Chapter – 6
FINDINGS SUGGESTIONS AND CONCLUSIONS

International air cargo business is concerned with the transportation of goods by air on international flight both for imports of cargo into and exports of cargo out of a country. Logistics management in international airports means management of air cargo logistics activities in international trade and domestic trade. Air cargo logistics is a process which involves movement of materials and product, from the vendors right through to delivery at the customer’s door, including moves through manufacturing facility warehouses, third parties such as distributors. There is strong relationship between growth in air cargo traffic and logistics infrastructure at the airport. Availability of logistics infrastructure at competitive rate in the airports reduce cost of transportation which promotes international trade and improves global competitiveness of the airport and can contribute directly to global competitiveness of the country. So efficient management of components of the air cargo logistics chain in the airport is essential in international trade.

The state of Kerala has three international airports at Trivandrum, Cochin and Calicut handling both international and domestic flights and all are located at strategic locations in the state. Out of the three international airports, Trivandrum and Calicut airports are owned by Government of India and that at Cochin airport is owned by Government of Kerala with Public Private Participation. In Kerala all the three airports are predominantly handle perishable cargo like fruits, vegetables, flowers and sea food. The study about ‘Logistics Management in International
Airports in Kerala’ was confined to the air cargo movement and air cargo services in the airport. The purpose of the study is to make an assessment of prevailing logistics management practices in international airports in Kerala. From the findings based on primary and secondary data, certain conclusions have been drawn out and certain concrete suggestions are made for.

5.1 Findings of the Study

Major findings of the study based on the analysis of primary and secondary data are summarized and presented under three categories as under:

5.1.1 Performance of Air Cargo Traffic in International Airports in Kerala

1. Good performance was achieved by international airports in Kerala with regards to air cargo traffic during the reference period. But in the case of individual airport, Cochin and Calicut airports showed better performance but the performance of Trivandrum airport was very weak.

2. The growth in the volume of exports of cargo during the period under review indicates an upward trend in international airports in Kerala. The growth rate of export increased at CAGR of 11.50 per cent during the period under review. In the case of individual airports, Calicut airport got first position with CAGR of 20.21 per cent followed by Cochin airport with CAGR of 15.67 per cent and Trivandrum airport with CAGR of 5.46 per cent.

3. The growth in the volume of imports of cargo through international airports in Kerala during the period under review indicates an upward trend. It was increase at CAGR of 9.72 per cent during the period under review. The
airport wise analysis shows that that Cochin airport achieved the highest growth rate with CAGR of 16.48 per cent followed by Calicut with CAGR of 12.66 per cent. But in the case of Trivandrum airport the CAGR was (-) 2.81 per cent i.e. in Trivandrum airport, the growth rate was negative.

4. The growth in the volume of total cargo traffic through international airports in Kerala during the period under review indicates an upward trend. It increases at CAGR of 9.72 per cent during the period under review. In the case of airport wise analysis, Calicut airport showed better performance with highest CAGR of 16.72 per cent followed by Cochin international airport with CAGR of 15.88 per cent and Trivandrum airport with CAGR of 2.73 per cent.

5. The growth pattern in the volume of export cargo through International Airports in Kerala for the period under study was ascending in nature. The growth pattern in the volume of import cargo through International Airports in Kerala for the review period was ascending except in the year 2008-‘09. The growth pattern in the volume of total cargo through international airports in Kerala for the reference period was ascending in nature except in the year 2007-‘08.

6. The growth pattern in the volume of export, import and total cargo movement through Cochin International Airport, for the review period was ascending in nature except in the year 2010-‘11.
7. The growth pattern in the volume of exports from Trivandrum international airport during the period under study was consistently ascending except in the year 2008-'09 but in the case of imports and total cargo traffic it was consistently ascending except in the years 2008-'10 and 2011-'12.

8. The growth pattern in the volume of exports and total cargo traffic from Calicut airports during the reference period was consistently ascending except in the year 2007-08, but for imports it was ascending except in the year 2007-'08 and 2008-'09 respectively.

9. While comparing the consistency of export and import, international airports in Kerala maintained uniform level of consistency. But in case of individual airport, import is more consistent than export in Cochin and Calicut airport, but in Trivandrum airport, export is more consistent than import. Comparison of consistency between airports shows that Trivandrum airport is more consistent than the other two airports for export, import and total cargo.

