

# CHAPTER-ONE

## INTRODUCTION

### 1.1 Background

Nepal is a landlocked mountainous country in the Asia-Pacific region. It is sandwiched between world's two giant countries India and China. India lies to the east, south and west of the country while China to the north. Nepal is situated within latitude 26<sup>0</sup>22' to 30<sup>0</sup>27' N and longitude 80<sup>0</sup> 04' to 88<sup>0</sup>12' E. The area of the country is roughly rectangular in shape and extends from east to west with an average length of 885 km and average breadth 193 km. It covers a total area of 147,181 sq km of land, which constitute 0.03 percent of total area of the world and 0.3 percent of total area of the Asia continent. As reported by the national census 2011 the total population of the country is 2,66,20,809.

On the basis of its geographical topography, Nepal is divided mainly into three parts viz. Mountain region, Hill region and Terai region. The southern plain Terai region contains only 17% of the total land in the country while the remaining 83% land lies in the Hill and the Mountain region which is covered by hills and high mountains. The plain Terai region has fertile land that yield surplus amount of crops and food grains for the country people whereas, the hilly areas are able to produce fruits, medicinal herbs and other valuable crops. If managed properly the country has potential to grow food grains, fruits, vegetables and medicinal plants for its own consumption as well as for export. High Himalayas including the world's highest peak Mount Everest and many other higher peaks lie in the northern part. The high mountains, rivers, lakes and other majestic places in the country have made it renowned over the world.

Nepal is one of the richest countries in the world in terms of bio-diversity due to its unique geographical position and altitudinal variation. The elevation of the country ranges from 60m to 8,850 m above mean sea level, with a sharp variation within a distance of 150 km resulting into climatic conditions from Sub-tropical to Arctic.<sup>1</sup> Such a peculiar topography has caused surface transportation a very hard job in the country in terms of both feasibility and costs. Due to the inaccessibility of road transportation in the remote areas, many parts of the country are yet to be connected with other parts. Out of the total seventy-five districts in the country nearly one dozen are out of road link with other districts yet. There is lack of transportation facilities in the remote districts having hard topography which has seriously affected the socio-economic activities of the communities in those parts of the country.

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<sup>1</sup> Traveller's Information, Kathmandu 2006, Nepal Tourism Board.

In such a situation air service is the only means of transportation for most of the remote sectors in the country. Air transportation is no more a luxury in the remote, inaccessible mountainous areas where it is the only means for the mobility of people and transport of foodstuffs, medicines, construction materials and other essential goods. Civil aviation stands as the life-line of many parts of the country and every activity are stagnant in the absence of air services. Thus air transportation plays crucial role in the social, economic and overall development of the remote areas in the country. Besides these, air transportation being the most reliable, comfortable, safe and rapid, is much demanded as an alternative means of road transportation. Similarly, it is the only means to reach the majestic high Himalayas, lakes and other holistic places in the country which possess great feasibility for tourism promotion.

The availability of air transportation in the remote areas has made livelihood better by ensuring the supply of essential goods, medicines, construction materials, etc. and transport of local products to outside market. Airports have resulted in economic activities and raised income level of the people, and hence, played significant role in the socio- economic development of the remote areas. Civil aviation in the country has also played crucial role in promoting tourism and boosting up the economy. Civil aviation and tourism industry is making significant contribution in GDP and is established as one of the major sources of foreign exchange earnings. The government of Nepal aims to develop airports and encourage private sector participation in domestic and international air services to boost up tourism industry and contribute in the promotion of economic activities and poverty alleviation.<sup>1</sup>

### **1.1.1 Development of Civil Aviation in Nepal**

The history reveals that the formal beginning of aviation in Nepal took place in 1949 A.D with the landing of a four seater lone powered vintage Beach-craft Bonanza aircraft of Indian ambassador his Excellency Surjeet Singhat, at Gaucher, the present Tribhuvan International airport in Kathmandu. And the first charter flight service was started by Himalayan Aviation Dakota from Gaucher, Kathmandu to Kolkatta, India in 1950. The government of Nepal made initiative for the organized development of civil aviation in the country by creating 'Department of Civil Aviation (DCA)' in early 1957 A.D. The government also created a public undertaking 'Royal Nepal Airlines Corporation' in 1958 and started domestic as well as international flights. Latter in 1959, in order to provide legal support to civil aviation sector the government promulgated Civil Aviation Act 2015. Nepal attained the membership of International Civil Aviation Organisation (ICAO) in 1960 which was a milestone to connect Nepal in the international air network.<sup>2</sup> At present, Nepal is well connected with many popular destinations of South-East Asia, Middle-East, Europe, America and Caribbean region of the world. To facilitate the transport of passengers, cargo and mail nearly three dozen international carriers are providing regular flights to and from Kathmandu.

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<sup>1</sup>Civil Aviation Policy 2063,pp.2

<sup>2</sup> Civil Aviation Report 2005, CAAN, pp. 7

Till now, the government has made huge investment in civil aviation industry by constructing airports and establishing air navigation services in various parts of the country. As a result number of airports in the country totaled to fifty-one including four under construction (Appendix- I). However, nearly one dozen airports are not in operation due to the access of road network and lack of regular flights. The government has also adopted liberal sky policy since 1992 in order to encourage private sector participation in civil aviation industry. The supportive policy of the government for the promotion of air services has caused the emergence of a large number of airlines from private sector in the domestic as well as international services (Appendix- II).

Tribhuvan International Airport (TIA), Kathmandu, is the only international airport in the country serving flights for short and long international routes. Whereas Biratnagar, Pokhara, Bhairahwa and Nepalgunj airports are operated as regional hub airports and the remaining airports in the mountain region are mostly short take-off and landing (STOL) airfields. The government of Nepal has announced to develop Dhangadhi airfield as a regional-hub airport and infrastructure development works are in progress accordingly. On the other hand, Pokhara, Bhairahwa and Janakpur airports will be upgraded as regional international airports to facilitate cross border flights from India and other neighboring countries. Due to the traffic congestion and at TIA and geographical constraints for expansion the government of Nepal has decided to build a second international airport in the country on BOOT modality to accommodate the growing demand of air traffic.<sup>1</sup>The feasibility study and detailed project report of the Second International Airport, proposed to be built at Neejgadh in Bara district, has also been finalized by Land Mark Worldwide, a Korean airport builder, and submitted to the Ministry of Tourism and Civil Aviation, GoN for final approval.

### **1.1.2 Civil Aviation Authority of Nepal (CAAN)**

Airports are important places which play crucial role for economic activities in a country. In the old days airports were operated and managed by the direct control of States as a junction of air transport. But the scenario has been changed drastically. Airports are no more a station providing flight for various destinations but, are referred as a point of service generation and hospitality. As a result it is required to operate and manage airports efficiently to minimize cost and maximize benefits. Airports under the control of States failed to follow business principles, and hence, to generate sufficient resources required for facilitation. To market and retail services and facilities in airports, States worldwide are either creating autonomous entities to operate airports or privatizing them. The growing competition in the industry has compelled states to operate airports by autonomous entity and with business concept so as to generate surplus revenue that can be reinvested for facilitating those airports.

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<sup>1</sup>Civil Aviation Policy2063, pp 13

An autonomous airport entity is essentially an independent body established for the purpose of operating and managing one or more airports, one objective of which is to permit local and user needs to be met better. In some instances, the scope of such autonomous airport entities has extended to the operation and management of navigation services as well. Experience has shown that establishing autonomous airport entities for the management and operation of airports may translate into the following advantages: <sup>1</sup>

- empowers service providers through financial and operational autonomy;
- encourage the growth of a business culture;
- lower expenses per traffic unit relative to other airports of comparable size;
- recycle various aviation user charges into aviation;
- reduce the financial burden on governments;
- generally improve the quality of services; and
- establish a clear distinction between the regulator and the service provider.

To keep pace with the international trend of establishing autonomous entity, the then HMG/N on 31<sup>st</sup> December 1998, established Civil Aviation Authority of Nepal (CAAN) to operate airports and regulate civil aviation in the country to make air services safe, standard, regular and effective.<sup>2</sup> The objective of CAAN is to operate airports efficiently and to make air services safe and effective tool for the economic development of the nation. CAAN is not a profit seeking organization but it has to work with business motive in order to generate sufficient resources which can be reinvested for upgrading infrastructures and facilitation at airports.<sup>3</sup>

### **1.1.3 Nepalgunj Airport**

Nepalgunj airport is the regional hub of mid and far western Nepal, having the largest network of air links after TIA, Kathmandu. It is located at Ranjha, Manikapur VDC, of Banke district in Bheri zone. This airport is situated at an elevation of 518 ft (158 m) from mean sea level and it is nearly 6 km north of Nepalgunj city. This airport has a 5000 ft long black topped runway which is suitable for the operation of short and medium type aircrafts. The airport currently served with 47 served ATR aircrafts and 30 seater Jet Stream aircrafts, was being serve with 105 seater Fokker-100 jet aircraft. It has paved apron with a capacity to accommodate nearly 10 short and medium aircraft parking. It is well equipped for instrument flights and air field lighting system to operate flights in the night also. Among many other equipments and facilities it has a state of art hangar facility built under the assistance of

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<sup>1</sup>Airport Economic Manual, 2<sup>nd</sup> Ed. 2006, ICAO, pp 2-2

<sup>2</sup>Civil Aviation Authority of Nepal Act 2053, pp. 4

<sup>3</sup>Civil Aviation Authority of Nepal Act 2053, pp. 21

Canadian International Development Agency for the maintenance of Canadian manufactured Twin Otter aircrafts operating in Nepal.

Nepalgunj airport has been serving as the gateway of the least developed and far remote Karnali region. Besides daily flights to the capital, Kathmandu, this airport provides regular scheduled and chartered flights to many destinations of Karnali, Rapti and Seti zones. Many airlines operate regular scheduled and chartered flights from this airport to remote airfields of Jumla, Dolpa, Rara, Simikot, Bajura, Bajhang, Rukum, Chaurjhari, etc. This airport is also operating flights for the transportation of passengers, foodstuffs, medicines, construction materials, and other logistic support to the remote areas.

This airport has played significant role in facilitating economic activities and development works in the remote areas and generating employment opportunities for the locals directly and indirectly. Nepalgunj airport has also contributed for the promotion and development of potential tourism places in western Nepal. It stands as the main air gate for Indian pilgrims to visit the holy religious destination Kailash Mansarovar situated in Tibet, the autonomous region of China. Thus, Nepalgunj airport is playing crucial role in the socio economic development of the people in remote mountainous areas and the whole mid-western region and contributing significantly to the GDP of the country.

#### **1.1.4 Concept of Airports Revenue**

Revenue is total amount of money received by the company for goods sold or services provided during a certain time period. It also includes all net sales, exchange of assets; interest and any other increase in owner's equity and is calculated before any expenses are subtracted. The income generated from sales of goods or services, or any other use of capital or, Assets, associated with the main operation of organization before any costs or expenses are deducted. Revenue is shown, usually, as the top item in an income (profit and loss) statement from which all charges, costs, and expenses are subtracted to arrive at net income. Also called sales, or (in the UK) turnover. The amount of money that a company actually receives during a specific period of time, including discounts and deductions for returned merchandise. It is the "top line" or "gross income" figure from which costs are subtracted to determine net income. Net income can be calculated by subtracting expenses from revenue. There are rules specifying when should be recognized in different situations for companies using different accounting methods, such as cash basis and accrual basis.

In the case of government, revenue is the money received from taxation, fees, inter-governmental grants or, transfers, securities, sales, mineral rights, and resource rights, as well as sale that are made. From the business point of view revenue can be understood as a gross increase in owner's capital resulting from the operations of a business. Gross means not decreased by the expenses incurred to earn revenue. Usually, the following business transactions cause earning of revenue and their recognition in accounting;

- Sales of goods.

- Provision of services.
- Permission granted to other to use the assets of the business (leasing, renting, etc)
- Selling of assets other than goods.

Main features of revenue are the following.

- It arises from the trading activities of a business.
- It creates inflow of funds to the business.
- It is measured in terms of money.
- It is always related to a particular accounting period.
- Capital is the sources of revenue.

## 1.2 Statement of the Problem

The government of Nepal authorized to develop and operate all the airports in Nepal, though many of them are already closed and most are social sector airports generating huge loss. CAAN Act 2053 mentions that CAAN will generate revenue through collection of charges from the users of airports in terms of aircraft landing, parking, housing, hangar, night stop, communication and navigation, overfly, etc. Likewise, charges imposed on ground handling, vehicle parking, visitors' entrance, other business and recreational activities, advertisement, rentals on other services, cost recovery for extended hour operation, training cost, licensing and renewal fees, etc. Besides these, it can also generate non-aeronautical revenues by providing consultancy services and leasing unused land and other property for business purpose.<sup>1</sup> Civil Aviation Policy also allows CAAN to use the lands it possess for business purpose to generate income (revenue) for its economic development.<sup>2</sup>

Being an autonomous entity CAAN is independent to play its roles in regulating and promoting air services within the country and abroad. Its motive is to operate airports profitably so as to generate sufficient resources which can be used to facilitate the airports properly. It also possesses great potential for generating sufficient amount of revenues. But government as well as political interferences and lack of professional management in CAAN has affected its activities and priority areas. As a result CAAN is unable to make better use of available resources till now and incurs huge loss in operating many of the social sector airports. Besides, the government has over burdened CAAN to provide services in the loss generating social sector airports with reduced rates of charges.

In the light of above scenario problems considered in the study can be stated as follows:

- (i) Is the level of revenue generation by CAAN and Nepalgunj airport is sufficient for infrastructure development and facilitation?

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<sup>1</sup> Civil Aviation Authority of Nepal Act 2053, pp 14-17.

<sup>2</sup> Civil Aviation Policy 2063, (GON), Para 4.17.2

- (ii) In what way revenue of Nepalgunj airport and CAAN be maximized?
- (iii) How civil aviation can be taken as an economic driver and multiplier?

### **1.3 Objectives of the study**

The main objective of the study is to analyze the revenue pattern of CAAN and Nepalgunj airport and its contribution in the socio economic development and tourism promotion in the country. But specific objectives of the study can be pointed out as follows:

- (a) To find out the sources of revenues in CAAN and the contribution of Nepalgunj airport in the total revenues of CAAN.
- (b) To present the status of air traffic flow in Nepal and its future prospects in the Asia-Pacific region.
- (c) To find out experts opinion regarding the roles of CAAN in maximizing revenues of airports in Nepal and making air services affordable and convenient.

### **1.4. Scope of the study**

The scope of the study covers activities and roles played by Civil Aviation Authority of Nepal, Nepalgunj Airport and Ministry of Tourism and Civil Aviation in revenue generation by airports and formulation of supportive policies. Since, the revenue generated by airports in the country is reinvested for infrastructure development and facilitation of the airports, it is crucial to find out the existing sources of revenues, the potential sources and the need of suitable strategies. Aviation industry having the large chain of multiplier effect should not be taken as a luxury and the government must give priority for its development. This study is also focused on the strategies of CAAN for maximizing airports revenues as well as the policy of the government for developing civil aviation and tourism industry. Finally, it emphasizes contribution of Nepalgunj airport in promoting tourism, enhancing business and economic activities in remote sector in the western region.

### **1.5 Importance of the Study**

The importance of civil aviation as a means for connecting people worldwide as well as an effective economic driver is growing regularly. Civil aviation being the safest, fastest and reliable means of transport is rapidly growing worldwide with the increasing demand as a service industry. The increasing growth has also added many challenges to maintain the level of safety and reliability in the industry. This causes modernization and adoption of much sophisticated technologies regularly. The technological advancement in civil aviation causes many research studies to be carried on annually worldwide in order to result in efficiency in the industry. However, very few research studies have been carried on in this field in our

country. This study makes effort to analyze the contribution of civil aviation and airports in the revenue generation and socio economic development of the country. This study also aims to encourage scholars and academicians to conduct further researches for the promotion of civil aviation and tourism industry.

## **1.6 Variables and Measures**

Performance evaluation of airports is done on the basis of revenues generated by the airport and aircrafts, passengers and freight movement took place. There are many dependent and independent variables to be considered while measuring the efficiency of an airport. The dependent variables can be named as airport revenues, investments, flight movements, passenger movements etc. Similarly, the independent variables are infrastructure, level of consumer disposable income, attitude, flight safety and reliability, weather conditions, level of service quality, etc.

The total investments and revenues of an airport are measured in terms of monetary unit such as rupees. Total revenues consist of aeronautical revenues and non-aeronautical revenues. The aeronautical revenues include the charges collected directly from airlines for the movement of aircrafts, passengers and cargos. Whereas non-aeronautical revenues include concessions and benefits from commercial activities in an airport conducted by the operator itself or by authorized entities. Aircraft and passenger movements are measured in numbers whereas freight movement is measured in tones.

## **1.7 Organization of the Study**

The study comprises of total five chapters as follows:

The first chapter reveals introduction of the study and contains general background, statement of the problem, objectives, scope and importance of the study, and variables and measures used.

In the second chapter review of related literatures is made and includes theoretical review, summary of previous studies, relevant literatures, conceptual framework and organization structure of CAAN.

The third chapter contains research design, sources of data, procedure and sampling, data collection procedure, data processing procedure and tools used for data analysis.

The fourth chapter contains tabulation, analysis and presentation of data related to aeronautical and non-aeronautical revenue, aircraft flow, passenger flow, cargo flow, contributions of Nepalgunj airport in total revenue of CAAN.



The last chapter includes the summary of findings, conclusions and recommendations made for users of the study. And finally appendices to the research report and references are also included.

## **1.8 Limitations of the study**

The limitations of the study can be pointed out as follows:

- (a) The study is conducted with primary objective of fulfilling academic requirement;
- (b) The analysis will be based on data published by CAAN and other relevant authorities;
- (c) Data collection and critical analysis of the study is based on Nepalgunj Airport;
- (d) Reduction in flights due to various reasons may contradict the assumptions; and
- (e) Unavailability of data and unwillingness of respondent also limit the study area.

# CHAPTER- TWO

## REVIEW OF LITERATURE

Literature review is basically a ‘stock taking’ of available literature in one’s field of research. The purpose of literature review is thus to find out what research studies have been conducted in one’s chosen field of study, and what remain to be done. It provides the foundation for developing a comprehensive theoretical framework from which hypothesis can be developed for testing.<sup>1</sup>

This chapter consists of two parts viz. General Review and Review of Relevant studies. General Review contains review of Acts, laws and policies, Structure, conceptual framework and Review of relevant studies contains of different journals and articles (Manual).

### 2.1 General Review

Civil aviation industry, being highly technical and professional requires a sound combination of various disciplines to result in safe conduct of air services and airport operations. The core functions in civil aviation includes air traffic management; flight operations, radio-communication, electronics, electrical, civil and aeronautical engineering. Similarly, the allied functions include marketing, finance, general administration, rescue and fire-fighting, etc. Research study in this field requires the knowledge of some specific technical and managerial activities. Some terms from economics such as concession, commercialization, multiplier effect etc. are often used in this study and defined as below:

**Concession:** The right to operate a certain commercial activity at the airport, commonly on an exclusive basis and usually at a specified location.

**Commercialization:** An approach to management of facilities and services in which business principles are applied or emphasis is placed on development of commercial activities.<sup>2</sup>

**Multiplier Effect:** Normally expressed as a factor showing how much the direct economic impact of the airport is increased by indirect and induced economic effects of airport activities<sup>3</sup>

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<sup>1</sup>Wolf, H.K. and Pant, P.R. A Hand Book of Science Research and Thesis Writing, Kathmandu (1999), pp 30

<sup>2</sup> ICAO, Airports Economics Manual, 2<sup>nd</sup> Ed., 2003, pp ATT 1-1

<sup>3</sup> ICAO, Airports Economics Manual, 2<sup>nd</sup> Ed., 2003, pp ATT 1-2

Some specific terms often used in this study to represent assets, services, charges and revenue of airports are described in the following three sub-sections.

