



*The Prime Minister*

KATHMANDU  
NEPAL



## Message

I am pleased to know that the Civil Aviation Authority of Nepal (CAAN) is celebrating Nineteenth Anniversary of its establishment, and would like to extend my congratulation to CAAN on behalf of the Government of Nepal. I would also like to recognize its contributions to the development of aviation industry and to the nation.

CAAN has an immense responsibility in terms of air transportation. To a land-locked country like Nepal, air transportation plays a crucial role in providing most reliable means of connectivity to the outside world and remote areas within the country as well. Civil aviation is one of the means to provide integrity, prosperity to the people and country. Network of well functioning airports across the country has played a significant role for the socio-economic growth of the people in the remote areas through tourism promotion and transportation of essential goods.

The importance of aviation was observed in the post-quake rescue and relief operations in the aftermath of the devastating earthquake in April and May 2015. Air transportation was used to rescue people, carry sick and injured people, food, shelter and other relief materials and, to a greater extent, instill hope in people.

Aviation has undergone through various technical advancements. Therefore, Nepal should speed up to meet the international standards set by International Civil Aviation Organization (ICAO). CAAN has the responsibility to implement the national civil aviation policy, create enabling environment for the private sector airlines companies, and introduce air safety measures. I am confident that the CAAN will perform its role perfectly in this regard.

The government of Nepal is committed to developing aviation infrastructure including international and regional airports in the country.

I would like to express my best wishes for CAAN's every success in the days to come.

**Poush, 2074**

*Sher Bahadur Deuba*

**Sher Bahadur Deuba**

**Hon. Jeetendra Narayan Dev**  
Minister  
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**Poush 16, 2074**

## Message

I would like to express my hearty greetings and best wishes to Civil Aviation Authority of Nepal (CAAN) on the nineteenth anniversary of its establishment. CAAN has an immense responsibility in terms of air transportation together with increasing connectivity and uplifting the economic status of the country.

Aviation is an important tool to support economic development and facilitating accessibility to remote areas. In our case, many remote areas inaccessible by road are connected by air services and are being developed as famous travel destinations in the world. In past one year, about half a dozen such destinations were listed as the must visit places by international media and travel and tours companies. I would like to appreciate CAAN for its commendable role in developing airports efforts to uplift the aviation industry in Nepal.

Flight safety assurance and sustainability of civil aviation are the prime concerns for an autonomous body like CAAN. Nepal is strongly committed to comply with the safety standards issued by the International Civil Aviation Organization (ICAO), and strong initiatives have been taken by CAAN on several fronts to resolve findings of ICAO audit in cooperation with various international organizations including European Union. It has been trying to meet the global standards of aviation safety and infrastructure.

Aviation plays an important role during the times of natural calamities and humanitarian crisis as it was seen during the devastating earthquakes in April and May 2015. Air service was used in rescue and relief operation, delivering aid and medical supplies. I would like to take the opportunity to extend my accolades to the employees of CAAN, airline industry and all concerned organizations and individuals in the aviation sector.

I wish CAAN every success in its future endeavors.

A handwritten signature in black ink, appearing to read 'Jeetendra Narayan Dev'.

Jeetendra Narayan Dev  
Minister

**Hon'ble Sumitra Tharuni**  
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## Message

I have the pleasure to extend heartfelt congratulations to Civil Aviation Authority of Nepal (CAAN) on its 19<sup>th</sup> Anniversary.

As an authority responsible for both Regulatory and ANS Service Provider, CAAN has played a significant role in adopting international aviation safety measures and facilitating the airlines service provider in operating their business in the country. Aviation activities contribute to tourism development, economic upliftment and employment generation in the country.

Nepal is struggling hard to develop tourism and aviation infrastructure. Second International Airport (SIA) in Bara is on the offing, Gautam Buddha International Airport Bhairahawa and Pokhara Regional International Airport in Pokhara are being constructed. Once completed, these airports will open new avenues for tourism, aviation and economic development in the country. SIA has the potential to a transit for the long haul international flight while Bhairahawa and Pokhara airports will help to carry tourists to the two most famous touristic destinations in the country – Lumbini and Pokhara.

I would like to appreciate the contribution of CAAN in the development and expansion of civil aviation in Nepal. I am optimistic that CAAN will enhance its capability with support from the government, ICAO and other concerned organizations to cope with emerging challenges facing the civil aviation sector. On the occasion of its 19<sup>th</sup> anniversary, CAAN should reflect its past performance and introduce new measures for improvement of aviation sector.