10. Analysis shows that in all the three airports in Kerala, volume of exports have outweighed imports. Out of the total cargo moved through international airports in Kerala, an average of 66 per cent constitute exports and 34 per cent constitute imports cargo. In case of individual airport, Cochin airport with an average of 73 per cent as exports and 27 per cent as imports, Trivandrum airports an average of 65 per cent as exports and 35 per cent as imports and in Calicut airports an average of 58 per cent as exports and 42 per cent as imports.
11. Even though the growth rate of Trivandrum airport was low they are the major player in all airports with regard to exports imports and total cargo traffic because they have highest share in exports, imports and total cargo traffic.

12. On account of the consistency level in share in export, Cochin airport came ahead of others with CV of 10.64 per cent during the period under study. On account of the consistency level in share in import, Trivandrum airport came ahead of others with CV of 16.23 per cent. But in case of consistency level in share in total cargo, Cochin and Trivandrum airport follow more or less the same level of consistency with CV of 13.08 and 13.70 respectively.

13. The analysis shows that Kerala’s air cargo market is a perishable cargo market because in case of exports cargo, around 85 per cent of total cargo exported through international airports in Kerala consists of perishable cargo. The share of business claimed for general and valuable cargo is insignificant in international airports in Kerala. But in case of individual airports, Cochin airport concentrate on both general and perishable cargo and role of valuable cargo is insignificant. As far as Trivandrum and Calicut airport is concerned, they are mainly concentrated on perishable cargo because more than 95 per cent of total cargo exported consists of perishable cargo in this airport and the role of general and valuable cargo is insignificant.

14. In case of imports, Unaccompanied Baggage (53 per cent) is the main item handled in the international airports in Kerala and the role of general cargo
including valuable is rather insignificant. But the airport wise analysis shows some difference in this regard. Cochin airport concentrated on both UB and general cargo but in Trivandrum and Calicut airport mainly concentrated on UB and the role of general cargo is insignificant.

15. Majority (52.34 per cent) of perishable cargo exported through international airports in Kerala was from Trivandrum airport followed by Cochin (27.34 per cent) and Calicut airport (20.32 per cent). But in case of general cargo exported, majority (94.14 per cent) is moved from Cochin airport followed by Trivandrum (5.12 per cent) and Calicut airport (0.74 per cent).

16. Majority of Unaccompanied Baggage (52.83 per cent) imported in international airport in Kerala was in Trivandrum airport followed by Calicut airport (29.73 per cent) and Cochin airport (17.44 per cent). But in case of general cargo majority 978.66 per cent) was from Cochin airport followed by Trivandrum (17.35 per cent) and Calicut airport (3.99 per cent).

17. While analyzing the consistency of export of each item in the airports in Kerala, valuable is more consistent than others. In case of individual airport, general cargo is more consistent in Cochin airport, perishable is more consistent in Trivandrum airport and Valuable is more consistent in Calicut airport.

18. In case of imports, general cargo is more consistent in international airports in Kerala. In case of individual airport, general cargo is more consistent in
19. Emirates airlines dominates the international air cargo market in Kerala, because it have largest market share in export, import and total cargo and accounts the first place in all the three international airports in Kerala during the period under review. Other major players in the airports in Kerala are Air India, Jet Airways, Srilankan Airlines and Saudi Arabian Airlines.

20. While analyzing consistency in market share, Air India is more consistent for export, Jet Airways is more consistent for import and Oman air is more consistent for total cargo traffic in international airports in Kerala. In case of individual airport, Emirates is more consistent for export and import but for total cargo Oman air is more consistent in Cochin airport, in Trivandrum airport, Emirates is more consistent for exports, imports and total cargo. But in case of Calicut airport, Air India is more consistent for export, Jet Airways was more consistent for import and Oman air was more consistent for total cargo.

21. Analysis finds that Emirates maintain their first rank position for cargo traffic in international airports in Kerala during the period under review.

22. Projected air cargo traffic for the next five years from international airport in Kerala shows upward trend for volume exports, imports and total cargo traffic. Around 8 per cent CAGR is expected for total cargo in the next five years. In case of individual airport, Cochin airport volume total cargo movement expected a CAGR of 10.50 percent, in Trivandrum airport,
expected a CAGR of 4.53 percent and in Calicut airport expected a CAGR of 9.86 percent.

