



CAAN Souvenir 2019



Civil Aviation Authority of Nepal (CAAN)
Babarmahal, Kathmandu

CAAN Souvenir 2019



CIVIL AVIATION AUTHORITY OF NEPAL

Head Office: Babarmahal, Kathmandu, Nepal
Tel.: 977-1-4262387, 4262326, 4262518 Fax: 977-1-4262516, AFTN: VNKTVAXX
Email: cnsatm@mos.com.np, dgca@caanepal.gov.np, misprpd@caanepal.gov.np
Website: www.caanepal.gov.np



The Prime Minister

KATHMANDU
NEPAL



Message

It is a matter of great pleasure that the Civil Aviation Authority of Nepal (CAAN) has completed the two decades and is celebrating the twenty-first anniversary of its establishment. On this occasion, I would like to extend my congratulations to the aviation sector regulator on behalf of the Government of Nepal. I would also like to recognise its role and contribution to the development of aviation industry, tourism and the overall economy of the country. I am confident that CAAN will play an instrumental role in materialising the national aspiration 'Prosperous Nepal, Happy Nepali' through the development of aviation sector.

Raising the life standard of people through infrastructure development and shared economic opportunities is the aim of the government for which movement of people and goods is fundamental. For a country like Nepal where difficult terrain hinders the development of roads, tunnels and railways, aviation sector has the responsibility, along with the business, to cater to the need of the people in remote areas.

Aviation has become the main model of transportation in a land-locked country like Nepal. A good network of reliable airports can serve the country in the time of emergency. It is aptly proved during various disasters including the devastating earthquakes and recent Terai floods, among others. Air services play important roles in rescue and relief operations and keep the hope alive mainly when disasters hit the country and the people.

Aeronautical science has witnessed impressive technological development. So, the country has to make pragmatic arrangements in terms of policy and technical aspects in order to maintain the international standards in civil aviation. We are at a crucial juncture now. The country has speeded up the development of aviation infrastructure across the country including two international airports. We will commence the development of a large airport in *Nijgadh* of Bara district soon. The government-owned Nepal Airlines Corporation and private aviation companies are adding new aircrafts to their fleet and increasing the number of domestic and international flights. Because of the facility, the number of tourists visiting to Nepal is going up significantly. The country is ready to welcome two million tourists in 2020. It will be another milestone to the aspiration of national prosperity.

The International Civil Aviation Organization (ICAO) has recognized that Nepal has made significant progress in terms of air safety. It has presented its council certificate but we still need to put extra efforts to get country's name delisted from the European Union's safety concern list. And, there are positive signs in this direction as well. The government will soon implement reforms in National Airlines Corporation. I would like to note that CAAN is making progress together with international aviation bodies in making air transport safe and standard. CAAN has the responsibility to implement the national civil aviation policy, create enabling environment for the private sector airlines companies, introduce air safety measures and adhere to the ICAO principles, the Convention and its annexes.

I would like to express my best wishes to CAAN on the occasion.

K P Sharma Oli

December 15, 2019



Government of Nepal
Ministry of Culture, Tourism and Civil Aviation
Singhadurbar, Kathmandu, Nepal



Ref. No.:



Yogesh Bhattarai
Minister

MESSAGE

This gives me an immense pleasure to mark the 21st Anniversary of Civil Aviation Authority of Nepal (CAAN). I congratulate the CAAN family and thank all staff and stakeholders for their dedication to the wellbeing of this institution.

Given our geographical diversity and unique topography, aviation in Nepal is essential not only for tourism purpose but also as a means of domestic transport for common Nepalis to far and remote districts. CAAN deserves appreciations for its relentless efforts of connecting different parts of the country on the one hand and Nepal to different parts of the world on the other by air and developing aviation of Nepal into safe, reliable and progressive sector working as per the set international standards and guidelines of International Civil Aviation Organization (ICAO).

However, there are a number of things we have to do to enhance our aviation image worldwide. For this, CAAN has a lot to do: from policy reforms to upgrading domestic and international airports across the nation, to constructing new world class airports, to utilizing unused airports as air-sports venues, to maintaining world standard safety measures and to operating airports in the most professional manner. Keeping in view the upcoming Gautam Buddha International Airport, Pokhara Regional International Airports, it needs to work out detailed professional plan to take Nepal's aviation standard to the next level. Our much coveted project, construction of Neejgadh International Airport should be commenced as soon as possible, for which extensive homework and efforts need to be put together from all corners of Nepali society.

We are at the advent of Visit Nepal Year 2020 with our mission of two million international arrivals per year, increase of length of stay and per capita expense of a tourist in Nepal and increase of tourism's contribution to GDP and employment market. I hope CAAN will meet all the expectations and help Nepal become a hub of international air traffic. I wish it all success.

Yogesh Bhattarai



Government of Nepal
Ministry of Culture, Tourism and Civil Aviation
Singhadurbar, Kathmandu, Nepal



Ref. No.:



I feel happy to congratulate the Civil Aviation Authority of Nepal on the occasion of the 21st anniversary of its establishment. CAAN, as the aviation sector regulator, is actively dedicated to expanding Aviation sector infrastructure and enhancing business and enforcing air safety standards. The airlines business has flourished and contributed in transportation and tourism development through fast and reliable accessibility to various destinations in and out of the country.

For a country like Nepal with difficult geographical terrain, development of aviation industry is instrumental to the growth of other sectors like tourism, hospitality, education, health and other infrastructure. Absence of reliable ground transportation, mostly in remote area, air travel is considered as a basic need of air transportation. This very reality requires easily accessible, safe, standard, economical and reliable air services as well as efficient cargo service in those locations.

I am delighted to know that CAAN has achieved remarkable progress on bringing reliable infrastructure. Expansion of runways, addition of equipment, upgradation of runway has added more value in airport safety and facilities. I also feel happy to know that it has continued the publication of CAAN Souvenir which will be a useful publication for the aviation and tourism sector. Such publications help in sharing useful knowledge among the employees and aviation stakeholders. The CAAN Souvenir can be a medium for sharing ideas, knowledge and dissemination of information.

The Ministry of Culture, Tourism and Civil Aviation has given high priority to the aviation sector's development and initiated the upgradation of Tribhuvan International Airport, construction of Gautam Buddha International Airport in Bhairahawa, Pokhara International Airport. Similarly, Public Private Partnership model has been implemented in second International Airport, Nijgadh.

Aviation is a dynamic industry which calls for proactive approaches from regulator, airlines operators and government. Therefore, the government will support the industry in transferring the latest technology that can guide the business and flight operation to a new era..

Furthermore, Ministry has signed three more MOUs this year to add more possible destinations from Nepal. Concerns of lifting out from Air Safety List of European Union, Ministry has registered separation bill to the Cabinet. Reform in the area of aviation is a continuous process, therefore, ministry will join more hand with private sector and CAAN to ensure one of the safest aviation sectors. Together we can achieve that goal.

Finally, I extend my best wishes to CAAN and all family member on this occasion.

Kedar Bahadur Adhikari

Kedar Bahadur Adhikari
Secretary

Ministry of Culture, Tourism And Civil Aviation

"Service-friendly Administration, Good Governance in Federalism"

Tel: +977-1-4211879(Office), Fax: +977-1-4211758, Email: info@tourism.gov.np, Website: www.tourism.gov.np



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Message

Our warmest congratulations to the Civil Aviation Authority of Nepal on its 21st Anniversary.

The ICAO Regional Office for Asia and Pacific shares your joy and pride and cherishes our close and mutual working relationship very much. The valuable contribution of Nepal to the enhancement of safety, security and efficiency in international civil aviation is acknowledged very well.

I am also very grateful for the support you continue to provide to ICAO activities and for Nepal's reiteration of confidence in leadership of ICAO. We are committed to support and work with Nepal for strengthening international aviation security and safety levels, enhancing capacity and efficiency and promoting sustainable air transport.

Please accept my best wishes and assurance of our cooperation at all times.

Arun Mishra
Regional Director
Regional Office for Asia and Pacific
19 December 2019

Asia and Pacific Office
252/1 Vibhavadi Rangsit Road
Chatuchak
Bangkok 10900
Thailand

Postal Address:
P.O. Box 11
Samyaeek Ladprao
Bangkok 10901
Thailand

Tel.: +66 (2) 537-8189
Fax: +66 (2) 537-8199

www.icao.int/apac
E-mail: apac@icao.int

Phone : 4262326, 4262416, 4262518, 4262923
Fax : (977)-1-4262516, 4111198
E-mail : dgca@caanepal.gov.np
Cable : AIRCIVIL
AFTN : VNKTAYX



CIVIL AVIATION AUTHORITY OF NEPAL

Head Office, Babar Mahal, Kathmandu, Nepal



Ref. No.:

Message



As the Civil Aviation Authority of Nepal (CAAN) completes its two decades of an iconic journey, the nation will start celebrating the Visit Nepal Year 2020 with an aim of attracting 2 million tourists in a year. On such an occasion, I feel privileged to extend my sincere felicitations and warm greetings to all our stakeholders, clients, valued travelers, organizations, donors and other concerned parties in Nepal and abroad. The development of the civil aviation sector would not have achieved the results that we have achieved so far without your continuous support and contribution.

Aviation is a dynamic sector and since the time of our establishment, we have experienced significant transformation in terms of policies, principles and technologies relating to civil aviation. Aviation Safety has emerged as the most focused area where States have achieved remarkable progress in aviation safety after the introduction of USOAP audit programme and SMS by ICAO. Innovation of Fly-by-Wire aircraft technology, satellite based air navigation system and improvised airport infrastructures have made aviation safer, more efficient and economical. The aviation sector in Nepal has also witnessed a tremendous change in regulatory aspect, air transportation sector and the development of aviation infrastructure during this period.

The Aviation world celebrated the year 2019 as the 75th anniversary of signing of Convention on International Civil Aviation. This year will always be etched in the canvas of world aviation history as the ICAO commemorative flag was hoisted atop Mt. Everest. On this historical 75th anniversary, Nepal hosted the 56th Conference of Directors General of Civil Aviation of Asia-Pacific Region in 19-23 August 2019. This Conference was able to highlight our aviation sector to the outside world and strengthen our aviation diplomacy. Nepal also participated in the 40th Assembly of ICAO under the leadership of Hon. Minister for Culture, Tourism and Civil Aviation. The Director General of Civil Aviation Authority of Nepal has been selected as the Vice-Chair of Asia-Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) by its 30th Meeting held in November 2019.

The government of Nepal has accorded high priority to the development of aviation infrastructure in the country. Upgrading of the Tribhuvan International Airport, development of Gautam Buddha International Airport and Pokhara International Airport, initiation of a mega airport project in Nijgadh and development of required infrastructure in key locations across the country have given impetus to the development aspiration of people. Major improvement and expansion of infrastructure works including rehabilitation of runway, taxiway and expansion of apron areas have been carried out at TIA. This year we introduced RNAV procedure along with

Phone : 4262326, 4262416, 4262518, 4262923
Fax : (977)-1-4262516, 4111198
E-mail : dgca@caanepal.gov.np
Cable : AIRCIVIL
AFTN : VNKTYAYX



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Ref. No.:

airfield lighting system at Chandragadhi and Janakpur airports. Installation of ADS-B facilities at Dhangadhi, Nepalgunj, Bhairahawa and Kathmandu will enhance our terminal and en-route surveillance capability.

ICAO conducted aviation security audit of Nepal under its Universal Security Audit Programme (USAP) in 16-25 October 2019. CAAN gives top priority to aviation security and works together with agencies involved in aviation security to improve the areas identified by the audit. As part of its social obligation, CAAN has continuously been involved in building new domestic airports and improvement of existing airports located in the remote areas of hilly and mountainous regions. At present, among 49 domestic airports, 32 airports are in operation and all of these airports are now paved with expansion and development of associated infrastructure and facilities.

Entering the 21st year of its existence, CAAN would like to express its commitment to strengthen aviation safety and make the air transport service sector more efficient. We are dedicated to improve services and facilities in airports and ensure reliable air services in domestic airports across the country so that it would contribute in making the VNY2020 a success.

I feel privileged to extend my sincere felicitations and warm greetings to all our stakeholders, clients, valued travelers, organizations, donors and other concerned parties in Nepal and abroad. Your continuous support and contribution in the development of the civil aviation sector of Nepal is indeed commendable. On behalf of CAAN, I would like to express my confidence in the continuation of your support in the days to come.

I would like to thank the Souvenir Publication Committee and the Anniversary Celebration Committee of CAAN for their valued contribution. I am also thankful to all members of the organization, stakeholders, patrons and well-wishers for their support.

Allow me to wish you a Happy New Year 2020.

Rajan Pokhrel

Director General

Editorial

Nepal will be celebrating the Visit Nepal Year 2020 from the next day of the publication of this souvenir. Nepal had organised Visit Nepal 1998 and Nepal Tourism Year 2011 to attract foreign visitors to the country while Nepali calendar year 2073 was celebrated as the Domestic Tourism Year in order to motivate Nepalis to visit new locations. All those efforts have resulted in not only growing number of tourist arrival but also progress in developing new tourism products and enhancing facilities for the visitors which has resulted in 3 per cent contribution of tourism sector to the national economy and 12 per cent contribution to employment. In VNY2020, the nation aims at bringing in 2 million tourists and increasing tourism sector's contribution to the economy to 10 per cent. For this, the government and private sector have forged a strong partnership. It is in everybody's knowledge that aviation has a great role to play in terms of tourism promotion in the country like Nepal where accessibility is challenging due to difficult terrain.

As honourable Minister for Culture, Tourism and Civil Aviation Yogesh Bhattarai says, the Visit Nepal 2020 must not be viewed as a campaign only but should be recognised as a national development strategy with ownership of VNY2020 across the nation by each citizen and the stakeholders of this industry. As the aviation sector regulator, Civil Aviation Authority of Nepal must play a significant role in making the national campaign a success.

Last year, there were some positive development such as the country witnessed eight-fold increment in Nepali air passenger's insurance, national flag-carrier Nepal Airlines Corporation added a new wide-body plane to its fleet, private sector companies added aircraft and International Civil Aviation Organisation (ICAO) recognised that Nepal made significant improvement in terms of air safety.

We are happy to announce that the Gautam Buddha International Airport in Bhairahawa is in the phase of completion and flight services will be started there in the next few months, and work at Pokhara Regional International Airport is in full swing and will be completed in 2021. Apron and taxi-way were added at the Tribhuvan International Airport and runway has been rehabilitated. Preparations are underway for an international airport in Nijgadh of Bara district.

The Civil Aviation Authority of Nepal (CAAN), the aviation sector regulator in the country, is celebrating its 21st anniversary among these positive developments which will have significant impacts on the aviation and tourism sector. As we are impatiently waiting to welcome the New Year with lots of joy and festivity and celebrate the CAAN Day on the eve of the New Year when year 2019 is saying farewell to us, we need to cherish the progress and achievements made to rejuvenate the tourism industry.

Aviation safety in Nepal has always been a contentious issue but the Ministry of Culture, Tourism and Civil Aviation, CAAN and other concerned agencies are tirelessly working to make Nepali sky safer for air passengers. Our Safety Oversight Capability (SOC) has been visibly improved after the ICVM of ICAO in July 2017. On this joyful moment of celebration, we would like to express our commitment that in order to make the sustainable, continuity will be given to the flight safety reform, and CAAN's SOC will be strengthened in cooperation and collaboration with the regional and international aviation organizations. We will put our efforts to delist the country from the European Union's Safety Watch List, and we need make our sky safer for it.

To make the anniversary celebration more special, we have published the 'CAAN Souvenir' including articles, experience and opinions from various aviation sector experts, engineers, former high government officials, professors, journalists and other stakeholders. We feel very proud and satisfied while presenting this publication in your hands.

The Souvenir Publication Committee would like to express its sincere gratitude to writers and contributors, and other individuals for their invaluable support and suggestions.

Wish you all a very happy and prosperous New Year 2020!

Patron

Mr. Rajan Pokhrel
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Co-ordinator

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Information Officer

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Dy. Director

Publisher

Civil Aviation Authority of Nepal (CAAN)
Babarmahal, Kathmandu
Phone: 4262416
Fax: 4262516
Email: cnsatm@mos.com.np
misprpd@caanepal.gov.np
Website: www.caanepal.gov.np

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Yubraj Shakya

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Strengthening Aviation:

A Perspective from Federal Tourism Economy

Dr. Lekha Nath Bhandari
(Ph.D. in Aviation)
Board Member, CAAN



Introduction

The purpose of this article is to focus on regional or federal tourism and economic development in Nepal, across provincial political jurisdictions from the spectrum of aviation. The study argues that remote hinterlands can be more usefully understood as forming an integrated whole, rather than functioning as the poor rural cousins of their provincial rural municipalities, sub-metropolis, and metropolis. Thus, the article considers three propositions: that key transport projects (such as airports) can unlock regional development; that this may stimulate federal spatial integration; and that this can spur the Nepal's government to address its weak regional planning system from the point of view of aviation. All three propositions are speculative, drawn from the national and international literature, but they contribute to an argument for greater spatial coherence in Nepalese economic planning in rural regions. Tourism influx and economic contribution made by Jomsom airport of Gandaki province 4 has been discussed as an example of rural airport. The argument is illustrated with reference to the unexplored regions of Nepal, and the potential of new airports to impact on regional economic dynamics. Furthermore, the article argues that such impacts will require new regional or federal or local level planning systems, which are currently absent from the current Nepalese political economic system in the context of implementing federal structure for development.

Why Aviation is Significant to Tourism Economy?

The connectivity provided by international airlines has contributed to the fast-growth of tourism industry. It is estimated that over half of international tourists travel to their destinations by air. However, in the context of Nepal, 75 percent international tourists use aviation to enter into Nepal where as only 25 percent tourists use overland transport if we make historical data analysis of international arrival. Tourism makes a major contribution to the global economy. It directly contributed U.S \$2.2 trillion to world Gross Domestic Product (GDP) which is almost 10 percent of the global economy in the year 2015 and provided over 108 million jobs globally. By 2024, the World Travel and Tourism Council forecasts direct employment in the tourism industry to be more than 126 million people globally. When looking at the jobs and GDP supported through the indirect and induced impacts of tourism, the figures are significantly higher at 285 million jobs (8.7 percent of employment) and \$7.2 trillion, or 9.8 percent of the global economy. By 2026, tourism could support some 370 million jobs and \$11 trillion in GDP (WTTC, 2016).

It is essential to harness the benefits of growing tourism sector. There are some things governments can do relatively easily to boost their national tourism sectors. Whilst many governments spend lots of money promoting their countries as destinations, a number complicate visits by instituting lengthy visa processes, placing high taxes on arriving or departing tourists or not engaging in 'joined-up thinking' at a regional

level. There are signs of improvement in these areas, with some regional groups like APEC and ASEAN discussing ways they can make travel to and within their regions simpler. Europe, with a single Schengen visa, is a good example of regional thinking, but the UK government is missing out on tourists, as those applying for a Schengen visa have to apply for a UK visa separately (WTTC, 2016). Schengen model is a fruitful one, to the rest of the world for developing tourism mobility. South Asian Association for Regional Cooperation (SAARC), also needs to implement this model to increase the flow of tourism in south Asia region. Opening up air markets (allowing airlines to start services without having to go through lengthy government-to-government negotiations for every new route or airline) has proven to be a real driver of travel, tourism and the economic benefits that can bring. Finally, countries should ensure that they regularly review the capacity of their airport and air traffic infrastructure versus projected demand (ABB, 2016). This will ensure that aviation can continue to support tourism development and deliver wider economic benefits.

Influence of Aviation on Tourism Sector

Aviation and tourism are closely associated to each other. The growth in tourism industry directly reflects onto the air transportation. The expansion of international tourism has a large impact on the discipline of transport geography. Transport is the cause and the effect of the growth of tourism. To start with, the improved facilities have stimulated tourism, and the expansion of tourism has stimulated transport (UNWTO, 2016). Accessibility is the main function behind the basics of tourism transport. In order to access the areas that

are mainly aimed, tourists will use any transportation mode. However, air transport is the primary mode for international tourism as well as domestic tourism. For example, if the climbers want to climb Mount Everest, first they have to board international flight to get into Nepal and then must take flight Kathmandu to Lukla. Air transport plays a dominant role in inter-regional movements of tourists, which normally entails travel over long-distance. Growth rates of international air traffic are pegged with growth rates of international tourism. Attractive package tours, competitive airfare attract more and more tourist day by day; therefore tourism and aviation industry both are expanding rapidly.

Aviation has revolutionized the geographical aspect of distances; the most remote areas can now be attained, any journey around the world can be measured in terms of hours of traveling. With jet that, can reach up to 1950 km per hrs, international tourism is no longer an ongoing adventure. About 16 million jobs worldwide are in tourism industry directly supported by the spending of foreign visitors arriving by air. Taking into account both the overseas visitors and work force employed it can be said that the Industry is giant in shape--The world's largest industry of Travel and Tourism. How big the airline industry and its market share are an example will give a clear image - in a statistics it has shown that, American Airlines saves US\$40,000 in a year by eliminating one olive from each salad served in first class only. The role of international airlines in the total tourism business is to provide mass and quick transportation between countries under safe, standardized and economical conditions (WTTC, 2017). Its relationship to the tourism industry is better understood by breaking down the entire activity of tourism into its component parts. Because of quick and efficient transportation, people are spurred to travel for various reasons as destinations have become more accessible. Some of these reasons to travel are sightseeing - historical, cultural, social and technological sights relaxation - beach and mountain resorts, sport - mountain, climbing, skiing, surfing, scuba diving, special Interest - study tours on art, history, religion, culture and science, shopping - personal and professional business, governmental - political, cultural, social and scientific reasons.

Aviation and Remote Area Connection

Domestic Airports are playing extremely important role in connecting remote areas of Nepal. Out of 54 domestic airports only 32 are at the position of seasonally operation level. Yet, these airports have connected people living in the difficult geography to some extent. More significantly, some of these airports have played crucial role to provide easy access to develop adventure, cultural and ecotourism. Among them Lukla airport and Jomsom airport are very significant from the point of view of tourism. Therefore, a discussion of Jomsom airport has been made as a model airport in the rural sector which lies in Gandaki province & according to newly implemented federal structure.

Jomsom Airport is the entry point to Mustang region bringing in thousands of tourists and locals annually. Many household items, construction materials, daily necessities are ferried through this airport. The airport is basically a part of people's lives not only in Jomsom but the entire district of Mustang. Tourist arrivals in Mustang district in north-western Nepal, which is famed for the Muktinath Temple, have been swelling in recent years. An increasing number of domestic and foreign visitors have been travelling to Muktinath to visit

various religious sites. Kagbeni, Muktinath, Damodar Kunda and Lomanthang are important destinations for pilgrims and adventure seekers (TKP, 2015). Lomanthang village which is situated in the upper Mustang valley has been growing as a significant destination in this region because of its strategic location of its geographical proximity with Tibet and its unique culture.

Autumn is the most appropriate time for people to visit Mustang. The number of people going to Muktinath to offer worship on the occasion of Sorha Sradda has increased the flow of people in the region. Trekkers coming over Thorang Pass from Manang return through Muktinath and this have helped to flourish the tourism business. This route also forms part of the Annapurna Circuit trekking trail. According to CAAN, the number of people visiting Mustang by air has also gone up in the recent years. Tara Air and Simrik Airlines conduct daily flights between Pokhara and Jomsom. In high tourist season, Jomsom Airport accommodates 10 to 12 flights everyday (CAAN, 2016).

Airports are vital to foster community's development by helping create employment opportunities, invite business ventures, and attract visitors and thus contribute to the overall economy. Jomsom airport and Atlanta's Hartsfield-Jackson International Airport is basically a part of people's lives not only in Jomsom but the entire district of Mustang. The economic developments of Jomsom and Atlanta demonstrate the significance of airport at a micro and macro level (Gurung, 2016). After the operation of Jomsom airport tourism created massive job opportunities in the region and the local economy became stronger and sustainable. Therefore, it has been observed that there is a paradigm shift in the local economy and a huge change in the living standard of the people in the district.

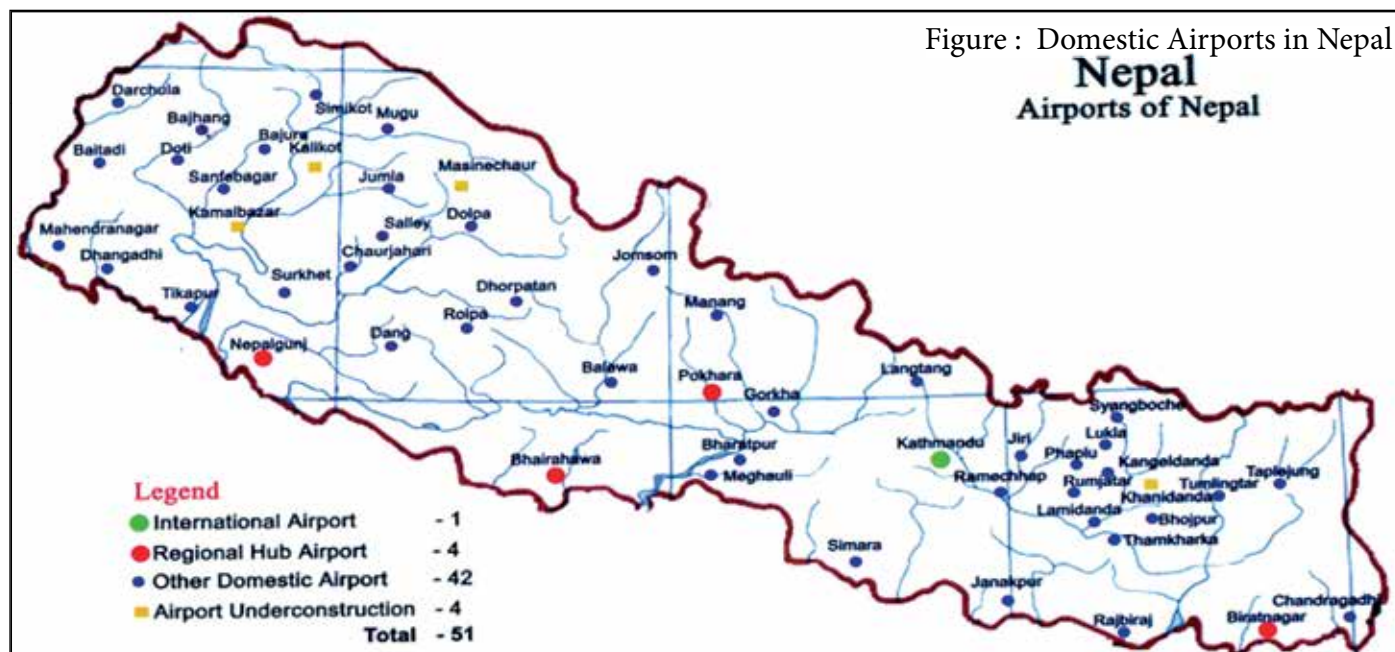
Significance of Domestic Aviation

Existing airports are insufficient to satisfy the increasing demand of air services. At present, only 32 airports are in operation including one international. Out of 32 domestic airports, a few are located in the trunk routes and tourist routes, which have regular traffic, but other airports are seasonal. More airports, therefore, need to be constructed. Lack of road network connection in the high hill and mountainous regions demands construction of more airports. More airports mean more movements that support and enhance economic activities. In addition, construction of surface transport destroys a large area of cultivable land in the hills. Toni Hagen argues that with the drastic population increase from 8 million in 1950 to over 20 million in 1997, Nepal now suffers from shortage of cultivable land. The country as a whole is turning these years from a surplus producer into a net deficit country with regard to food production (Hagen, 2000). This argument stresses that; cultivable land needs to be protected in the hills in order to reduce food shortage in the mountain and hill regions. Thus, expansion of airports helps to minimize deforestation, soil erosion, and preserve cultivable lands.

Aviation industry will be sustainable if people have access to easy and affordable air transport facilities. Expansion of airports will reduce the collapse of private airlines and will bring a big hill population in the economic, social, and cultural mainstream. The map below shows Nepal's current position of airport network.

Air transport services provided by airlines on remote airfields have played a crucial role in Nepal's economic, social, cultural,

Figure : Domestic Airports in Nepal



Source: Civil Aviation Report, 2014, GON

and tourism development. Geographical diversity of the country has made air transportation the most pertinent mode of movement. Government's liberalization policy of 1992 has made air travel business more competitive. It ended the monopoly of the national carrier and invited several private airlines in the domestic sector. However, most of the private airlines focused their mission in the major cities rather than remote areas. Private airlines are not following the provision of 40 percent flights to rural sector. Due to the government's negligence in implementing aviation rules and regulations, people in the remote sector are deprived of transport facilities. Yet, Nepal Airlines is still providing limited services to remote area with its decreasing number of aircrafts in the domestic sector. Similarly, private airlines such as Tara Air, Simrik Airlines, Summit Air and Sita Air have been operating flights to some remote sectors with relatively more expensive fare than Nepal Airlines Corporation. It was observed that the compulsion of forty percent flights on the remote sector was not benefiting to the remote sector as there was not any proper definition of the sector. Since, only the tourist sector was well defined, all sectors other than the tourist sector were treated as social sector. This oscillating concept provided a technical ground to domestic operators, to escape from the obligation of flight operations in remote sectors.

Construction of more airports is required because existing airports are insufficient to provide air service to the remote and rural area. These are some major reasons why expansion of airport is essential to provide access to the people living in the isolated area. Construction of new unpaved STOL field airports in the mountain areas of Nepal costs rupees 60 to 80 million for each airports which is the equivalent of the cost of 6 to 12 km. of road construction. In comparison, improvement in the existing STOL fields to bring them up to the paved standards with additional navigation and communication aids would cost about Rs.30 to 80 million. If analysis is made based on the estimation of Asian Development Bank, building of (Short Landing & Take Off) STOL airfield is comparatively cheaper and more viable than road construction. With the cost of 100 km road construction, approximately ten unpaved airports can be built in the remote area. The cost of building ten airports will be equal to the construction of 100 km road (Baral, 2003).

The weak situation of road network in Nepal demands construction of more airports to people to participate in the economic, social, cultural, and tourism activities. Expansion of airports reduces communication distance and introduces local resources to the markets. Nepal's adventure tourism is located in the mountain region. Therefore, airports are the basic infrastructure for tourism development. Air transport is an infrastructure and a tool for organic development.

In the context of deregulation, privatization and globalization in the civil aviation sector, government should formulate comprehensive policies on infrastructure and operation. Many of the infrastructures in the form of airports should also have private investment. There could be different models of private sectors involvement like partial sale of shares, joint venture, long-term lease, and disinvestment or management contract. For instance, Dolpa airport is a model, which is under renovation in public private partnership. Similarly, Khanidanda airport is constructed with joint investment of Khotang community (Rs. 32, 200000) and Civil Aviation Authority of Nepal (Rs.84, 200000). Civil Aviation Report 2007 elaborates that works are in progress for the runway expansion with a new modality of partnership in which the government has 75 percent share followed by 20 percent share of local people (CAAN, 2016). Public-private partnership model can be a practical approach to construct more airports and operate airlines to the remote areas in making sustainable aviation industry, as the liberalization policy could not solve the problems.

Civil Aviation Policy and Private Airports

The increment of air travelers in the country demands more airports both domestic and international should be constructed. Considering the scenario Nepal government is planning to propose a new aviation policy. The proposed integrated civil aviation bill 2016 has envisaged allowing the private sector to build and operate airports. A draft of the new civil aviation law seems liberal on potential privately operated airports, and it has also simplified the process for the government to privatize it existing airports. The proposed bill which has been put on the websites of the Ministry of Culture, Tourism and Civil Aviation and the Civil Aviation Authority of Nepal (CAAN) to get feedback from stakeholders' that the private sector can

develop and operate airport after receiving the government's approval. According to the draft, the government has laid down five criteria for the construction of private airports (TKP, 2015).

The proposed airport must be feasible in terms of geographical, environmental and commercial factors. It should be viable in terms of the population size that will use the facility, local and foreign direct investment and social obligation. The government however, will determine the limitations of the airports. The exiting Civil Aviation Policy 2006 AD, constraints a provision allowing the private sector to enter the airport business only in PPP model, therefore, it has created obstacles because there are no laws related to it. Sourcing of capital for such investments from the private sector is essential in airports infrastructure development. After the approval of law, it will permit private sector to invest in airport business which will also attract foreign direct investment in the aviation sector.

Currently, there are 54 domestic airports in Nepal but 32 airports are in operation. But, according to CAAN report 2018, only eight airports are at profit making situation. Inviting the private sector into the airport business will also improve the quality standard of services. The government has accorded priority to the development and up gradation of airport infrastructure in a bid to revitalize the tourism industry that has been struggling to attract even a million tourists annually in its six-decade aviation history. The government is currently constructing three new international airports. Pokhara International Airport project, having total budget of U.S. \$ 215.96 million is expected to be completed by July 2021. Gautam Buddha International airport which will service as a gateway to the birthplaces of Buddha in Lumbini, is scheduled to be completed by December 2019. IF GIA will be completed within the timeframe it will contribute to fulfill the 2 million tourist arrival target of Nepal Government in the year 2020 to some extent. But symbol of

completion of GIA on time is not optimistic. Apart from the development of two international airports, the government is also considering building a full-fledged international airport at Nijgadh, Bara district which will cost approximately NRS 121 billion (CAAN, 2016). However, work progress of these three international airports is at snail's pace. The case of Nijgadh International Airport Project is different as it has not finalized its modality, master plan and business plan yet.

Conclusion

Considering the complex topography, aviation is the most efficient mode of transport in Nepal. Therefore, it is better and wiser for Nepal to give more focus on developing aviation than road construction because road network expansion is costly and difficult in the rock terrain, so, aviation is the only substantial infrastructure to connect all the beautiful tourist destinations and bring isolated communities in the national mainstream for Nepal's holistic development. Aviation has played an outstanding role for the development of tourism. While analyzing the tourist arrival data, 75 percent tourists are found to have entered to Nepal using air transportation. So, only 25 percent tourists use surface transport. Moreover, domestic air connectivity is very important to promote Nepal's adventure tourism, cultural tourism, rural tourism, and ecotourism. For example, operation of Jomsom airport enhanced local economy and made people of Jomsom and Mustang region prosperous and life status sustainable. Similarly, operation of Pokhara domestic airport has played a vital role to develop tourism and enhance regional economy in Pokhara region. Hence, in the context of implementing Nepal's new constitution, all seven federal states should work to make appropriate aviation policy and initiate to make more airports in the rural and remote sectors potential for tourism development in order to lead this country for economic prosperity. ■

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Safety in the Air Quality on the Ground

Sanjiv Gautam
Former DG, CAAN



Quality refers to meeting requirements, and Safety refers to keeping people and property from harm. They are different but complementary business principles. Customers and regulators require certain safety requirements to be met by an air operator; therefore, a quality product is also necessarily safe.

The European regulation that currently establishes a mandatory QMS is EU Regulation on Air Operations (EU OPS) 1.035, but it prescribes only basic quality requirements, “to monitor compliance with, and adequacy of, procedures required to ensure safe operational practices and airworthy aircrafts.” In airline operations, QMSs are mandatory with only safety in mind and with no consideration for other, more strategic, business areas.

According to ICAO, SMS shares many commonalities with QMS, and specific SMS processes are nurtured by quality principles. QMS and SMS both need to be planned and managed; both depend on measurement and monitoring; both involve every function, process and person in the organization; and both strive for continuous improvement. In the safety assurance component of an SMS, the application of quality assurance principles helps to ensure that the requisite system-wide safety measures have been taken to support the organization in achieving its safety objectives.

SMS promotes the achievement of high safety standards by encouraging a safety culture that considers the human dimension organization-wide and by promoting a hazard identification/risk management-based approach to safety management.

In a QMS, two parts can be identified: quality control and quality assurance. Quality control is reactive — that “part of quality management focused on fulfilling requirements.” Quality assurance is proactive — that “part of quality management focused on providing

confidence that quality requirements will be fulfilled.”

Scope of QMS goes well beyond monitoring compliance with safety requirements. SMS extends the scope of safety management beyond ensuring the conformance of working practices with safety requirements toward thoroughly identifying hazards.

An SMS is therefore considerably more proactive than a QMS; furthermore, the theory that supports SMS has been developed with only safety in mind, while the theory supporting QMS has been developed with customer satisfaction in mind.

Quality and Safety are both fundamental for an organization to attain its corporate goals. The fundamental importance of safety in allowing an air operator to operate safely and profitably is unquestionable, because an airline with a poor safety record can be banned from flying to some countries and is not likely to attract many customers.

For efficiency and profitability, airlines can benefit from an advanced form of quality management, Total Quality Management (TQM). This tool goes well beyond satisfying the customer or offering quality products. TQM is a management approach in which all members of an organization participate in improving processes, products, services and the culture in which they work. Airlines can benefit from TQM because it is widely agreed that the industry needs cost reduction and control, without losing the focus on product safety. TQM emphasizes, among other things, eradicating defects and waste from operations, reducing development cycle times, reducing product and service costs, and challenging quantified goals and benchmarking.

When these things happen to aviation SMS implementations, it's time to start making some decisions about:

- ✓ Restructuring the aviation SMS;
- ✓ Changing QMS operations to better

accommodate the SMS requirements; or

- ✓ Integrating QMS and SMS.

Integrating QMS and SMS can prove to be extremely beneficial to aviation service providers. Combined QMS and SMS are usually called:

- ✓ Quality-Safety Management Systems (QSMS);
- ✓ Safety-Quality Management Systems (SQMS); or
- ✓ Integrated Management Systems. (IMS)

All these amount to the same thing: combined quality and safety operations. Combining QMS and SMS operations involves 5 general steps:

- ✓ Ensure upper management support;
- ✓ Redesign policies and procedures to incorporate QMS and SMS;
- ✓ Create goals that combine SMS and QMS objectives;
- ✓ Combine and/or coordinate QMS and SMS resources; and
- ✓ SQMS performance monitoring.

Depending on the organization, there can be more or fewer steps, but the above points cover the critical elements needed to combine them. SQMS systems feature better use of resources and significantly reduced conflict of interest between performance vs preparedness.

Conclusion:

Both safety and quality assurance would be additionally beneficial for understanding the difference and shared aspects of both processes.

- ✓ It can make good sense to risk assess findings generated from QA;
- ✓ QA findings will nearly always need a corrective action plan, but safety reports may not need corrective actions – it depends on the level of risk assessed. ■



Ratish Chandra Lal Suman
Former DG, CAAN

Airport Economics: *Nijgadha Airport*

If the claim that “all roads lead to Rome” was the key indicator of that city’s economic greatness in ancient times, a modern city’s equivalent claim would have to be “all airlines land here”. Airports have long been recognised as key contributors to the economic growth as they support a flurry of direct and indirect jobs, not to mention tourism, trade and business. Across the world, many countries can rely on the activity of airports as one of their main sources of income – the Maldives, for example, relies on aviation-enabled tourism to support 42% of its economic output. Tourism is the largest industry in the Maldives, accounting for 28% of GDP and more than 60% of the Maldives’ foreign exchange receipts. It powered the current GDP per capita to expand 265% in the 1980s and a further 115% in the 1990s. The aviation sector is one of the biggest drivers of the global economy, supporting nearly 63 million jobs and contributing \$2.7 trillion to the GDP.

Although all airports will play their part in attracting employment, investment, development and business to their location, not all are created equal. Hub airport is the buzzword in the industry. They operate around the ‘hub and spoke’ way of modelling a network, offering a lot of direct journeys from one single central point. They aggregate passenger demand from the entire area, offering a multitude of options equally for holidaymakers, business passengers and freight trade.

Airport economics is based on the international policies and principles on airport cost recovery that states have developed through ICAO and it describes procedures and practices

that are in conformity with them.

Airport ownership and operation

Most of the world’s large airports are owned by local, regional, or national government bodies who then lease them to private corporators who oversee the airport’s operation. For example, in the United Kingdom, the state-owned British Airports Authority originally operated eight of the nation’s major commercial airports which were subsequently privatized in the late 1980s, and following its takeover by the Spanish Ferrovial consortium in 2006, has been further divested and downsized to operating just Heathrow Airport now. Germany’s Frankfurt Airport is managed by the quasi-private firm Fraport. While in India GMR Group operates, through joint ventures, Indira Gandhi International Airport while Rajiv Gandhi International Airport, Bengaluru International Airport and Chhatrapati Shivaji International Airport are controlled by GVK Group. The rest of Indian airports are managed by the Airports Authority of India. In Pakistan, nearly all civil airports are owned and operated by the Pakistan Civil Aviation Authority except Sialkot International Airport which has the distinction of being the first privately owned public airport in Pakistan and South Asia. Dubai International Airport is the world’s busiest airport with 89.1 million passengers in 2018.

In Nepal, tourism industry contributes 3.5% to the country’s gross domestic product (GDP). However, the actual contribution of the sector to the GDP has increased in recent years. As per economic studies, 10% growth in air

passenger results in 0.5% growth in the national GDP. Unavailability of adequate and proper infrastructure has remained one of the major setbacks to the growth of tourism in the country. Thus, the key to unleash Nepal’s tourism potential is developing competitive infrastructure, especially related to air-connectivity and airports.

Airline hubs or hub airports are used by one or more airlines to concentrate passenger traffic and flight operations at a given airport. They serve as transfer (or stop-over) points to get passengers to their final destination. It is part of the hub-and-spoke system. When there is a hub airport, it affects three channels of impact. The first channel of impact is the direct effect. In case of aviation sector in Hub Airport City, this encompasses the activity generated by its local operations. The second channel of impact – indirect effect – encapsulates the activity supported in the aviation sector’s supply chain as a result of its procurement of inputs of goods and services. It should be noted that this supply chain impact relates to current expenditures only. This channel of impact includes the supply chain behind the sector’s operations in nearby city.

The final channel captures the impact of the staff employed in the aviation sector spending their wages on locally produced goods and services, together with the spending of those working for suppliers to the aviation sector (relating to the relevant proportion of their wages). This supports activity across the spectrum of consumer goods and services, and their supply chains. Travelers arriving in the city will spend money

on food, accommodation, travel, and a variety of cultural and recreational activities. People and firms providing those services make purchases from their suppliers, supporting further economic activity. The government invests in the promotion of the tourism sector, while both public and private entities make investments to capitalise on growth in the sector. This section explores and quantifies the direct, indirect impacts of travel and tourism in country, as well as the wider impacts that the travel and tourism sector enable.

Nepal Air Traffic Scenario

Aircraft movement and passenger movement have witnessed an increasing trend in 2018. The domestic aircraft movement in 2017 was 93,107 which reached 95,580 in 2018, thus registering an increase of 2.66 per cent. Similarly, the domestic passenger movement was 2,451,390 in 2017 and 2,847,752 in 2018, an increment of 16.17 per cent. On the other side, the domestic cargo movement increased by 10.24 per cent as it was 4,114,386 Kgs in 2017 and 3,693,070 Kgs in 2018. Similarly, the international

aircraft movement in 2017 was 33,362 which reached 33,933 last year. The international passenger movement was 3,887,845 in 2017 and 4,342,486 in 2018, an increase by 11.69 per cent. On the other side, the international cargo movement was 20,665,929 tons in 2017 and 20,552,530 tons in 2018. (Source: Civil Aviation Report 2018)

The rapidly increasing traffic demand cannot be catered even after the completion of the Gautam Budhha International Airport and Pokhara International Airport because these two international airports are constructed as the regional international airports but not as International Hub Airports

Nijgadh Airport is the only strong alternative to reduce traffic at TIA and extend TIA's life. However, despite the government giving SIA a status of 'National Pride Project' some years ago, there has been negligible progress at the site.

Development of Nijgadh Airport is vital for various reasons:

- a. It is the ultimate response to the (Based on Detailed Feasibility Study)

growing aviation traffic in the country

- b. It is expected to provide direct long-haul connectivity to geographies such as North America, Europe, and Australia, enhancing Nepal's tourism and trade opportunities.
- c. It addresses decentralized development focus of federalism by enabling major infrastructure outside of the capital city.
- d. It makes Nepal not just a destination but a lucrative transit point between the east and the west.
- e. It provides tremendous opportunity for large volume cargo business, resulting in additional revenues to the country.
- f. It has the ability to turn Nijgadh into an aero-city with the potential to employ up to 70,000 people by 2045 and unlock approximately USD 2 billion of economic value over the same period. ■

Remote Parking Bay





निजगढ अन्तर्राष्ट्रिय विमानस्थलः चर्चामा नआएका पक्ष

त्रिरत्न मानन्धर
पूर्व महानिर्देशक, नेनाउप्रा

देशको सर्वाङ्गीण विकासमा निजगढ विमानस्थलको बहुआयामिक प्रभाव सम्बन्धमा पर्याप्त चर्चा परिचर्चा भएता पनि यसको एउटा महत्वपूर्ण पक्षबारे कहिल्यै चर्चा भएको पाइएन । कार्बन उत्सर्जन घटाई वातावरणीय पक्षमा यसले महत्वपूर्ण योगदान पुर्‍याउन सक्ने छ भने हिमालय रुट कार्यान्वयनमा ल्याउनमा पनि सहयोग गर्नेछ जसले देशलाई मात्र होइन बंगालको खाडी भएर जाने हवाई ट्राफिकको चापलाई समेत कम गरी क्षेत्रीय उडान सुरक्षामा समेत अतुलनीय योगदान गर्ने छ । तर, यी विषय ओभरलेमा परेको देखिदा यस लेखमा त्यसलाई स्पष्ट पार्ने प्रयास गरिएको छ ।

राष्ट्रिय महत्वः

१. निजगढ अन्तर्राष्ट्रिय विमानस्थलविना हिमालय रुट कार्यान्वयनमा ल्याउन नसकिने होईन तर हिमालय रुटबाट अपेक्षाअनुरूप प्रतिफल पाउन र देशलाई

अन्तर्राष्ट्रिय हवाई रुट संजालभित्र ल्याउन निजगढ विमानस्थल नै चाहिने हुन्छ । निजगढ विमानस्थलसहितको हिमालय रुटले नेपाललाई हंगकंग, बैंकक र सिंगापुर भन्ने महत्वपूर्ण ट्रान्जिट हबको रूपमा प्रवर्द्धन गराई देशको सर्वाङ्गीण विकासमा फड्को मार्ने अवसर दिलाउनेछ ।

२. नेपाल Middle East र South East Asia को बिल्कुल मध्य बिन्दुमा अवस्थित रहेको हुँदा पनि एउटा सजिलो र सुविधायुक्त र ट्रान्जिट हबको रूपमा प्रवर्द्धन हुनसक्ने प्रचुर आधार छ ।

३. हिमालय रुट संचालनमा आएपछि यो रुटलाई एभरेष्ट दृश्यावलोकन रुटको रूपमा पनि प्रवर्द्धन गर्न सकिने हुन्छ । यो कुरा एशियाली विकास बैंकको एउटा प्रतिवेदनमा पनि उल्लेख गरिएको छ ।

४. हिजोआज त्रिभुवन अन्तर्राष्ट्रिय विमानस्थलमा अत्यधिक हवाई चापको कारण उडानहरु होल्डमा पर्छन् । गत वर्ष सन् २०१८ को अक्टुबरमा गरिएको

अन्तर्राष्ट्रिय आगमनको अध्ययनअनुसार महिनाभरमा १२५ घण्टा भन्दा बढी होल्ड गर्नु परेको थियो । जुन एक दिनको लगभग ४ घण्टा हुन आउँछ र त्यो पनि International Arrival मा मात्र । सन् २०१९ को अक्टुबरमा यो होल्डिग भन्डै दोब्बर भएको अनुमान छ ।

५. उडानको सिट क्षमता, यात्रु संख्या, कार्गो तथा इन्धन खपतको आधारमा कार्बन उत्सर्जनको हिसाव निकालिने ICAO Carbon Emission Calculator अनुसार काठमाडौँदेखि हंगकंगसम्मको १५० यात्रु बोकेको उडानले भन्डै ३२.६ टन कार्बन उत्सर्जन गर्ने देखिन्छ । चार घण्टाको उडानमा यति कार्बन उत्सर्जन हुन्छ भने कम उचाइमा होल्डमा रहेको विमानले त भन्दा बढी कार्बन उत्सर्जन गर्ने निश्चित छ । यसबाट हामीले काठमाडौँको होल्डिगको वातावरणीय प्रभावलाई सजिलै अन्दाज गर्न सकिन्छ । निजगढ विमानस्थल नै यो समस्याको सजिलो समाधान हो ।

निजगढ विमानस्थलको अन्तर्राष्ट्रिय पक्षः

१. भारतको उत्तर पूर्वी हवाई आकाश अर्थात नेपालको दक्षिणी भाग संसारकै अत्यधिक हवाई चाप हुने Airspace मध्येको मानिन्छ । यहाँबाट हंगकंग, बैंकक र सिंगापुरजस्ता दक्षिण पूर्वी एसियाका गन्तव्यहरुबाट बंगालको खाडी र उत्तर पूर्वी भारत हुँदै दिल्ली तथा त्यहाँबाट मध्यपूर्व तथा युरोप र अमेरिकी गन्तव्यहरुको लागि दिनमै सयौं उडानहरु आउने जाने गर्दछन् ।

२. बंगालको खाडीको हवाई चापलाई कम गर्न ICAO ले EMARSSH Project

One Way/Round Trip		Cabin Class		Number of Passengers	
Round Trip		Economy		150	
Leg		From City/Airport		To City/Airport	
1		KTM		HKG	
Delete All Location(s)		Delete Leg		Add New Leg	
Reset		Compute			
Metric (KG / KM)		Standard (LBS / MI)			
Total					
Dep. Airport	Arr. Airport	Number of passengers	Cabin Class	Trip	Aircraft Fuel Burn/Journey (KG) ⁴⁰
KTM	HKG	150	Economy	Round Trip	39852.2
					Total passengers' CO2/Journey (KG) ⁴¹
					85178.4
Flight Stage Detail					
The result in metric(KG/KM)		Distance (KM)	Aircraft	Aircraft Fuel Burn/leg (kg) ⁴¹	Passenger CO ₂ /pass/leg (KG)
Origin/Airport	Arr. Airport				
KTM	HKG	2928.0	320, 333	19926.1	217.3
HKG	KTM	2929.0	320, 333	19926.1	217.3

भनेर छुट्टै परियोजना संचालन गरी तीन वर्षसम्म सम्बन्धित मुलुकहरुसँग गहन छलफल र समन्वय पश्चात सन् २००४ मा नयाँ Air Route Structure लागु गरे को थियो । त्यसमा नेपालले प्रस्ताव गरे को हिमालय २ रुट पनि समावेश थियो । यो रुटले हंगकंगदेखि काठमाडौँलाई सिधा जोड्छ । साथै मौजुदा L626 Route हुँदै दिल्ली र मध्यपूर्वी गन्तव्यसँग पनि जोड्दछ । यो मौजुदा काठमाडौँ-हंगकंग रुट भन्दा १४० नटिकल माईल याने कि १९२ किलो मिटरले कम छ भने दिल्लीदेखि हंगकंगको मौजुदा रुट भन्दा ५७ नटिकल माईल याने कि १०६ किलोमिटरले कम छ ।

३. छोटो र सिधा रुट भएको कारण यो रुट सबैको सरोकारको विषय भयो । तर यो रुटमा हंगकंगबाट कुनमिड नाघे पछि दिल्ली नपुगेसम्म कुनै पनि गतिलो विमानस्थल नभएपछि आकस्मिक अवतरण गर्नमा समस्या छ जसले गर्दा हालसम्म यो रुट IATA को प्राथमिकतामा पर्न सकेन र कार्यान्वयनमा आउन सकेन । ICAO ले गत अगष्ट २०१९ मा यो रुटलाई कार्यान्वयनमा ल्याउन सम्बन्धित मुलुकहरुलाई पुनः जनाउ दिई ३६ महिना भित्र सञ्चालनमा याउन नसके रद्द गर्न सकिने चेतावनी समेत दिएको छ ।

४. निजगढ विमानस्थल बनेमा तुरुन्तै कार्यान्वयनमा आउन सक्ने यो हिमालय रुट देशको भविष्य हो । त्यसैले यस्तो अपूर्व अवसर र कार्यमा ढिलाई गर्न र बाधा पार्ने भनेको मुलुकका लागि ठूलो दुर्भाग्य हो साथै एक गम्भीर अपराध पनि हो ।

५. हिमालय रुट कार्यान्वयनमा आएपछि यसले विश्व वातावरणमा ल्याउने सकारात्मक प्रभाव पनि उत्तिकै महत्वपूर्ण छ । हंगकंगदेखि काठमाडौँ, दिल्ली, मुम्बई तथा मध्यपूर्वी मुलुकहरुको लागि हप्तामा भन्दा १०० वटा नियमित यात्रु उडान र त्यतिकै संख्यामा कार्गो उडान हुने गर्छन् । प्रत्येक उडानमा एकतर्फी १९२ किलोमिटर छोटो पर्न जाने भनेको १५ मिनेट भन्दा बढी उडान अवधि घट्नु हो । एउटा मध्यम वर्गको जेट विमानले १ घण्टामा न्यूनतम २,२०० लिटर र ठूलोले ११,८०० लिटरसम्म इन्धन खपत गर्दछ । यो रुट संचालनमा आएमा

यसबाट वार्षिक ४,८६७ टन इन्धन बचत हुने देखिन्छ भने वार्षिक भन्दा ३९,००० टन कार्बन उत्सर्जन घटाउन टेवा दिने देखिन्छ । यसबाहेक नेपाली आकाश प्रयोग गरेबापत विदेशी वायुसेवाले तिर्ने शुल्कबाट करोडौँ आयआर्जनको अवसर पनि मिल्नेछ ।

१३ मई २०१८ को Flightradar24 बाट उद्धृत माथिका Real Air Traffic Scenario ले निम्न तथ्यहरु जानकारी दिन्छ:

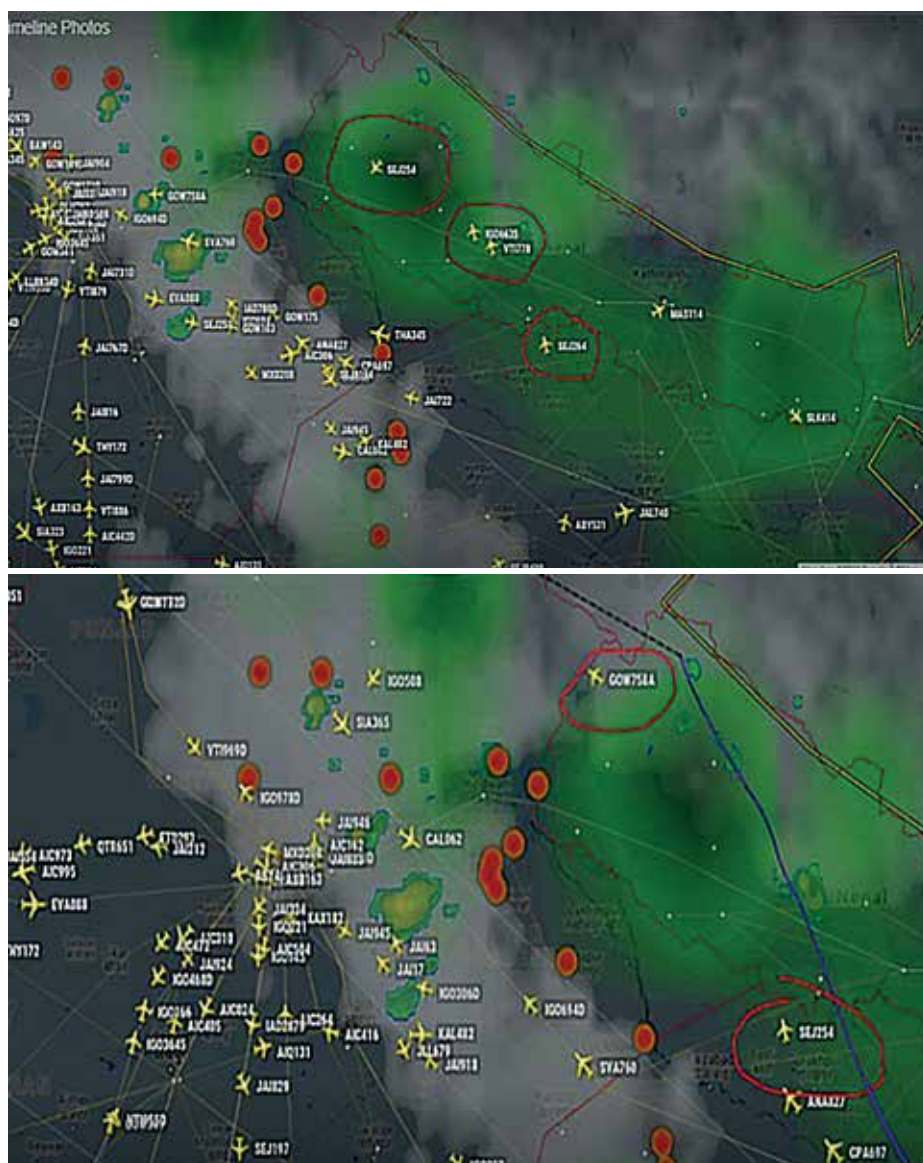
१. नेपालको दक्षिण छिमेकी देशको हवाई आकाश अत्यन्त गुलजार छ भने नेपाली हवाई आकाश शून्य छ । यसबाट नेपाल अन्तर्राष्ट्रिय हवाई रुट संजालबाट एक्लिएको स्पष्ट हुन्छ ।

२. नेपाली आकाश भएर जाने हिमालय रुट संचालनमा आउन सकेको भए यस क्षेत्रको अत्यधिक हवाई चाप केही मात्रामा भए

पनि नेपालतर्फ सर्न गई उडान सुरक्षामा महत्वपूर्ण योगदान पुग्ने थियो ।

निश्कर्ष:

नेपालको एयर ट्राफिक वृद्धि दर संसारको कनै पनि Growth Model सँग मेल खाँदैन । अन्य मुलुकहरुमा हरेक १५ वर्षमा एयर ट्राफिक दोब्बर हुने मान्यता छ तर २५ वर्षअघि १०-१२ लाखको हाराहारीमा रहेको त्रिभुवन अन्तर्राष्ट्रिय विमानस्थलको यात्रु आवागमन सन् २०१८ सम्ममा भन्दा ७२ लाख पुगिसकेको छ भने अर्को २५ वर्ष सम्ममा कति पुग्छ ? त्यसको लागि ध्यान सक्ने पूर्वाधारको लागि अहिल्यै सोच राख्न आवश्यक छ । वातावरणीय पक्ष, आर्थिक र सामाजिक पक्ष, हरेक दृष्टिबाट निजगढ अन्तर्राष्ट्रिय विमानस्थल देशको लागि अपरिहार्य छ । ■





Civil Aviation Policy

catalyst for development

Hari Bhakta Shrestha
Former DG, CAAN

Air transport system in any country plays a catalytic role in attaining economic prosperity of that country. It is more so for country like Nepal, where air transport is the only effective means of accessibility for vast majority of the people. Development of air transport system depends very much on its aviation policy. Nepal embarked on promotion of private sector to play significant role in providing air transport service in early 90's. Nepal adopted a liberal aviation policy and emergence of private sector in domestic air transport in 1992. Now, the contribution of private air transport service provider in economic development and social integration of the country is very significant.

The thrust of first civil aviation policy 2050 BS (amended in 2053) was to develop healthy and competitive air transportation through encouragement to the private sector. And very focused emphasis was given to establish Civil Aviation Authority of Nepal. It is satisfactory to note that CAA Nepal was established in timely manner on 2056 and private sector's participation in air transport has been very significant since then. Civil Aviation Policy 2063 (CAP 2063) was more comprehensive encompassing all aspects of air transportation system. The main objective of this policy was "to promote tourism and trade through safe, easily available, economical, market oriented, reliable and effective air transport, while ensuring flight safety and aviation security in consonance with international standard."

Since then, Nepalese aviation has seen tremendous growth in terms of accessibility, infrastructure development

and private sector's participation. Also, there has been lot of development in aviation technology, globally more and more liberalization of aviation market and aggressive participation of private in operation and management of air transport infrastructure, beside airline. Domestically, Nepal has surpassed any forecast model in growth of air traveler and air traffic movement. Institutionally, Nepal has now seven provincial government with federal government at center. This has necessitated to rethink about existing CAP 2063 and revise it to encompass all those new developments and give clear vision on how air transport should move ahead for the benefit of the country at large.

Airspace is valued national asset which has a vast potential for economic development and social integration of the country. New policy should be formulated on this basic premises. Accommodating this goal, new aviation policy should focus its objective on:

1. Air transport infrastructure development strategy.
2. Air transport service provider – its domain and role
3. Regulator's job – in ensuring safe, secure, reliable, cost-effective and competitive air transport development.

Following strategy may be relevant and fruitful to include in new aviation policy.

Air transport infrastructure development strategy.

Nepal has already promulgated the "Private Financing in Build and Operation of Infrastructure" Act in 2063 "to make

necessary provision on making services and facilities available to the general public in reliable, cost-effective and easily available manner by getting the private sector involved in the build, operation and transfer of the infrastructure in consistent with the liberal economic policy pursued by the country."

Also, Nepal Government had approved the regulation namely "Built, Develop and Operate of Civil Aviation Infrastructure Regulation 2066" made by Civil Aviation Authority of Nepal under the authority provided by Article 34 of Civil Aviation Authority Act 2053. This regulation has contemplated the modality of development of air transport infrastructure development in the following manner:

1. Built and Transfer (BT)
2. Built, Operate and Transfer (BOT)
3. Built, Own, Operate and Transfer (BOOT)
4. Built, Transfer and Operate (BTO)
5. Lease, Operate and Transfer (LOT)
6. Lease, Built, Operate and Transfer (LBOT)
7. Develop, Operate and Transfer (DOT)
8. Any other similar model.

Hence, new aviation policy should encourage private participation in air transport infrastructure development within these legal frameworks. Some suggestion to include in the policy for infrastructure projects:

1. Tribhuvan International Airport (TIA).
2. So far CAAN has been developing

it under its own fund and Asian Development Bank (ADB) Bank. To complete all the component of new ITB master plan proposed by Airport De Paris (ADP), it may need close to billion-dollar investment.

3. Then will come the question of our capability of operating and managing cost-effectively. Hence, it is suggested that policy should frame to convert it into limited company with opening for foreign investor in joint venture with Nepalese party. This JV company should allow majority ownership and Government should remain in minority share. One could replicate successful model of Delhi International Airport Limited (DIAL). At the least, TIA to be more efficient and cost effective, it must be operated and managed by private sector under PPP model.

a. **Nijgadh International Airport.**

This is a national priority project. There is no second thought on tremendous economic and social benefit the country will derive from it. And there is no alternative to this, if air transport is to be developed in line with the growth in this field. To develop it into a full-fledged international, investment of well over billion dollar will require. This airport could be developed as a ICAO Category 4F full-fledged airport and there is great scope for the transit hub. As discussed earlier, the best model could be BOOT. Alternative model of limited company as suggested for TIA should be explored, incase there is no taker for BOOT model.

b. **Gautam Buddha Airport and New Pokhara Airport**

These upcoming regional airports should be operate and managed under PPP model. Policy should have ample provisions to encourage foreign investor and Nepalese investor to operate and manage.

c. **Hub Airports (Biratnagar, Nepalgunj, Dhangadhi, Bhadrapur and others)**

Handover to provincial government to operate and manage efficiently and effectively.

