of innovative facilities for **value addition** to raw or ripe banana and the residues of banana plantation in the post harvest period.

15. There are some exogenous factors responsible for the incompetency of banana marketing.

   I. The wholesale trading centers have no adequate lodging facilities for traders coming from different parts of the country.

   II. Except for a branch of Assam Gramin Vikash Bank, there is absence of any nationalized bank at Darrangiri. Due to lack of banking
facilities the traders face the problem of money transaction relating to banana trading.

III. Most of the farmers from tribal community are found hesitant to sell the crop in the market places. They are less willing to face the hassles of marketing.

Conclusion

Growing of different varieties of banana along with other horticultural crops is inherent to the cultivation practices of the farmers in Goalpara and east Garo Hills districts. Prevailing cropping patterns restricting the use of improved agricultural implements resulted in non adoption of the recommended method of banana cultivation. It results in a very low yield in banana cultivation. Although there is a deviation from the improved technique of production, banana growers are found to receive nearly four times benefit over and above a unit investment in banana farming. It indicates that there is immense scope to increase productivity provided adoption of improved technique of production. The findings indicate that there is a need of improved technique of production equipped with major agricultural implements (tractor, power tiller), irrigation, fertilizers and financial supports for an increasing productivity. With a very poor status of utilization of major agricultural implements, irrigation and financial
supports, the OLS estimates show that the expenditure on suckers and miscellaneous items should be curtailed for further rise in yield. Contrarily, increase in expenditure on labour, fertilizers and planting treatment are suggestible for an increasing productivity. There is a need to concentrate the improved technique of production particularly to the mono cropping pattern as it is relatively more productive than any other cropping patterns. Further the findings indicate that ‘malbhog’ species is suggestible under this cropping pattern for commercialized farming in the area.

As a seasonal and perishable crop banana marketing needs well equipped marketing facilities. Seasonal arrival of marketed surplus has emerged two important wholesale markets- Darrangiri and Dhupdhara in Goalpara district of Assam. The marketing system in the area lacks in proper marketing infrastructure such as improved transportation facilities, cold/ conditioned storages and processing units. However, in an undeveloped marketing structure about 95 per cent of total production of banana produced by the farmers of the villages in and around these wholesale markets is disposed through important marketing channels- national and local. Insufficiency in marketing infrastructure in national channel disposing the major part of banana resulted higher marketing costs and margins, thereby a higher price spread. The existence of higher price spread resulted in the smaller share of producers in consumers’ actual
price. In other word this results inefficiency in the marketing of banana. The findings indicate development of marketing facilities for better performance for raising income levels of the farmers and the levels of satisfaction of the consumers.

The prevalence of traditional practice in production front and the inefficient marketing system of banana imply the need of policy interventions in farm level, post-harvest and marketing and also in, laboratory levels. The prevalence of small holdings leaves no alternatives except to raise yield of banana per unit of land in production front in one hand and to improve the post harvest handling and marketing facilities on the other to explore the potential of banana sector. Policy measures from one or two angles would neither be feasible nor be fruitful; rather concentrated efforts from the part of the governments, concerning agencies, policy makers, researchers, financial institutions, cultivators and different NGOs are urgently called for. Mechanization of cultivation practice and improvement of marketing facilities are need of hour to develop and to raise yield and dispose the banana efficiently.

The development strategies to be pursued for improving yield of banana are given below.
1. The NHM must be diluted to "Area specific" policy interventions and a "Banana Mission" (1) must be initiated because the study region is found viable for this horticultural fruit. Area specific implementation of such initiatives must be emphasized for realizing the economic objectives. For proper implementation of 'area specific' scheme, strategic actions must be adopted. Intensive disseminations about the opportunities, improved technique of production available so far in different regions and the outcomes of recent research works for raising productivity are to be displayed in the farm level. Farmers are to be made aware of the economic benefits of adopting improved technique of production and the opportunities for adding values not only to the harvested fruits but also for treating the post harvest wastes and residues. Besides, the opportunities of processing of different parts of banana plants to alkali, washing powder, paper-boards etc. are to be disseminated so as to pave the way for shifting the traditional production process to a commercialized one. The traditional practice of cultivation must shift, specially, from the intermixed cropping and multiple cropping to mono-cropping of banana in specific area of farmers' garden. Such shift would facilitate the use of scientific planting system and provide a higher yield of banana.