5.1.2 Services rendered by Freight Forwarders in International Airports in Kerala

1. All the freight forwarders in international airports in Kerala are IATA agents because license from IATA is must for doing freight forwarding business.

2. Majority of the freight forwarders (60 per cent) operating in international airports Kerala are National level private company and Multinational companies constitute only 40 per cent. The airport wise analysis does not find wide variation in this regard.

3. Majority (55.65 per cent) of the respondent in international airports in Kerala under study have 5 to 10 years of experience. The airport wise analysis also does not find wide variation in this regard.

4. Almost 80 per cent freight forwarding firms operating in international airports Kerala under study have 5 to 10 number of employees. The airport wise analysis does not find wide variation in this regard.

5. Majority (78.26 per cent) of the managers of freight forwarding firms operating in international airports Kerala are not specially qualified in the field of logistics management. The airport wise analysis does not find wide variation in this regard.
6. It is observed that 67.83 per cent freight forwarding firms limited its operation to one or two airports only and 32.17 per cent have operations in all the airports in Kerala. The airport wise analysis shows more or less the same results.

7. Majority of the freight forwarders (73.04 per cent) handle international trade only, none of them handle domestic trade alone and 26.96 per cent of them handle both domestic cargo and international trade. The airport wise analysis also shows more or less the same results. This may be due to the volume of domestic trade in international airports in Kerala are insignificant.

8. Majority (60 per cent) of freight forwarders in international airports in Kerala under study handle both air and sea cargo. But the airport wise analysis shows some variation in this regard that in Calicut airport majority (63.33 per cent) of the freight forwarders handle air cargo only.

9. More number (86) of firms in international airports in Kerala under study handle exports cargo than imports cargo (74). The airport wise analysis shows more or less the same results.

10. In case of Export, nearly 85 per cent firms in international airports in Kerala always handle perishable cargo. But the airport wise analysis shows some difference in this regard. In Trivandrum and Calicut airport all the firms always handle perishable cargo but in Cochin airport only 64.87 percent firms always handle perishable cargo. This is because in Trivandrum and Calicut airport almost 97 per cent export cargo consists of perishable but in Cochin
airport it is around 60 per cent. For general cargo, 44.18 per cent firms never handle always general cargo, 27.91 per cent sometimes handle it and same per cent always handle it. But the airport wise analysis shows that in Cochin airport 54.04 per cent always handle general cargo but in Calicut airport none of the firms always handle general cargo and in Trivandrum airport it is 14.82 per cent. This is because in Trivandrum and Calicut airport the volume of general cargo exported is insignificant but in Cochin airport it is around 35 per cent. For valuable and other cargo concerned, majority of the freight forwarders in international airports in Kerala never deals with it. The airport wise analysis also does not find wide variation in this. This is because the volume of valuable and other cargo is insignificant in all the three airports in Kerala.

11. In case of Import nearly 43 per cent of freight forwarding firms always deals with Unaccompanied Baggage and 41.89 per cent always deals with General cargo. But the airport wise analysis show some different in this regard. In case of Cochin airport, around 79 per cent always deals with general cargo but respondent deals with UB is very insignificant. But in case of Trivandrum and Calicut airport, majority of the respondent always deals with UB but respondent deals with general cargo in these two airports is insignificant.

12. Almost 83 per cent firms are regularly dealing with air cargo business. The airport wise analysis does not find wide variation in this regard.
13. Majority of the firms who are regularly dealing with air cargo business have regular shipper or consignee. The airport wise analysis does not find wide variation in this regard.

14. Only limited number of logistics services are offered by air freight forwarders in Kerala. The logistics functions such as arrangement of transportation, customs clearance and freight forwarding are performed by all the freight forwarders in international airport in Kerala. Majority of the freight forwarders never performed packaging, order processing and reverse logistics functions. In case of warehousing function, 66.28 firms always performed it. The airport wise analysis does not find wide variation in this regard.

15. Preparation of documents and submission of documents, payment arrangement with bank and rate negotiation are the auxiliary function performed by all the freight forwarders in international airports in Kerala under study. Majority (81.40 per cent) of the freight forwarders never performed insurance arrangement and analysis of routine and mode of transport to the shipper. The airport wise analysis also shows the same results.