Provincial government should attract Nepalese investor with enough provisions

of concession, waver of fees etc.

d. **STOL and other airports.**

Policy should frame to encourage private operator to provide regular services under the principle of cost recovery modality.

Air Transport Service Provider:

a. **Nepal Airline Corporation.**

One of the main reasons for poor performance of national carrier is because government owns it, control and operate. The only solution to this is to privatize it, with possibly foreign strategic partner as soon as possible. Government role should limit to protect national interest with golden share concept.

b. **Private Operator.**

Policy should address the present problem facing by the private operator such as red-tapism, duplication of process, lack of access to foreign currency, Taxes, Custom duties, Tariff restriction, fuel cross subsidy-making aviation fuel most expensive in the region, high cost of products essential for airline operation. Enough provisions should be made in the policy, such as various concession, rebate, duty free, other facilities, simplified one door policy for all kind of approval so that airline operation could be more cost-effective and competitive.

Non-Aeronautical activities.

Non-aeronautical revenue generation is bare minimum in Nepalese aviation sector. Desired level of revenue generation from non-aeronautical activities is more than fifty percent of total revenue. Hence policy should spell out clear provisions of concessions, custom duty rebate, tax holiday, simplified procedure for Foreign Direct Investment (FDI), fee waver and other significant facilities to promote private sector's participation in developing and operating Airport hotel, Flight kitchen, Duty free shop, Business Centre, Recreational activities such as Golf etc.

Regulator's Role.

To ensure safe, secure, efficient and affordable competitive air transport service, present regulator i.e. CAAN, must oversee the strict compliance of aviation related regulations, as promulgated under

Chicago Convention (Annexes 1-19 & related manuals), and other aviation related conventions to which Nepal is the party. CAAN must not wear two hats of Regulator as well as Service Provider. Air transport service provider job must be left to private sector under PPP model.

Miscellaneous:

Policy should also give due consideration to following issues which directly affect the well being of air transport system.

- **Independent Accident Investigation Board (AIB).**

Often questions have been raised regarding impartiality of accident investigation conducted in Nepal. ICAO safety audit team has repeatedly pointed out the need for permanent independent accident investigation board. New policy must address it.

- **Civil Aviation Security Bureau.**

Aviation security in Nepal is currently being provided by Nepal Police. It is prone to frequent transfer of trained security personnel and subject to problem of retention of highly trained and skill manpower. Aviation security is a very sensitive matter. Any lapses on it will jeopardize whole air transport sector. The memory of fall out effect and economic impact IC 414 hijacking from TIA is still fresh. The government should maintain a "Zero Tolerance" policy with regard to "Air Rage".

- **Ground Handling:**

TIA must have two ground handling agencies. One NAC and other international JV company chosen under international bidding process. At Gautam Buddha and New Pokhara Airport, one international JV company be chosen under competitive bidding and allow self-handling for international operator.

- **Aviation Fuel supplier:**

At TIA and Regional airport Gautam Buddha and New Pokhara, there must one private fuel supplier, beside NOC, chosen under international competitive bidding process.

- **General Aviation/Sport & Recreational activities.**

Policy should make provisions for formulation of separate rules and regulation to govern these activities.

- Flying School/MRO/ATO

Policy should also encourage private sector for the establishment of those entity with hundred percent equity ownership and other facilities.

Ratification of International Conventions and its Domestic Legislation.

Nepal has submitted instrument of accession for Montreal Convention 1999 (MC99) regarding air carrier's legal liability. Nepal Treaty Act 2047 (1990) provides that a treaty to which the Nepal Government is a party, upon ratification by the Parliament or House of Representatives, shall carry the force of law in that particular matter and shall prevail over the existing domestic laws in

case of any conflict. Nepal has adopted the Monist Approach in enforcing treaties and thus does not require additional parliamentary action to make the Montreal Convention enforceable in Nepal. But it is applicable to international flight only. Therefore, it is urgently needed to promulgate domestication legislation for its application to domestic carriers. Also, Nepal needs to deposit the instrument of accession for Cape Town convention and Protocol 200 on urgent basis. This will have easy access to international financing for aviation at very cheaper interest rate. Policy should spell out the commitment of the government to this effect and ratification of other relevant international convention.

Liability of Airport Operator/Air Traffic Service Provider.

In any just society, if some one suffered damage due to your action or inaction (e.g.

parked aircraft damaged, damage due to faulty runway/navigation equipment, Bird/animal strike on runway) then you should be liable for that damages and victim should be compensated justly. No one should escape from this liability and Airport Operator/Air Traffic Service Provider can not and should not be exception. New aviation policy should mitigate this issue through third party liability insurance mechanism.

The Government has duly recognized the need for timely revision of present Aviation Policy 2063 and formed a committee to draft new aviation policy. My wishful thinking is that the Committee will seriously consider my views expressed as above. My next wishful thinking is that Government will consider to prepare "Air Transport Master Plan." In lack of this, scarce resources of investment could be wasted in unproductive sector. ■

Domestic Apron



पोखरा क्षेत्रिय अन्तर्राष्ट्रिय विमानस्थल २ गण्डकी प्रदेशको समृद्धि



सूर्यबहादुर थापा
पूर्व उपमहानिर्देशक, नेत्राउप्रा.

विषय प्रवेश

स्थानीय तह र प्रदेश सभाका उम्मेदवारहरूले निर्वाचनताका आफ्नो ठाँउलाई स्मार्ट शहर तथा नमुना प्रदेश बनाउने घोषणा गरेका भएपनि स्मार्ट शहरको न्युनतम मापदण्ड भने प्रकाशमा ल्याएका छैनन् । सफा, स्वच्छ, हरियाली तथा वातावरण- मैत्री शहर, सबैलाई स्वच्छ खानेपानी, प्रदूषण मुक्त शहर, सुलभ यातायात, आधारभूत शिक्षा तथा स्वास्थ्य, भ्रष्टाचार मुक्त सुशासन, सुरक्षाको पुर्ण प्रत्याभुती, दण्डहिनताको अन्त्य, डिजीटल सुचना प्रणाली जस्ता स्मार्ट सिटीका आधारभूत शर्तहरू हुन भन्ने कुरामा कसैको विमति रहदैन । हाम्रो जस्तो पछौटे मुलुकमा यस्ता सुविधाहरूको व्यवस्था गर्न अझ कति वर्ष लाग्ने हो भन्न सकिन्न । सरकारले अघि सारेको स्थिरता र समृद्धिको नारा आर्थिक विकास भए मात्र पुरा हुन्छ र आर्थिक समृद्धि भए मात्र स्मार्ट सिटी र नमुना प्रदेश सम्भव हुन्छ । आर्थिक विकास र समृद्धिको लागि योजनाबद्ध तरिकाले आर्थिक कार्यक्रम तथा गतिविधिहरूको संचालन गर्नु पर्ने हुन्छ । अविकसित मुलुकहरूमा नै आर्थिक विकासको आवश्यकता हुने हो । यस्ता मुलुकहरूमा भएका श्रोत र साधनहरू आसिक रुपमा उपयोग गरिएका हुन्छन् या उपयोगविहीन हुन्छन् । योजनाबद्ध रुपमा संचालन गरिएको आर्थिक कार्यक्रम तथा क्रियाकलापले उपलब्ध श्रोत र साधनहरूको समुचित उपयोग गरि समृद्धि हासिल हुने आशा गर्न सकिन्छ ।

मुलुकको आर्थिक विकासमा विमानस्थलको महत्वपूर्ण भुमिका हुने कुरामा दुई मत

छैन । हालको पोखरा विमानस्थल उत्तर दक्षिण फैलिएको र जहाज उडान अवतरणको लागि महत्वपूर्ण प्रवेश क्षेत्र (approach area) को रुपमा रहेको दक्षिण तिर अवस्थित अग्लो डाँडा (क्रिस्ति-नाचनेचौर) को कारणले ठुला जहाजलाई सुरक्षित अवतरण गर्न सम्भव देखिदैन । हालको विमानस्थलको धावनमार्गको उत्तर तिर पोखरा बसपार्कको छेउमै पृथ्वी र १जमार्ग र दक्षिणतिर घनाबस्तीको कारणले विमानस्थल विस्तार (extension) को सम्भावना पनि देखिदैन । संचालन सीमितताले गर्दा विद्यमान विमानस्थलले विश्व मै बढ्दो हवाई यात्रुहरूको मागलाई सम्बोधन गर्न नसक्ने भएकोले अर्को सुविधा सम्पन्न विमानस्थल निर्माणको जरुरी भएको हो ।

गण्डकी प्रदेशको राजधानी पोखरामा निर्माणाधीन “पोखरा क्षेत्रिय अन्तर्राष्ट्रिय विमानस्थल” ले यस क्षेत्रमा आर्थिक रुपमा के कस्तो प्रभाव पार्न सक्छ, यहाँ संक्षिप्त विवेचना गर्ने जमर्को गरिएको छ ।

गण्डकी प्रदेशको संरचना र यसका आकर्षणहरू

गोरखा, लमजुङ, तनहुँ, कास्की, मनाङ, मुस्ताङ, पर्वत, स्याङ्जा, म्याग्दी, बाग्लुङ, नवलपरासी (बर्दघाट-सुस्तापूर्व) गरि ११ जिल्ला गण्डकी प्रदेशमा समेटिएका छन् । यसरी यो प्रदेश हिमाल, पहाड र तराई सबै जिल्ला समेटिएकोले यो सम्पन्न प्रदेश मान्न सकिन्छ । सम्पन्न हुनको लागि सबै साधन श्रोतहरू यस प्रदेशमा उपलब्ध छन् । गोरखाको मनकामना मन्दिर, मुस्ताङको मुक्तिनाथ मन्दिर,

बाग्लुङको कालिकामन्दिर आदि जस्ता प्रसिद्ध धार्मिक स्थल; गोरखा दरवार जस्तो ऐतिहासिक स्थल; लामो पदयात्रा (ट्रेकिङ) को लागि अन्नपुर्ण बेस क्याम्प र धौलागिरी सर्किट तथा छोटो पदयात्राको लागि घोरे पानी, घान्द्रुक, धम्पुस, मुक्तिनाथ, मनाङ्ग र मुस्ताङ्ग; कास्की जिल्लामा अवस्थित पाताले छाँगो, गुप्तेश्वर गुफा, महेन्द्र गुफा र सात तालहरू (फेवा, बेगनास, रुपा, दिपाङ, खास्ते, मैदि, गडुवा), रमणीय शहर पोखरा र यहाँ बाट देखिने अन्नपुर्ण हिमश्रृंखला, सुन्दर माछापुच्छ्रे हिमालका मनोरमदृश्यले पर्यटकहरू आकर्षक हुने हुदा यस्ता प्राकृतिक दृश्यहरू गण्डकी प्रदेशको आर्थिक विकासको लागि द्रष्टो श्रोत बन्न सक्छ । तुलनात्मक रुपमा सफा सहर, यातायातका साधनहरूको समुचित व्यवस्था, पुरानो शहर भएको कारणले सेवा-सुविधाको उपलब्धता, तुलनात्मक रुपमा सुरक्षित वातावरण र अनुकूल हावापानी र प्राकृतिक सुन्दरताको कारणले गर्दा बाह्य तथा आन्तरिक पर्यटकहरूको चाप बढ्दै गएको छ । फेब्रुअरी शहरीकरणले पनि यसको आकर्षण बढ्दै गएको भन्न सकिन्छ । यस्तो स्थानमा निर्माणा धिन विमानस्थलले पर्यटक तथा हवाईयात्रुहरूको बढ्दो आवागमनले आर्थिक क्रियाकलाप बढ्न जान्छ ।

नयाँ विमानस्थलको परिकल्पना

नेपाल सरकारको आठौ योजना (२०४९-२०५४)मा पर्यटनको दृष्टिकोणबाट महत्वपूर्ण पोखराको हालको विमानस्थलमा रहेको सञ्चालन गर्ने क्षमताको सिमीतताले गर्दा नयाँ विमानस्थल निर्माण गर्न केहि वर्ष अगाडि नै जग्गा अधिग्रहण

कार्य भईसकेकोले योजना अवधिको अन्त सम्ममा नयाँ विमानस्थल सञ्चालनमा ल्याउन धावनमार्ग लगायत अन्य भौतिक सुविधा निर्माणको कार्य सञ्चालन गरिने छ, भनी उल्लेख गरिएको थियो। नेपालको समग्र हवाई क्रियाकलापको अध्ययन गर्दा सन् २०१४-२०१८ को पाँच वर्षको समयावधिमा अन्तर्राष्ट्रिय उडानहरू २४.७ ५ र अन्तर्राष्ट्रिय हवाई यात्रुहरू २३.६५ ले बृद्धि भएको देखिन्छ। त्यस्तै सोहि समयावधिमा आन्तरिक उडानहरू ५०.६ ५ र आन्तरिक हवाई यात्रुहरू १०४५ ले बृद्धि भएको देखिन्छ। अन्तर्राष्ट्रिय नागरिक उड्डयन संगठनको सन २०१८ को वार्षिक प्रतिवेदन अनुसार अन्तर्राष्ट्रिय हवाई यात्रुहरू अघिल्लो वर्ष भन्दा ६.४ ५ को बृद्धि भएको देखिन्छ। सन २०१४ मा विश्वभर करिब ३.३ अरब हवाई यात्रुहरू थिए भने सन २०१८ मा करिब ४.३ अरब हवाई यात्रुहरू थिए। यसरी विश्वभर प्रत्येक वर्ष हवाई यातायात प्रयोगकर्तामा बृद्धि भएको देखिन्छ। यसको केही प्रभाव नेपालमा पनि पर्ने निश्चित देखिन्छ र बढ्दो हवाई उडान तथा यात्रीहरूको माग सम्बोधन गर्न अर्को अन्तर्राष्ट्रिय विमानस्थल हुनु जरुरी थियो र पोखरामा त्यस्तो विमानस्थलको निर्माण गर्नु न्यायोचित हुने देखिन्छ।

गण्डकी प्रदेशको राजधानी पोखराको छिनेडाँडामा (मौजुदा विमानस्थलबाट करिब ४ कि.मि. पूर्व पृथ्वी राजमार्गको बाटोबाट दक्षिण - पोखरा लेखनाथ महानगरपालिका वा.नं. १४) मा बन्न लागेको क्षेत्रिय अन्तर्राष्ट्रिय विमानस्थल यस प्रदेशको मुख्य आकर्षण र आर्थिक विकासको महत्वपूर्ण श्रोत मान्न सकिन्छ। उड्डयन क्षेत्रमा के भनिन्छ भने : "One Kilometer of road go nowhere but One Kilometer of runway goes Everywhere" अर्थात एक किलोमिटर सडकले कहि पुगिदैन तर एक किलोमिटर धावनमार्गले सबै ठाउँमा पुगिन्छ। यसले विमानस्थलको क्षमता र यसको प्रभावलाई दर्शाउँछ। पोखरामा यस्तो अन्तर्राष्ट्रिय विमानस्थलको निर्माणले पोखरा र सिंगै विश्वको लागि ढोका खुला हुन्छ। यो अवसर लाई प्रयोग गर्न सक्दा आर्थिक कायापलट भएको प्रशस्त उदाहरण पाईन्छ। पोखरा क्षेत्रिय अन्तर्राष्ट्रिय विमानस्थल निर्माणको

योजना बिक्रम सम्बत २०३२ सालमा ३१०६ रोपनी जग्गा अधिग्रहणबाट शुरु भएको हो। त्यस पश्चात लामो समयसम्म अनिश्चितताको भुमरीमा रुमल्लिन पुगेको यो राष्ट्रिय गौरवको योजना बल्ल चीनीया सहयोगमा निर्माण सम्पन्नको चरणमा पुगेको छ। यस विमानस्थलको धावनमार्गको लम्वाई २५०० मिटर र चौडाई ४५ मिटर को (Runway 2500x45 meter) हुनेछ। यो धावनमार्ग काठमाण्डौको ३०५०x४६ मिटर भन्दा कम हो। काठमाण्डौको त्रिभुवन अन्तर्राष्ट्रिय विमानस्थलको धावनमार्ग भन्दा छोटो बनाउनु यो विमानस्थलको निर्माणमा गम्भिर कमजोरी हो। यस्ता ठूला आयोजनाहरू निर्माण गर्दा ४०, ५० वर्षको हवाई उडानको माग र सम्भावनालाई दृष्टिगत गरी योजना बनाउनु बुद्धिमानी हुन्छ।

पोखरा क्षेत्रिय अन्तर्राष्ट्रिय विमानस्थल

(क) विशेषताहरू (Salient Features):

बिजयपुर खोलाबाट पश्चिम र हालको विमानस्थलबाट पूर्व तिर अवस्थित यो स्थान ठूला जहाजहरू अवतरण गर्न आवश्यक पर्ने प्रवेश मार्ग खुला भएको ले पूर्व-पश्चिम फैलिनेगरी धावनमार्ग बनाईदा ठूला जहाजहरू सहज रूपमा उडान तथा अवतरण (takeoff and landing) गर्न सक्ने देखिन्छ। अन्तर्राष्ट्रिय नागरिक उड्डयन संगठनले विमानस्थलहरूलाई यसले संचालन गर्न सक्ने हवाई जहाजका आधारमा विभिन्न बर्ग (category) मा बाँडेको छ। पोखरामा निर्माण हुन लागेको विमानस्थलको क्षमता Category 4D को हो र यो Category अन्तर्गत अन्तर्राष्ट्रिय उडान गर्ने जहाजहरूमा A-310 (A-Airbus 300 series), B757-200 (Boeing 757 200 series), B757-300, B767-300, B767-400 जस्ता मध्यम बर्गका narrow body जेट विमानहरू पर्छन्। Category 4D बर्गमा पर्ने विमानस्थलहरूमा उडान गर्ने यस्ता जहाजहरू सामान्यतया लगातार ५ देखि ६ घण्टा सम्म यात्रु उडान (passenger flight) गर्न सक्ने भएकोले पोखराबाट त्यतिकै दुरीमा रहेका छिमेकि देशहरूमा उडान गर्न सक्ने छन। यस्ता देशहरूमा भारतको दिल्ली, कलकत्ता, बनारस, मुम्बई,

पटना, चीनको छेंदु, कुनमिङ्ग, ग्वाङ्गझाउ, ल्हासा, सांघाई, थाईल्याण्डको बैंकक, कोरियाको सिउल, कतारको दोहा, सिंगापुर आदि जस्ता विमानस्थलहरूमा उडान गर्न सक्ने हुनाले यो विमानस्थललाई क्षेत्रिय अन्तर्राष्ट्रिय विमानस्थल भनिएको हो।

त्रिभुवन अन्तर्राष्ट्रिय विमानस्थलमा प्रतिकुल मौसम या अन्य प्राविधिक कारणले जहाजहरू अवतरण गर्न असमर्थ हुँदा ने पाल भित्र अर्को अन्तर्राष्ट्रिय विमानस्थल नभएको कारणले भारतका विभिन्न विमानस्थलहरूमा अवतरण गर्नु पर्ने बाध्यकारी अवस्था रहेको छ। यसले गर्दा ती बायुसेवाहरूमा अनावश्यक खर्च बढ्न जाने हुन्छ। यस्तो अवस्थामा category E क्षमतामा संचालित त्रिभुवन अन्तर्राष्ट्रिय विमानस्थलमा अवतरणको लागि आउने सबै जहाजहरू category D क्षमतामा संचालित पोखरा अन्तर्राष्ट्रिय विमानस्थलमा अवतरण गर्न नसक्ने भएकाले यो कमजोरी देखिएको हो।

आर्थिक प्रभावहरू (Economic Impacts):

(१) पोखरा क्षेत्रिय अन्तर्राष्ट्रिय विमानस्थल संचालनमा आएपछि पोखराबाट सीधा अन्तर्राष्ट्रिय उडान हुने भएकोले पर्यटकीय नगरी पोखरामा आउन ईच्छुक पर्यटक तथा अन्य हवाईयात्रुहरूको समय बचत हुने भएकोले पर्यटकहरू उत्प्रेरक भै पर्यटकको संख्या बढ्न सक्छ। हवाई यातायातबाट विदेश आवागमन गर्नु पर्दा काठमाण्डौमा नै धाउनु पर्ने बाध्यता समाप्त हुन्छ। यसरी सीधा हवाई उडान हुदा थुप्रै अन्तर्राष्ट्रिय विमानसे वाहरु यो विमानस्थल संग जोडीन गै अन्तर्राष्ट्रिय आबद्धता बढ्न जान्छ। यसरी नेपाल सरकारको Visit Nepal 2020 कार्यक्रम अन्तर्गत २० लाख पर्यटकहरू भित्र्याउने सरकारको योजना सफल पार्न यो विमानस्थलले सघाउ पुऱ्याउँछ। बै कक, सिंगापुर, सिउल, ग्वांगझाउ आदि जस्ता अन्तर्राष्ट्रिय हव विमानस्थलहरूबाट सीधा हवाई सम्पर्क हुने हुदा ती देशहरू संग अन्तर्राष्ट्रिय आबद्धता बढ्न जाने हुदा यहाँका विविध समुदाय, बजार तथा जनस्तरमा सम्बन्ध कायम हुन गै आर्थिक विकासको जग बस्न मद्धत गर्छ।

(२) विमानस्थल भन्नाले जहाजहरु उडान र अवतरण गर्ने स्थान मात्र बुझ्नु गलत हुन्छ । अन्तर्राष्ट्रिय विमानस्थलको संचालनले स्थानीय, क्षेत्रिय र राष्ट्रिय रुपमा नै प्रत्यक्ष र अप्रत्यक्ष रुपमा आर्थिक प्रभाव पर्छ । विमानस्थल संचालनको मुख्य उद्देश्य हवाई यात्रुहरु र मालसामानलाई (air passengers and air cargo) सुरक्षित रुपमा गन्तव्यमा पुऱ्याउनु भएपनि यो सुविधा प्रदान गर्दा धेरै निकायहरु संलग्न हुने हुदा यसले आर्थिक क्रियाकलापमा सकारात्मक प्रभाव पार्छ । अन्तर्राष्ट्रिय विमानस्थल संचालन गर्दा सुरक्षा निकाय, अध्यागमन, भन्सार, टयाक्सी सुविधा, चमेना गृह/रेष्टुराँ, वायुसेवाका तथा अन्य कार्यालयहरु आवश्यक पर्ने हुदा ती निकायहरुमा कार्य गर्ने कर्मचारीहरु, हवाई यात्रुहरु र ती संग आउने मानिसहरुको आवागमनको कारणले विमानस्थल वरिपरिका क्षेत्र आर्थिक रुपले चलायमान हुन्छन । यस्ता गतिविधिले विमानस्थल वरिपरि को क्षेत्रमा व्यापार, व्यवसायको विकास, बजारको विस्तार, विमानस्थलको वरिपरि र अन्य जिल्लाबाट विमानस्थल सम्म सहज पहुँचको लागि पूर्वाधारको निर्माण

र मर्मतले हजारौ व्यक्तिहरुको आर्थिक उपार्जनको माध्यम बन्ने हुदा रोजगारीको श्रृजना हुन्छ । विमानस्थल संचालनमा संलग्न विभिन्न निकायका कर्मचारीहरुले गर्ने खर्चले अर्थतन्त्रमा बहुआयामिक प्रभाव (Multiplier impact) पर्न जान्छ ।

(३) आजकल हवाई सेवा संचालनलाई उद्योगको रुपमा लिईन्छ । विमानस्थलमा उडान तथा हवाईयात्रुमा वृद्धि भएको अवस्थामा विद्यमान भौतिक पुर्वाधार, होटलहरु जस्ता सुविधा नपुग हुन सक्छ र त्यस्ता भौतिक पुर्वाधार र सुविधाहरुको निर्माण, विकास र विस्तारले आर्थिक क्रियाकलाप बढ्ने हुदा आर्थिक रुपमा कायापलट हुन सक्छ ।

(४) प्रदेश नं ४ को राजधानी पोखरा बाँके सबै जिल्लाहरुबाट समदुरीमा पर्ने भएकोले पनि यो सबै जिल्लाहरुलाई पायक पर्ने ठाउँ हो । विदेशबाट पोखराको अन्तर्राष्ट्रिय विमानस्थलमा सीधा उडान हुने हुदा पर्यटकहरुको संख्यामा वृद्धि हुन्छ र तिनीहरुको मनोरञ्जनको लागि विभिन्न जिल्लामा भएका धार्मिक, ऐतिहासिक तथा पर्यटकीय क्षेत्रमा टुर प्याकेज बनाई भ्रमण गराउने, प्याराग्लाईडिङ, जिप फ्लाएर, केवल कार आदि जस्ता साहसिक

क्रियाकलापहरुलाई पोखरा लगायत अन्य जिल्लामा पनि विस्तार गर्नाले ती जिल्लाको पर्यटन उद्योगलाई समेत सहयोग पुग्ने देखिन्छ । पर्यटकहरुको वृद्धि भएमा होटलहरुको संख्या वृद्धि हुने, पर्यटकहरुको होम-स्टे कार्यक्रम बनाउने, तिनीहरुको बसाई लम्ब्याउन विभिन्न मनोरञ्जन कार्यक्रमहरु गर्ने, थप पर्यटन स्थलहरुको खोजी, पहिचान र विकास गर्ने र भएका पर्यटकीय स्थलको थप विकास र विस्तार गर्ने आदि गतिविधिले रोजगारी श्रृजना भै सकारात्मक आर्थिक प्रभाव पर्ने देखिन्छ ।

(५) सीधा हवाई उडान हुदा कार्गो ओसार-पसार सहज हुन्छ र यसले व्यापार बढाउन मद्दत गर्छ । कार्गो मार्फत वस्तु र सेवा ओसारपसार गर्न सहज हुन्छ । स्थानीय व्यापारीलाई आयात निर्यात गर्न पनि सजिलो हुन्छ । यसले गर्दा राजस्व पनि बढ्न जान्छ ।

(६) आर्थिक क्रियाकलाप बढ्न जाने हुदा लगानी को लागि अनुकूल वातावरण बन्छ । त्यसले गर्दा अन्य व्यापार व्यवसाय आकर्षित हुने हुदा आर्थिक वृद्धिमा सघाउ पुऱ्याउछ । मुलुकको समग्र आर्थिक वृद्धिको लागि विमानस्थलले catalyst को काम गर्न सक्छ । ■

Construction Works at TIA



PIA AND BBSLS



Ramesh Man Joshi
Former DDG, CAAN

Better late than never, Pokhara International Airport (PIA), a mega project of national pride, is to be completed (Civil works, Communication, Navigation and Surveillance System as well as Flight Calibrations) by the end of December, 2021, after two years from now if all goes well. The foundation stone of the infrastructure was laid by K.P. Sharma Oli, Prime Minister of Nepal, on April 13, 2016 among the highly enthusiastic mass of Pokharelis. The land, first acquired about 44 years ago in 2032 BS, will see its proper utilization at last. Jet aircraft like B737, B757, A320 or equivalent will be able to operate to and from PIA when completed.

‘Safety’, at all stages of a flight is accorded the highest degree of ‘priority’ and ‘concern’ by the ICAO, all contracting states of the world, and CAAN as never before. There are myriads of things to do in this regard for PIA, too. The ICAO has prescribed all needful provisions to the contracting states for the implementation. ICAO

Doc 9137 Airport Services Manual Part – 3 “Wildlife Control and Reduction” prescribes measures for the reduction of Wildlife Hazard to Aircraft in general, possible birds’ menace at PIA deserves particular attention due to the existence of a close by land-fill site known as Bachhe Baduwa Sanitary Land-fill Site (BBSLS), which is also a habitat of rather rare Egyptian vultures, a bird of prey, since a long time. In this write up, attempt is made to discuss this paradox a little more elaborately for the benefit of all.

Nepal is rich in birds with more than 887 species. Pokhara, a small valley is known all over the world for its beauty – abundant with flora, fauna and the scenic mountains and lakes. More than 500 kinds of birds are found here. One very special among them is the habitat of the Egyptian vultures. They dwell at the bank of Phusre Khola in Bachhe Baduwa. They are big and one can weigh up to 20 Kg. The location lies just 4.5 km SE of the existing Pokhara airport (Right Base of RWY 04). Pokhara, not too long ago, was a

very mismanaged city in terms of waste management view-point. Solid waste could be found littered everywhere. Eventually a very good and scientifically managed Sanitary Waste Management Site was constructed and brought into operation from 2004 with 15 years of life span by the then Pokhara Sub-Metropolitan City Office (PSMCO) under the aegis of Second Tourism Infrastructure Development Project (STIDP) which was funded by Asian Development Bank (ADB). Since this BBSLS was fairly close to the existing Pokhara Airport, ADB had asked the PSMCO to get a sort of no objection from CAAN for its operation.

National level Airport Bird Control and Reduction Committee (ABCRC), headed by the secretary at the Ministry of Culture, Tourism and Civil Aviation, was constituted about two decades ago. This Committee, way back in 2002, had decided that BBSLS shall be closed whenever new PIA at Chhine Danda comes into operation. Pokhara is now Pokhara – Lekhnath

Metropolitan City. It is hoped that this office will follow the decision of the ABCRC by shifting the Sanitary Land-fill Site somewhere safely away from PIA (at least 13 km away) as ICAO recommends.

BBSLS was well run in the beginning, without fuming out any smell whatsoever that would attract birds. But, its operation was not smooth in the later years, that is, smell from the solid waste and leachate deposited at the site could not be controlled. It became a paradise for the birds, including the Egyptian vultures. They roam over it at all times. Already a number of bird hits have occurred over this area with the aircraft landing or taking off from the existing Airport, not to mention the scare among the pilots whenever they fly over BBSLS.

Runway at PIA (2500Mx45M) is

only 1.5 Km away from BBSLS. It is reported that Pokhara – Lekhnath Metropolis has decided to build a separate sanitary landfill-site away from the PIA. It should now be the concern of the CAAN to ensure that BBSLS is safely closed for all activity related to the deposition of the solid waste within December 2021. PIA cannot afford it to be projected as a bird – prone – airport right from the beginning.

The proximity of BBSLS and the hazard it could create must be dealt with rather seriously while study and management of Wildlife Hazard at PIA is conducted in totality at a later date. When constructing the new sanitary landfill site, it must not be close to PIA. It is said that ADB is ready to finance the new project. But, the site selection work is not yet finalized. Existing BBSLS took two and half years to built. CAAN must

be very watchful in this regard. To mention a few of the birds activity in Pokhara Valley, every day big flocks of egrets (hundreds in number) go eastward from Fewa Lake at dawn and come back at dusk to their nest, by crossing the existing Airport as well as BBSLS every day. A thorough study must be conducted on the birds activity for the whole year round right away. At least this issue and presence of Egyptian vulture at BBSLS (even after its closure) must be seriously dealt with. Moreover, even while closing the BBSLS by the metropolis, caution must be observed in the sense that closure of a sanitary landfill site, in general, is a highly technical/ecological process for that matter. There is an old adage ‘A war is lost because of a nail’. PIA should not lose any war because of a bird. ■

Helipads



My Transfer a great boon in disguise..... the missing link



Birendra Kumar Singh
Former Joint Secretary, MOCTCA

The Backdrop:

Even during our training periods our instructors always hammered home the fact that our training was to fulfill the missing link... that we were to manifest our skill and talent (that we were being bestowed by our instructors) at farfetched and far flung remote stations of Nepal be it Simikot, Jumla, Tumlingar or Jomsom. We being the first ACOs 001 (Aeronautical Communication Officers), product of Nepal, our instructors placed great and massive confidence in our group and they often transferred us to remote stations (verbally), even before completion of our training period. As for me those training days were very enjoyable, fun, and above all very interesting and fruitful. This I can vouch for all of my friends of 001 group. The classroom was full of learning attitude with fun and laughter accompanied by volley of question and answer to the extent that both the instructors and we students were always on our toes to gain new knowledge and share experiences that our instructors gathered during their long outstanding services they had rendered to their country at out stations. Hence they were always encouraging us to leave TIA at the very of our job for greener pastures. we were told that we would be our own masters, be station-in- chief and the best part would be to shoulder great responsibilities and what more greater opportunities for quicker promotions,

Experiences of remote stations the Pros and Cons:

Of course, easier said than done. Even though from our group most of us grabbed the opulent opportunity to jump to be posted outside at remote stations yet others shied away to be posted out of Kathmandu and I at the initial stage was the one not to go out of Kathmandu: reasons being many and the foremost was that I was recently married with a child which discouraged me to remain at TIA laboring at our famous ACO channels the SSB, International Mobile and the FIC handled by the ACOs at the infant stage. But as the days at our duties ripened I now started to think as to why not get posted out of TIA which could not only fetch me a bit more money and above all better marks for grinding my nose to our assigned duties at the remote stations. Hence an idea was generated in my mind: get a transfer to Bhairahawa this way I would be enjoying the most as it was near to my birth place Tawlihawa giving me an edge over many things especially

I would have an opportunity to visit my hometown and be close to my maternal grandparents. But to get my transfer to Bhairahawa was not a piece of cake as I thought I had to do a lot of string pulling and run around because those days no ACOs had ever been posted to Bhairahawa only the ATCs were stationed there. But {as always I say to my friends what fate has it for you no man can put it asunder} thus the post of an ACO was created to ensure that I got posted to Bhairahawa. And be it informed dear friends that it is Birendra Singh's effort to install other ACOs at Bhairahawa Airport from then on. This is not a braggadocio but the real truth in the Nepalese aviation history.

- Being posted to any station can either be a great boon or bane depending upon the individual. During my 35 years plus career in the aviation arena I have been transferred to only two places; one at Bhairahawa Airport presently Gautam Buddha International Airport

Bhairahawa and the other at Jomsom Airport. I have enjoyed tremendously at both these airports. My career as an ACO was launched from Bhairahawa Airport as I initiated my career from daily wages carrying on to temporary and finally was made permanent employee of His Majesty's Government of Nepal. My five years of working there was enjoyable and I utilized my free time serving Bhairahawa as a social worker being totally dedicated to Siddhartha Jaycees. I could devote my time and days to Jaycees because I worked only on a single morning shift. My duties could begin at 0500 in the morning and end at 1200 LT thus enabling me to do all my social work through the day. During those five years of stay at Bhairahawa I had an opportunity to be the Chairman of Jaycees kindergarten, giving free Spoken English Classes to the SLC Graduates, distributing free medicines and instructing the villagers of Chapkaiya how

to make 'noon chini pani' in the local language, attending the Jaycees Conference at Birgunj, Dhankuta, Butwal and winning the oratory contest held at Butwal on the topic entitled "Buddha and Jaycees". To cut the long story short the days at Bhairahawa were full of fun frolic and enjoyment. The overtime I accumulated through my then RNAC overtime was spent on visiting Banaras, Gorkhpur, Lucknow watching movies and buying clothes. At retrospect I often think had I not squandered my overtime money watching movies and buying clothes I would have had enough money to buy me a few piece of land . But I never worried on that and I never thought of even saving money being stingy on the contrary I loved my stay at Bhairhawa enjoying each minute till I got my transfer to TIA. I loved my stay at the Korean Quarter at Bhairahawa. Since I loved reading my RNAC pilot friends that flew into Bhairahawa from Kathmandu always brought me some magazines or books so I could read.

I am thankful to Civil Aviation department for posting me to Bhairahawa. No sooner had I been back to Katmandu than I again requested the then DGCA to transfer me to Jomsom (a very famous and renowned remote station.) My request was complied with hence off I flew to replace D P Raman my own buddy ACO of Group 001 at Jomsom. Since it was my very first transfer to Jomsom my family accompanied me so they too could have the darshan of lord Muktinath. We flew via Pokhara with the famous RNAC Twin otter. We could stay at Pokhara staff quarter { courtesy Pokhara Station Manager late Madav Kumar Raimajhi, under whom I had worked at Bhairahawa. } The next day after paying homage to Bidibashin Mata we flew to

Jomsom Airport. The same day after landing at Jomsom ,negotiating with the Major of the Army stationed at Jomsom for horses, we left for Muktinath. I had difficulty coming back to Jomsom from Muktinath as it was my first ever to climb to such a height. Finally we reached Jomsom wee in the late night. My three years of stay at Jomsom has been very memorable as I can never forget not only the great hospitality bestowed upon me by the ever loving Thaklies but also because I had a great opportunity to be more close to them as well as to be deeply associated with their culture which is very rich and glorious. I passed my afternoon teaching English and Science at Jomsom School which was across the kalo pul from the airport. I was the first ACO to announce the arrival of the aircraft in English, Nepali and French (though I do not claim to be an expert in French) from Pokhara through the PA system installed in Jomsom Tower. Even though this job should have been done by an airlines person. It was fun working at Jomsom as we were lucky to exchange food from Pokhara and Marpha {the local drink} along with the famous juicy apples from Jomsom. When most of the civil servants idled away their times toying with a glass of Marpha and cards I on the other hand passed my time teaching at the school.

Though I did have an opportunity to work at various places my top priority has always been Jomsom. Even at times the weather gets very harse and the wind is gusty that people often curse as to when they will end their transfer days but I on my part enjoyed my stay to the fullest. Most of the days we civilians at Jomsom gathered to merry making with singing and dancing which I enjoyed the most. As most of us suggested that we should have a building

for Karmachari Milan Kendra my friends and I collected around Rs 25,000 singing dhuse during Thihar which was contributed for building the Kasrmachari Building which still stands today at Jomsom and my friends and me were one of the major contributors for the erection of that building.

Conclusion:

So dear friends do not fear or feel remorse if you have been transferred to any remote places but make it a chance to grab an opportunity for these are the advantages I have amassed working at remote place and underlined as:

- A great prospect to see a place which you may miss once you retire from your perspective job
- Don't only concentrate at the tower/ ACC/ Briefing etc. but go out to meet people (especially the local people and not the big bosses) get immersed into its culture, agriculture, attitude of the people etc,
- Being a true Nepali try to help the local people in any way you can as in sanitation, health education. Even a small gesture from your side can mean a lot to them. Don't just sit idle cursing your own faith but extend your ides open your arms and be engrossed with them. This way you will have spent your days fruitfully.
- The best is the number you will be gathering for your quick promotion.
- Thus take a ride to your future go out to the far flung remote stations to gather and share your experiences. But all may not be that lucky to go out but if you do have the chance I advise you my friends do grab this golden opportunity Fly out earn money climb your ladder to success..... ■



आन्तरिक लेखापरीक्षणबाट विमानस्थल निरीक्षणको उपादेयता

शालिग्राम पौडेल
पूर्व निर्देशक, नेनाउप्रा

(आन्तरिक लेखापरीक्षण तथा गुणस्तर निश्चय निकायमा वाह्य सेवा प्रदायक चार्टर्ड एकाउण्टेण्ट मार्फत आलेप गराउन समन्वय गर्ने बाहेक अरु काम नभएको अवस्थामा विमानस्थल “निरीक्षण सूची” बाट काम श्रृजना गरिएको थियो । सूची अनुसार विस्तृत निरीक्षण गरी विमानस्थलका सबै पक्षका तात्कालीन समस्याको पहिचान भै समाधानका उपायको खोजी गर्ने नौलो अवसर श्रृजना भयो । साथै समस्यालाई प्रधान कार्यालय तहमा उजागर गरी समाधानका केन्द्रको आवश्यक सहयोग बढाउन मद्दत पुग्यो । विमानस्थलका सेवासुबिधालाई परिष्कृत पार्न व्यवस्थापकीय अभिप्रेरणा पनि थपियो । तर हाल आलेप बिभागाबाट यो कार्यलाई निरन्तरता दिइएको बुझिंदैन । अतः आलेप बिभागाबाट विमानस्थल निरीक्षण कार्य पुनः चालु गर्नुपर्दछ भन्ने समेत धेरै यले यो लेख तयार गरिएको हो ।)

आर्थिक वर्ष २०५८।५९ देखि नेपाल नागरिक उड्डयन प्राधिकरणको आन्तरिक लेखापरीक्षण तथा गुणस्तर निश्चय (Internal Audit & Quality Assurance -IAQA/आलेप) निकाय निस्कृय रहेको थियो । आ.व. २०६४।६५ मा मेरो पदस्थापना आलेपमा भयो । त्यसपछि यो निकायलाई सक्रिय गराउन लागियो । बजेट व्यवस्था भयो । कोठा व्यवस्था भयो । एकजना कम्प्युटर सहायक र कार्यालय सहयोगी गरी दुईजना जनशक्ति दिइयो । अब आलेप निकायको कार्य थालनी गर्नुपर्ने थियो । आलेप निकायको मूल काम त प्राधिकरणको आन्तरिक लेखा परीक्षण गर्नु नै हो । तर आवश्यक लेखाका कर्मचारी उपलब्ध नभएकोले प्राधिकरणको आलेप आफैले गर्न सक्ने स्थिति थिएन । त्यसैले वाह्य सेवा प्रदायक चार्टर्ड एकाउन्टेन्ट

फर्म मार्फत आलेप कार्य गराउन थालियो । चार्टर्ड एकाउन्टेन्टको काम कार्यतालिका अनुसार समयमा सकाउन तरताकेता र पत्राचार गर्नु बाहेक आलेप निकायमा अन्य नियमित काम थिएन । काम नगरी बस्ने बानी नभएकोले मलाई कार्यालयमा समय बिताउन गाह्रो भैरहेको थियो । यो समस्या महा-निर्देशकज्यू समक्ष राखेपछि मलाई आफ्नो निकाय सम्बन्धि के काम गर्ने हो पेश गर्न भनियो । तत् पश्चात प्राधिकरण आ.प्र. नियमावली २०५७ को ४.१ (ख) मा व्यवस्था गरिएका काम मध्ये (प्राधिकरणलाई कुशलतापूर्वक संचालन गर्न... अध्ययन तथा विश्लेषण गरी महानिर्देशक समक्ष पेश गर्ने) कार्य सम्पादन गर्ने उद्देश्यले “निरीक्षण सूची” मस्यौदा गरीयो । मस्यौदा पेश भै व्यवस्थापन समितिबाट स्विकृति प्राप्त भएपछि आलेप निकायलाई सक्रिय बनाउने मार्ग प्रशस्त भयो ।

स्विकृत निरीक्षण सूचीमा विमानस्थल कुशलतापूर्वक संचालन गर्ने सम्बन्धका विविध विषय समावेश छन् । विमानस्थलको आर्थिक पक्ष राजस्व र खर्च तर्फ विस्तृत र नियन्त्रणात्मक विवरण लिने ढाँचा बनाइएको छ । जस्तो राजस्व तर्फ गत आ.व.को नगद, बैंक तथा आसामी जिम्मेवारी, चालु आवको नगद असुली, उधारो बिलिङ्ग, बैंक दाखिला, गत र चालुको जम्मा, सो जम्मा मध्ये प्रधान कार्यालय ट्रान्सफर भएको रकम, कार्यालयमा रहेको नगद, बैंक मौज्जात तथा आसामी बाँकी समेत देखिने तालिका निरीक्षण सूची मै देखाई सो सम्बन्धि सन्तुलन परीक्षण संलग्न गर्ने, यात्रु सेवा सुविधा शुल्कको आय सो अवधिमा मुभमेन्ट लगबुक समेत अनुसार उडानमा प्रस्थान भएका यात्रु संख्यासँग भिडान गर्ने । राजस्व ठेक्का व्यवस्था, ठेक्का अभिलेख, संभौता

कार्यान्वयन सम्बन्धि विषय । खर्च तर्फ बजेट निकासा, खर्च, पेशकी बाँकी देखिने तालिका र सन्तुलन परीक्षण । मूल्य अभिवृद्धि कर सम्बन्धि कुरा । बिक्री खाता, खरीद खाता । श्रोतमा कर कट्टीका बैंक भौचर, अग्रिम कर कट्टी रकमको हिसाव । जिन्सी निरीक्षण प्रतिवेदन, लिलामी, घर जग्गाको स्वामित्व पूर्जा सहीत स्थायी सम्पत्तिको आमदानी, सम्बन्धी विषय । कार्यालयको आ.व. २०५५।५६ देखिको कूल बेरुजु, सो मध्ये संपरीक्षण भै फर्छिएको र फछ्यौट बाँकी बेरुजुको विवरण । विगत ५ वर्षको आय व्यय विवरण । वार्षिक कार्यक्रम, कार्य प्रगति, कर्मचारी दर बन्दी, पदस्थापना, हाजिरी । विमानस्थलमा जडित प्राविधिक उपकरणहरु जस्तो VOR/DME, NDB, रन वे लाईटिङ्ग जे नेरेटर, आदिको अवस्था । अग्नि निवारण सेवाका साधनहरुको सन्चालन अवस्था । प्राविधिक उपकरणको दैनिक चेकजाँचको अभिलेख र लगबुक तथा नियन्त्रण र जिष्टरमा उल्लिखित कुराहरु । स्थलगत अवलोक, विमानस्थलको जग्गा, रनवे निरीक्षण । व्यवस्थापन पक्षमा टर्मिनल चेकईन, प्रस्थान कक्ष, र शौचालयको सरसफाईको अवस्था । यात्रुलाई खाने पानी सुविधा, चिया चमेनाको उपलब्धता र स्वच्छता आदिको निरीक्षण गर्ने । निरीक्षणको क्रममा पहिचान गरिएका समस्या र समस्या समाधानका उपायहरु उल्लेख गर्ने । कार्यालय प्रमुख, अधिकृत, र राजस्व, लेखा प्रमुखबाट सुभाब सङ्कलन गर्ने । उडानमा जाने यात्रुहरुका राय, सुभाब प्रतिक्रिया लिने । वायुसेवा संचालक संस्था लगायत अन्य सम्बन्धित व्यावसायीसँग सुभाब प्रतिक्रिया लिई प्रतिवेदनमा समावेश गर्ने व्यवस्था रहेको छ ।

यसरी विमानस्थलको विस्तृत निरीक्षण गर्दा

५।६ दिन लाग्ने हुन्छ । निरीक्षण पश्चात् देखिएको अवस्था र प्राप्त सुभाब तथा प्रतिक्रियाका आधारमा समस्याको पहिचान भएका विषयमा विमानस्थल प्रमुखसँग समेत छलफल गरी निरीक्षण सूचीमा समावेश गरीन्छ । तत् पश्चात निरीक्षण अधिकारी र विमानस्थल प्रमुखको हस्ताक्षर गरिन्छ । अनि विमानस्थल द्वारा प्रधान कार्यालयमा पठाइन्छ । त्यस पछि आलेप विभागमा प्राप्त हुन्छ । आलेप विभागले समस्याको प्रकृति बमोजिम प्राधिकरणको अन्य विभागसँग समन्वय गर्नुपर्नेमा समन्वय गरी समस्या, सुभाब, प्रतिक्रियालाई तीन वर्गमा विभाजन गरीन्छ । (क) विमानस्थल कार्यालयबाट दर्शाइएका समस्या, सुभाब, जिम्मेवार अन्य निकायलाई पठाइन्छ । यस व्यावसायीबाट दर्शाइएका सात ओटा समस्या मध्ये केही निम्नानुसार छन् ।

(क) विमानस्थल कार्यालयबाट दर्शाइएका समस्या, सुभाब, प्रतिक्रिया

समस्या, सुभाब, प्रतिक्रिया	समस्या, सुभाब, प्रतिक्रियाको मुल्यांकन	समाधानका लागि जिम्मेवार निकाय	समय सीमा
टावरको लगवुक र राजस्व असुली अभिलेखमा यात्रु संख्या फरक परेको	राजस्वमा देखिएको संख्या भन्दा टावरमा ६१५ जना बढी यात्रु प्रस्थान देखिएकोमा यस्तो फरक देखिनाको कारण पत्ता लगाई राजस्व छुट भएको देखिएमा सम्बन्धितबाट असुल गर्नु पर्ने (रु.१०४२४२।५०)	विराटनगर ना.उ.का.	२०६५ भाद्र भित्र
Runway Edge cutting को अवरोधका कारण अग्नि निवारण यन्त्र घटनास्थल पुग्न करीव २० सेकेण्ड ढिला हुने पाइयो ।	अग्नि निवारण सेवाको परीक्षण गर्दा १७५ से केण्डमा Runway-09 पुग्न सक्ने देखियो । यो अवरोध हटाइएमा १५५ सेकेण्डमा पुग्न सक्ने ।	विराटनगर ना.उ.का. (भैरहेको मर्मत संभार बजेट बाट)	२०६५ आश्विन
VOR/DME भरपर्दो किसिमबाट संचालन हुन नसकेको	यो समस्या वर्षौ पहिलेबाट रही रहेको बुझिएको। यसको उपयुक्त समाधान यथाशिघ्र गरीनु पर्ने । साथै rating भएको Technical अफिसरबाट मर्मत संभारको व्यवस्था मिलाउनु मनासिव हुने ।	स.उ.स.विभाग विराटनगर ना.उ.का.	यथाशिघ्र

(ख) उडानमा जाने आउने यात्रुहरूको राय, सुभाब, प्रतिक्रिया (१) उडान नं. द्यज्ठ (ठण्ट) । सेक्टर विराटनगर-काठमाडौं । मिति: २०६५।३।३१ उडानमा रहेका यात्रु : १८ जना । अन्तर्वार्ता लिएको संख्या ८ जना (२) उडान नं. F5 (529) । सेक्टर विराटनगर-काठमाडौं । मिति: २०६५।३।३१ उडानमा रहेका यात्रु: ८९ जना । अन्तर्वार्ता लिएको संख्या ३५ जना ।

समस्या, सुभाब, प्रतिक्रिया	समस्या , सुभाब, प्रतिक्रियाको मुल्यांकन	समाधानको लागि जिम्मेवार निकाय	समय सीमा
खानेपानी विस्वसनीय हुनु पर्दछ ।	विमानस्थलमा उपलब्ध गराइएको खानेपानी पिउन यो ग्य छ भन्ने सम्बन्धित निकायबाट प्रत्येक ४ महिनामा परीक्षण गराई प्रमाण लिई पिउने पानीको धारा नजिक टाँसी राख्ने व्यवस्था मिलाई अनुगमन भै रहनु मनासिव हुने ।	विराटनगर ना.उ.का.	सर्व प्रथम २०६५ आश्विन मसान्त भित्र र त्यसपछि निरन्तर

(ग) अन्य सम्बन्धित व्यवसायिका राय सुभाब, प्रतिकृया

राय, सुभाब, प्रतिकृया	राय, सुभाब, प्रतिकृयाको मुल्यांकन	समाधानको लागि जिम्मेवार निकाय	समय सीमा
X-ray चालु गरीनु पर्दछ। Walk-through machine मर्मत गरी चालु गर्नु पर्दछ।	विग्री रहेको एक्सरे मेसीन प्रस्थान कक्षमा वर्षौं देखि राखी रहँदा विमानस्थल स्वभायमान नहुने। यात्रुको गुनासो पनि रहने। विग्रीको एक्सरे उक्त स्थानबाट हटाउन नै बेस होला। साथै walk-through machine सकेसम्म छिटो मर्मत गरी चालु राख्नुपर्ने।	स.उ.स.विभाग विराटनगर ना.उ.का.	६ महीना

(२) त्रि. अ. वि. आन्तरिक टर्मिनल र सम्बन्धित सेवा सुबिधा सम्बन्धमा २०६५ असौज। कार्तिकमा गरिएको निरीक्षण सारांश प्रतिवेदन: उडानमा जाने यात्रुहरूबाट प्राप्त ५ ओटा राय, सुभाब, प्रतिकृया मध्ये ३ ओटाको प्रतिवेदन अनुसार गरिएको थियो। जम्मा अन्तर्वार्ता लिएका यात्रु संख्या ९२। उडान नं.: यति एयरलाइन्स OY-131, 133, 153, 159, a'4 Po/ 105, 555, 605, 607, 609 नेपाल एयर लाइन्स RA-, cUg Po/ AR-201.; S6/M काठमाण्डौ- बिराटनगर, काठमाण्डौ-सिमरा, काठमाण्डौ-पोखरा, काठमाण्डौ-माउन्टे न, काठमाण्डौ-तुम्लिङटार

समस्या, सुभाब, प्रतिकृया	समस्या, सुभाब, प्रतिकृयाको मुल्यांकन	समाधानको उपाय	जिम्मेवार निकाय	समय सीमा
(एनाउन्सले) कराइरहेको हुन्छ पोखरा भन्छ कि सिमरा भन्छ थाहा हुँदैन। माइकबाट भनेको त बुझ्दै बुझ्दैन। Announcement should be at low voice. (There is) echo effect. Announcement I do not know what they are saying. So I am seating here nearby the gate.	उडान आवागमन सुचनाको समस्याबारे अलग्गै पेश गरिएको प्रतिवेदनमा समस्याको मुल्यांकन गरिएको छ।	अलग्गै पेश गरिएको प्रतिवेदनमा समस्या समाधानको उपाय प्रस्तुत गरिएको छ।	अलग्गै पेश गरिएको प्रतिवेदनमा समस्या समाधानको लागि जिम्मेवार निकाय पहिचान गरिएको छ।	अलग्गै पेश गरिएको प्रतिवेदनमा समय सीमा पहिचान गरिएको छ।
Trolley को पछाडि मान्छे छ। पैसा लिन खोज्दछ। Virtually Passenger को लागि छैन। Trolley लिएर आउन खोज्दा भोला तान्छ। पैसा माग्दछ। एकजनाको पछाडि तीन जना भोला छुदै आयो र पैसा माग्यो। रु ५० दिए।	Trolley को समस्याबारे अलग्गै पेश गरिएको प्रतिवेदनमा समस्याको मुल्यांकन गरिएको छ।	पेश गरिएको प्रतिवेदनमा समस्या समाधानको उपाय प्रस्तुत गरिएको छ।	पेश गरिएको प्रतिवेदनमा समस्या समाधानको लागि जिम्मेवार निकाय पहिचान गरिएको छ।	पेश गरिएको प्रतिवेदनमा समय सीमा पहिचान गरिएको छ।
किन्ने चिज महंगो। रु. १० को सामान ४० पर्दछ। चकलेट बाहिर रु ३० याहाँ रु १००-१५०। Magazine रु ६० को २००।	किन्ने चिज महंगो भनी आएको गुनासो बारे अलग्गै पेश गरिएको प्रतिवेदनमा यस समस्याको मुल्यांकन गरिएको छ।	अलग्गै पेश गरिएको प्रतिवेदनमा यस समस्या समाधानको उपाय प्रस्तुत गरिएको छ।	अलग्गै पेश गरिएको प्रतिवेदनमा समस्या समाधानको लागि जिम्मेवार निकाय पहिचान गरिएको छ।	अलग्गै पेश गरिएको प्रतिवेदनमा समय सीमा पहिचान गरिएको छ।

तत्कालीन अवस्थामा TIA आन्तरिक वायुयान पार्किङ्ग स्थलमा २८-२९ ओटा वायुयान अव्यवस्थित रूपमा पार्किङ्गमा रहने गर्दथे। सोही ठाउँमा आयल निगमका तेलभर्ने ब्याङ्कर (bowser) पनि चालु रहने कारण कथं कदाचित् त्याहाँ आगलागी हुनगएमा पार्किङ्गमा रहेका वायुयान सखाप

हुनसक्ने अवस्थाको आँकलन गरी अग्नि निवारण परीक्षण (Fire Response Test) गरियो। त्यसरी अग्नि परीक्षण गर्दा Parking Bay पुगी फोम फाल्ने अवधि सम्म २२० सेकेण्ड लाग्न गयो। त्यसमा पनि यो परीक्षण कार्य पूर्व जानकारी र सतर्कताको अवस्थामा गरिएको थियो।

ICAO को स्तर अनुसार विमानस्थलको कुनैपनि भागमा Fire Response समय ३ मिनेट हुनुपर्ने र वाञ्छनीय रूपमा २ मिनेट हुनुपर्ने उल्लेख छ। यी सबै विषय समेत खुलाई महानिर्देशकज्यूलाई प्रतिवेदन पेश गरिएको थियो।

(३) गौतमबुद्ध विमानस्थल कार्यालय भैरहवाको निरीक्षण प्रतिवेदनका केही अंश: विमानस्थल कार्यालय तर्फका ११, यात्रुहरुबाट दर्शाइएका २ र वायुयान कम्पनी समेत अन्य सम्बन्धित व्यावसायीबाट दर्शाइएका ५ ओटा समस्या मध्ये केही निम्नानुसार छन् ।

(क) विमानस्थल कार्यालयबाट दर्शाइएका समस्या /सुझाव /प्रतिक्रिया

समस्या /सुझाव/ प्रतिक्रिया	समस्या/सुझाव/ प्रतिक्रियाको मुल्यांकन	समाधानको लागि जिम्मेवार निकाय	समय सीमा
कार्गो प्रवन्ध दस्तुर असुल गर्ने सम्वन्धमा स्पष्ट निदेशन आउनु पर्ने ।	विमानस्थल दस्तुर नियमावली २०३८को नियम ८(१.क) वमोजिम प्रति किलो तीस पैसा लिने व्यवस्था र नियम ८ (क) संग सम्बन्धित अनुसूची (४.क) को खण्ड (ख) वमोजिम प्रतिकिलो पचास पैसाअसुल गराउनु पर्ने व्यवस्था रहेकोले दुवै दस्तुर असुल गर्नु पर्ने ।	वि.व्य.तथा वि. निदेशनालयले अनुगमन गर्ने । गौतम बुद्ध ना.उ.का.ले असुल उपर गर्ने ।	२०६४ चैत्र भित्र
विमानस्थलमा आवश्यक पानी सप्लाईको ठुलो समस्या रहेको	यस समस्याबाट विमानस्थलको फायर सेवा र सरसफाईको स्तर समेतमा असर परिरहेको । तत्काल रु.१,५०,०००/- सम्मको बजेटबाट हालको भुमीगत श्रोत मर्मत र ७.५ हर्स पावरको स्तरीय पंप जडान गरी पर्याप्त पानी सप्लाईको व्यवस्था मिलाईनु मनासिव ।	सि.इ.विभाग गौ.बु.ना.उ.का.	२०६५ आषाढ सम्म
एप्रोच लाइट नचल्ने अवस्थामा रहेको	ट्रान्स्फरमर (चोरी भएकोले नचलेको भन्ने जानकारी भयो) चोरी सम्बन्धमा छानविन गरी यथार्थ पत्ता लगाई आवश्यक कारवाही हुनु पर्ने । चोरी नहुने व्यवस्था मिलाई अको ट्रान्स्फरमर फेरीनु पर्ने ।	ने.ना.प्रा.प्र.का. स.उ.स.विभाग गौ.बु. ना.उ.का.	यथाशिघ्र
विग्री वसेको एक्सरे मेसीन	सो मेसिनको प्राविधिक जाँच गरी प्रतिवेदन लिने । मर्मत हुन सक्ने भए मर्मत गरी संचालन गर्ने । अन्यथा जडान स्थानबाट हटाई सुरक्षित राख्न मनासिव ।	स.उ.स.विभाग गौ.बु. ना.उ.का.	२०६५ आषाढ सम्म

(ख) उडानमा जाने यात्रुहरुको रायसुझाव उडान नं.इथ(जेटद् मिति ०६४।१।२९ यात्रु सख्या ३०/अन्तरवार्ता लिएको संख्या ११

समस्या सुझाव, प्रतिक्रिया	समस्या,सुझाव,प्रतिक्रियाको मुल्यांकन	समाधानको लागि जिम्मेवार निकाय	समय सीमा
सौचालयको सरसफाई कमजोर । १०० मा ३५ को स्तरमा छ ।	सरसफाईको स्तर बढाउनु पर्दछ । सौचालयमा पानीको पर्याप्त व्यवस्था समेत गरीनु पर्दछ ।	गौ. बु. ना.उ.का. सिभिल इन्जिनियरीङ्ग विभाग।	यथाशिघ्र २०६४।०६५ भित्र ।
Canteen is not in proper way	क्यान्टिन स्तरीय बनाउन आवश्यक छ । ठेक्का संभौता कडाइका साथ पालना गराइनु पर्दछ ।	गौ . बु. ना.उ. का.	यथाशिघ्र

(ग) अन्य सम्बन्धित व्यावसायीका राय सुझाव निकायहरु -: यति एयरलाइन्स ,बुद्ध एयर, नेपाल वायुसेवा निगम, एयरपोर्ट क्यान्टीन संचालक

यात्रुलाई खानेपानीको समस्या छ ।	युरोर्गाड डिपार्चर हलमा व्यवस्था गरी सफा पानी उपलब्ध गराउन मनासिव	गौ.बु. ना.उ.का.	२०६४ फागुन सम्म
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(४) विगत केही वर्षदेखि बन्द रहे गी थिए । विमानस्थलको जग्गामा विवाद आधा दाम क्षेत्रफल रहेछ । सो ३७ कित्ता को रामेछाप विमानस्थल केही महीनादे भएको बुझिन आयो । त्यसैले मालपोत जग्गाको लालपूर्जाका प्रतिलिपी मालपोत खि Single Engine जहाजबाट सल्लेर कार्यालयमा अनुरोध गरी विमानस्थलको कार्यालयबाट लिई जग्गाको लगत प्रमाण गोलुक्ला तर्फ कार्गो ढुवानीमा प्रयोग नाममा रहेको जग्गाको लगत खोजी गरि सुरक्षित राख्न कर्पोरेट निर्देशनालयमा पे हुनथालेको थियो । कर्मचारीमा एकजना यो । मालपोतको लगतमा ३७ कित्ता जग्गा श गरियो । विमानस्थलमा हावाको दिशा एटीसी अधिकृत र ५ जना कार्यालय सहयो र कूल २२० रोपनी ६ आना ३ पैसा दर्शाउने Wind Shock ले राम्रो काम



नगरेको पाईयो । सो अवस्थाको फोटो (तल दिईएको) समेत राखि विमानस्थल व्यवस्थापन निर्देशनालयलाई जानकारी गराइयो । र निर्देशनालयबाट तत्काल Wind Shock पठाईयो ।

यसरी प्राधिकरणका विभिन्न विमानस्थलको सेवा सुविधा, सरसफाई, सेवा प्रदायक निकायसंग छलफल, सेवाग्राही यात्रुसँग अन्तरवार्ता, प्राविधिक उपकरणको अवस्था बारे जानकारी, आय असूली, लेखांकन प्रतिवेदन, जिन्सी, बेरुजू फछ्यौट आदि

विषयमा गरिएको निरीक्षण, सो कार्यबाट पहिचान गरिएका समस्या र समाधानको सुझाव सहीतको प्रतिवेदन दिने र ती समस्या समाधानमा भएका प्रगतिको अनुगमन गरी २३ वर्षको अवधिमा आलेप तथा गुनि विभागलाई केही हदसम्म भएपनि सकारात्मक र सहयोगी निकायको भूमिका दिन सफल भए जस्तो हामीलाई लागेको छ । हाल आलेप विभागको नामाकरणमा गुणस्तर निश्चय भन्ने शब्द नरहेतापनि प्राधिकरण आ.प्र. नियमावली २०५७ को नियम ४.१(ख)को व्यवस्था यथावत छ । त्यसैले विमानस्थलहरुको उपरोक्त किसिमको निरीक्षण कार्य आलेप विभागले चालु गरी व्यवस्थापन र लेखापरीक्षण समिति (Audit Committee) लाई प्रतिवेदन दिने कर्तव्य, अधिकार र जिम्मेवारी कायमै छ भन्न सकिन्छ । अतः विमानस्थल निरीक्षण कार्यले निरन्तरता पाओस् । प्राधिकरणको कार्यक्षमता तथा महत्ता अभिवृद्धीमा (Value Adding) यो गदान पुगोस् भन्ने शुभकामना छ । अस्तु !!