I am hopeful that the government, CAAN, aviation companies and other stakeholders will forge an effective collaboration and partnership at local, regional and national level for the development of aviation sector.

I would like to take this opportunity to express my sincere wish for the success of CAAN in its future endeavour.

  
2068/3198



Government of nepal  
**MINISTRY OF CULTURE, TOURISM & CIVIL AVIATION**



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Paush 16, 2074

## Message

I would like to offer my sincere congratulations to Civil Aviation Authority of Nepal (CAAN) on the occasion of 19<sup>th</sup> anniversary of its establishment. As a service provider regulatory body of the aviation sector, of Nepal. CAAN has played a tremendous role in enhancing the aviation infrastructure and enforcing air safety measures.

I am also delighted to know that CAAN has continued the publication of CAAN Souvenir and hope that it will be a useful publication for the stakeholders of aviation and tourism sector.

Aviation is a dynamic industry with rapid update and innovation of high-end technology and its application which calls for proactive approaches from regulator, airlines operators and Government. Collaborative efforts and sharing of knowledge among various stakeholders are needed for the sustainable development of the sector. CAAN Souvenir can be a medium for sharing ideas and knowledge apart of being a tool of information dissemination.

CAAN should enhance its capabilities to keep pace with the ever-changing scenario of aviation sector, technological development, aviation safety and technology transfers. It also has the responsibilities to set standards for the domestic and international airlines service providers, infrastructure development and creating skilled manpowers. It should facilitate the national carrier Nepal Airlines Corporation along with other private sector aviation companies in technology transfer, deploying skilled manpower and ensuring aviation safety.

Meanwhile, initiatives to develop international and regional airports and upgrade domestic airports and adding more aeroplanes in the government and private sector aviation companies will have significant impact on the development of aviation and tourism sector in the country.

I extend my best wishes to CAAN on this occasion.

Maheshwor Neupane

Secretary



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航空组织

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Mr. Sanjiv Gautam  
Director General  
Civil Aviation Authority of Nepal  
Head Office  
Babar Mahal  
Kathmandu



Message to the  
Civil Aviation Authority of Nepal  
on 19<sup>th</sup> Anniversary

Dear Mr. Gautam,

Please accept my warm Greeting

This is to extend our warmest congratulation to you and the Civil Aviation Authority of Nepal on the celebration of 19<sup>th</sup> Anniversary of its establishment will be marked by a special event on 31<sup>st</sup> December 2017.

The Asia/Pacific Regional Office 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 grateful for the support the Civil Aviation Authority of Nepal continued to provide to ICAO activities and for Nepal's reiteration of confidence in leadership of ICAO.

With warmest regards.

Yours sincerely,

Arun Mishra  
Regional Director  
International Civil Aviation Organization  
Asia & Pacific Office  
15 December 2017

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# CIVIL AVIATION AUTHORITY OF NEPAL

Head Office, Babar Mahal, Kathmandu, Nepal



Ref No.:

## Message

Civil Aviation Authority of Nepal (CAAN) has completed 18 years of its existence and services successfully and is celebrating nineteenth anniversary on 31<sup>st</sup> December 2017. On behalf of CAAN, I feel privileged to extend my sincere felicitations and warm greeting to all our stakeholders, clients, valued travelers, organizations, donors and other concerned parties in Nepal and abroad. Without your continuous support and collaboration, CAAN wouldn't have achieved progress in the development and expansion and regulation of civil aviation sector.

On this occasion, I would like to express my commitment to deliver the aviation safety and increase the efficiency of air transportation both in domestic and international front. At the same time, CAAN is continuously dedicated to developing new aviation infrastructures such as Commissioning the new Communication, Navigation and Surveillance equipment and facilities, Construction, Upgradation and Maintenance of International & Domestic Airports, conducting feasibility of new airports across the country. We are committed to support the development of tourism in the remote areas with safe and reliable flight services. If tourism is the major source of employment and foreign currency, aviation is the first prerequisite for tourism development, promotion and sustainability.

We must not forget that civil aviation has become an integral part of the national life and has been playing an important role in better connectivity and socio-economic development. It has greatly contributed during natural calamities like flood, earthquake and landslide which was evident during the devastating Gorkha Earthquake 2015 and Terai Floods 2017.