### 2.1.1 Airport Infrastructures and Assets

An asset is a resource from which future economic benefits are expected to flow to the entity that owns or control it. Civil aviation industry being a high capital intensive field possesses many specific assets which are as follows.

**Airport/Aerodrome:** A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.<sup>1</sup>

**Aircraft:** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth surface.

**Passenger Terminal:** The building constructed on the airport for the purpose of passenger processing having facilities like check-in counters, security measures, sterilized areas, customs, immigrations, restaurants, duty-free shops, etc.

**Cargo Terminal:** Buildings within the airport constructed for the purpose of cargo and freight handling equipped with security measures and cooling process.

**Runway:** A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

**Taxiway:** A defined path on a land aerodrome established for the taxiing of aircraft and intended to connect one part of the aerodrome to another.

**Apron:** A defined area on a land aerodrome, intended to accommodate aircraft for the purpose of loading or unloading passenger, mail or cargo, fuelling, parking or maintenance.

**Hangar:** A building or shade on a land aerodrome, intended to be used for the maintenance or housing of aircraft.

**Communication and Navigation Aid:** Equipments installed on the airport or en-route for the purpose of establishing communication between aircraft and air traffic control unit, and to locate path of flights.

**Airport Lighting:** Lighting systems installed on an airport for the safe conduct of flights especially in night such as airport beacon, runway light, taxiway light, approach light etc.

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<sup>1</sup>ICAO, Air Traffic Management, (Doc 444), 14<sup>th</sup> Ed.2001, pp.1-1

**Rescue and Fire Fighting Facilities:** A combination of equipments and vehicle used for extinguishing fire burnt in aircraft on the airport and to rescue its occupants.

**Security Measures:** A combination of equipments and security personnel to safeguard civil aviation from illegal interferences.

### 2.1.2 Airport Services

Civil aviation is a service industry, and is expanding rapidly due to the increasing demand of air services and transport. Besides passenger services, airports provide some specific services, which are considered as the heart of civil aviation such as

**Air Traffic Control Service:** A service provided for the purpose of preventing collision between aircraft, between aircraft and obstructions on the maneuvering area, and expediting and maintaining an orderly flow of air traffic.<sup>1</sup>

**Communication and Navigation Service:** A service provided between air traffic control unit and aircraft for the exchange of messages relating to aircraft position, weather information, collision avoidance and route guidance.

**Rescue and Fire Fighting Service:** A service provided to evacuate and rescue persons onboard an aircraft in emergency and extinguish fire to safeguard property.

**Passenger Service:** Services provided for the comfort of passengers waiting on the airport such as sitting, security, flight information, drinking water, electricity, refreshment, entertainment, etc.

### 2.1.3 Revenues/Charges

Charge is a levy that is designed and applied specifically to recover the costs of providing facilities and services for civil aviation. Total revenue of an airport is composed of aeronautical and non-aeronautical revenues.

#### 2.1.3.1 Aeronautical Revenues

The revenues generated by flight operation in an airport collected directly from the aircraft operator such as:

**a. Landing charges:** The charges and fees collected for the use of runways, taxiways and apron areas, including associated lighting<sup>2</sup>

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<sup>1</sup>ICAO, Air Traffic Management, (Doc 444), 14<sup>th</sup> Ed.2001, pp.1-2

<sup>2</sup>ICAO, Airport Economics Manual, 2<sup>nd</sup> Ed.2003, pp.3-10

**b. Parking and Housing charges:** Charges collected from aircraft operators for the parking of aircraft and their housing in airport owned hangars, including any revenue from the leasing of such hangars to aircraft operators.

**c. Passenger Service charge:** The charges and fees collected from passengers for the use of the passenger terminal and other passenger-processing facilities.

**d. Cargo charge:** The charges and fees collected in respect of cargo for the use of the airport's freight processing facilities and areas.

**e. Security charge:** The charges and fees collected by the airport for the provision of security services for the protection of passengers and other persons at the airport, aircraft and other property.

**f. Noise-related charges:** The charges collected related to the noise alleviation and prevention measures.

**g. Communication and Navigation charge:** The charges collected for the communication service and navigation equipments installed by airports for the safe conduct of flights.

### 2.1.3.2 Non-Aeronautical Revenues

The revenue generated from sources other than flight operation in an airport such as:

**a. Rentals:** This refers to rentals payable by commercial enterprises and other entities including aircraft operators for the use of airport-owned building space, land or equipment other than those used for aircraft operation.<sup>1</sup>

**b. Duty-free Shops:** The fees and charges payable by a commercial enterprise or any other entity for the right to operate duty-free shops at the airport, and for off-airport duty-free shops to deliver goods sold at the airport.

**c. Restaurants, Bars, Cafeterias and Catering Services:** The fees and charges payable by commercial enterprises or other entities for the right to operate restaurants, bars, cafeterias and catering services at the airport including aircraft catering.

**d. Aviation Fuel and Oil Concession:** This refers to the concession fees including any throughput charges collected from the supplier of aviation fuel and lubricants at the airport.

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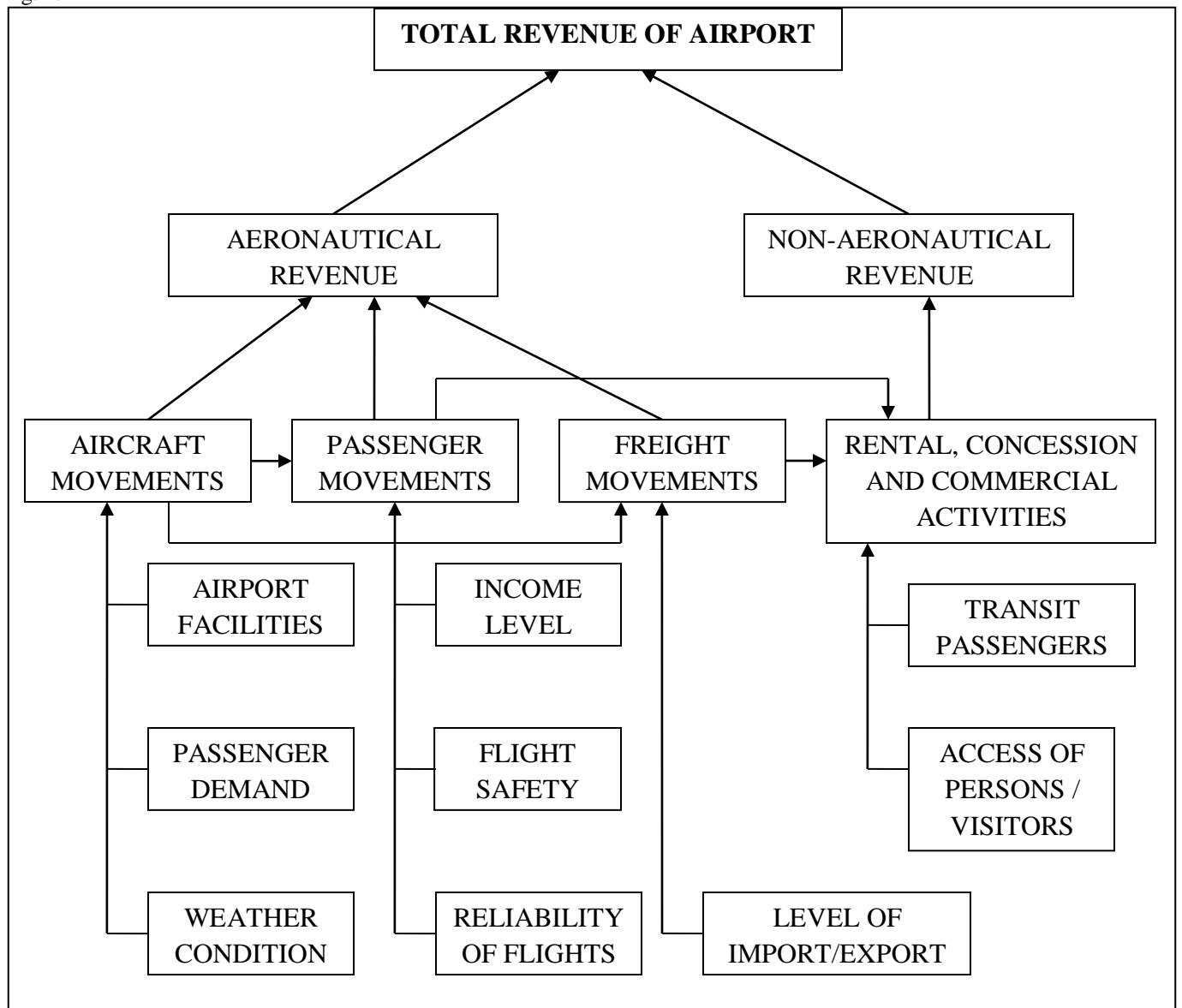
<sup>1</sup>ICAO, Airport Economics Manual, 2<sup>nd</sup> ,Ed.2003,pp.3-11

**e. Automobile Parking:** This includes fees and charges payable by a commercial enterprise for the right to operate automobile parking facilities at the airport.

**f. Other Concessions and Commercial Activities Operated by the Airport:** All other concession fees and charges payable by commercial or other entities for the right to sell goods and services at the airport, as well as any public admission fees charged for entry to areas of special interest or for guided tours at the airport.

### 2.1.4 Conceptual Framework of Revenue Variables

Fig. 2.1



## 2.1.5 Summary of Acts, Laws, and Policies

### **Civil Aviation Authority of Nepal Act 2053, HMG/Nepal**

Civil Aviation Authority of Nepal Act 2053 is promulgated by the then HMG/N in order to establish an autonomous entity to regulate civil aviation and operate airports in the country. The Act states that CAAN is established for the development and expansion of civil aviation and for the safe, regular, standard and efficient conduct of air traffic, aeronautical communication, air navigation and air transportation services.<sup>1</sup>

The vision of CAAN assumed by the Act is making both domestic and international air services safer, more reliable and affordable. The Act states in Article 5 that CAAN shall allow using and utilizing equipments, services and facilities available in airports to maximize economic benefits. Following major provisions are made in the Act to raise funds for CAAN

- Charging fees for aircraft landing, parking, housing, ground handling, and vehicle parking on the airports owned by CAAN
- Collecting passenger service charges for providing standard passenger services and facilities.
- Collecting fixed charges from business and advertisements on the airport.
- Collecting fixed charges for providing electricity, drinking water, telephone, telex, fax, etc.

Similarly, the Act states, in article 18, that CAAN board shall follow business principle while conducting its duties keeping in view safety of air services and passengers comfort and security.

### **Civil Aviation Policy 2063, Government of Nepal.**

Civil Aviation Policy 2063 is formulated by the government of Nepal in order to ensure its activities to cope with the growing demand of air services within the country and abroad. The goal of this policy is to develop air transport system by making civil aviation safe, reliable, standard, affordable, sustainable and effective through increasing participation of private sector according to liberal sky policy.<sup>2</sup> This policy has recognized the need of private participation in the construction and operation of airports in order to generate maximum benefits.

In order to fulfill its goal, civil aviation policy has its major objective to establish national aviation industry in comparison to global aviation industry, maintaining higher level of flight

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<sup>1</sup> Government of Nepal, *Civil Aviation Authority of Nepal Act 2053*, pp. 4.

<sup>2</sup> Government of Nepal, *Civil Aviation Policy 2063*, pp. 2

safety and aviation security. To make civil aviation fair and competitive by attracting and encouraging national and foreign private investors to conduct air services; construction, operation and management of airports, and facilities related to air transport. Develop civil aviation in the form of reliable service industry and recreational aviation activities. The policy also initiates to make bilateral and multilateral air service agreements, on the principle of equity and mutuality, with countries having feasibility of sufficient tourism promotion in order to benefit Nepal.

The Para 4.14 of the policy states the provision of private sector participation in airports. Private sectors will be encouraged to participate in the development and operation of air transport and related infrastructures such as airports, roads, railway link, terminal building, communication, air navigation, etc through BOT, BOOT, OT and other suitable modalities. This policy further states the working policy for air transport infrastructure developments which includes the expansion and upgrading of Tribhuvan International Airport, according to its long term plan by the combined investments of government of Nepal, CAAN and private sector. To enhance economic opportunities in the country by the promotion of tourism and civil aviation a second international airport will be built with modern facilities to cope with the increasing demand worldwide.

#### **Airport Tariff Rules (4<sup>th</sup> Amendment) 2061, Nepal Gadget 2061/08/28**

The Airport Tariff Rules is the only legal document mentioning the charges and fees to be collected from various activities in airports within the country. The Rules made provision for collecting various aeronautical and non-aeronautical charges. It states that the airport entity will collect ‘landing charge’ for each landing made by an aircraft on the basis of its weight. ‘Parking charge’ will be collected on the basis of time an aircraft remains on the airport. ‘Housing charge’ will be collected for the number of housings provided to an aircraft. Ground handling charge will be collected from the airlines as per prior agreement. Likewise, communication and navigation charge will be collected as certain percentage of landing charge for each landing.<sup>1</sup>

Similarly, the Rules states that airport entity will collect charges for the sales of fuel, cargo handling, automobile parking, airport entry pass, film shooting and advertising. The airport will also collect rentals for land and buildings on the basis of area occupied. The Rules also made provision to collect miscellaneous charges such as passenger service, security, rescue and fire-fighting. And charges will be collected for airport catering, passenger transport, electricity, telephone etc.

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<sup>1</sup> MoCTCA, *Airport Tariff Rules (4<sup>th</sup> Amendment) 2061*, Kathmandu, pp. 2-6.



## **'Airport Economics Manual', International Civil Aviation Organization (2003)**

The 'Airport Economics Manual' explains the need for establishment, development and areas of responsibility of an autonomous airport authority as: 'The establishment of an autonomous airport entity would not necessarily result in an unprofitable airport become profitable. But experience gained worldwide from these developments indicates that where airports have been operated by autonomous entities their overall financial situation has generally tended to improve. The areas of responsibility or services concerned normally include most or all of the following aircraft movement areas, passenger terminal facilities, cargo handling facilities, aircraft parking areas, hangar facilities, air traffic control including communications and sometimes meteorological services.'<sup>1</sup>

The manual further explains the financial independence of autonomous airport authorities as 'A main objective of establishing an autonomous airport entity is to improve the efficiency and finances of the airport(s) concerned. This means turning losses into profit or at least reducing the level of losses. It should be noted in this context, however, that profitable operations may not be achievable for reasons beyond the control of the entity or state concerned, such as low traffic volumes.'<sup>2</sup>

Assigning the operation of one or more airports to an autonomous entity may not, in certain circumstances, be a good approach to improving airport operating efficiency. The responsibility of regulatory and service providing entity, for example CAAN, causes increased burden and hence, reduced efficiency. In such case separating the responsibility of regulator and service provider will enhance efficiency. The reduced responsibilities of the civil aviation administration would normally include aviation safety and various licensing, monitoring, policy and regulatory functions.

### **2.1.6 Summary of Action Plans**

#### ***Vision, Mission and Strategy of CAAN***

The vision, mission and strategy of CAAN reflect the spirit of CAAN Act, international obligation and national civil aviation policy.

Vision: - Making air service an effective vehicle of high economic growth through wide scale tourism promotion and accessibility.

Mission: - Ensuring safe, secured, efficient, standard and quality service in civil aviation and airport operation.

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<sup>1</sup>ICAO, Airport Economics Manual, 2<sup>nd</sup> Ed. 2003, pp.2-3

<sup>2</sup>ICAO, Airport Economics Manual, 2<sup>nd</sup> Ed. 2003, pp.2-4

Strategy: - Diversification of revenue sources, airport marketing, performance monitoring and human resources development, among other things.

### **Civil Aviation in the Tenth Year Plan, Civil Aviation Report 2003, CAAN**

The long term perspectives of Civil Aviation Authority of Nepal include its vision, objectives, strategies, working policies and future programs. The vision of CAAN is to make international and domestic air service affordable, comfortable, safe, reliable and well managed. Its major objectives are to facilitate tourists' movement for the development of tourism industry supportive to national economy, and to contribute to poverty alleviation by increasing income generations and employment opportunities for the nationals.<sup>1</sup> The strategies of CAAN are to ensure in place airports and air services with necessary infrastructure intact for domestic and international accessibility, and to involve private sectors in the construction and operation of airports as well as in long haul flights.

The working policies of CAAN include the establishment, development and expansion of the satellite-based communication and navigation systems for affordable and safe air transport; development and expansion of essential infrastructure at international and domestic airports; making air service regular and reliable through development and standardization of airports in remote areas; encourage international charter or schedule flights and to ensure optimum utilization of air routes in the Nepalese sky. The major future programs of CAAN include safe and reliable air operations; commencement of international flights from increased number of domestic hub airports; construction of a second international airport and availing around 1.2 million air seats on international flights.

### **Infrastructure Development Undertakings, Civil Aviation Report 2009-2010, CAAN**

The report explains the development and expansion activities in aviation field being carried out in Nepal. With a single international airport, five regional hub airports (Nepalgunj, Pokhara, Biratnagar, Bhairahawa and Dhanagadhi), Forty three other domestic airports and five airports under construction (Kalikot, Kamalbazar, Masinechaur, Sitaleshola, and Simichaur), there are fifty-five airports in the country. Of these, thirty four airports are under operation at present. In the process of TIA improvement and expansion, CAAN has signed agreement of SDR 44388000 with Nepal Government. ADB has agreed to fund for capacity enhancement of ITA according to its master plan. Under this assistance we are hoping for an overall improvement made to meet the air traffic growth trend. Some of the planned initiations to be supported by ADB include runway extension by 300 meters to the south,

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<sup>1</sup> CAAN (2004) *Civil Aviation in the Tenth Year Plan*, Civil Aviation Report 2004, pp. 13

installation of runway centerline lights, installation of new CATI approach lights, construction of a temporary Domestic Terminal Building, refurbishing the existing international terminal building, construction of new parallel taxiway, construction of new international apron, new CNS equipment, installation of localizer for Runway 02, etc. Besides, the project is also carrying out studies on organizational and management aspects of CAAN. The runway and taxiway overlay work at TIA is in the average of completion and the one additional aircraft parking bay extension work has already been completed. Consequently, there are nine international aircraft parking bay at present.

### **Development of Domestic Airports, Civil Aviation Report 2009-2010, CAAN**

The increase in number of aircraft operating companies as well as the aircraft has rendered it necessary to upgrade and expand the domestic airports. This process of expansion is being continued by CAAN for aviation to remain safe, regular and reliable. Following works have been done regarding the expansion of domestic airports and construction of additional physical infrastructures.

#### **a) Dhangadhi Airport:-**

Taking into consideration the absence the of airport with a blacktopped runway in far Western Development Region and the request from the local bodies for up gradation and expansion of Dhangadhi airport, which has made a high contribution for the regional balance, CAAN has completed the blacktopping of the runway, taxiway and apron aiming to run the airport for the whole year through. Now Dhangadhi airport is capacitated enough for welcoming aircraft as big as Fokker 100.

#### **b) Surkhet Airport:-**

Surkhet airport as the base of Karnali Region has been widely upgraded. Now the 1040x30m runway is blacktopped, the aircraft parking apron area, which could otherwise accommodate five twinotters or the like aircraft, is now developed into a rigid parking apron fit for accommodating three more MI8 helicopters. The land acquisition for runway expansion is in progress.

#### **c Janakpur Airport:-**

The runway at Janakpur airport has been extended by 300 m giving it a final length of 1200 m. The upgrading and development of the runway, taxiway, and apron has been completed at this airport. Expansion and infrastructure development of this airport to make it a regional level international airport is underway.

**d) Simikot Airport:-**

The compensation amount against the land acquired for the runway expansion at Humla airport has been distributed. The blacktopping of taxiway, runway, and apron at this airport is in progress. The construction work is delayed due to difficulties in transporting construction materials and adverse weather conditions. However, major portion of the runway has been completed and is opened for flight operations.