Test Landing at Khiji Chandeswori



56th DGCA Conference

“Harmonizing Efforts to Meet the Capacity Constraints”

Er. Raju Shrestha
Off. Director, CAAN

Introduction

Civil Aviation Authority of Nepal (CAAN) hosted 56th edition of Directors General of Civil Aviation Conference (DGCA) in Nepal from 19th to 23rd August 2019 in Kathmandu, Nepal with adoption of various action items emanating from various technical sessions. The Conference was the third of this kind since Nepal had already hosted successfully earlier 14th and 34th Conferences in 1978 and 1998 respectively. The Conference, one of biggest events of civil aviation in the Asia and Pacific Regions, was inaugurated by the Right Honorable Prime Minister of Federal Republic of Nepal. The Director General of Civil Aviation Authority of Nepal welcomed the dignitaries and delegates in the grand opening ceremony. The conference was addressed by Hon. Minister for Culture Tourism and Civil Aviation, President of International Civil Aviation Organization (ICAO) Council, Regional Director of ICAO Asia and Pacific Regional Office Bangkok. The author intends to highlight major events and outcomes of the Conference.

Widest Participation

The Conference was attended by 36 States totaling to 266 State delegates. Taking into account total number of participants of 411 in the conference, it was apparently the widest participation in the history of DGCA conference in the Asia and Pacific Regions. It was a pleasure for Civil Aviation Authority of Nepal to host such a great event.

Nepal's preparation

The theme topic of “**Harmonizing Efforts to Meet the Capacity Constraints**” was proposed by Nepal and was accepted by 55th DGCA Conference in Nadi, Fiji in 2018. The congruent theme topic proposed by Nepal took into account the prevailing growth and potential growth of civil aviation in the region. Nepal foresaw that the potential growth will be decelerated in days to come if due consideration is not accorded in time that may bring detrimental effects leading to sluggish economic growth of the region since aviation is a catalyst for economic development of any State or region. Nepal started preparing for the Conference by forming a central organizing committee headed by Director General. Various sub committees formed under the leadership of Deputy Directors General of CAAN led to successful hosting of the Conference. The continuous and consistent efforts of all involved in the preparation resulted in successful conclusion of the Conference.

Nepal's participation

Nepal as a host presented various discussion and information papers in the

Conference including a discussion paper aligning with theme topic of conference, highlighting constraints in safety oversight may lead to potential impediment in growing aviation activities in Nepal and in the region. Following discussion papers were presented by Nepal.

- D G C A - 5 6 / D P / 1 a / 8 - “Constraints in Safety Oversight to Cope Growing Aviation Activities”
- DGCA-56/DP/3/18 “Need of Mandatory Provision for ANS Certification for Effective and Efficient Delivery of Air Navigation Services”
- DGCA-56/DP/3/23 “Review of Annex 19 Second Edition and Doc 9859 - Safety Management”

Apart from discussion paper, Nepal also presented an information paper on the following topic.

- D G C A - 5 6 / I P / 4 / 2 0 “Implementation of Himalayan-2 Route via Kathmandu FIR”

In the spirit of regional collaboration Nepal, along with South Asian neighbors, also presented an information paper as below.

- DGCA-56/IP/8/13 “South Asian Regional Cooperation in Environmental Protection and Aviation Safety Oversight”

Sideline meetings

The Conference was as an opportunity for Nepal to boot relationship with various States and agencies at one hand while it offered as an ideal congregation for participating States, agencies and

organizations to engross in bilateral and multilateral negotiations in the eve of 40th ICAO Assembly.

Nepal concluded sideline meetings with following States, agencies and organizations.

- United States of America- Federal Aviation Administration
- People's Republic of Bangladesh- Civil Aviation Authority of Bangladesh
- Republic of Singapore- Civil Aviation Authority of Singapore
- Republic of the Union of Myanmar- Department of Civil Aviation Myanmar
- Republic of Indonesia- Directorate General of Civil Aviation (Direktorat Jenderal Perhubungan Udara)
- Republic of Korea- “Civil Aviation Authority Office of Civil Aviation, Ministry of Land, Infrastructure and Transport
- European Aviation Safety Agency, Europe
- Civil Air Navigation Services Organisation (CANSO)
- Japan- Japan Civil Aviation Bureau
- Republic of France- La Direction générale de l'Aviation civile (DGAC)
- Peoples Republic of China- Civil Aviation Administration of China
- ICAO (Combined meeting of Civil Aviation Authority of Nepal with Department of Hydrology and Meteorology, Government of Nepal with

ICAO in the area of aviation meteorology)

The major areas of concern raised by Nepalese delegation during the various sideline meetings focused in renewal of cooperation in past and exploring additional avenues of cooperation for mutual benefits. The expansion of the flight services by Nepalese carriers in the various neighboring and APAC States also featured prominently that resulted in facilitation of Nepalese operators' flight services in such States. Nepalese delegation also urged the various States, agencies and organization in the areas of air routes, safety oversight capability development, human resource development, infrastructure development, enhancement of air navigation facilities of CAAN. The sideline meetings proved to be very effective means of ensuring national interest in the area of civil aviation. Civil Aviation Authority of Nepal opines that the objectives of various sideline meetings have already fulfilled and visible outcomes have been experienced after conclusion of the Conference.

Exhibitors

More than a dozen international exhibitors participated in the conference to display their product and services while two Nepalese exhibitors availed the opportunity to venture in the arena of Asia and Pacific region. Both international and national exhibitors were well received by the participants. The forthcoming Visit Nepal Year 2020 was well circulated by the Nepal Tourism Board in its exhibition stall in the Conference.

Action agenda

The conference had total 12 agenda items that encompassed all sectors of civil aviation. The areas of covered in the action items are enumerated as below.

- Aviation safety
- Air navigation
- Aviation security
- Air transport
- Facilitation
- Aviation Meteorology
- Aviation environment
- Human Resources development
- Regional cooperation

Apart from International Civil Aviation Organization (ICAO) and member States, various professional organization and agencies are also major stakeholder for the safer and harmonious development of civil aviation in the region. In this light the major professional organizations also participated in the 56th DGCA Conference in Nepal. The list is self-explanatory regarding the role of each stakeholder.

- International Civil Aviation

Organization (ICAO)

- European Aviation Safety Agency (EASA)
- Airport Council International (ACI)
- Civil Air Navigation Services Organization (CANSO)
- International Federation of Airline Pilots (IFALPA)
- International Federation of Air Traffic Safety Electronics Association (IFATSEA)
- Association of Asia Pacific Airlines (AAPA)
- Pacific Aviation Safety Office (PASO)
- International Coordinating Council of Aerospace Industries Associations (ICCAIA)
- International Air Transport Association (IATA)
- The Boeing Company
- Eurocontrol

Action items from DGCA conference

In order to meet the objective of DGCA conference the action items resulting from the conference are recorded and distributed among the stakeholder for various action including but limited to action, recognition, noting, sharing etc. The action items from the Conference resulted in the various calls for actions for ICAO, States and Administration as well as special technical groups including but not limited to APAPIRG etc. to implement the action items adopted by the Conference. The analysis of the action items of 56th DGCA Conference indicates that out of 36 action items 30 action items are intended to the States and Administration, 9 action items are to be acted on by ICAO and 3 action items by others. It is expected that the timely implementation of action items by all concerned stakeholders will lead to safe and orderly civil aviation system in the APAC region.

The conference resulted in 36 action items to be implemented by ICAO and States. The discussion papers from Nepal have been included in the Action Item 56/1 and the Conference urged States and Administrations to-

“The Conference:

- a) while recognizing the benefits delivered by CAT missions in furtherance of ICAO's NCLB initiative, urged ICAO to conduct CAT missions and other similar assistance programmes on a regular basis; and
- b) urged States and Administrations to:

i. develop and further strengthen regional and sub-regional cooperation in order to promote the highest degree of aviation safety and security;

ii. consider to provide volunteer technical experts to ICAO's APAC CAT Mission programme and ICAO's IPAV programme; and

iii. collaborate through providing financial contributions and in-kind technical assistance to neighboring States/Administrations including membership of sub-regional cooperative arrangements to meet capacity constraints of the region. “

Similarly Action Item 56/11 resulted in the following action to be completed by ICAO:

The Conference urged ICAO to examine the potential benefits, balanced against the associated costs of the development of provisions and guidance material for certification of air navigation services providers as a priority.

Next Conference

The 57th DGCA Conference will be held in Bangladesh in 2020 with theme topic of “Promoting ICAO Gender Equality Programme in conjunction with Next Generation of Aviation Professionals (NGAP) initiative”

Conclusion

Nepal anticipates that the implementation of outcomes of 56th DGCA Conference in coming days will lead to capacity building of safety oversight and aviation infrastructure to propel economic growth in the region. Successful hosting of the Conference is a testimony that Nepal can host international event of this scale meeting international standard. Furthermore, perfect teamwork among various departments in CAAN and support from various government agencies and airline industry also facilitated in the successful hosting of the Conference. ■

Reference:

<https://www.icao.int/APAC/Meetings/DGCA56/18eGv-56-dgca-conference-action-items.pdf>

Aviation Safety and *Accident Theory*

Shyam Kishor Sah
Dy. Director, CAAN



Safety in simple terms, is understood as free from danger or risk of harm or injury to people and damage to property. Since we are not free from danger or risk in our daily life we have to abide by various signs, instructions or alert to avoid the risk of harm to us or damage to our property. We can find speed limits and lines painted on the roads to avoid road accidents, exit signs in buildings for safe evacuation, wet floor signs to warn people of slippery floor, etc. Signs of security are also around us to protect us and our information. Security at airports checks passengers to ensure they are not taking dangerous items onto planes. No matter what the context at hand is, safety is not an accident and security requires constant vigilance. Safety in aviation, a high risk sector, is considered as the reduction of risks and prevention of errors or failures to maintain the system operating safely.

ICAO defines: *safety is the state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level*.

Ultra-Safe High-Risk Industry (USHRI)

Modern commercial aviation is considered an Ultra-Safe High-Risk Industry (USHRI) because it manages to operate with a great degree of safety in a high-risk environment. Along with other industries, such as nuclear power

and chemical, commercial aviation accomplishes its mission while having less than one disastrous accident per 10 million events. USHRIs are described as facing very high risks on a constant basis, but somehow not succumbing to them except on rare occasions. Within these domains the smallest mistake could have huge consequences and jeopardize safety for many. In USHRIs, accidents are understood to result from a combination of elements, whereas any of these elements on its own would likely not cause an accident or serious incident. Although mistakes in any setting can result in harm, the chances of small mistakes resulting in very grave harm are reduced to rare. Safety in aviation has to be ever-present in aviation industry to be profitable financially. Since efficiency is natural byproduct of safety, a commercial aviation operator that pursues safety processes will often also gain in operational efficiency.

Safety Philosophy

Philosophy is the study of reality, existence, and the nature of knowledge. Although it does not take a philosopher with deep thoughts to define safety philosophy, there are quite a few concepts about the nature of safety that are not obvious. Unfortunately, there are industry professionals who believe, quite incorrectly, that safety is merely common sense. At its core, safety is making life better by addressing unacceptable risks.

There are some common myths about safety that intends to deviate professionals, such as:

1. *Accidents happen to stupid people.* People may think 'I'm not stupid, so I have nothing to worry about'. But accidents can happen to anyone if the right conditions are there because often external factors outside one's control combine to work against an individual.
2. *If it isn't broken, don't fix it.* Very often, we may think something is not broken, but there are often numerous unknown factors at work that may not be at optimal condition.
3. *If it hasn't been a problem before, then it isn't a problem.* This mindset is slippery slope. Just because a certain factor has not been an issue before does not mean we should ignore it. There is always a first for everything.
4. *You have been successfully trained.* If employees are sufficiently trained to do everything, we would be training our whole life and never have time to move passengers around the world.
5. *Safety is our top priority.* Safety should always be on our mind, and we should strive to operate safely at all times, but let us not kid around, the top priority of any commercial venture is profit. Hence, safety trade-off must be controlled.
6. *Accidents are impossible to*

predict. It is outside of our capability to predict specific accidents with any degree of accuracy. However, that is not to say that we cannot recognize developing accident chains by noticing the presence of undesirable factors.

7. *Weather is a leading cause of accidents.* Adverse weather is often a factor in accidents. However, those who are purists about accident causation stress that weather cannot be deemed a causal factor in accidents.

8. *There is often a single cause behind an accident.* In fact, just the opposite is true. Accidents are complex events stemming from multiple causes. It is quite challenging to think of any accident that only had one cause.

9. *Accidents are 'Acts of God'.* Many people tend to think that accidents are impossible to foresee and accidents just happen. Doing so brings psychological comfort because it removes ties to the truth that most accidents are preventable, if the right people are provided right tools at the right time.

Besides the common myths about safety, there several conditions that are often notorious precursors to accidents. Accidents do not happen out of the blue, instead there are precursors that are usually detectable by one means or another. There are many other such preconditions and negative factors coming together that could potentially create an accident. Few of such precondition are:

1. *Distraction.* Aviation professionals can let other things affect their concentration, such as checking text message or chatting during a preflight check or before joining duty.

2. *Rushing.* Someone may take a shortcut. When we do this, we are not giving our personal best and we risk missing key information and skipping items that may not seem important now but that could prove

critical in a few moments.

3. *Operating outside one's training.* Accidents can occur when we find ourselves doing something outside what we are trained to do.

4. *Desensitization.* It is easy to tune out warning signs when it is something that frequently occurs and which have not resulted in problems in the past.

5. *Ignoring your instinct.* Professional should not feel uncomfortable when they are doing a task. If something does not feel right, it may be our protective instinct kicking in and recognizing that an unresolved discrepancy or problem is lurking in the background, ready to ruin our whole day.

Models to understand Accident Theory

Accident theory is an amalgam of concepts that have gained acceptance by accident investigators and which generalize our understandings of how accidents happen. Accident theory uses models to simplify complex concepts, and thus, make the concepts understandable for study and research. Aircraft accidents are extremely complex events caused by numerous interacting factors. Thus, it proves highly desirable to refer to visual conceptual models in order to understand *how* and *why* accidents happen. Such accident models help assist the relationship between hazards and accidents; assist with understanding and explaining reality; aid in visualizing things that cannot be observed; and approximate conditions that exist in reality to be useful. Following three accident models have been most frequently associated with aviation.

Reason's "SWISS CHEESE" Model

James Reason's model of accident causation focuses on understanding incidents and accidents and their contributing factors. Reason's model traces the root causes of accidents to errors that occur in

the higher management levels of an organization. These errors are also referred as *latent errors*. Reason contends that models are grossly inadequate if they attribute accidents solely to individual operator performance. Reason also proposes that human error (*active failure*) is the end result rather than the causes of incidents or accidents.

SHELL Model

Another widely used visual conceptual tool in aviation accident theory is the *SHELL* model. In this model, *S* stands for *Software*, *H* for *Hardware*, *E* for *Environment*, *L* for *Liveware* and *L* for another *Liveware*. The *SHELL* interfaces are in constant interaction with each other and should match closely to the human element (*Liveware*) in the center of the system. The interface *Liveware to Software* is the relationship between the human and supporting system found in the workplace. *Liveware to Hardware* is the relationship between the man and machine. *Liveware to Liveware* is relationship between the human and other people in the workplace. *Liveware to Environment* is the relationship between the human and the internal and the external environment.

5-Factor Model

Another visual conceptual model used to depict the major categories of factors that interact to create a safety error chain or an accident is the 5-Factor Model. The *human*, *machine*, *medium*, *mission* and *management* factors represent this valuable visual conceptual model for examining the nature of accidents. The five factors are closely interrelated and interact in numerous ways, although management plays the overall predominant role and is thus depicted as if hovering over the factors. Mission is located as the central target or objective to emphasize that effective mission accomplishment is implicit in highly professional system (aviation) safety work. ■

RNP AR implementation at TIA: Benefits, Challenges and *Way Forward*

Suwarn Raj Upadhyay
Dy. Director, CAAN



A. Introduction

RNP AR APCH specification is considered most stringent PBN specification that requires aircraft and aircrew to acquire the special authorization from the State authority for the conduct of operation with such specification. This PBN specification has been in effect at Tribhuvan International Airport (TIA), Kathmandu since 28 June 2012 after publication of RNAV (RNP) approach procedure in AIP SUPP S011/12 dated 3 May 2012. This procedure was first commercially flown by Qatar Airways on 1 October 2012. Introduction of this RNP AR with RF leg capability allowed qualified operators to select the better option that relieved them from overflying the difficult terrain Bhattedanda while commencing the VOR approach. Looking at the usefulness of the approach procedure, currently there are more than 15 operators that conduct RNP AR at Kathmandu.

B. Operators conducting RNP AR at TIA

At present, the authorized operators that are conducting RNP AR operations at TIA are:

1. Qatar Airways
2. Korean Air
3. Turkish Airlines
4. Malaysian Airlines
5. Silk Air
6. Royal Bhutan Airlines
7. Oman Air
8. Himalayan Airlines
9. Etihad Airways
10. Air Arabia
11. Dragon Air
12. China Southern Airlines
13. Bhutan Airlines
14. Malindo Air
15. Fly-Dubai
16. Nepal Airlines

C. Benefits of implementing RNP AR

Some of the noticeable benefits of RNP AR that are realized after the introduction of RNP AR at TIA can be illustrated as:

- Airport accessibility has been improved with relatively lower Visibility minima of 1100m and decision height of 300ft compared to the 2800m (for CAT C) and 632ft respectively in case of conventional VOR approach procedure.

- Cost effectiveness has been meaningfully improved because of significant reduction in holding delay due to the weather, including significant reduction in number of missed approaches due to the stabilized approach with lower minima.

- Alternative procedure with constant glide path angle of 2.8° is available to authorized operators to opt for smooth and energy efficient procedure that allowed optimum engine thrust during the final approach.

- Trust on the procedure has been increasing day by day, motivating the operators to proceed for RNP AR due to the precision of the procedure and integrity of the RNAV system with On-board Performance Monitoring and Alert (OPMA). This has ultimately enhanced the safety of the aircraft operations to and from Kathmandu.

Note: The above benefits have been experienced by the aviation community. However, actual quantitative benefits in terms reduction in delay time and reduction in number of missed approaches are yet to be analyzed.

- As the holding delay and missed approaches are reduced significantly and as the procedure is energy efficient due to CDFA profile, it is apparent that the consumption of fuel and the carbon emission is significantly reduced.

D. New developments in RNP AR implementation at TIA

VOR-based instrument approaches are limited only to RWY 02 at TIA because of the mountainous terrain environment around the airport. Tailwind limitation is one of the compelling factors for pilots to think for either visual circling to another

runway, hold or divert to other suitable alternate aerodromes. Due to the closeness of the mountain in the North side, visual circling approach from RWY 20 was not preferable to many of the international operators. Driven by these facts, demand for guided instrument approach procedure for RWY 20 was raised. Recently, the visual circle to land approach for RWY 20 has been limited to Category A and B aircraft only.

With the support of NAVBLUE (AIRBUS company), CAAN initiated the second phase project of new RNP AR approach and departure

procedures for both runways of TIA since December 2014. Now, the project is almost at the final stage which will accommodate following new procedures:

- Six SIDs, three from RWY 20 and three from RWY 02
- Two approaches, one for RWY 02 with two transitions from IGRIS and DARKE and other for RWY 20 with four transitions from DANFE, RATAN, DARKE and IGRIS.

Airports like forthcoming Pokhara Regional International Airport can also be benefited by this type of

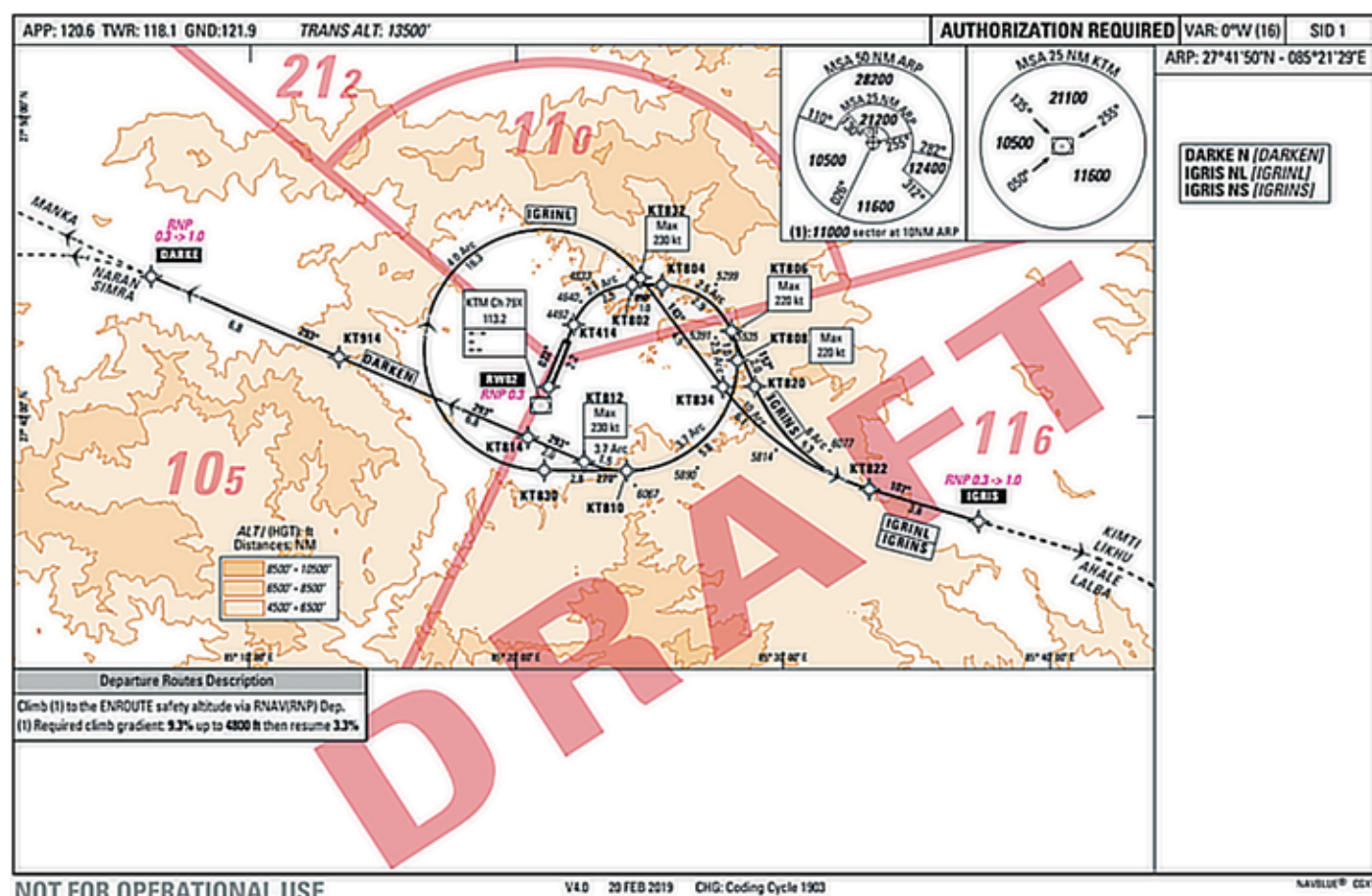


Fig. Draft of one of the RNP AR SID charts for TIA

procedure where the terrain could be the major concern for missed approach and where the conventional operating minima could be very high.

E. Challenges ahead

Approval part of the procedure and aircraft operation certainly be tougher for the procedures designed using the criteria beyond the scope of RNP AR Procedure Design Manual, Doc 9905. Some of the

major challenges that can come across with the effective and timely implementation of upcoming RNP AR procedures can be illustrated as:

- As the anticipated Final approach Roll Out Point (FROP) distance is very short for approaches to RWY 20, and gradients and bank angles for the procedures (including departures) are higher than the standard or optimum values

prescribed by ICAO, procedure approval of such RNP AR procedures is not as simple as the approval of other PBN Navigation Specifications.

- PBN Manual, Doc 9613 does not mention RNP AR specification for departure procedure. Similarly, there is no provision for the approval of RNP AR departure in PBN Operational Approval Manual, Doc 9997. As such, operational approval

can be more challenging.

3. A very few States have implemented RNP AR departures. So, regulatory provisions for both operational as well as procedure approval of RNP AR departures are very limited. There is no such approval procedure developed by CAAN as well.

4. As the number of RNP AR procedures will be significantly increased at TIA, procedure maintenance part in future can be tougher and will need much more dedication.

5. In ATC perspective, separation of RNP AR traffic with VFR traffic could be more challenging.

F. Way forward

To overcome the above challenges, following approaches should be taken into consideration:

1. RNP AR departure procedures are implemented in the airports like Vagar Airport (Denmark), Linzi and Zhangjiajie Airports (China), Innsbruck Airport (Austria), Santos Dumont Airport (Brazil) and Tegucigalpa Airport (Honduras). Similarly, FROP distances shorter than standards are used in the RNP AR approaches of such airports. So, exploring these States' experience in doing necessary RNP AR approval and application is beneficial.

2. RNP AR Departure authorization has also been practiced by CASA, Australia. ENR 1.17 of AIP published by FAA mentions

about the provision of RNP AR Departure. So, referring to CASA and FAA provisions can also be fruitful during the approval process.

3. FOSA which is a mandatory part of RNP AR operational approval must address, including the others, shorter FROP distance, higher bank angle and higher PDG issues. However, safety assessment in part of Air Traffic Management must not be ignored before the implementation of the new RNP AR procedures.

4. Continuous software support shall be provided to CAAN procedure designers in order to enhance and maintain their capability for the maintenance of RNP AR procedures in future.

5. Lateral separation points recognized as necessary in ATC points of view shall be identified, and it would be beneficial if ATC surveillance map at TIA be updated to address all the evolving RNP AR trajectories for the safe and efficient surveillance service within Kathmandu TMA.

6. Necessary supports must also be sought from NAVBLUE Company for any discrepancies and required future modifications, as per the contract between the CAAN and the company.

7. Safety aspects of the procedure must also be assured through the design documentation. Additionally, stakeholders' consultation and feedback must also be appropriately addressed during finalizing the design documentation. Similarly, safety part of the procedure must also be carefully studied during

the procedure approval phase.

8. Approval for the conduct of new RNP AR approaches and departures must be acquired by the operators before conducting such operations. Previous approval of RNP AR APCH for RWY 02 and associated experiences should only be supplemental for the new approval.

9. Essential documentation such as AFM, AFM revision, AFM supplement, TC datasheets, etc. addressing the aircraft eligibility for RNP AR departure and necessary crew training are other vital aspects that the operators need to organize to ease the approval process.

10. Approval guidelines should be developed to streamline the approval process in the future.

G. Conclusion

New RNP AR procedures will certainly enhance the accessibility, along with the safety and efficiency of aircraft operations to and from TIA, provided all the safety aspects are minutely assessed and all the operational risks, if any, are mitigated to an acceptable level. However, the tasks that CAAN has to perform before implementation are the approval activities, both procedure and operational which are very challenging. So, the concerned stakeholders within CAAN should be proactive to find the ways to effectively handle such challenges by developing appropriate procedures and/or measures, referring to other States' experiences and consulting design agency NAVBLUE for necessary supports, if needed.■

1. SAM/IG/23-WP/06, 20/04/2019

2. CASA AC 31U-II-C-6(0) September 2012

3. https://www.faa.gov/air_traffic/publications/atpubs/aip_html/part2_enr_section_1.17.html

AVIATION Sector



Nabin Pd. Acharya
Dy. Director, CAAN

Introduction

Aviation began in the 18th century with the development of hot air balloon on this earth. A milestone development of aviation started from 1903 when Wright Brother made the first aeroplane. After the end of World War II the significant development in aviation sector increased rapidly worldwide. Now aviation is major portion of travelling sector for passengers and freight. Aviation is one of the most global industries connecting people, cultures and business across continents. Aviation provides rapid worldwide transportation network. Aviation sector generates economic growth, creates job and facilitates international trade and tourism. Tourism industries relies mostly in aviation development. Air transport is a driver of global trade and e-commerce allowing globalization of production also. Aviation's advantage over other mode of transport in terms of speed and reliability has contributed to the market for "same day and next day" delivery service goods. Around 90 percent e-commerce parcels are currently carried by air.

Aviation is by far the world's safest and most efficient mode of long-range transportation. It often serve as the only possible means of transportation to provide medicine and food supplies to many remote communities to deliver urgent humanitarian aid during emergency of natural disasters.

Aviation sector is supporting the mission of United Nations (UN). UN has adopted sustainable development goals (SDGs), transforming our world 2030 agenda for sustainable development. This agenda is a plan of action for people, planet and prosperity and seeks to strengthen universal peace in larger freedom. The World should aim to achieve the 17 Sustainable Development goals (SDGs) and 169 targets by 2030. A number of these goals are aimed at improving the living conditions and economic prosperity of people all over the globe. Aviation contributes to achieve many of these SDGs directly and indirectly.

Many states have come to understand that air connectivity is an asset improving the global competitiveness of cities, regions and countries, they try to include aviation projects as a priority in their development strategies and

formulate policies to enhance connectivity outcomes. Since the early 1990s in response to demands by the aviation industry, states began to negotiate more liberal bilateral and multilateral agreements including "open skies" agreements to allow aviation industries to do business in more favorable operating environments and expand into new market. Definitely now, aviation sectors is connecting our world, powering our economy and expanding our horizons.

Aviation Growth;

Historically air transport has doubled in size every 15 years and has grown faster than most other industries. A report shows that today 1303 scheduled airlines operate over 31,717 aircraft serving 3759 airports. There is 170 air navigation service providers, they are supporting continuously for safe and expeditious movements. In 2018 airline worldwide carried out around 4.3 billion passengers annually. Everyday more than 100,000 flights transport almost 12 million passengers and around 18 billion worth of goods. Now air transport industries supported 65.5 million jobs globally. It provides 10.2 million direct jobs. A report shows that by 2045 AD passengers traffic will reach over 22 trillion with a growth of 4.1 percent per annum and freight will expand by 3.6 annually.

Nepalese aviation growth perspective, since the starting of aviation history in 1949, the landing of small Beach Craft Bonanza, tremendous development has achieved and facing the new challenges with the increasing number of traffic everyday. As per yearly data of CAAN there was 95,580 movements of aircraft in domestic sector and 33,933 movements in international flights in 2018. The increase ratio was 2.66 percent in domestic flights and 1.71 percent in international flights compare to 2017.

Nepal has signed air service agreement with 40 countries till now. Now 27 international airlines from 14 countries operating international flights to Nepal. Now 3 more international airlines willing to operate flights to Nepal in 2019-2020. Similarly in domestic sector 19 domestic airlines are registered with valid AOC. We have 49 airports including TIA. Now 6 domestic airports and 3 international airport are under construction and will be available in coming days. After the establishment of

CAAN on 31 December 1998, as an autonomous body CAAN is the regulator of civil aviation as well as the service provider in the areas of air navigation services and aerodrome operations.

Regulatory Framework

The continuous growth of air traffic and enhanced air connectivity can only be sustained with a globally harmonized regulatory framework .Modern aviation was founded upon the Chicago Convention 1944 which set forth the core principles permitting international transport by air and led to the creation of the ICAO . The mandate of ICAO then as it is today is helping states to achieve the highest degree of uniformity in civil aviation standards, policies and procedures. Now ICAO manages over 12,000 Standards and Recommended Practices (SARPs) across the 19 annexes to the Chicago convention.

A national and regional policy frame work consistent with ICAO SARPs and policies and with globally accepted good regulatory practices can revealed the full value of civil aviation. For the past seven decades the operation of international air transport services has also been governed by over 5000 bilateral air service agreements signed between states which regulate airlines’ destination, routes, capacity and frequency, fares and rates etc.

Air safety is a paramount importance in the operation of airlines. Approximately 100,000 daily flights worldwide are in operation today. Aviation is by far the world’s safest and most efficient mode of long- range mass transportation .The safety performance of the world’s commercial aviation industry continues to improve with an accident rate of 1.35 accidents per million sectors in 2018 compared to 1.79 for the 5 year period average from 2013-2017 . The safety level that global air transport enjoys today represents an achievements built on the determination and effort of the entire aviation community.

Aviation Growth in Asia pacific Region: as per Civil Air Navigation Services Organization (CANSO) report, in 2018 airlines worldwide carried about 4.3billion passengers and 58 million tons of freight. For the Asia pacific region air transport is supporting 30.2 million jobs and USD 684 billion in GDP. South Asia has a great potential and challenge for the development of aviation, over 24% of World’s population are living in South Asia. Traffic growth forecast in South Asia is 8.6% per year over next 20 years.

World’s Largest Aviation Markets

Asia and Pacific Region (APAC)	37% of global passenger traffic
Europe	26%
N America	23%
Latin America	8%
Middle east	4%

Africa	2%
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Asia pacific region has emerged as a center of growth in Aviation and has consistently recorded faster passenger traffic growth than the world average pace. 5 out of the top 20 countries in terms of international tourism by numbers of arrivals are located in Asia Pacific region. This region also carries the largest share of freight traffic with 38 percent of the world freight. Among the world top 25 busiest airports by passenger numbers in 2018, ten are from Asia pacific region and their traffic levels are continue increased. The investment needs for airport expansion and construction in this region are estimated at USD 65 billion per year to 2020. The most likely scenario is that airlines in this region will need to train on average of 12,249 new pilots, 2537 new ATC, 14,779 new maintenance technician and 20,142 new cabin crews yearly until 2037. In addition the APAC has yet to achieve a kind of seamless connectivity that would allow countries to make the optimal use of air transport.

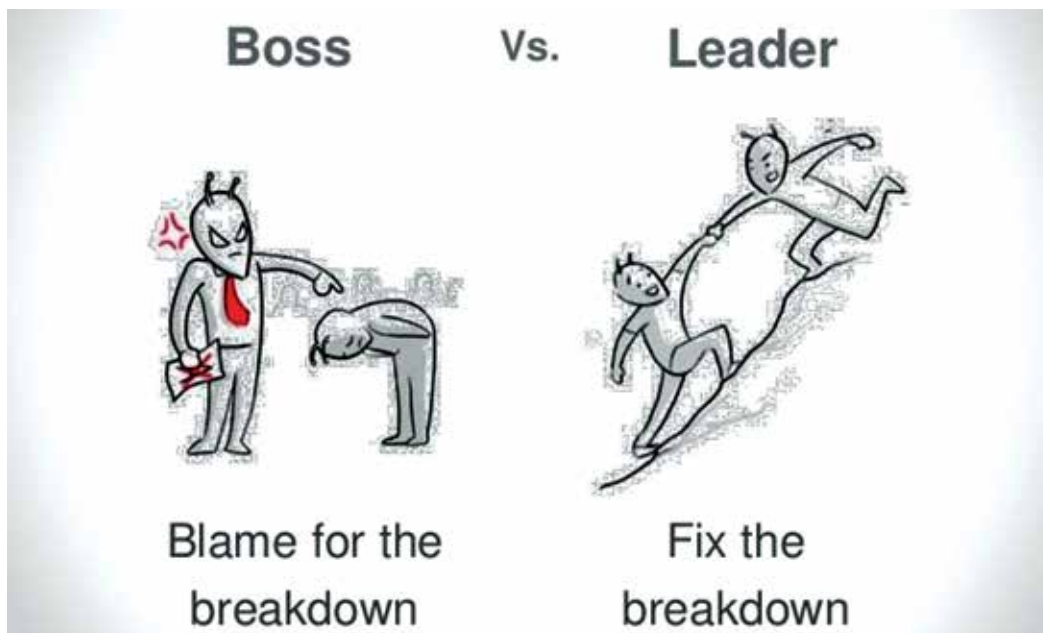
Conclusions: In Nepalese aviation sector air transport is playing long-lasting and vital important role in economy and tourism sector. Nepalese aviation growth holds tremendous economic potential. Now with the increasing demand, Nepalese aviation sectors are facing many challenges. To solve the arising issues, continued political support and economic investment will be needed to meet its potential. It is necessary for all stakeholders to work together to maximize the benefit of air transport and to support the sustainable growth. We need a close partnership with governments and regulatory bodies to ensure the proper air traffic management and infrastructure are in place so that all the stakeholders can reap the benefits. In this phase of development, in our context it is proving difficult to make aviation infrastructure improvements fast enough to keep pace with the faster growth in demand, massive investment is required to close infrastructure gaps. To attract investors, the legal and regulatory frame work needs to be improved in terms of transparency and certainty. The projected expansion of the aviation sector in Nepal will also bring the need for effective regulatory oversight as well as the recruitment and training for the man power is needed. Due to the topography of Nepal, as being the fastest mode of travel, aviation is being used as a preferred mode of travel and is creating large chunk of revenue for the country. We have stood on the edge of significant transformation of technology in aviation sector .We need to treat these new and emerging technologies as part of the aviation ecosystem so they will be integrated safely and efficiently into our airspace. ■

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3. CAAN Report 2018

Good Leader VS Good Boss



Manju Paudyal
Manager, CAAN



Do you know that 75% of people leaving jobs, in fact, don't quit their jobs, but they quit their bosses?

The Difference Between a Boss and a Leader. A boss manages their employees, while a leader inspires them to innovate, think creatively, and strive for perfection. Every team has a boss, but what people need is a leader who will help them achieve greatness.

A great deal of responsibility rests on the shoulders of the boss of a company. Bosses must effectively manage, lead and inspire employees. Good managers bring tangible benefits to a company, including the ability to motivate employees and align them with the company's vision. Bosses who fail to effectively manage employees may create an environment susceptible to conflict and unsatisfied workers. Bosses should take their responsibilities seriously and find out what is needed to bring out the best in their employees.

"A good boss makes his men realize they have more ability than they think they have so that they consistently do better work than they thought they could." - Charles Erwin Wilson

While it might sound similar, a "boss" and a "leader" have

slightly different meanings.

Being a boss means that you're in charge of a team or the whole organization. A boss is supposed to assign tasks, have control over employees and make crucial decisions.

Being a leader means being able to influence and inspire others, to make the best of them. It's a person that leads others by example, has a vision and stays committed to his goals.

Both descriptions sound like two sides of one coin, right? Unfortunately, not every boss is a leader, and not every leader is a boss.

The good thing is that if it happened that you're in a management position, it doesn't mean that you cannot be a leader. On the contrary; if you want to be a good boss, you should be a good leader.

Here are five tips that will help you to achieve that.

1. Build a bond of trust

“Without trust we don’t truly collaborate; we merely coordinate or, at best, cooperate. It is trust that transforms a group of people into a team.” – Stephen M.R. Covey

The most important part of being a boss is constant work on building a bond of trust in your team. There are several benefits of building trust: effective communication, employee engagement and better job performance.

How to build trust:

- Make sure that you’re always honest. Always tell the truth, even if the news is bad or it’s to your disadvantage. Be transparent!
- Be fair. It’s easy to judge people based on their actions, but sometimes it’s worth taking a closer look at their motives.
- Don’t gossip and don’t share anyone’s personal information. Don’t say bad things about employees that are absent.
- Show that you’re a team-player and others can rely on you. Give a good example, finish your work on time and don’t ask others to do the job you dislike.
- Be empathic. If you know that your employee is having a hard time, don’t be afraid to ask them if they’re alright or if they need any help.

2. Praise your employees

A person who feels appreciated will always do more than what is expected.

Recognition at the workplace cannot be underestimated. Just look at these statistics:

- 16 percent of employees left their previous job due to a lack of recognition,
- 35 percent of them claims that lack of recognition is the biggest hindrance to their productivity,
- 78 percent of US workers said that being recognized motivates them in their job.

It means that employee recognition is essential if you want to have a well motivated, efficient team. There are more benefits as well! For example, thanks to recognition your employees will be more loyal and satisfied, their individual productivity will increase and their retention will be lowered.

How to recognize your employees:

- Thank the person by name,
- specifically state for what are they being recognized,
- point out the value added to the team or organization by the action that they have taken,
- reward them with a gift (a dinner, ticket to a theater

or a pay rise).

Looking for a tool for chatting with customers and recognizing employees at the same time? Test Live Chat for 14-days, track your team’s achievements and spot support superstars!

3. Inspire your employees

*“I never teach my pupils. I only attempt to provide the conditions in which they can learn.”
– Albert Einstein*

Inspiration at work is about commitment and passion. If your employees love what they do, they will need only a little bit of help from your side to spread their wings.

How to inspire your employees:

- Tell them about your vision – people love to know that they are part of something important,
- tell about benefits behind your ideas, don’t speak only about “how” but tell them also “why”,
- praise them and encourage to develop,
- share your knowledge with them,
- acknowledge feedback

4. Let your employees to be themselves

*“Most people are other people. Their thoughts are someone else’s opinions, their lives a mimicry, their passions a quotation”.-
Oscar Wild*

If you don’t accept your employees as they are, you cannot expect that they will feel comfortable in a workplace. If you want for your employees to be highly motivated, you cannot increase the division between home and work. You need to integrate them.

Let them be themselves:

- If there is no need to look smart, don’t try to implement dress code,
- encourage them to talk about their passions,
- trust them and let them decide how to achieve their goals,
- encourage them to take the ownership of their work,
- get familiar with the Fish! Philosophy and bring some joy to your workplace.

5. Value feedback

We all need good people who will give us feedback. That’s how we improve. – Bill Gates

There are no perfect people as there are no perfect workers. That’s exactly why you should encourage an

open, honest communication in your company. Don't be afraid of it! Even if you hear something unpleasant, treat it as an opportunity to develop. Research shows that people who are better at handling negative feedback tend to be more successful.

How to encourage employees to give feedback:

Many companies depend on the benefits that teamwork offers an organization. Work environments that focus on teamwork encourage the creative process and establish platforms for innovation.

- Ask them questions. "What would you change if you were me," "what do you like or dislike in your job" or "is there anything you'd like to change in our team" are good examples of such questions,
- if you don't want to speak in person, you can ask your employees to fill a survey (it can be anonymous),
- tell them honestly that if there is any feedback they would like to share with you, you're happy to hear it.

Provide Feedback from Management.

- An employee's professional development depends greatly on the feedback provided by management. Bosses should provide quality feedback on a regular basis, letting employees know what they are doing right and addressing the areas that need improvement.

Listen to Concerns

Bosses must listen to the concerns of their employees. When managers fail to listen, employees start to feel as though their opinions and concerns are not important to the organization. Listening to employees improves communication and builds trust.

Pay Fair Wages

Employers should pay fair wages. A company that underpays its employees may suffer from low employee morale and high employee turnover. Although money is not the only factor considered in employee satisfaction, it plays a role in how workers feel about their jobs.

Reward Employees

Bosses should reward their employees when a job is well done. Bosses can offer monetary or non-monetary rewards. Some common non-monetary rewards may include employee recognition and praise, flexible work

schedules or celebration of employees' birthdays.

Communicate Effectively

Most employees appreciate managers communicating important news that concerns the company and their job security, even if it is not good news. Bosses should keep communication lines open with their subordinates. Effective communication from management shows employees that they are important to the organization.

Provide Fair Treatment

Bosses should treat employees fairly. Managers who show bias in the workplace may create an environment with unhealthy workplace competition and conflict. Managers who are fair to employees create a loyal workforce.

Delegate Responsibility

Good bosses understand the importance of delegating. Allowing an employee to take on more responsibilities shows a manager's confidence in the employee's abilities. Most employees desire to work in environments that offer career growth.

Provide Employees with Resources

Managers should provide employees with the necessary resources to perform their job duties. These may include necessary software, training and information concerning the company. Equipping employees with the necessary tools allows them to complete their tasks effectively and allows the company to remain competitive.

Summary

Being a boss is a tough job, because there is no formula on how to do this right and there are no pre-defined qualities of a good boss.

It's true that some people are natural born leaders who intuitively know how to make the best of each employee, but most of us need to learn it.

It's a bit like playing with a shape-sorting cube. Every employee has their unique shape and a good boss needs to be able to find a suitable role for each of their employees and match them with the cube. Luckily, with a bit of patience and perseverance, you will be able to shape this wild variety of personalities into a well-working team.■

Sources: from different website/internet

My journey to **ICAO AVSEC Instructor**

Khageswor Aryal
Manager, CAAN



Today, I have become ICAO AVSEC INSTRUCTOR and my dream has come true. Some friends are saying that it is pride for CAAN, pride for aviation industry and also pride for Nation as whole. But, I think to be ICAO Instructor or ICAO auditors in the country, certainly it counts lot and perception of ICAO personnel towards the nation will be different and positive in every activities or issues. It says that in every success of person, certainly there will be someone-hands behind it. No doubt in my case, Mr. Deo Chandra Lan Karn and my family have played significant role to me to achieve the goal. Directly and indirectly there are numbers of hands to uplift me at this level. At this moment, I, therefore, would like to express my sincere thanks to all who directly or indirectly support me in this journey and I am grateful to all of them.

It was the day, when various factors were playing role to make the situation fragile. The situation was not in favour of me. All of sudden, I was transferred to Tribhuvan International Airport Civil Aviation Office from Civil Aviation Authority of Nepal, Head Office. Even though my profession was ATS, it was very difficult me to resume ATS job because I had left operational duty since long. At that time General Manager of TIACAO was Mr. Ratish Chandra Lal Suman, he was quite impressed with me. There was positive feeling with him that I had some potentiality. Considering these factors, he advised me to work aviation security division and

deputed me there. He emphasized me, “work sincerely, one day, you will be Bharat Dhakal.” Mr. Bharat Raj Dhakal is prominent figure in aviation security in Nepal. Further he added with all seniors of the division that he had some experience of head office and writing skill that would help you all.

At that time, I was junior of all and completely new in this aviation security field. Thus I had to learn from very beginning. During the ATS Basic course I had learnt basic concept of aviation security of 10 hours and also that was almost erased from my mind. About one year later, I was nominated for KOICA fellowship program relating to aviation security but unfortunately my nomination was not confirmed by South Korea Government. Couple of months later, again, I was nominated to take part in Senior Management for Aviation Security Course, in Jakarta, Indonesia under ICAO fellowship program. Generally, it was course for those who done basic, supervisor course, and some other course but I had attempted directly without having such courses of aviation security. It was also competency base training. It means all participants should go through exam and secure 80% mark in exam. Any how I had to get through. I remembered that a participant from Mauritius secured 100% in that exam. He was very cooperative and helped me a lot.

Few years later, I was doing my job effectively with knowledge and experience at TIA. By the time, I was nominated JICA fellowship program named **Aviation Security**

Seminar in 2014. It was about 5 weak program consisting of three phase; phase I, phase II and phase III. In Phase I nominated participant had submit country report to Japan through JICA. Phase II was conducted in Japan (theory and practical field visit). In Phase III, participant implement what they had learnt and submitted action plan under Phase II in Japan. The course itself was not in depth but it was good opportunity to observe advanced country aviation security system. At final of the course, I was selected to speak few words from participants’ side. All of them appreciated me.

In 2015 I got chance to participate in one of the important course of aviation security that was National Inspector Course. It was conducted by CASP- AP in Siem Reap, Cambodia that was also competency based course of ICAO. I secured 94 % in the exam. I left very good impression towards Cambodians. Some of participants could not get through in the exam. I was also quite familiar with them. They extended warm hospitality during the whole stay in Siam Reap, Cambodia.

I used to tell the those senior who had decisive role in the organization that I want to continue my career in aviation security. I consistently remained in my journey of aviation security. I didn’t ask for any benefit position and continually and dedicatedly did my assigned security job.

In 2017, I could get chance to participate in National Aviation Security Training Program

Workshop which was conducted by CASP AP and organization by Civil Aviation Training Institute at Yangon. It was 5 days course. There was two facilitator Mr. Kyal Barter, chief of CASP AP and STE Mr Seikh Abdullah from Singapore. I actively participated in that Program and everybody praised me. Some participant from Myanmar and Thailand request to be a ICAO instructor. CASP-AP commented me that you had great participation. These comments inspired me to move head to this direction of icao avsec instructor.

Finally, state letter of ICAO Certification for Aviation Security Instructor was received. There were minimum two criteria to participant in exam. One was National Instructor and the other was five years working experience. ICAO National Instructor course would be preferable. The course was design in such way that applicant should completed in two phases. ICC Phase I exam was online session and could be completed from their countries relating administration procedure of UNDP and ICAO to be done after ICAO AVSEC instructor. ICC Phase II main session was conducted at ASTC Hong Kong SAR consisting of SME (pass mark 84%) and Presentation (Progress Test and Mastery Test, pass mark 80%)

I believe myself and in my competency. Along with this, sometime circumstance become more favorable. Year 2019 become historic year in my life. Mr. Deo Chandra Lal Karn become department head, ICAO certification for aviation security instructor was scheduled, USAP CMA audit was conducted in Nepal. Focusing USAP CMA audit, APAC and CASP-AP assistance missions were concluded. We all security persons and some AVSEC experts were continuously busy in audit

preparation work. By the time, Civil Aviation Academy run a Screening course for foreigner (Bhutanese). I took class for them where there was ICAO auditor as a participant. It forced me to work harder and harder and made my confidence level build high. DCL sir some time used to give me threat, sometime motivate me. At any function he used to declare and present me as ICAO certified instructor, sometimes in front of ICAO people. Due to these factors I was in situation Do or Die. I was almost in one way trap and no chance to return without achieving the goal.

It was 2nd December, 2019, when I entered in a big hall of Hong Kong International Aviation Academy from where nice view of ocean can been seen. There were participant from Asia Pasic region and some of them were already ICAO auditor and some of had done a lot of aviation security course. At that moment, I remembered the Interview of Late Dr. Upendra Devekota in NTV. He had faced the same situation in Europe. In a big exam hall of Europe with participants from developed countries, he was the one who come from poor, small country but with full of confident. At any cost he had to get success in the exam. Then I remembered Pashupati Nath and Late mother and father and opened exam paper. It was very hard but when completing SME exam, I thought I did good.

There were other three modules left to be completed. During each module there was progress test and at end of the module there was Mastery Test. The major part of the process was presentation. Every participant was assigned 5 minutes and 15 minutes presentation based on ICAO ASTP. Pass mark of SME was 84% and rest of presentation pass mark was 80%. There were three types of Certificate that ICAO going to issue for the participant as

per their performance throughout the course. They are;

- 1) Successfully completed ICC Phase 2 and passed the SME Exam: Certified as an AVSEC Instructor
- 2) Successfully completed ICC Phase 2 but did not passed the SME Exam: Certificate of successful completion; and
- 3) Did not successfully complete ICC Phase 2; Certificate of Attendance

On the last day that was 6th December, 2019 we all participants were waiting for result and we were called one by one by the ICAO instructors' team. There were separate individual briefing. All faces were full of curiosity that what would be the result. Finally, I was called and briefed me by instructors and they congratulated me for success. I again confirmed that which categories of certificate I got. The judges answered no. 1 certificate. This moment I cannot express here with some words. By the time I inform in office and home. It was remarkable day in my life.

Abbreviation

ICAO = International Civil Aviation Organization

CASP-AP= Cooperative Aviation Security Program- Asia Pacific

USAP-CMA= Universal Security Audit Program- Continuous Monitoring Approach

ICC= Instructor Certification Course

STE= Short Term Expert

SME= Subject Matter Expertise

AVSEC= Aviation Security

ATS= Air Traffic Services ■

समृद्ध नेपालका लागि नागरिक उड्डयनको भूमिका

सुनिल मूल
प्रवक्ता, नेनाउप्रा



देशमा योजनाबद्ध विकासको थालनी भएको लगभग छ दशक पुगेको छ भने आधुनिक उद्योग विकास थालनीको सात दशक नाघिसक्दा पनि मुलुकको आर्थिक संरचनामा सुधार आउन नसक्नु निश्चय नै दुर्भाग्य हो । मुलुकको समग्र आर्थिक स्थिति क्रमशः अत्यन्त चिन्ताजनक अवस्थाले गुञ्जिदै जानुका पछाडि विकासका लागि चुनौतीमात्र देख्ने तर अवसरलाई नदेख्ने हाम्रो मानसिकता नै मुख्य जिम्मेवार छ । फगत राजनीतिक दाउपेचको समय बर्बादिले मुलुकका जल्दाबल्दा आर्थिक मुद्दा ओभरेल परेका छन् । मुलुकको पूर्वाधार निर्माण र आधारभूत सामाजिक सेवाका लागि सरकारको उपस्थिति चाहिन्छ, तर सधैं कमजोर रहँदै आएको सरकारको कार्यशैलीले मुलुकमा विकास निर्माणको काम र आर्थिक समृद्धिमा खासै उल्लेखनीय रहन नसकी आर्थिक क्षेत्र गौण बन्दै गएको छ ।

विश्वको मानचित्रमा नेपाल, विशाल दुई राष्ट्र चीन र भारतबीच एसियाको मध्य भागमा युगौदेखि आफ्नो स्वतन्त्र अस्तित्व जोगाएर सार्वभौम मुलुकका रूपमा विश्वसामु अवस्थित छ । दुवै देश वर्तमान विश्वमा तेजगतिले आर्थिक उन्नति गरिरहेका छन् । यसको रत्तिभर फाइदा लिन हामीले कहिल्यै जानेनाँ । छिमेकी यी देशबाट हुन सक्ने हाम्रा लागि हजारौं रोजगारी सिर्जना र व्यापार विस्तारजस्ता अवसरप्रति कहिल्यै सकारात्मक ध्यान पुर्‍याउन सकेनाँ । सधैं भूपरिवेष्ठित मुलुकको

अलाप जपैमा हामी व्यस्त रहिरह्यौं । अन्य भूपरिवेष्ठित मुलुकले गरेको आर्थिक उन्नतीलाई कहिल्यै हेरेनाँ ।

नेपाल जस्तो उच्च पर्वतीय भूधरातलयुक्त मुलुक जहाँ जल यातायातको सम्भावना न्यून छ, रेल यातायात सेवा नगन्य छ, मौजुदा सडक यातायात अत्यन्तै जोखिमपूर्ण रहेको मात्र होइन लामो समयको कष्टपूर्ण यात्राले यहाँ यातायातका साधनमा हवाई यातायात नै महत्वपूर्ण रहँदै आएको छ । हुनतः हाम्रो मुलुक मात्र होइन विश्वका अधिकांश विकसित मुलुकहरुमा समेत यातायातका साधनहरुमा हवाई यातायातलाई नै सुरक्षित, सुलभ र भरपर्दो साधनको रूपमा सबैभन्दा महत्वका दृष्टिले हेरिन्छ । यस कुराको स्थल यातायात र हवाई यातायातको तथ्यांकलाई खोजपूर्ण अध्ययनबाट सबैभन्दा सुरक्षित यातायातको साधनमा हवाई यातायात नै रहेको तथ्य प्रमाणित भएको छ । जुन अमेरिकाको नर्थवेष्टर्न युनिभर्सिटिले गरेको अध्ययनले एक बिलियन यात्रु माइलमा हवाई यात्रामा न्यून मानवीय क्षति भएको र सबैभन्दा बढी मोटरसाइकल यात्रामा मानवीय क्षति हुने गरेको जनाएको छ ।

नेपालमा वर्षेनी हामीले भोग्दै आएको बाढी, पहिरो, अनाविष्टि, अतिविष्टिका कारण नागरिकहरुको जनजीवन कष्टकर त हुँदैछ तर त्यसभन्दा पर दलीय स्वार्थको ओतप्रोतबाट दिनहुं हुने बन्द हडताल आदिले सडक बन्द हुने स्थितिले थप जेलिएको छ ।

हामीले दलीय स्वार्थभन्दा माथी उठेर देश र जनहितलाई प्राथमिकता दिई उपलब्ध स्रोत साधनलाई उच्चतम सदुपयोग गर्न एकै स्वरमा नाराबाजी गर्न हामीले कहिल्यै जानेनाँ । यस्तो स्थितिमा वैदेशिक रोजगार माथीको परनिर्भरतालाई अन्त्य गर्दै आर्थिक, सामाजिक रुपान्तरणले मुलुकको कायापलट गर्न सकिने प्रचुर सम्भावनायुक्त हवाई यातायात सेवाको समूचित विकास, विस्तारलाई अब हामिले भूलु हुँदैन । यहि तथ्यले मुलुकको हवाई यातायात सेवालाई समयसाक्षेप थप सुरक्षित, नियमित, स्तरीय र प्रभावकारी तुल्याउने हेतुले तत्कालीन मौजुदा हवाई विभागलाई एक स्वायत्त संस्थाको रूपमा नेपाल नागरिक उड्डयन प्राधिकरणमा रुपान्तरण गरी यस क्षेत्रको अझ बढी विकास, विस्तार गर्नका लागि स्थापना गरिएको पनि २१ वर्ष भई सकेको छ । प्राधिकरण स्थापना पश्चात यस सेवालाई अझै सुरक्षित तथा भरपर्दो तुल्याउनका लागि हवाई उडान संग जोडिएका सम्पूर्ण भौतिक, प्राविधिक व्यवस्थापकीय कार्य तथा हवाई नियमनकारी पक्षहरु समेतलाई समानान्तर रूपले प्रभावकारी बनाउने दिशामा अघि नबढेको भने पक्कै होइन तथापी सफलताको नगिच पुग्न अझै धेरै बाकी रहेको तथ्यहरुले हामीलाई बाध्य तुल्याएको छ । यस परिप्रेक्ष्यमा सबैबाट यस क्षेत्रको जिम्मेवार सबै पक्षहरुले अझ थप जिम्मेवारीपूर्वक वहन गर्नुपर्ने विषयमा हामीले भूलु हुँदैन ।

नेपालमा हवाई यातायात सेवाको इतिहास

केलाउने हो भने सन् १९४९ को अप्रिलमा सिंगल इन्जिनको ४ सिटर निजी विमान (Vintage Beach-Craft Bonanza Aircraft) काठमाण्डौंको गौचरणमा सफल अवतरण पश्चात मुलुकको नागरिक उड्डयनको इतिहास आरम्भ भएको हो । तत्पश्चात तत्कालीन राजा त्रिभुवन भारतीय जहाज DC-3 बाट २००७ सालमा भारत र सोही वर्षको फागुन ७ मा काठमाण्डौं अवतरण भएकोलाई नेपालको नागरिक उड्डयन क्षेत्रमा भएको ऐतिहासिक दिन मानिएको छ । नेपालमा प्रजातन्त्र स्थापना पछि भारतीय वायुसेवा कम्पनी Himalayan Aviation ले २८ सिटर क्षमताको DC-3 Dakota वायुयानबाट भारतका पटना, कलकत्ता र दिल्ली रुटमा काठमाण्डौंबाट नियमित हवाई सेवा प्रदान गरिएको थियो । मुलुकलाई उच्च फाइदा हुने गरी नागरिक उड्डयनको विकासलाई प्रोत्साहन हुने परिस्थिति सिर्जना गर्न तथा यस क्षेत्रलाई नियन्त्रित एवं व्यवस्थित गर्ने अभिप्रायले गैर सैनिक हवाई उडान ऐन, २०१५ जारी गरी नागरिक उड्डयन सम्बन्धी विविध क्रियाकलापहरु परिचालन हुँदै आएको हामी माझ छ । नेपालको करिब तीन दशकसम्म सरकारी वायुसेवा तत्कालीन शाही नेपाल वायुसेवा निगमले एकछत्र सेवा संचालन गर्दै आएको मा नेपालले सन् १९९२ मा उदार हवाई नीति (Liberal Sky Policy) अवलम्बन गरे पश्चात निजी क्षेत्रका वायुसेवा कम्पनीहरुबाट समेत हवाई यातायात सेवा संचालन गर्ने ढोका खुलेको हो । यस पश्चात हवाई यातायात सम्बन्धी क्रियाकलापहरु क्रमशः उल्लेख बढेको हुँदै आएको तथ्य हामी माझ छल्लङ्ग छ । यसो हुनुमा वर्तमान एकाइसौं शताब्दीको विश्वव्यापारीकरण, आर्थिक उदारीकरण र तीव्र प्रतिस्पर्धाले एकातिर हामीलाई विश्वमा अवसरहरुको सिर्जना हुँदै जाने क्रम बढेको छ भने अर्कोतिर तीव्र प्रतिस्पर्धी विश्वसँग कसरी प्रतिस्पर्धात्मकमा रुपमा सरिक बन्न सक्ने भन्ने सवालले चुनौती थपिँदै गएको छ ।

नागरिक उड्डयनको क्षेत्र भित्र मूलतः हवाई क्षेत्र, वायुसेवा, विमानस्थल आदि पर्दछन् । यसै अन्तर्गत नेपाल नागरिक