CAAN prioritizes to enhance the capability of its human resources, facilitate airlines operators, and improvement of airport infrastructure across the country. We at CAAN believe that without proper infrastructure, skilled manpower, relevant policies and high-end technological support, air safety and security can't be achieved. CAAN can play an instrumental role in facilitating the aviation sector to induce right technology to Nepal and air safety. Nepal, having resolved from SSC List of ICAO and placing above the global safety benchmark, sets milestone to eliminate it from safety watch list of the European Union.

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

I have the pleasure in presenting this special souvenir to our distinguished readers.

Allow me to wish you a happy new year 2018.

{Sanjiv Gautam}  
Director General

## Editorial

Civil Aviation Authority of Nepal (CAAN), the aviation sector regulator has successfully completed 19 glorious years since its establishment in 1998. We celebrate the CAAN Day on the eve of the New Year when year 2017 is saying farewell to us and we are impatiently waiting to welcome New Year with lots of joy and festivity.

Aviation safety in Nepal has always been a contentious issue. There has not been significant improvement in the safety, although Civil Aviation Authority of Nepal (CAAN) has put its utmost and sincere efforts to make Nepali sky safer. The European Union has placed Nepal registered carriers in EU Safety Watch List due to safety concerns tagged by International Civil Aviation Organization (ICAO) Audits. Nepal's safety standard is lower than the ICAO set standards therefore we should implement State Safety Programme (SSP). 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 achievement 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.

Ever-increasing demand of aviation service, growing number of passengers, shortage of quality aviation infrastructure, lack of narrow-body and wide-body aircraft for long-haul destination and stunted growth of the national flag carrier have become the major challenges for the development of the aviation sector.

Pokhara Regional International Airport is yet to take off while Second International Airport project in Bara and Gautam Buddha International Airport Project Bhairahawa has been continuously receiving glitches in land acquisition and construction works. Although CAAN is developing new airports in various locations and upgrading the existing airfields, most of the airports have become burden economically.

However, we will continue to put our efforts to implement reforms. In order to make the air travel more reliable, lapses and weaknesses related to air safety, as pointed by the ICAO and European Union, will be addressed with better utilization and mobilization of available resources. Similarly, a five-year action plan will be formulated to mobilize the Airport Development Fund (ADF) along with the CAAN's three-year plan. We, at CAAN have been working day and night to meet the aviation infrastructure deficit and address the loopholes in Air Safety management.

It is also true that the future will be more challenging due to rapid change in technologies applied in aviation field and strategic management approaches in international arena. Therefore, CAAN needs to create aviation environment accordingly adhering ICAO principles and International scenario.

Each year's last day witnesses the aviation authority in the country celebrating its anniversary with various activities. To make this celebration even more special, we have published the 'CAAN Souvenir 2017' 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. This is our noble effort to disseminate useful as well as technical and academic information with deeper understanding of the subject to the stakeholders and public at large.

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 2018 !