**e) Tumlingtar Airport:-**

The blacktopping of the 1200 m long runway at Tumlingtar airport has been recently completed and is opened for flight operations. Further development of this airport is planned to make it a major airport in the eastern mountain region.

Likewise, land acquisition has also been completed for a project to construct a new regional level international airport in Pokhara, Bhairahwa and Janakpur. Besides, Simara, Dhangadhi, Sanfebagar, Chaurjhari, Dolpa, Rara and Kangel Danda airports are also getting significant infrastructure development during this fiscal year etc.

**Significant Works Included in the Budget and Programme of fiscal year 2067/68**

CAAN in the current fiscal year is conducting the following crucial works with the approval of the Board of Directors:<sup>1</sup>

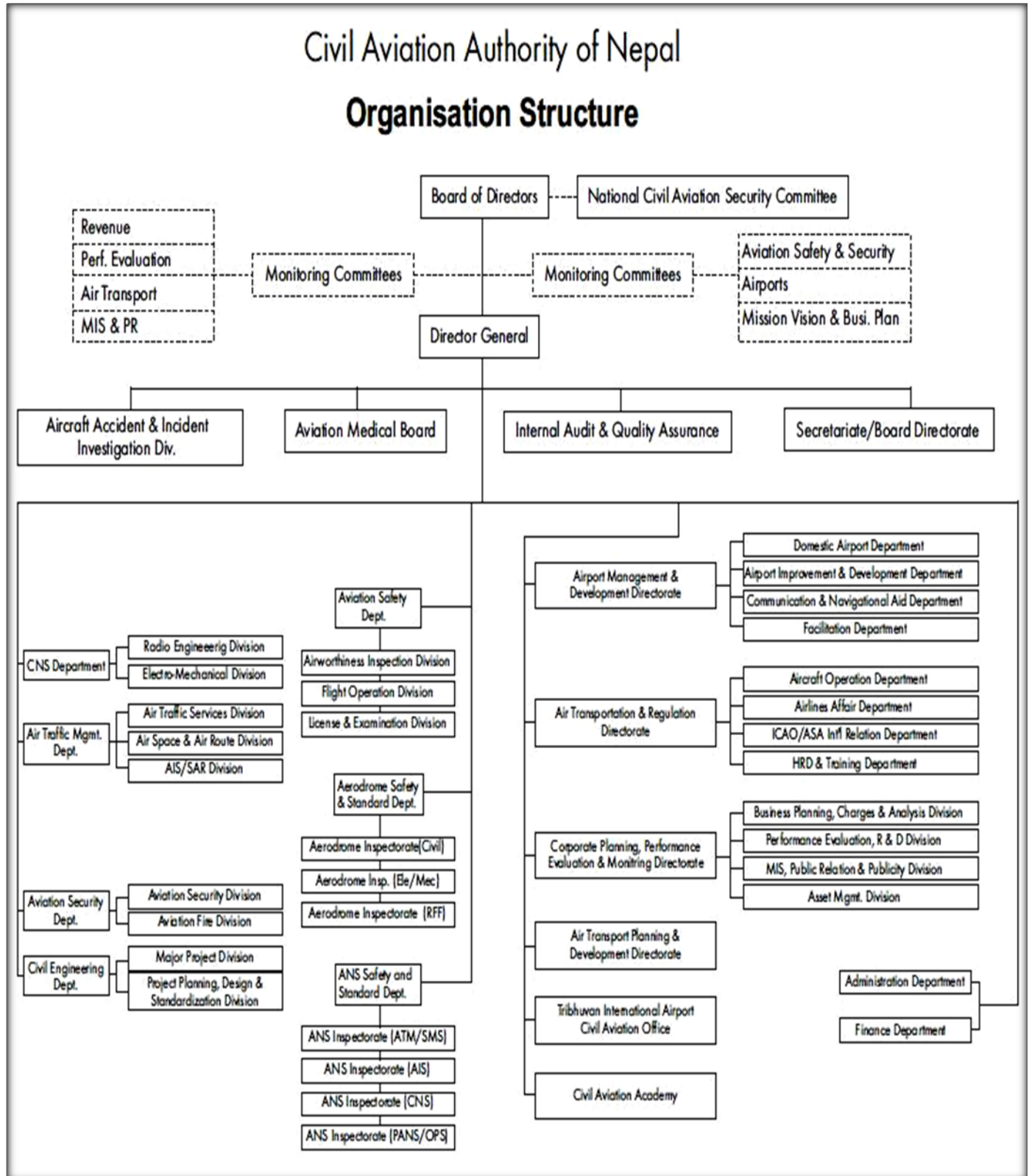
- Extend the runway at Manang and Dolpa airports, construct the terminal/tower building at Kangelanda airport and extend the apron at Simikot airport.
- Continue the works being done during the last fiscal year, regarding to runway, taxiway and apron at Taplejung, Khanidanada, Kangelanda, Thamkharka, Rajbiraj, Rumjatar, Manang, Tumlingtar, the old and the new airports at Pokhara, Dolpa, Rara, Biratnagar, Simikot airports.
- Equip Simara and Dhangadhi airports with airfield lighting system to make these airports suitable for running night operation.
- Complete the installation process of new VOR/DME at Kathmandu and Biratnagar airports to accommodate smooth operation of increased flights.

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<sup>1</sup> Civil Aviation Report 2009-2010, CAAN (2010), pp. 29

## 2.1.7 Organization Structure of CAA: Nepal

Fig-2.2



## 2.2 Review of Relevant Studies

There are many national and international publications in the form of manuals, journals, magazines, articles etc in the field of civil aviation and air transportation. Many case studies have also been carried out for Organizations involved in civil aviation and tourism industry. In our country, studies have been conducted by institutions and consultants regarding the operational status and institutional strengthening of CAAN. But there is lack of research studies in civil aviation and airport revenue by professionals as well as academicians. In the course of the study various publications like Acts, laws, Government policies, ICAO Journals, Manuals, civil aviation reports, souvenirs, case study reports and other relevant magazines are consulted. The relevant literatures in the field are summarized as follows:

### **Upadhyay, Meen Raj, ‘Airport: Emerging issues and challenges’, (2002)**

In his article ‘Airport: Emerging issues and challenges,’ M. R. Upadhyay highlights the contribution of airports in global economic development. He explains that airports are a place of global air transportation network, inter modal transfer point, and serve as an engine of economic development.<sup>1</sup>It drives economic progress by -

- transporting billions of passengers worldwide,
- transporting a third of the value of world’s manufactured exports,
- allowing cheaper and more efficient air transportation as driving global force,
- creating business expansion and attraction worldwide,
- Enhancing international tourism and consequently serving the government, local community and satisfying customer’s need in a sustainable way.

He further explains that airport operators should recognize the need to maximize the use of existing capacity by improving and expanding physical airside and landside, ground access enhancements and traffic flow management. As well as new runway, terminal buildings, and new airports need to be built to meet growing traffic demands. According to him airports in the modern era must cope with

- ensuring that customers are satisfied with cost-effective and performance based quality service
- crucial capital investment requirements
- new technologies with greater costs

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<sup>1</sup> Upadhyay, M.R. Airport: Emerging Issues and Challenges. CAAN Souvenir 2002, pp. 23

- acquisition of new business expertise

Thus, airports need to improve capacity for handling passengers and freight and to adopt the changing role of service provider to increase benefits from airports.

### **NEPECON, Institutional Strengthening of CAAN: Study Report. Kathmandu (2004)**

Nepal Engineering Consultancy Services Centre Ltd. conducted a study on the institutional strengthening of CAAN and submitted the final report in August 2004. The main objective of the study was to improve the overall institutional capacity of CAAN on the basis of the modern systematic management tools and practices. The Board has also mandated the management to implement the recommendations within the preview of prevailing Act, rules and regulations. Some of the major findings of the report are summarized below:

**Traffic-** The domestic traffic trend at TIA and some domestic airports is increasing. Nepalgunj, Biratnagar, and Gautam Buddha airports have registered significant increase in air traffic movement and revenue turnover particularly after the introduction of jet aircraft in the domestic sector.

**Profit/Loss trends-** Out of 47 airports, only 10 airports (TIA and 9 domestic airports- Lukla, Chandragadhi, Rumjatar, Biratnagar, Simara, Pokhara, Jomsom, Nepalgunj and Surkhet) are in operating profit. Chandragadhi and Simara have shown growing profit trend.

**Management skills-** Enhancement of management skills and capacity, business orientation, corporate planning, external relationships and incentive plans for maximization of revenue should be duly addressed.

**Commercialization-** CAAN is yet to be fully commercialized and the investments in commercially non-viable airports should not be encouraged.<sup>1</sup>

**Training-** The expensive foreign training programs require proper analysis of the needs and planning for appropriate placement.

**Preferential Share-** The capital structure of CAAN amounts to NRS. 1,330 million in the form of redeemable preferential shares, which is to be paid back to Govt. of Nepal within 10 years starting from the fourth year of its existence. It is difficult for CAAN to payback the redeemable share of the capital amount within the given time frame due to financial constraints.

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<sup>1</sup>CAAN (2005) Corporate Planning: Institutional Strengthening. Civil Aviation Report 2005, pp.18

**Interest rate-** The interest rate of 10.25% for the capital loan to be paid to the Govt. is very high. It should be revised on the basis of actual currency inflation exchange rate of Nepal Rastra Bank.

**Tax exemption-** CAAN has paid a substantial amount to the Govt. of Nepal as TDS payments. On the other hand, it is subsidizing many remote and social sector airports with negative cash flow as well. Considering CAAN's contribution on social sector, tax exemption on CAAN earning is sought.

**Asset Valuation-** Out of total assets value transferred from DCA to CAAN, 50% is land value. The calculation of land value on the basis of commercial values is very high compared to the costs by the accounting principle of cost price or market price whichever is lower.

**Business plan and financial viability-** A long term business plan, financial plan or a strategic plan should be prepared.

**Pokhrel,Rajan,'Commercialization of Airports and users Charges - An analysis,'(2005)**

In his article 'Commercialization of airports and users charges,' R. Pokhrel explains that that air transport industry is becoming more and more competitive day by day. A competitive market and considerable growth in air traffic demand has undertaken a significant transformation of the airports and related facilities. In order to meet the competitive market airports are either being run on an autonomous, quasi-commercial basis, or sold, or installations such as terminals are being turned over to the private sector through operating concession or long term leases.

He explains the status of airport marketing and financing of airports. Nepal has paved its way towards the commercialization of airports by running them through an autonomous civil aviation entity. A country where civil aviation is also a social obligation, privatization of airports is still far from the ground reality.<sup>1</sup>Airport facilities used to be financed by the charges paid by airlines using them and in many cases complemented by public aid.

He further explains that non-aeronautical revenues earned from the commercial activities are subsidizing the aeronautical charges in many commercial airports. Non-aeronautical revenues share almost 50 percent of the total income in most of the international airports in the world, which is only 17 percent of the total revenue in the case of TIA. But, the trend of non-aeronautical revenue generation during short span of time after the establishment of CAAN is quite encouraging.

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<sup>1</sup> Pokhrel, R. Commercialization of Airports and user's Charges- An analysis. CAAN Souvenir 2005, pp.17



Thus, the article emphasizes that commercial use of airports is essential to maximize non-aeronautical revenues which helps to lower aeronautical charges and, in turn, cost of air services.

**Menachery, Martin, 'Airports in GCC States - Promising good return on investments', (2006)**

This article discusses the development of infrastructures and growth of civil aviation in the Gulf Consortium Countries (GCC). Airport infrastructure in GCC States- Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE- has undergone dramatic development during the last two decades. It is one of the regions in the world where maximum investments are happening in the construction of new airports and expansion and modernization of existing ones. Billions of dollars are already spent and many more billions will be spent in the airport projects in these States.

The article mentions that development of modern aviation infrastructure is having and will continue to have a very positive impact on the lifestyle of people in the GCC States as well as on its economy. Currently, these countries are competing among themselves to create world-class airport infrastructure. The world's highest rate of growth in passenger traffic, freight and aircraft movements witnessed in the region stands as a testimony to the importance of the GCC States in the worldwide civil aviation infrastructure map. The region is fast emerging as one of the most desired destinations for investment in the civil aviation infrastructure.<sup>1</sup>

The article concludes that civil aviation infrastructure in these States is developing rapidly and qualitatively, considering the expansion and modernization programme going on in various airports in the region and addition of new services and facilities every year. The main factors behind this development are the dramatic rise in the passenger throughput, a remarkable jump in the number of flights and the appreciable increase in the size of aircraft used. This is complemented with economical and constructional development, and adoption of new income sources as a diversification strategy.

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<sup>1</sup> Menachery, Martin (2006). Airports in GCC States- Promising good return on investments, Air Contracts, Issue 9, October, pp.4

**Young, Nisha, ‘The Land of opportunities for Air Logistic Industry’, (2006)**

This article states aviation as an integral part of the growth process in the emerging economies of the world. The growing demand for air cargo in the South Asian region has added challenges to airport authorities for upgrading infrastructures and facilities in airports. As a result many smaller airports are being upgraded with special focus on improving air cargo handling facilities, such as modern security systems, cold storage services, etc. Nepal, a country that goes almost unnoticed, is also experiencing growth in the air cargo industry. <sup>1</sup>

The author adds that air freight industry worldwide has been growing at a steady pace over the years and is likely to experience exponential growth in South Asia. The air cargo industry in India is going through dynamic changes. The market is developing with new products being exported out of and imported in the country. This has resulted in new demands from customers, and India has responded well to decongest the traditional airports like Mumbai, Delhi, Chennai and Bangalore by developing many new airports like Ahmadabad, Kochin and Thiruvananthapuram.

The article further explains that airlines based in India, Pakistan, Bangladesh, Nepal and Sri Lanka have been mounting additional capacities regularly to take advantage of the spurt in the exports to the region. The skies will be congested with more carriers joining the race. Mergers and acquisitions will strengthen the market, and increased competition will encourage best services. Privatization of airports and other facilities will increase efficiency.<sup>2</sup>In the next few years, the infrastructure available at the airports will be world class in the region, and South Asia will move towards offering the best services and grabbing bigger and better share of the global air freight industry.

**KC, Kamal Kumar, ‘Little Fast Forward’ (2006)**

This article highlights the necessity of commercially viable airports in a land locked and under developed country like Nepal to facilitate sustainable economic activities. Airports being economically important place of national significance should be attractive enough for all kinds of clients using the airport. Airport can become attractive only when it maintains a highest degree of international standards which can be achieved through three fundamental requirements: budget, infrastructure and human resources.<sup>3</sup>The proper utilization of adequate

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<sup>1</sup>Young, Nisha, The land of opportunities for Air logistic industry, CAAN Souvenir 2006, pp. 49.

<sup>2</sup>Young, Nisha, The Land of opportunities for Air logistic industry, CAAN Souvenir 2006, pp.52

<sup>3</sup>KC, K. K, Little Fast Forward, CAAN Souvenir 2005, pp. 1

budget for the standard infrastructure and well trained human resources can produce a world class airport which in turn will generate safe, regular, secure and efficient air transport.

The article mentions ahead that confronting to the ICAO standards and recommended practices can assure the quality of the airport not only to the commuter but the airport users in general. The assurance of the quality will boost confidence and bring in more users. More users will result in more business and ultimately augment the economy of the country at large. To build up this cycle of standard, confidence of the users and added advantage to the national economy, a sound management system, along with a transparent and effective fees and charges and an efficient revenue collection system should be in place.<sup>1</sup>

Besides, the article also explains that air transport development in the Nepalese context is resisted by the resource limitation as well as the lack of skill and professionalism. Therefore, it is difficult to demonstrate that the local airports conform to the set of standards and recommended practices. The adoption of liberal sky policy and private sector participation stands as the first success story in civil aviation field in the country. The article suggests that CAAN should adopt airport marketing policy with a total 'management contract' of at least the landside facilities of TIA. After the successful start of facilitation in TIA CAAN should fully concentrate on the 'regulatory' part and delegate the responsibility of 'service provider' to the major airport operators.

### **Neupane, Ram Prasad, 'Strategic Focus of CAAN', (2007)**

This article highlights that the objective of Civil Aviation Authority of Nepal (CAAN) as reflected in the preamble of the Act is to develop and expand civil aviation in Nepal and to ensure safe, secured, regular, standard, and effective operation of flight, aeronautical communication, air navigation and air transportation service for domestic and international air access. CAAN is entrusted to undertake triple role as regulator, aerodrome operator and air navigation service provider. It has multifarious obligation involving construction of airport infrastructure, installation of equipment and facilities, operation, maintenance and management of airport and associated facilities.

Introduction of a new civil aviation policy in 2006 is major breakthrough in policy dimension. The policy underlines the importance of safe, secure and efficient air transport system in Nepal. It opens new horizon for private sector investment in the airlines industry, establishment of flying school, aircraft maintenance organization and airport infrastructure. CAAN is required to address pressing demand and expectation of airlines operators, airport users and traveling public in teams of infrastructure development and facilities rapidly.

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<sup>1</sup> KC, K. K, *Little Fast Forward*, CAAN Souvenir 2006, pp.3

Article four of CAAN Act states that CAAN shall be a self-governed and autonomous entity. It can acquire, utilize and manage movable and immovable property as deemed necessary. Similarly, Article ten empowers CAAN for its income generation through various sources and article 18 states that the commercial principles shall be followed with due consideration to the safety and interest of passenger while implementing activities of the CAAN.<sup>1</sup>

The vision of ICAO is stated as “safe, secure and sustainable development of civil aviation through cooperation amongst its member States.” To implement this vision, the organization has adopted the six strategic objectives for the period 2005-2010 which include safety, security, environmental protection, efficiency, continuity and rule of law. Since its inception, CAAN is confined to short-term planning using the tool of annual programming and budgeting. So, a long-term plan with strategic focus is crucial for the sustainability and healthy growth of CAAN in the capacity of regulator and service provider. Bearing in mind the changes at global, regional and national level, time has now come to review and revise vision, mission, strategy so as to create an environment in which domestic and international air transport may develop and flourish in a stable, efficient and economical manner without compromising safety and security.

Strategic planning with specific goal and measurable action should be in place to ensure successful business operations. Such plan will be goal oriented and will focus on specific measurable action with clear indication about where we are, where we want to go, how we wish to get there, when we want to arrive, who will do the work and how we are willing to pay. It is the best management tool. Along these lines appropriate strategic plan should be developed. The civil aviation sector strategy developed under ADBTA outlines the strategic objective as –to position and brand Nepal as a regional model of aviation excellence within 10 years. It suggests the following strategic objectives:

- An effective institutional and managerial framework.
- A sustainable, viable, competitive and fair aviation market.
- A modern, safe and secure operating environment that supports national development assists poverty alleviation and improves social access.