उड्डयन प्राधिकरण ऐनद्वारा स्थापित एक विशिष्टिकृत संस्थाको रुपमा क्रियाशिल छ । वर्तमान नेपालको संविधानले व्यवस्था गरे अनुरूप संघीयता कार्यान्वयन गर्ने सिलसिलामा हवाई उड्डयन र अन्तर्राष्ट्रिय विमानस्थल संघको अधिकार सूचीमा परेको हुँदा नेपाल नागरिक उड्डयन प्राधिकरण संघीय सरकारको कार्यक्षेत्रमा रहेको छ । संविधानले संघ, प्रान्तीय र स्थानीय गरी तीन तहको सरकारको व्यवस्था रहने गरेकोमा मूलुकभरी छरिएर रहेका अधिकांश विमानस्थलहरु प्रान्तीय भूभागहरुमा विद्यमान रहेको अवस्था र यसको कार्यान्वयन संघ अन्तर्गत भएबाट तत्सम्बन्धीको व्यवस्थापकीय कार्यहरु सफलतापूर्वक संचालन गर्न आई पर्ने समस्या एवं चुनौतीहरुलाई सामना गर्न चाल्नु पर्ने कार्यहरु अविलम्ब सम्पन्न गर्नुपर्ने हुन्छ । तर मुलुक संघीय संरचना अन्तर्गत आई संविधान जारी भएको चार वर्ष व्यथित भै सक्दा पनि संघीय संरचनामा नागरिक उड्डयन क्षेत्रको कार्य विश्लेषणको खाका तयार हुन सकेको छैन । अभूतपूर्व रुपमा मुलुकमा भएको राजनीतिक परिवर्तनसँगै संघीयताको अवलम्बन भएको छ । संविधानबाट दिशाबोध भएको विषयमा तत्सम्बन्धीको कार्य क्षेत्रमा अविलम्ब थालनी गरी यस क्षेत्रको विकास, विस्तार गरी जनस्तरसम्म यसको प्रतिफल पुर्‍याउनु आजको आवश्यकता हो । किनकी मुलुकको आन्तरिक र बाह्य हवाई यातायातलाई संघीय प्रारूप अनुरूप सुरक्षित, स्तरीय र भरपर्दो बनाई यस क्षेत्रको विकास, विस्तार गर्ने जिम्मेवार निकाय नेपाल नागरिक उड्डयन प्राधिकरण नै रहेको छ ।

मुलुकका विभिन्न महत्वपूर्ण सेवाहरुमा हवाई सेवा एक अत्यावश्यक सेवा रहेको कुरामा कसैको विमति छैन । नेपालका सुगम तथा दुरदराजका क्षेत्रहरुमा हवाई यातायात सेवा प्रदान गरी पर्यटक तथा यात्रुहरुको आवागमन, निर्माण सामग्रीको ढुवानी, अत्यावश्यक औषधी एवं खाद्यान्न, लत्ताकपडा, शैक्षिक सामग्री तथा मानवीय जीवनयापनका सामग्री आदीको ओसार पसार एवं क्षेत्रगत रोजगारी सिर्जना गरी मुलुकको सामाजिक

तथा आर्थिक विकासमा यसले ठूलो भूमिका निर्वाह गरिरहेको त छँदैछ भने मुलुकमा वर्षेनी १० लाखको हाराहारीमा पर्यटकहरु हवाई यातायात कै माध्यमले भित्रिएका छन् । नेपालको पर्यटन विकासको क्षेत्रमा हवाई सेवा प्रमुख प्राण वायु नै रहेको र पर्यटन तथा हवाई एक अर्काका परिपूरक रहेकोमा द्विविधा छैन । मुलुकको अर्थतन्त्रमा विशेष टेवा पुर्‍याउन सक्ने प्रचुर सम्भावनायुक्त पर्यटन सेवामा हवाई यातायातले प्रत्यक्ष वा परोक्ष रुपमा सघाउ पुर्‍याउँदै आएको पनि तथ्यांकले देखाएको छ । त्यसैगरी, देशमा भएका दैवी, विभिन्न घटना तथा दुर्घटनाका बखत छिटो छरितो राहतको प्रभावकारी माध्यम पनि हवाई सेवा नै भएको छ । चार वर्ष अघि गएको विनासकारी भूकम्पमा यस क्षेत्रले पुर्‍याएको सेवा हामीले विसर्न सकिँदैन । नेपाल,

जहाँ तेश्रो मुलुकसँगको सिधा सम्पर्कको एक मात्र सिधा यातायातको माध्यम हवाई यातायात नै वाध्य रहेको र मुलुकमा बसोबास गर्ने सम्पन्न र विपन्न दुवै वर्गका लागि उत्तिकै सार्थक रुपमा सहयोग पुर्‍याउँदै आइरहेको छ । यहि तथ्यलाई मनन् गरी केही वर्ष पूर्व हवाई क्षेत्रको समूचित विकास, विस्तारका गर्नका लागि अल्पकालीन, दीर्घकालीन रणनीति तयार गर्नुमा गर्न नतिजामूलक राय सुझाव प्रस्तुतका लागि संस्कृति, पर्यटन तथा नागरिक उड्डयन मन्त्रीस्तरीय निर्णयानुसार विषयगत नागरिक उड्डयन विज्ञ समूह गठन गरिएको थियो । गठित विषयगत विज्ञ समूहबाट निर्धारित कार्यविधिको परिधिभित्र रही क्षेत्रगत भ्रमण, अन्तरक्रिया समेतको आधारमा राय सुझाव सहितको प्रतिवेदन प्रस्तुत भएको पनि देढ वर्ष नाघि सकेको छ । प्रतिवेदनमा समावेश भएका सुझावलाई कार्यान्वयनको दिशामा लग्न सकिएको छैन । यस क्षेत्रको तत्कालीन, मध्यकालीन, दीर्घकालीन जटिल समस्या र चुनौतीहरुलाई सुझाइएका समाधानका कार्यदिशा तर्फ तत्कालै कार्यान्वयनमा लाग्नु श्रेयष्कर हुनेछ । अन्यथा समय अनि आर्थिक व्ययभार मात्रको बोझ बोकेको अनुभवमा सिमित हुनुपर्ने वाध्यता रहन्छ ।

दक्षिण पूर्वी एसियाली राष्ट्र भियतनाम जहाँ कुनै समय त्यहाँका नागरिकको जनजीवन अत्यन्तै कष्टपूर्ण थियो, त्यो देश हाल विश्वका निर्यात व्यापारमा आर्थिक उन्नति गरी सफल राष्ट्रमा परिणत बनिरहेको छ । विश्व बजारको विदेशी लगानीको आकर्षक केन्द्रका रूपमा भियतनाम आज औद्योगिकमुख हुँदै चीन र भारत पछिको तेस्रो उच्च आर्थिक वृद्धि हासिल गर्ने राष्ट्रका रूपमा सफल बनिरहेको छ । छोटो दशकको अन्तरालमा छिमेकी मुलुक भारत र चीनले गरेको विकासको फड्कोलाई अब हामीले हेरेर मात्र चित्त बुझाई नबसी ती मुलुकले अंगालेका विकासका रणनीतिहरु तत्कालै प्रारम्भ गरी अनुसरणमा लाग्नु बुद्धिमानी हुनेछ । मुलुकको विकासको प्रवेश बिन्दु मानिएको पर्यटन तथा हवाई विकासको नारालाई आजैबाट कार्यान्वयनस्तरमा लैजानु पर्दछ। सन् २०१७ को आँकडाले मुलुकको एक मात्र अन्तर्राष्ट्रिय विमानस्थल त्रिभुवन विमानस्थलबाट करिब ३९ लाख अन्तर्राष्ट्रिय र २४ लाख आन्तरिक गरी ६३ लाख हवाई यात्रु आवागमन भएको देखाएको छ । यस तथ्यले आगामी १० वर्षमा करिब १३० लाख र २० वर्षमा करिब ३३० लाख यात्रु आवागमन पुग्ने संभावना देखाएको छ । मौजुदा अन्तर्राष्ट्रिय विमानस्थलको यात्रु टर्मिनल विद्यमानमा ३२ हजार वर्गमिटर क्षेत्रफलको क्षमता करिब ३० लाख यात्रुको रहेको तर सन् २०१७ मा ३८ लाख ८ हजार अन्तर्राष्ट्रिय यात्रु आवागमन देखिएको छ । त्यसैगरी, आन्तरिक उडान तर्फ आन्तरिक टर्मिनल भवनको क्षमता ५ लाख रहेको सोहि वर्षमा २४ लाख ५ हजार यात्रु आवागमन भएको देखाएको छ । यात्रु आवागमनको दृष्टिले आफ्नो क्षमता भन्दा बाहिर संचालन गर्दा विमानस्थलले पुर्‍याइनु पर्ने यसको सेवा सुविधामा स्तरोन्नति गर्न निक्कै चुनौती रहेको बुझाउँछ । साथै, यसले मौजुदा हाम्रो अन्तर्राष्ट्रिय विमानस्थलको वास्तविकता देखिएको छ भने अर्कोतर्फ रन वे क्षमताको दृष्टिले वायुयानहरुको आवागमन क्षमता करिब १ लाख ९० हजार रहेकोमा सोहि वर्ष (२०१७) को तथ्यांकले १ लाख २६ हजार ४६८ मात्रको

उडान/अवतरण भएको देखिएको छ । यस स्थितिलाई मध्यनजर गर्ने हो भने मौजुदा अन्तर्राष्ट्रिय विमानस्थलको अवस्था नखस्कने गरी विकल्पको अन्तर्राष्ट्रिय विमानस्थल संचालनमा तत्कालै ल्याउनु जरुरी भै सकेको छ ।

उसोत नेपालले दोश्रो अन्तर्राष्ट्रिय विमानस्थलको रूपमा विकास गर्ने ध्येयले निजगढ विमानस्थललाई अंगिकार गरेको पनि लामो समय व्यतित भई सकेको छ । मौजुदा त्रिभुवन अन्तर्राष्ट्रिय विमानस्थलको बढ्दो चापलाई घटाई मुलुकको हवाई सेवाको समुचित विकास, विस्तार गर्न धेरै अध्ययन, अनुसन्धानहरु नभएको पनि होइन तर यसले मूर्तरूप हालसम्म लिन सकेको छैन । अब भिना मसिना तर्कहरुमा नअल्झीएर मुलुकलाई समृद्धिको दिशामा लान अविलम्ब यसको निदान तर्फ लाग्नुको कुनै विकल्प छैन ।

नेपालमा हाल ४८ वटा आन्तरिक विमानस्थल र ७ वटा निर्माणाधीन अवस्थामा छन् । चालु विमानस्थलहरु मध्ये पोखरा, भरतपुर, लुक्ला, सिमिकोट र तुमिङटार गरी ५ वटा विमानस्थलहरुले मात्र नाफा उन्मुख बन्न सफल भएका छन् भने घाटामा रहेका ११ वटा विमानस्थलहरु मध्ये पहाडी क्षेत्रका विमानस्थलमा सरदर करिब ३० लाख प्रति विमानस्थल र तराई तर्फका करिब १.५ करोड प्रति विमानस्थल घाटामा संचालन रहेका छन् ।

विमानस्थलबाट पुर्‍याउनु पर्ने सेवा सुविधामा बढोत्तरी गर्दै घाटामा संचालित विमानस्थलहरुलाई केन्द्रित गरी नाफा उन्मुख हुने कार्य प्रक्रियाको थालनीमा विलम्ब गरिनु हुँदैन । यसै सिलसिलामा मुलुकको समग्र हवाई विकासलाई मध्यनजर गरी गौतमबुद्ध अन्तर्राष्ट्रिय विमानस्थल र पोखरा क्षेत्री अन्तर्राष्ट्रिय विमानस्थलको निर्माण कार्य तीब्र रूपमा अगाडि बढेको संकेतले भने केही आशाको किरण देखाएको छ । गौतमबुद्ध अन्तर्राष्ट्रिय विमानस्थल तयार भई संचालनमा आएपछि यसले करिब १० लाख अन्तर्राष्ट्रिय यात्रु त्रिभुवन अन्तर्राष्ट्रिय विमानस्थलबाट घटन जाने देखिन्छ । गौतमबुद्ध अन्तर्राष्ट्रिय विमानस्थल सम्पन्न पश्चात यसको संचालनमा सुरुवाती समयमा स्वदेशी

तथा विदेशी वायुसेवा कम्पनीहरुलाई आकर्षित गर्न आर्थिक प्रोत्साहनको प्याकेजहरु लागु गर्न सकिएमा यसले सकारात्मक दिशा तर्फ लगेर कुरालाई मध्यनजर गरी यस सम्बन्धिको अवधारणालाई विचाराधीन रही निर्णयको अन्तिम चरणमा पुगेको संकेतले मुलुकको हवाई सेवा विकासमा टेवा पुग्ने संकेत देखाएको छ । गौतमबुद्ध अन्तर्राष्ट्रिय विमानस्थल संचालनमा आएपछि वैदेशिक रोजगारीमा जाने/आउने नेपाली यात्रुहरुलाई यस विमानस्थलबाट मात्र गर्न सकिएको खण्डमा यस विमानस्थलले सन् २०२८ मा करिब २० लाख यात्रु लिन सकिने र त्रिभुवन अन्तर्राष्ट्रिय विमानस्थलको विद्यमान चाप घटन गई सहज ढंगबाट अन्तर्राष्ट्रिय एवं आन्तरिक यात्रु धान्न सकिने मात्र होइन यी दुवै अन्तर्राष्ट्रिय विमानस्थल आत्मनिर्भर समेत बन्न सक्नेछन् । त्यसैगरी, निमाणाधीन पोखरा अन्तर्राष्ट्रिय विमानस्थल तर्फ दृष्टि दिने हो भने यस विमानस्थल रहेको भू प्रकृति बनौट एवं भौगोलिक स्थितिले हेर्दा साना जेट विमानलाई समेत व्यावसायिक सर्म्थताको समस्या हुने र यसले खासै अन्तर्राष्ट्रिय विमानस्थलको रूपमा यात्रु तान्न सकिने देखिँदैन । निर्माणाधीन टर्मिनल ढाँचाले करिब १५ लाख भन्दा कम यात्रु क्षमताको उद्देश्य राखेको यस विमानस्थललाई आन्तरिक यात्रु क्षमता विस्तारमा प्रयोग गरिनु उचित हुने देखिन्छ । मुलुकको निर्माणाधीन अन्तर्राष्ट्रिय विमानस्थललाई आत्मनिर्भरताको दृष्टिले हेर्ने हो भने पोखरा अन्तर्राष्ट्रिय विमानस्थल आत्म निर्भर बनाउन २० वर्ष भन्दा बढी लाग्ने, गौतमबुद्ध अन्तर्राष्ट्रिय विमानस्थल करिब १५ वर्ष भित्र र निजगढ अन्तर्राष्ट्रिय विमानस्थल संचालनमा आएको सुरु वर्ष देखि नै आत्मनिर्भर हुन सक्ने मात्र होइन निरन्तर यस विमानस्थलको क्षमता अभिवृद्धि गर्दै जान सकिने अन्तर्राष्ट्रिय विमानस्थलको रूपमा पनि रहेको अध्ययनले देखाएको छ।

नेपालले हालसम्म विभिन्न ३९ वटा मुलुकहरूसँग हवाई सेवा सम्झौता गरी सकेको छ तर सम्झौताबाट प्राप्त गर्न सकिने लाभ मुलुकले पूर्ण लिन सकिएको छैन । विभिन्न देश गरी जम्मा १४

वटा देशहरुमा मात्र नेपालले हवाई से
वा संचालनमा खुम्चिन परेको
मात्र नभई सम्भौतामा प्राप्त हवाई यात्रु
क्षमतालाई पनि गुमाउन बाध्य रहेको छ ।
कतिपय मौजुदा आन्तरिक विमानस्थलहरु
यात्रुको अभावमा बन्द अवस्थामा रहेका
छन् भने विद्यमान हवाई नीति, २०६३
ले निकटस्थ विमानस्थलबाट प्रस्तावित
विमानस्थलको दूरी हिमाली र पहाडी क्षे
त्रमा साधारणतया २० नटिकल माइल तर
ई र भित्रि मध्येसमा कम्तिमा ४० नटिकल

माइल हुनुपर्ने स्पष्ट व्यवस्था रहेतापनि
मौजुदा विमानस्थलहरुलाई उच्चतम
सदुपयोग गर्दै जानुको सट्टा केवल स्वार्थ
एवं होडवाजीकै भरमा जथाभावी थप
विमानस्थलहरु निर्माण गर्दै जाने लहडको
अन्त हुन सकेको छैन । यस स्थितिमा ने
पालले अबको करिब ३० वर्ष सम्म मौ
जुदा तथा निर्माणाधिन आन्तरिक तथा
अन्तर्राष्ट्रिय विमानस्थलहरु बाहेक अन्य
विमानस्थलहरुको परिकल्पना समेत नगर्ने
गरी कठोर नीति ल्याउनु जरुरी देखिन्छ । ■

सन्दर्भ सामग्री :

पूर्व महानिर्देशक श्री संजिव गौतम "नेपाल
नागरिक उड्डयन प्राधिकरणको भूमिका"

गठित नागरिक उड्डयन विज्ञ समूहको
प्रतिवेदन ०९ जेष्ठ २०७५

TIA Statistics - 2017

Civil Aviation Report - 2017

सुनिल मूल "नेपाल आर्थिक समृद्धिको
आशा"

Extended Parking Bay Construction



TIA Runway Extension



Mechanism for coping stress in Emergency Responders

Suneeta Shiwakoti Bhardwaj
Manager, CAAN



You once told me
You wanted to find
Yourself in the world -
And I told you to
First apply within,
To discover the world
within you.

You once told me
You wanted to save
The world from all its wars -
And I told you to
First save yourself
From the world,
And all the wars
You put yourself
Through.

I have started my article with this famous poem “Apply within” by Suzy Kassem as I felt that, this poem is all about the attitude that one has to owe, the awareness, the balance in one’s life and finally in believing in oneself. Of course, there is always chaos, worry, war and stress in life but tranquility, inspiration, peace of mind, peace of self in the journey from becoming raw to fine in the way to fulfilling the dreams are also the part of our life. The most important thing is to create a balance between the ups and downs in life and getting through by saving yourself, believing yourself, respecting yourself and loving yourself.

The fast pace of the development in every sectors of life has created stress in life of everyone. Stress has become a usual part of life and so obvious that nobody can skip it. We can experience stress from environment, our body and our thoughts. Actually, stress is the body’s reaction to any change that requires an adjustment

or response. The body reacts to these changes with physical, mental and emotional response.

Stress according to Wikipedia is a feeling of strain and pressure. Stress is a type of psychological pain. Small amounts of stress may be desired, beneficial, and even healthy. Positive stress helps to improve athletic performance. It also is a factor in motivation, adaptation, and reaction to the environment. Excessive amounts of stress, however, may lead to bodily harm. Stress can increase the risk of strokes, heart attacks, ulcers, and mental illnesses such as depression.

From the definition, it is understood that stress is a defense mechanism of our body. When under stress, our body releases hormones. These hormones cause increased brain activity, raise our pulse, and cause muscle tension. Stress can help us overcome challenging situations, but sustained stress can be harmful.

In this regard, we should also have some general understandings about the types of stress. There are two types of stress which we confront:

1. Acute stress is for short period of time. This can include things such as a nervous feeling before giving a speech, anger because of an argument with a friend, or the rush you get when you jump into a pool from a high dive etc. Acute stress is normal and may not harm to our body and mind.
2. Chronic stress lasts for long periods of time. Chronic stress is associated with sustained problems that can cause you discomfort. This could include a bad relationship, an unhappy work situation, or big life changes. This type of stress may harm our mind and body and need to be managed as soon as possible.

Stress doesn’t happen automatically. There are stressors that support

on stress or that give stress. These agents are stressors. Now, let's find who and what are the stressors.

Stressors: The definition of stressors is somewhat broad, and identification of stressors within the limits of this definition is still largely based on expert opinion. However, according to Wikipedia, stressor is a chemical or biological agent, environmental condition, external stimulus or an event that causes stress to an organism. Psychologically speaking, a stressor can be events or environment that an individual would consider demanding, challenging or threatening the individual's safety. To understand the stressors, let's go through their types:

- environmental stressors: hypo or hyper-thermic temperature, elevated sound levels, overcrowding etc.
- daily stress events: traffic, lost keys, money, quality and quantity of physical activity etc.
- life changes: divorce, bereavement etc.
- workplace stressors: high job demand vs. low job control, repeated or sustained exertions, forceful exertions etc.
- chemical stressors: tobacco, alcohol, drugs etc.
- social stressor: societal and family demands

Why the first responders are very likely to get stressed so easily?

The term first responder includes fire fighters, police officers and Emergency Medical Services (EMS).

First responders are always at the forefront of each incident or disaster, and they ensure the safety and well-being of the people. They are, however, at great danger of being exposed to potentially traumatic situations that pose risk of harm to them or the people under their care. This constitutes a great risk for the behavioral health of first responders, putting them at risk for stress, Post

Traumatic Stress Disorder (PTSD), and depression. Both natural and technological disasters were found to be associated with increased risk of these conditions, as were factors such as resiliency, trust in self and team, duration on the disaster scene, individual coping style, and post-disaster mental health support.

First responders are usually the first on the scene to face challenging, dangerous, and draining situations. They are also the first to reach out to disaster survivors and provide emotional and physical support to them. These duties, although essential to the entire community, are strenuous to first responders and with time put them at an increased risk of trauma.

According to a survey by the University of Phoenix, PTSD is common for these everyday heroes.

- 80 percent of fire fighters report being exposed to a traumatic event.
- 90 percent of police and EMTs report exposure to trauma.
- 49 percent of first responders were offered "Psychological First Aid" after traumatic events.
- 85 percent of first responders experienced symptoms related to mental health issues.

The same data found that 34 percent of first responders have received a formal mental health disorder diagnosis, like depression or PTSD.

In 2012, Christine A. Reynolds and Shannon L. Wagner published a Journal from Cambridge University Press about stress and first responders. This journal discusses about the need for a multidimensional approach to stress management which clearly states that the First responders are exposed to traumatic, non-traumatic and organizational stressors that conspire to create stress, potentially leading to emotional issues and/or physical or physiological illness. In addition to individual consequences, stress also takes a toll on the

function of emergency departments and their communities. Combating stress effectively requires more than offering individual coping skills and access to counseling the first responders. To best preserve the wellbeing of their workers, emergency service administrators must recognize the impact of stress from variety of sources, including organizational factors, and approach stress prevention in a multi-staged and comprehensive manner, paying special attention to primary stage interventions.

Fortunately, in the developed countries, the first responding agencies and their administration have initiated various preventive measures in an effort to mitigate the ill-effects of continued exposure to stressors by their personnel. The management also has embraced and acted on a broad and holistic view of stress management that includes instituting cultural and organizational changes to support stress prevention, which would obviously show some significant improvements in the stress level and health of first responders.

How to cope with stress in first responders?

Fire fighters and other first responders respond to traumatic incidents that can be mentally and emotionally demanding. For many years, emergency services personnel were expected to accept that stress was part of the job and "just deal with it." Thankfully, this mindset is changing in the developed countries and the developing countries like Nepal would also adopt the norms and mindset in the future. In developed countries, the concerned departments of the first Responders have realized they need to develop a culture that encourages responders to build resiliency to properly manage their stress.

To improve the psychological and behavioral health of the first responders, a cooperative effort is needed between organizational leadership and coworkers to establish

a work environment that provides adequate training and ensures the resiliency and health of first responders by protecting them from overwork and excessive stress, and supporting them in seeking help when needed. First responders carry the weight of their own safety and well-being as well as those they serve, and thus making programmatic changes to educate them, offer them support, and protect their health and well-being would reduce the risk of burnout, fatigue, or other health issues associated with being overworked, uncertain, or stressed. As more first responders discover the resilience they can access through others, and particularly their peers, they become better able to maintain their own behavioral health while addressing the countless challenges of disaster and emergency response. Nevertheless, there is still much work to be done.

Since stress is obvious, there should be some ways to manage it. When we are stressed, our body activates our “fight or flight response” (The fight-or-flight response was first described in the 1920’s by American

physiologist Walter Cannon) and releases hormones like adrenaline and cortisol. The response is triggered by the release of hormones that prepare your body to either stay and deal with a threat or to run away to safety.

The term ‘fight-or-flight’ represents the choices that our ancient ancestors had when faced with danger in their environment. They could either fight or flee. In each case, the physiological and psychological response to stress prepares the body to react to the danger.

We often don’t recognize the physical signs of stress in time and just keep pushing on. We often can’t do much about the external stress factors, but we can choose how we react to them. Stress management is the best option for all those who work as the first responders. There are some stress management tips:

- Always keep positive attitude.
- Accept those events that you cannot control.
- Be assertive instead of aggressive.

- Eat healthy, exercise regularly and practice relaxation techniques.
- Take enough rest and sleep.
- Manage your time properly.
- Spend time with your family and friends.
- Seek medical attention if needed.

Everything that happens to you is the way you perceive and react it. If we really want to change the world, we have to help people change the way they see things. Global betterment is a mental process, not one that requires huge sums of money or a high level of authority. Change has to be psychological. ■

Ref:

- *Wikipedia, medical and psychological sites*
- *Survey data by the University of Phoenix*
- *Cambridge University Journal 2012, by Christine A. Reynolds and Shannon L. Wagner*
- *Poem by Suzy Kassem*

ICAO Day Celebration



Air Transportation



Kiran Kafle
Dy. Manager, CAAN

"Powering global economic growth, employment, trade links and tourism, let's work together for sustainable air transport"

Oxford Economics analyzed the economic and social benefits of aviation at a national level in over 50 countries and used the results of that assessment to build the most comprehensive global picture of air transports many benefits. Working with partners across the industry, the Air Transport Action Group (ATAG) has expanded the analysis to build a unique view of the air transport system that provides jobs, trade, connectivity, tourism, vital lifelines to many remote communities and rapid disaster response. Every day

- » 8.6 million passengers
- » 99,700 flights
- » \$17.5 billion worth of goods carried.

Air transport is a major contributor to global economic prosperity. Aviation provides the only rapid worldwide transportation network, which makes it essential for global business and tourism. It plays a vital role in facilitating economic growth, particularly in developing countries. Airlines transport over three billion passengers annually with revenue passenger kilometers totaling nearly 5.5 trillion. Nearly 50 million tonnes of freight were carried by air, amounting to 185 billion freight ton kilometers. Air transport facilitates world trade, helping countries participate in the global economy by increasing access to international markets and allowing globalization of production. The total value of goods transported by air represents 35%

of all international trade. Aviation is indispensable for tourism, which is a major engine of economic growth, particularly in developing economies. Globally, 52% of international tourists travel by air. Connectivity contributes to improved productivity by encouraging investment and innovation; improving business operations and efficiency; and allowing companies to attract high quality employees.

Aviation is one of the fastest growing industries as well as transportation modes in the world. With the phenomenal growth in national and international air transports, the consequential emission levels are also becoming alarming over passage of time. Airline operations produced 689 million tonnes of carbon dioxide (CO₂) in 2012 (and 705 million tonnes in 2013), just under 2% of the total human carbon emissions of over 36 billion tonnes. The aviation industry agreed in 2008 to the world's first set of sector-specific climate change targets. The industry is already delivering on the first target — to continue to improve fleet fuel efficiency by 1.5% per year until 2020. From 2020, aviation will cap its net carbon emissions while continuing to grow to meet the needs of passengers and economies. By 2050, the industry has committed to reduce its net carbon footprint to 50% below what it was in 2005. Companies across the sector are collaborating to reduce emissions using a four pillar strategy of new technology, efficient operations, improved infrastructure and market-based measures to fill the

remaining emissions gap. Modern jet aircraft are 75% quieter than the first models that entered into service and each new generation of aircraft continues this downward trend. Over 1,500 passenger flights operating partially on sustainable biofuels have taken place so far. It is expected that carbon reduction from moving to alternative fuels could be up to 80% compared with traditional jet fuel.

Air transportation can't come to halt, but hopeful strategy can be suggested to make responsible aviation in consuming and polluting earth's resource. Technology improvement is often a suggested strategy but wide range of option to cope with greenhouse gases emission can be traffic management and operation procedure, single window global market based measured, etc. Technology alone cannot solve the problem, along with requires Strong leadership, actionable strategies, accountable implementation and monitoring process and effective collaboration among the stakeholders. Not fully described, methodologies still in a pace of development, sustainable air transport is a well-accepted challenge to work out.

Taking into account of Nepal Aviation, Total aircraft movement at Tribhuvan international airport in year 2016 was 100994 and year 2018 was 129512, similarly aviation turbine fuel use in Nepal aviation in recent years 2015/16 was 83819.0 kilo liters and in 2016/17 was 164836 kilo liters and in 2017/18 was 197220 kilo liters. The combustion of 1 kilogram (kg) of jet fuel in an

aircraft engine produces 3.15 kg of carbon dioxide (CO₂). The data looks a small contributor in climate change, but seems to perfect time to find the solution to balance the objectives of transportation and dimension of sustainability. Sustainable aviation is a unique challenge and Aviation is a clear cross border issue and requires an international co-ordination. For aviation to grow sustainably, the associated environmental impacts must be mitigated and aviation stakeholders must engage with the community to address these environmental concerns. This can be conducted proactively, preferably within an aviation stakeholder's corporate social responsibility programme, rather than as a reaction to community complaints, criticism and other pressure. Actually, different angle should be developed to look out and solve the global issue. Lessons should be learned and Good Practices must be adopted. Starting early and being proactive using a well-planned strategic approach that includes continuing engagement over the long term, not just during the planning application process. Let us ensure the process is as inclusive and collaborative as possible, informing and seeking input from as many stakeholders as appropriate and practicable.

ICAO circular 351 "Community Engagement for Aviation Environmental Management", highlights aircraft operations are being optimized today to improve environmental performance while maintaining safety. With the realization of a global, interoperable, ATM system, in combination with technological advances, the eventual achievement of future goals for aviation environmental performance will become possible. Aircraft are required to meet the environmental certification standards adopted by the Council of ICAO. These are contained in Annex 16 (Environmental Protection) to the *Convention on International Civil Aviation*. This Annex at present

consists of two volumes, viz., Volume I: Aircraft Noise and Volume II: Aircraft Engine Emissions. These certification Standards have been designed and are kept up to date in order to respond to concerns regarding environmental impact of aviation on communities in the vicinity of airports as well as society at large.

Taking this as opportunity to connect with other young professional to explore new horizon and knowledge for the professional and acceptable practice of sustainable air transportation. Young people are recognized as the torchbearers of sustainable development and the frontlines in the struggle against climate change. By working directly with young leaders, the transport community will empower the generation who can help foster far-reaching and unprecedented change and build long-lasting bridges with other constituencies. Building bridges between the transport community and young people and to explore new perspectives by creating an interface between knowledge and policy. It will also raise the capacity of young people and provide them new skills in evidence-based policy analysis for sustainable air transport.

Creating a community to adopt Paris Agreement to formulize a long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels, developing new skills and raising new capacity in sustainable air transportation in policy level must be fruitful for young leaders to work for the development, improvise, implementation and monitoring of national and international Standards to respond to concerns, regarding environmental impact of aviation on communities in the vicinity of airports as well as to global society. Opportunity should be created to connect with other young leaders, up and coming professionals working in the global policy space related to sustainable air transport development and climate change,

that allows Young Leaders to engage in key milestones in wider processes, fostering a stronger professional network and developing highly beneficial skills related to knowledge-based policy making and advocacy.

With the proper will, aviation industry can move towards becoming one of the main exponents of sustainability and will provide an inspiration to their communities and other institutions. Aviation industry are able to take steps to minimize any negative impact that their development may have and, indeed, aviation have a unique opportunity to act as leaders in their communities as far as best practice, environmental and social action are concerned. Let there be a platform, where Young Leaders will become thought leaders on sustainable, low-carbon air transport for the realization, implementation, follow-up, and review of global sustainability frameworks. Let the Young Leaders be strongly involved in determining the ultimate activities and output for the sustainable air transport, ensuring even greater benefits to earth and its resource.

We all agree, Aviation has environmental impacts ranging from the global to the local levels, from atmospheric contributions to climate change to local noise or health impacts around airports. We also understand, Aviation is leading the way with efforts to improve its environmental performance. It was one of the first industries to have ambitious global goals and a strategy for reducing its impact on climate change. Creating a sustainable future for aviation, and limiting its impact on the climate and on communities, is always a shared responsibility. As aviation professional, it will be our duty to recall the incredible spirit of connectivity and co-operation that established the air transport network to begin with, and to safeguard its positive benefits for our world by addressing its environmental sustainability with equal measures of conviction and perspective. ■

ATFM and ACDM for TIA



Er. Pramod Kr. Chaudhary
Dy. Manager, CAAN

Introduction

Air Traffic Flow Management (ATFM) has become pertinent even in regions without sustained overload conditions caused by dense traffic operations in recent years. Increasing traffic volume in the face of constrained resources has created peak congestion at specific locations and times in many areas of the world. Increased environmental awareness and economic drivers have combined to create a resurgent interest in ATFM as evidenced by a spate of recent ATFM conferences and workshops mediated by official bodies such as ICAO, IATA, CANSO the FAA and Eurocontrol.

Air Traffic Flow Management (ATFM) involves a number of measures to accomplish the mission of supporting a safe, efficient and expedited flow of air traffic. Both long-term and short-term measures are considered to resolve perturbations arising due to unpredicted weather and capacity disruptions. The effectiveness of these measures depends considerably on the amount, accuracy and timeliness of the information exchanged. As a result, human operators depend crucially on technology enablers and Decision Support Systems (DSS) for making better informed and more effective decisions.

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Support Systems (DSS) for making better informed and more effective decisions

ATFM involves a number of measures to accomplish the mission of supporting a safe, efficient and expedited flow of air traffic. Both long-term and short-term measures are considered to resolve perturbations arising due to unpredicted weather and capacity disruptions. The effectiveness of these measures depends considerably on the amount, accuracy and timeliness of the information exchanged. ATFM is a procedure that balances demand against capacity to create a more orderly and expeditious flow of traffic. It is an enabler of air traffic management (ATM) efficiency and effectiveness. It contributes to the safety, efficiency, cost-effectiveness, and environmental sustainability of an ATM system. It is also a major enabler of global interoperability of the air transport industry. The CDM process is a key enabler in any ATFM strategy, allowing the sharing of all relevant information among decision-makers and supporting an ongoing dialogue between the various stakeholders throughout all phases of flight.

The impetus for ATFM/CDM may be driven by industry stakeholders, specifically airspace users. Increased flying times, airborne holding, extended radar vectoring, extended routings, extensive speed control, ground delays, and congestion on the ground and in the air are some of the key indicators of a need for ATFM/CDM. These conditions result in a lack of predictability for stakeholders,

which the implementation of ATFM/CDM will address. The role of ATFM is to monitor demand, capacity, and constraints at airports and airspaces and where imbalances exist; ATFM solutions are put in place so as to balance demand and capacity. In a strong ATFM environment, stakeholders share accurate and up-to-date information. This enables ATFM authorities to make appropriate decisions, taking all stakeholders' requirements into consideration to further improve flight and airspace efficiency. These ATFM processes optimise airport and airspace capacity. ATFM/CDM necessitates preplanned and agreed procedures to ensure that decisions are made with all available information, expeditiously, equitably and in a transparent manner.

Airport Collaborative Decision-Making (A-CDM) is a process based on improved real-time information sharing between all stakeholders, i.e. airport operators, aircraft operators, ground handlers and air traffic control unit, allowing better decision-making and more efficient handling of an aircraft while on the ground. A-CDM manages the turnaround of aircraft at airports, improving the operational efficiency of all airport stakeholders by reducing delays, increasing the predictability of events and optimising the

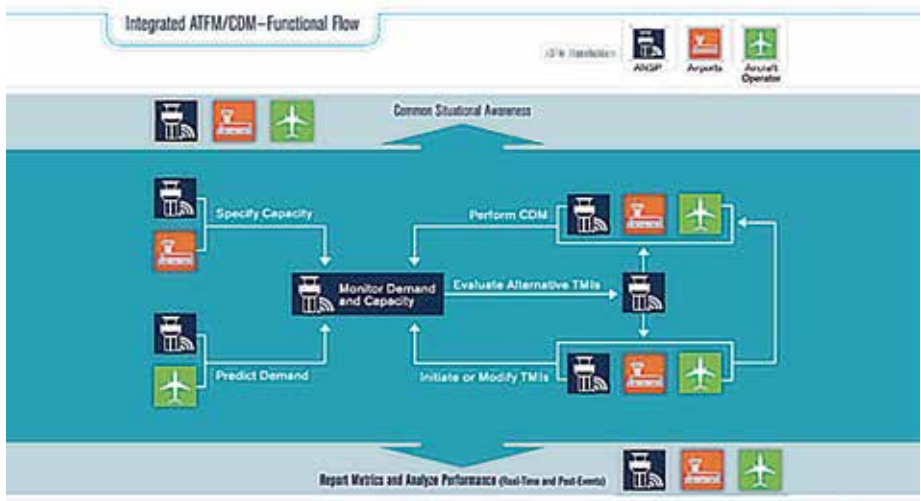


Fig. Integrated ATFM/CDM Function Flow (Reference: Metron Aviation)

utilisation of resources at airports. A-CDM is about partners working together and making joint decisions based on more accurate and higher quality information, where every bit of information has the exact same meaning for every partner involved. More efficient use of resources and improved event punctuality as well as predictability are the target results. Collaborative decision making has become an integral part of ATFM process.

Why ATFM?

Annex 11 to the Convention on International Civil Aviation says ATFM shall be implemented for airspace where air traffic demand at times exceeds, or is expected to

exceed, the declared capacity of the air traffic control services concerned. As ICAO Doc 9971 Manual on Collaborative Decision-Making (CDM), states, “As a general rule, ATFM is needed whenever airspace users are faced with constraints on their operations, and in areas where traffic flows are significant”.

Benefits of implementing an ATFM service:

- ✓ enhanced ATM system safety;
- ✓ increased system operational efficiency and predictability through CDM processes;
- ✓ effective management of capacity and demand through data analysis and planning;

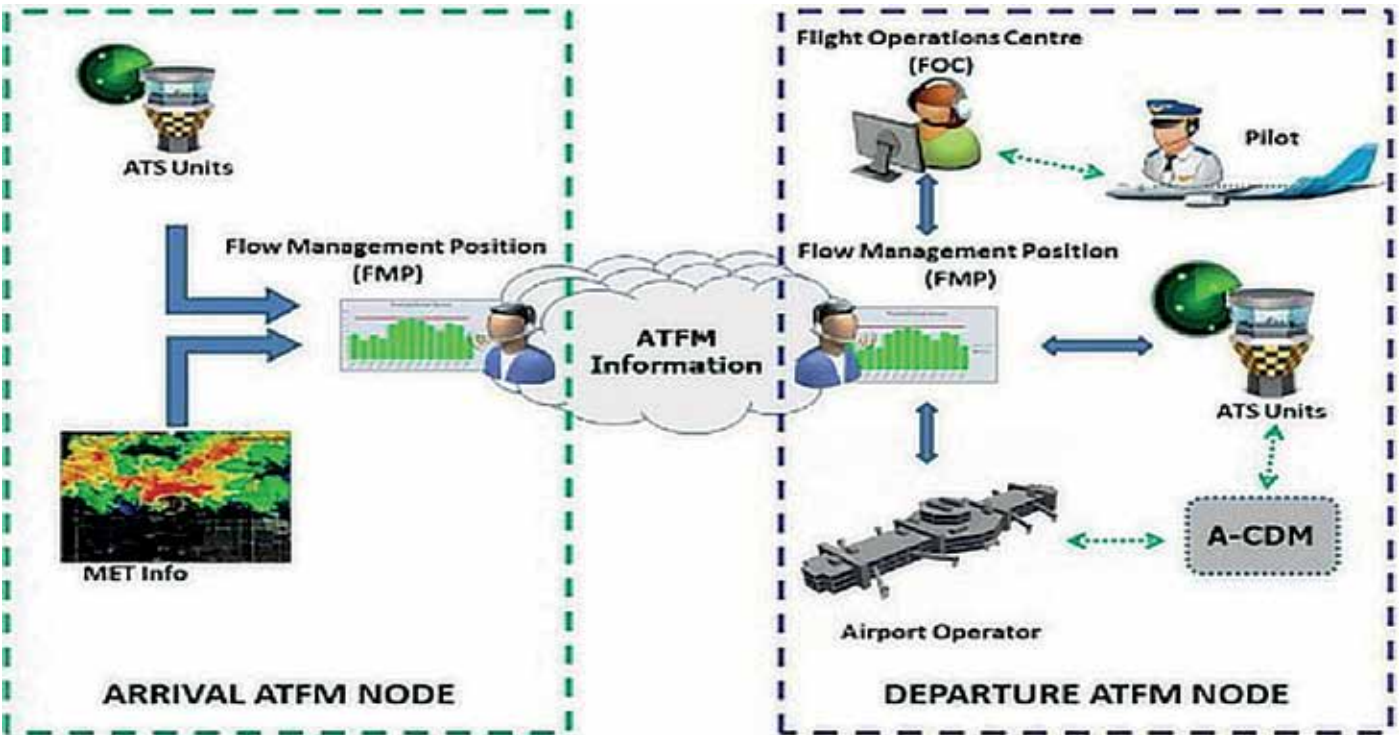


Fig. Distributed Multi-Nodal ATFM Network Operational Environment(Ref. CANSO)

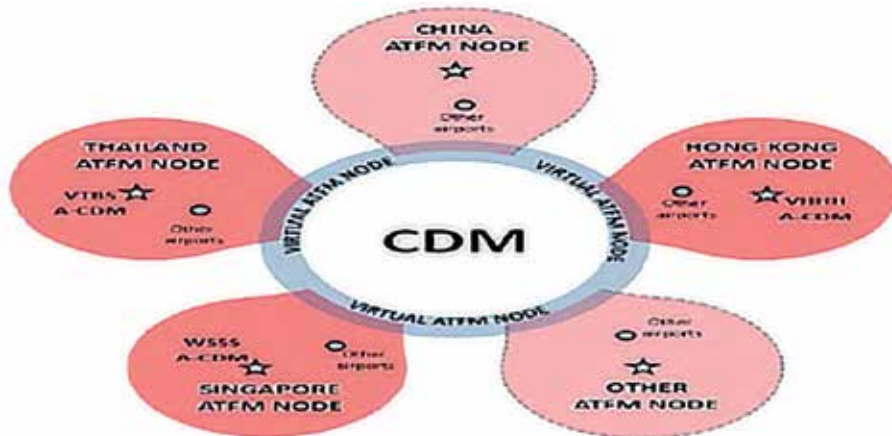


Fig. Cross Border MultiNodal Regional ATFM/CDM(Ref: CANSO)

- ✓ increased situational awareness among stakeholders and a coordinated, collaborative development and execution of operational plans;
- ✓ reduced fuel burn and operating costs;
- ✓ effective management of irregular operations and effective mitigation of system constraints and consequences of unforeseen events;
- ✓ improved quality of air travel; increased economic development through efficient and cost-effective services to the projected increased levels of air traffic;
- ✓ reduction of aviation-related greenhouse gas emissions;
- ✓ mitigation of the effects of unforeseen events and situations of reduced capacity along with coordinating effective and rapid solutions to recover from them.

Developing a Concept of Operations

Once the ATFM/CDM implementation requirements are established, the ANSP will need to develop a concept of operations for its

area of responsibility. This concept could be limited to one measure or a combination of the ATFM/CDM measures described in the following sections.

a. Domestic ATFM

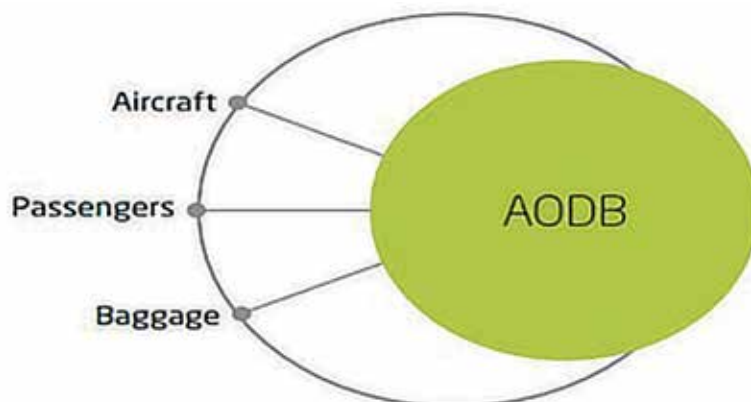
The state may identify a required number of domestic flights to make domestic ATFM effective without including regional and international flights.

b. Cross Border ATFM

Should an ANSP require flights from adjoining states to be included in an ATFM measure, this will indicate that a cross border ATFM concept of operation is required. It is not envisaged any state will implement cross border regional ATFM/CDM concept of operation in isolation.

c. Cross Border MultiNodal Regional ATFM/CDM

A state/ANSP implements and operates an ATFM system based on the application of remote CTOT delivery impacting multiple flight information regions (FIRs)/ sectors of airspace or airports coordinated via one single node within the



country, illustrated below.

Some supporting systems for the smooth operation of ATFM include:

a. Airport Operational Database (AODB)

AODB is the “core” of the airport operations management system. It allows the integration of airport control systems, airport resource allocation and airport invoicing systems under a unique, friendly, fast and intuitive user interface. The system gathers information from the Air Traffic Control system (ATC systems), the slot assignment system and, in general, all operations related systems within the airport, instantly updating changes to flights and the associated airport resources. AODB is the destination of all the operational information generated manually or automatically by external parties, as well as the unified information source for all airport users and stakeholders.

Features and benefits

- ✓ Real-time system - Centralized information system that monitors all events at the airport in real-time, centralized operations management that allows real-time interaction with all systems
- ✓ Robust and reliable system, using industry standard technology, with mobile access capability
- ✓ Air Traffic Control, Slot Assignment and Resource Allocation System connectivity
- ✓ Integral and unified system, with unique, friendly, fast and intuitive user interface
- ✓ Easy and efficient administration based on user and group profile customization enabling a full control on data access and update capabilities.
- ✓ Modularized system, allowing the airport to acquire strictly the required modules facilitating the systems architecture simplification and reducing investment.

Resource Management System

(RMS)

The deploying of a Resource Management System will help airports to achieve the following business goals:

- ✓ Optimizing the current resources;
- ✓ Providing an overview of the resource allocations covering the entire day;
- ✓ Maximizing the runway and airport capacity;
- ✓ Identifying and alerting of potential bottlenecks and providing conflict resolution;
- ✓ Attracting new traffic by offering off-peak service and pricing package for low cost carriers;
- ✓ Cutting workload of scheduling managers in optimizing handling capacities;
- ✓ Allowing user modifications to accommodate the airport-specific business processes by flexible maintenance of business rules;
- ✓ Enhancing the overall service quality (punctual departures, cost competitiveness and reliability);
- ✓ Optimizing the cost of operation by levelling the resource utilization and enabling an effective process control for all aircraft turnaround on the airport;
- ✓ Consequently, growing the top line income, and optimizing revenue.

Airport Collaborative Decision Making (A-CDM)

Airport CDM (A-CDM) is about partners working together and making decisions based on more accurate and higher quality information, where every bit of information has the exact same meaning for every partner involved. This application module (ACDM) can reduce airport and en-route delay and optimize airport operations, by increasing an efficient turnaround process and improving flight predictability through real time

data exchange for air navigation services. A-CDM also potentially helps to improve gate management, reduce apron, taxiway, and holding point congestion. It involves sharing accurate and timely information amongst airport partners, and implementing a set of operational procedures and automated processes for the benefit of all operating at the airport.

A-CDM Elements

The A-CDM concept is divided in the following elements:

- ✓ Airport CDM Information Sharing – defines the sharing of accurate and timely information between the Airport CDM Partners in order to achieve common situational awareness and to improve traffic predictability. It is the core A-CDM Element and the foundation for the other Airport CDM Elements.
- ✓ CDM Turn-round Process – Milestones Approach – this describes the progress of a flight from the initial planning to the take-off from a CDM-A by defining milestones to enable close monitoring of significant events. The aim is to achieve a common situational awareness and to predict the forthcoming events for each flight. The CDM

Turn-round Process combined with the A-CDM Information Sharing Element is the foundation for the other A-CDM elements.

- ✓ Variable Taxi Time Calculation – This consists of calculating and distributing to the Airport CDM partners accurate estimates of taxi-in and taxi-out times to improve the estimates of in-block and take off times. The complexity of the calculation may vary according to the needs and constraints at the A-CDM. The aim is to improve the traffic predictability.
- ✓ Collaborative Management of Flight Updates – consists of exchanging Flight Update Messages (FUM) and Departure Planning Information (DPI) messages between the Network Manager and a CDM-A to provide estimates for arriving flights to CDM Airports and improve the ATFM slot management process for departing flights. The aim is to improve the coordination between Air Traffic Flow and Capacity Management (ATFCM) and airport operations at a CDM-A.
- ✓ Collaborative Pre-departure Sequence is the order that aircraft are planned to depart from their stands (push off blocks) taking into account partners' preferences (note: It should not

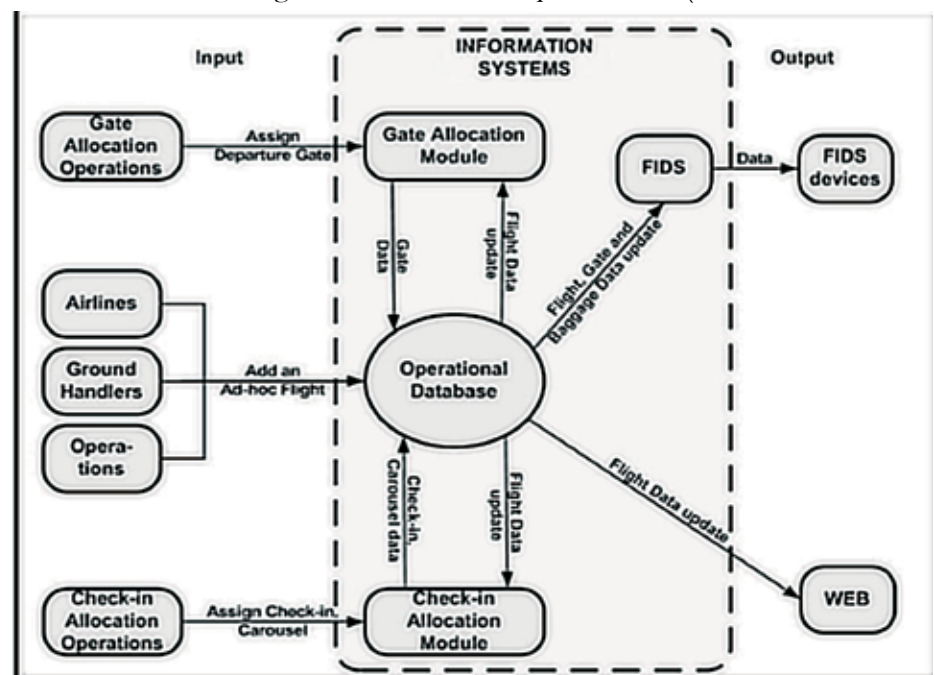


Fig. Resource Management Data Flow Chart



Fig. Stakeholders for ACDM

be confused with the pre-take off order where ATC organize aircraft at the holding point of a runway). The aim is to enhance flexibility, increase punctuality and improve slot-adherence, allowing the airport partners to express their preferences.

- ✓ CDM in Adverse Conditions – this consists of a collaborative management of the capacity of a CDM-A during periods of a predicted or unpredicted reduction of capacity. The aim is to achieve a common situational awareness among the Airport CDM partners, including better information for the passengers, in anticipation of a disruption and expeditious recovery after the disruption.

Conclusion

ATFM/ACDM needs to be implemented to cope with the air traffic growth at Tribhuvan International Airport to accomplish the mission of supporting a safe, efficient and expedited flow of

air traffic. Moreover, they help to reduce airport and en-route delay and optimize airport operations by increasing an efficient turnaround process and improving flight predictability through real time data exchange for air navigation services with coordination with all the stakeholders involved in the process.■

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ELECTRIC PROPULSION AIRCRAFT

An emerging talks in Aviation



Er. Umesh Bhandari
Sr. Officer, CAAN

Background

The present commercially viable large sized aircraft (or spacecraft) rely on fossil fuel for their operation. It is estimated that these aircraft are one of the largest contributors to climate change worldwide due to emission of greenhouse gases like Carbon dioxide (CO_2), Nitrogen Oxide (NO_x) and the creation of persistent contrails by them. Statistics reveal that aircrafts emit about 2.4% of global greenhouse gases (4 to 9% of anthropogenic greenhouse gases) but the demand for flights is growing rapidly which may result these gases emission to nearly triple by the middle of the century. At the same time, scientists, to limit global warming to 1.5°C this century, say that the world will have to reduce total emissions to half as soon as 2030.

The ongoing climate change issues, awareness on environmental sustainability, study on carbon footprint left by the aviation industry had compelled the developed nations,

aircraft industries and concerned authorities to think of some better environmental friendly options for a more better tomorrow. The 55th Conference of Directors General of Civil Aviation Asia and Pacific Region held on Denarau Island, Nadi, Fiji on 22-26 October, 2018 had committed to reduce carbon emissions and noise from aircraft operations in line with ICAO's carbon neutral growth goal, reducing cost saving in fuel consumption. Aerospace companies are thus joining hands to tackle their industry's growing contribution to greenhouse gas emissions. As a result, the goal of net zero carbon emissions is now being formulated worldwide. For instance, UK has accepted the goal of net zero carbon emissions by 2050, European Aviation Safety Agency (EASA) is going to categorize aircraft based on CO_2 emissions, while Norway and Sweden are aiming to make short distance flights in their airspace electric by 2040 and so on. It is thus creating a huge challenge

as well as opportunities for the air travel business to switch to viable alternatives with rapidly increasing air passengers each upcoming year.

To reduce overall CO_2 emissions from air travel, the choice may be either don't fly or fly using alternative sources that eliminates emission. Human are much habitual with air travel that they can't think of not flying. So, the alternatives could be

1. Using bio-fuel or hydrogen in the aircraft, or
2. Using electric aircraft

Bio-fuel, fuel derived from plants or algae, when used in an aircraft though still produce CO_2 , don't require significant changes to existing aircraft. It was first used on a commercial flight in 2008 and several airlines have performed trials with them. However, because of CO_2 emission and impact on freshwater sources or food production, it had not been widely

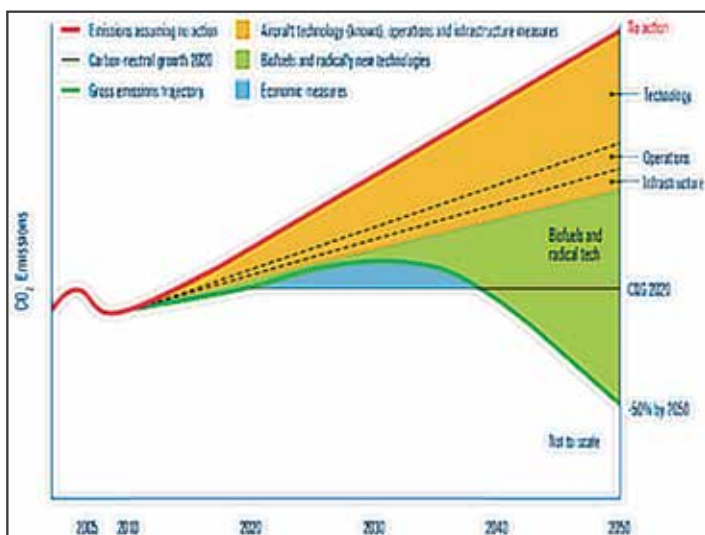


Fig: Fuelling Aviation with Green Technology

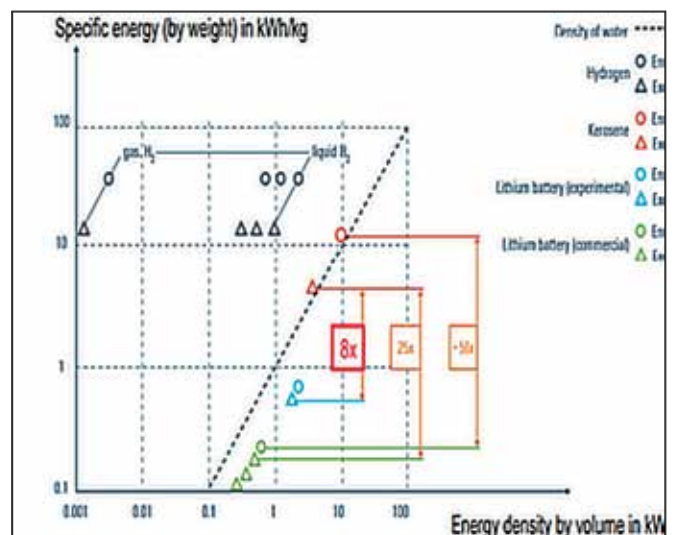


Fig: Graph showing Potential Energy gap of Kerosene versus battery: a factor of 8

adopted and research is undergoing on sustainable bio-fuel.

Hydrogen, on the other hand, is very light and contains three times more energy per kilogram than kerosene (consume up to 12% less energy than kerosene when used in long-distance flights) but its density is very low, even when stored as a liquid at -250°C. This means, fuel can no longer be stored in the wing but needs to be moved to relatively heavy and bulky tanks inside the fuselage. Thus, when hydrogen is used in an aircraft, a complete redesign of the fuelling infrastructure as well as redesign of the aircraft itself is required, which is also less feasible.

Can electric aircraft be the best alternatives then? To understand this, we shall first know what an Electric Aircraft is, what recent technologies are in practice and what are the shortcoming and remedies involved.

Electric Aircraft

An electric aircraft is an aircraft powered by electric motors. Electricity may be supplied to these motors by a variety of methods including batteries, solar cells, fuel cells, power beaming, etc. Different Electric Propulsion Architectures like All electric, Hybrid Electric (Series, Parallel, Series/parallel partial hybrid) or Turboelectric (Full, Partial) may be used in an electric aircraft. These architectures rely on different electric technologies (batteries, motors, generators, etc.) and the levels of CO₂ reduction associated with the different architectures are a function of the configuration, component performances, and missions.

Batteries are the most common and essential energy carrier component of any electric aircraft, due to their relatively high capacity. With advancement in battery technology, even nickel-cadmium (Ni-Cd) rechargeable battery is being replaced by Modern lithium ion based batteries, although they still have limited endurance between charges and hence limited range to obtain the desired milestone in aviation industry. Continuous research in battery

technology may reveal electric aircraft as a best alternative.

Why Electric Aircraft?

1. Electric power is efficient and reliable. Electric motors can be placed anywhere on the plane to improve efficiency. They, thus can unlock new aircraft design replacing the conventional engine to achieve extraordinary levels of aerodynamic, propulsive, control, and structural synergistic coupling.
2. Being clean source of energy, emits zero greenhouse gases
3. Mechanically less complicated design
4. Reduces operating costs (cost-efficient alternative to commercial jets)
5. Reduces energy consumption
6. Possibility of Emergency power increase of 50-100% for 30 to 120 seconds
7. Reduces aircraft noise and vibration
8. Drastic reduction in engine cooling and radiated heat
9. Results in low engine weight and maintenance
10. Variable speed output at full power, for improved cruise efficiency at low tip-speed
11. Reduces engine-out penalties
12. Because of these reason, electric aircraft find its application in short flights, military or normal flight trainings for students (in comparison to using aviation fuel for combustion engines).

Recent Trend in Electric Aircraft Technology

History reveals that the use of electricity for aircraft propulsion was first experimented in the latter part of the nineteenth century. On 8th October 1883, Gaston Tissandier flew the first electrically-powered airship.

In 1973, Fred Militky and Heino Brditschka converted a Brditschka HB-3 motor glider to an electric aircraft, the Militky MB-E1, the first prototype. It flew for just 14 minutes to become the first manned electric aircraft to fly under its own power. The recent trend involves many small sized electric aircraft in different stages of their development as listed below:

- Alice, an unconventional looking electric aircraft, by Israeli firm Eviation, carries nine passengers for up to 650 miles (1,040km) at 10,000ft (3,000m) at 276mph (440km/h). It is expected to fly in 2022 and forecasted to be ready for regional flight by mid-2020s.
- The Slovenian based Pipistrel's Alpha Electro, is the world's first mass produced electric aircraft, used for training of flight students and recreational fliers.
- X-57 Maxwell by NASA, An Italian Tecnam P2006T aircraft modified with an electric propulsion system, is undergoing testing for its first planned flight in 2020. It will have 14 electric motors mounted on it.
- The eFlyerX, by Bye Aerospace, is being the first FAA and European Aviation Safety Agency (EASA) certified all-electric airplane by the end of 2021 to serve the pilot-training market.
- Some of the advanced hybrid electric aircraft developed till now are
 - ✓ Airbus E-Fan X demonstrator, is a complex hybrid electric aircraft expected to embark on its first flight in 2021.
 - ✓ VoltAero Cassio, by a French company VoltAero, is a conversion of a Cessna 337 Skymaster to make a Hybrid electric aircraft for 4-6 passengers utilizing a "push-pull" propulsion configuration.
 - ✓ EEL, an Ampaire prototype, is a six-seat Cessna 337 Skymaster retrofitted with two engines: conventional combustion engine

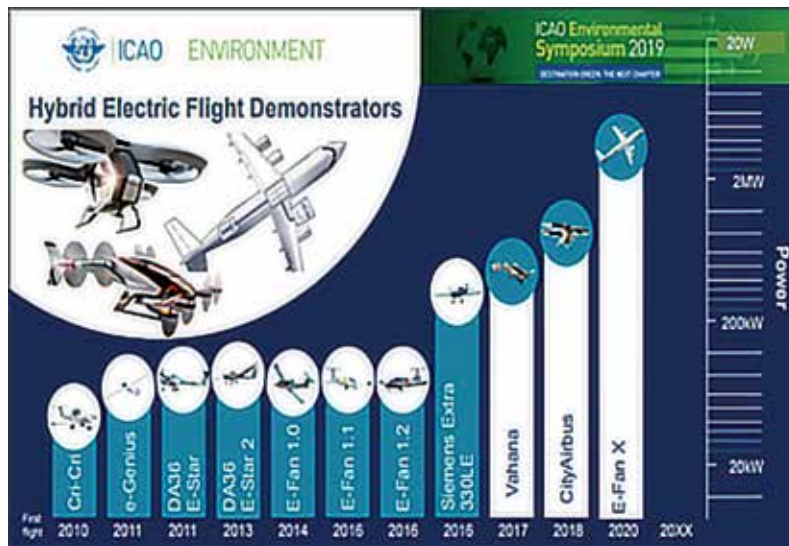


Fig: Hybrid Electric Flight Demonstrators

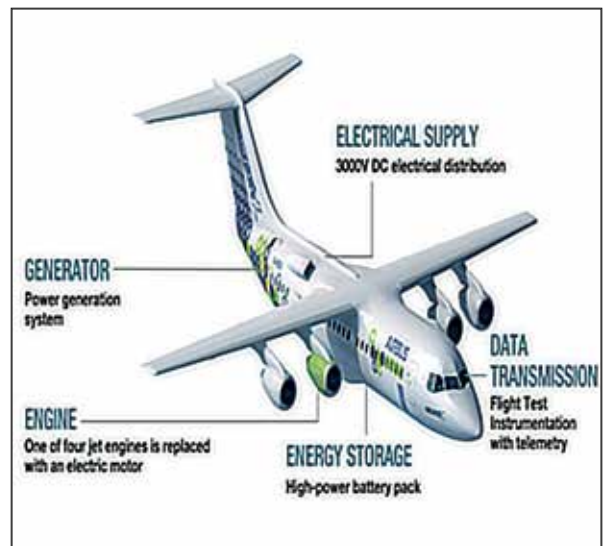


Fig.1: Airbus E-Fan X demonstrator

and electric motor powered by a battery-pack.