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# Table of Contents

## Message

## Editorial

Nepal Air Transport: Terbulent Time	<i>Lalit Bikram Shah</i>	1
Role of Aviation Safety for Economic Growth	<i>Rajesh Raj Dali</i>	4
TIA and the Aviation Musuem	<i>Ramesh Man Joshi</i>	9
नेपाल विमानस्थल चूनौती र संभावना	शिशिल चित्रकार	11
राष्ट्रिय गौरवका आयोजनाहरूमा प्राधिकरणको भेल्लुपरेको समस्या	विनोद प्रसाद न्यौपाने	14
GBA's Operational Preparedness	<i>Shaligram Poudyal</i>	22
CAAN Day : Time for Togetherness	<i>Birendra Kumar Singh</i>	26
Status of Effective Implementation.....	<i>Suwarn Raj Upadhyay</i>	28
The Operating Status of TIA .....	<i>Shyam Kishor Sah</i>	34
The Role and Status of CNS Personnel .....	<i>Sanjay Kumar Thakur</i>	36
Wayfindings: Standards and Design.....	<i>Sunil Kumar Kushwaha</i>	40
Aviation Law: An Overview	<i>Narayan Prasad Giri</i>	44
Important of AIS in Aviaton .....	<i>Manju Paudyal</i>	49
Creating Public Awareness: .....	<i>Khageswor Aryal</i>	54
Recreational Airlift: Pleasant .....	<i>Devendra P. Pandeya</i>	58
Aspects of Mega Project .....	<i>Hari Adhikari</i>	61
Seamless ATM and ASBU Strategy.....	<i>Dinesh R. Ghimire</i>	65
नेपाल नागरिक उड्डयन प्राधिकरणमा .....	निरन्जन मल्ल ठकुरी	71
नेपाल नागरिक उड्डयन प्राधिकरणमा बोनस	सुनिल मूल	74
Increasing Difficulties at the TIA	<i>Nabin Pr. Acharya</i>	78
E-Tourism in Nepal	<i>Bishnu Gautam</i>	82
Work Motivation among the .....	Keshav Mishra &.....	86
नेपालमा साभेदारी विकास मोडेलमा एयसपोर्ट	प्रकाश शर्मा	90
Potential of Nepali Tourism	<i>Bhola Nath ghimire</i>	92
Understanding Fire Fighting Foams	<i>Pradhumna Adhikari</i>	98
Security Equipments in Airports and .....	<i>Khet Raj Dahal</i>	102
सार्वजनिक संस्थानमा सुशासन	<i>Bhim Raj Upreti</i>	104
इन्टरनेटको युगमा पुस्तकालय	गोमा बज्जाडे	108
Transforming Aviation with .....	<i>Bishal Paudel</i>	110
Error and Contributing Factors	<i>Govinda poudyal</i>	114
स्वास्थ्य लागि हाईकिड	रामदेवी महर्जन	116
आन्तरिक वायुसेवा : क्षमता अभिवृद्धिसंगै .....	अच्युत पुरी	120
मुख्य आकर्षन साहसिक पर्यटन	राजु बास्कोटा	123
आन्तरिक पर्यटनको सम्मान	अमृत भादगाउँले	127
नेपालमा पर्यटन विबासको सम्भावना	दधिराम खतिवडा	129
जीवन उपयोगी स्वास्थ्य जानकारी	नारायण डंगोल	132
साइकलमा दाप्चा दौडाहा	देबेन्द्र बस्न्यात	136
Next Generation of Aviation .....	<i>Birendra Pr. Shrestha</i>	138



# Nepali Air Transport: Turbulent Times

✈ Lalit Bickram Shah  
Former Regional Director, ICAO



## Growth:

Growth is wonderful – everyone is simply in love with this word – with over 1,400 scheduled airlines, 26,000 aircraft in service, 3,900 airports and 173 air navigation services providers, aviation has established an unmatched global network at the service of travelers and businesses in every corner of the world.

Traffic volume will double by 2032, spurring tourism and trade. Aviation will contribute to increasing consumer benefits, creating jobs, economic prosperity and establishing cultural and social exchange. What is often times conveniently overlooked is the fact that aviation enhances emergency humanitarian response capabilities during crises and public health emergencies. Such a capability serves as a benchmark of a state's disaster preparedness.

## Economic force:

Aviation has evolved as a truly global economic force. It is interesting to note that if aviation were a country, its Gross Domestic Product should be similar to that of Switzerland at around USD 660 billion with a total economic impact of USD 2.7 trillion.

Aviation is a customer-focused economic sector. While there is no single definition of air connectivity, it can be viewed as the ability of a network to move passengers, cargo and mail involving minimum transit points in the shortest possible time with optimal user satisfaction at the minimum price possible. Many states have realized the vital role of air connectivity for their economies and have placed this industry in their priority list of development needs. From a historical perspective, it may be noted that air transport tends to double in size every fifteen years.

The total economic impact of the aviation industry is around 3.5 percent of the world's GDP, USD 2.7 trillion, which supports 2.7 million jobs worldwide. Apart from this direct impact, over 11 million indirect jobs are supported globally – contributing around USD 761 billion to the global economy.

Aviation supports tourism greatly with around 54 percent of international inbound tourists arriving by air.

## Regional impact – Asia and the Pacific:

Asia and the Pacific Region in recent decades have registered an impressive level of growth creating millions of jobs and contributing billions to the regional GDP. Airlines of the region have consistently recorded passenger traffic growth higher than the world average since 2009.

## Challenges:

Growth and Challenges come hand in hand – often inducing a deep sense of 'Complacent slumber' wherein inherent problems that come with growth are brushed aside as a matter to be visited in the future. A common but glaring problem is that aviation infrastructure improvements invariably lack far behind the demands placed by rapid growth. Because of airport capacity constraints, in 2030 around 33 percent of traffic at the Asia/Pacific Region's 22 busiest airports will be lost or redirected to less attractive airports.