2. Financial constraints are mostly responsible for the stagnated situation of banana cultivation. Therefore, utmost care must be taken to
provide **access to credit** as it is very crucial, specially, for small scale farmers. Despite the provisions of fund-flows from different agencies, the small farmers usually have less capability for receiving and using the funds properly that has possibility to distort the goals of farmers and bring a failure to recover the same from the part of the supporters. For avoiding such adversities, **field level specification** must be pursued and **farmers’ group** can be formed. **Group liabilities** are to be conferred to the **farmers’ group** and pursued by the agencies concerned. The traditional system in providing **financial assistance** via a troublesome and long way of paper works must be given up. Such strategy can reduce the possibility of **deprivation** of the **small farmers’ accessibility** to finances. Small farmers must receive special emphasis because they are found to play crucial role for creating marketable surplus. Such initiatives, specially, for small farmers not only help to eradicate **financial hardships** but also can help to overcome the individual **risk-aversion** of the small holders and compensate the **contract farming system** for large scale production that is prevailing in different parts of the country today. The strategies under **government’s mini-mission for integrated development of horticulture** must be implemented on “**area based**” and “**banana based**” because NHB has identified Goalpara district as one of the thrust districts for banana cultivation. On the basis of specification, **special package** of fund can be
provided for establishing **processing units** of banana and different parts of the plant. Provisions for using fallow and de-forested land can be availed for **area expansion** of this lucrative crop of horticulture which has an added advantage to conserve **soil types** and **environment**.

3. Governments’ initiatives are called for providing **infrastructural facilities** to improve **production environment**. The package should cover to improve **all-weather road connectivity**, **irrigation facilities**, **electricity**, improved **suckers**, **fertilizers**, **planting materials** etc. to this potent area for banana farming.

4. Improvement of **irrigation facilities** must get priority to facilitate mechanization in banana cultivation. The area has no much scope for major or minor irrigation flow projects, specially, to make possible to irrigate plant crops particularly, banana which is usually planted in high slope land. The feasible **micro-irrigation facilities** to benefit the small farmers are to be provided. Either **lift system irrigation** from natural pools, streams and rivulets or shallows in individual farm level can be initiated. This can be performed under the small farmers’ group liability to reduce **cost constraints**. Government’s micro-irrigation scheme consisting of **drip** and **sprinkler irrigation** can be implemented in the area.

5. As regards to improvement of **suckers** and **planting materials**, governments’ initiatives for **research** and **laboratory** works must be
brought down to area specific field level. Rearing of improved suckers and
the use of planting materials must be demonstrated at field level. This
would facilitate, again, to avoid risk-aversion of the farmers to adopt the
improved suckers and planting materials at their threshold. Provisions for
crop insurance for this specific product would further reduce the farmers’
risk-aversion. Such initiatives must cover innovative strategies, especially
to the hybridization of different ethnic varieties like ‘Athiakol’ and
‘Chenichompa’ that possess more adaptability, and resistance to pests and
diseases. Long term research based ventures are to be initiated exclusively
in field level to establish demonstrative-experimental nurseries to rear
tissue culture and develop local varieties of banana for higher
productivity.

Since marketed surplus depends on the proper disposal of the
perishable crop so the problem of post harvest handling and marketing of
banana needs special emphasis. One of the prime objectives of good market
arrangement is to improve the farmers’ share in the consumers’ price.
This improvement may be accomplished mainly in two ways- i) the costs of
marketing may be reduced so as to increase the net amount of farmers’
share in consumers’ price, ii) the market for banana can be further
expanded and developed in order to increase gross consumers’
expenditure, thereby return higher income, even, in consumers fair prices.
The objectives of good banana marketing can only be achieved by enhancing the marketing efficiency. For enhancing efficiency in banana marketing improvement of the following marketing facilities are called for-

1. Unlike other manufacturing products banana advertising would bear no effective results for merchandise. Improvement in merchandising practices bears possibilities for raising efficiency in marketing of banana. The specialty of the banana varieties produced in the area may be displayed by arranging banana festival comprising of both ethnic and exotic varieties. Such promotional activity may influence to raise the consumer’s expenditure for banana.

2. As a highly perishable item, it needs marketing infrastructure like road connectivity, cold storages, cold carriages improved packing system and processing units. The marketing infrastructure must be improved from the cluster villages of banana cultivation to the terminal markets under the area specific package. Improvement of road connectivity to and fro banana producing villages and primary terminal markets.

3. Establishment of cold chain comprised of cold carriages, storages throughout the movement from farmers to the main trading centers – Darrangiri and Dhupdhara in Goalpara district. The “hub and spoke” (2)
format of modern terminal market system under the centrally sponsored scheme must bring down to these semi-urban centers which emerged as central focus of banana.