**Business Plan and Budget:** - A quality planning is necessary for the successful outcome of organizations’ management. The planning process will involve preparation of business plan and budget. The budget is normally set for a year and represents the first year of the business plan and financial and operational detail. Setting business plan and budget is process. In our context, the calculation of cost and benefits indicate that CAAN is in deficits and must

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<sup>1</sup> Ram Prasad Neupane, ‘Strategic Focus of CAAN’ CAAN Souvenir 2007, pp.5

increase its annual income significantly to recover the cost. Such financial imbalance is primarily due to the huge amount of loan liability, the high rate of interest and the problem of the recovery of outstanding dues and application of cost recovery based on charge mechanism. Increasing the charge levels is an obvious choice but it is not an easy task due to resistance from stakeholders. The airport charge should be linked with investment, annual revenue, expenditure and cash flow. Increase in international flight reduces cost per unit. It may be achievable by offering discount at lean time and more charge during peak time. Similarly for the domestic airport, the charge should be grounded as regional hub and touristic airports and low traffic remote area airports. The long term business plan and financial plan should provided guidance on determining the airports specific charges. Reduction in inefficient expenditure, operating cost and overall improvement in efficiency of planning and implementations is quite important. A good accounting system should design the budget and the account heads in such a way that direct relationship can be established between the revenue and expenditure, loans and sources of cost recovery and the performance indicators. Any loan agreements with donors and international agencies should be based upon the optimum investment which would be acceptable from commercial principles.<sup>1</sup>

Strategic Initiatives: - The future of air transport depends upon a safe, secure and profitable airports system, a viable airlines industry and a fair and consistent regulatory regime. CAAN is government owned autonomous entity. It requires significant supports to maintain financial, technical and managerial health and move forward as a successful sustainable organization responsive with change in technology, industry, trade and expectation of users and customers. In order to make repaid progress, CAAN is in need of a relief package from Government in various aspects. It including a significant deduction from the liabilities transferred, including capital structure. CAAN should focus on the operation of the airports through the best utilization of existing facilities rather than new investments. Measures to reduce financial imbalance limited to: i) Subsidize CAAN for remote area airport development and operation, ii) Link with national poverty alleviation strategy and allocate resources from Government for remote area air transports, iii) Arrange to pay all outstanding dues for housing of government agency offices at ITA and cargo complex and deduct dues from the loan liabilities of CAAN, IV) Revise likely overcapitalization due to high valuation of land (50% of total Assets) and the obsolete building and the equipment and reduce interest Rate from 8% to 3, 4%.

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<sup>1</sup> Ram Prasad Neupane, 'Business Plan and Strategic Initiatives of CAAN' CAAN Souvenir 2007, pp. 7

### **Sah, S K, Airport Marketing: An Analytical Study of Nepalgunj Airport, 2007**

In his study Mr. Sah highlights the growing importance of airports in global economy and the marketing aspects for generating revenues from airports. Air transport is no more luxury but is a necessity in remote areas and stands as the life-line in various parts of Nepal where road transportation is not accessible. Air service is the only means for transporting people and essential goods including food stuffs, medicines and construction materials. People in various parts of Nepal in the mountainous region are still dependent on air services for their livelihood and economic activities. The difficult topography has compelled the government of Nepal to invest huge amounts in constructing airports in various parts of the country to provide air services.<sup>1</sup>

Civil aviation industry is experiencing significant growth in the couple of years in the Asia-Pacific region and around the world. It is playing crucial role in raising real GDP in the emerging economies as well as around the world. The global scenarios show that civil aviation industry is causing multiplier effect in the economy by creating a chain of employment opportunities. Thus, civil aviation has stood as an economic driver and airports have become significant places for economic activities. Airports are no more port of aircrafts but are being converted into service centers and junctions of commercial activities. To enhance operating efficiency, airports are being privatized all over the world. Airports are being freed from the government control in order to standardize services and make attractive to the users. The emerging economies in Asia and Middle-East region are competing to construct highly standard and well facilitated airports to attract more users. The growing trend in this industry has created opportunities for the countries having potential for tourism and export of manufactured goods.

The concerned agencies in civil aviation field needs to develop their skills and abilities to provide standard services in order to promote the industry and maximize benefits. Aviation industry in the Asia-Pacific region has been experiencing significant growth in the couple of years and, hence, benefiting the emerging economies in this region. To make use of the opportunities in civil aviation industry in the region and around the world infrastructure development is required. In the Nepalese context, construction of second international airport and upgrading of major hub airports into regional status are urgently required. In the growing scenario of privatization of airports around the world terminal management as well as operation of airports need to be handed over to private sectors. Likewise, private sector participation is required in the construction, operation and maintenance of airports in the country.

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<sup>1</sup> Shyam Kishor Sah, 'Airport Marketing: An Analytical Study of Nepalgunj Airport', A thesis submitted to T.U, August 2007.

CAAN is unable to perform well due to lack of professionalism and unstable political situation as well as undue political interferences. Management culture in CAAN is not desired and needs improvement through skill development and hiring new professionals. A team of highly qualified and skilled professionals should lead the CAAN Board in order to enhance efficiency. Government policies are inadequate and need periodical review to make relevant and supportive for the promotion of civil aviation industry. The dual role of CAAN as the regulator of civil aviation and service provider needs to be separated in order to provide standard services and operate airports efficiently. Efficiency in airport operations helps to upgrade and standardize services, maintain desired safety level which will attract more users and finally boost up revenues. Thus, it is urgently needed to focus on the provision of services and commercial activities to market the airports.

The present state of art in civil aviation industry shows that aviation field is growing tremendously causing fast development of infrastructures and technologies to fulfill the growing demand globally. Airport authorities, worldwide, are focusing on marketing airports to provide standard services and attract more users. But in our country the concept of airport marketing is newly emerging and yet to be implemented. Though the major objective of establishing CAAN was also to facilitate air services and operate airports with business motive. But the operation of airports does not seem to be freed yet from government control and political influences. However, GoN and CAAN are seen to planning for the commercialization of airports and various services in the civil aviation field. The newly formulated Civil Aviation Policy 2063 also makes provision for commercialization of airports and related services.

**Shah, Lalit Bikram, 'Catalyst for Global Economic Development', CAAN Souvenir 2010**

This article mentions that demand of air transport will be driven by emerging economics, evolving airline network, expansion of low cost carriers, and the increasing number of megacities with their traffic growth and the need of more eco-efficient airlines. It is interesting to note that the greatest demand for passenger aircraft will be from airlines in Asia-pacific and emerging markets. The people's Republic of China and India account for 31 percentage of the total, followed by Europe (25 percent) and North American (23 percent). In terms of domestic passenger markets, India at 10 percent and China at 7.9 percent will have the fastest growth over the next 20 years. The largest by volume of traffic will remain the US domestic market. On a worldwide scale, tourism generated US\$ 7067 billion worth of economic activity in 2007 with an expected growth worth of US\$ 13,232 billion by 2017. Currently, 45 percent of all tourists worldwide arrive by air. Talking about Economic Rates from Aviation Investment in Developing Countries, a striking example is the case of KENYA-with an investment of US\$ 351 million, the increase in national connectivity has been 59 percent and

an Annual Economic Rate of return of 59 percent. Cambodia attained an increase of 46 percent in national connectivity and an annual Economic Rate of Return of 19 percent.

A look at the time of worst crisis in air transportation reveals that oil Crisis generally dominated the period from 1973 to 1980 and from 1981 to 1992, except for a break of seven years in between. 1997 brought in the Asian financial Crisis with the infamous 9/11 event having disastrous effect in the economy from 2001 to 2003 and well beyond. At the end of July 2009, passenger travel was down by 7 percent and freight volumes by 19 percent. Parked idle fleet was as high as 20860 airlines comprising a high 1301 percent of the total fleet. Leaving aside Air Transports industry, the 2008/2009 economic crisis had an equally devastating impact in the shipping Industry. Container port throughput decline was as high minus 27 percent with 9 percent of world shipping fleet having been laid up, Anticipated 2009 losses for all container shipping lines were US\$ 10 billion, a comparable figure to the losses incurred by the air Transport Industry during the same period.

**Subedi, Ashok Kumar, 'Investment in Airports Infrastructure', CAAN Souvenir (2010)**

This article explains the purpose of investment and need of investment in air transport sector. It is essential to analyze that whether investment in aviation field provides the investor with worthwhile returns to justify the investment, whether the investor is a State or a private entity. So that, it is necessary to look at the climate for global investment and investment in air transport, as well as, the economic benefit brought about by civil aviation. A good investment climate should foster productive private investment as the engine of growth and poverty reduction. Transportation plays a multi-faceted role in the pursuit of development objectives of a nation, as well as the need to maintain international communication networks. By enabling the transfer of passengers from one place to another and goods between the production and consumption centers, air transport plays the vital role that fully justifies ongoing investment.

Changing markets conditions, global airline competition and increased pressure on cost and revenue have significantly changed the international aviation business. This has led to greater competition among airports as well. Airports competition intensifying due to the following trends:

- Ongoing concentration in the airlines industry (global mergers and alliances)
- New airlines business models (low cost carries)
- Differentiated hub strategies (the trend towards multi –hobbling)
- Increasing overlap of catchment areas supported by fast track link to the major cities and development of multinational companies.



Airports worldwide have invested more than 150 billion USD in the past five year in capital infrastructure to brown field as well as green field airports.

In Nepalese context (rather worldwide concept), air transport is now accepted as a fundamental pillar of our global society, as indispensable to our daily lives as medicine and telecommunications, and essential for social progress and economics prosperity. Now, it is no more a luxury means of transports but a necessity. It plays a vital role in facilitating economic growth, particularly in developing countries. In Nepal, our past experience tells that we just need some square meter of plain land and traditional orders from political authority to build an airport. But the scenarios have been changed now and we are seeking a well build world class second international airport to facilitate the growing demand.

**Poudyal, Shaligram, 'Airport City and Aerotropolis Approach for SIA Development', (2010)**

In this 21st century, amid the forces of globalization and internationalization, airports are emerging as the new linchpins in the movement and exchange of people, products and ideas, and creators of high value-added. A nation's economic competitiveness today is increasingly determined by the competitiveness of its airports. Airports are capital intensive projects. Billions of dollars of investment is necessary to develop airport facilities. In the case of existing airports, facility expansion is required to address the growth in traffic. Technology advancement is also demanding bigger facilities (such as a 4000 meter runway and wider parking bay for A-380 Aircraft). Modern international airports are virtually a large business ventures. In the airport business return on investment is not much attractive. It generally takes more than ten years to turn around the capital investment. Thus airports are concerned to safeguard their investment looking for the long term financial sustainability.

There is regional and global competition among international airports. They want to reduce aeronautical charges to attract more and more flights. By this tendency, the proportion of aeronautical revenue is decreasing. To compensate the deficit, airports are focusing to increase the share of non-aeronautical revenues. Non-aeronautical revenue comes from commercial facilities. Successful airports are getting more than two third of revenue through commercial facilities. In this process airports are exploring for new business models. They want to be innovative. They are inventing new playing fields to expand their business. The concept of Airport City and Aerotropolis has emerged from this background. The concept of 'Aerotropolis' envisions an airport and airport city at the center and a greater airport related activity centered city, linked to, and generating synergy effects with shopping, relaxation, tourism, entertainment, convention and other facilities located in area surrounding the airport. As a national economic growth engines, airports must generate demand and position them for

heightened competition. Through airport city and aerotropolis airports like to place themselves as the core engine of national development. Aerotropolis concept brings important industry, trade, business and commercial activities within the airport area. With airport city and aerotropolis airport are not only the place of departure but also an important destination to visit, stay and to doing businesses. Airport city includes the core areas like terminal buildings, shopping arcades, air cargo facilities, offices, hotels and parking facilities.

As mentioned above, the concept of airport city and aerotropolis has been essential for airport's long term financial sustainability. The site of Second International Airport (SIA) is going to be developed from the very green field status. Billions of dollar investment in SIA development has to be financially sustainable. Investment should produce reasonable return on capital. Since projected traffic is not so high, we must choose a business model to sustain in future. For sustainability, we should follow suit as other successful world airport operators are doing. It is probable that SIA will be developed under BOOT modality. Private investors want attractive return on investment and seek to minimize the risk of loss. With availability of sufficient land, private airport developers would favor to take airport city and Aerotropolis concept in SIA. Nijgadh, the proposed site of SIA is appropriate to aerotropolis development because it is nearby Birgunj, the gateway of Nepal, and another growing city Hetauda. Besides, Chitwan National Park, the famous touristic destination of Nepal is reachable within two hour drive. All these conditions are favorable for aerotropolis development in Nijgadh. Moreover, SIA can be an air cargo hub to serve the transit trade between India-China via Tibet-Nepal.

# **CHAPTER – THREE**

## **RESEARCH METHODOLOGY**

### **3.1 Research Design**

This study is an analytical cum descriptive research in nature and result in valuable finding regarding the revenue status and potential condition of Civil Aviation Authority of Nepal (CAAN) as a sole authority established for regulating and promoting civil aviation in the country. Both primary and secondary data are used for analysis and concluding the study as per the objective.

### **3.2 Sources of Data**

Primary and secondary data required to make the study significant has been collected from relevant sources. Primary data in the form of experts' opinion are collected from experts in the field of civil aviation by survey method. Secondary data regarding air traffic movement, passengers and cargo (freight) flows and revenues of Nepalgunj airports are collected. Similarly, data of air traffic movement in TIA and total revenues of CAAN are also collected from secondary sources. Other data regarding activities taking place in the aviation field around the world required for comparative analysis are gathered from ICAO journals and other relevant international publications.

### **3.3 Population and Sampling**

For the purpose of primary data collection a survey of experts' opinion was carried. Total 20 respondents were selected from among the experts in the civil aviation field in our country by judgmental sampling procedure. The respondents consisted of 50 percent from current and ex-executives of CAAN, 30 percent from executives of domestic and international airlines, and 10 percent each from executives of MoTCA and 10 percent senior executives of airlines. An attempt was made as well to contact some more experts from the field of economic and infrastructure development sector.

### **3.4 Data collection Procedure**

The primary data was gathered by survey method by using mail questionnaire from respondents of selected sample. Secondary data related to movements of aircrafts, passengers and freight and revenues of Nepalgunj airport were collected from Nepalgunj Civil Aviation Office through field visit. Similarly, total revenue of CAAN and air traffic movements of TIA were collected from published reports of CAAN. Other required data were gathered from secondary sources like journals, magazines, special reports and web pages, etc.

### **3.5 Data Processing Procedure**

The primary and secondary data gathered from various sources are interpreted and tabulated systematically. The individual data are converted to suitable form and summed as well as average and percentages are determined. The data are systematically presented in tables, graphs and charts to make it easy to understand.

### **3.6 Analytical Tools**

For the purpose of analyzing and interpreting the data various mathematical tools are applied. The major mathematical tools applied were average, percentage, ratios, etc. The growth trends of revenue and air traffic movements were analyzed by presenting the data in graphs, bar diagram and pie charts. Contributions in the total revenues were analyzed in terms of ratios and proportions. Since the study does not assume any hypothesis statistical tests were not carried out. However, interpretations of findings of the study were expressed in terms of correlation

# **CHAPTER- FOUR**

## **PRESENTATION AND ANALYSIS OF DATA**

### **4.1 General**

The findings of the study in terms of revenues, traffic movement and growth in traffic around the world and experts opinion regarding the status of civil aviation industry in Nepal are presented in this chapter. An attempt has been made to highlight the focus of the study to find out the present situation of airports in the country and activities of related agencies. Secondary data are collected through field visits to find out sources of revenues in Nepalgunj airport and total revenues of CAAN.

Similarly, published data of CAAN and other agencies are gathered to determine the current scenario of air traffic movement in Nepal and around the world. For the collection of primary data regarding the role of CAAN in the development of aviation industry and revenue of airports in the country, survey of experts' opinion has been applied. The data are presented systematically and interpreted accordingly to give a clear picture of present scenario of aviation industry and the need of airport revenue in our country.

Secondary data highlighting the sources of revenues in Nepalgunj airport and its average contribution in the total revenue of CAAN are presented. Similarly, attempt has been made to present the air traffic movement in Nepalgunj airport and Tribhuvan Int'l airport. As well as the scenario of growth trend in the topper airports of the world are also included in this section. Finally, experts' opinion regarding the policies and activities of concerned agencies for the development of aviation industry in the country are interpreted. The relevant data gathered in the course of the study are presented in tables, graphs, bar diagrams and pie charts in the following three sections. Besides the presentation of data an attempt is also made to analyze them to give a clear picture of the findings.

### **4.2 Sources of Revenues in Nepalgunj Airport**

In this section nine years data of revenues of Nepalgunj airport and CAAN are presented. Data of revenues taken for analysis in the study ranges from fiscal year 2058/59 to 2066/67. These data includes sources of revenues in Nepalgunj airport and its contribution in the total revenue of CAAN. The proportions of aeronautical and non-aeronautical revenues in the total revenue of CAAN are also presented. After presenting the data in tables attempt is made to analyze them consequently in the succeeding paragraphs.

**Table-4.1 Sources of Revenues in Nepalgunj Airport**

(Rs. In thousands)

Sources of Revenue	Fiscal Year								
	2058/59	2059/60	2060/61	2061/62	2062/63	2063/64	2064/65	2065/66	2066/67
<b>A. Aeronautical Revenues:</b>									
Landing Charge	1,711.14	1,355.24	2,127.93	2,910.23	3,363.11	3,181.30	5,078.62	3,404.56	2,147.92
Parking Charge	17.51	4.21	0.97	-	617.84	1,587.44	2,970.72	837.30	1,141.08
Housing Charge	1,848.75	2,665.57	3,078.75	2,980.98	2,790.30	164.10	2,716.05	163.80	17.25
Comm. and Nav.	499.78	534.48	807.82	969.01	1,042.46	545.32	519.65	414.92	482.99
Passenger Service Charge	7,865.85	6,746.70	8,474.55	10,501.35	11,213.25	8,545.35	11,934.15	10,517.70	11,476.95
Cargo Charge	237.01	479.89	661.91	845.23	1,307.63	918.42	338.97	364.14	563.96
<b>Aeronautical Revenue Total</b>	<b>12,180.04</b>	<b>11,786.09</b>	<b>15,151.93</b>	<b>18,206.80</b>	<b>20,334.59</b>	<b>14,941.93</b>	<b>23,558.16</b>	<b>15,702.42</b>	<b>15,829.99</b>
<b>Percentage</b>	<b>75.24</b>	<b>82.50</b>	<b>83.54</b>	<b>83.11</b>	<b>81.33</b>	<b>78.44</b>	<b>75.99</b>	<b>65.28</b>	<b>83.09</b>
<b>B. Non-Aeronautical Revenues:</b>									
Terminal Rental	1,836.44	1,270.58	1,137.55	1,088.90	1,470.44	1,004.62	3,145.15	5,053.15	1030.47
House/land Rent	92.09	322.28	265.59	286.93	288.10	289.58	287.69	405.16	309.69
Entry Fees	77.79	23.75	62.25	33.25	98.75	15.50	65.00	20.00	56
Advertising Fees	72.10	32.11	54.00	88.65	81.77	112.62	135.50	124.67	139.78
Security Charge	171.11	146.84	212.79	291.02	336.31	218.12	207.86	165.95	193.19
Fuel Sale Charge	285.73	248.26	287.02	463.42	603.00	489.44	694.58	409.50	474.37
Electricity charge	85.05	66.53	112.03	131.33	109.82	100.00	132.41	142.47	164.25
Telephone	-	-	-	-	144.14	24.02	-	-	-
Auto Parking	-	-	-	16.20	49.04	87.83	83.60	99.40	99.40
Other Charges with no VAT	36.86	-	224.45	557.91	741.89	626.12	113.19	141.88	177.13
Misc. Income	79.27	209.41	134.18	93.88	585.85	313.5	24.31	11.00	296.36
Late Fine	1,272.31	180.36	496.43	648.81	158.00	611.257	2487.70	1744.92	280.00
<b>Total Non-Aeronautical</b>	<b>4,008.75</b>	<b>2,500.12</b>	<b>2,986.29</b>	<b>3,700.30</b>	<b>4,667.11</b>	<b>4,108.58</b>	<b>7,441.99</b>	<b>8,348.10</b>	<b>3,220.68</b>
<b>Percentage</b>	<b>24.76</b>	<b>17.50</b>	<b>16.46</b>	<b>16.89</b>	<b>18.67</b>	<b>21.56</b>	<b>24.01</b>	<b>34.72</b>	<b>16.91</b>
<b>Grand Total Revenue</b>	<b>16,188.79</b>	<b>14,286.21</b>	<b>18,138.22</b>	<b>21,907.10</b>	<b>25,000.70</b>	<b>19,050.51</b>	<b>31,000.15</b>	<b>24,050.52</b>	<b>19,050.67</b>
<b>Increase Percent</b>	<b>-</b>	<b>(11.75)</b>	<b>26.96</b>	<b>20.78</b>	<b>14.13</b>	<b>(23.80)</b>	<b>62.72</b>	<b>(22.41)</b>	<b>(20.70)</b>

Source: Nepalgunj Civil Aviation Office

**Average Aeronautical Revenues - 78.72 percent (708.52/9)**  
**Average Non- Aeronautical Revenues - 21.28 per (191.48/9)**  
**Average Growth in Total Revenue - 5.74 percent (45.93/8)**

In the above table 4.1 various sources of revenues in Nepalgunj airport from fiscal year 2058/59 to 2066/67 are presented. There are basically two types of revenues viz. aeronautical and non-aeronautical revenues. The major sources of aeronautical revenues are landing charge, parking charge, housing charge, communication and navigation charge, passenger service charge and cargo charge. Similarly, the non-aeronautical revenues include terminal rental, house and land rental, entry fees, advertising fees, security charge, fuel sales charge, automobile parking charge and miscellaneous charges. It shows that total revenue of Nepalgunj airport was NRs. 16.189 millions in FY 2058/59. The total revenue was reduced by 11.75, 23.80, 22.41 and 20.70 percent in FY 2059/60, 2063/64, 2065/66 and 2066/67 respectively over the previous year. The revenue totaled Rs. 18.138 million in FY 2060/61 with an increase of nearly 27 percent over the previous year and 21.90, 25.00 and 31.00 million in FY 2061/62, 2062/63 and 2064/65 respectively with an increase of nearly 21, 14 and 63 percent over the previous years. There is an increasing trend in the total revenue from FY 2060/61 to FY 2062/63.