Closing infrastructure gaps requires massive investment in new projects and for the adequate maintenance and upgrading of those already in place. Investment needs for airport expansion and construction in the Region are estimated at USD 6.52 billion per year till 2020.

## Nepalese context - challenges and way forward:

Against the above backdrop of such a rosy picture of growth – global and regional - one needs to move closer to home and critically examine Nepali aviation with all seriousness without any tourism bias.

Nepali aviation is basking in the warmth of the 'tourism sun', joyfully drooling at the numbers – the only factor that seems to count and redeem all other more critical problems. It is reported that 1.87 million travelers passed through the Tribhuvan International Airport in the first six months of 2017 up by 12.79 percent compared to the same period last year. Aircraft movement grew by 31.86 percent to 16,469 flights. While the stakeholders in the tourism industry may be jumping up and down with glee at witnessing this growth, true aviation professionals are extremely worried by the ensuing congestion of almost chaotic proportion – a burden that is likely to enhance risk and badly erode safety.

Boeing states that over the next 20 years there will be a need for 38,050 airplanes valued at more than 5.6 trillion dollars – 40 percent to be delivered to airlines of the Asia/Pacific Region. Our northern and southern neighbors have a major share of this 40 percent chunk which will boost Nepal's share of air traffic significantly.

## Ill-managed growth and risk:

It is to be noted that growth if not managed properly stifles, impedes and kills growth itself – a condition likely to invite serious risks. Unbridled growth is often, mistakenly, made synonymous with various interpretations of liberal economy which the self-proclaimed pseudo-intellectuals propound that this is a self – correcting process. Aviation left to this fallacy will be disastrous.

One may recall these words of caution were brought out strongly by the scribe on the occasion of several high-level gatherings of aviation stakeholders in the past – the most recent one being the seminar organized by NATCA in August 2017. This contribution has taken the liberty of recapping portions of the remarks made on that occasion to include in this write-up as the contents are of close relevance.

TIA's capacity and congestion form an integral part of the Aviation Safety Challenges in Nepal. In fact gap between available capacity and increasing demand appears to have reached such a critical point that aircraft operations are moving closer to the verge of being overtaken by congestion risks and inefficiencies. Against the best judgment, additional operations of mixed and varied aircraft types continue to be added. While one hoped that no mishap would take place, authorities were not ready to make hard decisions – undertake risk assessment by a competent team immediately, put a cap on growth and/or expand resources and infrastructure on a footing demanded by the highly critical situation.

CAAN and the Ministry are to be commended for their incessant efforts in finally removing the Significant Safety Concern tags – however a word of warning is that complacency must not be allowed to set in.

NTSB Chairman states that "Complacency is the biggest threat to Safety of Aviation Industry." Canada's TSB Chairman is of the view that "the biggest risk facing the industry is trying to identify what our next biggest risk is". Accident is in the data, question is how we dig that data and find those risks.

At the policy level, decisions that may not be popular and do not sit well with the stakeholders of the travel and trade industry need to be taken. Identify real time safety risks by assigning the task to a dedicated team of competent individuals. Derive safety and capacity efficiencies to the maximum through all possible means, technical and managerial – any degree of improvement must be felt by the industry. Ongoing capacity enhancement projects must be aggressively expedited without compromising quality and integrity. A cap be placed on the growth of additional operations till risk is mitigated to an acceptable level.

## TIA Operations – Critical Constraints

It has been reported extensively that TIA Operations are being conducted under severe constraints. Some of which are as follows:

- ✘ Deteriorating R/W conditions are being attempted to overcome by resorting to very rudimentary patch works impacting the structure of the runway.
- ✘ Due to governance and administrative lethargy, and other non-professional issues of interests, contractors have not been appointed to rehabilitate the r/w which was constructed as far back as 1980.

After operations close, a shovel- ready mobile team is dispatched every night to undertake

repair of surface patches under very strenuous circumstances.

- ✘ - During operations – it has become a routine affair to have aircraft hold in the air three to four times so that patch-work repair may be carried out on the r/w surface.
- ✘ This period of holding in the air ranges from 20 minutes to one hour to allow time for repair work. Holding and/or diversion due lack of parking space is another story. It is indeed a sorry state of affairs that in spite of collecting 4 billion rupees as airport development fee, r/w repair has to follow an almost 'stone-age' methodology which is almost unthinkable inviting safety and efficiency risks with potentially dire consequences. On the human side these 'Repair Warriors' are to be commended for their thankless task conducted under severe conditions.

