Chapter 5

Summary and Conclusion
From the preset study it can be summarized that-

- Andaman and Nicobar Island is a chain of 572 Island stretched from North to Southern located about 1200 km of mainland on longitude 930-940 East and latitude 60 –170 north. Out of the 572 islands, 38 islands are inhabited and 8 islands are covered under various settlement program. In term of livelihood, about 50% of the union territory population is directly dependent of agriculture and allied activities. The total land being used for agriculture is relatively small due to paucity of non-forested land and numerous competing infrastructural demands. Thus, only about 6% of the non-forested land i.e. about 50,000 ha is being used for agriculture purposes of which 10, 561 ha is under field crops and 29774 ha is under plantation crops. Devastating Tsunami of December, 2004 has further damaged permanently about 9 percent (4206 ha) of pre-Tsunami Agriculture Land. Half of the agriculture land is used for coconut plantation, 10 percent is for areca nut and 20 percent for Fruits (banana 12 percent), Vegetables and Root Crops and 20 percent is for Paddy Cultivation. Due to land limitation high value and low volume agriculture has to be encouraged to increases productivity and make horticulture commercially viable.

- High density planting along with fertigation enables phenomenal yield increase in China banana. This method increases the productivity by 50 percent and reduces the cost of production by saving 25 percent chemical fertilizers and 30 – 40 percent water. It has been clearly established that leaching and run off of nutrients is checked since small quantities of fertilizers are applied at frequent intervals.

- Among the planting systems, normal planting recorded significantly higher fruit girth of 11.52 cm against 11.15 cm in high density planting. Heavier bunch weight was noticed under normal planting system with a mean bunch weight of 11.55 kg plant\(^{-1}\) as compared to 8.84 kg plant\(^{-1}\) in high density plantation. China banana planted under high density planting significantly registered higher bunch yield of 38.31 t ha\(^{-1}\) than that of normal planting (P\(_1\)) which recorded 28.21 t ha\(^{-1}\) of bunch yield.
Vegetative growth characters of china banana were significantly influenced by planting system. China banana planted under normal system i.e., one sucker pit\(^{-1}\) was found significantly higher plants growth 90.60 cm, 179.00 cm, 326.83 cm during 3\(^{rd}\), 5\(^{th}\), 7\(^{th}\) and 9\(^{th}\) month. Normal planting system pedostem girth was found wider 25.28 cm, 36.61 cm, 43.30 cm and 47.90 cm in 3\(^{rd}\), 5\(^{th}\), 7\(^{th}\) and 9\(^{th}\) month as compare to high density plantation. It was also recorded that normal planting system had recorded significantly greater length of functional leaves 8.43 cm, 16.89 cm, 18.21 cm, 17.61 cm and higher leaf area index 0.76 cm, 1.46 cm, 1.91 cm were recorded in 3\(^{rd}\), 5\(^{th}\), 7\(^{th}\), and 9\(^{th}\) month respectively than high density planting.

Among the fertigation levels, fertigation at 100 percent NK g pit\(^{-1}\) was found the highest number of hands bunch\(^{-1}\) (7.41). Different fertigation levels registered significant influence on the number of fingers hand\(^{-1}\). Higher number of fingers hand\(^{-1}\) was recorded with the fertigation level at 100 percent recommended NK g pit\(^{-1}\) followed by fertigation at 125 percent recommended NK g pit\(^{-1}\) and lowest number of fingers hand were recorded from 50 percent recommended NK g pit\(^{-1}\). Fertigation level showed significant influence on total crop duration. Fertigation at 125 percent recommended NK g pit\(^{-1}\) significantly recorded shorter crop duration of 367 days which was closely followed by fertigation at 100 percent NK with 373 days to complete the crop cycle.

Growth regulators exerted significant influence on the number of fingers hand. Application of *Panchagavya* 3 percent was found highest number of 7.46 fingers hand\(^{-1}\) while application of GA\(_3\) at 50 ppm recorded lower number of 7.15 fingers hand\(^{-1}\). Significant interaction was found among the planting system, fertigation levels and growth regulators. The highest number of fingers hand\(^{-1}\) was obtained from normal planting, fertigation level at 125 percent of recommended NK g and application of *Panchagavya* at 3 percent. Among the growth regulators, application of *Panchagavya* at 3 percent recorded higher number of 68.60 fingers bunch\(^{-1}\) than application of GA\(_3\) at 50 ppm (67.40). Application of *Panchagavya* at 3 percent was found highest fingers weight (83.91 g) than that of GA\(_3\) at 50 ppm (81.65 g).
Application of *Panchagavya* at 3 percent was recorded highest fruit length of (11.08 cm) than that of GA3 at 50 ppm (10.62 cm). Application of *Panchagavya* at 3 percent resulted in higher fruit girth (11.62 cm) as compared to GA3 at 50 ppm (11.06 cm). Among the growth regulators, application of *Panchagavya* at 3 percent significantly recorded higher weight (10.28 Kg plant\(^{-1}\)) than GA3 at 50 ppm (9.95 Kg). Application of *Panchagavya* at 3 percent recorded significant increase in bunch yield (34.61 t ha\(^{-1}\)) than application of GA3 at 50 ppm (31.91 t ha\(^{-1}\)).

- Based on the above investigations, it could be concluded that, intercropping of fruit crops like banana and plantain with allied enterprises provides a possible solution to meet the demand for food commodities to ensure nutritional security of tribal and non tribal households while supporting the stability of agro - ecosystem components existing in this area.

- There are some constrains in the cultivation of banana which need to be removed so that farmers could adopt new technology to increase productivity. Strong wind during rainy season and drought like condition in dry period (January – April) affect yields. Therefore shooting during high wind time is avoided by adjusting time of planting. In both the conditions China banana can withstand strong wind and drought conditions.

- From the present investigation, it can be concluded that suckering and good management practices are indispensable for higher yields of banana. In general, plants with excess suckers removal performed better than leaving outgrowths attached to the mother plants as in conventional farmer’s practice. Therefore, proper management practices must be adhered to otherwise farmers may not tap the full potential management practices.

- The marked attainment of banana in islands agriculture can make socio-economic upliftment of the tribal and non – tribal farming community of this island. Looking to the prospects and potential of banana in this island, an integrated investigation of
crops soil-water relationship and appropriate crop designing is needed to increase production and productivity of banana.

- The extension agencies concentrates mostly on coconuts and their attention in banana or other fruit crop is very limited. Lack of institutional credit, low level of fertilizer consumption, absence of banana based cropping system, absence of proper marketing machinery to ensure a fair and legitimate return to the producer.

- Available water in a function of the total amount of rainfall and its distribution. Moreover, rainfall will always vary spatially, seasonally and annually. Whatever the rainfall region in an area, the amount of water available to the crop will depend also on how much can be held by the soil. The capacity of the soil to hold water for later use by the crop will also be determined by how much evapotranspiration requirement of the area would have been satisfied.

- Looking at the principal banana production areas and human population density of Andaman (approximately 5 lakhs, 2011 census), it is clear that China banana as a crop and food is closely associated with human population density areas. This system in this territory is associated with intensively cultivated land use system.

- China banana is a year round crop, which requires plenty of water that is well distributed throughout the year.

- Despite of repeated efforts to develop horticulture there has been no tangible impact in terms of increase in productivity and income generated by growers. The productivity of the most of the China banana is however low, mainly due to inadequate awareness of hi-tech intervention and unscientific methods of cultivation being practiced by the total population of Andaman and Nicobar Islands.