The average total revenue of Nepalgunj airport is nearly 20 million rupees annually and is growing with an average rate of 5.74 percent. The average Proportions of aeronautical and non-aeronautical revenues in Nepalgunj 78.72 and 21.28 percent respectively. The share of non-aeronautical revenue is 34.72 percent in FY 2065/66 (which is the highest) while it is only 16.46 percent in FY 2060/61. Similarly, the share of aeronautical revenues is 75.24 percent of the total revenue in FY 2058/59, while it is 83.54 percent in FY 2060/61, 83.11, 81.33 and 83.09 respectively in FY 2061/62, 2062/63 and 2066/67.

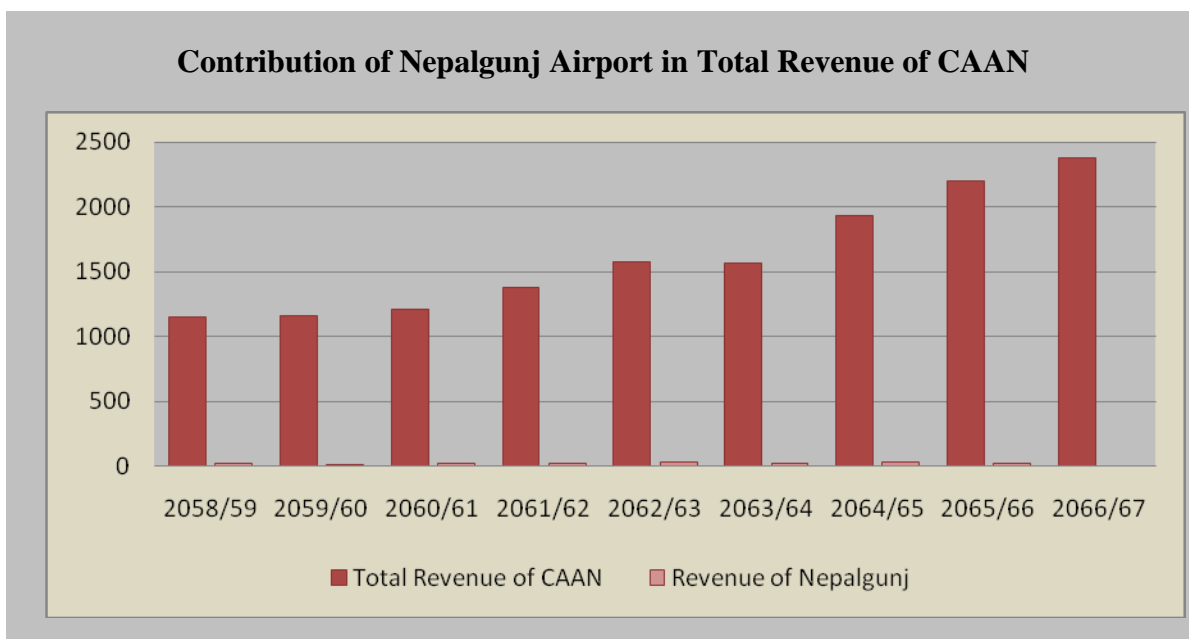
**Table - 4.2 Contribution of Nepalgunj Airport in Total Revenue of CAAN**

(Rs. In millions)

Fiscal Year	Total Revenue of CAAN		Contribution of Nepalgunj		
	Amount	Increase %	Amount	Increase %	percentage
2058/59	1155.69	-	16.19	-	1.40
2059/60	1164.25	0.74	14.30	(11.67)	1.22
2060/61	1208.52	3.81	18.14	26.85	1.50
2061/62	1374.63	13.74	21.19	16.68	1.54
2062/63	1576.97	14.72	25	17.98	1.58
2063/64	1565.46	(0.73)	19.50	(22.00)	1.25
2064/65	1931.04	23.35	31.00	58.97	1.60
2065/66	2201.11	13.98	24.50	(20.96)	1.11
2066/67	2378.29	8.04	19.50	(20.40)	0.81
<b>Average</b>	<b>1617.33</b>	<b>9.70</b>	<b>21.04</b>	<b>5.68</b>	<b>1.33</b>

Source: Nepalgunj Civil Aviation Office.

**Fig 4.1**



Source: Nepalgunj Civil Aviation Office.

Table 4.2 gives the picture of the total revenues of CAAN from FY 2058/59 to FY 2066/67 and the net contribution of Nepalgunj airport. The total revenue of CAAN is CAAN was able to generate 1576.97 Million rupees as its total revenue in FY 2062/63 and remained at third position among PEs in the country by earning net profit of 200 million rupees.<sup>4</sup> However, the total revenue shows increasing trend from FY 2060/61. The data show that CAAN is able to generate average total revenue nearly 1.6 billion rupees annually with average growth rate of 9.7 percent. The contribution of Nepalgunj airport in the total revenue of CAAN is 16.19 million rupees in FY 2058/59 whereas; it has reached 31 million rupees in FY 2064/65 with an increase of 58.97 percent over the previous year. However, the total revenue of CAAN show decrease trend from FY 2063/64 with a decrease of 0.73 percent over the previous year. Above data also show FY 2064 to 67 the revenue of CAAN is increase. (it is 23.35, 13.98 8.04 respectably) and FY 2065/66 and 2066/67 Nepalgunj airport revenue decreases (20.96 and 20.40 respectably) The average contribution of Nepalgunj airport is only 21 million rupees which is only 1.33 percent contribution of the total revenue of CAAN.

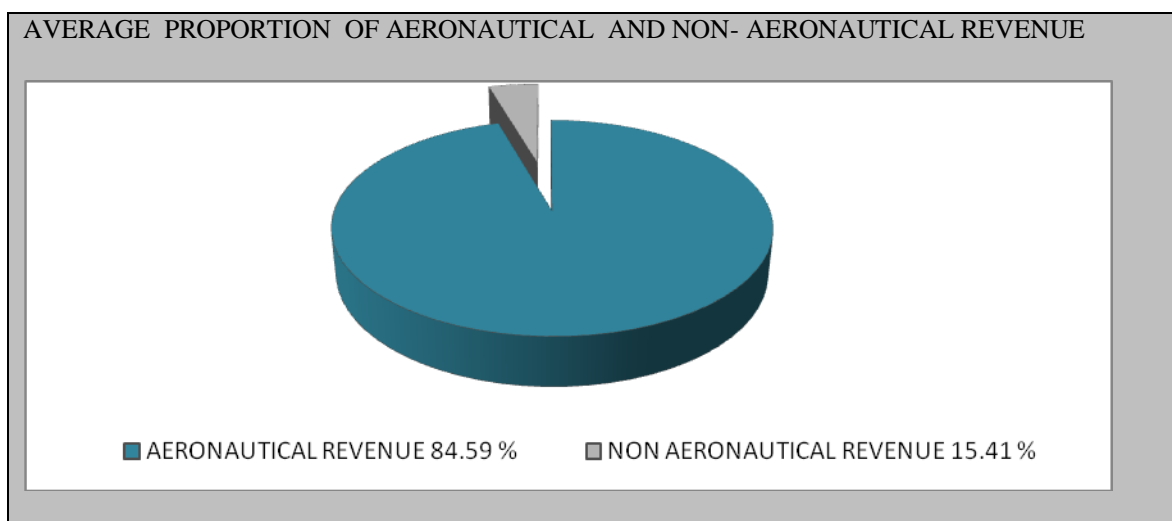


**Table – 4.3 Aeronautical and Non – Aeronautical Revenues of CAAN**

(Rs. in millions)

Year	Aeronautical Revenue		Non – Aeronautical Revenue		Total Revenue
	Amount	Percent	Amount	Percent	Amount
2058/59	1103.81	95.52	51.88	4.50	1155.69
2059/60	1030.10	88.47	134.25	11.53	1164.25
2060/61	1010.62	83.62	197.89	16.37	1208.52
2061/62	1096.62	79.77	277.97	20.22	1374.63
2062/63	1268.99	80.47	307.98	19.53	1576.97
2063/64	1431.61	91.45	134.31	8.52	1565.46
2064/65	1490.71	77.19	440.33	22.81	1931.04
2065/66	1724.65	78.35	476.45	21.64	2201.11
2066/67	2056.46	86.47	321.75	13.52	2378.23
<b>Average</b>		<b>84.59</b>		<b>15.41</b>	<b>1617.96</b>

Source: Civil Aviation Report 2009-2010

**Fig 4. 2**

Source: Nepalgunj Civil Aviation Office.

The proportions of aeronautical and non-aeronautical revenues in the total revenue of CAAN are presented in the above table 4.3. The data show that in FY 2058/59 share of aeronautical revenues is 1,103.81 million rupees which is 95.52 percent of the total revenue but, the share of non-aeronautical revenues is 58.88 million rupees which is only 4.5 percent of the total revenue. Similarly, in FY 2066/67 aeronautical revenues totals 2056.46 million rupees which is 86.46 percent and non-aeronautical revenues totals 321.75 million rupees i.e. 13.52 percent

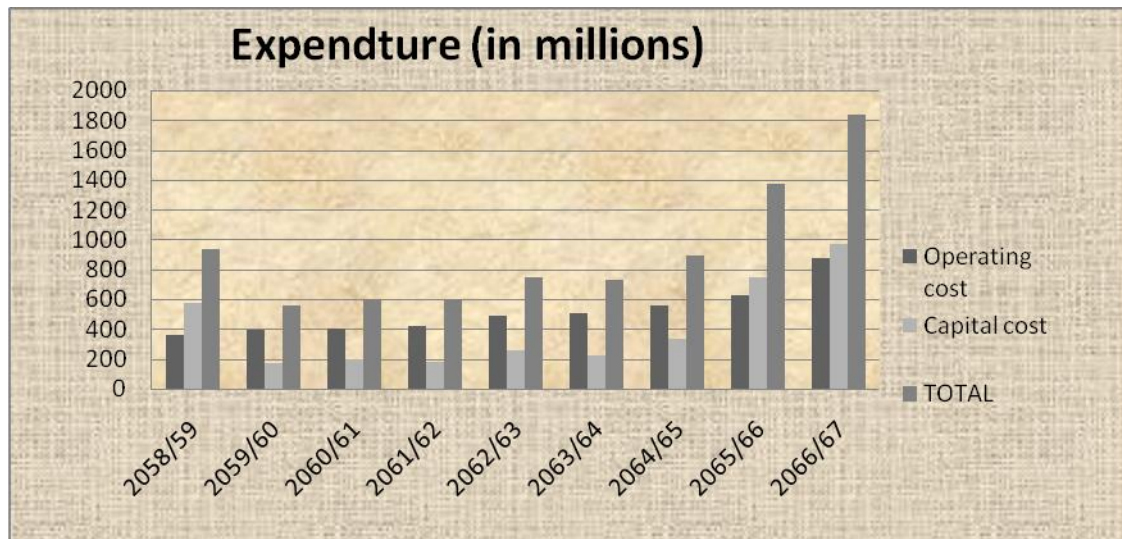
of the total revenue. The proportion of non-aeronautical revenue has reached to 22.81 percent of the total revenue in FY 2064/65. However, the share of non-aeronautical revenues in average is only 15.41 percent of the total revenue whereas the share of aeronautical revenues is 84.592 percent. The pie-chart in figure also shows the shares of aeronautical and non-aeronautical revenues in the total revenue of CAAN.

**Table –4.4 Expenditures of CAAN** (Rs. in millions)

Year	Operating Cost	Capital cost	Total cost
2058/59	358.356	577.670	936.027
2059/60	390.79	170.521	561.412
2060/61	404.71	200.241	604.953
2061/62	421.593	178.314	599.90
2062/63	490.195	259.539	749.734
2063/64	507.653	219.188	726.841
2064/65	556.544	332.364	888.908
2065/66	622.388	748.530	1370.86
2066/67	874.592	965.861	1840454

Source: Civil Aviation Report 2009-2010

**Fig 4.3**



Source: Nepalgunj Civil Aviation Office.

The above table 4.4 shows the total expenditure of CAAN. Operating cost and Capital cost present in FY 2058/59 to 2066/67. The data show that in FY 058/59 to 2066/67 operating cost increasing rates every FY. Capital expenditure in FY 2058/59 is Rs 577.670 million, which is decreased to Rs. 170.521 million in FY 2059/60. It varies up to FY 2063/64. But

there after FY 2063/64 to 2066/67 is increase Rate. As a company decrease in expenditure also increases in revenue.

### 4.3 Aircraft, Passenger and Cargo Flows

In this section nine years data related to air traffic flow from the year 2002 to 2009 are presented. Aircraft, passenger and cargo movement data of Nepalgunj airport as well as Tribhuvan International Airport (TIA) are presented to analyze the status of civil aviation industry in the country. A list of top fifteen international airports among the 100 leading airports of the world which got two digit growths in passenger flow in the year 2006 is also presented. This section is concluded with the comparative analysis of growth in civil aviation industry in our country and around the world.

#### 4.3.1 Air Traffic Flows in Nepalgunj Airport

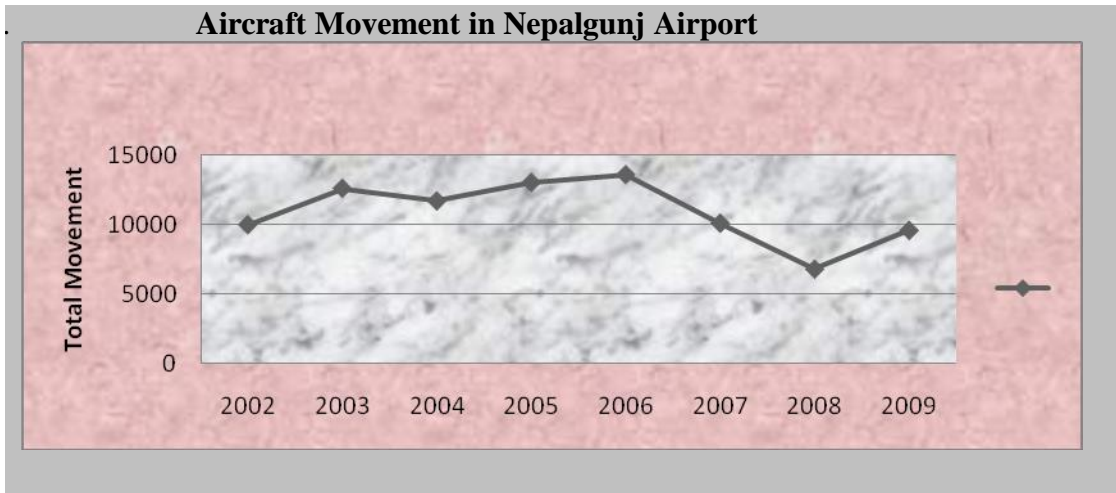
The air traffic flows is presented in three sections viz. total aircraft movements, passenger flows and cargo flows in the flowing tables and also highlighted in graphs and bar diagrams.

**Table- 4.5 Aircraft Movement in Nepalgunj Airport**

Year	Total Movement	Increase / (decrease)	Percentage Increase
2002	9,980	-	-
2003	12,609	2,629	26.34
2004	11,698	(911)	7.22
2005	13,032	1,334	11.40
2006	13,597	565	4.33
2007	10,088	(3,509)	25.80
2008	6,772	(3,316)	32.28
2009	9,568	2,796	41.28

Source: Nepalgunj Civil Aviation Office

**Fig 4.4**



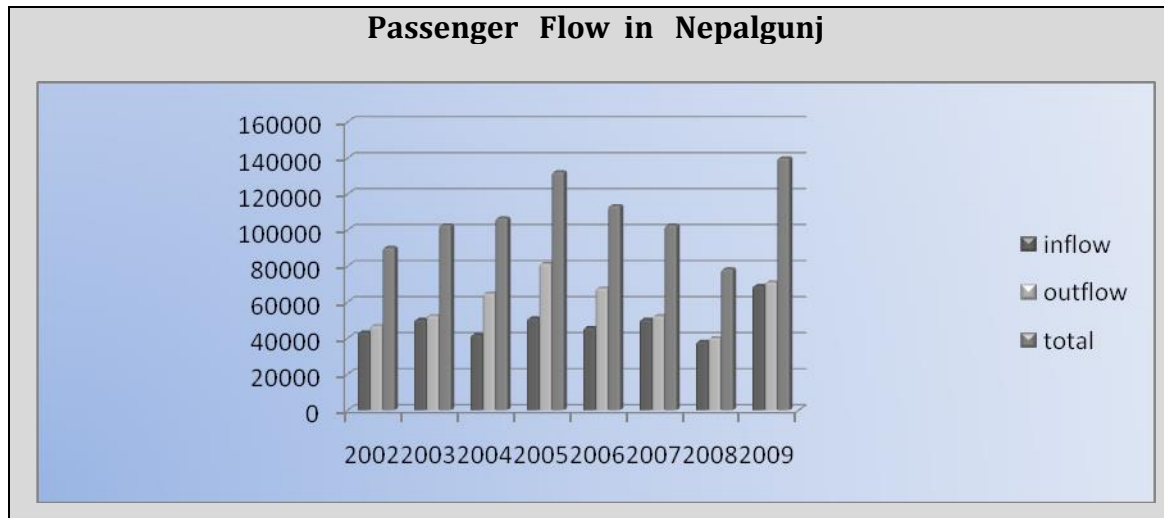
Source: Nepalgunj Civil Aviation Office.

The above table 4.5 presents the number of aircraft movements in Nepalgunj airport during the study period. The data show that total aircraft movement in the year 2002 was 9,980 and 13,394 in 2006. In the year 2003 aircraft movement was surged to 12,609, which was increased remarkably by 26.34 percent over the previous year. But, the total aircraft movement is reducing from 2004 and finally decreased in 2006 by 4.51 percent over the previous year. The total aircraft movement in Nepalgunj airport is, however, increased by average growth rate of 8.24 percent annually. The graph in above figure also presents the trend of growth in aircraft movement in Nepalgunj airport.