- ✓ Royce E-Fan X, by Airbus, is a large commercial Hybrid electric aircraft having 2MW Engine Power and 100 Passengers carrying capacity, targeted to enter in service by 2030.

Short-Range Electric Aircraft

Though long distance voyaging large sized electric aircraft (like 747s) are not feasible till date, small electric aircraft travelling short distance are already invented. In such discoveries, lithium ion battery are used which provide 200 watt-hours (Wh) energy per kilogram, about 60 times less than current aircraft fuel. This type of battery can power small electric aircraft with up to four passengers over a distance of around 100km. For longer trips, more energy-dense cells are needed.

Though we see electric cars, trains, trams or boats commercially operated, why don't we have large electric aircraft?

- ✓ It's much simpler to radically modify a car, train, tram or boat to cope with the extra mass from electrical propulsion systems but aircraft are much more sensitive. Increasing the mass of a car by 35% leads to an increase in energy usage of 13-20%. But for an aircraft, energy usage is directly proportional to mass: increasing

its mass by 35% means it needs 35% more energy (all other things being equal).

- ✓ Aircraft travel much farther than ground vehicles and must store onboard all the energy needed to move its mass for each flight (unlike a train connected to an electrical grid or a vehicle which can recharge, if needed, at intermediate points of its journey).

For aircrafts, mass is crucial. But, they need batteries with enough energy per kilogram of battery. While fulfilling the energy requirement, quantity of batteries is increased, boosting mass tremendously. Increased mass of an aircraft in no load condition implies low passenger carrying capacity i.e., higher operating cost. That's why, electric planes simply can't fly long distances and large electric aircraft with such features is further complex to invent.

But, it does not mean that we cannot make it happen. With time, if the invention in battery technology foster rapidly in terms of weight reduction (four- to tenfold reduction is required) with increased energy density per kilogram, it will no more be a nightmare. The long-term historical rate of improvement in battery energy has been around 3-4% per year, doubling roughly every decades. Based on a continuation of this historical trend, the fourfold improvement needed for a fully electric commuter

aircraft could potentially be reached around mid-century.

Hybrid Electric Aircraft: An Alternative to Small Electric Aircrafts

A Hybrid-electric aircraft combine fuels with electric propulsion. This combination is needed for airliners as the energy density of lithium-ion batteries is much lower than aviation fuel. The electric propulsion system may serves to improve the thrust efficiency, reducing the amount of fuel needed or may provide extra power in specific circumstances like take-off and landing to reduce emissions near airports.

Challenges/Hurdles in the Development

- ✓ Improving new technologies in batteries attaining specific power and reliability reducing weight is time consuming.
- ✓ Design of small, compact and light weight electrical components (like generators, motors, power conversion electronics like inverters, rectifiers, etc.) and aerodynamics suiting the aircraft model is also critical to design.
- ✓ Certification process of electric aircraft is lengthy and expensive.
- ✓ Safety protocols have to be developed to govern batteries and other components.

- ✓ Attracting and convincing deep-pocketed investors is not so easy.
- ✓ Convincing frequent and infrequent passengers to embrace or use electric plane takes time.

Conclusion

While electrical motors, generators, power distribution and controls have advanced very rapidly, battery technology hasn't developed in the same pace. Even assuming huge advances in battery technology, with batteries that are 30 times more efficient and "energy-dense" than today, it would only be possible to fly an A320 aircraft for a fifth of its range with just half of its payload. So, Unless there is some radical paradigm shift in energy storage, electric long-haul flights are difficult and we are going to rely on a mixed air travel: using hydrocarbon fuels, electric or hybrid electric system as well. It means, the future aviation industry will not have to exclusively rely on jet fuel as hybrid and electric aircraft will replace existing short range air travel.

In an airplane relying on hydrocarbon,

a majority of the fuel is required for take-off and landing. So, even if short haul flights switches completely to electric and long haul flights switch to hybrid electric (using electric power during take-off and landing), it could be a great achievement, both economically and environmentally (CO2 emission could be significantly reduced which is usually maximum during take-off and landing).

With advancement in technology i.e., after significant weight reduction and improvement of energy density of commercial batteries, bigger size electric aircraft could be a viable option. However, Hybrid aircraft, combining electricity and fuel, could be even more viable option. Hence, electric aircraft (hybrid electric or electric) could be a big opportunity but committing the commercial operation to a specific date is challenging. And, if electric propulsion for commercial aircraft, once become viable, could result in massive changes in aircraft industry eliminating the presently existing disruption in technology. ■

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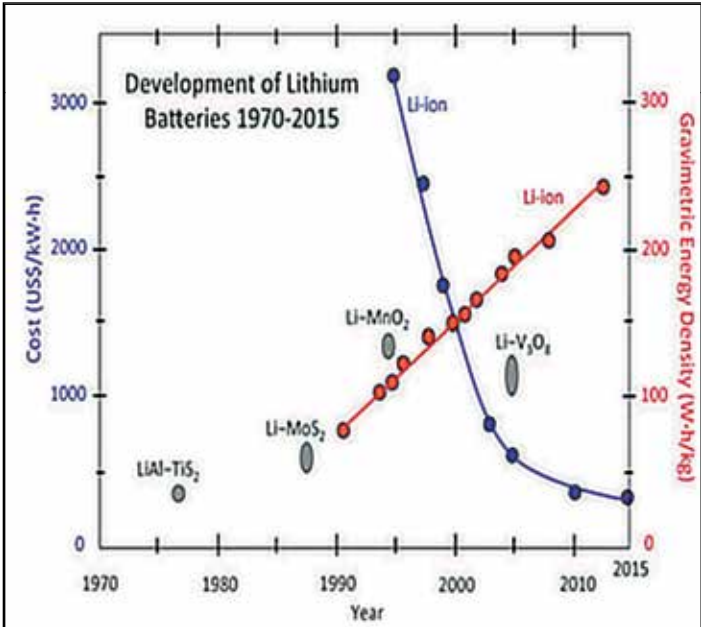


Fig 5: Development of Lithium Ion Batteries

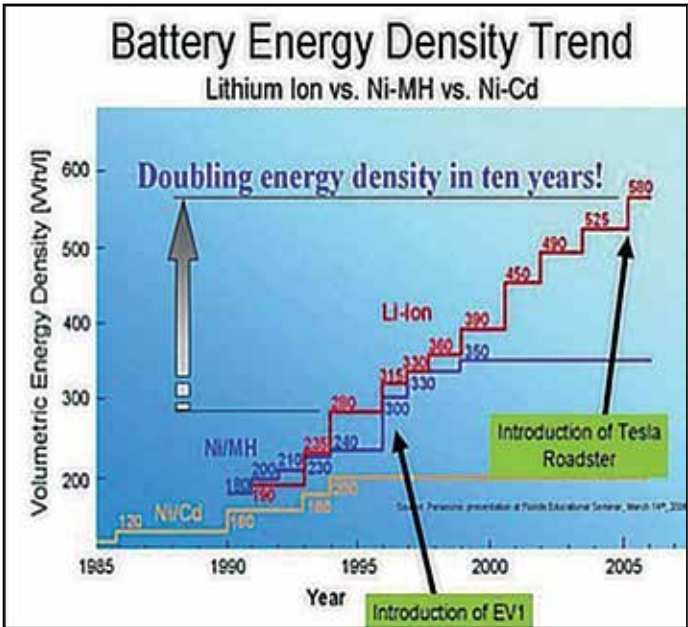


Fig.6: Energy Density Trend in Batteries

ICT IN AIRPORT

Er. Ram Pathak
Sr. Officer, CAAN



WHAT IS ICT?

Information and Communications Technology or ICT, is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.

ROLE OF ICT IN AIRPORT

When considering airports, most people think of the airfield, terminals, people movers, roadways, and rail used to flow passengers to baggage, cargo, large and small aircraft, buses, shuttle vans, automobiles, trucks, trains, etc. Often overlooked, however, is the hidden infrastructure of Information Technology and Systems which enables the airport and all of its intricate facets to efficiently and safely function minute-by-minute and day-to-day.

Airport managers and operators have become increasingly dependent on Information Technology and Systems to increase their airport's capacity and security. Information Technology and Systems has become a critical component of airports, supporting all phases of their lifecycle—from development to operations, maintenance, and renewal and replacement.

Information and Communications Technologies (ICT) plays a vital role in the operation of airports and the facilitation of traffic, passenger processing and security. The role of the airport operator is to coordinate development of automated systems.

The role of the airport operator should be to promote and implement standardized shared solutions and systems. Centralized management of these systems by the airport operator is suggested wherever possible.

All data processing and communications activities and requirements at an airport which affect airport management and operations should be coordinated, and/or approved by, the airport operator.

The development and installation of shared use data communications systems at an airport should be the result of careful coordination between all parties involved (users, suppliers, operators) in order to achieve the most cost effective and operationally desirable technical and functional solutions for all airport users and customers.

Airport operators should develop standards and install a general multi-purpose infrastructure, in order to avoid heterogeneous and incompatible operations and information.. In order to ensure optimal, economic use of airport physical infrastructure, the airport operator should promote and prioritize the use of common-use systems.

In environments where a shared

common-use ICT infrastructure is installed, it is necessary to have adequate IT security procedures and operational contingency planning

The airport operator should discourage the use of dedicated systems, wherever clearly defined benefits can be achieved from applying economies of scale for the provider and users of the facilities, thus avoiding unnecessary and costly capital investments in airport and ICT infrastructure.

Common use systems provide various benefits for both the airport and airline, including standardized, cost-efficient operations, and optimization of airport infrastructure. These aspects produce economies of scale for the provider and user of the facilities, avoiding unnecessary and costly capital investments in airport infrastructure. Economies of scale can be realized by applying a “one to many” vs. “one to one” approach, where it is more cost effective to distribute the initial investment and recurring costs amongst the users of ICT infrastructure as opposed to investing in and maintaining different ICT solutions. The airport operator should take a leading role in promoting these systems to the airline community.

APPLICATION AREAS

Resource management

Resource management systems are key to effective planning for an airport's operation, especially as a facility reaches capacity. Examples of critical assets that affect an airport's

capacity include runway capacity, stand or gate capacity, passenger concourse standing capacity, numbers of check-in desks, and number and size of security posts. Specialized Resource Management Application are needed for managing resources. Below are some examples of resource management applications.

- **Gate Management System:** These system assigns and allocates passenger and freight flights to specific gates, catering for remote stands, jet ways, gate lounges, buses and other services. Gates can be common use (shared) or dedicated (assigned to one airline).
- **Ticket Counter Management System:** This system assigns ticket counters to airlines, whether common use (shared) or dedicated (assigned to one airline)

Flight Information Displays Systems (FIDS)

Centralized management of these systems by the airport operator is suggested. All the parties involved in the operation of flights, including airlines and air traffic control authorities, should provide on a timely and rapidly updated basis the relevant information on flights, including last-minute changes, to the authority responsible for the operation of the flight information display system. This authority should be responsible for establishing the list of data elements needed for this operation and the

means of communicating them.

Security Systems

Airport operators should take a leading role in the implementation of automated security systems, in close collaboration with the entities responsible for airport security. The implementation of CCTV, access control, fire detection and building management systems in particular must take into account security requirements and any infrastructure modifications which are being planned or executed so as to optimize airport security. The implementation of these systems should be centrally coordinated and managed to maximize economies of scale, ensure adhesion to airport and/or government-defined requirements and policies, as well as to ensure a uniform level of service.

Airport Web Sites

Airport web sites provide an attractive and practical solution to the diffusion of airport information. The natural attraction of flight information generates a high level of visits by local and international users alike. Airport operators should consider web site content in such a manner that the airport environment is adequately represented, working closely with all airport partners to ensure consistent, up-to-date and compatible content for informational as well as commercial purposes, taking into account both local and international site visitors.

Airport-Airline Data processing and

electronic data Interchange (EDI)

In order to maximize the benefit from new technology, the airport community has a need to share certain data relating to flights, including flight schedules and updates, airport facility allocation (such as aircraft stands, gates, check-in desks and baggage belts), including real-time updates, aircraft details, actual times, delays and aircraft load data. Most such exchanges are currently implemented by technically obsolete means. In order to ensure optimal airport resource allocation, cover all security requirements in and around the airport environment, ensure orderly airport passenger flows and customer service, it is essential to establish safe and reliable information exchange between the partners.

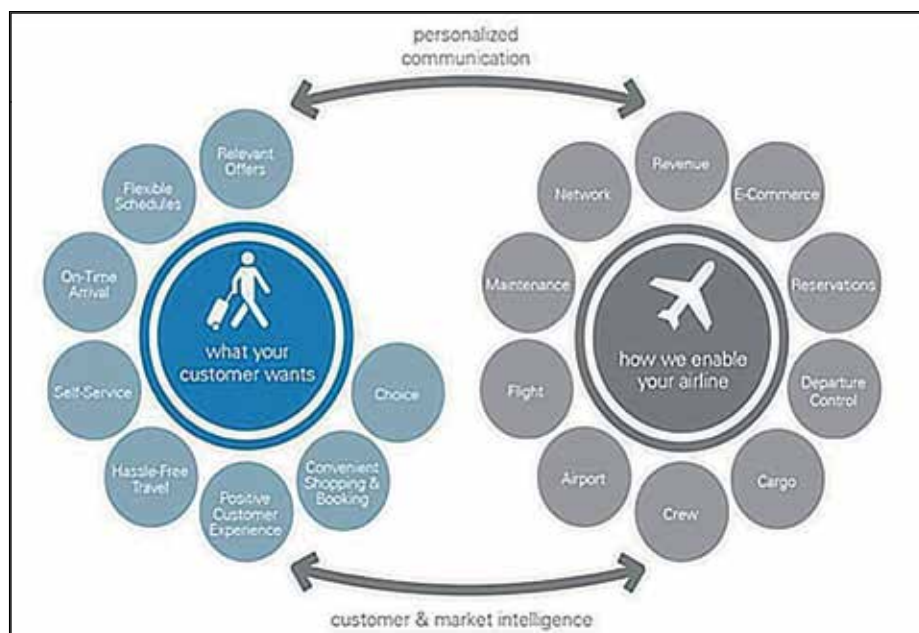
To meet the ever-growing requirements for on-time, real-time information, it is important that airport operators take a leading role and guide concentrated efforts to ensure the maximum level of integration between all informational and operational systems, ensuring data integrity and delivery within the airport environment. In this respect, Airport Operational Data Bases (AODBs) provide a powerful and practical solution for the centralization of airport information and should be considered as a single repository for all aircraft movement information - planned and real-time.

Common use Wireless Infrastructure at Airports

In order to avoid potential security and control deficiencies, duplication of investment, disturbance and interference, a "shared-use" approach is essential. Airport operators should coordinate and manage the development and implementation of an integrated WLAN service infrastructure.

Computerized Maintenance Management System (CMMS)

A CMMS software package maintains a computer database of information about an organization's maintenance operations. CMMS organizes planned (preventative) and unplanned maintenance tasks, usually referred



to as tickets or work orders. A CMMS can also perform inventory and asset management and will produce a wide variety of reports. A CMMS is sometimes referred to as an enterprise asset management system.

Airport Administration Systems

Airport administration systems include all Information Technology and System required for “back office” airport business administration, from financial management to human resources.

Financial Management System

This computerized management and cost accounting system allows costs and revenues to be identified and tracked on a per-product, per-project, and/or per-customer basis, developing customized reports as required. The system needs to perform customer billing and to hold and track budgets and forecasts. All normal ledgers should be supported, and the system should comply with prevailing financial accounting standards.

Asset Inventory Management Systems

An asset management system is important for a number of reasons, not the least of which is that this drives

the linking of the asset to its service entitlement. It tracks who owns it and who repairs it and under what service agreement. It is like a catalog of everything in the airport. Careful consideration needs to be given to how assets are identified—by location, ownership, value, etc. It is also vital to keep an asset register up to date.

ADVANTAGES

ICT will provide following advantages to all the stakeholder of Airport (Airport Operator, Airlines) as well as travelers visiting the airport.

- Improved decision making
- Great productivity
- Faster processing of passengers
- Immediate available information
- Sharing of data between different stakeholders in airport
- Reduction in fraud cases

CONCLUSION

ICT will improved efficiency in the airports include; increased productivity and efficiency; faster processing of passengers hence greater customer satisfaction; immediate dissemination of information

throughout the airport; faster sharing of data between different departments and stakeholder in airport; processing of enormous amounts of data; easy accessibility of information at any time; enforced checks and balances across the different sections in the airport in terms of well-defined workflows thus enhancing accountability and efficiency in carrying out the day to day tasks at the various departments in airports; accuracy, speed and volume of work done; improved process management; improved lead times in service delivery; improved communication flow access to real time information; reduced communication costs; data accuracy through the use of industry standard communication platforms and using applications that validate against business rules; reduced fraud cases and paperless environment reduces costs robust systems to support operations. Airport operators should promote implementation of ICT in airport for improved performance and greater customer satisfaction. ■

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TIA Radars





कृष्ण कुमारी अधिकारी
व. अधिकृत, नेत्राउप्रा.

नेपालमा पर्यटनः विकास र कार्यान्वयन

व्यापार, मनोरञ्जन वा रमाईलोका लागि गरिने यात्रालाई पर्यटन भनिन्छ । आर्थिक विकास एवं समृद्धिको लागि अर्थतन्त्रमा पर्यटनको महत्वपूर्ण भूमिका रहन्छ । आन्तरिक एवं बाह्य पर्यटकहरु विभिन्न धार्मिक पर्यावरणीय, सांस्कृतिक एवं प्राकृतिक क्षेत्रहरुको अवलोकन गर्न पुग्ने स्थललाई पर्यटन क्षेत्र भनिन्छ । कला, संस्कृति, रहनसहन, वातावरण र विकास एवं पर्यावरणका सम्बन्धमा जानकारी लिने एवं मनोरन्जनको लागि भ्रमण गर्ने यसको मुख्य उद्देश्य रहेको हुन्छ । विशेष गरी दोस्रो विश्वयुद्धपछि विकास प्रशासनको लहरसँगै विभिन्न मुलुक तथा क्षेत्रको भ्रमण गर्ने प्रचलन बढेको हो । पर्यटन उद्योगको विकासले रोजगारीका अवसरहरु सृजना गर्न, गरीबी घटाउन, जनाताको जीवनस्तर मा सुधार गरी आर्थिक समृद्धिको लक्ष्य हासिल गर्न महत्वपूर्ण योगदान पुग्दछ ।

नेपालमा पर्यटनको विकासकम हेर्दा प्रत्यक्ष एवं अप्रत्यक्ष रुपमा राज्यको स्थापनादेखि नै भए तापनि विशेष गरी २००७ सालको राजनीतिक परिवर्तनपश्चात विकास हुँदै गएको हो । २०१३ सालदेखि यो जनाबद्ध विकासक्रमसँगै पर्यटन क्षेत्रको पनि विकास हुँदै गयो । २०३३ सालमा पर्यटन मन्त्रालयको स्थापनापछि भने संस्थागतरुपमै कार्यक्रमहरु अगाडि बढ्न थाले । प्रजातन्त्रको पुनःस्थापनापछि सर कारले आर्थिक उदारीकरणको नीति लिएपछि भने निजी क्षेत्रको पनि यसमा संलग्नता बढ्दै गयो । २०५३ सालमा पर्यटन बोर्ड ऐन र २०५५ सालमा पर्यटन बोर्डको स्थापना गरियो । हालका दिनहरुमा भने पर्यटन क्षेत्रहरुको पहिचान गरी नयाँ गन्तव्यहरु विकास गरी प्रचारप्रसार पनि गरिएको छ । विशेष गरी मनोरञ्जन, पदयात्रा तथा पर्वतारोहण एवं तिर्थयात्रीको रुपमा पर्यटकहरुको आगमन हुन थालेको

छ ।

हालका दिनमा विभिन्न खोज अनुसन्धानको लागि पनि पर्यटकहरु आउने गर्दछन् । हाम्रा दुई छिमेकी देशहरुमा जनसंख्या धेरै भएको र आर्थिक विकास हुँदै गएकोले नेपालमा पर्यटन आगमन र बसाई अवधिमा वृद्धि हुने सम्भावना रहेको छ । आ.व. २०७४।७५ मा पर्यटन आगमन ९ लाख ४० हजार रहे को छ भने यसको योगदान कुल गाहस्थ उत्पादनमा २.६ प्रतिशत पुगेको छ । त्यस्तै ३१ हजारले रोजगारी पाएका छन् भने प्रतिपर्यटक खर्च प्रतिदिन ५४ अमेरिकी डलर र औसत बसाई १३ दिन रहे को छ । नेपालको संविधानले प्राकृतिक, धार्मिक, सांस्कृतिक तथा पुरातात्विक सम्पदाको संरक्षण, प्रवर्द्धन र विविधीकरण गर्दै पर्यटकीय स्थलको रुपमा विकास गरी राष्ट्रिय अर्थतन्त्रको प्रमुख आधारको रुपमा यस क्षेत्रलाई विकसित गर्ने नीति अंगीकार गरेको छ ।

नेपालमा पर्यटनको सम्भावना

- ✓ संघीय संरचनाअनुरूप तीन तहका सर कारबाट पर्यटन क्षेत्रमा उत्साहजनक काम गर्ने वातावरण तयार हुनु ।
- ✓ भू-कम्पबाट क्षतिग्रस्त सांस्कृतिक सम्पदाहरुको पुनःनिर्माणले गति लिनु ।
- ✓ नयाँ पर्यटकीय गन्तव्यहरुको विकास हुँदै जानु ।
- ✓ अन्तर्राष्ट्रिय विमानस्थलहरु लगायत पर्यटन पूर्वाधारहरुको निर्माणले गति लिनु ।
- ✓ राजनीतिक संक्रमणकालको अन्त्य हुनु ।
- ✓ शान्ति सुरक्षाको प्रत्याभुति हुनु ।
- ✓ प्राकृतिक सुन्दरता प्रर्याप्त हुनु ।

- ✓ जैविक विविधता प्रचुर मात्रामा हुनु ।
- ✓ पर्यटन विकास गरी अर्थतन्त्रलाई बलियो बनाउने सरकारको नीति हुनु ।
- ✓ नागरिक सचेतना बढ्दै जानु ।
- ✓ राष्ट्रिय अर्थतन्त्रको महत्वपूर्ण आधार को रुपमा पर्यावरण अनुकूल पर्यटन उद्योगको विकास गर्ने नीति राज्यले लिनु ।
- ✓ पर्यटनमैत्री संस्कृतिको विकास गर्न आवश्यक वातावरण एवं नीति निर्माण हुँदै जानु ।
- ✓ पर्यटन उद्योगको विविधीकरण गरी प्राप्त लक्ष्य वितरणमा स्थानीय जनतालाई प्राथमिकता दिनु ।

माथि उल्लेखित पर्यटनको अधिक सम्भावना हुदाँहुँदै पनि यसका नीतिगत, संरचनागत, पर्यावरणीय र व्यवस्थापकीय पक्ष कमजोर हुँदा एवं स्रोतसाधनको उचित कार्यान्वयन हुन नसक्दा सोचे जस्तो सफलता हासिल गर्न सकिएको छैन । अनुगमन, मूल्यांकन एवं अन्य पद्धतीमा सुधार गर्न नसक्दा देहायका समस्याहरु रहेका छन् ।

- ✓ पर्यटन विकासमा पर्यटन उपज र क्रियाकलापको विकास र विविधीकरण हुन नसक्नु,
- ✓ अन्तर्राष्ट्रियस्तरमा पर्यटन प्रवर्द्धन अपे क्षित रुपमा गर्न नसकिनु,
- ✓ पर्यटन पूर्वाधारको कमी हुनु,
- ✓ धार्मिक तथा सांस्कृतिक सम्पदाहरुको संरक्षण सम्बर्द्धन र प्रचारप्रसार हुन नसक्नु
- ✓ पर्यटन विकासमा निजी क्षेत्रलाई प्रर्याप्त सहभागी गराउन नसक्नु
- ✓ पर्यटन क्षेत्रको विकासमा उद्यमशीलता

विकासलाई जोड्न नसक्नु

- ✓ पर्यटन क्षेत्रबाट प्राप्त लाभको न्यायोचित वितरण हुन नसक्नु
- ✓ पर्यटकीय गतिविधि प्रविधिमैत्री नहुनु
- ✓ यस क्षेत्रमा दक्ष एवं क्षमतावान जनशक्तिको कमी हुनु ।

मथि उल्लेखित समस्या समाधानका लागि समग्र पर्यटनको विकासमा पूर्वाधारको विकास एवं पर्यटकहरु एकठाउँबाट अर्को ठाँउ जानको लागि प्रर्याप्त सूचना संचारको व्यवस्था हुनुपर्छ । पूर्वानुमान गर्न सक्ने मौसमसम्बन्धी संयन्त्रको विकास गरी खाने, बस्ने र स्वास्थ्यसम्बन्धी सुविधाको सम्बन्धमा Web Site मा सूचना राखिदिएमा सजिलैसँग सुविधा लिन सक्छन् । विभिन्न गन्तव्यमा पुग्नका लागि हवाई सेवाको पहुँच सुरक्षित र भरपर्दो रूपमा पुर्‍याउनु पर्छ । खोजमूलक अनुसन्धानको लागि जैविक विविधता, कलासंस्कृति आदिलाई असर नपर्ने गरी नीतिगत व्यवस्थाको आधारमा प्रबन्ध मिलाउने र सबै निकायहरुले आ-आफ्नो क्षेत्रबाट काम गरी पर्यटकबाट हुन सक्ने गलत कामलाई निरुत्साहित गर्न कानुन बनाइ दण्ड सजायको व्यवस्था गर्नुपर्दछ । यसो गरेमा पर्यटनको विकासमा थप सहयोग पुग्ने देखिन्छ ।

पर्यटन विकासमा देखिएका चुनौतीहरु

- ✓ विश्व पर्यटन बजारमा नेपाललाई आकर्षक पर्यटकीय गन्तव्यको रूपमा स्थापित गर्नु
- ✓ हवाई सेवाको सुरक्षा, विश्वसनीयता र विस्तार गर्नु
- ✓ पर्यटकीय सेवा सुविधाको गुणस्तर वृद्धि गर्नु
- ✓ नयाँ गन्तव्य स्थलहरुको पहिचान र विविधीकरण गर्नु
- ✓ पर्यटन पूर्वाधार विकासमा निजी क्षेत्रको लगानी आकर्षित गर्नु

✓ पर्यटन उद्योग र पर्यटन अर्थतन्त्रको रूपमा विकास गर्ने सोच तयार गर्नु

✓ आवश्यक दक्ष जनशक्तिको प्रर्याप्तता कायम राख्नु

✓ जलवायु परिवर्तन जन्य जोखिमबाट आउने असर कम गर्नु

✓ गुणस्तरीय पर्यटक आगमन वृद्धि गर्नु

✓ पर्यटन सेवालाई छरितो पर्यटक मैत्री, सुरक्षित र विश्वासिलो बनाउनु

✓ आधुनिक प्रविधि र उपकरणहरुको प्रयोग हुन नसक्नु

✓ पर्यटकको बसाई अवधि र खर्च वृद्धि गर्नु

नेपालको अर्थतन्त्रको विकासका लागि पर्यटन क्षेत्रको विकास हुन आवश्यक छ । यस क्षेत्रको विकासले बजारको विकास र विस्तार गर्न, स्थानीय स्रोत साधनको उपयोग गर्न, रोजगारीका अवसरहरुको सृजना गर्न, स्रोत साधनको अधिकतम उपयोग गर्न एवं नवीन कला, संस्कृतिको विकास गर्न समग्र अर्थतन्त्रको उचित व्यवस्थापन गर्न आवश्यक छ । सरकारले वि.सं. २०७९ सम्ममा अतिकम विकसित देशबाट विकसित देशमा स्तरोन्ती गर्ने लक्ष्य राखेको छ ।

त्यसैगरी वि.सं. २०८७ सम्ममा दीगो विकासका लक्ष्यहरु हासिल गर्ने अन्तर्राष्ट्रिय प्रतिवद्धता रहेको एवं २०८७ सम्ममा मध्यम आय भएको मुलुकको स्तरमा पुर्‍याउने लक्ष्य रहेको र वि.सं. २१०० सम्ममा नेपाललाई समुन्नत मुलुकको स्तरमा पुर्‍याउने लक्ष्य रहेको हुँदा “समृद्ध नेपाल, सुखी नेपाली”को संकल्पानुरूप दीर्घकालीन पर्यटन विकासको सोच बनाई २०२० को नेपाल भ्रमण वर्षलाई सफलतापूर्वक सम्पन्न गर्नको लागि सम्बन्धित पक्षहरुले जिम्मेवारीपूर्ण रूपमा काम गर्नु पर्ने आवश्यकता देखिन्छ । पर्यटनको बसाई अवधि बढाउन र खर्च गर्ने क्षमता बढाउनको लागि विभिन्न किसिमका कार्यक्रमहरु संचालन

गर्ने, प्रचारप्रसार गर्ने, सूचना प्रवाह गर्ने, सम्बन्धित निकायहरूसँग समन्वय गर्ने, युवा जनशक्तिको परिचालन गर्ने जस्ता कार्यक्रमहरु प्रभावकारी हुन सक्छन् । यसबाट समग्र पर्यटनमा सकरात्मक सुधार आई राज्य र सरकारले राखेका लक्ष्यहरु हासिल गर्न सजिलो हुन्छ । यसका लागि सम्बन्धित पक्षहरुले आ-आफ्नो क्षेत्रबाट प्रतिवद्धता एवं कार्यान्वयनमा जोड दिनु आवश्यक छ ।

यसरी सरकारले बनाएका नीति कार्यान्वयनका लागि सघं, प्रदेश र स्थानीय तहहरु विच समन्वय गरी कार्य योजना बनाई काम गर्नु पर्छ । प्रदेश र स्थानीय तहबाट पर्यटन क्षेत्रको नयाँ ठाउँहरु पहिचान गर्दै “Think Globally, Act Locally” को सिद्धान्तलाई आत्मसाथ गरी युवा शक्तिलाई नेपालमा नै श्रम गर्ने वातावरणको सिर्जना गर्दै विभिन्न ठाँउमा खुलेका Home Stay को उचित व्यवस्थापन र स्थानीयस्तरमा उत्पादित वस्तुहरुको उपयोग गरी स्थानीयवासीको जीवनस्तरमा सुधार गरी मानव विकासमा महत्वपूर्ण सहयोग पुग्ने देखिन्छ । यसबाट विदेशी मुद्रा आर्जन भई रोजगारीका अवसरहरु पनि बढ्दै जान्छन् ।

निष्कर्ष

अझै पनि निरपेक्ष गरीबी १८.७ प्रतिशतलाई घटाउँदै तीव्र आर्थिक वृद्धि हासिल गर्न, बेरोजगारी दर घटाउन, सामाजिक न्याय र समानता अनुरूप रोजगारीका अवसरहरु बढाउँदै पर्यटनलाई उद्योगको रूपमा विकास गर्न त्यति सहज छैन । त्यसका लागि सुरक्षित हवाई सेवाको विकास गरी विपद एवं संकट व्यवस्थापनमा सरकारले उचित समन्वयकारी भूमिका खेल्नु पर्दछ । नयाँ पर्यटन गन्तव्यको पहिचान गरी विभिन्न कार्यक्रमहरु तय गर्ने नीति लिनु पर्छ । साथै नागरिक सचेतना बढाउने, नीतिगत संयन्त्र बलियो बनाउने, दण्ड र पुरस्कारको व्यवस्था गरी उचित वातावरण सिर्जना गर्न सकेमा पर्यटन क्षेत्रको विकासले गति लिन सक्छ । ■



नेपालमा रोजगारीको आयमा करकट्टी सम्बन्धी व्यवस्था

सृजना पौडेल
व. अधिकृत, नेनाउप्रा.

नेपालमा आयकरको अवधारणा सर्वप्रथम २०१७ सालमा प्रारम्भ भएको थियो । वि.स. २०३१ सालमा लागु भएको आयकर २०५८ मा नयाँ ऐन आउनुभन्दा पहिले प्रचलनमा रहेको थियो । आयकर ऐन २०५८ आयकरको आधुनिक अवधारणा बोकेको कर प्रणाली हो । करको दरमा वृद्धि गर्नु भन्दा करको दायरा बढाएर राजस्वमा वृद्धि गर्न सकिन्छ भन्ने मान्यता यस ऐनले लिएको छ । आयकरको सैद्धान्तिक आधार भनेको आयको वितरणमुखी न्यायको प्रत्याभुति दिने समष्टिगत आर्थिक स्थायित्व कायम गर्ने तथा राज्यको वित्तीय संरचनालाई सन्तुलित र अनुकूल बनाई पारदर्शी समाजको निर्माण गर्ने रहेको हुन्छ । व्यक्तिका सबै प्रकारका आयहरू (जस्तै: रोजगारी, श्रम, सम्पत्ति हस्तान्तरण आदि) लाई यस ऐनले समेटेको छ । Pay as you earn (PAYE) को अवधारणालाई यसले आत्मसात गरेको छ । जसले जति बढी आमदानी गर्दछ, त्यसै अनुसार बढी कर तिर्दछ भन्ने मान्यतामा आधारित छ । यसले Residence Principle लाई अंगालेको छ, जसअनुसार नेपालको बासिन्दाको आय संसारभर जहाँ भएपनि नेपालमा कर तिर्नुपर्ने व्यवस्था रहेको छ ।

रोजगारीबाट भएको आयको गणना

रोजगारी आय भन्नाले कुनै पनि प्राकृतिक व्यक्तिले रोजगारीको शर्तअनुसार आफ्नो ज्ञान, अनुभव सीप जाँगर तथा श्रम प्रयोग गरी सेवा प्रदान गरे वापत प्राप्त गर्ने नगद, जिन्सी तथा अन्य सुविधालाई जनाउँछ । गणनामा समावेश हुने रकममा प्राकृतिक व्यक्तिले ज्याला तथा तलब वापत प्राप्त रकम, विदा वापतको रकम, कमिशन, बोनस, पुरस्कार, उपहार, महंगी भत्ता, जीवन निर्वाह खर्च, भाडा, मनोरन्जन, यातायात भत्ता, आवास, स्टेशन भत्ता र रोजगारीको अन्त्यमा प्राप्त हुने भुक्तानीहरू पर्दछन् ।

करका दरहरू

प्रत्येक प्राकृतिक व्यक्ति बेग्लै करदाताको रूपमा मानिन्छ । सामान्यतया कुनै प्राकृतिक व्यक्ति विवाहित भएपनि निजको छोरा, छोरी, बाबु, आमा, सगोलमै भएपनि निज, निजको पति वा पत्नी छोरा, छोरी, बाबु, आमा सबै वेग्लैवेग्लै व्यक्ति मानिन्छ । प्राकृतिक व्यक्ति वा सो व्यक्तिको बासिन्दा पति वा पत्नी दुवैले लिखित सूचनाद्वारा एउटै प्राकृतिक व्यक्ति मानिने गरी दम्पती सुविधा

छनौट गर्न सक्ने व्यवस्था ऐनमा रहेको छ । तर आश्रितलाई भरणपोषण गर्नुपर्ने विधुवा वा विधुरलाई दम्पती सरह मानिने व्यवस्था रहेको छ । आर्थिक वर्ष २०७६/७७ को बजेट बक्तव्यमार्फत करको दरमा केही परिवर्तन गरिएको छ । सो अनुसार रु. १,००० भन्दा माथिको भुक्तानीमा PAN (Permanent Account Number) मा दर्ता हुनुपर्ने व्यवस्था गरिएको छ । यस व्यवस्थामार्फत सकेसम्म सबैलाई करमा समाहित गर्न खोजेको देखिन्छ ।

एकल व्यक्तिको लागि करको दर

Particulars		Tax Rate
First Slab	4,00,000/-	1%
Next	1,00,000/-	10%
Next	2,00,000/-	20%
Next	13,00,000/-	30%
Balance Exceeding	20,00,000/-	36%

दम्पतीको लागि करको दर

Particles		Tax Rate
First Slab	4,50,000/-	1%
Next	1,00,000/-	10%
Next	2,00,000/-	20%
Next	12,50,000/-	30%
Balance Exceeding	20,00,000/-	36%

कार्यालय आउन जान सवारी साधन सुविधा प्राप्त गर्ने कर्मचारीले तलबको ०.५ प्रतिशत रकमलाई आयमा गणना गरी करयोग्य आयमा गणना गर्नु पर्ने व्यवस्था छ ।

रोजगारीको आयबाट घटाउन पाउने रकम

१. अवकाश कोषको रकम

कुनै प्राकृतिक व्यक्तिले कुनै आय वर्षमा स्वीकृत अवकाश कोषमा योगदान गरेको रकमलाई आयबाट घटाउन पाउने व्यवस्था रहेको छ । उसले रु. ३ लाख वा आफ्नो आयको एक तिहाईमा जुन घटी हुन्छ, सो रकमलाई ननघाई आफ्नो आयबाट घटाई पाउने दावी गर्न सक्नेछ ।

२. चन्दा खर्च

कुनै व्यक्तिले आफ्नो करयोग्य आय गणना गर्दा आन्तरिक राजस्व विभागबाट स्वीकृती प्राप्त कर छुट पाउने संस्थालाई

चन्दा, उपहार दिएको रकमलाई करयोग्य आयबाट घटाउन पाउने व्यवस्था छ। तर सो रकम १ लाख रुपैयाँ वा सो व्यक्तिको सो वर्षको समायोजित करयोग्य आयको ५ प्रतिशतमध्ये जुन घटी हुन्छ त्यो मात्र घटाउन पाउने छ।

३. बीमा प्रिमियम

कुनै व्यक्तिले बीमा गरेको रहेछ भने सो वापत भुक्तानी गरेको प्रिमियम वा २५ हजार रुपैयाँमा जुन घटी हुन्छ सो रकम करयोग्य आयबाट घटाई पाउन दावी गर्न सक्नेछ।

४. दुर्गम क्षेत्र सुविधा

नेपाल सरकारले दुर्गम क्षेत्र तोकेको स्थानमा काम गर्ने व्यक्तिले दुर्गम भत्तावापत तोकिए बमोजिम बढीमा ५० हजार रुपैयाँसम्म करयोग्य आयबाट घटाउन पाउने व्यवस्था छ।

जसअनुसार -

क्षेत्र	छुट रकम
क वर्ग	५०,०००
ख वर्ग	४०,०००
ग वर्ग	३०,०००
घ वर्ग	२०,०००
ङ वर्ग	१०,०००

५. औषधी उपचार खर्च

कुनै रोजगारीमा भएको व्यक्तिले औषधी उपचारवापत कर मिलान गर्न पाउने व्यवस्था छ। उक्त कर मिलानको रकम स्वीकृत औषधी उपचार खर्च रकमको १५ प्रतिशतको दरले हुने रकममा विगत वर्षमा मिलान हुन नसकेको कुनै रकम भए सो समेत जोडी गणना गर्नपर्नेछ। तर एक आ.व. मा रु. ७५० भन्दा बढीको औषधी उपचार खर्च घटाउन नपाईने प्रावधान छ।

कर छुट सम्बन्धी व्यवस्था

आयकर ऐन २०५८ को अनुसूची १ मा आयकरमा निम्नानुसार को कर छुट को व्यवस्था गरिएको छ।

- ▶ प्राकृतिक व्यक्तिका लागि रु. ४ लाखसम्म र दम्पतीका लागि रु. ४ लाख ५० हजारसम्म कर योग्य आयमा १ प्रतिशत मात्र कर लाग्ने।
- ▶ दुर्गम क्षेत्रमा काम गर्ने व्यक्तिले दुर्गम भत्तावापत बढीमा ५०,००० सम्म करयोग्य आयबाट घटाउन पाउने।
- ▶ कुनै व्यक्ति अपाङ्ग भएको खण्डमा उसले १ प्रतिशत कर लाग्ने आयको ५० प्रतिशतले हुने रकम करको गणना गर्दा कर योग्य आयबाट घटाउन पाउने।
- ▶ रोजगारीको आयमा आर्जन गर्ने प्राकृतिक व्यक्ति महिला भएमा कर तिर्नु पर्ने रकमको १० प्रतिशत रकम छुट पाउने।
- ▶ निवृत्तिभरण आयमा १ प्रतिशत कर नलाग्ने र १ प्रतिशत कर लाग्ने आयको २५ प्रतिशतले हुने रकम करको गणना गर्दा करयोग्य आयबाट घटाउन पाउने।
- ▶ स्वीकृत औषधी उपचार खर्चवापत बढीमा रु. ७५० सम्म कर मिलान गर्न पाईने।
- ▶ नेपालको विदेशस्थित कुटनैतिक नियोगमा कार्यरत कर्मचारीले वैदेशिक भत्ताको ७५ प्रतिशत रकम करयोग्य आयबाट घटाउन पाउने।
- ▶ प्राकृतिक व्यक्तिले जीवन बीमा गरेको रहेछ भने सोवापत भुक्तानी गरेको वार्षिक प्रिमियम वा २५ हजार रुपैयाँमा जुन घटी हुन्छ सो रकम कर योग्य आयबाट घटाउन पाउने।
- ▶ प्राकृतिक व्यक्तिले स्वास्थ्य बीमा गरेको रहेछ भने सो वापत भुक्तानी गरेको वार्षिक प्रिमियम वा २० हजार रुपैयाँमा जुन कम हुन्छ सो रकम घटाउन पाउने। ■

Construction Works at TIA



“Together We Stand, Divided We Fall”



Renuka Satyal
Sr. Officer, CAAN

Introduction

The concept of work life balance is all about balancing work and other aspect of life within given frame of time. The term work life balance is not that older term it was firstly used in UK and US in 1970's and 1980's respectively. Today, the working trend has been changed drastically, in past there was a trend of husband and male member were considered to be the breadwinners whereas, wives and female members mainly engaged in bringing up their children and doing household chores. But nowadays, both husband and wives have their own career aspirations and its becoming harder to manage together. Work life balance has recently taken the attention of both researchers and executives. This subject interests almost everyone with a professional career. This widespread interest is partly due to its reflection on all aspects of life. For those who think that the main objective in life is to work, their career becomes the core of life. However, people have limited time and therefore have to perform many other activities other than their jobs. Without a balance between the two, many mishaps can be experienced in both. In this study work –life balance is analyzed from organizational context. This study has the potential to enable the working people to consider their stand point in terms of work –life balance and the executives to gain new perspective in order to cope with such a problem. The demands that one experience in family life and that have effects on life balance can be given as the demand of workload and time, role expectations in family and support to be given to the spouse. It is also included in the literature that such variances as marriage, child rising, caring of the elderly at home have effect on work-life balance since they demand more family responsibilities. Those who have to

look after a child or the elderly might sometimes have to risk their career by shortening their working hours, which becomes a source of stress for them. On the other hand, those without children or any elderly to look after at home experience less work-life imbalance.

Today, one experience of family life shared by most children under the age of eighteen is that their fathers and mothers are both working. This is not only the situation for families with limited resources struggling to make ends meet; rather it is predominant pattern for middle class families. Working mothers and fathers are now splitting three jobs between two people as they divide responsibilities for the family in addition to managing their own professional careers or jobs. Time is often a scarce commodity for working families as they struggle to balance work and home life. Parents find themselves multitasking in order to meet job demands and ensure quality time at home. Several factors contributing to manage the household tasks as well as career tasks, first the amount of time spent in mental labor of household work and office works time spent thinking about planning, coordinating, and managing household task is often hidden and therefore unmeasured, and these task is usually performed by women. Secondly, women are more likely to multi-task. Children are also affected by work experiences of both their mothers and fathers. Since, the “breadwinner” role is now being shared by both parents in dual career couple the ideas about how they organize their life, particularly with respect to who have the major responsibility for earning an income, taking care of the children, and doing household chores. The strengths of children's egalitarian orientation might be expected to vary depending in whether parents are equal partners, or whether the husband

remains the primary earner while the wife retains most of the responsibility for the home and children.

Until the beginning of the twenty-first century, work-life balance did not get much attention and was perceived as less challenging as compared to the current perception because of two suppositions. First, mostly employment limited itself to a male full-time worker. Second, it was a trend that women were involved in more unpaid work such as nurturing, caring and domestic work (Crompton, 1999).

Yet dual career couple faces a unique set of challenges and tradeoffs. In my role as a female officer, it's becoming an increasingly common for all to seek the advice concerning not just the work place but the home as well. When both you and your partner have busy, demanding career, how can you reap the benefits of being a dual career couples and show up as your best self at work and at home. Negotiating whose career takes prominence at any given time juggling two work schedules and households and family duties and maintaining healthy boundaries between home life and work life are often the most difficult areas to navigate. While each household is different, the couples I've seen overcome these challenges have developed systems that optimize their time and energy- as a unit.

Women as a part of dual career couple: Nepalese context

Nepal being a predominantly patriarchal society where the social dogmas like chhaupadi, witch- hunts are still in practice, to become career oriented woman is more challenging. Still for the positive note women are shattering these status-quo notion of women being confined within home only, our honorable president Bidhya Devi Bhandari and other ladies in top of the organizations are some of the example who are splintering the traditional description of women.

In countries with strong policy support for work-family reconciliation and less traditional gender norms, women are expected to be equally integrated into the labor as men, and men to be more involved in household. This institutional context may therefore weaken gender differences in the division of housework, especially among dual working couples. In countries with weaken policy support for work family reconciliation and more traditional gender norms. Women are expected to be the prime career and men the prime earner.

The proportion of women who were employed was only 30% in 2006 compared to 50% in 2016", among employed respondents, women are almost three times more likely than men not to be paid (52% versus 16%) according to the demographic and health survey by government of Nepal. Women are not getting appropriate working environment due to socio-cultural responsibility at home, and it's also hard to find the work place with women friendly environment and child care home facilities. Women have to go through lots of compromising factors to balance the career and life together definitely it is the tougher for them who is having demanding career.

As a demanding Career seeking and having a badass perception woman, I, myself have experiences of facing lots of problems and challenges as well, being a woman to perform the job of both as a employee and typical Nepali society daughter is of course is not an easy task. To get fit into household task, hypocritical society transitional working culture, itself is a work of provocation in the society like ours where discriminatory practices begin even before birth of the child.

Ways to better balance the work & life together: men and woman as the two wheels of the chariot

Female is the male's counterpart like the opposite wheels of the chariot. According to hindu mythology also the female is the shakti the famine the one that nourishes or supplies the energy, it's like the mother earth, we put the seed into the mother earth, the seed grows, it's all done in an unseen modest way, everyone admires the outcome, the flowers but the mother earth does all the unseen work. The mother is the kinetic energy and the male aspect is the action, the male is the doer,

the shakti is always the power and support and without the support there is no output no action. So, the earning couples should complement each other for the better balance of work and life together. Some of the ways to accomplish the better work life balance of the dual career couples are as follows:

Taking your family as a team

When you have demanding career, it can be easy to become so wrapped up in your work that your time at home gets shuffled down the priority list. To overcome this, you need to give your family or partner the same level of dedication that you give to your team at work. Coming up with a name for your home team or your family is a fun way to shift your mindset. Doing so can help remind you and your partner that it should never be "my career versus your career". Rather you should view yourselves as allies.

Start Saying "No"

As you and your partner's career advance, you may gain more influence and receive an increasing number of requests beyond your day-to-day work responsibilities. To maintain a healthy work-life equation, you'll need to get comfortable saying "no". But knowing when to turn down a request isn't always easy.

Knowing and coping up with each other's strength and interests

With both partners working, staying on top of household and family responsibilities is a continuous struggle. More often than not you have to be strategic and disciplined about who does what, especially as your work and family roles grow.

Divvyng up responsibilities according to each other's strength and interests can be a life saver.

Regular Meetings to meet the each other's expectation

There will inevitably be times when you and your partner have to negotiate expectations and make decisions about whose career takes the front seat. To do this, dual-career couples need to be in constant communication. A simple solution is to schedule regular meetings to plan and the set expectations. These meetings are times for open, honest communication, which

will help you both, stay actively involved in big decisions about career changes, projects, promotions, and about job satisfaction and dissatisfaction as a whole.

Conclusion

It is the fact that nowadays that the number of dual- career couples is increasing and the trend is worldwide. This is further enhancing the increasing role and rights of woman in society and changing family values. From economic point of view also, dual career couples as well as parent employees is considered to be a positive tendency, because this will positively contribute to the life status, education, health and national economy as a whole. Balancing both of these responsibilities proves to be highly challenging task to accomplish and may cause pressure and stress for employees that will consequently lead to lower performances at work, as well as, issues in maintaining good family relationships. So, the organizations today need to be proactive rather than reactive in terms of assisting their employees to deal with these issues. ■

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Electrical Power Saving with Increasing Passengers Movement Scenario in Tribhuvan International Airport, Kathmandu, Nepal

Er. Ratan Das
Officer, CAAN



Abstract—Tribhuvan International Airport is the only international airport in Nepal as being a landlocked country, most of hilly region, there is electrical power deficit too, so electrical power system enhancement in airport seems logical and necessary. There is possibility of implementing power system enhancement technologies such as using star rated electrical appliances (such as ceiling fan, room heater, AC units and etc.), energy efficient LED lightings (free from inductive lighting like fluorescent tube lights, metal halide and sodium vapor lights and bulk energy consumable halogen lamps) and proper demand side load balance to sub-consumers end in order to reduce earth leakage current (neutral return current) to meet the space electric power requirements and reduce the electricity and fossil fuel consumption. The factors affecting consumption variations are envisaged to include seasonality, number of flight, passenger foot fall trends and sub-consumer side consumption variations. Relation between yearly passenger movement and electrical energy consumption study data gives electrical consumable energy will be in 2024 will be **7389248.85 kWh** as per scenario of electrical system, but after enhancement using LED in lighting system in general lighting, Aeronautical Ground Lighting (AGL) systems and star rated electrical appliances electrical consumable energy in 2024 will be **6,881,842.05 kWh** as per regression analysis and Trend method of forecast in solver. After enhancement annual energy will save **507,407.8 kWh** in total electrical energy consumption

INTRODUCTION

HISTORY OF TRIBHUVAN INTERNATIONAL AIRPORT (TIA) STARTED WITH THE LANDING OF A SINGLE ENGINE AIRCRAFT IN 1949 AD. AT THAT TIME, AIRPORT WAS KNOWN BY THE NAME OF KATHMANDU AIRPORT. IT WAS NAMED AS TRIBHUVAN AIRPORT IN 1956 AD AND IN 1964 AD IT WAS RENAMED AS TIA. Electricity used for TIA is received mainly through the NEA 11 KV Baneshwor and another dedicated Chabhil feeder serve as both an essential and non-essential supply in demand side from one newly installed 2 MVA transformer in 2017 to fulfill yearly incremental electrical power needs and existing two 1 MVA transformers units respectively. In addition to the NEA power supply, there are two 650kVA and one 1MVA generators units in order to emergency supply in all area of TIA. TIA has also installed different units of Diesel Generator (DG) Sets in different location but major generators units are in P0 station. The major electrical loads of the TIA consist of air conditioning systems, in-door and out-door lighting, airfield lighting, lifts, escalators, conveyors, pumps, aviation and IT equipments. In present scenario analysis electrical energy consumption increases as passengers movement per year increase in TIA, that needs increment in passenger's related facilities and infrastructures which results more power consumption and that will cause insufficiency of electrical power. Enhancement in electrical power system makes system efficient and reduces unwanted power consumption.

Method and materials

Different research paper related to electrical power system in airports studied in order to get idea about enhancement electrical power system in TIA.

At premises of electrical system in TIA visited and past (2012 to 2017) electrical energy consumption and passenger movement data collected from TIA. Electrical energy consumption pattern is evaluated using solver added excel programming BAU (Business As Usual) scenario with respect to passenger movement yearly.

The present load consumption pattern parameter studied from available electrical appliances in TIA. Electrical control and measuring unit (air circuit breaker-ACB etc.) in different control measuring units of TIA.

Data collected of passenger and electrical energy consumption analyzed by relating on passenger movement and electrical energy consumption pattern in TIA with plotting different types of graph between two parameter year wise in excel and forecasted the passenger movement and electrical energy consumption up to 2024 based on present scenario of electrical energy Consumption and passenger movement without enhancement in electrical power system.

In order to enhance electrical power in TIA has focused to use star rated equipment, LED lights, reduce reactive load, improve power factor, occupancy sensors, load management etc. based on measurement unit study.

Table 1 Technology to enhance electrical power system

S.N.	Improve	Method
1	Power factor ,Low Power Consumption, Environment friendly	Star Rated Equipment
2	Power factor, Low Power Consumption, Environment friendly	LED Lights
3	Power factor , Voltage regulation, Reduce Cu-loss	Reduce reactive load
4	Save unwanted power use in balcony, corridors ,Wash room	Occupancy Sensors
5	Voltage regulation, Power,Voltage, Power factor, Reduce Cu-loss	Load Management

Led lighting for industrial, official (exterior, interior), home and other all purpose is efficient long life lower power consumable among all lighting system. LED has also additional advantageous with occupancy sensor too as saving energy cost and conserve energy (Kinze et al, 2012).

Table 2 Light saving Efficiency of occupancy sensors:

S.N.	Application	Potential of Energy Cost Savings
1	Offices(private)	25-50%
2	Offices(open areas)	20-25%
3	Restrooms	30-75%
4	Corridors	30-40%
5	Storage areas	45-65%
6	Meeting rooms	45-65%
7	Conference rooms	45-65%
8	Warehouses	50-75%

(US department of energy ,2014)

Energy star rated electrical appliances are more efficient as compare to normal as it is environment friendly conserve energy like ceiling fan ,pump motor and etc. which enhancement electrical power too (Shah et al ,2014).

Major inductive load and bulk electricity consumable (Metal Halide, Sodium Vapor Light ,Fluorescent Lamp, Approach halogen lights and Ceiling Fan, etc.) load replaced LED lights and star rated super ceiling fan which results in good pf., low cu-loss, low electrical power consumption and thus reduction in electrical energy consumption at TIA. After enhancement in electrical power system forecasted electrical energy consumption up to 2024 based on enhancement scenario of electrical energy consumption. Data collected of passenger and enhanced electrical energy consumption analyzed by relating on passenger movement and enhanced electrical energy consumption pattern in TIA with plotting different types of graph between two parameter year wise in excel. Existing electric load and enhanced electric load compared in financial feasibility with payback period, internal rate of return and net present value method.

Results and Discussion

Business as usual (Existing State) scenario analysis

Results obtained from collected Electrical Energy Consumption data and passenger movement of TIA as existing state using solver linear regression analysis as below:-

Equation obtained of Double Variable from regression analysis is $Y = -343150190.772071 + 173346.016277973 * X_1 + -0.0505408935223931 * X_2$, Where Y =Energy Consumption, X_1 =Year, X_2 =Passenger movement.

Similarly equation obtained of single Variable from regression analysis is $Y = -359681615.70 + 180902.4 * X$, Where Y =Energy Consumption, X =Passenger movement.

Forecasted data of electrical energy consumption and passenger movement as BAU scenario (existing state) of TIA using solver TREND command regression analysis double variable equation as below:-

Table 3 Passenger movement and energy consumption BAU scenario analysis in solver

Year	Passenger	Actual Electricity Consumed (kWh)	Forecast by Trend		Forecast by Regression
			Passenger	Electricity (kWh)	Electricity (kWh)
2012	4283872	5310059	4324208	5403444	5405483
2013	4500176	5387181	4479772	5568928	5567897
2014	4682906	5908278	4635336	5734411	5732007
2015	4962205	6201704	4790900	5899895	5891237
2016	4581210	6134082	4946463	6065379	6083839
2017	5268338	5961619	5102027	6230863	6222457
2018			5257591	6396346	6662070
2019			5413155	6561830	6835416
2020			5568718	6727314	7008762
2021			5724282	6892797	7182108
2022			5879846	7058281	7355454
2023			6035410	7223765	7528800
2024			6190973	7389248	7702146

Table 4 Single and Double Variable

Double Variable		
	Coefficients	Standard Error
Intercept	-3.43E+08	240092394.1
X Variable 1	173346.02	120419.7687
X Variable 2	-0.050541	0.640684788
Single Variable		
Intercept	-3.6E+08	209045903.7
X Variable 1	180902.37	103822.115

This table has given equation of double variable and single variable in the form of $Y = m_1x_1 + m_2x_2 + c$ and $Y = m_1x + c$ as have mentioned above.

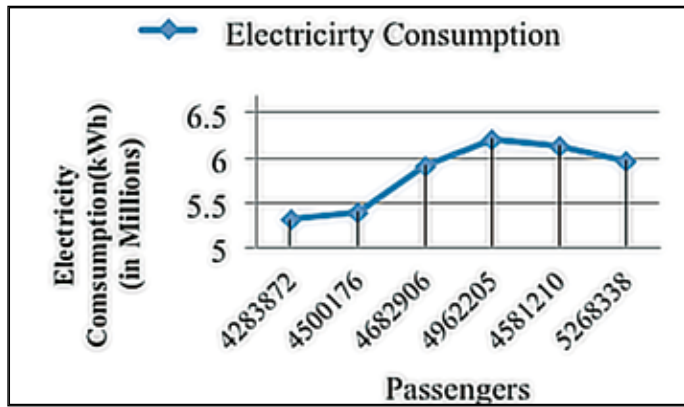


Fig.1: Passenger Vs Electricity Consumption

Plots of year, Electrical Energy Consumption and passenger movement as given below:-

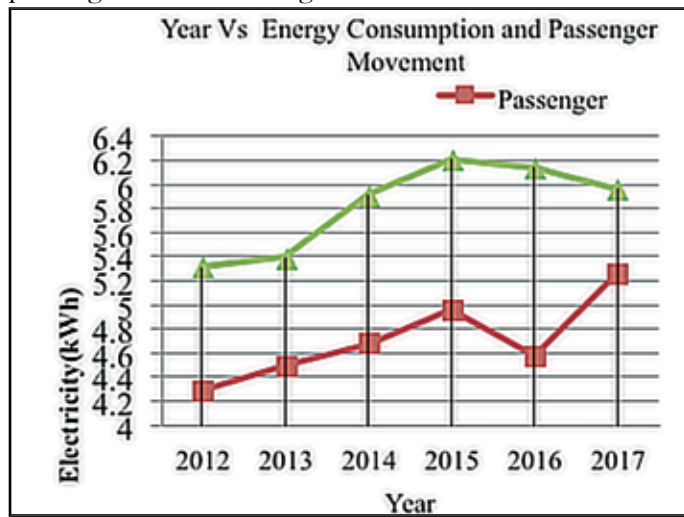


Fig.2: Year Vs Energy Consumption and Passenger Movement

Enhanced State Electrical Energy consumption Analysis

Table 5 Annual Saved in energy after enhancement

S.N	LED Light In place of FTL	LED in Place of Sodium Vapor	Star rated fan in place of old Ceiling Fan	Led Light in place of halogen approach Light	Total annual Energy saving in kWh
1	273859	94608	43740	95199.3	507407

Results obtained from collected Electrical Energy Consumption data and passenger movement of TIA as enhanced state with one variable using solver linear regression analysis as below:-

Table 8: Single Variable after enhancement

	Coefficients	Standard Error
Intercept	1950261	1912758.056
X Variable 1	0.71279	0.404899122

Equation obtained of single Variable from regression analysis is given below:-

$$Y = 1950260.75859681 + 0.712794670860274 * X, \text{ Where}$$

Y=Energy Consumption, X=Passenger

Note:-Equation obtained of double Variable after enhancement from regression analysis was same as BAU scenario analysis and showed large deviation as compare to single variable i.e. for base year 2012 and passenger 4283872 gave electricity 5,405,483.26 kWh as BAU state.

Forecasted data of electrical energy consumption and passenger movement as enhanced state of TIA using solver TREND command regression analysis single variable equation as below:-

Table 7 Passenger movement and energy consumption after enhancement analysis in solver

Year	Passenger	Annual Save Electricity due to enhanced (kWh)	Actual Electricity Consumed (kWh)	Electricity Consumption after Enhanced	Forecast by Trend		Forecast by Regression
					Passenger	Electricity (kWh)	Electricity (kWh)
2012	4283872		5310059	4802651	4324208	4896036	5003781
2013	4500176		5387181	4879773	4479772	5061520	5157962
2014	4682906		5908278	5400870	4635335	5227004	5288211
2015	4962205		6201704	5694296	4790899	5392487	5487294
2016	4581210		6134082	5626674	4946463	5557971	5215722
2017	5268338	507407.8	5961619	5454211	5102027	5723455	5705504
2018		544408.53	6396346	5888938	5257590	5888938	1950260
2019		558493.24	6561830	6054422	5413154	6054422	1950260
2020		572577.96	6727314	6219906	5568718	6219906	1950260
2021		586662.68	6892797	6385389	5724282	6385389	1950260
2022		600747.39	7058281	6550873	5879845	6550873	1950260
2023		614832.11	7223765	6716357	6035409	6716357	1950260
2024		628916.83	7389248	6881841	6190973	6881841	1950260

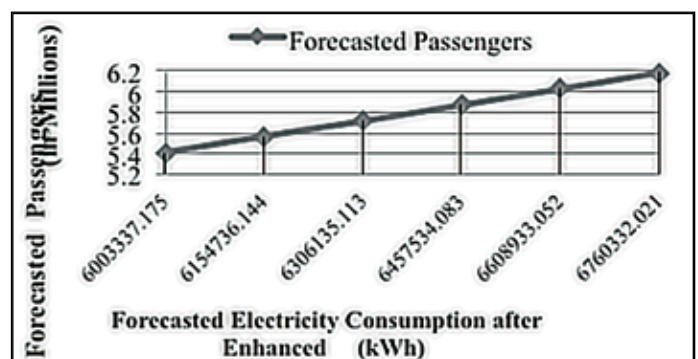


Fig.3: Enhanced Electricity Vs Passengers

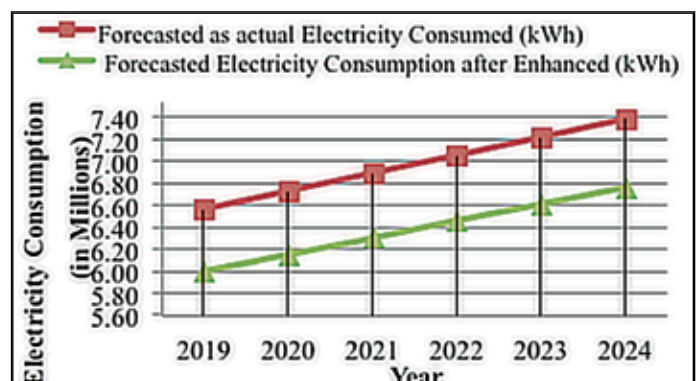


Fig. 4: Year Vs Enhanced Energy Consumption and Passenger Movement

Discussion

Saving electrical energy 3% by replacement of conventional lighting with LED up to 2020 in Icheon International airport in Korea and in Tribhuvan International Airport annual saving in electrical energy consumption 507407.8 kWh has achieved by using LED lighting and star rated super ceiling fan.