16. Nearly 85 per cent firms have no warehouse near the airport. The airport wise analysis also shows more or less the same results.

17. Even though consolidation of cargo reduces transportation costs, nearly 71 per cent firms never doing consolidation function. The airport wise analysis shows more or less the same results.
18. None of the freight forwarding firms in international airports in Kerala act as integrated logistics service provider. The airport wise analysis shows more or less the same results.

19. Combination carrier are still dominated air cargo traffic in Kerala. All the air cargo is transported through the belly space of passenger aircraft. This is because airports are developed primarily from passengers stand point of view. So there is negligible presence of dedicated cargo airlines and almost all airlines carried cargo in aircraft bellies. There are no freighter services in Cochin International airport and Calicut airport. The freighter service in Trivandrum airport is very limited. So they are in a fragmented stage in Kerala.

20. Majority (61.63 per cent) of the firms are agent of all airlines operating in the airports in Kerala. The airport wise analysis does not find wide variation in this regard.

21. Majority of the firms have opinion that shipper have no involvement in carrier selection. The airport wise analysis does not find wide variation in this regard.

22. Majority (54.78 per cent) of the freight forwarders in international airports in Kerala are satisfied with the service of carrier. The airport wise analysis does not find wide variation in this regard.
23. Shortage of direct flight, shortage of cargo space and off loading are the most important problems faced by freight forwarders from carrier in international airports in Kerala.

24. Availability of space, punctuality and direct flight are the most preferred factor for carrier selection for export. Freight rate and preference of exporters are the least preferred factor for carrier selection for export of cargo.

25. Providing more space is the most important facilities required by freight forwarders in international airports in Kerala from carrier followed by more incentives, better tariff and support services.

26. Insufficient facilities is the most important problem faced by forwarders from the airports in Kerala followed by customs problems, tedious formalities, high clearance time and high formalities.

27. Majority (73.91 per cent) of the firms in international airports in Kerala are expressed optimism on the future prospects of the freight forwarding business.

5.1.3 Findings on Warehousing and Customs Clearance Functions in the Airport

1. Demurrage free storage period is two days for export in all the three airports in Kerala, but for import it is seven days in Trivandrum and Calicut airport and five days in Cochin airport. This period is fixed by the warehouse management authority. Majority of forwarders in international airports in
Kerala under study have opinion that demurrage free storage period is moderate. The airport wise analysis also shows more or less the same results.

2. Majority (69.57 per cent) of the freight forwarders in international airports in Kerala under study have opinion that the demurrage charges, terminal charges, ground handling charges and other charges levied in the international airports in Kerala are moderate. The airport wise analysis also find no significant variation in this regard.

3. Majority of freight forwarders in international airports in Kerala have opinion that the infrastructure facilities such as capacity of the warehouse, cold storage facilities, strong room for valuables and storage space for dangerous goods are said to be woefully inadequate for the current volume of cargo traffic. But the airport wise analysis shows some significant difference in this regard. In Cochin airport majority have opinion that all these facilities are sufficient. With regard to availability of X-ray machines majority have opinion that it is not sufficient. There is no significant difference in the opinion of freight forwarders in the airports with this regard.

4. Majority of the freight forwarders in international airports in Kerala have opinion that the available X-ray machines and other cargo handling equipments have average quality. The airport wise analysis also shows there is no significant variation in this regard.
5. With regards to automation 54.78 per cent firms says that only moderate level of automation is adopted in the warehouse. The airport wise analysis also shows more or less the same results.

6. Majority (81.74 per cent) of the forwarders are not satisfied with the Information and Communication Technology in the warehouse. The airport wise analysis also shows that there is no significant variation in this regard.

7. Majority (62.61 per cent) of the freight forwarders are not satisfied with the security system in the warehouse. But the airport wise analysis shows significant difference in this regard. Majority of the respondent in Cochin airport have opinion that the security system in the warehouse is satisfactory.

8. Majority (62.79 per cent) of the freight forwarders are satisfied with the handling of off loaded cargo. The airport wise analysis also shows the same results.