Generally speaking, within the nine phases of a typical flight of 1.5 hours, commencing from taxiing to landing, exposure as a percentage of flight time to risks of occurring accidents – descent accounts for 11 percent of flight time and 4 percent of fatal accidents while initial approach accounts for 12 percent of flight time and 4 percent of fatal accidents. Final approach and landing account for 3 percent and 1 percent of exposure to flight time but account for 16 percent and 20 percent of fatal accidents respectively.

The scribe's attention was caught, and somewhat relieved, to note the news item of 19 November 2017 carried by a daily newspaper – "Poor airport infrastructure to put brakes on fleet expansion". It was also heartening to note that CAAN had undertaken a study which recommended complete halt in issuance of new air operator's certificate (AOC) until the airport infrastructure is upgraded. It is stated that the airport shows that there is a potential risk of minor and major accidents on the ground due to overcrowding of the aircraft. It has been adversely putting pressure on all the partners of aircraft operations and is also creating safety hazards for passengers and making routine delays in departures and arrivals.

### **Conclusion:**

The findings of the study on TIA Capacity/ Congestion undertaken by CAAN vindicate the major thrust of the scribe's concern brought out on several occasions, recent one being the NATCA event in August 2017.

It is sincerely hoped that the government authorities do wake up to the gravity of the situation and do not succumb to the pressures that are likely to be generated by the travel/trade industry, whose chorus of voices have not changed since decades – expand operations to meet their business interests and keep on blaming the authorities for their inability to expand/upgrade infrastructure at a pace they would like to see. The author urges all the stakeholders to take ownership of the problem and implement resolutions with total cooperation, keeping SAFETY, SECURITY and EFFICIENCY at the center of the Industry.

### **Reference:**

ICAO,  
IATA,  
ACI,  
CANSO,  
Personal notes and presentations

# Role of Aviation Safety for Economic Growth in Nepal

✉ Rajesh Raj Dali  
Former DG, CAAN



## Importance of Air Transportation

Air transportation is an innovative industry that drives economic and social progress. It connects people, countries and cultures as well as provides access to global markets and generates trade and tourism. The air links between developed and developing nations has global impact on exchanging their capacity of nature and manmade resources for each other benefits. Like most human activities, air transport has also an impact on the environment, mainly through noise and emissions generated from the operation of aircraft that affect local air quality and the climate. But the industry fully recognizes its responsibility in this regard and is determined to accelerate action aimed at mitigating its environmental impact, while preserving and enhancing its economic and social benefits.

Unlike other modes of transport, the air transport industry generate enough income through various activities to serve passengers and it can pay for its own infrastructure costs (i.e. runways, airport terminals, air traffic control), rather than these being financed through taxation and public investment or subsidy (as is typically the case for road and railways). So, globally the nations have transformed aviation management into public private partnership for sustainable organization of the business.

With the liberalization policy during the 1990s and the first decade of the new millennium, aerodrome operators in Asia-Pacific invested billions of dollars to enhance capacity of existing aerodromes and to build new ones to meet increasing air traffic demand. Notable examples are the opening of Bangalore, Hong Kong, Incheon, Kuala Lumpur International, Shanghai Pudong and Suvarnabhumi airports and the expansion of New Delhi and Beijing Capital airports. The automation and the adoption of self-service technology for passenger handling such as check-in and automated border control has enabled many airports to build up capacity without expanding passenger terminal footprint. However, new capacities have been taken up quickly by tremendous air traffic growth due to the mushrooming of the Low Cost Carriers. Runways are typically the capacity bottleneck of aerodromes but aircraft parking stands, baggage sorting and transfer facilities, aprons and passenger security screening points operating close to or over capacity are becoming choke points as well, especially at hub airports in the region.

Companies in the air transport industry also make substantial tax payments to national treasuries. Air transport contributes to sustainable development. By facilitating tourism and trade, it provides jobs, improves living standards, alleviates poverty, increases revenues from taxes, and fosters the conservation of protected areas, thus ultimately contributing to the economic progress of the country. Air transport is often the only means of transportation to/from remote areas, and promotes social inclusion by connecting those living in such communities with the rest of the country. The air transport network facilitates the delivery of emergency and humanitarian aid relief anywhere on earth, and ensures the swift delivery of medical supplies and organs for transplantation. Air transport improves quality of life by broadening people's leisure and cultural experiences. It provides a wide choice of holiday destinations around the world and an affordable means to visit distant friends and relatives.