Conclusion

Tibhuvan international airport has supply side two 11KV feeder as one 11KV Baneshwor and another 11KV Chabahil as dedicated feeder in Po station. In demand side there is essential and non-essential loads have been separated, in order to maintain healthy electricity supply in case main supply failure essential side has two generators as secondary back up. Electrical load increase yearly as per passenger movement up to 2012 to 2017 and it has also shown same proportional ratio of incremental value as BAU state from solver TREND and regression method of forecast from 2018 to 2024. Electrical energy consumption with enhancing technology of using LED lighting in aeronautical and non-aeronautical lighting system and star rated ceiling fan which result save in electrical power consumption and financially feasible too.

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TIA Back



सार्वजनिक निकायमा खरिद व्यवस्थापन



भीमराज उप्रेती
अधिकृत, ने. ना. उ. प्रा.

विषय प्रवेश

सार्वजनिक खरिद भन्नाले सार्वजनिक निकायले सार्वजनिक खरिद ऐन, नियामवली बमोजिम कुनै मालसामान, परामर्श सेवा, वा अन्य कुनै निर्माण कार्य गर्ने वा गराउने कार्य सम्भन्धनु पर्छ। सार्वजनिक निकायमा खरिद प्रक्रियामा पारदर्शिता, इमान्दारीता, जवाफदेहीता, प्रतिस्पर्धा, स्वच्छता, विश्वसनीयता, जवाफदेहीता र मूल्य सार्थकता कायम गरी सार्वजनिक खरिद व्यवस्थालाई वैज्ञानिक बनाई सार्वजनिक खर्चलाई प्रतिफलयुक्त तुल्याई सबैमा समान अवसर सिर्जना गरी सुशासनको प्रत्याभूती दिलाउने उद्देश्यले सार्वजनिक खरिद ऐन, २०६३ र सार्वजनिक खरिद नियमावली, २०६४ कार्यान्वयनमा ल्याइएको हो । र राज्यबाट गरिने कुल खर्चका करिव ६० देखि ७० प्रतिशत सार्वजनिक खरिदले ओगट्ने गरेको सन्दर्भमा सार्वजनिक खरिदको प्रभावकारी रुपमा व्यवस्थापन गर्नु पहिलो आवश्यकता हो । सार्वजनिक खरिदलाई पारदर्शी, वैज्ञानिक र वस्तुनिष्ठ नबनाई विकासलाई कुशल रुपमा व्यवस्थापन गर्न सकिदैन।

सार्वजनिक खरिद सम्बन्धी कार्यविधि, प्रक्रिया तथा निर्णयलाई अब बढी खुला, पारदर्शी, वस्तुनिष्ठ र विश्वसनीय बनाई सुशासनको प्रत्याभूति दिलाउन खरिद ऐन र नियामवलीले व्यवस्था गरपनि हालका दिनमा नेपालको सार्वजनिक खरिदमा चरम बेथिती देखिएको छ । राज्यको ढूलो हिस्सा सार्वजनिक खरिदमा खर्च हुने भएको हुदा सार्वजनिक खरिदमा

सार्वजनिक चासो हुनु स्वभाविक नै हो । सार्वजनिक खरिद प्रक्रियामा हुने गलत कार्यहरु, खराब प्रवृत्ति कम गर्ने दिशामा सरोकारवाला सबै क्षेत्र विशेष गरी सरकारी, नीजि क्षेत्र, व्यवसायी, नागरिक समाजको पनि गराई, सोचाई र कार्यशैलीमा परिवर्तन आउन जरुरी छ ।

पन्ध्रौ योजनाले “समृद्ध नेपाल, सुखी नेपाली” को दीर्घकालीन सोच र समृद्ध अर्थतन्त्र, सामाजिक न्याय तथा परिष्कृत जीवन सहितको समाजवाद उन्मुख लो ककल्याणकारी राज्यको रुपमा रुपान्तरण गर्दै उच्च आय स्तर भएको मुलुकमा स्तरोन्नति गर्ने मुख्य लक्ष्य रहेको छ । जसलाई प्राप्त गर्नका लागि सार्वजनिक खरिदमा नै तिकता

र सदाचाराति सबै क्षेत्रबाट प्रवर्द्धन गर्नु आवश्यक छ । सार्वजनिक खरिद ऐन, २०६३ ले सार्वजनिक निकायलाई स्पष्ट रुपमा परिभाषित गरेको छ । सबै सरकारी, अर्ध सरकारी, सार्वजनिक संस्थान, सरकारी कोषको प्रयोग गरी खरिद गर्ने सबै निकायलाई सार्वजनिक निकायको रुपमा परिभाषित गरिएको छ ।

सार्वजनिक खरिद ऐन र नियमावलीमा भएका केही प्रावधानहरु :

सार्वजनिक निकायले वार्षिक दश लाख भन्दा बढीको खरिद गर्ने पर्ने भएमा वार्षिक खरिद योजना बनाउने पर्छ भने वार्षिक दश करोड रुपैया भन्दा बढी रकमको खरिद गर्ने पर्ने भएमा खरिद गुरु योजना तयार पार्नु पर्दछ । सार्वजनिक खरिदलाई व्यवस्थित बनाउन खरिदका निम्न विधिहरु

तोकिएका छन् : अन्तर्राष्ट्रिय स्तरमा खुला बोलपत्र आह्वान गरी, राष्ट्रिय स्तरमा बो लपत्र आह्वान गरी, सिलबन्दी दरभाउ आह्वान गरी, सोभै खरिद गरी, उपभोक्ता समिति वा लाभग्राही समुदायलाई सहभागी गराई, अमानतबाट, एकमुष्ट दर विधि, क्याटलग सपिङ्ग, लिमिटेड टेन्डरिङ्ग र बाई ब्याक मेथड त्यसै गरी परामर्श सेवा खरिद गर्नु पर्दा प्रतिस्पर्धात्मक प्रस्ताव माग गरी र सोभै वार्ताबाट गर्ने गरिन्छ ।

मालसामान, निर्माण कार्य वा अन्य सेवा खरिद गर्दा खुला बोलपत्र, सिलबन्दी दर भाउपत्र र सोभै खरिद विधि मध्ये मूल्यका आधारमा निम्न आधारमा खरिद विधि चयन गरिन्छ :

- ✓ रु एक लाखसम्मको फूटकर खरिदमा सोभै खरिद,
- ✓ पाँचलाख सम्म लागत अनुमान भएको मा दरभाउ पत्रबाट सोभै खरिद,
- ✓ बीसलाख सम्म लागत अनुमान भएको मा सिलबन्दी दरभाउपत्र,
- ✓ बीसलाख भन्दा माथिको हकमा खुला बोलपत्र, त्यसैगरी परामर्शको सम्बन्धमा,
- ✓ पाँचलाख सम्म सोभै वार्ताबाट,
- ✓ पाँचलाख सम्म लागत अनुमान भएको सोभै खरिद,
- ✓ दशलाख सम्म मौजूदा सूचिबाट,
- ✓ बीसलाख सम्म दरभाउपत्रबाट,

- ✓ दश करोड सम्म राष्ट्रिय स्तर र दश कडोर भन्दा माथि अन्तराष्ट्रिय स्तरको बोलपत्र गरी ।

बोलपत्र आह्वानको सूचना प्रकाशन गर्दा राष्ट्रिय स्तरको बोलपत्र वा पूर्व निर्धारणको प्रस्ताव आह्वानको सूचनाको हकमा कम्तिमा तीस दिन र अन्तराष्ट्रिय स्तरको बोलपत्र वा पूर्व यो ग्यता निर्धारणको प्रस्ताव आह्वानको सूचनाको हकमा कम्तिमा पैतालीस दिनको अवधि दिनु पर्ने छ । सिलबन्दी दरभाउको सम्बन्धमा पन्ध्र दिनको अवधि दिनुपर्ने छ । सार्वजनिक निकायले खरिद सम्झौता पश्चात आपूर्तिकर्ता, निर्माण व्यवसायी वा सेवा प्रदायकबाट अग्रिम बैक जमानत लिई खरिद सम्झौता रकमको बीस प्रतिशतले नबढ्ने गरी पेशकी दिन सक्ने व्यवस्था गरेको छ । पहिलो पटक पेशकी प्राप्त गरेको मितिले तीस महिना भित्र कार्य शुरु गर्नु पर्ने व्यवस्था खरिद ऐनले गरेको छ ।

सार्वजनिक खरिदलाई पारदर्शी बनाई नैतिक मूल्य कायम गर्नका लागि सार्वजनिक खरिदमा संलग्न पदाधिकारी र बोलपत्रदाता वा प्रस्तावदातालाई आचरणको व्यवस्था गरेको छ । बोलपत्रदाता वा प्रस्तावदाता, सेवा प्रदायक, आपूर्तिकर्ता, निर्माण व्यवसायी, आदिलाई एक वर्ष देखि तीन वर्ष सम्म कालो सूचीमा राख्न सक्ने व्यवस्था छ । सार्वजनिक निकायबाट हुने खरिद कार्यको अनुगमन, नियमन र सार्वजनिक खरिद प्रणालीलाई व्यवस्थित गर्न प्रधानमन्त्री तथा मन्त्रिपरिषद्को कार्यालय अन्तर्गत एक सार्वजनिक खरिद अनुगमन कार्यालय रहनेछ ।

सार्वजनिक खरिदको वर्तमान समिक्षा :

सार्वजनिक खरिद निर्माण कार्यले नै मुलतः राज्यको भावी संरचनाको खाका तयार पार्ने हो तर गुणस्तरीय खरिद र निर्माण कार्य आजका दिनमा चुनौतीपूर्ण बन्दै गएको छ । विगतबाट पाठ सिकेर अगाडि बढ्न नसक्ने हो भने भविष्यको पिढीले पनि दिगो विकासको अनुभूति गर्न पाउने छैनन् । सार्वजनिक खरिदलाई दोष देखाएर २१ वटा राष्ट्रिय गौरवका आयोजना समयमा सम्पन्न हुन सकेका छैनन् । भ्रमपूर्ण विज्ञापन, विभेदकारी बोलपत्र कागज पत्र,

बजारको आपसी मिलेमतो बाँडफाँड गर्ने, पालैपालो बोलपत्र लिने र दिने, आदि जस्ता समस्या आजका दिनमा पनि भइरहेको पाइन्छ । यसरी अनैतिक कार्य गर्नका लागि प्रोत्साहन गर्ने काम राजनीतिक दल र प्रशासनको उच्च तहमा आसिन व्यक्तिहरुबाट नै भएको छ । सार्वजनिक खरिदमा कमजोर र गुणस्तरीय कार्य हुदाँ पनि कारवाही प्रक्रिया अगाडि बढाउन सकिएको छैन । त्यस्तै पुरस्कार र दण्डलाई कार्य संपादनसँग आबद्ध गर्न नसकिँदा पनि गतल काम गर्नेलाई प्रोत्साहन मिलेको छ । भौतिक संरचना बनाउनका लागि ठेक्का प्राप्त ठेकेदारहरु अग्रिम कार्य पेशकी लिएर राजनीतिक र प्रशासनबाट आशिर्वाद पाएर वेपत्ता भएका छन् ।

सार्वजनिक खरिद प्रक्रियामा अधिकांश सन्दर्भमा सबै भन्दा न्यून अंक कबोल गर्ने सेवा प्रदायक छनौट हुने सम्भावना रहन्छ । न्यून कबोल भएको सेवा प्रदायकबाट कार्य सम्पन्न गर्दा पछि न्यून गुणस्तरको काम हुने, भेरिएसनमा जानु पर्ने, समयमा नै कार्य सम्पन्न नहुने जस्ता समस्याहरु विद्यमान छन् । सार्वजनिक खरिद कानूनको माध्यमबाट धेरै कामहरु हुने गर्छन् । सबै कार्यहरुका लागि एउटै कानून कतिको प्रभावकारी र वैज्ञानिक छ भन्ने सन्दर्भमा बहस र छलफल आवश्यक छ । सार्वजनिक खरिदको सम्बन्धमा स्पेशलफिकेसन तयार गर्नमा बढी समय लगाउने, समयमा नै खरिद प्रक्रिया शुरु नगर्ने, मूल्यांकनमा आवश्यकता भन्दा बढी समय लगाउने, धेरै संख्यामा बोलपत्र फारम बिक्री हुने भएता पनि न्यूनतम संख्यामा मात्र बोलपत्र दाखिला हुने, सम्झौता व्यवस्थापनमा ढिलाई हुने, आदि पनि खरिदको समस्याको रूपमा आजका दिनमा पनि विद्यमान छन् ।

सार्वजनिक खरिद व्यवस्थापनमा देखिएका समस्याहरु :

- ✓ खरिद गर्नु पर्ने मालसामान, निर्माण कार्य, सेवा वा परामर्शको विवरण समयमा नै तयार नपर्ने,
- ✓ अधिकांश सार्वजनिक निकायमा वार्षिक खरिद योजना र खरिद गुरु यो जना बनाएको पाइँदैन,

- ✓ लागत अनुमान तयार गर्दा फरक फरक नमर्सको प्रयोग गर्ने,
- ✓ प्रायगरी संभाव्यता अध्ययन नगर्ने गरी हाले पनि हचुवाका भरमा गरी सोही अनुरूप आयोजना तर्जुमा गर्ने,
- ✓ निश्चित ब्रान्डसँग मिल्ने गरी स्पे शिफिकेसन तयार पार्ने सोही अनुरूप खरिद प्रक्रिया अगाडी बढाउने,
- ✓ आचरण सम्बन्धि व्यवस्थालाई सबै पक्षबाट पालना हुन नसकेको अवस्था छ,
- ✓ अमानतबाट हुनेकार्य स्वीकृत नगराई खरिद कार्य गर्ने,
- ✓ सार्वजनिक खरिद ऐनले धेरै वटा खरिद विधिहरु उल्लेख गरेता पनि खरिद विधिको छनौट वैज्ञानिक रूपमा छनौट हुन नसकेको,
- ✓ खरिद ऐनमा व्यवस्था भएको आचरण सम्बन्धी व्यवस्थालाई प्रभावकारी रूपमा लागु गर्न नसकिएको,
- ✓ बोलपत्र आह्वान गर्दा सूचनामा खुलाउनु पर्ने व्यहोरा स्पष्ट रूपमा नखुलाउने,
- ✓ मोबिलाईजेसन पेशकी लिएर अन्य क्षेत्रमा लगानी गर्ने र संझौता अनुसार समयमा काम सुरु नगर्ने,
- ✓ ठेक्का सझौता गर्दा ठेक्का कार्यान्वयन कार्य तालिका पेश नगर्ने,
- ✓ लागत अनुमान टुक्र्याई सोझै खरिद गर्ने,
- ✓ कानूनमा व्यवस्था भए बमोजिम सबै प्रकारका खरिद विधिहरुको नमूना बोलपत्र सम्बन्धी कागजात तयार नहुनु,
- ✓ सार्वजनिक निकायमा विद्युतीय खरिद प्रणाली बारेमा प्रयाप्त जानकारी नहुनु र विद्युतीय खरिद प्रणाली संचालन निर्देशिका, २०७४ को बारेमा जानकारी नहुनु,
- ✓ धेरै सार्वजनिक निकायमा हाल सम्म पनि खरिद महाशाखा, शाखा, इकाईको अवधारणाको प्रभावकारी भएको

पाईदैन,

- ✓ मूल्य समायोजन वैज्ञानिक र भरपर्दो नभएको,
- ✓ गुणस्तर परीक्षण गर्दा गुणस्तरीय कार्य नगरेकोमा समेत कार्य स्वीकार गर्ने,
- ✓ पूर्व निर्धारित क्षतिपूर्ति नलिई म्याद थप गर्ने गरेको पाइन्छ,
- ✓ कानूनी, आर्थिक, प्राविधिक मूल्यांकन भन्दा पनि न्यूनतम कबोल गरेकोमा सो को उपयुक्त पुस्त्याइ माग नगर्ने,
- ✓ बोलपत्रमा हुने मिलेमतो न्युनीकरणमा अपेक्षित रुपमा उपलब्धी हासिल गर्न कठिनाई भएको,
- ✓ ठेक्का र खरिद संभौताको कार्यान्वयनको अवस्था कमजोर, नाजुक र समस्या ग्रस्त रहेको,
- ✓ खरिद कार्यमा संलग्न कर्मचारीहरुको नैतिकता र सदाचारको पक्ष कमजोर हुनु र खरिद सम्बन्धी पर्याप्त ज्ञान र सीपको अभाव हुनु,
- ✓ सार्वजनिक खरिद अनुगमन कार्यालयको संस्थागत क्षमता कमजोर हुनका साथै अधिकारमा कमी हुनु, आदि ।

खरिद व्यवस्थापनलाई प्रभावकारी बनाउने भावी कार्य दिशा

- ✓ विद्युतीय खरिद प्रणालीको समय सापेक्ष सुधार गरी प्रभावकारी कार्यान्वयन गर्ने,
- ✓ संघीय संरचना अनुकूलको सार्वजनिक खरिद प्रणालीको स्थापना र सो को बस्तुगत ढङ्गले कार्यान्वयन गर्ने,
- ✓ सार्वजनिक खरिद कानूनमा समय सापेक्ष सुधार गर्ने,
- ✓ खरिद ऐनमा व्यवस्था भएका सबै खरिद विधिहरुको नमुना बोलपत्र सम्बन्धि कागजात, कार्यविधि, निर्देशन

तथा प्राविधिक मार्गदर्शनको तयारी गर्ने,

- ✓ विद्युतीय खरिद प्रणाली सम्बन्धी दक्षता अभिवृद्धि, तालिम तथा अभिमुखिकरणलाई बृहत व्यापक बनाउदै सबै सरोकारवालाहरुलाई समेट्ने,
- ✓ सार्वजनिक खरिदका सम्बन्धमा अन्तराष्ट्रिय असल अभ्यासहरु अनुशरण गर्दै वर्तमान खरिद प्रणालीलाई वैज्ञानिक बनाउदै लैजाने,
- ✓ सार्वजनिक खरिद अनुगमन कार्यालयको संस्थागत क्षमतामा बृद्धि गरी अधिकार क्षेत्रमा बढोत्तरी गर्ने,
- ✓ पूर्व निर्धारित क्षतिपूर्ति अनिवार्य रुपले लागु गर्ने,
- ✓ सार्वजनिक निकायमा खरिद महाशाखा, शाखा, इकाईका अनिवार्य गरी नैतिकता र सदाचारको पाटोलाई बलियो बनाउने,
- ✓ बोलपत्र आह्वान गर्दा सूचनामा खुलाउनु पर्ने व्यहोरा स्पष्ट रुपमा खुलाउने,
- ✓ सार्वजनिक निकायमा वार्षिक खरिद योजना र खरिद गुरु योजना अनिवार्य बनाउने र सोही अनुरूप खरिद कार्य अगाडी बढाउने,
- ✓ राजनीतिक दलको आन्तरिक लोकतन्त्रलाई बलियो बनाई चुनावलाई कम खर्चिलो बनाउने, आदि ।

निचोड :

वर्तमान संविधानले सहभागितामूलक विकासका माध्यमबाट लोक कल्याणकारी राज्य हुदै समाजवाद उन्मुख अर्थतन्त्रमा जोड दिइएको छ । सार्वजनिक खरिदमा मात्र राज्यको करिब ७० प्रतिशत खर्च हुने हुदाँ यो विषयमा सरोकारवाला सबै को ध्यान जानु आवश्यक छ । राज्यमा

विकास व्यवस्थापन गर्ने जिम्मा सरकार को मात्र हैन, त्यसैले निजी क्षेत्रले पनि समाज र राष्ट्रप्रति आफ्नो दायित्व पुरा गर्दा इमान्दारिता, पारदर्शिता, नैतिकता र सदाचारिता देखाउनु पर्ने बेला भएको छ । सार्वजनिक खरिद कानूनको प्रभावकारी कार्यान्वयनको लागि खरिद योजना एउटा आधार हो । सुशासन, सार्वजनिक जवाफदेहिता, भष्टाचार नियन्त्रण सरकारको उच्च प्राथमिकताको विषय हो । सार्वजनिक खरिदलाई सदाचारयुक्त बनाएर मात्र सुशासनको लक्ष्य हासिल गर्न सकिन्छ । विकासलाई गुणस्तरीय र दिगो बनाउन खरिद प्रक्रियाको structural part भन्दा पनि behavioural र ethical part लाई बलियो बनाउनु पर्ने देखिन्छ ।

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- ✓ पन्ध्रौं योजनाको आधार पत्र
- ✓ सार्वजनिक खरिद ऐन, २०६३
- ✓ सार्वजनिक खरिद नियमावली, २०६४
- ✓ सार्वजनिक संस्थानहरुको वार्षिक स्थिति समीक्षा, २०७५
- ✓ प्रशासन सुधार सुझाव समितिको प्रतिवेदन, २०७०
- ✓ सोपान मासिकका विभिन्न अंकहरु
- ✓ राजन खनाल, सार्वजनिक व्यवस्थापनका सामयिक बहस, दोस्रो परिमार्जित संस्करण, सोपान मासिक, ढिल्ली बजार, काठमाण्डौं
- ✓ आर्थिक सर्वेक्षण, आर्थिक वर्ष २०७४/०७५
- ✓ राष्ट्रसेवक दपर्ण, २०७१
- ✓ विष्णु सुवेदी, प्रशासन, व्यवस्थापन, समावेशी लोकतन्त्रका नविन आयामहरु, पैरवी प्रकासन, पुतलीसडक, काठमाण्डौं ■

नेपाल नागरिक उड्डयन प्राधिकरणको पुस्तकालयः एक परिचय

गोमा बन्जाडे
अधिकृत, नेनाउप्रा.



भूमिका

कुनै पनि संस्था सशक्त रूपले संचालन हुन त्यसका विभिन्न विभाग, शाखा, इकाईहरू पनि सशक्त हुनुपर्दछ। बाहिर बाट हेर्दा कुनै विभाग, शाखाहरूको काम प्रत्यक्ष देखिने हुन्छ त कुनै शाखाहरूको कार्य गौण हुन्छ तर प्रत्यक्ष देखिने कार्यहरू पनि प्रभावकारी एवं दीर्घो बनाउन गौण देखिने शाखाहरूले पनि महत्वपूर्ण भूमिका खेल्न सक्छन्। पुस्तकालय पनि अप्रत्यक्षरूपमा सहयोगी र महत्वपूर्ण बौद्धिक पक्ष हो। यसले कुनै पनि निकायको सुनौलो भविष्यको लागि अध्ययन अनुसन्धानमा सहयोग गर्न सक्छ। तर यसको लागि एक सबल पुस्तकालय र अब्बल पुस्तकालयकर्मीको आवश्यकता पर्दछ। नेपालका प्रायः मन्त्रालय लगायतका सरकारी कार्यालयहरूमा पुस्तकालयको भूमिका केही नरहने र भौतिक संकलनको एउटा कुराको रूपमा मात्र पुस्तकालयकर्मी सम्झिने परिपाटीले गर्दा नै नेपालका पुस्तकालयहरूको अवस्था त्यति राम्रो हुन नसकेको र पुस्तकालयले दिनुपर्ने सेवा प्रवाह हुन नसकेको यथार्थ छ।

नेपाल नागरिक उड्डयन प्राधिकरणको स्थापनासँगै पुस्तकालयको परिकल्पना गरी प्राधिकरणको प्रधान कार्यालय, त्रिभुवन अन्तर्राष्ट्रिय विमानस्थल नागरिक उड्डयन कार्यालय र नागरिक उड्डयन प्रतिष्ठानमा पुस्तकालय रहने गरी पुस्तकालय कर्मचारीका

केही दरबन्दी श्रृजना गरिएको भएतापनि प्राधिकरणका पुस्तकालयहरूको अवस्था हेर्दा लामो समयदेखि संचालनमा रहेको जस्तो देखिदैन। प्राधिकरणको प्रधान कार्यालय र प्रतिष्ठानमा रहेका पुस्तकालयहरू डिजिटाइजेशन सहित पुनर्जिवित गर्ने प्रयास भइरहेको छ। त्यसै गरी सिनामंगलस्थित प्राविधिक सुचना इकाईमा प्राविधिक सामग्रीहरू व्यवस्थित गरिएको छ जहाँ हाल renovation को कार्य भइरहेको छ। तर यो लेख प्रधान कार्यालयस्थित पुस्तकालयको सेरोफरोमा मात्र केन्द्रित छ र यसअन्तर्गत संचालित डिजिटल पुस्तकालय र यसमा सामग्री खोजी गर्ने तरिका प्रस्तुत गरिएको छ। यस लेखको प्रमुख उद्देश्य धेरै भन्दा धेरै पाठकहरूले यस पुस्तकालयबाट लाभ लिन सक्नु भन्ने नै हो।

परिचय

प्रधान कार्यालयस्थित पुस्तकालयलाई वि.सं. २०७२ मा SOP बनाई प्राविधिक सामग्री राख्न जोड दिई प्राविधिक सूचना इकाई - पुस्तकालय नामाकरण गरिएको पाइन्छ। यो पुस्तकालय हाल आईकाओ, अन्तर्राष्ट्रिय मामिला तथा कानून विभागअन्तर्गत संचालित छ। यो नेपाल नागरिक उड्डयन प्राधिकरण र समग्र नागरिक उड्डयन क्षेत्रसँग सम्बन्धित सामग्रीहरू अध्ययनको लागि

अत्यन्त महत्वपूर्ण पुस्तकालय हो। नेपालमा नागरिक उड्डयन प्राधिकरणको प्रधान कार्यालयमा नागरिक उड्डयनसम्बन्धी केन्द्रीय पुस्तकालय रहनु पर्ने आईकाओको Requirement नै भएकोले पनि यस पुस्तकालयमा नेपाल नागरिक उड्डयन प्राधिकरणका विभिन्न विभागहरूलाई ध्यानमा राखेर ती विभागहरूलाई उपयोगी सामग्रीहरू संकलन गरी व्यवस्थित गरिएको छ।

पुस्तकालयको प्रबलीकरण (Library Renovation)

यो पुस्तकालय नेपाल नागरिक उड्डयन प्राधिकरण, प्रधान कार्यालयको भुईँ तलामा कुनै बेला पनि घाम नपर्ने स्थानमा रहेकोले सामग्रीहरू ओसेप र किराबाट जोगाउन साथै पर्याप्त समय बसेर पढ्ने वातावरण मिलाउन गत वर्ष वातानुकूलन (Air Conditioning) को व्यवस्था गरिएको छ।

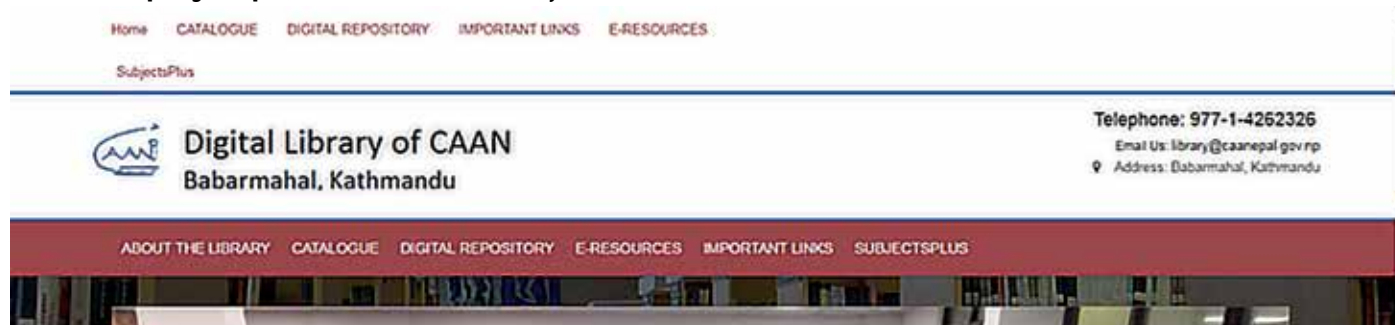
जर्नल तथा पत्रिका प्रदर्शनका लागि Display Rack मा राखिएको छ। पुराना पुस्तक च्याकहरू सानो हलको लागि ठूला र भद्दा भएको, साथै पुस्तकहरूमा धुलो जम्ने भएकोले पुराना च्याकहरू नै मर्मत गरी पुस्तकहरू धुलोबाट जोगाउनका लागि शिशाको slide हरूले बन्द गर्न मिल्ने र कोठा सुहाउँदो साइजका पुस्तक च्याक

बनाइएको छ । पाठ्यसामग्रीको सुरक्षार्थ CC Camera पनि जडान गरिएको छ । पुस्तकालय सामग्रीहरू पाठकको मागअनुसार संकलन गरी व्यवस्थित गरिएको छ । साथै पुस्तकालयको वेबसाइट, छ ।

पुस्तकालयमा पाइने सामग्रीहरूको अनलाइन क्याटलग, CAAN बाट प्रकाशित full-text सामग्रीहरू, इन्टरनेटका सामग्रीहरूको व्यवस्थापन गर्ने गरी डिजिटल पुस्तकालयको सुरुवात गरिएको छ ।

पाठकहरूलाई इन्टरनेटबाट search गरी पढ्न इन्टरनेट जडित कम्प्युटरहरूको व्यवस्था पनि गरिएको छ । एक पटकमा चार जनाले यो सुविधा प्रयोग गर्ने व्यवस्था मिलाइएको छ ।

www.caanepal.gov.np > E-resource > E-library



चित्र १: पुस्तकालयको वेबसाइट

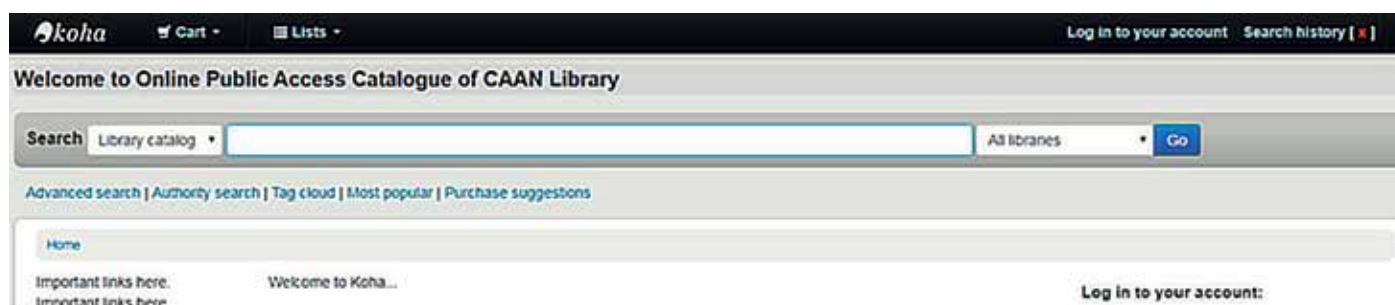
पुस्तकालयको वेबसाइट (Library Website)

प्राचीन अर्थमा 'पुस्तकालय' भन्नाले पुस्तक राख्ने घरको रूपमा बुझिने भएता पनि आधुनिक अर्थमा भौतिक रूपमा भएको संकलन न्याकमा मात्र सिमित राख्ने होइन,

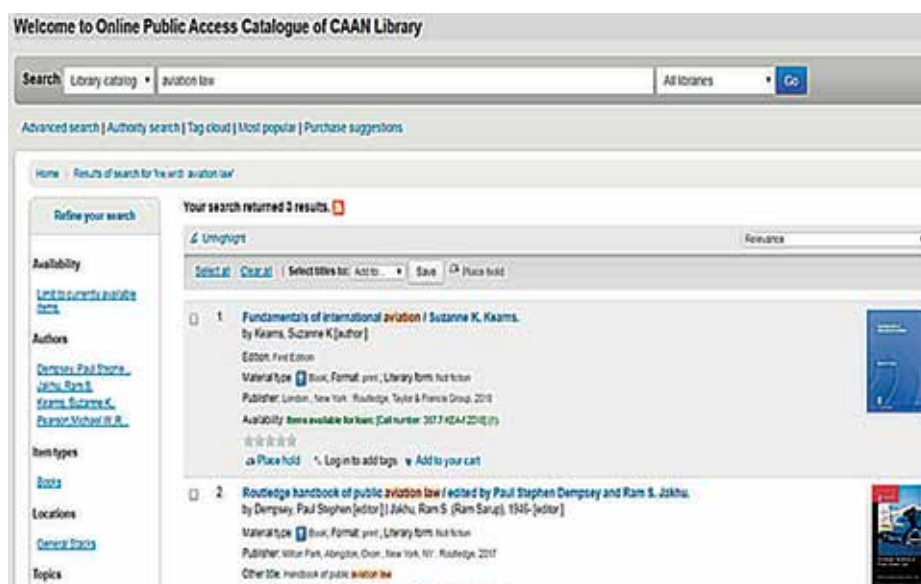
यसलाई पाठक पुस्तकालयमा प्रवेश नगरे पनि पाठककै डेस्कबाट पुस्तकालयको रूपरेखा, त्यहाँबाट प्राप्त हुने सेवासुविधाहरू, आवश्यक सामग्रीहरू छ, छैन पत्ता लगाउने, सकेसम्म पूर्णपाठ (full-text) प्राप्त गर्ने हुनुपर्दछ । त्यसको लागि पुस्तकालय वे

बसाइटको महत्वपूर्ण भूमिका हुन्छ । प्राधिकरणको पुस्तकालयले पनि गतवर्षदेखि पुस्तकालय वेबसाइट बनाई अद्यावधिक गर्दै आएको छ ।

पुस्तकालय वेबसाइटमा अनलाइन क्याटलग, संस्थाको डिजिटल रिपोजिटरी



चित्र २: पुस्तकालयको सूचीकरण (Library Catalogue)



चित्र नं: ३

तथा अनलाइन सामग्रीहरू व्यवस्थित गरिएको छ । यो वेबसाइट प्राधिकरणको मुख्य वेबसाइटसँग जडान गरिएको छ । चित्र नं. १ हेर्नेहोस् ।

अनलाइन क्याटलग (Online Catalogue)

पुस्तकालयमा पाइने सामग्रीहरूको सूचीलाई यदि इन्टरनेटको माध्यमबाट खोज्न सकिन्छ भने त्यस्तो सूचीलाई अनलाइन क्याटलग भनिन्छ । प्राधिकरणको पुस्तकालयमा Koha Integrated Library System मा अनलाइन क्याटलग व्यवस्थित गरिएको छ ।

यस पुस्तकालयमा आफूले चाहेको पुस्तक छ कि छैन भन्ने कुरा आफ्नो डेस्क, घर वा जुनसुकै ठाउँबाट पनि पत्ता लगाउन सकिन्छ। यस अनलाइन क्याटलगाबाट चाहेको पुस्तक र सामग्री खोज्ने तरिका यस प्रकार छः

१. प्राधिकरणको वेबसाइट www.caanepal.gov.np बाट E-resource हुँदै E-library मा click गरी library website मा पुगे पछि CATALOGUE मेनुमा click गरेपछि Library Catalog Search Box देखिन्छ। चित्र नं. २ हेर्नहोस्।

२. यस Search Box मा आफूले चाहेको सामग्रीको Title, Author, Subject, ISBN मध्ये कुनै एउटा टाइप गरी पत्ता लगाउन सकिन्छ।

३. उदाहरणको लागि aviation law टाइप गरी search गरौं:

४. Aviation law सम्बन्धी जम्मा ३ वटा पुस्तकहरू देखियो। अब यीमध्ये पहिलो क्रमको पुस्तक “Fundamentals of international aviation” हेर्न प्यो भने यसको बोलावट नं. (Call Number) टिपेर पुस्तक व्याकमा खोज्नुपर्दछ वा पुस्तकालय कर्मचारीको सहयोग लिनुपर्दछ।

डिजिटल रिपोजिटरी (Digital Repository)

कुनै पनि संस्थासँग सम्बन्धित, सो संस्थाबाट प्रकाशित वा अप्रकाशित सामग्रीहरू चाहेको समयमा प्राप्त गर्न सकिने गरी व्यवस्थितरूपले संकलन गरिएको डिजिटल भण्डारणलाई डिजिटल रिपोजिटरी भनिन्छ। संस्थासँग सम्बन्धित सूचना सामग्रीहरू व्यवस्थित गरिने हुँदा यसलाई Institutional Repository पनि भनिन्छ। CAAN को डिजिटल रिपोजिटरीमा CAAN सम्बन्धी Full-text सामग्रीहरू DSpace नामक सफ्टवेयरको प्रयोग गरी व्यवस्थित गरिएको छ।



चित्र नं. ४



चित्र नं. ५: DSpace को रूपरेखा



चित्र नं. ६: DSpace मा aerodrome सम्बन्धी search

CAAN को वेबसाइट www.caanepal.gov.np बाट E-resource हुँदै E-library मा click गरी library website मा पुगेपछि DIGITAL REPOSITORY मेनुमा click गरेर full-text सामग्रीहरू व्यवस्थित गरिएको सफ्टवेयर DSpace मा पुग्न सकिन्छ। चित्र नं २ हेर्नहोस्: यसमा Civil Aviation Authority

या Nepal अन्तर्गत निम्नानुसारका सामग्रीहरू वर्गीकरण गरी व्यवस्थित गरिएको छः

- Advisory circulars
- Aviation Safety Related Documents
- CAAN Acts and Regulations

- CAAN Annual Reports
- CAAN Directives
- CAAN Manuals
- CAAN Procedures
- CAAN Requirements
- CAAN Souvenirs
- Handbooks
- ICAO Annexes
- Regulations of Aerodrome Engineering Department
- Standard Operating Procedures

यी सामग्रीहरू खोज्नुपर्दा विभिन्न तरिकाले खोज्न सकिन्छ। सबैभन्दा छिटो र छोटो तरिका बारे यहाँ उल्लेख गरिएको छ।

Search DSpace Box मा आफूले चाहेको विषयको शीर्षक वा त्यससँग मेल खाने शब्द वा शब्दावली टाइप गरी enter key हानेपछि सम्बन्धित full-text सामग्रीको सूची देखिन्छ। उदाहरणको लागि Aerodrome टाइप गरी Search गरौं। यसले Aerodrome सम्बन्धी CAAN बाट प्रकाशित सम्पूर्ण सामग्रीहरू एउटै List मा देखाइदिन्छ। चित्र नं. ३ हेर्नहोस्।

Aerodrome टाइप गर्दा यस सम्बन्धी २१ वटा full-text document हरू रहेको देखियो। त्यसमध्ये आफूलाई आवश्यक छानेर पढ्न सकिन्छ। यीमध्ये पहिलो Requirements for issue र renewal of an aerodrome certificate को full-text हेर्न पथ्यो भने त्यसमा click गरी view/open मा click गरेपछि यसको full-text खुल्छ जसलाई पढ्न वा save गरेर राख्न सकिन्छ।

अनलाइन सामग्रीहरूको व्यवस्थापन (Management of Online Documents)

इन्टरनेट तथा गुगलमा खोज्नुभन्दा सहज र छिटो होस् भन्ने हेतुले महत्वपूर्ण अनलाइन डाटाबेसहरूलाई alphabet अनुसार खोज्न A-Z List तथा विषयवस्तु अनुसार खोज्न Subject Guides को व्यवस्था गरिएको छ। यसको लागि पनि SubjectsPlus नामक सफ्टवेयर जडान गरिएको छ। यस्ता database हरू कुनै शुल्क सदस्यता लिनुपर्ने हुन्छन त कुनै निःशुल्क सदस्यता प्राप्त गर्न सकिने हुन्छन। हालसम्म यस पुस्तकालयबाट निःशुल्क डाटाबेसहरू मात्र subscribe गरिएको छ:

- Journal of air traffic management
- Airports international

Research4life: <https://www.research4life.org> को subscribe गरिएको छ।

जसबाट मुख्यतया ५ किसिमका database portal हरूका full-text scientific article हरू सितैमा पढ्न सकिन्छ:

1. Hinari – Health Information सम्बन्धी scientific journal articles
2. AGORA – Agriculture, forestry, fisheries, climate & food security सम्बन्धी scientific journal articles
3. OARE – Environment सम्बन्धी scientific journal articles
4. ARDI – Innovation and technology सम्बन्धी scientific journal articles
5. GOALI – Law सम्बन्धी scientific journal articles

निष्कर्ष

नेपाल	नागरिक	उड्डयन
प्राधिकरण	जस्तो	गरिमामय

संस्थामा पुस्तकालय तथा डिजिटल पुस्तकालयलाई राम्रोसँग व्यवस्था गर्न सकिएमा प्राधिकरणका कर्मचारी वर्ग मात्र होइन नागरिक उड्डयनमा रुची राख्ने सम्पूर्ण अनुसन्धाता, उद्यमी एवं सर्वसाधारणहरू समेत लाभान्वित हुने देखिन्छ। त्यसैले एउटा नमूनाको रूपमा यस किसिमको डिजिटल पुस्तकालयको सुरुवात गरिएको हो।

पुस्तकालयको प्रयोग जति बढी भयो त्यति नै पुस्तकालयले जिवन्तता पाउँछ। पुस्तकालय आउने र सामग्रीहरू खोजी गरी पढ्ने पाठकहरू नै पुस्तकालय अद्यावधिक गर्न महत्वपूर्ण हुन्छन्। आफ्नो विषयवस्तुमा ज्ञान बढाउँदै लैजान चाहने पाठकहरूलाई उपयुक्त सामग्रीहरू सहित सहयोग गर्न, मार्गनिर्देशन गर्न पुस्तकालय कर्मचारीको कर्तव्य हो र यसैमा उ रमाउनु पर्दछ। सबैको सदैव हित सोच्दै अध्ययन/अनुसन्धान गर्न सघाउँदै आफ्नो संस्थाको गरिमा बढाउने पुस्तकालयलाई प्रोत्साहन र प्रवर्द्धन गर्दै लैजान प्राधिकरणका सबै निकाय तथा पदाधिकारीहरूको सहयोग, समन्वय र सद्भाव आवश्यक पर्दछ जुन प्राधिकरणको पुस्तकालयले धेरै हदसम्म प्राप्त गरिरहेको छ र गरिरहने छ। यस पुस्तकालयका सेवाहरू अझ प्रभावकारी बनाउन पाठकहरूका सुझावहरू सदैव अमूल्य हुनेछन्। ■

Energy Saving in Variable Refrigerant Flow (VRF) Air Conditioning System

Shankar Lal Das
Sr. Assistant, CAAN



Introduction

VRF systems are similar to the multi-split systems which connect one outdoor section to several evaporators. However, multi-split systems turn OFF or ON completely in response to one master controller, whereas VRF systems continually adjust the flow of refrigerant to each indoor evaporator. The control is achieved by continually varying the flow of refrigerant through a Pulse Modulating Valve (PMV) whose opening is determined by the microprocessor receiving information from the thermistor sensors in each indoor unit. The indoor units are linked by a control wire to the outdoor unit which responds to the demand from the indoor units by varying its compressor speed to match the total cooling and/or heating requirements. VRF systems promise a more energy-efficient strategy at a somewhat higher cost. The modern VRF technology uses an inverter-driven scroll compressor and permits as many as 48 or more indoor units to operate from one outdoor unit (varies from manufacturer to manufacturer). The inverter scroll compressors are capable of changing the speed to follow the variations in the total cooling/heating load as determined by the suction gas pressure measured on the condensing unit. The capacity control range can be as low as 6% to 100%. Refrigerant piping runs of more than 200 ft are possible, and outdoor units are available in sizes up to 240,000 Btuh.

A VRF schematic arrangement is indicated below:

Electronic Expansion Valve (EEV) in VRF System

With an electronic expansion valve (EEV), you can tell the

system what superheat you want and it will set it up. The primary characteristic of EEV is its ability to rotate a prescribed small angle (step) in response to each control pulse applied to its windings. EEV consists of a synchronous electronic motor that can divide a full rotation into a large number of steps, 500 steps/rev. With such a wide range, an EEV valve can go from full open to totally closed and closes down when system is satisfied. EEV in a VRF system functions to maintain the pressure differential and also distribute the precise amount of refrigerant to each indoor unit. It allows for the fine control of the refrigerant to the evaporators and can reduce or stop the flow of refrigerant to the individual evaporator unit while meeting the targeted superheat.

Design consideration for VRF system

VRF systems are typically distributed systems – the outdoor unit is kept at a far off location like the top of the building or remotely at grade level and all the evaporator units are installed at various locations inside the building. Typically, the refrigerant pipework (liquid and suction lines) is very long, running in several hundreds of feet in length for large multi-story buildings. Obviously, the long pipe lengths will introduce pressure losses in the suction line and, unless the correct diameter of pipe is selected, the indoor units will be starved of refrigerant resulting in insufficient cooling to the end user. So it is very important to make sure that the pipe sizing is done properly, both for the main header pipe as well as the feeder pipes that feed each indoor unit.

The maximum allowable length varies among different manufacturers; however the general guidelines are as follows:

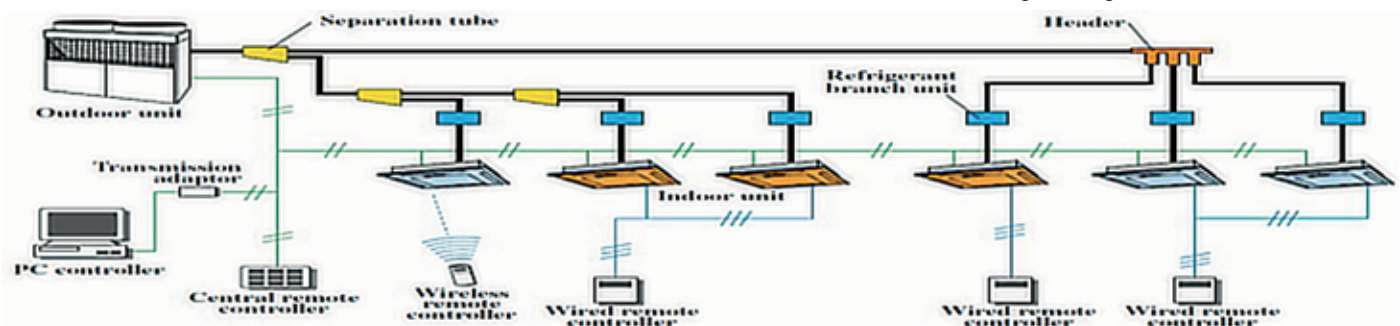


Figure 1: VRF Layout - (Source: Fujitsu)

- » The maximum allowable vertical distance between an outdoor unit and its farthest indoor unit is 164 ft;
- » The maximum permissible vertical distance between two individual indoor units is 49 feet,
- » The maximum overall refrigerant piping lengths between outdoor and the farthest indoor unit is up to 541 ft.
- » L1: Maximum height difference between outdoor unit and indoor unit = 50m
- » L2: Maximum height difference between indoor unit and indoor unit = 15m
- » L3: Maximum piping length from outdoor unit to first separation tube = 70m
- » [L3+L4+L5+L6]: Maximum piping length from outdoor unit to last indoor unit = 100m
- » L6 & L7: Maximum piping length from header to indoor unit = 40m
- » Total piping length = 200m (Liquid pipe length)

Table 1: Heat load calculation

Component	Q (Btu/hr) Sensible	Q (Btu/hr) Latent
Walls	16878.32	
Glass	4409.82	
Partition, Ceilings And Floors	68144.8	
Infiltration	26655.05	27303.8
People	15300	12300
Light	23390.64	
Appliances	72276	
Outside air	46116	47238.4
Total heat	273170.63	86842.2
Total Heat (sensible+latent)	360012.83	
Safety factor at 10%	36001.28	

Grand Total heat	396014.11 (33.00 TR) (115.5KW) (40HP)
------------------	--

(1 TR (tons) = 12000 BTU/HR, 200 BTU/MIN, 1.21HP, 3.5 KW..)

Energy Efficiency of Air Conditioner:

Efficiency of a room air conditioner is normally measured as Energy Efficiency Ratio (EER), which is the ratio of the cooling output, measured in British thermal units (Btu) per hour, to the power input (in Watts, and includes all inputs to compressor, fan motors and controls) to operate AC at standard rating conditions. This means a higher the EER, the more efficient the air conditioner is. At times, EER is defined a little differently. The cooling capacity instead of being denoted in Btu/hr is also denoted in Watts (1Btu/ hr = 0.293 Watts). Thus EER is represented as Watts/ Watts or as a number without any units.

- » $EER = \text{cooling capacity} / \text{Power consumption (both in Watt)}$
- » EER of 33 TR (about 115500 W) capacity air conditioner consuming power 52000 W = $115500/52500 = 2.2$
- » Star Rating System based on EER – No star:2.2,1-Star: 2.3, 2-Star: 2.5, 3-Star: 2.7, 4-Star: 2.9 and 5-Star: 3.1
- » EER of 33 TR For VRF system in a space house maximum cooling capacity 115500W as per outdoor unit and air conditioner consuming power 21300W = $115500/21500 = 5.37$

Annual Energy Cost Calculation:

We can use following steps to calculate energy consumption of your air conditioner on basis of power input required by it.

- » Assuming 8 hours normal working hours of air conditioner in a day.
- » Assuming electricity rate per unit (In Nepal) = Rs. 10

Annual Energy Cost of VRF System:

Working hours of compressor in “cut-in & cut-out” condition is 70%. That means 70% of 8 hours = 5.6 hours/day.

- » Electricity consumption of a 33 Ton VRF air conditioning system is 22.51KW

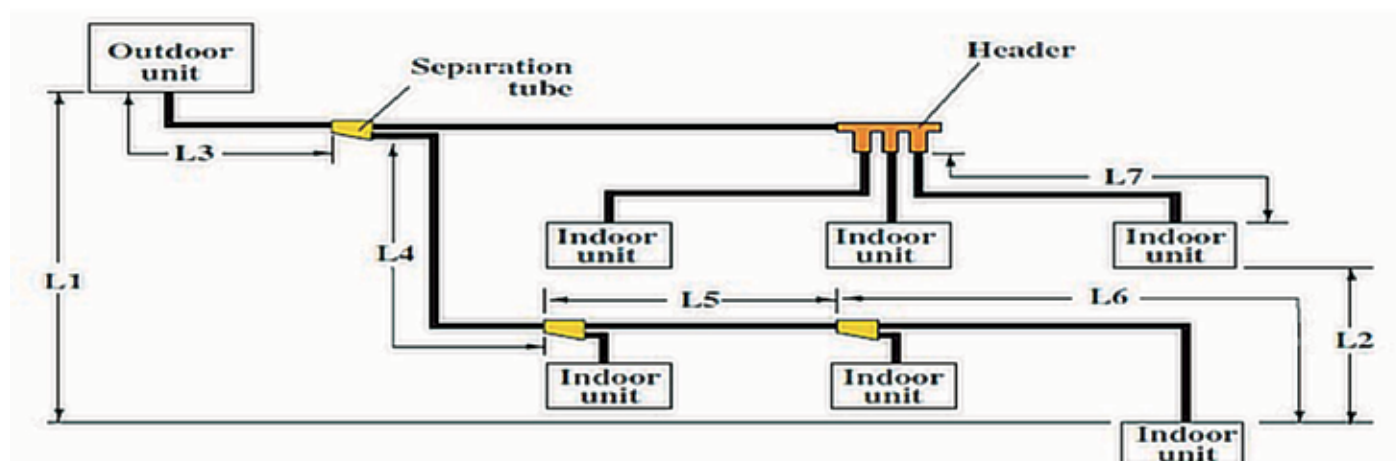


Figure 1. 5: VRF design data (Source: Fujitsu)

- » Actual Units of electricity consumed per day = $(5.6 \times 22.5) = 120.4$ units
- » Electricity consumed per day in price = $(120.4 \times 10) = \text{Rs. } 1204$
- » Electricity consumed per year = $(\text{Rs. } 1204 \times 365) = \text{Rs. } 439460$

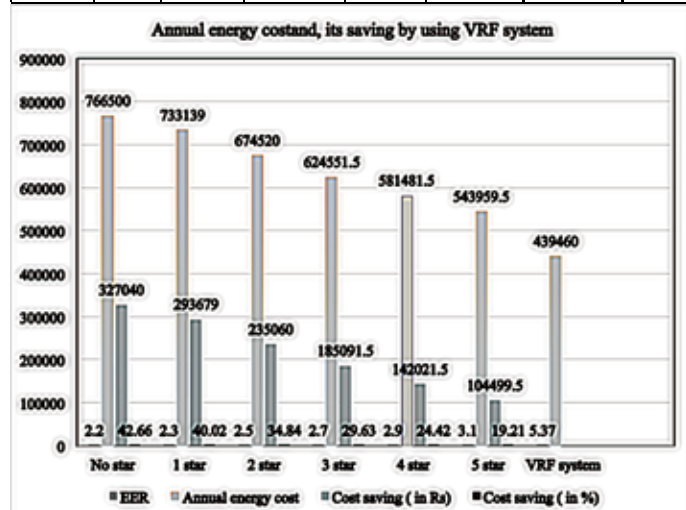
Annual Energy Cost of Split AC:

Working hours of compressor in “cut-in& cut-out” condition is 50%. That means 50% of 8 hours = 4 hours/day.

- » Electricity consumption of a 33 Ton Split air conditioning system is 52.5KW
- » Actual Units of electricity consumed per day = $(4 \times 52.5) = 210$ units
- » Electricity consumed per day in price = $(210 \times 10) = \text{Rs. } 2100$
- » Electricity consumed per year = $(\text{Rs. } 2100 \times 365) = \text{Rs. } 766500$

Annual Energy Cost for 33 tons Split AC at Different Star Ratings and VRF System.

	Minimum energy efficiency Ratio (EER)	Maximum cooling capacity (watts)	Input power (watts)	Unit consumption per day (KWH)	Electricity cost/year (in Rs.)	Cost Saving by use of VRF System (in Rs.)	Cost Saving by use of VRF System (in %)
No star	2.2	115500	52500	210	766500	327040	42.66
1 star	2.3	115500	50217.39	200.86	733139	293679	40.02
2 star	2.5	115500	46200	184.8	674520	235060	34.84
3 star	2.7	115500	42777.77	171.11	624551.5	185091.5	29.63
4 star	2.9	115500	39827.58	159.31	581481.5	142021.5	24.42
5 star	3.1	115500	37258.06	149.03	543959.5	104499.5	19.21
VRF system	5.37	115500	21500	120.4	439460		



Conclusion:-

VRF system uses lower energy than that of the different star rating of split system. The energy consumption by VRF system is

lesser. The maintenance cost also is lower than of Split system. In split types AC, as the number of star rating increases, the initial cost will increase but running cost will decrease. The energy efficiency ratio of VRF system is quite high than split system. It was found that the annual energy cost of VRF system is 42.66% and 19.21% less as compared to no star rating of split AC and five-star rating of split AC respectively. This implies that using VRF system, we can save Rs 327,040 annually instead of using 33-ton capacity split AC.

Among different star rating of split AC and VRF system, the VRF system shows better economy during its operational cost and energy consumption rate for the same capacity of the cooling load. Above all VRF have least energy cost.

Recommendation:-

VRF system requires less equipment, there's potentially a lower cost to installing a VRF systems over Split AC. A single condensing unit can serve multiple indoor VRF units, while separate condensing unit is required for each indoor unit for other applications in split AC. When a VRF system is designed and installed correctly, it also can be a fit for retrofit applications that lack room for additional air ducts or large cooling units. It is recommend to use VRF system if there are more than 5 Indoor units. ■

Reference:-

- » Alshatti, R. A. (2011). Analyses of Variable Refrigerant Flow and Exergy in Air Conditioning Systems.
- » Bhatia, A. (2011). HVAC variable refrigerant flow systems. CED Engineering Course, (M03-014).
- » Patel, K. M., Jain, P. K., & Koli, D. K. (2015). Design of HVAC with VRF system for a space house in Ahmedabad. People, 15300, 12300.

पर्यटन लाभ, समस्या र समाधान



कृष्ण प्रसाद भण्डारी
व. सहायक, नेत्राउप्रा.

सामान्यतः घुमफिर, मनोरञ्जन, धार्मिक आस्था, पर्वतारोहण, अध्ययन तथा अनुसन्धान आदि प्रयोजनले भ्रमण गर्ने मानिसहरु पर्यटक हुन र त्यससँग सम्बन्धित व्यवसाय पर्यटन हो । प्राकृतिक, पुरातात्विक, ऐतिहासिक, साँस्कृतिक तथा धार्मिक दृष्टिबाट नेपाल विश्वकै एक प्रमुख पर्यटकीय गन्तव्य हो । हिमाली, पहाडी र तराई क्षेत्रमा रहेका अद्वितीय प्राकृतिक सुन्दरता, महत्वपूर्ण धार्मिक पर्यटकीय गन्तव्य तथा मौलिक साँस्कृतिक तथा पुरातात्विक सम्पदा नेपालको पर्यटन क्षेत्रमा प्रचुर सम्भावना बोकेका निधि हुन् । हिमाली क्षेत्रमा रहेका सुन जस्तै टल्कने हिमाल विश्वमै परिचित छन् । त्यस्तै, गुम्बाहरु, दुर्लभ जडीबुटी, वन्यजन्तु, वनस्पति र स्वस्थकर हावापानी, फलफूल आदिले पनि नेपाललाई विदेशीको आकर्षणको केन्द्र बनाएको छ । क्षेत्रअनुसार पाइने सामाजिक, धार्मिक तथा साँस्कृतिक रितिरिवाजमा आफ्नै मौलिकता पाइन्छ ।

आर्थिक तथा सामाजिक रुपान्तरण गर्ने प्रमुख माध्यम पर्यटन हो । नेपाल विश्वमै एक आकर्षक पर्यटकीय गन्तव्यको रुपमा चिनिन्छ । यहाँको प्राकृतिक सौन्दर्य, संस्कृति, परम्परा र ऐतिहासिक धरोहरहरु साँच्चिकै मोहित बनाउने खालका छन् । नेपालको आतिथ्य सत्कार विश्वमै उत्कृष्ट छ । ति उत्कृष्ट पर्यटकीय सम्भावनाहरुको पहिचान विकास र विस्तारमार्फत आर्थिक स्थायित्व हासिल गर्न नेपालले सन् २०२० लाई नेपाल भ्रमण वर्षको रुपमा मनाउँदै छ । नेपाल भ्रमण वर्षले नेपालको आर्थिक रुपान्तरणमा सघाउनेमा कुनै शंका छैन । तर त्यसका लागि आवश्यक

पर्यटकीय पूर्वाधारको निर्माण, आपसी सम्बन्धमा सुधार, भिसा प्रणालीमा सुधार, आफ्ना विशिष्ट पर्यटकीय गन्तव्यहरुको बारेमा अन्तर्राष्ट्रिय जगतमा प्रचारप्रसार, नेपाललाई विश्व पर्यटन बजारमा प्रमुख आकर्षक पर्यटकीय गन्तव्यको रुपमा स्थापना, सुरक्षित र विश्वसनीय हवाई सेवा, पर्यटकीय सेवा सुविधा तथा प्रविधिको गुणस्तरमा वृद्धि र नयाँ गन्तव्यस्थलको पहिचान र विविधीकरण भने आवश्यक छ ।

नेपाल भ्रमण वर्ष सफल पार्न नेपाल नागरिक उड्डयन प्राधिकरणको प्रमुख भूमिका रहन्छ । अन्तर्राष्ट्रिय तथा क्षेत्रिय आवश्यकताका लागी द्रुत र भरपर्दो साधनको रुपमा हवाई यातायातलाई लिईन्छ । नेपालको विशिष्ट भूराजनीतिक अवस्थितिको कारण विश्व बजारमा प्रत्यक्ष पहुँच कायम गर्न हवाई सेवाको महत्वपूर्ण भूमिका रहेको छ । भौगोलिक विविधताले भरिपूर्ण पर्यटकीय स्थलको भ्रमणका लागि आन्तरिक हवाई सेवा अपरिहार्य जस्तै देखिएको छ । विदेशी पर्यटक हवाई मार्ग हुँदै आउने हुँदा हवाई सेवालाई सुरक्षित, भरपर्दो र विश्वसनीय बनाउनुपनि उत्तिकै आवश्यक छ । पर्यटनको विकासबाट विदेशी मुद्रा आर्जन गर्ने ठूलो अवसर छ भने छोटो समयमै हवाई पूर्वाधार तयार गर्न पनि उत्तिकै चुनौतिपूर्ण छ ।

एक मात्र अन्तर्राष्ट्रिय त्रिभुवन विमानस्थलबाट भित्रिने पर्यटकलाई गन्तव्य स्थलसम्म पुऱ्याउन वैकल्पिक उपाय अपनाउनु पर्ने देखिन्छ । आन्तरिक विमानस्थलहरुको क्षमता विस्तार गरी पर्यटनमैत्री पूर्वाधारको विकास गर्नमा समेत ढिलो गर्न हुँदैन । अन्तर्राष्ट्रिय हवाई

सेवाको लागि नेपाल प्रवेश गर्ने सहज मार्गहरुको विस्तार, सार्वजनिक निजी साभेदारीको माध्यमबाट विमानस्थलको विकास, विस्तार र व्यवस्थापन, बाह्रै महिना आन्तरिक विमानस्थलहरुको सञ्चालन पनि अहिलेको आवश्यकता हो । अन्तर्राष्ट्रिय नागरिक उड्डयन संगठन (आईकाओ)ले नेपाललाई उड्डयन सुरक्षा चासोको सूचीबाट हटाएता पनि युरोपियन युनियनले सूचीबाट नहटाएकोले नेपाली वायुसेवाहरुले उडान भर्न नपाउँदा पर्यटकको आगमन खस्किएको प्रस्ट हुन्छ । कुटनीतिक पहलबाट सो समस्या समाधान गरी नेपाललाई सुरक्षित हवाई यातायातको सूचीमा राख्न ढिला गर्न हुँदैन ।

नेपाल प्राकृतिक श्रोत र सम्पदाले भरिपूर्ण मुलुक हो जसले पर्यापर्यटनमार्फत आर्थिक विकास गर्ने प्रशस्त सम्भावना बोकेको छ । भुगोल अनुसारको जैविक, धार्मिक, साँस्कृतिक र जातीय विविधताले वर्षेनी लाखौं पर्यटकलाई नेपालमा तानिरहेका छन् । वर्तमान सरकारले अङ्गिकार गरेको 'समृद्ध नेपाल सुखी नेपाली'को नारालाई साकार पार्न पर्यटनले महत्वपूर्ण भूमिका खेल्न सक्छ । नेपालमा पर्यटनको अपार सम्भावना हुँदाहुँदै पनि विश्वको आधा जनसंख्या ओगटेका छिमेकी मुलुक भारत र चीनबाट आगमन हुने पर्यटकहरुको कुल संख्या र पर्यटनबाट हुने लाभको हिस्सा नेपालले एकदमै कम पाउने गरेको छ । दक्षिण एसियाबाट एक प्रतिशत मात्र पर्यटक नेपाल भित्राउन सक्ने हो भने त्यसले समृद्धिको ढोका खोल्न सहयोग गर्नेछ । पर्यटनलाई थप व्यावसायिक र उद्यमशील बनाउन

पर्यटकीय पूर्वाधारको विकास विविधीकरण र व्यावसायीकरण गर्न सरकारको एक्लो प्रयासले सम्भव छैन । त्यसका लागि सार्वजनिक निजी र साभेदारीको विकास गर्नुपर्छ ।

पर्यटनसम्बन्धी वर्तमान तथ्यांकीय जानकारी

गत आर्थिक वर्ष २०७५।७६को सर्वेक्षणअनुसार भारतीय बाहेक ११ लाख ७३ हजार ७२ जना पर्यटक नेपाल भ्रमणमा आएका छन् । यो संख्या अघिल्लो आवको भन्दा २५.५ प्रतिशतले बढी हो । देशगत आधारमा हेर्दा सबैभन्दा बढी पर्यटक आउने मुलुकमा क्रमशः भारत १६.६५, चीन १३.१५, अमेरिका ७.८५, श्रीलंका ५.९५ र वेलायत ५.४५ रहेका छन् । औसत बसाई अवधि १२.४ दिन, प्रतिदिन प्रति पर्यटक खर्च अमेरिकी डलर ४४ रहेको छ । त्यसै गरी, नेपाल भ्रमणमा आउने पर्यटक सबै भन्दा बढी मनोरञ्जनको उद्देश्यले आउने गरेको पाइन्छ । आ.व. २०७५।७६ को फागुन मसान्तसम्म पर्यटन क्षेत्रबाट रु ४७ अर्ब ५९ करोड बराबरको विदेशी मुद्रा आर्जन भएको छ । आ.व. २०७४।७५ मा कुल गाहस्थ उत्पादनमा पर्यटन क्षेत्रको यो गदान २.२ प्रतिशत रहेको थियो ।

पर्यटनको आवश्यकता किन ?