9. Space available handling of transhipment cargo is not sufficient as per opinion of majority 55.65 per cent of freight forwarders. The airport wise analysis shows some difference with regard this. In Cochin airport majority (62.22 per cent) says that sufficient facilities are available for handling transhipment of cargo.

10. As per the opinion of 73.91 per cent of freight forwarders, the space available for loading and unloading of cargo is not sufficient. The airport wise analysis also shows the same result.
11. Availability of truck is not sufficient as per opinion of 51.13 per cent freight forwarders. But the airport wise analysis shows some difference in this regard. In Cochin airport 60 per cent opinion that Truck is sufficient for cargo traffic.

12. Majority of forwarders says that EDI system is not full fledged in international airports in Kerala. The airport wise analysis also shows the same results.

13. As per the opinion of majority of freight forwarders, the dwell time for export is less than a day, but for import it ranges from three to five days as compared to an average of four to twelve hours at leading global airport. The airport wise analysis shows that there is significant difference in the opinion of freight forwarders in regard to export. In Cochin airport 29.73 per cent says that it takes three to five days but in Trivandrum and Calicut airport nearly 8 per cent opine that it takes three to five days. This is because in Cochin airport significant portion of cargo exported consists of general items also but in Trivandrum and Calicut it is insignificant. Another reason is that the normal clearance time in Cochin airport is 10 a.m to 5 p.m per day but in Trivandrum and Calicut airport clearance is on 24 hours except Sundays and holidays.

14. Almost 71 per cent forwarders are not satisfied with the normal operating hours of customs department. But the airport wise analysis shows that there is difference in opinion among the forwarders in this regard. This is because in
CIAL the normal working hours of customs department is limited 10a.m to 5 p. m except Sundays and holidays but in Trivandrum and Calicut airport, customs department function in 24 hours a day except Sundays and holidays.

15. Majority (80.87 per cent) of the forwarders are not satisfied with customs formalities in the airport. The airport wise analysis does not find any wide variation in this regard.

16. Majority (80 per cent) of the forwarders are satisfied with customs clearance inspection. The airport wise analysis does not find any wide variation in this regard.

17. Around 68 per cent forwarders are not satisfied with awareness of customs department about EDI system. The airport wise analysis also shows more or less the same results.

18. As per the opinion of 63.48 per cent respondent, there is transparency in customs clearance. The airport wise analysis does not find any wide variation in this regard.

19. Majority have opinion that there is no complexity in customs clearance in international airports in Kerala. The airport wise analysis also shows more or less the same results.
20. Majority (53.04 per cent) have opinion that unnecessary documents is not required by the customs department. The airport wise analysis also shows no wide variation in this regard.

21. Almost 60.87 per cent says that more time is taken for document processing. The airport wise analyses also find some variation in this regard.

22. Majority of the freight forwarders have opinion that they get timely information when regulations change. The airport wise analyses also find more or less the same results.

23. Majority (72.17 per cent) of the forwarders are just satisfied with service of customs department. Only 6.96 per cent are highly satisfied with the service of customs department.

5.2 Suggestion for the Research

The studies put forward the following suggestion for the efficient and successful management of logistics activities in the International airport in Kerala

1. Update of technology with respect to cargo handling should be strictly practiced.

2. The cargo handling procedure should be standardized and employees should be trained accordingly to avoid delays.

3. Provide adequate infrastructure: It would be desirable if the cargo complex is provided with increased number of X-ray machines and the staff for
screening. Advanced X-Ray machines sufficient of screen big lots should also be installed this can reduce the waiting time at the queue significantly. This will reduce the high dwell time of imports cargo.

4. Provision of E-filing of shipping bill: It would be desirable if airport complex implements e-filing of the shipping bill. This leads to reduce paper work and the time involved in transactions can be reduced.

5. The availability of agent’s warehouse near the airport can be a great use to exporters to store their cargos. This can cause less mishandling of cargo and can be kept fresh.

6. All cargo carriers in all airports in Kerala will also reduce the costs and price of the product and the product is more competitive in the international market which will increase air cargo traffic growth. If cargo is moved through combination carrier, the screening cost is more than freighter because combination carrier requires more strict screening than freighter. If screening require more time it cuts the difference between ocean and air transport.