4. Since the price spread in national market is found high establishment of processing unit in the area is called for.

5. Introduction of improved **handling equipments**, practice of **timely picking**, improved **packing system** etc. are to be facilitated for reducing marketing losses.

6. The **Regulated Marketing Boards** and **NGOs** must come forward to create **specialized labour force** for proper **post-harvest handling practices** to channelize banana. Such performance would facilitate expansion of a **marketing service sector** in the area.

7. **Demonstration of processing of fruits, processing of post-harvest wastes** by ancillary industries would bear impacts for establishing such units in the locality.

8. Improvement of **financial facilities** for **marketing operations** in the area by setting up the **micro financial institutions** by governments or by benevolent NGOs.
6.1 Limitations and Scope of the Study

_limitations of the study_

In spite of all possible efforts to make the study more comprehensive and scientific, there may have certain weaknesses and shortfalls. Being a descriptive and analytical approach, the study investigates to make a conceptual and theoretical framework about the problem of production and marketing on the basis of empirical studies. The paucity of research works and secondary data for such specific product of horticulture bear the possibility of unearthing many realities. Because there exists a diversity in respect to climate, geophysical situations, intensity and mode of cultivation to small plots in backyard or kitchen gardens and even in large scales of production, uses of the crop - as fruit, vegetables and processing materials, etc. Existence of such diversities gives rise to a plethora of aspects to be addressed. Despite the utmost attention to cover all the aspects it has to give up many of them.

One of the most important drawbacks of the present study is that the issue has inducted to a specific geographical area comprising of only four CD Blocks of Goalpara and East Garo Hills district. This particular area is socially and economically backward that gives rise to the paucity of formal statistical data pertaining to production and marketing. Such paucity of data
may cause ambiguity about the information provided by the farmers and by
the official sources. In respect to secondary information, the study was
unable to cover the period prior to 1998 because the formations of the
District Regulated Marketing Boards in these districts are recent origin
(Goalpara in 1998).

As the study mostly relies on sample survey technique for gathering
primary data, the technique itself is not free from questions. Besides,
qualitative approaches for gathering information about marketing
performances are adopted that have the possibility of incompleteness about
the realities in the field level. Non-responsiveness about the information
and hiding the truth by the sample farmers and market functionaries may
also affect the results of the findings of the study. Despite the above
limitations the study carefully uses different statistical tools and qualitative
evaluation, and it is believed that the results of the study are at best near to
the ground realities.

**Scope of the study**

The thesis on “Production and Marketing of Banana: A Case Study of
East Garo Hills and Goalpara District” tries to explore all the issues
pertaining to general aspects and region-based problems. In no way, any
study can be regarded as complete and if it continues to research, many
unfolded sides may come to lime light. This study has left such unexplored sides that remain for further research works.

Time limiting factors compel to leave identifying more potent areas for banana that restrict to analyze extensively the differentiated cultivation practices existing in diverse situations in different key producing areas. A comparative study in diverse geo-physical conditions bears prospects for policy perspectives. The growth of banana cultivation is associated with the growth of horticulture as well as agriculture. The agricultural diversification, crop and diet diversification could be measured in favour of horticulture as well as banana. Such measures would explore the ground realities about the emergence of growing banana cultivation. The factors associated with diversification might have relationship with a plethora of other factors but the present study leaves these aspects for further research work.

The present thesis has left the social cultural indicators for production and marketing of banana. The social cultural pattern of tribal community might have impacts on such specific product of horticulture. Though few aspects have been cited in this thesis, numerous factors remain unexplored that are associated with social and cultural pursuits. Scientific and laboratory research works for this multipurpose product possesses more
prospects for further study. Such works may be vested to the horticulture and ancillary industrial scientists and experts. A multi-disciplinary project may be solicited to find the unexplored areas of production and marketing of banana.

Notes

1. There is a centrally sponsored scheme of “Bamboo Mission” since 2006-07 under NHM in horticulture sector. As a potent key area, banana can also be included under such scheme.

2. It is an initiative under NHM to promote modern terminal markets for fruits and vegetables in important urban centers to provide infrastructure facilities for electronic auction, cold chain and logistics and operation through conveniently located primary collection centers. The terminal markets are envisaged to operate on a “hub-and-spoke” format wherein the terminal market (the hub) could be linked to a number of collection centers (the spoke), conveniently located in key production centers to allow easy access to farmers for the marketing of their produce.