**Table- 4.6 Passenger Flow in Nepalgunj Airport**

Year	Inflow	Outflow	Total	Increase	Percentage Increase
2002	43,298	46,925	90,223	-	-
2003	50,319	52,425	102,744	12,521	13.88
2004	41,855	64,799	106,654	3,910	3.88
2005	51,034	81,320	132,354	25,700	24.16
2006	45,769	67,711	113,480	(18,874)	(14.26)
2007	50,422	52,300	102,722	(10,758)	(9.48)
2008	38,184	40,100	78,284	(24,438)	(23.79)
2009	69,045	71,000	140,045	61,761	78.88
<b>Average</b>					<b>10.47</b>

**Fig 4.5**



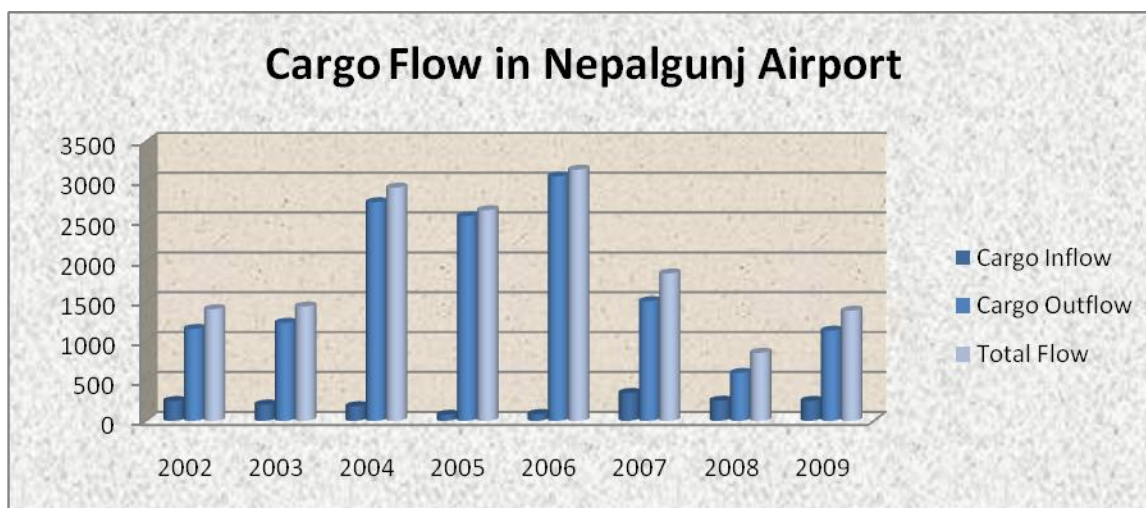
Source: Nepalgunj Civil Aviation Office.

In the above table 4.6, data of passenger inflow, outflow and total passenger flow in Nepalgunj airport from the year 2002 to 2009 are presented. The data show total passenger flow in Nepalgunj airport is 90,223 in the year 2002 and 140,045 in 2009. The total passenger movement is reached to 132,354 in the year 2005 with a remarkable increase of 24.16 percent over previous the year. The passenger movement has increasing trend from 2003 to 2005 but, it is decreased in 2006 by 14.26 percent over the previous year. However, the total passenger flow in Nepalgunj airport is growing annually with an average rate of 10.47 percent. The bar diagrams in the above 4.5 also shows the status of passenger in Nepalgunj airport.

**Table- 4.7 Cargo Flow in Nepalgunj Airport**

Year	Cargo Inflow	Cargo Outflow	Total	Increase	% Increase
2002	247.63	1,152.22	1,399.85	-	-
2003	203.71	1,229.82	1,433.53	33.68	2.41
2004	182.85	2,741.99	2,924.84	1,491.31	104.03
2005	76.25	2,565.44	2,641.69	(293.15)	(10.02)
2006	85.71	3,065.38	3,151.09	509.4	19.28
2007	349.10	1,500.30	1,849.39	(1,301.7)	(41.3)
2008	252.00	600.77	852.77	(996.62)	(54.0)
2009	250	1,131.02	1,381.02	528.25	62.0

**Fig 4.6**



Source: Nepalgunj Civil Aviation Office.

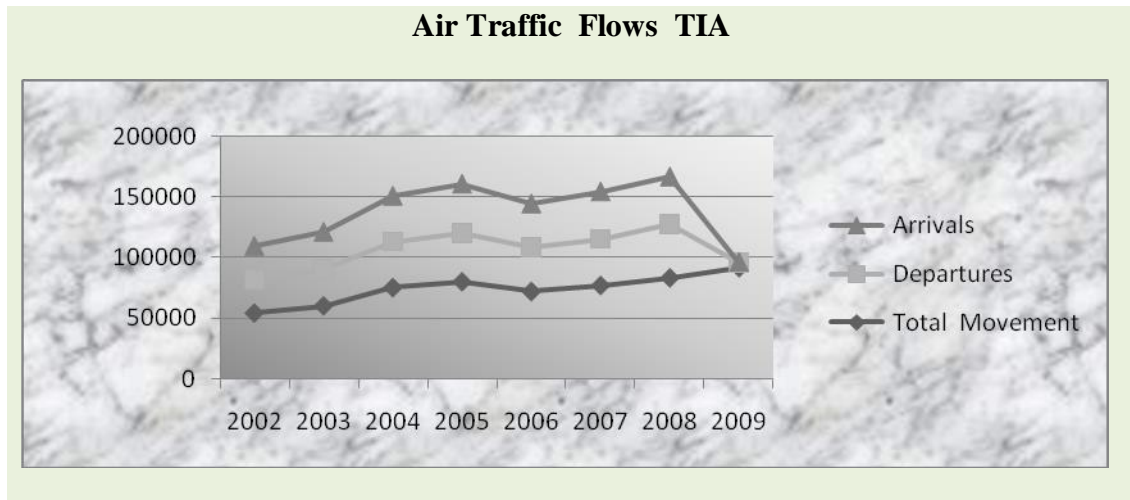
The above table 4.7 shows the data of cargo (freight) inflow, outflow and total movement in Nepalgunj airport from the year 2002 to 2009. The data of total cargo flow in Nepalgunj airport is 1399.85 tons in the year 2002 and it is 1381.02 tons in 2009. There is a significant increase in the cargo flow in the year 2004 by 104 percent over the previous year. But, it is decreased by (10.02 %, 41.3%, and 54%) percent in the year (2005, 2007 and 2008) over the previous year. In the year 2009 the cargo flow is increased by 62% over the previous year. However, total cargo flow is growing with an average rate of nearly 11 percent.

### 4.3.2 Air - Traffic Flows in Tribhuvan International Airport (TIA)

**Table- 4.8 Aircraft Movement in TIA**

Year	Departure	Arrival	Total	Increase	% Increase
2002	27,415	27,410	54,825	-	-
2003	30,324	30,324	60,648	5,823	10.62
2004	37,900	37,633	75,533	14,885	24.54
2005	40,159	40,634	80,793	5,260	6.96
2006	36,165	36,172	72,337	(8,456)	(10.37)
2007	38,171	39,171	77,342	5,005	6.92
2008	44,362	39,200	83,562	6,220	8.04
2009	45,042	46,842	91,884	8,322	9.95

**Fig 4.7**



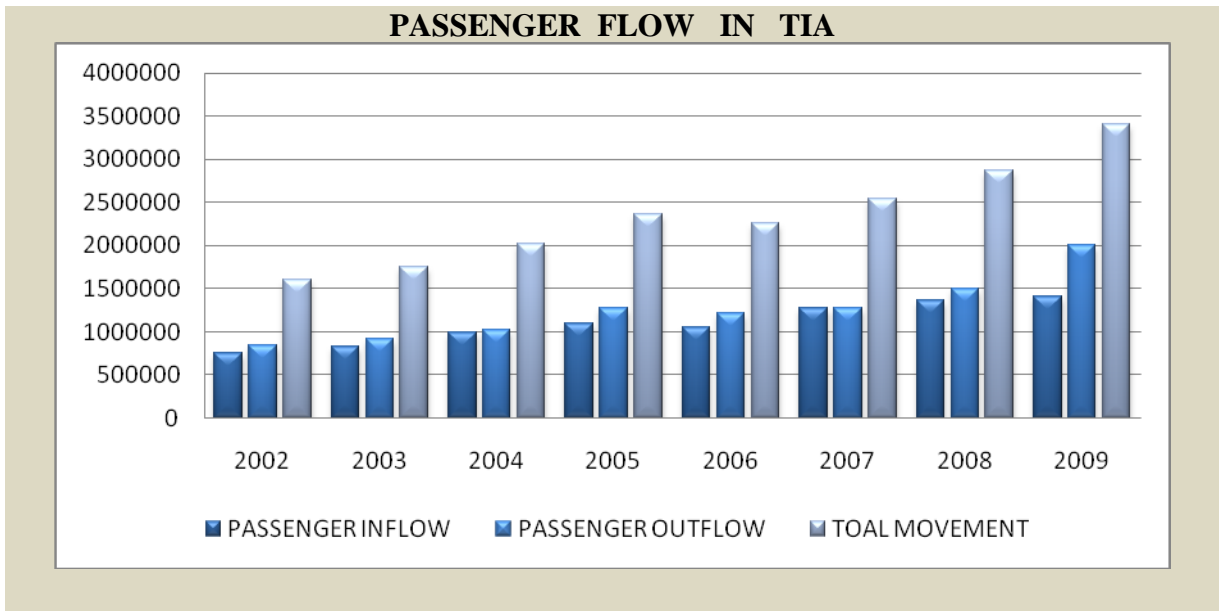
Source: Nepalgunj Civil Aviation Office.

In the above table number of arrivals, departures and total movement of aircrafts in the domestic as well as international sector in TIA are presented. The data show that total aircraft movement in TIA is 54,825 in the year 2002 and 91,884 in 2009. Total aircraft flow is increased till 2005 and decreased in 2006. The total air traffic flow is reached 91884 in the year 2009 with a significant increase by 9.95 percent over the previous year. But, it is totaled to 72,337 in the year 2006 and resulted in a decrease by 10.47 percent over the previous year. However, the total aircraft movement in TIA is growing with an average rate of 8.11 percent. The graph shown in figure 4.7 also represents the picture of total aircraft, Departures and Arrivals movement in the domestic as well as international sector of TIA

**Table- 4.9 Passenger Flow in TIA**

Year	Inflow	Outflow	Total	Increase	% Increase
2002	752,153	848,156	1,600,309	-	-
2003	828,298	919,784	1,748,082	147,773	9.23
2004	992,641	1,024,209	2,016,850	268,768	15.37
2005	1,095,940	1,266,945	2,362,885	346,035	17.15
2006	1,057,743	1,208,015	2,265,758	(97,127)	(4.18)
2007	1,271,282	1,272,200	2,543,482	277,724	12.26
2008	1,367,216	1,500,000	2,867,216	323,734	12.72
2009	1,405,015	2,000,000	3,405,015	537,799	18.75

**Fig 4. 8**



Source: Nepalgunj Civil Aviation Office.

Table 4.9 and bar diagram in figure 4.8 presents the passenger inflows, outflows and total flows took place in the domestic as well as international sector in TIA. The data show that passenger inflow was 752,153 in the year 2002 and 1,405,015 in 2009. The passenger inflow registered maximum to be 1,405,015 in the year 2009. Similarly, passenger outflow was 848,156 in 2002 and 2,000,000 in 2009 and registered the maximum to be 2,000,000 in the year 2009. The passenger outflow is slightly more than the passenger inflow. The total passenger flow in TIA was 1,600,309 in 2002 and 3,405,015 in 2009 and recorded the maximum in 2009 to be 3,405,014. Total passenger flow is increased till 2005 while it is decreased in the year 2006 by 4.18 percent over the previous year. However, the average growth in total passenger flow is around 11.62 percent annually.

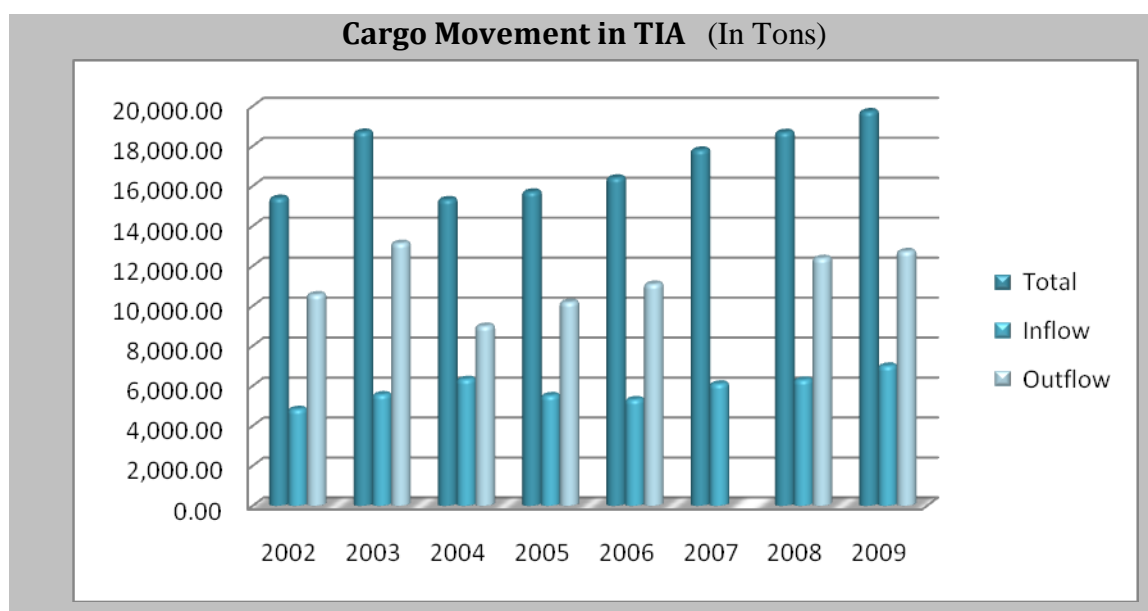


**Table- 4.10 Cargo Movement in TIA**

(In tons)

Year	Cargo Inflow	Cargo Outflow	Total	Increase	%Increase
2002	4,829.58	10,569.20	15,398.78	-	-
2003	5,564.84	13,142.10	18,706.94	3,308.16	21.48
2004	6,332.36	8,994.76	15,327.12	(3,379.82)	(18.10)
2005	5,517.34	10,192.23	15,709.57	382.45	2.50
2006	5,320.32	11,093.60	16,413.92	704.35	4.48
2007	6102.21	11,706.30	17,808.51	1,394.59	8.49
2008	6300.33	12,389.90	18,690.23	881.72	4.95
2009	7000.21	12,733.21	19,733.42	1,043.19	5.58

**Fig 4.9**



Source: Nepalgunj Civil Aviation Office.

The above table 4.10 presents data of tons of cargo (freight) inflows, outflows and total flows from TIA. The data show that cargo outflow is nearly double of cargo inflows. The total cargo movement is 15,398.78 tons in the year 2002 and 19,733.42 in 2009. Total cargo movement was recorded to be 19,733.42 tons in 2009 with an increase of 5.58 percent over the previous year and highly increase in 2003 which is 21.48% in previous year. But, it was reduced to 15,327.12 tons in the year 2004 with a decrease by 18.10 percent over the previous year. However, the average growth in total cargo flows in TIA is only 4.2 percent.

**Table- 4.11 International Air Traffic Flow in TIA**

Year	Aircraft Flow		Passenger Flow		Cargo Flow (tons)	
	Total Flow	Increase %	Total Flow	Increase %	Total Flow	Increase %
2002	6,884	-	851,918	-	12,685.48	-
2003	7,508	9.10	1,000,101	17.39	15,585.12	22.86
2004	9,062	20.70	1,140,660	14.05	13,010.05	(16.52)
2005	11,536	27.30	1,252,266	9.78	12,739.20	(2.08)
2006	11,058	(4.14)	1,383,041	10.44	13,110.82	2.92
2007	11,894	7.56	1,627,053	17.64	13,883.85	5.89
2008	14,276	20.01	1,830,630	12.52	13,885.77	0.0138
2009	15,701	9.98	2,027,147	10.73	15,348.68	10.53
Average		12.93		13.22		3.37

Source: Nepalgunj Civil Aviation Office.

Table 4.11 above presents the total aircraft, passenger and cargo flow in the international sector in TIA. These data show the status of international air traffic flow in the country and the growth in aircraft, passenger and cargo movement taking place compared to the global scenarios. Total aircraft flow was rushed till 2009 with increasing rate, but it was decreased by 4.14 percent in 2006. The growth rate in aircraft flow is remained to 12.93 percent in average. Passenger flow in the international sector is also growing over the years. The growth rate in total passenger flow is 13.22 percent in average. While the average growth rate of cargo flow is 3.37 percent.

#### **4.3.3 Budget FY 2067/68 (2009/2010) of CAAN**

CAAN Board has approved the budget for fiscal year 2067/68. It invests in air transport infrastructure either from its own resources or from governmental loan or share at present under budgetary provision for each fiscal year. For current fiscal year 2067/68, it is estimated that Rs 3,290,050,000 will be invested as capital expenditure and Rs 1,748,463,000 as operating expenditure. The estimated expenditure which is Rs 5,042,213,000 is more than the last year. In addition, CAAN has made provision of Rs. 763,706,000 for principle and interest payment, Rs. 179,504,000 for income tax, and Rs 121,400,000 is allocated for the retirement fund, contribution to employee union, professional organization and contingency fund. All together, CAAN has estimated Rs 6,106,823,000 as total expenditure for this fiscal year. To cover up the above expenditure, CAAN is raising Rs 4,424,253,000 from various aeronautical and non – aeronautical charges, Rs 529,496,000 from Government of Nepal as

loan and equity share and rest Rs. 1,869,945,000 will be borne from the bank reserve in the beginning of the current fiscal year. On the whole, the budget committee has estimated that there will be still a surplus of Rs 71, 68, 71, 000 at the end of the current fiscal year. The detail of the budget is as follows.

**Table 4.12 Budget FY 2067/68 (2009/2010)**

<b>Particular</b>	<b>Amount</b>	<b>Particular</b>	<b>Amount</b>
Revenue	3,001,382,000	Capital investment	3,293,750,000
Loan/Share/Grant	1,422,871,000	Operating cost	1,748,463,000
	<b>4,424,253,000</b>		<b>5,062,213,000</b>
Receivable from Govt. of Nepal	529,496,000	Principle/Interest payment	763,706,000
Bank balance(067 Shrawan)	1,869,945,000	Contribution to Employment fund, Employment union and Professional Organization	101,400,000
	<b>2,399,441,000</b>	Provision for income tax	<b>1,044,610,000</b>
<b>Total</b>	<b>6,823,694,000</b>		<b>6,106,823,000</b>
<b>Net surplus</b>	<b>716,871,000</b>		

#### **4.4 International Scenarios**

The international scenarios of air traffic flows including aircraft movement, passenger and movement show growing trend. The growth trends of passenger and aircraft movements in the Asia-Pacific region are quite encouraging. Many airports of the Asian country have become successful in achieving remarkable growth in air traffic flows. Airports of our two neighboring countries India and China are able to gain position in the world topper airports list. A list of top 30 international airports of the world, which experienced significant growth in the year 2010 compared to the 2009 figure, is presented in the table below.