7. In Kerala air cargo traffic shows high rate of growth. So framing a policy for development of an airport exclusively for cargo operations gives a much needed boost to the air cargo segment.
8. Developing a cargo village in the airport increases cargo movement through airport. CIAL is planning to develop a cargo village in future. It will help to import spare parts and convert it into final product and then export it to another country.

9. Technology like Warehouse Management System (WMS), Radio Frequency Identification Devices (RFID), Automatic Store and Retrieval systems (ASRS) should be leveraged to increase automation to facilitate quicker and more efficient cargo operations.

10. Adopt EDI system at its full spring.

11. All activities related to air cargo processing has been done at the cargo terminal in the airports area. With the growth of cargo volume, the current space at cargo terminal in airports in Kerala is woefully inadequate, leading to severe congestion issue. So setting up an Air Freight Station which will reduce congestion in the airport and minimize logistics cost. Air Freight Station is an off-airport cargo terminal station having facilities such as Customs documentation/examination, cargo acceptance check, security check and palletization.

13. Airlines ensure that shipments are carried as booked without delays and offloading and should ensure adequate capacity to avoid offloading.

15. Setting up separate facilities for transshipment of cargo in Trivandrum and Calicut airport.
16. Developing full-fledged automation at air cargo handling terminals in airports in Kerala.

17. Introduce 24*7 customs operation. It is vital for the growth of air cargo traffic because most of the global airports that Kerala is competing to have such operations.

18. Need to develop Cold Storage facilities in Calicut airport and also set up a Centre for Perishable Cargo in this airports.

19. The discussion with airport authority reveals that the long delay at Valayar check post for clearance of export cargo especially garments from Tripura is one of the causes for delay in reaching cargo in the airport, so state government should provide fast track clearance facilities for export cargo in Valayar Check post.

20. Setting up of more industries especially in the area of Calicut airport is needed to boost general cargo traffic.

21. Specially qualified managers in the field of logistics management is appointed in the freight forwarding firms.

22. Freight forwarders should offer more logistics functions to the shipper instead of providing traditional logistics functions.
5.3 Conclusion

Air cargo industry is one of the sectors of the Indian economy and has been growing since liberalization and globalization of trade policy. But in this globalized world, cost management and cost reduction has become priority in international trade to achieve competitive advantage. The present study makes an attempt to analyze the extent of efficiency of logistics management activities in international air cargo traffic in Kerala because efficient management of logistics activities in the airport ultimately results in reduction of cost of transportation and increase of air cargo traffic. The aim of the study is to suggest measures to improve the efficiency of the present logistics management activities followed by the international airports in Kerala. The study reveals that Kerala’s air freight traffic has been experiencing a strong growth over the past six years. International air cargo traffic has grown at a CAGR of 9.72 per cent during financial year 2006-‘2012. Building on this momentum, international air cargo traffic is expected to exhibit a CAGR of 8.14 percent during financial year 2012-‘2017. The opportunities and openings available for air cargo business in Kerala are high, particularly with opening of Vallarpadam Transhipment Container Terminal at Cochin. But the logistics facilities in the airport are not sufficient to cope with this growth. Logistics functions offered by the air freight forwarders to exporters and importers in Kerala are limited. Off loading and lack of space is the main problem faced by the forwarders from airlines because combination carrier is only used for air cargo traffic in Kerala. So freighter service is needed to meet the expected demand of air cargo traffic. Even though majority of the cargo exported consists of perishable cargo in Kerala, the warehouse facilities such
as cold storage facility especially in Trivandrum and Calicut airport is not sufficient because in these two airports more than 95 per cent cargo exported consists of perishable cargo. The role of general cargo in Trivandrum and Calicut airport is very insignificant because of lack of industries. The X-ray machines available in the airports are not sufficient to meet the demand and the available machines are not suitable for screening all type of cargo. So long waiting time is required for screening and sometimes cargo is required to screen from other airports of other states because of lack of screening machines for big size cargo. The storage facility in the warehouse is not sufficient especially in Trivandrum and Calicut airport. The clearance time for export is normal but for import it takes 3-5 days. The working hours of customs department are not sufficient especially in Cochin airport. Development of more industries is needed to boost general cargo traffic especially in Trivandrum and Calicut airport area because in these two airports the role of general cargo including valuable cargo is very insignificant both for import and export. So appropriate measures shall be taken by the authorities to solve these problems and boost the international air cargo traffic through Kerala.