- विदेशी मुद्रा आर्जन गरी अर्थतन्त्रलाई सबल बनाउन,
- रोजगारीका अवसर सिर्जना गरी बिद्यमान बेरोजगारी समस्या समाधान गर्न,
- गरिबी निवारण गरी जनताको जीवनस्तरमा सुधार ल्याई आर्थिक समृद्धीको लक्ष्य हासिल गर्न,
- नेपालमा रहेका प्राकृतिक, साँस्कृतिक सम्पदाहरूलाई विश्वसामु चिनाउन,
- नेपालका ऐतिहासिक, धार्मिक, साँस्कृतिक, पुरातात्विक र प्राकृतिक सम्पदाहरूको पहिचान, संरक्षण, प्रवर्द्धन एवं प्रचारप्रसारमार्फत राष्ट्रिय अर्थतन्त्रको महत्वपूर्ण आधारको रूपमा पर्यावरण अनुकूल पर्यटन उद्योगको

विकास र विस्तार गर्न,

- नयाँ पर्यटकीय स्थल र उपजहरूको पहिचान, विकास तथा पर्यटकीय पूर्वाधारहरूको विकासमा टेवा पुऱ्याउन,
- पर्यटकीय गन्तव्यहरूको माध्यमबाट अन्तर्राष्ट्रिय मंचहरूमा सम्बन्ध विस्तार गर्न,
- पर्यापर्यटनको माध्यमबाट ग्रामीण क्षेत्रका नागरिकको जीवनस्तरमा सुधार ल्याई न्यायपूर्ण समाजको निर्माण गर्न,
- दिगो विकासको लक्ष्यहरू हासिल गर्न,
- पर्यटन क्षेत्रको विविधीकरण र विस्तार गर्न,
- मौलिक पहिचान बोकेका प्राकृतिक, धार्मिक, साँस्कृतिक तथा पुरातात्विक सम्पदाहरूको संरक्षण, सम्बर्द्धन र प्रवर्द्धन गर्न,
- समाजवाद उन्मुख समृद्ध र सुखी नेपालीको नारालाई साकार पार्न

नेपालमा पर्यटन क्षेत्रमा देखिएका समस्या

- पर्यटनमैत्री पूर्वाधारहरूको कमी,
- अन्तर्राष्ट्रियस्तरमा पर्यटन प्रवर्द्धन अपेक्षित रूपमा गर्न नसक्नु,
- सुरक्षित हवाई यातायातको पर्याप्त व्यवस्था गर्न नसक्नु, सबै विमानस्थल सबै मौसममा सञ्चालन गर्न नसक्नु,
- सहरकेन्द्रित पर्यटन व्यावसायीहरूलाई ग्रामीण तहसम्म पुऱ्याउन नसक्नु जसले गर्दा सहरमा पर्यटकको चाप अत्यधिक हुनु र अन्य क्षेत्रका पर्यटकीय सम्भावना बोकेका ठाउँहरू ओभरलुड भई पर्नु,
- सुरक्षा व्यवस्था चुस्त र दुरुस्त नहुनु,
- पर्यटकीय सूचना केन्द्रको सबै ठाउँमा विस्तार गर्न नसक्नु, पर्यटकीय गतिविधि प्रविधिमैत्री नहुनु,
- पर्यटनसँग सम्बन्धित दक्ष जनशक्ति र पर्यटन ज्ञानको विकासमा कमी,
- नयाँ पर्यटकीय स्थल र उपजहरूको

पहिचान, विकास तथा पर्यटकीय पूर्वाधारहरूको विकास गर्न नसक्नु,

- धार्मिक तथा साँस्कृतिक सम्पदाहरूको संरक्षण सम्बर्द्धन र विकासमा निजी क्षेत्रलाई पर्याप्त मात्रामा सहभागी गराउन नसक्नु,
- पर्यटन क्षेत्रलाई उद्यमशिलता रोजगारीसँग जोड्न नसक्नु,
- गुणस्तरीय पर्यटक भित्राउनेमा भन्दा संख्यालाई जोड दिनु,
- पर्यापर्यटन र ग्रामीण पर्यटनलाई गरिबी निवारणसँग आवद्ध गर्न नसक्नु,
- पर्यटन क्षेत्रबाट प्राप्त लाभको न्यायोचित वितरण गर्न नसक्नु,
- पर्यटकस्तरीय होटल, लज तथा रिसोर्ट संख्या पर्याप्त मात्रामा नहुनु,
- अतिथि देवो भवको मन्त्रलाई हृदयङ्गम नगरिनु,
- आन्तरिक पर्यटन प्रवर्द्धन गर्नमा खासै पहल कदमी नहुनु,
- पर्यटन क्षेत्रको विकास र विस्तार गर्न मौजुदा ऐन नियम कानूनको समयसापेक्ष संसोधन गर्न नसक्नु ।

पर्यटन क्षेत्रको समस्या समाधानका उपायहरू

- नेपालमा रहेका प्राकृतिक र साँस्कृतिक सम्पदाहरूलाई विश्व बजारमा प्रचार प्रसार गर्ने,
- नागरिक उड्डयन सेवा र सुरक्षालाई अन्तर्राष्ट्रिय मापदण्डअनुरूप सञ्चालन तथा सुनिश्चित गरी हवाई यातायातको पहुँच अभिवृद्धि गर्ने, आन्तरिक विमानस्थलहरू सबै मौसममा संचालन गर्ने,
- पर्यटनमैत्री पूर्वाधारहरूको विकास र विस्तार गर्ने,
- पर्यटकीय गतिविधि प्रविधिमैत्री बनाउने पर्यटनसँग सम्बन्धित सम्पूर्ण गतिविधिलाई अनलाइन प्रणालीबाट उपलब्ध गराउने व्यवस्था मिलाउने,
- नयाँ पर्यटकीय स्थल र उपजहरूको

पहिचान, विकास तथा पर्यटकीय पूर्वाधारहरूको विकास गर्न निजी क्षेत्रलाई अभिप्रेरित गर्ने,

- पर्यटकस्तरीय होटल, लज तथा रिसोर्ट संख्या बढाउने,
- पर्यटन क्षेत्रबाट प्राप्त लाभलाई लक्षित क्षेत्र र समुदायमा न्यायोचित वितरण गर्ने,
- ग्रामीण क्षेत्रको पर्यटन प्रवर्द्धन गर्न आवश्यक पूर्वाधारको विकास गर्ने, पर्यटनलाई गरिबी निवारणसँग जोड्ने खालको नीति, योजना र कार्यक्रम तर्जमा गरी त्यसको प्रभावकारी कार्यान्वयन गर्ने,
- पर्यटन सम्बद्ध नीतिनियम तथा कानूनमा समयसापेक्ष सुधार गर्ने,
- पर्यटन उपजको विकासमा स्थानीय साधन र उत्पादनलाई प्रोत्साहित गर्ने,
- पर्यटन प्रवर्द्धन गर्न सार्वजनिक निजी साभेदारीलाई प्राथमिकता दिने र प्रत्यक्ष वैदेशिक लगानी आकर्षित गर्न विदेशस्थित नेपाली राजदुत, गैर आवश्यक नेपाली संघसँग सहकार्य गर्ने ।

नेपालमा पर्यटन प्रवर्द्धनका लागि भएका कानूनी, संस्थागत व्यवस्था र नीति तथा कार्यक्रमहरू:

क) संविधानमा भएको व्यवस्था:

धारा ५१ (७) ले नेपालका ऐतिहासिक, धार्मिक, साँस्कृतिक, पुरातात्विक र प्राकृतिक सम्पदाहरूको पहिचान, संरक्षण, प्रवर्द्धन एवं प्रचारप्रसारमार्फत राष्ट्रिय अर्थतन्त्रको महत्वपूर्ण आधारको रूपमा पर्यावरणअनुकूल पर्यटन उद्योगको विकास गर्न आवश्यक वातावरण एवं नीति निर्माण गर्ने तथा पर्यटन उद्योगको लाभ वितरणमा स्थानीय जनतालाई प्राथमिकता दिने राष्ट्रिय नीति अवलम्बन गरेको छ ।

ख) पर्यटन नीति, २०६७:

पर्यटन क्षेत्रको विविधीकरण तथा विस्तार,

रोजगारी सिर्जना, पर्यापर्यटन तथा ग्रामीण पर्यटनलाई गरिबी निवारणसँग आवद्ध गर्ने, पर्यटनलाई राष्ट्रिय अर्थतन्त्रको प्रमुख आधारको रूपमा विकास गर्ने, नेपाललाई पर्यटकीय दृष्टिले आकर्षक र प्रमुख गन्तव्य स्थलको रूपमा विकास गर्ने, हवाई यातायातलाई सुरक्षित, भरपर्दो र विश्वसनीय बनाउने आदि ।

ग) पर्यटन ऐन, २०३५

घ) पर्यटन विकास गुरुयोजना, १९७२

ड) पन्ध्रौँ योजना २०७६।७७ देखि २०८०।८१

संस्थागत व्यवस्था

- संस्कृति, पर्यटन तथा नागरिक उड्डयन मन्त्रालय
- नेपाल पर्यटन बोर्ड
- नेपाल नागरिक उड्डयन प्राधिकरण
- नेपाल साँस्कृतिक संस्थान, विकास समितिहरु, साँस्कृतिक प्रतिष्ठान, संग्रहालयहरु
- नेपाल पर्यटन तथा होटल व्यवस्थापन प्रतिष्ठान
- नेपाल वायु सेवा निगम
- निजी क्षेत्रसँग सम्बन्धित संघ संस्थाहरु कार्यक्रमहरु

सन् १९९८ मा नेपाल भ्रमण वर्ष

सन् २००२ र २००३ मा गन्तव्य नेपाल अभियान

सन् २००७ मा पोखरा भ्रमण अभियान

सन् २००९ मा नेपाल पर्यटन वर्ष

सन् २०१२ मा लुम्बिनी भ्रमण वर्ष

सन् २०१६-२०२५ नेपाल पर्यटन राष्ट्रिय रणनीति कार्यान्वयनको चरणमा रहेको

सन् २०२० लाई नेपाल भ्रमण वर्ष मनाउन थालिएको

माइस टुरिजमको अवधारणा लागु गरिएको,

होमस्टेको संचालनमा व्यापक विस्तार भएको

अन्त्यमा

पर्यटन व्यवसाय कम लगानीमा मनग्य आम्दानी प्राप्त गर्न सकिने सेवामूलक क्षेत्र हो पर्यटनको विकासविस्तार र सम्बर्द्धनको माध्यमबाट स्थानीय रोजगारीको अवसर सिर्जना गर्ने गरिबी निवारण गर्ने र विदेशी मुद्रा आर्जन गर्ने दिगो माध्यम पनि हो । यस क्षेत्रबाट प्राप्त हुने लाभ र अवसरको खोजी गर्ने, समस्या र चुनौतीलाई पहिल्याई समाधान गर्ने खालको पर्यटनसँग सम्बन्धित दीर्घकालीन योजना बनाई कार्यान्वयन गर्न अहिलेको आवश्यकता हो । नेपालमा पर्यटन क्षेत्रको विकास र विस्तार गर्न सकेमा मुलुकले आर्थिक रूपमा उल्लेख्य प्रगति हासिल गर्ने निश्चित छ । नेपालमा रहेका प्राकृतिक, साँस्कृतिक, जैविक, धार्मिक र मानवनिर्मित सम्पदाको पहिचान, संरक्षण र प्रवर्द्धनमार्फत विश्व जगतमा एउटा अत्यन्तै आकर्षक, मनोरम, सुरक्षित र अनुपम गन्तव्यको रूपमा चिनाउन सक्ने हो भने वर्तमान सरकारले आत्मसात गरेको 'समृद्ध नेपाल, सुखी नेपाली'को नारालाई साकार पार्न, सन् २०२० मा २० लाख पर्यटक नेपाल ल्याउन, नेपाल पर्यटन राष्ट्रिय रणनीतिले तय गरेका लक्ष्य हासिल गर्न, पन्ध्रौँ योजनाको अन्त्यसम्म ३५ लाख पर्यटक नेपाल ल्याउन, पर्यटकको औसत बसाई १५ दिन पुर्याउन, प्रति पर्यटक प्रतिदिन खर्च १०० डलर पुर्याउन, ४ लाख ५० हजार प्रत्यक्ष रोजगारी सिर्जना गर्न र कुल गाहस्थ उत्पादनमा पर्यटन क्षेत्रको योगदान १० प्रतिशत पुर्याउन सम्भव छ । त्यसको लागि सरकारको एकलो प्रयासले पुग्दैन । तिन तहका सरकार विच समन्वय, सहकार्य र सहअस्तित्व पूर्व शर्त हुनेछ । त्यस्तै, सार्वजनिक निजी साभेदारीको पनि विकल्प छैन । ■

(भण्डारी तेन्जिङ हिलारी विमानस्थल नागरिक उड्डयन कार्यालय, लुक्लामा कार्यरत छन्)

फोहरमैला व्यवस्थापनको सूत्रः

न्यूनीकरण, पुनःप्रयोग, पुनःप्रशोधन र पुनर्लाभ

मन्जु प्रजापती
सहायक तेस्रो स्तर, नेत्राउप्रा



फोहरमैलाको परिभाषा

घर, उद्योग तथा व्यापारिक संस्थाहरु, बजार तथा सार्वजनिकस्थलहरु तथा सडक सरसफाईबाट निष्कासित तरल तथा अर्धतरल बाहेकका वस्तुहरुलाई फोहरमैलाको रूपमा परिभाषित गरिएको छ ।

फोहरमैलाको वर्गीकरण

भिन्नभिन्न आधारमा फोहरमैलालाई निम्नानुसार वर्गीकरण गर्न सकिन्छः

प्रकृतिको आधारमा

१) जैविक फोहर : कुहिने वा गल्ने फोहोर जस्तै तरकारी वा फलफूलका बोक्रा, बाँकी रहेको खाना, बगैँचाको भारपात, मृत जीव आदि ।

२) अजैविक फोहर : नकुहिने ना नगल्ने फोहर, जस्तैः धातु, प्लाष्टिक, सिसा, रबर आदि ।

व्यवस्थापनको आधारमा

१) पुनः प्रयोगीय फोहर : पुनः प्रयोग गर्न सकिने जैविक वा अजैविक फोहर ।

२) प्रशोधनयोग्य फोहर : प्रशोधन गर्न सकिने जैविक वा अजैविक फोहर ।

३) ल्याण्डफिल फोहर : पुनः प्रयोग वा प्रशोधन गर्न नसकिने जैविक वा अजैविक फोहर । जस्तैः फिल्म रोल, ब्याट्री, प्याकिङ खोल, चाउचाउको खोल, लेमिनेटेड कागज आदि ।

स्रोतको आधारमा

१) नगरीय फोहर : क) घरायसी फोहर ख) व्यापारीय फोहर ग) प्रतिष्ठानगत फोहर

२) औद्योगिक फोहर ३) चिकित्साजन्य फोहर

४) अन्य फोहरः क) कृषिजन्य फोहर ख) निर्माणजन्य फोहर ग) जीवजन्तुजन्य फोहर

फोहरमैला व्यवस्थापनमा हाम्रो दायित्व

जसरी घर बनाउनु, खान लाउनु, बालबच्चा पढाउनु आदि कामको लागि हामी सबै चिन्तित हुन्छौं र नितान्त आफ्नो काम ठान्छौं तर त्यसरी नै आफूले उत्पादन गरेको फोहर आफै तह लगाउने काममा त्यति चासो दिएका हुँदैनौ । बरु उल्टै नकारात्मक असर पुऱ्याइरहेका हुन्छौं । यस्ता विडम्बनाले हाम्रा सहरहरु जकडिएका छन् र वातावरण प्रदूषित बनिरहेको छ । तसर्थ हरेक व्यक्तिले फोहर व्यवस्थापनमा व्यक्तिगत तथा सामुहिक रूपले सही मार्ग समात्न ढिलो भैसकेको छ ।

फोहर व्यवस्थापनमा व्यक्तिगत दायित्व

व्यक्तिगत रूपमा निम्नानुसारका कुराहरुमा ध्यान दिने हो भने फोहरमैलाको उचित व्यवस्थापन हुनसक्छ :-

१) बजारबाट सामान किनेर ल्याउँदा भरसक प्लाष्टिक भोला नल्याउने ।

२) बाध्यता वश प्लाष्टिकको प्रयोग गरि एमा एकै ठाउँ जम्मा पारेर राख्ने र पछि विक्री गर्ने ।

३) उत्पादित जैविक फोहोरलाई कम्पोष्ट बनाउने ।

४) पुनः प्रयोग गर्न सकिने फोहरलाई शतप्रतिशत पुनःप्रयोग गर्ने ।

५) प्रशोधनयोग्य फोहरलाई जम्मा पारेर प्रशोधनस्थलमा पुऱ्याउने बाटो अवलम्बन

गर्ने ।

६) निर्माण सामग्रीहरु जहीँतहीँ नथुपार्ने ।

७) सेफ्टी ट्याङ्कीको व्यवस्था गर्ने ।

८) परिवारका सदस्य तथा छिमेकीलाई फोहर व्यवस्थापनका लागि उत्प्रेरणा जगाउने ।

९) कसैले वातावरण बिगार्ने काम गरेको देखेमा सम्झाउने र सम्झाउँदा नहुने भएमा सम्बन्धित निकायमा खबर गरिदिने वा सजाय दिने व्यवस्था गर्ने ।

१०) घर, पसल, होटल, रेष्टुरेन्ट आदिबाट निस्कने फोहरहरु राख्नलाई छुट्टाछुट्टै डष्टविनको प्रयोग गर्ने ।

फोहर व्यवस्थापनमा सामुहिक दायित्व

वातावरण सुधार अभियानको लागि सामुहिक रूपमा गरिने प्रयासले धेरै नै ठूलो भूमिका खेल्दछ । सहरी फोहरमैलाले ग्रस्त बन्दै गइरहेको हाम्रा सहरहरुलाई मनोरम बनाउने हो भने निम्नानुसारका सामुहिक कदममा हामी अगाडि बढ्नुपर्छ :-

१) टोलटोलमा समूह गठन गरी मिले मतोबाट फोहर व्यवस्थापन गर्न सुरु गरी निरन्तरता दिने ।

२) सामुदायिक कम्पोष्ट मल प्लान्टको स्थापना गरी जैविक फोहरबाट कम्पोष्ट मल बनाउने ।

३) आफ्नो टोललाई तुलनात्मक रूपमा सुन्दर बनाउन नियमित रूपमा जनचेतना मूलक सरसफाई कार्यक्रमहरु सञ्चालन गर्ने ।

४) विद्यालय तथा कलेजहरुमा वातावरणीय क्लब गठन गरी त्यसमार्फत चेतना अभिवृद्धिका कार्यक्रम सञ्चालन गर्ने । जस्तै

तालिम, नियमित सरसफाई कार्यक्रम, शैक्षिक कार्यक्रम आदि ।

५) सरकारी वा गैरसरकारी निकायहरूले संयुक्त पहल गरी विशेष कार्यक्रम चलाउने ।

६) फोहर व्यवस्थापनका लागि दरिलो र दीर्घकालीन नीति ल्याउन सामुहिक रूपमा सरकारलाई सुझाव तथा दबाव दिने ।

4R अवधारणा (4R Concept)

बढ्दो जनसंख्या तथा औद्योगिक प्रतिष्ठानहरूको वृद्धिले दिनानुदिन सहरी वातावरण बिग्रने गर्दछ । दैनिक रूपमा मानिसले उपभोग गरी कुनै पनि वस्तु आफूलाई अनुपयोगी लागेपछि फाल्ने गर्दछन् र त्यही वस्तु फोहरमा रूपान्तरित हुन्छ । विभिन्न किसिमका फोहरहरू नै सहरी वातावरण प्रदूषणको मुख्य कारक बनेका छन् । सरकारी तथा गैरसरकारी निकायहरूको निरन्तर प्रयासको बावजुद पनि सहरी फोहरको प्रकोप कायमै रहको छ । भावी पिढीहरूलाई समेत ग्रस्त बनाउने यस किसिमको प्रकोपले जीवन जगतलाई ठूलै नोक्सानी पुऱ्याउँछ । तसर्थ कसैको मुख ताक्नुभन्दा हरेक व्यक्तिले यस समस्यालाई आफ्नै समस्याको रूपमा लिई समाधानका लागि कदम चाल्नु जरुरी भएको छ । परिवारका हरेक सदस्यले राम्रो व्यवहार गरे त्यो घर अवश्य राम्रो बन्दछ । भन्न खोजिएको मूल कुरा के हो भने हाम्रो वातावरण सुधार गरी हाम्रो धर्ती हराभरा राख्नु हरेक नागरिकको परम कर्तव्य तथा आजको आवश्यकता हो । तसर्थ हरेक व्यक्तिले जान्ने पर्ने र फोहर व्यवस्थापनमा मानिसको व्यवहार बाट समस्या हल गर्न सकिने सजिलो माध्यम 4R अवधारणा (4R Concept) को छोटो चिनारी यहाँ प्रस्तुत छ ।

फोहरमैलाको समस्यालाई हल गर्न हामीसँग चारवटा उपायहरू छन् ।

१) फोहरको उत्पादन कम गरेर ।

२) फोहरको पुनः प्रयोग गरेर ।

३) फोहरबाट पुनः वस्तु उत्पादन गरेर ।

४) वस्तुलाई अर्को शक्तिको रूपमा प्रयोग गरेर ।

यिनै ४ वटा विधिहरू Reduce, Reuse, Recycle, Recovery लाई 4R अवधारणा भनिन्छ ।

१) न्यूनीकरण अवधारणा (Reduce Concept)

रोग लागेपछि उपचार गर्नुभन्दा रोगै लाग्न नदिनु बुद्धिमत्तापूर्ण कार्य भए भैं फोहर भएपछि त्यसको व्यवस्थापन गर्नभन्दा फोहर उत्पादन नगर्न नै सर्वोत्तम उपाय हो । तसर्थ फोहर उत्पादन कम गरि समस्याको जग नै बस्न नदिने सोचलाई (Reduce Concept) न्यूनीकरण अवधारणा भनिन्छ । आजको सुविधाभोगी समाज वर्तमानको सानो सजिलोको लागि भविष्यमा हुने ठूलो वातावरणीय क्षतिलाई बुझ्दैन । यसकारण फोहर व्यवस्थापनमा जटिल समस्या पर्न गई वातावरणमा प्रतिकूल असर परिरहेको छ । यसरी खस्कंदो अवस्थामा रहेको वातावरणलाई सन्तुलनमा ल्याउन फोहरलाई श्रोतबाटै घटाउने सोचलाई अभियानको रूपमा अगाडि बढाउन आज निकै नै ढिलो भइसकेको छ । यसो गर्न सकिने उपायका केही उदाहरणहरू यस प्रकार छन् :-

क) बजारमा किनमेल गर्न जाँदा जुट वा कपडाको भोला लैजाने जसले गर्दा प्लाष्टिकको भोला घरमा आउँदैन ।

ख) हामीले दैनिक प्रयोग गर्ने वस्तुहरूमा सकेसम्म कम प्याकेजिङ भएको सामान मात्र प्रयोग गर्ने जसले गर्दा उपभोग्य सामग्री सँगै आउने फोहरको मात्रा घट्न सक्छ ।

ग) चाहिनेभन्दा बढी खाना पकाउने र पस्किने गर्नाले पनि फ्याँकिने खानाको मात्रा बढेर फोहर बढ्ने हुँदा चाहिने जतिमात्र खाना पकाउनु पस्किनु जरुरी हुन्छ ।

२) पुनः प्रयोग (Reuse Concept)

कुनै पनि वस्तुलाई फोहर मान्दा मात्र फोहर हुन्छ । त्यसलाई उपयोगी वस्तु मानेर कुनै पनि काममा उपयोग गरियो भने त्यो फोहर हुँदैन । तसर्थ कुनै एक किसिमको काममा वस्तु उपभोग गरी फाल्नु वस्तु निस्किए पछि अर्को कुनै प्रयोजनका लागि पुनः उपयोग गर्ने सोचलाई पुनः प्रयोग अवधारणा (Reuse Concept) भनिन्छ ।

वस्तु पुनः उपयोगका केही उदाहरणहरू यस प्रकार छन् :-

क) कोकाकोला, मिनरल वाटर आदिका बोतलबाट सजावटका सामानहरू बनाउने ।

ख) दूध, तेल आदिको प्याकेटबाट भाँडा माभने जाली, ढक्की, पिर्का आदि बनाउने ।

ग) नाईलन तथा जुटका डेरीहरूबाट गुडिया, पिर्का, भोला आदि बनाउने ।

घ) कोकाकोला, पेप्सी आदिको बिकोबाट किरिङ्ग बनाउने ।

ङ) चाउचाउ, चुरोटका खोलबाट सजावटका फूल बनाउने ।

च) कागजबाट सजावटका विभिन्न सामानहरू बनाउने ।

छ) पुराना टायरलाई गमला, टेबुल वा कुर्सी बनाउने ।

३) पुनः प्रशोधन (Recycle Concept)

एक पटक प्रयोग भैसकेको वस्तुलाई प्रशोधन गरेर भौतिक गुणा परिवर्तन गरी फेरि पनि प्रयोगयोग्य बनाउने सिद्धान्तलाई पुनः प्रशोधन अवधारणा (Recycle Concept) भनिन्छ । कुनै पनि वस्तु आफूलाई काम लाग्दैन भन्ने ठानी फ्याँक्नु भन्दा पहिले त्यो वस्तु पुनः उत्पादन योग्य छ कि छैन भनेर एक पटक सोच्नु सान्दर्भिक हुन्छ । हामीले प्रयोग गर्ने प्राय सामानहरू पुनः प्रशोधन योग्य छन् । केही उदाहरणहरू

क) पुराना प्लाष्टिकबाट प्लाष्टिककै सामग्री वा भाँडाकुँडा बन्छन् ।

ख) सिसाबाट सिसाकै र रबरबाट रबरकै सामग्री बन्छन् ।

ग) थोत्रा कागजबाट पुनः प्रयोगयोग्य कागज उत्पादन हुन्छ ।

घ) पुरानो कपडा धुल्याएर डस्नाको लागि रुवा बनाउन सकिन्छ ।

४) पुनर्लाभ अवधारणा (Recovery Concept)

जुनसुकै खेर जाने वस्तुलाई प्रशोधन गरेर वा नगरी पुनः अर्को फाईदा लिने काममा अरु वस्तुको सट्टामा प्रयोग वा उपयोग गरिन्छ भने त्यो पुनर्लाभ अवधारणा (Recovery Concept) हो । यसले

वस्तु पुनः प्रयोग र पुनः प्रशोधन दुवैलाई सम्बोधन गर्दछ । यस अवधारणा अनुसार फोहरलाई स्रोत वा शक्तिको रूपमा लिइन्छ । केही उदाहरणहरु :-

क) जैविक फोहरबाट कम्पोष्ट मल बनाउनु ।

ख) काठको धुलो र गोबर मिसाएर सुकाई दाउरा बनाउने ।

ग) जैविक फोहरबाट बायोग्याँस उत्पादन गर्नु ।

यसरी कुनै पनि वस्तुबाट अधिकतम लाभ लिन सकेमा आर्थिक रूपमा फाईदा हुनुको साथै फोहर स्रोतमै न्यूनीकरण भई स्वच्छ र स्वस्थ वातावरणको सन्तुलन कायम राख्न सहयोग मिल्नेछ ।

विमानस्थल र फोहरमैला

जसरी हामीले हाम्रो वातावरण सफा राख्नुपर्छ त्यसरी नै विमानस्थल पनि सफा राख्नु अत्यन्त जरूरी छ । विमानस्थल क्षेत्र फोहर हुँदा धेरै क्षेत्रमा त्यसको असर पर्न जान्छ । पहिलो त देशको ईज्जतमा दाग लाग्दछ । सफा तथा व्यवस्थित विमानस्थलको कारण विश्वमा ख्याति कमाएका विमानस्थलहरुको उदाहरण अनगिन्ती छन् । यसका साथै विमानस्थलको फोहर वातावरणले सेवाग्राहीहरुको स्वास्थ्यमा पनि गम्भीर असर पुऱ्याउँछ । विमानस्थलमा पैदा हुने फोहरमैलाहरुको

मुख्य स्रोतहरुमा टर्मिनल भवन, एयरफिल्ड, जहाज मर्मत गर्ने ठाउँ अथवा ह्याङ्गर, रेष्टुरेन्ट, कार्यालय तथा निर्माणस्थल आदि । सामान्यतया विमानस्थल क्षेत्रमा पैदा हुने फोहरहरु निम्न अनुसारको हुन्छन् :-

१) टर्मिनल भवनबाट निस्कने जैविक फोहरमैला, फर्निचर, कपडा, बोटल, खाने कुरा, कागजहरु आदि ।

२) भौतिक संरचनाको निर्माणकार्यबाट आउने निर्माण सामग्रीजस्ता फोहर मैलाहरु आदि ।

३) विमानस्थल वरपरको क्षेत्र सरसफाई गर्दा निस्कने घाँसपात, बोटबिरुवा आदि ।

४) विमानस्थलमा रहेका खाजाघर तथा होटलहरुबाट निस्कने खाद्य पदार्थहरु ।

५) जहाजभित्र सुविधाका लागि प्रयोग गरिसकेपछि आउने अनावश्यक सामानहरु जस्तै बोटल, पत्रपत्रिका, प्लाष्टिक कप, अनावश्यक खानेकुरा तथा कपडाहरु ।

विमानस्थलबाट निस्कने फोहरमैलाहरुको व्यवस्थापन

कुनै पनि क्षेत्रबाट निस्कने फोहरमैलाले वातावरण तथा मानिसको स्वास्थ्यमा असर पर्ने कुरामा कसैको दुई मत नहोला तसर्थ विमानस्थलबाट निस्कने फोहरमैलाले पनि वातावरण तथा मानिसको स्वास्थ्यमा पार्ने नकारात्मक असरलाई कम गर्नको लागि

सो फोहरमैलाको व्यवस्थापन गर्न अत्यन्त जरूरी हुन्छ । सोभन्दा पहिला त्यस्ता फोहरमैलाहरुको उत्पादनमा कमी ल्याउनु नै सबैभन्दा राम्रो उपाय हो । यसका साथै त्यस्ता फोहरमैलाको व्यवस्थापन गर्ने उचित तरिका तथा उपायहरु अपनाउनु पर्दछ ।

विमानस्थलबाट निस्कने फोहरमैलाहरुको व्यवस्थापन पनि माथि उल्लिखित 4R अवधारणा (4R Concept) अनुसार गर्न सकिन्छ । त्यस्का लागि सर्वप्रथम फोहरमैलाहरुको पहिचान गरी वर्गीकरण गर्नुपर्दछ । अर्थात् फोहरमैला उत्पादनमा कमी ल्याउने । पुनः प्रयोग गर्न मिल्ने सामानहरु पुनः प्रयोग गर्ने । पुनः प्रशोधन गर्न मिल्ने सामानहरु छुट्याई पुनः प्रशोधनका लागि पठाउने व्यवस्था मिलाउने र अन्तिम अवधारणा अनुसार सो अनावश्यक सामानहरुबाट पुनर्लाभ लिने । यसका साथै फोहरमैलाको व्यवस्थापनका लागि विभिन्न किसिमका कार्यक्रमहरु आयोजना गर्ने । नयाँ नीति नियमहरु बनाउने । फोहरमैला व्यवस्थापनका लागि सबैजनालाई जिम्मेवारी बोध गराउने । यसका लागि सबै जनाले सर्वप्रथम आफ्नो पक्षबाट सकारात्मक भूमिका निर्वाह गर्नुपर्छ । यसरी सबै क्षेत्र तथा पक्षबाट सकारात्मक सहयोग भएमा आर्थिक फाईदा हुनुका साथै फोहर स्रोतमै न्यूनीकरण भई स्वच्छ र स्वस्थ वातावरणको सन्तुलन कायम राख्न सहयोग मिल्दछ ।

Runway Overlay Bharatpur Airport





Bhagawaty Kalikotay
Lecturer, TU

Nonviolent Communication

Introduction: Communication is a basic human activity. It involves touching a deep place within that we share. It is a process of coming into perfect communion with another, or with a group of others. It is indeed a valuable skill that must be learned in most cases. Nonviolent Communication, (NVC) is based on the principles of nonviolence—the natural state of compassion when no violence is present in the heart. NVC begins by assuming that we are all compassionate by nature and that violent strategies—whether verbal or physical—are learned behaviors taught and supported by the prevailing culture.

NVC also assumes that we all share the same, basic human needs, and that all actions are a strategy to meet one or more of these needs. People who practice NVC have found greater authenticity in their communication, increased understanding, deepening connection and conflict resolution.

“Human beings have enormous power to enrich life. We can use words to contribute to people’s enjoyment, their wisdom. We can use words that can make life miserable for people. So our words are very powerful. We can touch people in ways that give great pleasure, great nurturing, support. We are powerhouses, and there’s nothing

we enjoy doing more than to use that power we have to enrich lives. So isn’t it wonderful that we have this power and the joy it brings when we use it? That’s to be celebrated. Wow! And the more we celebrate that, the less we will be willing to do anything else.” (Marshall B. Rosenberg, 2005).

NVC emphasizes that needs are central to relationships and that the key to avoid destructive conflict is to make requests instead of demands. Criticisms are seen as requests to meet needs at their core, so the key to avoiding conflicts is stating needs positively. When there is a conflict, Rosenberg suggests that you find the feelings and needs behind your reactions while also finding the feelings and needs behind the words of others. He also advocates self-compassion, taking responsibility for your communications and to say things positively instead of negatively (e.g., saying “I want” instead of “I don’t want”).

Integration of Nonviolent Communication: NVC is the integration of 4 elements

Consciousness: a set of principles that support living a life of compassion, collaboration, courage, and authenticity,

Language: understanding how

words contribute to connection or distance,

Communication Skills: knowing how to ask for what we want without threatening, demanding or coercing, how to hear others (even if in disagreement) without absorbing self-criticism or blame, and how to move toward mutually beneficial and positive outcome for all parties involved in an interaction and situations and

Means of Influence: learning how to share our power with others instead of using our power over others, in order to facilitate an environment where all parties feel equally honored, valued, respected and safe.

Components of Nonviolent Communication: The 4 components of Nonviolent Communication developed by Marshall Rosenberg are:

➤ **Observation:** A description of “what’s actually happening” as reported by our senses (sight, hearing, touch, taste, and smell), plus our “inner” senses (e.g. our inner voice, vision, thoughts, etc.). It includes: Direct, Sensory Experience, “Just the facts”, **Specific** to time and context, The highest form of human intelligence,

Free of judgment, criticism or other forms of analysis, The trigger of our experience

Key Distinction: Observation vs. observation mixed with evaluation. Evaluations are “moral” judgments of good-bad, right-wrong, appropriate-inappropriate that tend to be fixed or static.

➤ **Feeling:** Physical sensations and emotions

Feelings are universal. They are the signals we receive from our body alerting us to the state of our needs. Feelings are composed of physical sensations (e.g. tight jaw, queasy stomach, smile, etc.) and/or emotions (e.g. sad, glad, mad, disappointment, frustration, guilt, etc.).

Key Distinction: Feeling vs. thought (thoughts are cognitive or mental, including beliefs, ideas and opinions)

➤ **Need:** Resources required sustaining and enriching life.

Needs are universal and transcend cultural mores and conditioning. Needs make no reference to any specific person doing any specific thing, “Values” are generally equivalent to needs.

Key Distinction: Need vs. strategy (a strategy is a specific method to fulfill a need)

➤ **Request:** An opportunity to contribute to the well-being of our self and/or others

A concrete offering with the intention of contributing to fulfilling a need. Requests are specific actions stated in the positive (what we DO want), immediately doable way. There are three types of requests: clarity,

feedback and action key.

Distinctions: Request vs. demand; request vs. wish (Demands includes a threat of punishment or the promise of reward linked to a behavior. Wishes tend to be vague, future oriented, and non-specific.)

NVC serves our desire to do three things:

1. Increase our ability to live with choice, meaning, and connection
2. Connect empathically with self and others to have more satisfying relationships
3. Sharing of resources so everyone is able to benefit

The Life-Changing Benefits of NVC

Conflict Resolution

NVC helps to resolve conflicts - personal or public, domestic or international – peacefully, and get to the heart of conflict and disputes quickly. It improves cooperation through listening, so others are really heard and transform criticism and blame into compassionate connection. It prevents future pain and misunderstanding in personal relationships as well as deepens your emotional connections, transforms judgment and criticism into understanding and connection. Listen so others are really heard and get what you want more often without using demands, guilt or shame and hear the needs behind whatever anyone does or says.

Parenting and Families: NVC helps to reduce family conflicts and sibling rivalry, move beyond power struggles to cooperation and

trust, create a quality of connection that embodies unconditional love, protect and nurture the autonomy of children and motivate using “power-with” rather than “power-over” strategies.

Education and Schools: NVC helps to maximize the individual potential of all students, strengthen students’ interest, retention and connection to their work, improve safety, trust and connection in your classroom, improve classroom teamwork, efficiency and cooperation and strengthen classroom and teacher-parent relationships.

Personal Growth and Healing:

NVC can transform shame and depression into personal empowerment. It is useful for healing old pain and transforming unhealthy habits. It helps to stay connected to your own needs and preferences. Eat by choice, not by habit.

Organizational Effectiveness: NVC is used to improve teamwork, efficiency and morale, increase meeting productivity, maximize the quality of services or products and maximize organization’s benefit to the community.

Anger Management: Transform anger before it leads to behavior you’ll regret, discover the needs behind your anger, learn to appreciate what triggers you and others, identify solutions that are satisfying to everyone and express anger in ways that connect us to others.

Business Relationships: Strengthen employee morale and loyalty, resolve workplace conflicts quickly and effectively, reduce office stress and absenteeism, maximize the potential of all employees, hear and address customer needs more effectively, offer employee evaluations that promote personal growth and improve the effectiveness of job and college interviews.

The Benefits of NVC in Civil Service, Aviation and other Organization: Communicating effectively isn't always simple. There tend to be more assumptions and misunderstandings than clear messages and accurate interpretations in public contact places that's why it needs to practice empathetic communication. In such place, we need to relate to each other in a more collaborative way and in harmony with our value. In addition to avoiding possible conflicts and misunderstandings, it allows us to resolve emotional and rational conflicts. With nonviolent communication, we can abandon more traditional forms of communication. Empathetic communication sets out to help us

practice active listening based on mutual understanding.

Satisfying Personal Relationship with Passengers in Airlines or Immigrations or Customs : NVC wagers on the concise, precise and accurate expression of a message. It's goal is to improve understanding. That kind of expression leaves less room for criticism and more space for an effective exchange of messages. If you share your concerns in an assertive way, you are giving the other person the chance to understand and share them.

Conclusion: The nonviolence communication model is useful in our everyday lives; it can help facilitate an empathic and supportive emotional environment for ourselves and those we value. This model can effectively be employed to enrich and nurture parenting and family relations, friendship and relationship, workplace interactions, the educational process and any other situation in which we interact with others. ■

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(Kalikotay teaches at the Tribhuvan University Institute of Medicine, Maharajgunj Nursing Campus)

New CAAN Underconstruction Building



फास्टाउँदो हवाई क्षेत्रः थपिंदैछन् अवसर र चुनौती

सिबी अधिकारी
रास्स



भूपरिवेष्टित राष्ट्र नेपाल जलयातायातका फाइदाहरूबाट वञ्चित मात्र भएको छैन, उच्च हिमाल, पहाडजस्ता भूधरातलीय स्वरूपका कारण सडक यातायात समेत अपेक्षित रूपमा विकास हुन नसक्दा दुरदराजका जनताहरू लाभान्वित हुन सकिरहेका छैनन्। सहज यातायात सेवाबाट वञ्चित दुर्गम क्षेत्रका जनताका लागि न्यूनतम आधारभूत आवश्यकताहरू खाद्यान्न तथा औषधी ओसारपसार गर्न र आवागमनको निम्ति हवाई यातायातको ठूलो महत्व छ। नेपालको भौगोलिक परिवेश अनुरूप हवाई यात्रा दुर्गम र सुगम दुवै क्षेत्रका जनताका लागि लाइफलाइन बनेको छ।

एक स्थानबाट अर्को स्थानमा छिटो पहुँच हुने, खोज तथा उद्धार, दैवी विपत्ती एवं व्यापारिक प्रयोजनका साथै यात्राहरूको श्रृङ्खलामा हवाईयात्रा सुरक्षित, आरामदायी, छिटो र रोमाञ्चक भएबाट यसको महत्व अझै बढी भएको देखिन्छ। प्राकृतिक सौन्दर्य, पुरातात्विक महत्व, जैविक विविधता, दृष्यावलोकन, साहसिक पर्यटन क्षेत्रको विकासमार्फत राष्ट्रिय अर्थतन्त्र अभिवृद्धि गर्नमा समेत यसको विशेष भूमिका रहन्छ।

विश्व हवाई इतिहास सन् १९०३ देखि शुरु भएको पाइन्छ। हवाई यातायातको एक शताब्दी भन्दा लामो इतिहासमा आजको अवस्थामा आइपुग्दा यस क्षेत्रको अधिकतम विकास भएको छ। सन् १९४८ मा Beach Banaya नामक वायुयानलाई बेलायती नागरिक H. Wedler ले काठमाडौँको गौचरणमा पहिलो पटक सफलतापूर्वक अवतरण गराएका थिए। नेपालमा हवाईयातायातको इतिहास त्यहीदेखि शुरु भएको पाइन्छ। त्यसपछि सन् १९४९मा पहिलो पटक काठमाडौँ

गौचरणमा डकोटा ३ वायुयान अवतरण गरियो। वि. स. २००७ मा भारतको पटनाबाट ईण्डियन नेशनल एयरवेजले पहिलो व्यावसायिक उडान गरेको थियो। सन् १९५४मा गौचर विमानस्थल पक्की भई सोही वर्ष शाही नेपाल वायुसेवा निगमको स्थापना भएपछि यस क्षेत्रको व्यवस्थित विकास गर्न गैरसैनिक हवाई उडान ऐन २०१५ लागु गरियो।

सन् १९५७मा तत्कालिन निर्माण तथा यातायात मन्त्रालय अन्तर्गत हवाई विभागको विधिवत स्थापना भएपछि सन् १९६०मा नेपालले अन्तर्राष्ट्रिय नागरिक उड्डयन संगठनको सदस्यता प्राप्त गरेको नेपाल नागरिक उड्डयन प्राधिकरणको विवरणमा उल्लेख छ। सन् १९८३ मा पर्यटन मन्त्रालय स्थापना भएपछि यसै अन्तर्गत हवाई विभाग राखि सन् १९९८ डिसेम्बर ३१मा नेपाल नागरिक उड्डयन प्राधिकरणको रूपमा विकास गरिएको हो।

नेपाल नागरिक उड्डयन प्राधिकरण ऐन २०५३ अनुसार तत्कालिन हवाई विभाग खारेज भई नेपाल सरकारको पूर्ण स्वामित्व भएको एक स्वशासित संस्थाका रूपमा सन् १९९८ डिसेम्बर ३१ मा प्राधिकरणको स्थापना भएको हो।

नेपालको हवाई यातायात क्षेत्रको झण्डै आठ दशक लामो यात्राको आरोह अवरोहमा अनेक अवसर र चुनौति देखिए। विकसित मुलुकले अपनाएका हवाई यातायातसम्बन्धी उपकरण र प्रविधिलाई नेपालले पनि उपयोगमा ल्यायो। सर कार तथा निजी क्षेत्रले नागरिक उड्डयन क्षेत्रका विविध चुनौति र अवसरलाई सामना गर्दै यो क्षेत्रमा लगानी गरी व्यवसाय मात्र

नभई सेवाभाव समेत देखाएको कुरालाई नकार्न सकिन्न।

पछिल्लो समय आन्तरिक तथा अन्तर्राष्ट्रिय उडानमा पहुँच विस्तार गर्न सफल वायुसेवा प्रदायक कम्पनीले जोखिम मोलेर लगानी बढाएका छन्। धमाधम गन्तव्य विस्तार पनि गरिरहेका छन्। विश्व बजारका नयाँ प्रविधिका जहाज र प्राविधिक ज्ञान, सीप र क्षमतालाई नेपाल भित्राउनमा पनि उनीहरूको भूमिका छ। हवाई यातायात क्षेत्रमा व्यवसायिक अवसरसँगै चुनौति पनि उत्तिकै छन्।

सरकारी स्वामित्वको नेपाल एयरलाइन्सले अन्तर्राष्ट्रिय उडानमा बोइङ र न्यारो बडी जहाज हुँदै पछिल्लो समय वाइड बडी जहाज भित्र्याएर लामा गन्तव्यमा उडान गर्दै आएको छ। नेपालको निजी क्षेत्र र चीनको संयुक्त लगानी रहेको हिमालय एयरलाइन्सले अन्तर्राष्ट्रिय उडान गरिरहेको छ। त्यस्तै निजी क्षेत्रको अग्रणी वायुसेवा प्रदायक कम्पनी बुद्ध एयरले पनि भारतका कतिपय गन्तव्यमा उडान गर्दै आएको छ।

आन्तरिक उडानतर्फ पनि निजी क्षेत्रका प्रतिष्ठित बुद्ध एयर, यति एयरलाइन्स, श्री एयर, सौर्य, सीता, समिट एयर लाइन्सले प्रतिस्पर्धी बजारमा उपस्थिति बलियो बनाउन ठूला विमान धमाधम भित्र्याइरहेका छन्। त्रिभुवन अन्तर्राष्ट्रिय विमानस्थललाई आधार बनाएर भद्रपुर, विराटनगर, जनकपुर, पोखरा, धनगढी, नेपालगञ्ज र भैरहवामा नियमित उडान गर्ने लक्ष्यका साथ विमान कम्पनीले ठूला जहाज ल्याएका हुन्।

धेरैजसो विमानस्थलमा रात्रिकालीन उडान तथा अवतरणको सुविधासमेत उपलब्ध भएको र त्यस्तो सुविधा नभएका

विमानस्थलमा प्राधिकरणले आवश्यक लगानी विस्तार गरेपछि निजी वायुसेवा प्रदायकले बजार विस्तारलाई आक्रामक बनाएका छन् । प्रतिस्पर्धी बजारमा उपस्थिति जनाउन र सहज सेवा दिएर व्यवसाय गर्ने लक्ष्यका आधारमा ठूला तथा मझौला आकारका विमान ल्याउन उनीहरु लागिपरेका हुन् । हवाई सेवा तथा सुविधा खोज्ने यात्रुको संख्यामा समेत बढोत्तरी भएको र आन्तरिक हवाई यात्रुको संख्यामा वृद्धि भएकाले पनि निजी हवाई सेवा प्रदायकले आक्रामकरूपमा सेवा विस्तार गर्न थालेका हुन् ।

जहाज थप्ने प्रतिस्पर्धामा वायुसेवा कम्पनी

आन्तरिक उडानमा अहिले निजी वायुसेवा कम्पनीबीच ठूला जहाज भित्र्याउने प्रतिस्पर्धा भइरहेको छ । वायुसेवा सञ्चालकको भनाईमा निजी वायुसेवा प्रदायक कम्पनीले मात्रै भण्डै खर्च रुपैयाँ लगानी गरेका छन् । यो जहाज, उपकरण र प्राविधिक जनशक्ति सहितको लगानी हो ।

निजी क्षेत्रको अग्रणी वायुसेवा प्रदायक कम्पनी बुद्ध एयरसँग ११ एटिआर र दुई बीचक्राफ्ट १९०० डी गरी १३ जहाज छन् । प्रतिस्पर्धी यती एयरलाइन्ससँग पाँच वटा एटिआर र पाँच जेटस्ट्रीम गरी १० वटा जहाज छन् भने यतीकै भगिनी संस्था तारा एयरले दुर्गम क्षेत्रमा साना जहाजमार्फत सेवा दिदै आएको छ । सीता एयरले पनि छिट्टै ७२ सिट क्षमताको एटिआर-७२ जहाज ल्याउने तयारी गरेको छ । एटिआरका अन्य विमान जस्तै यसमा पनि फराकिला सिट र सामानका लागि पर्याप्त ठाउँ उपलब्ध हुनेछ । वातावरणीय तथा ध्वनि प्रदूषणको हिसाबले एटिआर जहाज निकै किफायती मानिन्छ ।

श्री एयरलाइन्सले जेट इन्जिनका तीन जहाजबाट सेवा दिइरहेको छ । यो कम्पनी अन्तर्राष्ट्रिय उडान विस्तार गर्ने तयारीमा छ । सौर्य एयरलाइन्ससँग पनि तीन जहाज छन् । वायुसेवा प्रदायकले धमाधम नयाँ ठूला विमान भित्र्याउन थालेपछि विमानस्थलमा जहाजको चाप पनि बढेको छ । विमानस्थल प्रशासनलाई सहज रुपमा जहाज उडान

तथा अवतरणको व्यवस्था मिलाउन समेत हम्मेहम्मे परिरहेको छ । खासगरी त्रिभुवन अन्तर्राष्ट्रिय विमानस्थलमा चाप बढेको छ । विमानस्थलमा साना तथा ठूला गरी ३० जहाज बिसान गर्न सकिन्छ । यस्तै अन्तर्राष्ट्रिय क्षेत्रमा उडान गर्ने जहाज भने नौ मात्रै बिसान गर्न सकिन्छ । नयाँ विमान थपिनेबित्तिकै बिसानस्थल उपलब्ध गराउन समस्या पर्ने देखिएको छ । नेपाल वायुसेवा निगमले चीनबाट कूल छ ओटा जहाज भित्र्याएको छ । त्यसमा दुई एमए ६० र चार वाई १२ जहाज छन् । ती जहाजलाई सुगम तथा दुर्गम गरी २३ गन्तव्यमा उडाउने तयारी गरेको भएपनि केही जहाज ग्राउण्डेड छन् । त्रिभुवन विमानस्थलबाट आन्तरिक उडानतर्फ हेर्दा लिकप्टरसहित २० वायुसेवा कम्पनीले उडान गर्दै आएका छन् । अन्तर्राष्ट्रियमा तीन नेपालीसहित २८ वायुसेवा कम्पनीले उडान गर्दै आएका छन् ।

हवाई सुरक्षा चुनौति बढ्दो

विश्वभर हवाई यात्रुको सङ्ख्या क्रमशः बढ्दै गएको छ । यात्रु सङ्ख्या बढेसँगै यसका चुनौती पनि चुलिदै छन् । विगत १० वर्षमा नेपालमा हवाईयात्रु आवागमन दुई गुणाभन्दा बढी वृद्धि भएको पाइन्छ । सन् २००९ देखि २०१८ सम्मको दसकमा अन्तर्राष्ट्रिय उडानमा वार्षिक हवाईयात्रु वृद्धिदर ९.२ प्रतिशत छ भने आन्तरिक उडानमा यो वृद्धिदर ११.७५ प्रतिशत छ । २०१७ को तुलनामा २०१८ मा हवाईयात्रु संख्या १४ प्रतिशतले बढेको देखिन्छ । २०१८ मा त्रिभुवन विमानस्थलमा करीब ७२ लाख हवाईयात्रु आएका थिए ।

अन्तर्राष्ट्रिय नागरिक उड्डयन सङ्गठन (आईकाओ)को प्रारम्भिक तथ्याङ्कअनुसार सन् २०१८मा हवाई यात्रुको संख्या ४.३ अर्ब पुग्ने छ जुन अघिल्लो वर्षको तुलनामा ६.४ प्रतिशतले बढी हो । सन् २०१७ को विश्वव्यापी नियमित उडानमा यात्रु आवागमन अघिल्लो वर्षको तुलनामा ७.२ प्रतिशतले वृद्धि भएको देखिन्छ । हवाई ट्राफिक आवागमनका दृष्टिले एशिया प्रशान्त क्षेत्र विश्वकै सर्वाधिक हवाई यात्रु आवागमन हुने क्षेत्रमा परेको छ ।

यसले कूल हवाई ट्राफिकको ३४ प्रतिशत अंश ओगटेको छ । त्यस्तै हवाई ट्राफिक वृद्धिका दृष्टिले यस क्षेत्रमा सन् २०१६ को तुलनामा सन् २०१७ मा सर्वाधिक अर्थात् १०.७ प्रतिशत वृद्धि भएको छ ।

एकातर्फ हवाई यात्रुको आवागमन बढिरहेको छ भने अर्कातर्फ दुर्घटनाको जोखिम पनि उत्तिकै बढ्दै गएको छ । आइकाओको 'एभिएसन सेफ्टी रिपोर्ट २०१८' का अनुसार सो वर्ष विश्वमा नियमित उडानमा सञ्चालित ५ हजार ७ सय केजीभन्दा माथिका मानवीय क्षमतायुक्त १३ वटा वायुयान दुर्घटनामा परेका थिए भने दुर्घटनामा परी ५ सय ४४ यात्रुको मृत्यु भएको थियो । अघिल्लो वर्ष पाँच वटा वायुयान दुर्घटना हुँदा ५० जनाको मृत्यु भएको थियो । यसरी हेर्दा वायुयान दुर्घटना दर अघिल्लो वर्षभन्दा यो वर्ष २.५ गुणाले वृद्धि भएको देखिन्छ भने मृत्युदर १० गुणाभन्दा बढी पाइएको छ ।

नेपालको सन्दर्भमा सन् २०१७ मा दर्ता भएका वायुयानमध्ये ५ हजार ७ सय के जीभन्दा माथिको मानवीय क्षमतायुक्त एक वायुयान दुर्घटना भएको थियो । सो दुर्घटनामा परी दुई जनाको मृत्यु भएको थियो । यसवर्ष उक्त समूहमा कुनै दुर्घटना नभएपनि सोभन्दा कम क्षमताका हवाईजहाज र हेलिकोप्टरतर्फ दुईवटा दुर्घटना भएका थिए । ती दुर्घटनामा आठ जनाको मृत्यु भएको थियो । नेपालमा हवाई यातायातका चुनौती र अवसर दुवै छन् । हवाई सुरक्षा आजको महत्वपूर्ण चुनौतिको विषय हो । सेफ्टी र सेक्युरिटीमा नेपालले विश्वका महाशक्ति मुलुकहरूसँग प्रतिस्पर्धा गर्ने पर्ने बाध्यता छ किनकी अन्तर्राष्ट्रिय हवाई सञ्जालनमा नेपाल पनि जोडिएको छ । आइकाओ, आयोटेालगायत संस्थाहरुको मापदण्डलाई नेपालको हवाई क्षेत्रले अवलम्बन गर्नुपर्छ । नियामक निकाय प्राधिकरणको नियमनका आधारमा हवाई क्षेत्रलाई सुरक्षित भरपर्दो र विश्वसनीय बनाउनु वायुसेवा सञ्चालनको दायित्व हो । त्यस्तै नीतिगत सुधार तथा हवाई क्षेत्रमा पूर्वाधार विस्तार तथा व्यवसाय सहजीकरणको काममा राज्यको ध्यान जान जरुरी देखिन्छ । ■

भ्रमण वर्षको भव्यता

दधिराम स्वतिवडा
स्वतन्त्र पत्रकार



संस्कृतमा “अतिथि देवो भवः” शब्दको शाब्दिक अर्थ पाहुना ईश्वर हुन् । यो कथाले नेपाली सांस्कृतिक चरित्रको अभिव्यक्ति अनादिकालदेखि नै गरेको छ । साथै नेपाली सभ्यताको ऐतिहासिक लामो सामाजिक सांस्कृतिक भाषिक, धार्मिक विविधतामा मात्र सीमित छैन । उत्तिकै गहिरो प्राकृतिक, पर्यावरणीय तथा भौगोलिक जैविकीय सौन्दर्यता पनि भल्काउछ ।

वर्तमान सन्दर्भमा अभूतपूर्व विकासले समुच्च विश्व नै एउटा गाउँको रूपमा परिणत भएको छ । नेपालले मनोरम राष्ट्रिय सम्पदालाई विश्व सामु प्रस्तुत गर्दै विश्व पर्यटन उद्योग बजारलाई परिणाममुखी, प्रतिस्पर्धी र आकर्षित गरी अत्यधिक लाभ लिन सक्ने अवसर अभिवृद्धि गर्ने दीर्घकालीन लक्ष्य सराहनीय छ ।

नेपाल सरकारको महत्वकांक्षी रणनीतिक योजना अन्तर्गत सन् २०२० लाई “नेपाल भ्रमण वर्ष” घोषणा गरेर २० लाख पर्यटक भित्र्याउने लक्ष्य लिइएको सर्वविदितै छ । यसअघि सन् २०११ मा “पर्यटनका लागि सङ्सर्गै” भन्ने नारा सहित १० लाख पर्यटक नेपाल भित्र्याउने लक्ष्य अनुरूप योजना सफलतापूर्वक सम्पन्न भयो भने पर्यटनको बाह्य र आन्तरिक प्रवर्द्धनका लागि वि.स. २०७३ लाई “आन्तरिक घुमफिर वर्ष” को रूपमा मनाई पर्यटन गन्तव्य पहिचान गरेको छ ।

पछिल्लो समय पर्यटन क्षेत्रबाट उत्साहजनक धारमा देखिएको राष्ट्रिय अर्थतन्त्रको कुल ग्राहस्थ उत्पादनमा ३ प्रतिशत र कुल

रोजगारी निर्माणमा १४ प्रतिशत हाराहारीको योगदान देखिन्छ । आधुनिक पर्यटनले ११ वटा व्यवसायिक क्षेत्रमा रोजगारी सृजना गरेको छ । जसको माध्यमबाट दिगो, दरिलो आर्थिक विकासमा टेवा पुग्नुका साथै समृद्ध नेपाल निर्माणमा विशेष भूमिका रहने छ ।

अहिले तुलनात्मक व्यवसायिक लाभका दृष्टिले मुलुकको आर्थिक विकासको प्रमुख आधार रहेको पर्यटन क्षेत्रले विदेशी मुद्रा आर्जन, रोजगारी सिर्जनामा सहायता पुऱ्याएको छ । आर्थिक उपार्जन अभिवृद्धि खुट्टिकलो बनेको छ । मुलुकमा अथाह सम्भावना रहेका सम्पूर्ण सांस्कृतिक सम्पदाहरूको संरक्षण र पुनर्निर्माण भइरहेको छ । तिनको आर्थिक उपयोग गर्ने तथा पर्यटनलाई स्थानीयस्तरसम्म विकास र विस्तार गर्न यसको प्रतिफल जनजीवनको तल्लो तहसम्म पुऱ्याउन सांस्कृतिक, प्राकृतिक क्षेत्रको विस्तार र प्रवर्द्धन गर्ने सरकारी तथा निजी क्षेत्रको लक्ष्य सकारात्मक छ ।

पर्यटन क्षेत्रको विस्तार सहित आन्तरिक र बाह्य हवाई यातायात विकास गरी थप सुरक्षित, स्तरीय र भरपर्दो बनाउन आवश्यक कदमहरू थालिएका छन् । आर्थिक विकासमा पर्यटन क्षेत्रको महत्व बढ्दै गए अनुरूप यसलाई प्रमुख प्राथमिकताको क्षेत्रमा राखिएको छ । नेपालको प्राकृतिक तथा सांस्कृतिक विविधता अनुपम रहेकोले पर्यटकीय गन्तव्यको संरक्षण, विकास र प्रवर्द्धन गरी आर्थिक उपयोग, पर्यटनको मुख्य उत्पादन र पर्यटन हबको रूपमा विकास गर्न भ्रमण वर्षले सघाउने

छ ।

हिमश्रृङ्खलाहरू, मनोरम हरि याली अवलोकन गर्न हवाई सेवाको भौगोलिक विषमताका बाबजुद यातायात सेवा उपलब्ध गराउनुको अतिरिक्त बाह्य र आन्तरिक रूपमा पहुँच विस्तार गरी पर्यटनको व्यवसायिक उद्योग एकीकृत रूपमा अगाडि बढाउन अन्तरसम्बन्धित निकायहरू पर्यटन वर्षको पुर्वसन्ध्यामा लागेका छन् । सरकारद्वारा पहिचान गरिएका ऐतिहासिक पर्यटकीय स्थलहरूमा धमाधम पूर्वाधार निर्माण, सजावटकासाथ आकर्षित केन्द्रमा पाहुनालाई आदर र मीठो आतिथ्यताको व्यवहार गर्न सकियोस् ताकि उनीहरू राम्रोसँग सन्तुष्ट हुनेछन् र फर्केर आशिष दिनेछन् लामो समय नेपालमा बिताउनेछन् ।