**Table- 4.13 Passenger and Cargo Flow of Top 30 Airports 2010**

Rank 2010	Name of Airport	Total Passengers	% Change	Rank 2010	Name of Airport	Total Cargo	% Change
1	Atlanta	89,331,622	1.5	1	Hong Kong	4,168,394	23.2
2	Beijing	73,891,801	13.0	2	Memphis	3,916,937	5.9
3	Chicago	66,665,390	3.3	3	Shanghai	3,227,914	27.1
4	London/Heathrow	65,884,143	- 0.2	4	Seoul/Incheon	2,684,500	16.1
5	Tokyo/ Haneda	64,069,098	3.4	5	Anchorage	2,578,396	33.1
6	Los Angeles	58,915,100	4.2	6	Paris/CDG	2,399,067	16.8
7	Paris/CDG	58,167,062	0.4	7	Frankfurt	2,275,106	20.5
8	Dallas/Fort Worth	56,905,066	1.6	8	Dubai	2,270,498	17.8
9	Frankfurt	53,009,221	4.1	9	Tokyo/ Narita	2,167,843	17.1
10	Denver	52,211,242	4.1	10	Louisville	2,166,226	11.1
11	Hong Kong	52,410,819	10.6	11	Singapore	1,842,004	10.9
12	Madrid	49,786,202	2.8	12	Miami	1,835,793	17.9
13	Dubai	47,180,628	15.4	13	Los Angeles	1,810,345	15.5
14	New York/JFK	46,495,876	1.4	14	Taipei	1,767,075	30.1
15	Amsterdam	45,211,749	3.8	15	London/Heathrow	1,551,405	15.0
16	Jakarta	43,981,022	18.4	16	Beijing	1,549,126	5.0
17	Bangkok	42,784,967	5.6	17	Amsterdam	1,538,135	16.8
18	Singapore	42,038,777	13.0	18	Chicago	1,424,077	30.0
19	Guangzhou	40,975,253	10.6	19	New York/JFK	1,343,114	17.4
20	Shanghai	40,582,356	27.2	20	Bangkok	1,310,146	25.3
21	Houston	40,475,058	1.2	21	Guangzhou	1,144,458	19.8
22	Las Vegas	39,397,359	-2.6	22	Indianapolis	947,279	5.2
23	San Francisco	39,254,634	5.1	23	Newark	854,750	9.6
24	Phoenix	38,552,409	1.9	24	Shenzhen	809,363	33.6
25	Charlotte	38,143,078	10.4	25	Tokyo/Haneda	804,995	1.9
26	Rome	63,228,490	7.4	26	Osaka	759,278	24.7
27	Sydney	35,992,164	7.6	27	Luxembourg	705,370	12.2
28	Miami	35,698,025	5.3	28	Kuala Lumpur	697,015	15.6
29	Orlando	34,877,507	3.5	29	Mumbai	671,238	18.5
30	Munich	34,721,605	6.2	30	Atlanta	659,139	17.0

Source: Airport Council International (ACI)

In the above table 4.13, traffic flows of the world topper airports in the year 2010 are presented which show significant increases for global passenger and cargo traffic. The provisional statistics record that passenger traffic grew by more than 6.3 percent when compared to the 2009 figure, while cargo tonnage increase by 15.2% to 82 million tones. Monthly worldwide passenger growth was consistently high, averaging between 5% and 10%. Of the ten largest facilities in the world, Atlanta/Hartsfield-Jackson continues to dominate, handling nearly 90 million passengers during 2010-around 16 million passengers more than its nearest rival. The fastest growing facility in the top ten was Beijing capital International with a 13% increase in passenger traffic –up to 73.8 million –which meant it moved up from third place in 2009 into second in 2010. While outside the top ten the major movers were Dubai international, climbing to 13th place thanks to a 15.4% rise, with Shanghai/PuDong and Jakarta/Soekarno-Hatta both reporting healthy increase of 27.2% and 18.4% respectively.<sup>1</sup>

It also shows that the airlines industry’s recovery was: “more coherent and compressive in the freight sector” where all regions showed double digit increase, led by Asia –Pacific (+18.6%) and Europe (+17%). The figures show that international freight was the principle driver of the air freight recovery as total tonnage jumped by 20.5% compared to the 2009 total. Perhaps the most notable change is that after years of gradually narrowing the gap between them, Hong Kong has overtaken Memphis as the world’s busiest cargo hub. Across the world, cargo volumes grew by 15.2% in 2010 to 82 million tones. Hong Kong, like most other Asian airports, reported strong growth up 23.2% at 4.1 million tones. The increase was generally due to exports and imports from China, with Guangzhou, Shanghai and Shenzhen all reporting significant rise in the cargo. All the top 30 airports disclosed positive figures, with Paris/Charles de Gaulle remaining the busiest cargo hub in Europe, although Frankfurt has closed the gap to just 100,000 tones. In the Middle East, Dubai International also continued its dramatic expansion, recording a 17.85 rise.

## **4.5 Analysis of Primary Data**

Primary data regarding the role, activities and policies of CAAN and revenue generation by airports in the country was collected by the survey of experts' opinion with the help of a set of questionnaire. A set of 20 questions was prepared for collecting experts’ opinion. Total 20 experts were selected from the field of civil aviation by judgmental sampling method. Most of the respondents selected as sample of experts were contacted for personal interview to get their opinion. The set of questionnaire used for the purpose of collecting experts' opinion are presented in Appendix B-I.

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<sup>1</sup> Airports International, June 2011, Vol. 44 No. 4, pp 32, UK

The total questions were classified into four groups to analyze and interpret the answers. The four groups included questions related to the government policies and activities of CAAN, the external impact and infrastructural development, role of CAAN and operation of airports, and professional development and revenue generation separately. The experts' opinion gathered in the form of primary data are grouped and presented in the following tables.

**Table- 4.14 Government policies and Activities of CAAN**

Question No.	Answer Options	Total Response	Result
1. CAAN is playing active role for the development of aviation industry	a) Yes	11/20	55%
	b) No	9/20	45%
2. CAAN performance of the role of regulator and operator of civil aviation in the country	a) Very Good	2/20	10%
	b) Good	5/20	25%
	c) Satisfactory	13/20	65%
4. Government policy is promoting civil aviation industry and CAAN	a) Proper	2/20	10%
	b) Improper	4/20	20%
	c) Need improvement	14/20	70%
19. Passenger service charge Rs.5 from social sector airports	a) Yes	3/20	15%
	b) No	17/20	85%

In the first group questions related to government policies and activities of CAAN were included. Regarding the development of civil aviation in the country 55 percent respondents answered that CAAN is playing active role and 65 percent agreed that CAAN is satisfactorily performing its role of regulator and service provider. Likewise, 70 percent accepted that government policy needs improvement for the promotion of aviation industry in the country and 85 percent respondents answered that the decision of MoTCA to collect only Rs.5 as airport service charge by the remote airports is not rational.

**Table- 4.15 External Impact and the need of Second International Airport**

Question No.	Answer Options	Total Response	Result
5. Impact of the growing trend of civil aviation in Asia-Pacific region on Nepalese civil aviation industry	a) High	2 /20	10%
	b) Moderate	12/20	60%
	c) Low	6/20	30%
	d) No effect	-	-
6. The rush of international airlines in Nepal will continue longer	a) Yes	15 /20	75%
	b) No	5/20	25%
7. World class second International Airport urgently needed	a) Yes	16 /20	80%
	b) No	4 /20	20%

8. BOOT is the best model for the second International Airport	a)Yes	17/20	85%
	b)No	3/20	15%
9. Most suitable airport in western Nepal to upgrade as regional international airport.	a) Nepalgunj	14/20	70%
	b) Surkhet	3/20	15%
	c) Dhangadhi	3 /20	15%
15. Continue investment for new airports in the social sector	a)Yes	4 /20	10%
	b)No	16/20	80%

In the second group questions related to external impact and the need of second international airport were included in which 60 percent respondents agreed that the growing trend of civil aviation in the Asia-Pacific region will moderately impact the country civil aviation. A total 75 percent answered that the rush of international airlines in Nepal will continue for longer period and 80 percent agreed with the urgent need of second international airport in the country for which 85 percent responded that the construction should be on BOOT model. The upgrading of Nepalgunj airport into regional international airport is supported by 70 percent and 80 percent respondent opposed the construction of new social sector airport.

**Table- 4.16 Role of CAAN and Operation of Airports in Nepal**

Question No.	Answer Options	Total Response	Result
3. Separating the dual role of CAAN, regulator and service provider	a)Yes	18/20	90%
	b)No	2 /20	10%
10. Autonomous decision by CAAN in planning and investment	a)Yes	7/20	35%
	b)No	13/20	65%
14. Best option to operate airports having good financial status	a) Management contract	9/20	45%
	b) Privatizing terminal management	6/20	30%
	c) By CAAN	5/20	25%
17. Best option to utilize the property of airports not in operation	a) Handing over to local authorities	6/20	25%
	b) Leasing for commercial use	12/20	60%
	c) Selling	2/20	10%

In the third group questions related to the role of CAAN and operation of airports included where 90 percent respondents answered that dual role of regulator and service provider played by CAAN should be separated in order to enhance efficiency in the operation of airports. Similarly, 65 percent respondents feel that CAAN is unable to take decisions on its own; 45 percent respondents agreed airports having good financial should be operated by

management contract whereas 30 percent assume that privatizing terminal management will be the better solution. Regarding the utilization of unused property of those airports not in operation 60 percent supported leasing for commercial use.

**Table- 4.17 Professionalism Development and Revenue Generation**

Question No.	Options	Total Response	Result
11. Cause behind the non-productive investment being made by CAAN	a) Government interference	6/20	30%
	b) Political pressure	8/20	40%
	c) Lack of professionalism	5/20	25%
12. Level of revenue generated by airports and other offices of CAAN	a) Quite low	5/20	25%
	b) Satisfactory	12/20	60%
	c) Sufficient	3/20	15%
13. Best option to maximize revenue generation by airports	a) Increasing the tariffs	7 /20	35%
	b) Privatizing the airports	5/20	25%
	c) Privatizing services	8/20	40%
16. Non-aeronautical revenue proportion be raised up to 50 percent of total revenue	a)Yes	18 /20	90%
	b)No	2/20	10%
18. Nepalgunj airport possess great potential for revenue	a)Yes	9 /20	45%
	b)No	11/20	60%
20. CAAN need to hire qualified revenue professionals	a)Yes	15 /20	75%
	b)No	5/20	25%

In the last group questions related to professionalism development in CAAN and revenue generation were included and majority of the respondents blamed government interference and political pressure are the main reason behind the non-productive investment being made by CAAN. A total 60 percent of the respondents feel that the level of revenue generation by CAAN is satisfactory; 40 percent are in favor of privatizing services while 35 percent seeks increasing the tariffs will be the best option to maximize revenues. Similarly 90 percent experts suggest that the proportion non-aeronautical revenue should be up to fifty percent of the total revenue. Only 60 percent agreed that Nepalgunj airport possesses great potential for non-aeronautical revenue generation. Last but not least, 75 percent experts suggest that CAAN should hire qualified professional for revenue management.

#### **4.6 Major Findings of the Study**

The major findings of the study are summarized in the following three sub-sections to highlight the revenue pattern, air traffic flow and performance of CAAN according to objectives of the study.



#### **4.6.1 Revenue pattern**

The first objective of the study was to find out sources of revenues in Nepalgunj airport and its contribution in the total revenue of CAAN. In the course of the study it was found that there are various sources of aeronautical and non-aeronautical revenues in Nepalgunj airport. Major sources of aeronautical revenues are landing charge, parking charge, housing charge, passenger service charge, cargo handling charge, communication and navigation charge, etc. Similarly, major sources of non-aeronautical revenues are terminal rental, fuel sales charge, security charge, house and land rentals, etc. Nepalgunj airport has generated in average total revenue of nearly Rs. 20 million per year in the study period. The maximum revenue it has generated till now is Rs. 31 million in the fiscal year 2064/65. The total revenue of Nepalgunj airport is growing with an average rate of 5.74 percent annually.

The average total revenue of CAAN is found to be Rs. **1.618** billion per year which is growing with an average rate of 9.70 percent. CAAN was able to generate total revenue of 2.378 billion in fiscal year 2066/67. In this fiscal year CAAN was also able to stand at the third position among PEs in the country by making a net profit of rupees 200 million. The aeronautical revenue has the great share in the total revenue of CAAN which is 84.59 percent in average. But, the non-aeronautical revenue has a very small share of only 15.41 percent in the total revenue. Whereas the share of aeronautical revenue in Nepalgunj airport is 84.59 percent and non-aeronautical revenue is 15.41 percent of the total revenue of Nepalgunj airport. The contribution of Nepalgunj airport in the total revenue of CAAN is nearly 1.33 percent in average which is quite low compared to the facilities available in this airport.

Many facilities in Nepalgunj airport are under-utilized as a result contribution of this major hub airport having the widest network in the country, is quite low. An art of state, the well equipped hangar in this airport remains idle almost the whole year due to higher rentals. The aircraft owners allow their aircraft maintenance in open air despite rain, dust and rust but hesitate to pay the high cost of housing in hangar. Similarly, the large area of land in this airport generate negligible amount of rent due to the lack of technologies. In many airports rooms inside and outside the terminal building remains vacant over the year due to high rentals. The land and other properties of airports not in operation are also not utilized.

#### **4.6.2 Status of Air Traffic Flow**

The second objective of the study was to find out the status of civil aviation in Nepal and around the world. Regarding the air traffic flow in Nepalgunj airport, it was found that the total aircraft movement was increased gradually, with an average growth of nearly 8.24 percent annually. The total passenger flow was increasing till 2005 but decreased from 2006 to 2008 (by 14.26 in 2006, 9.48 percent in 2007 and 23.78 percent in 2008). Passenger flow

recorded the highest in the year 2009 to **140,045** with significant increase by 78.88 percent. The average growth in total passenger movement is nearly 10.47 percent per year. Similarly, cargo inflow is reducing but cargo outflow is increasing. The total cargo flow is growing by 11 percent in average annually. The air traffic flow is growing with the addition of bigger aircraft and increase of fleets.

In Tribhuvan International airport total air traffic flow has increased till the year 2005 but decreased in 2006 and again increasing since 2007. The average growth in aircraft movement is nearly 8.11 percent. The total passenger flow remained increasing till 2005 but decreased in 2006 by 4.2 percent. However, it is on increasing trend since the year 2007 and recorded the highest growth in 2009 (18.75 percent over the previous year). The annual growth rate of passenger flow is nearly 11.62 percent in average. The total cargo flow is growing with an average rate of 4.2 percent. Likewise, in the international sector aircraft movement in TIA is increased by 9.98 percent in 2009 where as total passenger flow is raised by 10.73 percent and total cargo flow is raised by 10.53 percent.

Similarly, the international scenario shows that passenger flow in the year 2010 grew by 6.3 percent over the previous year 2009, while cargo tonnage increased by 15.2 percent and aircraft movement recorded slight rise to 64 million, up by 0.8 percent. In the year 2010 Asia-Pacific region gained 14.2 percent rise in international passengers and overall increase of 11.5 percent over previous year while Middle East delivered 11.5 percent rise, Africa 8.8 percent rise, Europe 4.3 percent rise and North America managed only 2.4 percent growth. Individual performance shows that Beijing Capital International Airport remained the fastest growing facility in the top ten with 13 percent increase in passenger traffic and moved up from third place in 2009 to second in 2010. Likewise, Dubai International climbed to 13th place with a 15.4 percent rise in passenger flow while Shanghai/PuDong and Jakarta/Soekarno-Hatta both reported healthy increase of 27.2 and 18.4 percent respectively. In the freight sector Asia-Pacific region lead with increase 18.6 percent and Hong Kong has overtaken Memphis as the world's busiest cargo hub with 23.2 percent rise in the year 2010. Besides Tokyo, Bangkok, Singapore, Guangzhou, Sanghai, Kuala Lumpur, Mumbai and Taipei from the Asian continent.

#### **4.6.3 Findings from the Primary Data (Expert Opinion)**

The third objective was to find out experts' opinion regarding the government policies, roles and activities of CAAN for the development of civil aviation and revenue generation of airports in Nepal. It was found that CAAN is the only authorized agency of Government of Nepal to regulate civil aviation and operate airports in the country. The main objective of CAAN is to operate airports as autonomous entity and maximize economic benefits by

adopting business principles, and hence to reduce the burden of government investment in airports. But it is functioning dual role of regulator as well as service provider which should be separated at the earliest possible to enhance efficiency in airport operations. CAAN is not able to perform well during past eight years of its establishment due to inadequate and rigid government policies, lack of professional skills among executives of CAAN and undue influence from government and political leaders. The political interferences often resulted in non-productive investment of limited resources of CAAN and over loaded government loans.

To cope with the growth scenarios in aviation industry around the world it is urgently needed to construct a second international airport and Nepalgunj airport should be upgraded to regional international airport to facilitate air traffic flow from neighboring Indian cities and mitigate regional imbalance. For the construction and development of airports including international airport fund raising should be done by public and private participation including BOOT model. According to the experts' view the better options to operate financially viable airports are either to privatize services or through management contract in order to optimize revenue generation. And the unused property of the airports not in operation should be leased for commercial use. Likewise, the proportion of non-aeronautical revenue should be raised up to fifty percent of the total revenue to facilitate airports and standardize services as well as to make air services in the social sector affordable and accessible. Last but not least, majority of the experts advised that CAAN should focus on professional development and hire qualified personnel for revenue management.

## CHAPTER- FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATION

### 5.1 Summary

The study 'Revenue of CAAN - An Analytical Study of Nepalgunj Airport, is carried out with an objective of finding out the revenue status and potential condition of Civil Aviation Authority of Nepal (CAAN). This study is an analytical cum descriptive research in nature and result in valuable findings and recommendation for the stakeholders. CAAN is the sole authority designated for regulating and promoting civil aviation in the country. To keep pace with the international trend of establishing autonomous entity to look after this specialized sector and reduce the financial burden of government the then HMG/N established Civil Aviation Authority of Nepal on 31<sup>st</sup> December 1998, which replaced Department of Civil Aviation under the Ministry of Tourism and Civil Aviation. The main objective of CAAN is to operate airports and regulate civil aviation in the country to make air services safe, standard, regular and effective. It owns a total 54 airports in the country out of which few are under construction; more than a dozen are closed due to lack of flights and nearly 3 dozens are in operation. CAAN also provides air operator and worthiness certificates, licenses to technical personnel, and conducts trainings and performance ratings.

Tribhuvan International Airport (TIA) in Kathmandu is the only international airport in the country serving flights for short and long international routes. Whereas Biratnagar, Pokhara, Bhairahwa and Nepalgunj airports are operated as regional hub airports and the remaining airports in the mountain region are mostly short take-off and landing (STOL) airfields. The government of Nepal has decided to build a second international airport in the country to accommodate the growing demand of air traffic. The feasibility study and detailed project report of the Second International Airport, proposed to be built at Neejgadh in Bara district, has also been finalized by Land Mark Worldwide, a Korean airport builder, and submitted to the Ministry of Tourism and Civil Aviation, GoN for final approval. Besides, the government has announced through the annual Budget of FY 2068/69 to upgrade Bhairahwa, Pokhara, Janakpur and Surkhet airports into regional international level.

Airports are important places which play crucial role for economic activities in a country. In the old days airports were operated and managed by the direct control of States as a junction of air transport. But the scenario has been changed drastically. Airports are no more a station providing flight for various destinations but, are referred as a point of service generation and hospitality. As a result it is required to operate and manage airports efficiently to minimize cost and maximize benefits.

The growing competition in the industry has compelled states to operate airports by autonomous entity and with business concept so as to generate surplus revenue that can be reinvested for upgrading and standardizing the services and facilities at the airports. For which airports revenue is getting importance and the operating agencies are focused to optimize the use of facilities for increased revenue generation. Airports revenue is composed of aeronautical generated directly from flight operation and air traffic flow, and non-aeronautical revenues generated from the commercial and recreational activities taking place at the airport. Airport operating agencies throughout the world are focused on raising the proportion of non-aeronautical revenue over 50 percent of the total revenue.

Nepalgunj airport is the regional hub of mid and far western Nepal, having the largest network of air links after TIA, Kathmandu. It is located at Ranjha, Manikapur VDC, of Banke district in Bheri zone and is nearly 6 km north of Nepalgunj city. Besides regular flights to the capital Kathmandu, this airport provides regular and chartered flights to nearly a dozen airports in the mid and far western mountain regions of the country. In fact, this airport is serving as the gateway for the remote Karnali region as well as for Mount Kailash in Tibet, the renowned Hindu pilgrimage site. Nepalgunj airport is facilitating air transport, the lifeline of people in the far remote areas, and playing crucial role in the socio-economic development of the inaccessible areas of the country. It is also contributing to the national development by generating employment opportunities and facilitating economic activities in nearly one fourth of the territory of Nepal.