गैर-आवासीय चासो

अन्तर्राष्ट्रियस्तरबाट नेपाल भ्रमण वर्ष (२०२०) युरोपको इटालीबाट औपचारिक शुभारम्भ गरिसकेको छ । वैदेशिक रोजगारी र आप्रवास गरी भन्डै ६० लाख मानिस देशबाहिर छन् । गैर-आवासीय नेपाली संघको सञ्जाल विस्तार भएका ८० मुलुकबाट पर्यटक भित्र्याउन ‘तीन मित्र आफ्नो मुलुक पठाऊ’ अभियान, नमस्ते, अतिथि देवो भवः Spend Holiday in Nepal with Family and Friends’ विश्वभरिका विभिन्न देशहरूका सार्वजनिक ठाउँहरू बस स्टेशन, रेल्वे स्टेशन तथा प्रमुख पर्यटकीय क्षेत्रहरूमा नेपाल भ्रमण वर्ष २०२० को प्रचार सामग्री वितरण गरी प्रवर्द्धनात्मक कार्यक्रमहरू

सञ्चालनमा जोड दिएको छ ।

पर्यटन वर्षको अभियानलाई निरन्तरता दिन डा.स्पोरा मार्फत नेपालको सांस्कृतिक, धार्मिक, साहसिक एवम् पर्यटन प्रवर्द्धन गर्ने योजनाकासाथ नेपाल सरकारसँग सहकार्य गरिरहेको छ । नेपालमा पर्यटकहरूलाई देखे पछि प्रत्येक मानिसले हासेर नमस्कार गरौं र विदेशमा पनि नेपालीले मीठो मुस्कानसहित नमस्ते गरौं । यसो गर्दा हाम्रो संस्कार देखेर पनि पर्यटक हाम्रो मुलुकमा घुम्ने रहर जागोस भन्ने प्रचार विभिन्न मुलुकका राष्ट्रिय समन्वय परिषदहरूले काम गरिरहेका छन् ।

विदेशका विभिन्न कुनामा छरिएर रहे का युवाहरू कुनै विदेशीले कहाँबाट आएको भन्ने प्रश्नमा गर्वकासाथ म नेपालबाट आएको हुँ भन्छन् । प्रायः विदेशीले फेरि प्रतिप्रश्न गर्छन् । कहाँ पछि त्यो ? दुःखद पक्ष पनि भत्किन्छ । अधिकांश विदेशीलाई नेपाल राष्ट्र छ भन्ने सम्म थाहा छैन । यसको कारण हाम्रो कुटनीतिक तथा राजनीतिक सञ्चार र संवाद स्थापना हुन नसक्नु, सगरमाथा वा माउन्ट एभरेष्ट र हाम्रा प्राकृतिक सौन्दर्यताको जानकारीको अभावले हो । विदेशस्थित स्थापित नेपाली कुटनीतिक नियोग दूतावास र महावाणिज्य दूतावास पर्यटकीय मुलुक नेपालको प्रचार प्रसारमा थप सक्रिय हुनुपर्ने देखिन्छ ।

सरकारले गैर-आवासीय नेपालीबाट विशेष सहयोग लिनुपर्छ । नेपाली विदेशमा कार्यरत सङ्घ/संस्थाहरू मार्फत अन्य मुलुकका मानिसलाई सन्देश दिँदै भ्रमणमा उत्साही गर्नपर्छ । विदेशमा भएका एक नेपालीले एक पर्यटक पठाउन सक्दा लक्ष्यको तीन गुणा सफलता मिल्न सक्छ । पर्यटन प्रवर्द्धन, अन्तर्राष्ट्रिय बजारीकरण तथा भ्रमण वर्ष २०२० को प्रचार प्रसारमा विभिन्न देशमा अवस्थित नेपालका दूतावास, पर्यटन दूत तथा गैर-आवासीय नेपालीहरूसँगको थप समन्वयात्मक सहकार्य जरुरी छ ।

निजी क्षेत्रको प्रयास

निजी क्षेत्रले आफ्नो साभेदारीलाई फराकिलो बनाएर प्रवर्द्धनात्मक गतिविधि

सञ्चालन गरिरहेको छ । पर्यटकीय गतिविधि र सरोकारवाला निकायसँगको सहकार्य अभिवृद्धि गर्दै पर्यटन प्रवर्द्धनमा जुटेको छ । पर्यावरण र पर्यटन सम्बन्धी मुद्दाहरू सार्वजनिक बहस, पर्यटन उद्योगलाई जिम्मेवार बनाउन पर्यटकीय शैक्षिक कार्यक्रमहरूको प्रवर्द्धनबाट नेपालको अनौठो वातावरण र संस्कृतिको रक्षा गर्ने प्रण गरेको छ ।

निजी पर्यटनसँग सम्बन्धित व्यवसायिक संस्थाहरू एक (अर्कासँग जोडिएको वातावरणीय, सामाजिक सांस्कृतिक र पर्यटनको आर्थिक पक्षलाई ध्यानमा राखि व्यावसायिकतामा प्राथमिकता दिएको छ । मान्छे बस्नको लागि उत्तम ठाउँहरू, र भ्रमण गर्ने राम्रो ठाउँहरू पहिचान गर्दछन् । यसको उद्देश्य इकोटूरिज्म, जिम्मेवार पर्यटन र दिगो पर्यटन अभ्यासको प्रवर्द्धनका लागि आवश्यक समर्थन प्रदान गर्ने हो । निजी क्षेत्रले हातेमालो गर्नेछ ।

पर्यटन उद्योगमा प्रवेश गर्न चाहने मानिसहरूलाई ज्ञान र अनुभवको आधार प्रदान गर्ने सन्दर्भमा पर्यटन शिक्षाको विकास गर्न महत्वपूर्ण छ । आवश्यक जनशक्ति उत्पादन गर्ने, तालिम प्रदान गर्ने, सम्भाव्यता अनुसार नयाँ पर्यटन गतिविधि स्की-डाइभिडिङ, सार्प-सुटिङ, सफारी, स्काई-फ्लाई लगायतको सञ्चालनले भ्रमण आकर्षण बढाउँछ । पदयात्रा पर्यटन, जलयात्रा, साहसिक पर्यटन, सांस्कृतिक पर्यटन, क्यासिनो, स्वास्थ्य पर्यटन आदिमा व्यवसायिक योगदान पुगेको छ ।

पदयात्रा मार्गहरू जोगाउने र वैकल्पिक पदयात्रा मार्गहरूको खोज, पहिचान, ग्रामीण क्षेत्रसम्म पुग्ने यातायात सञ्चालन र विकासमा स्पष्ट नीति आउनुपर्छ । पर्यटकहरूको आगमन संख्या, बसाईको अवधि, प्रति पर्यटक खर्च आदि बढाउन पर्यटकीय सम्पदा र वस्तुहरूको वैज्ञानिक विविधीकरण तथा स्थानीय कला, साहित्य, धर्म, संस्कृतिको संरक्षण एवं विकास गर्दै विश्व पर्यटन बजारमा बजारीकरण गर्नपर्छ भने पर्यटकीय दक्ष जनशक्ति विकासमा पनि उत्तिकै ध्यान दिनुपर्छ ।

पर्यटन पूर्वाधार

नेपालको समग्र पर्यटकीय पूर्वाधार निर्माणका लागि दक्षिण एशियाली पर्यटन पूर्वाधार विकास परियोजना नेपालको क्षेत्रीय परियोजनाको एक हिस्सा हो । जसले बंगलादेश, भारत र नेपालमा पर्यटन सम्बन्धी पूर्वाधार विकास र सुधार गरिरहेको छ । यो दक्षिण एशियामा चयन गरिएको उच्च प्राथमिकता उप-क्षेत्रीय पर्यटन सर्किटमा प्रमुख प्रकृति र संस्कृतिमा आधारित पर्यटन सेवा र गन्तव्य पूर्वाधारमा कनेक्टिभिटी सुधार गर्ने सेवाहरूमा केन्द्रित छ ।

उक्त परियोजनाको नेपाल शाखाको उद्देश्य लुम्बिनीमा “भगवान बुद्धको पाइला” सर्किटको विकास गर्ने, मुलुकको अर्थव्यवस्था र रोजगारीका अवसरहरूमा पर्यटनको वृद्धि हुने प्रतिविम्बित हुनेछ । नेपालमा प्रकृति र संस्कृतिमा आधारित पर्यटन गन्तव्यका केही उपक्षेत्रीय सर्किटहरू हुन् । प्राकृतिक सांस्कृतिक सम्पदाको दिगो विकास व्यवस्थापनले पर्यटन लाभमा समुदायहरूको बढी संलग्नता रहने परियो जनको उद्देश्य छ ।

नेपाल भ्रमण वर्ष सन् २०२० को उत्कृष्ट पर्यटकीय धार्मिक गन्तव्यमध्ये काठमाडौं नै मुख्य भएको संयुक्त राष्ट्र शैक्षिक वैज्ञानिक एवं सांस्कृतिक संगठन (युनेस्को) ले जनाएको छ । भ्रमण वर्षलाई सफल बनाउन गन्तव्य प्रवर्द्धन, पूर्वाधार विकास र सेवा स्तरीकरणलाई प्राथमिकताकासाथ अधि बढाएका छन् । सङ्घीय, प्रदेश र स्थानीय सरकारकासाथ निजी क्षेत्रको सक्रियतामा भ्रमण वर्षलाई भव्यरूपमा शुभारम्भ गरिनुपर्छ ।

रणनीतिक योजना

पन्ध्रौं पञ्चवर्षीय योजनाले पर्यटनलाई राज्यको प्रमुख प्राथमिकतायुक्त क्षेत्रका रूपमा लिएको र अहिलेको कुल गार्हस्थ्य उत्पादनमा पर्यटन क्षेत्रको तीन प्रतिशत योगदानलाई उक्त योजना अवधिभर १० प्रतिशत पुऱ्याउने लक्ष्यकासाथ काम अधि बढाइएको छ ।

सरकारले प्रस्तुत गरेको पर्यटनसम्बन्धी रणनीतिक योजना (२०१६-२०२५) लाई थप परिणाममुखी । ग्रामीण पर्यटनको विकासका लागि कुनै ठोस योजना बनाइएको छैन । पर्यटन नीति, २०६५ लाई थप व्यवहारमा ढाल्न जरूरी छ ।

हिमालहरू आरोहण गर्न, पदयात्रा गर्न, धार्मिक पर्यटन गर्न अनि अन्य विभिन्न कुराहरू अवलोकन गर्न लाखौं पर्यटकहरू नेपाल आउने गर्दछन्, तर पर्यटनको अधिक संभावना हुँदाहुँदै पनि नेपालले पर्यटनबाट उचित लाभ लिन सकेको छैन । विश्वमा नै पर्यटनले एउटा प्रमुख उद्योगको रूप लिदै गएको छ । विभिन्न देशहरूमा उत्पादन वा आयात निर्यात हुने पदार्थहरू वा सामाजिक सेवाको एउटा ठूलो भाग पर्यटनको क्षेत्रमा खर्च हुन्छ र पर्यटनबाट लाखौं मानिसहरूलाई रोजगारी पनि प्राप्त हुन्छ ।

प्राविधिक चुनौति

देशको अस्थिर राजनीतिक अवस्थाले थिलथिलो भएको पर्यटन क्षेत्रलाई उद्योगको रूपमा विकसित गर्न हामी सबैको जिम्मेवारीपूर्ण दायित्व हो । सांस्कृतिक सम्पदाको व्यापक प्रचारमार्फत पर्यटकलाई आकर्षित गर्न र नेपालको समृद्धिमा यिनको उपयोग गर्न आवश्यक छ, जसका सम्भावनाको उचित उपयोग भएकै छैन ।

परम्परागत पर्यटनमा मात्र निर्भर नभई 'मेडिकल पर्यटन' र 'इको पर्यटन'मा पनि ध्यान दिन सक्नुपर्छ । हाम्रो अन्तर्राष्ट्रिय विमानस्थल, अध्यागमन, होटल पटककै प्रविधिमैत्री छैनन् । पर्यटकले हातमा बोकेको डेबिट वा क्रेडिट कार्ड नेपालमा नचलेर हैरान भएका दृष्टान्तहरू छन् । आर्थिक तथा सामाजिक सुरक्षा हाम्रो जिम्मेवारी हो । सवारी-साधनको सास्ती उत्तिकै छ । आरोहण पर्यटकहरूको दुर्घटना हुँदा तत्काल उद्धार हुन नसक्दा अन्तर्राष्ट्रिय लज्जाको विषय बनेको छ ।

अर्कोतर्फ पर्यटकहरू भनेका पैसा खर्च गर्न आउने पाहुना हुन् । उनीहरूले मनोरञ्जन, सुरक्षा र सजिलो खोज्छन् । हामीकहाँ पर्यटकले चाहेजस्तो पूर्वाधार बनेका छैनन् । अझ, विलासी पर्यटकहरूका लागि त हाम्रा पूर्वाधारहरू लाजमर्दा छन् । सगरमाथा आरोहणले मात्र पर्यटन क्षेत्र धानिँदैन । वैज्ञानिक पर्यटकको सुरक्षा, पर्यटकीय पूर्वाधारमा लगानी र व्यापक प्रचारको अभियान थाल्नुपर्छ ।

ग्रामीण पर्यटनको विकासबारे विचार गर्दा स्थानीय श्रोत साधनको आधार बलियो भएपछि नै ग्रामीण विकासले ठोस रूप लिन सक्नेछ र त्यसबाट ग्रामीण पर्यटनलाई पनि मद्दत पुग्नेछ । आर्थिक विकासको लागि सरकारी स्तरबाट विभिन्न योजनाहरू लागू गर्न प्रयत्न गर्नका साथै जनस्तरमा पनि त्यो दिशामा विकासका कार्यक्रमहरू अगाडि बढाउन प्रोत्साहित गर्ने र सहयोग गर्ने सरकारको नीति हुनुपर्दछ ।

पर्यटकीय क्षेत्रको विकास

विश्वको सर्वोच्च शिखर सगरमाथा र विश्वका शान्तिका अग्रदूत भगवान् गौतम बुद्ध जन्मेको ठाउँ लुम्बिनीको विकास, पोखराको क्षेत्रिय अन्तर्राष्ट्रिय विमानस्थलको निर्माणमा तीव्रता पाएको छ । ग्रामीण पर्यटन अन्तर्गत हरेक स्थानीय तहले पर्यटन विकास क्षेत्रहरूको निर्माणमा पर्यटनका लागि बजेट कैयौं गुणा बढाउनु पर्ने देखिन्छ ।

पर्यटनको अवधारण केन्द्रमा सीमित नगरी स्थानीय तहमा पनि विकास गर्नपर्ने भएको हुनाले सम्भावित स्थानीय क्षेत्रहरू पोखरा, चितवन, सोलुखुम्बु, इलाम, मुस्ताङ लगायतका ठाउँलाई पर्यटनको हबको रूपमा विकसित गर्नपर्छ । पूर्व, पश्चिम, हिमाली क्षेत्र, कर्णाली क्षेत्र लगायतका ठाउँमा सेवा केन्द्र स्थापना गरी सोही अनुसारको वातावरण र पूर्वाधार निर्माण गर्नपर्छ । दिगो र दीर्घकालीन पर्यटन विकास गर्न सहरदेखि गाउँगाउँसम्म

होमस्टे, ग्रामीण पर्यटन, स्थानीय प्रविधि र साधनमा प्राथमिकता दिएको छ । विश्व जगतमा नेपाल सुरक्षित, शान्त र सुन्दर देश हो भन्ने प्रचारात्मक सन्देश सम्प्रेषण भएको छ । यसका लागि पर्यटन क्षेत्र लक्षित स्वदेशी तथा विदेशी लगानी र कार्यक्रमहरू भित्र्याउन राज्यले स्पष्ट नीति, योजना तर्जमा र मार्गदर्शन तय गर्नपर्छ ।

संसारको सबैभन्दा अग्लो हिमशिखर सगरमाथा तथा ८ वटा ८००० मीटर भन्दा माथिका हिमालसम्म पुग्ने हवाई तथा स्थलमार्गको थप विकास, तराईका फाँट र घनाजंगल घुम्ने व्यवस्था, धार्मिकस्थल, पर्वतारोहण, पदयात्रा, च्याफटिङ, जंगल सफारीका लागि उपयुक्त वातावरण, प्याराग्लाइडिङ, अल्ट्रालाइट, साहसी गतिविधिको अन्तर्राष्ट्रिय संगमस्थल, छडछड भरना, तालतलैया, गुफा ऐतिहासिक ठाउँको प्रवर्द्धनमा जोड दिनुपर्छ ।

समग्रमा नेपाल भ्रमण वर्ष २०२० ले नेपाललाई विश्व सामु चिनाउने मौका दिनेछ । विशेषगरी पर्यटकीय क्षेत्रको मुख्य गन्तव्य भनेर चिनिएका स्थानहरू मात्र नभई नेपालमा अन्य थुप्रै मनमोहक, रमणीय तथा आकर्षक क्षेत्रहरू पहिचान गरी सो क्षेत्रको प्रवर्द्धन गर्न सकिन्छ । नेपाल जस्तो विकासशील मुलुकलाई आर्थिक समृद्धिको दिशातर्फ दोर्चाउन आन्तरिक तथा बाह्य पर्यटनले उल्लेखनीय भूमिका खेल्नेछ । ■

सन्दर्भ श्रोत

पन्ध्रौं पञ्चवर्षीय योजना तथा पर्यटन नीति, २०६५

पर्यटन सम्बन्धी रणनीतिक योजना (२०१६-२०२५)

संयुक्त राष्ट्र शैक्षिक वैज्ञानिक एवं सांस्कृतिक संगठन (युनेस्को)

व्यक्तिगत डाइरी र स्वअध्ययनबाट

यात्रा र वायुसेवा कम्पनीबीचको द्रुन्द कहिलेसम्म ?



अच्युत पुरी
वरिष्ठ संवाददाता

सेवा

प्रदायक कम्पनीले उपभोक्ताबाट अग्रिम भुक्तानीसहित सेवाको ग्यारेन्टी दिने प्रतिवद्धता व्यक्त गरिसकेपछि उपभोक्ताले बीना कुनै वाहनाबाजी त्यो सेवा पाउनु पर्छ । यो विश्वव्यापी मान्यता हो । जुन हरेक क्षेत्र र तहमा लागु हुन्छ । विश्वव्यापी रूपमा मान्य यो पद्धति यदि कसैले मान्दैन भन्छ, भने उसमाथि कानूनी कारवाही हुन्छ, नियामक निकायले त्यसमा कुनै न कुनै कारवाही गर्छ । चेतावनी दिन सक्छ, सचेत गराउन सक्छ, जरिवाना गराउन सक्छ र अन्त्यमा सेवाको लाइसेन्स सस्पेन्समा राख्ने वा रद्द गर्न सम्मको अधिकार नियामक निकायमा हुन्छ । किनकी सेवा प्रदायकले अग्रिम भुक्तानीको मूल्यमा उत्कृष्ट सेवा खोज्नु उसको अधिकार पनि हो ।

यस वर्ष नेपाली नागरिक उड्डयन क्षेत्रमा केही लज्जास्पद घटना घटे । स्वीकार गरेपनि या नगरेपनि, त्यो तितो सत्य हो । २७ भदौ, २०७६ मा नेपालगन्ज विमानस्थलबाट बहालवाला संस्कृति, पर्यटन तथा नागरिक उड्डयन मन्त्री योगेश भट्टराईमाथि उत्तेजित भिडले हुलहुज्जत गर्‍यो । हवाई सुरक्षाका दृष्टिकोणबाट त्यो कदम कति जायज थियो, कति कारवाही योग्य थियो, त्यो नियामक निकायले नै जान्ने पक्ष हो, तर यात्रुको ठाउँमा बसेर हेर्दा प्रश्न सबैतर्फ उठ्ने गर्छन् । आखिर घटनामा जिम्मेवार को हो ?

त्यसको एक महिना भित्रै जनकपुर विमानस्थलमा अर्को अप्रिय घटना घट्यो । सांसद प्रमोद शाहले जहाज ढिला आएको भन्दै विमानस्थलमा पोखेको आक्रोसले यतिसम्मको रूप लियो कि, अहिले यो मुद्दा अदालती प्रक्रियासम्म पुगेको छ । आवरणमा आवेशमा आएको घटनाले उग्ररूप लिँदा देखिएको परिणाम बाहिरिने गर्छ, त्यो परिस्थिति किन उत्पन्न भयो, सुक्ष्म रूपमा कसैले हेर्न, बुझ्न र अनुसन्धान गर्न चाहेको देखिँदैन । यदि, त्यस्तो परिपाटी थियो भने सायद पटक पटक एक प्रकृतिका घटना पटक पटक दोहोरिने थिएनन् । किनकी एउटा घटनाबाट पाठ सिकेर अर्को गल्ती नदोहोर्याउनु नै व्यापार, व्यवसाय गर्नेहरूको सफलता हो । साथै, गल्ती कसैबाट हुन्छ भने शुरुमा सचेत गराउने र नसच्चिए कारवाहीको भागिदार बनाउने जिम्मेवारी नियामक निकायको पनि हो ।

२८ नोभेम्बर २०१९ का दिन नेपाल भ्रमण सचिवालय मूल आयोजक समितिको बैठक सिंहदरबारमा डाकिएको थियो । जसमा

सबै प्रदेशका पर्यटनमन्त्री सहभागी हुनु पर्ने थियो । प्रदेश नं १ का पर्यटनमन्त्री जगदीश प्रसाद कुसियेत बैठक सकिएर संघीय पर्यटन मन्त्री योगेश भट्टराईले समापन मन्तव्य दिने बेला हल प्रवेश गरे । “किन ढिला मन्त्रीज्यू”, संघीय पर्यटन मन्त्रीको प्रश्न भूईँमा भर्न नपाउँदै उनले भने, “विहान ८ बजेको फ्लाइट थियो, यतिबेला भर्‍यो ।” घडीमा दिउसोको २ बजिसकेको थियो । हलमा हाँसो गुन्जियो, तर यसले नेपालको नागरिक उड्डयन सेवाको गुणस्तरलाई गिज्याइरहेको कसले मनन् गर्‍यो होला ? जहाँ देशको नेतृत्व गर्ने निकायकै व्यक्ति कमजोर गुणस्तरको शिकार बन्दै आफ्नो दैनिकी छुटाउन बाध्य छन् । प्रश्न स्वाभाविक उठ्छ, विमानस्थलमा कुनै ४/५ घण्टा समयको कुनै “भ्यालू” छैन ?

अराजकता दण्डनीय छ, त्यसो भए सेवा प्रदायक जे पनि गर्न पाउँछ ?

पंक्तिकारलाई संसद सचिवालयका एक कर्मचारीले मंसिर महिना मै उपलब्ध गराएको त्रिभुवन विमानस्थलको एक भिडियोमा एक वायुसेवा कम्पनीविरुद्ध यात्रुले निकै आक्रामक अभिव्यक्ति दिएका छन् । बुझ्दा थाहा हुन्छ, काठमाडौँबाट सिमरा उड्नुपर्ने भनी १२ बजे निर्धारित जहाज साँझ ७ बजेसम्म कुराइयो र भनियो, “आजको उडान रद्द भयो ।” यात्रु आक्रोसित नभई शान्त भइदिनु पर्ने कुनै कारण छ ? या सेवा प्रदायकले जे गर्दा पनि छुट हुन्छ ? यदि सेवा दिन सकिँदैन भने सर्वसाधारणको अग्रिम पैसा किन असुल हुन्छ ? आक्रोस पोख्दा फौजदारी मुद्दा लाग्ने सर्वसाधारणलाई आक्रोसित बनाउने सेवा प्रदायकमाथि के कारवाही हुन्छ ? यदि हुँदैन भने किन हुँदैन ? यसको जवाफ नियामक निकायका रूपमा नेपाल नागरिक उड्डयन प्राधिकरणले दिनै पर्छ ।

सर्वसाधारणलाई त पेल्ल मिल्छ, अदालतलाई नी ? विमान ढिला उड्ने विषयलाई दिएर उपभोक्ता हित संरक्षण मन्त्रको तर्फबाट घमराज लुईटेलले दायर गरेको एक रीटमा ३१ भदौ २०७२ मा सर्वोच्च अदालतको एउटा फैसला आएको छ । जसमा सेवा प्रदायकले तोकिएको समयमा उडान गर्नुपर्ने उनीहरूको प्राथमिक दायित्व हो भनिएको छ । तोकिएको समयमा मनासिव कारणबीना नै उडान रद्द गरिनु, रद्द भएको पूर्वसूचना उपभोक्तालाई यथासमयमा नदिइनुजस्ता कुरा हवाई यातायातको गुणस्तर भित्र पर्ने भन्दै फैसलामा भनिएको छ, “सेवाको मूल्य चुक्ता गरेका उपभोक्तालाई गुणस्तरीय सेवा प्राप्त गर्ने संवैधानिक र कानूनी हक पनि हो ।

त्यस्तो गुणस्तरीय सेवा प्रदान नगरी लापरवाही गरी उपभोक्तालाई क्षति पुग्न गएको अवस्थामा हवाई यातायात सेवा प्रदायक संस्थाले त्यस्तो क्षतिपूर्तिको दायित्वसमेत वहन गर्नुपर्ने व्यवस्था गरी त्यस्ता सेवा प्रदायक संस्थालाई जिम्मेवार बनाउनु आजको आवश्यकता रहेको छ ।” यो फैसला आएपछि नेपाल नागरिक उड्डयन प्राधिकरणले जानाजान ढिलाई गर्ने वा क्षमताभन्दा बढी रुटमा उडान तालिका हालेर व्यवस्थापन गर्न नसक्दा हुने उडान रद्दका बेला सेवा प्रदायकलाई कारवाहीको दायरामा ल्याउनु पर्ने आवश्यकता थियो, त्यसो गरेको भने पाइदैन । सर्वसाधारणलाई त पेलेरै जान सकिएला, नेपालमा भने अदालतलाई समेत पेलिएको हो । यो अवस्था रहेसम्म यात्रु र कम्पनीबीचको द्वन्द्व निरन्तर रहने छ ।

वनावटी जवाफ कहिलेसम्म ?

अहिले हरेक दिन उडान निर्धारित समयमा हुँदैनन् । आकास र ग्राउण्डमा निरन्तर समस्या छन् । तर, सेवा प्रदायकमात्र होइन, नियामक निकायसँग पनि वनावटी जवाफ छ । “पूर्वाधारको अभाव र क्षमताभन्दा बढी यात्रु ।” त्यसो भए यो समस्या कसले निम्त्याएको हो ?

जनकपुर एयरपोर्टमा छटपटिएको मृगौला रोगीले निजगढ विमानस्थल निर्माणमा अवरोध गरेको हो ? जुम्ला एयरपोर्टमा सुत्केरी व्यथाले रक्तात्म्य भएर जहाज कुरिरहेकी नारीको अवरोधले त्रिभुवन विमानस्थलको विस्तारको काम अवरुद्ध भएको हो ? होइन भने अब वनावट जवाफले यात्रुमाथिको शोषण त रोकिनु पर्छ । विमानस्थलभित्र यात्रुले चर्को स्वरमा बोल्दा त्यो हवाई सुरक्षाको विपरित हुन्छ, भने विमानस्थलमा तीन घण्टा कुराउने कम्पनीमाथि के हुन्छ ? यसको त जवाफ नियामक निकायका रूपमा प्राधिकरणले दिनुपर्छ, त्यो पनि सार्वजनिक रूपमा ।

किनकी हवाई यात्रु अनुसार पूर्वाधारको आवश्यकता आकलन गर्न नसक्नु त्यो सर्वसाधारणको दोष होइन । पूर्वाधार निर्माणमा उठेका जनसवाल सम्बोधन गरी बेलैमा पूर्वाधार निर्माणमा केन्द्रित नहुनु आम हवाई यात्रुको दोष होइन । एकै समयमा धेरै स्लट बिक्री गरेर ठूलो भिड जम्मा पारी आकास र ग्राउण्डमा हवाई जाम गराउनु यात्रुको दोष होइन । किनकी टिकट पाइदैन, जहाज आउँदैन भन्ने हो भने यात्रुले विकल्प खोज्छ । उसलाई तनाव होइन, सुविधा दिएर फकाउनु पर्छ ।

यात्रु आकर्षित गर्ने कि तर्साउने ?

सबै सेवा प्रदायकका लागि ग्राहक भगवान हुन् । उनीहरूलाई पूजा गर्नुपर्छ । तर नेपालको नागरिक उड्डयन क्षेत्रमा यात्रु वा ग्राहकलाई दुष्मनको जस्तो व्यवहार हुन्छ । जहाज हाम्रो हो, हामी जे गर्न पनि सक्छौं, यही मानसिकताले सेवा प्रदायकले व्यवहार गर्ने हो भने धेरै वायुसेवा कम्पनीको भविष्य लामो देखिदैन । जुन कम्पनीले यात्रुलाई भगवान सरह ठान्नेछ, उसैले विजनेश पाउनेछ । यो चेत वायुसेवा कम्पनीमा समेत बेलैमा आउनु जरुरी छ । किनकी यात्रुको दिमागमा नकारात्मक छवि स्थापित भयो भने कुनै पनि हालतमा परिवर्तन हुने छैन । कम्पनीहरू यसतर्फ सचेत हुनुपर्छ । भनिन्छ, हवाई विजनेश सधैं जोखिमपूर्ण नै रहन्छ ।

नियामक निकायको भूमिका

यात्रु र वायुसेवा कम्पनीबीच जति धेरै द्वन्द्व हुन्छ, हवाई सुरक्षामा त्यति नै जोखिम हुन्छ, यो त स्वाभाविक हो । तर यसबाट उत्पन्न परिस्थितिवारे भोली अन्तरराष्ट्रिय निकायमा जवाफ दिनुपर्ने निकाय त नेपाल नागरिक उड्डयन प्राधिकरण नै हो । अब प्राधिकरणले विगतका गल्ती सच्याउनु पर्छ । सर कारसँगको समन्वयमा ठप्प र सुस्त गतिमा रहेका पूर्वाधारलाई तिब्रता दिनु उसको पहिलो दायित्व हो । अर्को सेवा प्रदायकलाई यात्रुप्रति जिम्मेवार गराउनु पनि उसको जिम्मेवारी नै पर्छ ।

पर्याप्त जहाज बीना नै धेरै ठाउँको उडान तालिका राख्ने, टिकट काट्ने र यात्रुलाई अनावश्यक कुराउने प्रवृत्ति त रोक्नु आवश्यक छ नै बीना मौसम र प्राविधिक गडबडीबाहेक अन्य कारणबाट सेवा प्रदायकका कारण यात्रुले दुख पाउने अवस्थामा त्यसको क्षतिपूर्तिको व्यवस्थाका लागि पनि प्राधिकराले पहल थाल्नुपर्छ । किनकी हवाई यात्रु केवल नेपाली मात्र हुँदैनन् । विदेशीले पनि यही नियती भोग्दा नेपालको ब्रान्डिङ नकारात्मक भइरहेको हुन्छ । जुन राज्यकै लागि लज्जास्पद बन्न सक्छ । यसतर्फ सोच्न कतै ढिला भइसक्यो की ?

यात्रुको भूमिका

हवाई यात्रामा जोखिम भन्ने विषय नै हुँदैन । भनिन्छ, यहाँ मानिसले गर्ने पहिलो गल्ती नै जिन्दगीको अन्तिम गल्ती हुन जान्छ । त्यसकारण जायज कारण देखाएर केही समय हुने ढिलाईलाई यात्रुले पनि सहन सक्नु पर्छ । त्यही बाहनामा विमानस्थलमा हुलदंगा गर्ने, वायुसेवा कम्पनीका कर्मचारीमाथि दूर्व्यवहार गर्दा त्यसले नसोचेको जोखिम निम्तन सक्छ । त्यसकारण यात्रुले आवेश र रिसमा भन्दा कानूनी पाटोबाट समस्या समाधानको प्रयास गर्दा हवाई यात्रा अझ सुरक्षित, छिटो र रोमान्चक बन्नेछ । ■



राजु बास्कोटा
पत्रकार

नेपाली वायुसेवाको अन्तर्राष्ट्रिय पहुँच

नेपाली वायुसेवाको अन्तर्राष्ट्रिय पहुँच र विस्तारमा स्थायित्व हुन सकिरहेको छैन । कारण अनेकौं हुन सक्छन् । अझ नेपालबाट लामो दूरीको उडान गन्तव्यलाई स्थापित गराउनु त हाम्रा लागि निकै परको विषय बनेको छ । उड्डयन क्षेत्रमा सधैं हाँसीमजाक गर्ने र ठट्ट्याली गर्ने एउटा भनाइ निकै परिचित छ । त्यो हो 'तपाईं अर्बपति हुनुहुन्छ र लखपति बन्न चाहनुहुन्छ भने वायुसेवा कम्पनी खोल्नुस् ।' उड्डयन क्षेत्रमा यो विषयलाई सधैं लाक्षणिक रूपले अर्थ खोज्ने गरी प्रयोग गर्ने गरिन्छ । यसको कारण हो वायुसेवा कम्पनीको स्थायित्व नहुनु । व्यवसायमा टिक्न नसक्नु । केही वर्ष टिकेका वायुसेवा पनि कति बेला बन्द हुन्छन् कसैले अनुमान लगाउने सक्दैन ।

वायुसेवा भनेको यस्तो संवेदशील र ग्ल्यामरस विषय हो जहाँ १० वर्ष कमाएको नाफा १० महिनामा हुने घाटाले सिध्याउन सक्छ । अन्तर्राष्ट्रियस्तरमा हेर्ने हो भने स्थापित भइसकेका र लामो समय टिकेका धेरै वायुसेवा नामोनिसान नरहने गरी अस्ताएका थुप्रै उदाहरण छन् ।

पछिल्लो समय ८८ वटा जहाजबाट सेवा दिइरहेको छिमेकी मुलुक भारतकै वायुसेवा कम्पनी जेट एयर बन्द भएको छ । यो उदाहरणलाई स्थापित वायुसेवा कसरी सिध्न सक्छ भनेर बुझ्न पनि प्रयोग गर्न सकिन्छ । जहाज उडानबाट लाभ कमाइरहेको भएपनि उडानमा भएको घाटाले वायुसेवा बन्द भएको होइन । यसका अन्य पक्षका कारण त्यो वायुसेवा कम्पनी ऋणमा डुब्यो र अन्ततः ६ महिना अगाडि उसले आफ्ना सबै उडान बन्द गर्‍यो । त्यस्तै भारतको एक अगुवा वायुसेवा कम्पनी किङ्गफिशर

पनि ऋणकै कारण डुबेको थियो ।

त्यसो त नेपालसँग सम्बन्ध जोडिएका विदेशी वायुसेवाले नेपालमा उडान सुरु गर्ने र बन्द गर्ने काम सम्बन्धित वायुसेवाको अनुकूलतामा हुन्छ । यद्यपि अन्य बजेट एयरलाइन्सले पनि प्रतिकूल समय देखाउँदै सेवा बन्द गरेका थिए । यसअघि यूएईको 'याक एयर', दुबईको 'फ्लाई दुबई', भारतको 'किङ्गफिशर', बहराइनको 'गल्फ एयर', पाकिस्तानको 'पीआईएस'हिलेका वायुसेवाले पनि यहाँ उडान बन्द गरिसकेका थिए । बजार अनुकूल हुँदा उडान गर्नु र प्रतिकूल हुँदा बन्द गर्ने व्यवसायमा सामान्य प्रक्रिया हो ।

नेपालबाट पनि अन्तर्राष्ट्रिय उडानको प्रयास नभएको होइन । बेलाबेलामा सर कारले निजी क्षेत्रलाई अन्तर्राष्ट्रिय उडान गर्न आह्वान गर्छ । निजी क्षेत्रलाई प्रोत्साहन गर्ने पनि भन्छ । तर, अपेक्षाअनुसार न निजी क्षेत्रले अन्तर्राष्ट्रिय पहुँच बनाउन सकेका छन् न त सरकारी वायुवाको प्रवर्द्धन नै हुन सकेको छ ।

नेपालबाट अन्तर्राष्ट्रिय उडान गर्ने वायुसेवाको पहुँच कमजोर भएको फाइदा विदेशीले लिइरहेका छन् । राष्ट्रिय ध्वजावाहक नेपाल वायुसेवा निगमको कमजोर उपस्थितिका कारण वर्षौंदेखि नेपालबाट विदेशी वायुसेवाले अबौं रुपैयाँ यात्रु टिकटबाट मात्रै लैजाने गरेका छन् । अहिले नेपालमा नियमित उडानका अन्तर्राष्ट्रिय वायुसेवाको संख्या २८ पुगेको छ । नेपालमा सेवा दिने सबै विदेशी वायुसेवा नाफामा नै सञ्चालन हुने गर्छन् । जसरी नेपालको वायुसेवा विदेशी गन्तव्यमा जानुपर्दा घाटाको बजारलाई हेर्दैन, त्यसैगरी विदेशी वायुसेवाले पनि नेपाल

उडानमा सञ्चालन घाटा व्यहोर्न तयार हुँदैनन् । हवाई व्यवसायमा जोखिम लिनुपर्ने भएकोले पनि सामान्यता घाटामा व्यवसाय सञ्चालन हुँदैन । यसैको कारण कुनै पनि वायुसेवाले जर्बजस्ती उडान गरेका हुँदैनन् ।

नेपाल उडानमा कुनै प्रकारले घाटा लागेको अवस्थामा विदेशी निजी वायुसेवाले नेपालको उडान तत्काल फिर्ता लिने गरेका छन् । यस्तो अवस्थामा नेपाली वायुसेवाले अन्तर्राष्ट्रिय उडान जवरजस्त गर्नै पर्छ भन्ने होइन । अर्कातर्फ कुनै पनि देशको राष्ट्रिय ध्वजावाहक त्यो देशको शान हो । सोही वायुसेवाको उडानलाई आधार बनाएर आन्तरिक वायुसेवाको नियमन र भाडादर निर्धारण हुन्छ । नेपालमै पनि वायुसेवा निगमले चाहेर आन्तरिक उडान गरिरहेको छैन । अन्तर्राष्ट्रिय उडानमा कमाएको नाफाको केही हिस्सा आन्तरिक हवाई उडानको सेवामा प्रयोग गर्ने भन्ने मात्रै हो ।

नेपालबाट अन्तर्राष्ट्रिय उडान गर्ने र स्थायित्व पाउने भनेको निकै गाह्रो र जटिल विषय हो । नेपाल वायुसेवा निगम सरकारी भएको र यसले सेवा दिनै पर्ने भएर मात्रै हो । यो नाफामूखी मात्रै हुन्थ्यो भने अहिले ६ दशकको यात्रासम्म नआइपुग्न पनि सक्थ्यो । यसलाई त विस्तार गर्ने र प्रतिस्पर्धी बनाउने भन्दा पनि सत्ता र शक्तिकेन्द्रको स्वार्थमा प्रयोग गर्न थालिएको मात्रै छ । पहिलेदेखि यहाँ त्यही थियो अहिले पनि त्यही नै छ ।

निजी वायुसेवाको तुलना गर्ने हो भने हिमालय एयरलाइन्स मात्रै हो नेपालमा वार्षिक अबौंको घाटा सहेर पनि नियमित उडान गरिरहेको वायुसेवा । यसले

नेपालमा उडान सुरु गरेको तीन वर्षमै करीब ६ अर्ब रुपैयाँ घाटा व्यहोरिसकेको छ । पछिल्लो समय एउटा जहाज ६ महिनाका लागि भाडामा लगाएको र व्यापारिक योजना प्रभावकारी बनाउने तथा चीनका गन्तव्यमा उडान अनुमति पाउनुले यसलाई केही राहत मिलेको छ । नभए यो वायुसेवाले पनि यस अघि उडान सुरु गरेका कोलम्बो र म्यानमारसहितको गन्तव्यबाट फिर्ता आएजस्तै अन्य उडान गन्तव्यमा पनि सधैं घाटाको व्यापार गरेर टिकिरहन सक्दैन ।

नेपाली वायुसेवा बुद्ध एयरले पनि नेपालबाट कोलकातामा सुरु गरेको उडान बन्द गरेको छ । यो वायुसेवाले ६ महिनामा नै १० करोड रुपैयाँ घाटा भएको भन्दै उडान बन्द गरेको हो । यसअघि यसले काठमाडौँबाट भुटानको पारो, भारतको लखनउ, बनारसमा पनि उडान परीक्षण गर्‍यो । नाफामूखी हुन नसकेपछि कम्पनीले एकपछि अर्को गन्तव्यमा उडान बन्द गर्दै नयाँ विकल्प खोज्दै गर्न थालेको हो । उसको बनारस भने फेरि उडान सुरु गरेपछि अहिले कम्तिमा उडान खर्च धान्नेसम्मको अवस्थामा चलिरहेको छ ।

अन्तर्राष्ट्रिय उडान घोषणा गरेर मात्रै हुँदैन, सम्पूर्ण चाँजोपाँजो मिलाउन र टिकाउन साँच्चै गाह्रो छ । नेपालमै स्थापित भएको र गैरआवासीय नेपालीले केही वर्ष अगाडि सञ्चालन गरेको बीबी एयरवेज जम्मा तीन महिनामात्रै टिक्‍यो । त्यसपछि सुरु गर्ने भन्दाभन्दै अहिले कम्पनीको कुनै नामोनिशान छैन । भएकै वायुसेवाले उडान विस्तार गर्न नसकिरहेको बेला विदेशी वायुसेवाको अपेक्षा गर्नु त्यति सान्दर्भिक नहुन पनि सक्छ ।

नेपालबाट उडान गर्ने घोषणा गर्दै पछाडि फर्कदै गरेका वायुसेवा एकपछि अर्को गर्दै देखिने र हराउने गरेका छन् । त्यसो त नेपालमा धेरैजसो वायुसेवा कागजमा स्थापित हुन्छन् र सञ्चालनमा नआउँदै कागजमै हराउँछन् भन्ने पनि गरिन्छ ।

केही समय अगाडि कार्गोमार्फत अन्तर्राष्ट्रिय उडानको घोषणा गरेको सिम्रिक एयर नै स्थापित हुन नसकेर समस्यामा छ । यो वायुसेवाको स्वामित्व

पटक पटक परिवर्तन भइसक्यो तर ठूलो जहाज र उडान विस्तारको पहुँचसम्म भने पुग्न सकेको छैन ।

संयुक्त राज्य अमेरिकाको वायुसेवा कम्पनी सफायर ग्लोबल एयरवेजसँगको सहकार्यमा सिम्रिकले अन्तर्राष्ट्रिय उडान गर्ने घोषणा पाँच वर्ष अगाडि नै गरेको थियो । आन्तरिक तयारी गरेको र सोही अनुसारको सम्झौता भएको भए तापनि यसले अहिलेसम्म आवश्यकता अनुसार ठूला जहाज ल्याएर आन्तरिक उडानसम्म विस्तार गर्न सकेको छैन । सिम्रिक इन्टरनेसनल कार्गो एयरलाइन्स र सफायर ग्लोबल एयरवेजको संयुक्त लगानीमा नेपालबाट यो वायुसेवा संचालन हुने उल्लेख थियो । सिम्रिकले नेपालमा यात्रु उडान नभएर कार्गो उडान मात्रै गर्ने गरी सफायरसँग सम्झौता गरेको हो । करीब १६ अर्ब रुपैयाँको लगानीमा ७० प्रतिशत सफायरको र ३० प्रतिशत सिम्रिकको शेयर हुने गरी सम्झौता गरेको भएपनि यो सम्झौता कागजमा मात्रै सिमित भयो । व्यवसाय सञ्चालनमा नआउँदै सिम्रिकको स्वामित्व फेरि परिवर्तन भइसकेको छ । अहिले यो वायुसेवाले साना जहाजबाट छोटो दूरीको उडान गन्तव्यमै आफूलाई सिमित राखेको छ ।

यस्तै आन्तरिक उडानको सेवा सुरु गरेको श्री एयरलाइन्सले अन्तर्राष्ट्रिय उडानको तयारी गरेको छ । यो वायुसेवाले छिमेकी मुलुक भारतका पर्यटकलाई दृष्टिगत गरेर सेवा दिने भनेको छ । यो वायुसेवाले आफ्नो बजार रणनीतिलाई बलियो बनाएर र अन्य वायुसेवासँग प्रतिस्पर्धा गरेर उडान गर्न सक्नुपर्छ ।

नेपालबाट उडान गर्ने वायुसेवा स्थापित हुन नसक्नु र अन्तर्राष्ट्रिय पहुँच विस्तारमा कमजोर हुनलाई सरकारी नीति, पर्याप्त पुँजी, बजार अध्ययन, धैर्यता र सरकारले गर्ने सहजीकरण नै प्रमुख विषय हुन्छ । विदेशीले राष्ट्रको वायुसेवा र ध्वजाबाहक भनेपछि दिने प्राथमिकतालाई नेपालसँग तुलनामा गर्ने हो भने स्थिति उत्साहजनक देखिँदैन । नेपाली वायुसेवाले सरकारी प्रवर्द्धन र सहजीकरणको व्यवस्था पाएको छैन । यदि सरकारले आफ्नो देशको वायुसेवालाई

प्राथमिकता दिन्थ्यो र सहजीकरण गर्दै यसलाई थप उत्साहित बनाउँथ्यो भने सरकारी नेपाल वायुसेवासँग अहिले सयौं जहाज र गन्तव्य हुन्थे ।

निगमलाई हरेक प्रसंगमा उस्तै भूबनोट भएको र नेपालभन्दा निकै कमजोर अवस्थाबाट आएको इथियोपियन एयरसँग तुलना गरिन्छ । उसले निकै गति लिइसक्यो । त्यस्तै सँगै स्थापन भएको थाई कहाँ पुगिसक्यो निगम जहाँको तहाँ छ भन्ने गरिन्छ । तर, यसको लागि प्रवर्द्धन र सहजीकरण गर्ने कार्य हुन सकेन भने राजनीतिक स्वार्थ बाहेकको राष्ट्रिय स्वार्थमा नेतृत्वले कहिल्यै निगमलाई बुझ्न सकेन ।

विदेशीलाई लाभ, स्वदेशी कहाँ चुके ?

नेपालमा विदेशी वायुसेवाको उडान अवस्था हेर्दा नेपाल संभावना भएको र लाभदायक गन्तव्यको रूपमा उदाउँदै छ । नेपालमा अहिले पनि विभिन्न देशबाट २८ वटा विदेशी वायुसेवाको उडान हुने गरेको छ । यहाँको हवाई उडानबाट मात्रै वार्षिक एक खर्ब भन्दा बढीको कारोबार हुने अनुमान छ । यसमा विदेशी वायुसेवाकै बर्चस्व छ । नेपालको वायुसेवा कमजोर भएकै कारण विदेशी वायुसेवाले यस्तो लाभ लिइरहेका छन् ।

नेपालमा देखिएको पर्यटकीय संभावना र अन्तर्राष्ट्रिय हवाई यात्रुको पहुँचकै कारण विदेशी वायुसेवाको उडान बृद्धिसँगै ती कम्पनी बीचमै प्रतिस्पर्धा छ । वैदेशिक रोजगारीमा जाने नेपाली बढ्दै जानु र विदेशी पर्यटकसमेत वर्षेनी बृद्धि हुनुले हवाई उडान बढ्नु स्वभाविक पनि हो । नेपालमा अन्तर्राष्ट्रिय समूदायको गतिविधि बढ्नु, कुटनैतिक पदाधिकारीको आवतजावत र नेपालीको पनि विदेश आउनेजाने क्रमका कारणले अन्तर्राष्ट्रिय वायुसेवाको उडान थपिँदै गएको हो ।

यसै बीच केही विदेशी वायुसेवा नेपाल उडानमा संभावना देखिए पनि विभिन्न कारणले फिर्ता गएका पनि छन् । तर, हरेक वर्ष थपिने यात्रुको चापका कारणले वायुसेवाकै संख्या घटे पनि अकुपेन्सी भने राम्रो छ । नेपाल उडान सञ्चालनमा ती वायुसेवा नाफामै चलेको पाइन्छ । यसका साथै आवश्यकताअनुसार नयाँ जहाज

थपिने क्रम पनि रोकिएको छैन ।

नेपालले विदेशी पर्यटक लक्षित गरेर सञ्चालन गरेको पर्यटन वर्ष सन् २०११ सम्ममा जम्मा २७ ओटा विदेशी वायुसेवाले नेपाल उडान गरेका थिए । यो संख्या सन् २०१२ कै अन्त्यसम्ममा पुग्दा ३२ वटा पुगेको थियो । सरकारले सन् २०२० लाई फेरि नेपाल भ्रमण वर्षको रूपमा मनाउँदै छ । यो बेला सरकारले फेरि विदेशी वायुसेवालाई नै प्रवर्द्धन गर्ने नीति अंगिकार गरिरहेको छ । त्रिभुवन विमानस्थलमा उडान अवतरण गर्न दिनको समयमा स्लट अभाव छ । रातको समयमा यो विमानस्थलबाट उडान अवतरण गर्ने विदेशी वायुसेवालाई पनि आकर्षक छुट दिने घोषणा गरिएको छ । तर, दीगो सोच राखेर नेपाली वायुसेवालाई नै स्थापित गराउने, नयाँ वायुसेवाबाट अन्तर्राष्ट्रिय उडान प्रवर्द्धन गर्ने

सहितको विषयमा भने सरकार चुकेको छ ।

नेपालमा हवाई सेवा सम्झौता (एएसए) भएका विभिन्न ४० मुलुकमध्ये आधाबाट पनि नेपालमा उडान हुन सकेको छैन । नेपाली वायुसेवाको पहुँच विस्तार गर्ने र सबै देशमा पुग्ने कल्पना पनि अहिले कै अवस्थामा भएको हवाई उडानको अवस्थालाई हेर्दा दिवास्वप्न मात्रै हुनेछ । नेपालमा हवाई उडान गर्ने सम्झौता भएको लामो समय वितिसकदा समेत धेरै विदेशी वायुसेवाले उडान सुरु नगर्नु अनुकूल परिस्थिति नभएको र लाभ नदेखेको हुनसक्छ । नेपाली आकासमा हवाई उडानको चासो नदेखाएको हुनसक्छ । नेपालमा भएको एउटै मात्र अन्तर्राष्ट्रिय विमानस्थल र त्यसमा पनि बेला-बेलामा आइरहने विभिन्न प्राविधिक समस्याका कारण नेपालले अन्य मुलुक तथा

अन्तर्राष्ट्रिय वायुसेवा कम्पनीलाई यहाँ उडान गर्न आग्रह गर्न सकेको छैन ।

नेपालसँग हवाई सम्झौता भएर उडान नै नभएका मुलुकमा क्रोएसिया, फ्रान्स, लक्जेम्बर्ग, इजिप्ट, इजरायल, इटली, जापान, जोर्डन, मकाउ, रुस र बेलायत छन् । ती मुलुकले अनुकूलता मिलाएर कुनै पनि समयमा नेपाल उडान गर्न सक्ने गरी नेपाल सरकारले एएसए गरेको भए पनि उनीहरूले उडानको चासो देखाएका छैनन् । उडान सम्झौता भएका क्रोएसिया, इजिप्ट, लक्जेम्बर्ग र जोर्डन लगायतका मुलुकबाट पर्यटक नेपाल आउने सम्भावना न्यून हुनुले ती मुलुकसँगको सम्झौता तत्कालीन समयमा राजामहाराजा र सरकारी कर्मचारी घुम्न जाने मेसो मात्रै हो भन्ने भान हुन्छ । ■

TIA Arrival



आन्तरिक विमानस्थलको जनशक्ति व्यवस्थापनः विकास र विस्तारको चुनौती

त्रिलोचन पौड्याल
सूचना अधिकारी, नेताउप्रा



देशको एक विमानस्थलबाट सोही देशको अर्को विमानस्थलमा हवाई उडान र अवतरण हुन्छ भने त्यो आन्तरिक उडान हो । एक प्रदेशको विमानस्थलबाट अर्को प्रदेशको विमानस्थलमा हवाई उडान र अवतरण हुन्छ भने त्यसलाई आन्तरिक उडान भन्न सकिन्छ । अर्को शब्दमा एक देशको विमानस्थलबाट अर्को देशको विमानस्थलमा अन्तर्राष्ट्रिय उडान र अवतरण नभई त्यसै देशको विमानस्थलमा हुने उडान नै आन्तरिक उडान हो । नेपालको सन्दर्भमा एउटा विमानस्थलबाट अन्तरदेशीय उडान हुन्छ भने त्यसलाई आन्तरिक उडान सम्झनु पर्छ ।

नेपालको भू-धरातलीय स्वरूपका आधार मा यातायातको एक मात्र उत्कृष्ट साधन हवाई यातायात नै हो । हवाई यातायातलाई नियमित, भरपर्दो, सुरक्षित र स्तरीय रूपमा विकास गर्न विमानस्थल आधुनिक, वैज्ञानिक उत्कृष्ट सूचना तथा सञ्चार प्रविधिमैत्री हुनुपर्दछ । त्यसै अनुसार विमानस्थलको विकास, विस्तार, सुदृढीकरण र स्तरोन्नतिमा ध्यान दिनु आवश्यक देखिन्छ ।

आमनागरिकलाई सेवा सुविधा प्रदान गर्न राज्यले विभिन्न जिल्लामा विमानस्थलको निर्माण र विकास गरेको देखिन्छ । नेपालको परिप्रेक्ष्यमा हवाई यातायातलाई महत्वपूर्ण परिवहनको रूपमा स्वीकार गरेको पाइन्छ । वास्तवमा सडक यातायातको विकास नभएको अवस्थामा यातायातको सर्वोत्तम विकल्प भनेको हवाई यातायात नै हो । हवाई यातायातको लागि विमानस्थल

निर्माण हुनु आवश्यक हुन्छ ।

विमानस्थल निर्माणको लागि ठूलो धनराशीको आवश्यकता पर्ने हुँदा आमनागरिकको जीवनस्तर र आयस्रोतलाई दृष्टिगत गरी क्रमशः सडक निर्माण हुँदै गएको पाइन्छ । भौगोलिक अवस्थितिलाई विचार गरी सडक र विमानस्थल निर्माण भएको तथ्य पाइन्छ । जब सडक यातायातको विकास हुँदै गयो मानिसको हवाई यातायातबाट सडक यातायात तर्फ आकर्षित भएको देखिन्छ । मानिसले आफ्नो आयस्रोतको मूल्याङ्कन गरेर पनि सडक यातायाततर्फ जानु अस्वाभाविक होइन ।

नागरिकको जीउ र धनको सुरक्षा र संरक्षण गरी बढीभन्दा बढी सेवा सुविधा पुऱ्याउनु राज्यको निर्देशक सिद्धान्त हो । त्यस्तै सुरक्षा प्रणालीको विकास गरी शान्ति सुरक्षाको प्रत्याभूति गर्ने र सर्वाङ्गीण मानवीय सुरक्षाको व्यवस्था गर्ने राज्यको नीति हो । यातायातको सेवा सुविधामा नागरिकको सरल, सहज र समान पहुँच सुनिश्चित गरी यातायात क्षेत्रमा विकास, विस्तार र सुदृढीकरण गर्ने राज्यको प्रमुख दायित्व अन्तर्गत पर्छ ।

नेपालको संविधानले हवाई उड्डयन, अन्तर्राष्ट्रिय विमानस्थल संघको अधिकार सूची अन्तर्गत राखेको छ । संविधान अनुसार नेपालको नागरिक उड्डयन र विमानस्थलको निर्माण, विकास, विस्तार र स्तरोन्नति सङ्घीय सरकारले गर्ने स्पष्ट देखिन्छ ।

नेपालका अन्तर्राष्ट्रिय विमानस्थल, आन्तरिक विमानस्थल, सञ्चालनमा रहेका विमानस्थल, सञ्चालनमा नरहेका विमानस्थल, कालोपत्रे भएका विमानस्थल, निर्माणाधीन अन्तर्राष्ट्रिय र क्षेत्रिय विमानस्थल तथा आन्तरिक विमानस्थल, नेपालमा सञ्चालित आन्तरिक र अन्तर्राष्ट्रिय वायुसेवा कम्पनीहरु देहाय बमोजिम रहेका छन् :

Airports in Nepal

Airports in Operation

International Airport

1. Tribhuvan International Airport

Hub Airports

1. Biratnagar Airport
2. Gautam Buddha Airport
3. Nepalgunj Airport
4. Pokhara Airport

Other Domestic Airports

1. Bajura Airport
2. Bharatpur Airport
3. Bhojpur Airport
4. Chandragadhi Airport
5. Chaurjahari (Rukum) Airport
6. Dang Airport
7. Dhangadhi Airport
8. Dolpa (Juphal) Airport
9. Janakpur Airport
10. Jomsom Airport

11. Jumla Airport
12. Khanidanda (Manamaya Rai) Airport
13. Lamidanda Airport
14. Phaplu Airport
15. Rajbiraj Airport
16. Ramechhap Airport
17. Rara Airport
18. Rumjatar AirportSanfebagar Airport
19. Salle (Rukum) Airport
20. Simara Airport
21. Simikot Airport
22. Surkhet Airport
23. Taplejung Airport
24. Tenzing Hillary (Lukla) Airport
25. Thamkharka Airport
26. Tumlingtar Airport

Airports Not in Operation

1. Baglung (Balewa) Airport
2. Baitadi Airport
3. Bajhang Airport
4. Darchula Airport
5. Dhorpatan Airport

Bitumen Airports

S. N.	Aerodromes	Disctrict	S.N.	Aerodromes	Disctrict
1	Bajura Airport	Bajura	18	Phaplu Airport	Solukhumbu
2	Bharatpur Airport	Chitwan	19	Pokhara Airport	Kaski
3	Bhojpur Airport	Bhojpur	20	Rajbiraj Airport	Saptari
4	Biratnagar Airport	Morang	21	Ramechhap Airport	Ramechhap
5	Chandragadhi Airport	Jhapa	22	Rara Airport	Mugu
6	Dang Airport	Dang	23	Rukum Chaurjahari Airport	Western Rukum
7	Dolpa Airport	Dolpa	24	Rukum Salley Airport	Eastern Rukum
8	Doti Airport	Doti	25	Rumjatar Airport	Okhaldunga
9	Dhangadhi Airport	Dhangadhi	26	Sanfebagar Airport	
10	Gautam Buddha Airport	Rupandehi	27	Simara Airport	Bara
11	Janakpur Airport	Janakpur	28	Simikot Airport	Humla
12	Jomsom Airport	Mustang	29	Surkhet Airport	Surkhet
13	Jumla Airport	Jumla	30	Taplejung Airport	Taplejung
14	Khanidanda (Manamaya Rai) Airport	Khotang	31	Tenzing Hillary (Lukla) Airport	Solukhumbu
15	Lamidanda Airport	Khotang	32	Tribhuvan International Airport	Kathmandu
16	Manang (Humde) Airport	Manang	33	Tumlingtar Airport	Sankhuwasabha
17	Nepalgunj Airport	Banke	34	Thamkharka Airport	Khotang

6. Dolpa Masinechaur Airport
7. Doti Airport
8. Jiri Airport
9. Kangeldanda Airport
10. Langtang Airport
11. Mahendranagar Airport
12. Manang (Humde) Airport
13. Meghauli Airport
14. Palungtar Airport
15. Rolpa Airport
16. Syangboche Airport
17. Tikapur Airport

Domestic Airports Under Construction

1. Arghakhanchi Airport
2. Gulmi Airport
3. Ilam (Sukilumba) Airport
4. Kamal Bazaar Airport
5. Kalikot Airport
6. Khiji Chandeshwori Airport
7. Lamjung Airport

International Airports under Construction

1. Nijgadh International Airport

Domestic Airlines Operating In Nepal

Fixed Wing-9	Rotor Wing-10
Nepal Airlines Corporation	Air Dynasty Heli Services
Yeti Airlines	Simrik Air
Buddha Air	Shree Airlines
Sita Air	Summit Helicopters
Simrik Airlines	Mountain Helicopters
Tara Air	Prabhu Helicopters
Shree Airlines	Manang Air
Summit Air	Altitude Air
Saurya Airlines	Heli Everest
	Kailash Helicopter Services

Recreational Aviation Operational Companies - 76

International Airlines Operating In Nepal

S.N.	Country	Airlines
1	Bangladesh	1 Biman Bangladesh Airlines Ltd
2	Bhutan	1 Druk Air (Royal Bhutan Airlines)
		2 Tashi Air (Bhutan Air)
3	China	1 Air China
		2 Cathay Dragon
		3 China Eastern Airlines
		4 China Southern Airlines
		5 Sichuan Airlines
		6 Tibet Airlines Co. Ltd.
4	India	1 Air India
		2 Inter Globe Aviation Limited (Indigo)
		3 TATA SIA Airlines Limited (Vistara)
5	Korea	1 Korean Air
6	Kuwait	1 Jazeera Airways
7	Malaysia	1 Malaysian Airlines
		2 Malindo Air
8	Nepal	1 Buddha Air (International Operation)
		2 Himalayan Airlines
		3 Nepal Airlines Corporation
9	Oman	1 Oman Air
		2 Salam Air
	Qatar	1 Qatar Airways
	Singapore	1 Silk Air
	Thailand	1 Thai Airways International
		2 Thai Lion
	Turkey	1 Turkish Airlines
	U.A.E.	1 Air Arabia
		2 Etihad Airways
		3 Fly Dubai
	Total	29

2. Gautam Buddha International Airport

3. Pokhara Regional International Airport **जनशक्ति व्यवस्थापन**

नेपाल नागरिक उड्डयन प्राधिकरणको संगठन संरचना अनुसार कर्मचारीको कुल दरबन्दी संख्या १०६५ रहेकोछ ।

नेपाल नागरिक उड्डयन प्राधिकरणको स्वीकृत कुल दरबन्दी संख्याको लगभग आधा कर्मचारी आन्तरिक विमानस्थलमा कार्यरत रहेको देखिन्छ । अधिकांश आन्तरिक विमानस्थलमा कार्यरत कर्मचारीको लागि उपलब्ध गराइएको सेवा सुविधाको तुलनामा आय न्यून देखिन्छ ।

विमानस्थल विकास तथा विस्तारका चुनौती

१. जग्गा प्राप्त र मुआब्जा निर्धारणमा कठिनाई

२. भू-धरातलीय अवस्थिति

३. सार्वजनिक खरिद ऐन र नियमावली

४. राजनीतिक प्रभाव

५. पर्याप्त स्रोत र साधन संकलन गर्ने समस्या

६. विमानस्थल निर्माण गर्ने स्थानमा सडक यातायातको पहुँच नहुनु

७. स्थानीय अवरोध

८. उच्च प्रविधि र दक्ष मानव स्रोतको अभाव

९. नीतिगत निर्णय ढिलो हुनु

१०. नैतिक प्रतिबद्धताको अभाव

११. समय समयमा हुने श्रमिक र कर्मचारीको हडताल

१२. स्थान छनौटमा नै कठिनाई

१३. समन्वय नहुनु

१४. पर्याप्त गृहकार्य बिना योजना र आयोजना छनौट गरिनु ■