## **5.2 Conclusions**

Air transport is no more luxury but is a necessity in remote areas and stands as the life-line in various parts of Nepal where road transportation is not accessible. Air service is the only means for transporting people and essential goods including food stuffs, medicines and construction materials. People in various parts of Nepal in the mountainous region are still dependent on air services for their livelihood and economic activities. The difficult topography has compelled the government of Nepal to invest huge amounts in constructing airports in various parts of the country to provide air services. As an autonomous entity CAAN is developing and operating nearly three dozen airports in the country. It is essential to operate airports with business principle to generate sufficient revenues that can be reinvest to standardize services and facilities and relieve the the government from financial burden of huge investment. Conclusions of the study are drawn in the subsequent bullets.

- The total number of airports in Nepal including 4 under construction has reached 51 out of which 11 are permanently closed and 36 airports are in operation. Kathmandu-TIA is the only one international airport in the country that generates most of the revenues of CAAN. Another one dozen airports including the regional hubs are in operating profit

and possess financial viability. And the remaining are mostly social sector airports in the remote areas generating huge loss in their operation. List of airports and their classification on the basis of financial viability is in appendix A-III.

- Civil aviation industry is experiencing significant growth in the couple of years in the Asia-Pacific region and around the world. It is playing crucial role in raising real GDP in the emerging economies as well as around the world. The global scenarios show that civil aviation industry is causing multiplier effect in the economy by creating a chain of employment opportunities. Thus, civil aviation has remained as an economic driver and airports have become significant places for economic activities.
- Airports are no more port of aircrafts but are being converted into service centers and junctions of commercial activities. To enhance operating efficiency, airports are being privatized all over the world. Airports are being freed from the government control in order to standardize services and make attractive to the users. The emerging economies in Asia and Middle-East region are competing to construct highly standard and well facilitated airports to attract more users. The growing trend in this industry has created opportunities for the countries having potential for tourism above 50% increase in non-Aeronautical Revenue.
- The revenue generated by CAAN is compromised of Aeronautical and Non-aeronautical revenues. Major sources of aeronautical revenues are landing charge, parking charge, housing charge, passenger service charge, cargo handling charge, communication and navigation charge, etc. Similarly, major sources of non-aeronautical revenues are terminal rental, fuel sales charge, security charge, house and land rentals, etc. Besides, it generate revenue from allowing air operator and air worthiness certificates, providing licenses, conducting trainings, etc.
- The average total revenue of CAAN is found to be Rs. 1.618 billion per year which is growing with an average rate of 9.70 percent. CAAN was able to generate total revenue of 2.378 billion in fiscal year 2066/67. In this fiscal year CAAN was also able to stand at the third position among PEs in the country. The average share of aeronautical revenue is 84.59 percent in the total revenue of CAAN while the average share of non-aeronautical revenue only 15.41 percent.
- The proportions of aeronautical and non-aeronautical revenues in Nepalgunj airport are nearly 78.72 percent and 21.28 percent respectively. Nepalgunj airport contributes only 1.33 percent in the total revenue of CAAN. In the international scenario non-aeronautical revenues share greatly (more than 50 percent) that help in reducing aeronautical charges.

- Aviation industry in the Asia-Pacific region experienced significant growth in the past decade in passenger as well as cargo traffic, and benefiting the emerging economies in this region. China has remained the leader in achieving the highest growth in the world while airports in India, UAE, Singapore, Japan, Malasiya, and other Asian countries are able remain among the top 30 airports of the world.
- To get benefited with the opportunities in aviation industry in the Asia-Pacific region and around the world infrastructure development is urgently required. As such the Nepalese government has prioritized the construction of second international airport and upgrading of major hub airports into regional status. MoTCA has planned the construction of SIA on BOOT model for which feasibility study and detailed project report has been prepared.
- CAAN is unable to perform well due to lack of professionalism and unstable political situation as well as undue political interferences. Management culture in CAAN is not desired and needs improvement through skill development and hiring new professionals. A team of highly qualified and skilled professionals should lead the CAAN Board in order to enhance efficiency.
- Government policies are inadequate and need periodical review to make relevant and supportive for the promotion of civil aviation industry. The rules for revenue collection are too rigid and not scientific so that a significant portion of resources of CAAN are not properly utilized. As such idle properties (land and buildings) are not fully utilized for commercial purpose from where revenue generation can be maximized.
- The dual role of CAAN as the regulator of civil aviation and service provider needs to be separated in order to provide standard services and operate airports efficiently. Efficiency in airport operations help to upgrade and standardize services, maintain desired safety level which will attract more users and finally boost up revenues.
- The present state of art in civil aviation industry shows that aviation field is growing tremendously causing fast development of infrastructures and technologies to fulfill the growing demand globally. Airport authorities, worldwide, are focusing on revenue of airports to provide standard services and attract more users. But in our country the concept of airport revenue is newly emerging and yet to be implemented. The newly formulated Civil Aviation Policy 2063 also makes provision for commercialization of airports and related services.

### 5.3 Recommendations

On the basis of findings of the study following recommendations cum suggestions can be made which are equally important for scholars to conduct further studies in the related field.

- i. The dual role of CAAN, regulator and service provider, should be separated develop professionalism in regulation, airport management and enhance operating efficiency.
- ii. Government policies should be favorable to the development and promotion of aviation industries and always attempt to correlate civil aviation with tourism. The national civil aviation policy should be revised periodically to cope with the global scenarios.
- iii. CAAN should attempt to develop professionalism to establish sound management culture for the betterment of the organization and standardization of services. This will be done by hiring qualified professionals as well as developing skills among CAAN employees.
- iv. Highly qualified professional should be appointed as the chairman of CAAN and experts and executives should be included in the CAAN Board to make it play supportive and monitoring role to enhance efficiency in the management.
- v. Airports having financial and tourism potential should be operated on management contract to optimize the use of available resources, maximize revenue generation and standardize services and facilities.
- vi. Airports serving the remote social sectors should be operated by local government (DDC) in technical support of CAAN in order to reduce financial burden of CAAN.
- vii. The properties of airports not in operation since long should be leased for commercial use or return back to the government by deducting the value from government share capital.
- viii. The non-productive investment under political influence must be stopped. Construction of new airports should be started only after conducting feasibility and sustainability study and with public and private participation.
- ix. Public and private participation (PPP); build, own, operate and transfer (BOOT); build operate and transfer (BOT); operate and transfer (OT) and other modalities should be adopted for infrastructure development at new airports or at the existing airports.
- x. Construction of Second International Airport should be started at the earliest possible and Nepalgunj airport in the western part should be upgraded as regional airport.



- xi. Since CAAN owns sufficient land with high value it should focus on commercial use of idle lands to raise share of non-aeronautical revenue up to 50 percent of the total revenue.
- xii. The tariff rates should be scientifically determined in order to attract more users and to make optimum use of land, buildings, hangars, and other assets.
- xiii. Classification of airports should be made on the basis of their financial viability and infrastructure development and facilitation should be done on priority basis.
- xiv. Air service operators should be encouraged to operate flights between major airports even on transit basis to make optimum use of facilities at domestic airports and ultimately increase revenue generation by the hub airports.
- xv. Attempts should be made to facilitate canteens, restaurants, banks, telephone, cyber, duty free shops, etc in quality and quantity at TIA and the major domestic airports.
- xvi. Transit hotels and lodging facilities should be made available in airports periphery and CAAN should lease the unused land of TIA-Kathmandu for such purpose.
- xvii. CAAN and MoTCA should actively initiate to establish the proposed air routes that facilitate more international flights to over fly the country territory to optimize the use of air navigation services and increase revenue generation.
- xviii. Researches should be carried out to find out the optimum modality through which financially viable and tourism potential airports can be commercialized.
- xix. Scholars should also focus to find out the suitable ways in which properties of airports being closed should be utilized to maximize benefits.
- xx. Research studies should be conducted to find out the ways in which easy and affordable air services can be provided in the remote sectors.
- xxi. Last but not least, studies should also be carried out to determine the feasibility of flight operations between major cities in the country.

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## APPENDIX A - I

### List of Airports in Nepal

#### A. Airports in Operation:

S.N.	Name of Airport	District	S.N.	Name of Airport	District
1.	Taplejung	Taplejung	19.	Megghauli	Chitwan
2.	Chandragadhi	Jhapa	20.	Pokhara	Kaski
3.	Biratnagar	Morang	21.	Manag	Manag
4.	Tumlingtar	Sankhuwasabha	22.	Jomsom	Mustang
5.	Bhojpur	Bhojpur	23.	Bhairahwa	Rupandehi
6.	Rajbiraj	Saptari	24.	Dang	Dang
7.	Lamidanda	Khotang	25.	Chaurjhari	Rukum
8.	Thamkharka	Khotang	26.	Salle	Rukum
9.	Khanidanda	Khotang	27.	Dolpa	Dolpa
10.	Rumjatar	Okhaldhunga	28.	Surkhet	Surkhet
11.	Phaplu	Solukhumbu	29.	Nepalgunj	Banke
12.	Lukla	Solukhumbu	30.	Jumla	Jumla
13.	Kangeldanda	Solukhumbu	31.	Bajura	Bajura
14.	Janakpur	Dhanusa	32.	Rara	Mugu
15.	Ramechhap	Ramechhap	33.	Simikot	Humla
16.	Simara	Bara	34.	Bajhang	Bajhang
17.	TIA, Kathmandu	Kathmandu	35.	Dhangadhi	Kailali

18.	Bharatpur	Chitwan	36.	Doti/Silgadhi	Doti
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**B. Airports under Construction:**

S.N.	Name of Airport	District	S.N.	Name of Airport	District
1.	Masinechaur	Dolpa	3.	Kamalbazar	Achham
2.	Kotwada	Kalikot	4.	Tikapur	Kailali

**C. Airports Not in operation:**

S.N.	Name of Airport	District	S.N.	Name of Airport	District
1.	Syangboche	Solukhumbu	7.	Rolpa	Rolpa
2.	Jiri	Dolkha	8.	Sanfebagar	Accham
3.	Langtang	Rasuwa	9.	Darchula	Darchula
4.	Palungtar	Gorkha	10.	Baitadi	Baitadi
5.	Balewa	Baglung	11.	Mahendranagar	Kanchanpur
6.	Dhorpatan	Baglung			

Number of Airports in operation: 36

Number of Airports under construction: 04

Number of Airports not in operation: 11

**Total number of Airports: 51**

## APPENDIX A-II

### Classification of Airports on the basis of Financial Status

#### A. Financially Viable Airports

S.N.	Name of Airports	S.N.	Name of Airports
1.	Tribhuvan Int'l, Kathmandu	7.	Chandragadhi
2.	Biratnagar	8.	Janakpur
3.	Pokhara	9.	Surkhet
4.	Nepalgunj	10.	Bharatpur
5.	Bhairahwa	11.	Dhangadhi
6.	Simara		

#### B. Tourism Potential Airports

S.N.	Name of Airports	S.N.	Name of Airports
1.	Lukla	7.	Manang
2.	Jomsom	8.	Jumla
3.	Tumlingtar	9.	Dolpa
4.	Taplejung	10.	Rara
5.	Phaplu	11.	Simikot
6.	Meghauri		

#### C. Social sector Airports

S.N.	Name of Airports	S.N.	Name of Airports
1.	Bhojpur	9.	Dang
2.	Lamidanda	10.	Rukum Salley
3.	Rumjatar	11.	Sanfebagar
4.	Rajbiraj	12.	Doti
5.	Ramechhap	13.	Bajhang
6.	Thamkharka	14.	Bajura
7.	Kangeldanda	15.	Mahendranagar
8.	Chaurjhari		

### APPENDIX A-III

### List of Aircraft Operators in Nepal

S.N.	Name of Airlines	Service	Type of Aircraft	Status
1.	Nepal Airlines Corporation	Intl./ Domestic	Boeing757,TwinOtter	Operating
2.	Cosmic Air Pvt. Ltd.	Intl./ Domestic	Fokker100, Dornier	Closed
3.	Air Nepal International	International	Boeing 767	Closed
4.	Buddha Air Pvt. Ltd.	Domestic	ATR72/42, Beech	Operating
5.	Yeti Airlines Pvt. Ltd.	Domestic	Jet Stream 41	Operating

6.	Sita Air Pvt. Ltd.	Domestic	D228 Dornier	Operating
7.	Gorkha Airlines Pvt. Ltd.	Domestic	D228 Dornier	Closed
8.	Agni Air Pvt. Ltd.	Domestic	Jet Steam, Dornier	Operating
9.	Necon Air Ltd.	Intl./ Domestic	Avro, ATR, Cessna	Closed
10.	Mountain Air Pvt. Ltd.	Domestic	Beech Craft	Closed
11.	Everest Air Pvt. Ltd.	Domestic	D228 Dornier	Closed
12.	Nepal Airways Pvt. Ltd.	Domestic	Y12 Aircraft	Closed
13.	Flight Care Aviation P. Ltd	Domestic	Y12 Aircraft	Closed
14.	Shangri La Air Pvt. Ltd.	Domestic	Beech, Twin Otter	Closed
15.	Skyline Airways Pvt. Ltd.	Domestic	Twin Otter, Dornier	Closed
16.	Flying Dragon Airlines	Domestic	Twin Otter, Y 12	Closed
17.	Shree airlines Pvt. Ltd.	Domestic	MI 17 Helicopters	Operating
18.	Simrik Air Pvt. Ltd.	Domestic	BK17, Acurel	Operating
19.	Asian Airlines Pvt. Ltd.	Domestic	MI 17 Helicopters	Closed
20.	Karnali Air Pvt. Ltd.	Domestic	MI17, Acurel	Closed
21.	Manag Air Pvt. Ltd.	Domestic	MI 17 Helicopters	Closed
22.	Impro Airways Pvt. Ltd.	Domestic	MI 17 Helicopters	Closed
23.	Heli Hansa Pvt. Ltd.	Domestic	MI 17 Helicopters	Closed
24.	Air Dynasty Heli Service	Domestic	Acurel Helicopters	Operating
25.	Dynasty Air Pvt. Ltd.	Domestic	Acurel Helicopters	Closed
26.	Fishtail Air Pvt. Ltd.	Domestic	Acurel Helicopters	Operating
27.	Manokamana Air Pvt. Ltd.	Domestic	Acurel Helicopters	Closed
28.	Himalayan Helicopters	Domestic	Acurel Helicopters	Closed
29.	Air Ananya Pvt. Ltd.	Domestic	MI 17 Helicopters	Closed



30.	Space Air Pvt. Ltd.	Domestic	MI 17 Helicopters	Closed
31.	Kastmadap Airlines	Domestic	PAC 750	Operating
32.	Goma Air	Domestic	Cessna Caravan	Operating
33.	Makalu Air	Domestic	Cessna Caravan	Operating
34.	Tara Air	Domestic	D228, DHC6, PC6	Operating

## APPENDIX A-IV

### List of International Airlines Operating to Nepal

S.N.	Name of Airlines	Country	Operating From/To	Type of Aircraft	Passenger Capacity
1	Air Arabia	Saudi Arabia	Sarjaha- Kathmandu	A320	168
2	Air China	China	Guangzhou	A319	128
3	Buddha Air	Nepal	Lucknow	B190	19
4	Bahrain Air	Bahrain	Bahrain	A319/320	138/168
5	Biman Bangladesh	Bangladesh	Dhaka	B737,A310	162/221
6	China Eastern Air	China	Chengdu	B737	134
7	China Southern Air	China	Lasha	A319	128
8	Dragon Air	Hong Kong	Hong Kong	A333	300
9	Fly Dubai Aviation	UAE	Dubai	B738	184
10	Etihad Airways	UAE	Abu Dhabi	A332/A320	262/136
11	GMG Airlines	Bangladesh	Dhaka	MD82/83	153

12	Gulf Air	UAE	Abu Dhabi	A320/343/333	136/250/250
13	Jet Airways	India	New Delhi, Mumbai	B738	144
14	Jet Lite	India	New Delhi	B738	186
15	Kingfisher Air	India	New Delhi	A320/321	174
16	Korean Air	South Korea	RKST-VNKT-RKST	B772	261
17	National Aviation Co.	India	New Delhi, Kolkata, Varanasi	A320/321/319	145/172/112
18	Nepal Airlines Corp.	Nepal	New Delhi, Bangkok, Dubai, Doha, Hong Kong, Kuala Lumpur	B752	190
19	Oman Air	Jordan	Mascot	B738	154
20	Pakistan Int'l Airways	Pakistan	Karachi	A310	205
21	Qatar Airways	Qatar	Doha	A320/332/333	144/272/305
22	Royal Bhutan Air	Bhutan	Paro, New Delhi	A319/ATR42	114/48
23	Silk Air	Singapore	Singapore	A320	150
24	Spice Jet Airways	India	New Delhi	B738	212
25	Thai Airways Int'l	Thailand	Bangkok	B772	309
26	TUI Airs Netherlands	Netherlands		B378	180
27	United Airways	Bangladesh	Dhaka	MP83/DHC-8	155

## APPENDIX B-I

### Questionnaire for Survey of Expert Opinion

#### Questionnaire for Collecting Expert Opinion

1. Do you think CAAN is playing active role for the development of aviation industry in the country?  
[Yes / No]
2. How is CAAN performing its role of regulator and operator of civil aviation in the country since its establishment in 1998? [(a) Very Good (b) Good (c) Satisfactory]
3. Is it essential to separate the dual role of regulator and service provider played by CAAN for efficiency and service quality in airport operation? [Yes / No]
4. How is the government policy for the promotion of civil aviation industry and CAAN? [(a) Proper (b) Improper (c) Need improvement]
5. To what extent the growing trend of civil aviation in the Asia-Pacific region will influence the Nepalese civil aviation industry? [(a) High (b) Moderate (c) Low (d) No effect.]
6. Presently international airlines are rushed to operate services from Nepal, will this situation continue for longer period? [Yes/ No]
7. Is it urgently needed to construct a world class second international airport in the country? [Yes /

No]

8. Do you think BOOT is the best model to construct Second International Airport at Neejgadh?

[Yes / No]

9. Which is the most suitable airport in western Nepal to be upgraded into regional international airport? [(a) Nepalgunj (b) Surkhet (c) Dhangadhi]

10. Is CAAN able to make decisions autonomously for planning and investment to achieve its goal and objective? [Yes / No]

11. What is the cause behind the non-productive investment being made by CAAN? [(a) Government interference (b) Political pressure (c) Lack of professionalism]

12. What is the level of revenue generation by airports and other units of CAAN?

[(a) Quite low (b) Satisfactory (c) Sufficient]

13. Which will be the best option to maximize the revenue generation by the airports?

[(a) Increasing the tariffs (b) Privatizing the airports (c) Privatizing services]

14. What will be the best process to operate airports having good financial status?

[(a) Management contract (b) Privatizing terminal management (c) By CAAN]

15. Should CAAN and GoN continue investing for the construction of new social sector airports?

[Yes / No]

16. Is it essential to increase the proportion of non-aeronautical revenues up to 50 percent of the total revenue of airports? [Yes / No]

17. What is the best alternative to utilize the property of airports not in operation?

[(a) Handing over to local authorities (b) Leasing for commercial use (c) Selling]

18. Are you agree that Nepalgunj airport possess great potential for non-aeronautical revenue generation by leasing the unused land? [Yes/ No]

19. Do you think the recent decision of MoTCA to collect only Rs. 5 as airport service charge from the social sector airports is rational? [Yes / No]

20. Does CAAN need to hire qualified professionals for revenue management?

[Yes / No]

Any specific view not covered in the above questions; .....