## Global economic impact

The air transport industry also has important 'multiplier' impacts, which means that its overall contribution to global employment and GDP is much larger than its direct impact. These include employment and activities of suppliers to the air transport industry. For example, aviation fuel suppliers; construction companies that build airport facilities; suppliers of sub-components used in aircraft; manufacturers of goods sold at airport retail outlets; and a wide variety of activities in the business services sector.

The air transport industry contributes USD 1.1 trillion to world GDP through its direct, indirect and induced impacts – equivalent to 2.3 % of world GDP.

- ✎ **Opening up new markets:** Air services enable companies to expand in rapidly growing distant markets. They also expose companies to stiffer competition, encouraging them to become more efficient.
- ✎ **Servicing and meeting customers:** Air services allow more effective communication between companies and their clients, helping them make new sales and better meet the needs of existing customers.
- ✎ **Improving production efficiency:** Business is becoming increasingly global. Air services allow managers of multinational companies to visit overseas sites and subsidiaries in other countries; widen the range of suppliers and partners with whom firms can work; and facilitate the spread of best practice in business operations.
- ✎ **Providing fast and reliable delivery of high-value products:** The global supply chain is becoming increasingly dependent on the rapid and reliable movement of goods internationally, which only air transport can provide. Air services allow firms to shorten delivery times, minimize inventory costs and limit interruptions to production.

In addition, customers increasingly demand fast delivery and efficient handling of product returns and replacement; particularly as Internet shopping and e-commerce expand.

The tourism industry worldwide directly employs 79 million people and accounts for 3.4% of world GDP. By 2018, the World Travel & Tourism Council (WTTC) expects the tourism industry to employ directly more than 98 million people globally. The air transport industry plays a major role in supporting tourism. Over 40% of international tourists now travel by air, up from 35% in 1990. At the same time, the WTTC estimates that foreign visitors account for just under 25% of overall tourism spending around the world. This includes spending by business travelers, as well as those on leisure trips or visiting friends and relatives. Tourism is particularly important in many developing countries, where it is a key part of economic development strategies.

## Global Facts and Figures

### Jobs and economic Supports:

There are 62.7 million jobs supported by aviation worldwide. Out of which 9.9 million are direct jobs which includes 450,000 airport operators (work for the airport operator), 5.5 million in other on-airport (retail, car rental, government agencies such as customs and immigration, freight forwarders and some catering), 2.7 million in airlines jobs (flight and cabin crews, executives, ground services, check-in, training, maintenance staff), 1.1 million in civil aerospace (engineers and designers of civil aircraft, engines and components) and 220,000 in air navigation service providers (air traffic controllers, executives). Similarly 11.2 million indirect jobs have been created through purchases of goods and services from companies in its supply chain and 5.2 million induced jobs through spending by industry employees. In addition 36.3 million direct and indirect jobs are created through air transport's catalytic impact on tourism.

The Aviation's global economic impact comes around 2.7 trillion dollars (including direct, indirect, induced and tourism catalytic sectors). The aviation sectors only support 3.5% of global GDP. Aviation jobs are, on average, 3.8 times more productive than other jobs.

### Economic Aspect of Aviation

Aviation industry is capital-intensive sector (Investment in aircraft, infrastructure development, safety enhancement etc.).The 33% of the total operating cost of aircraft is for fuel. Modern aircraft achieve fuel efficiencies of 3.5 litres per 100 passenger-km. The new generation aircraft (A380 & B787) are targeting an efficiency of less than 3 litres per 100 passenger-km, which exceeds the efficiency of any modern compact car on the market. Air transport entirely covers its infrastructure costs as well as it is a contributor to national economy through taxation.

### Routes Flown and Passenger Carried

- ✎ Total of 52,964 routes have been connected by air services globally in 2015 (out of these, 17,370 unique city-pairs are served).
- ✎ Total 3.57 billion passengers were carried by airlines in 2015.
- ✎ 34.8 million scheduled commercial flights operated worldwide in 2015.

## Data of Every day

- ✘ 9.8 million passengers travel by air,
- ✘ 104,000 flights are operated,
- ✘ \$17.5 billion worth of goods carried by air,

## Airports and Airlines

- ✘ There are altogether registered 1,402 commercial airlines.
- ✘ 3,883 airports with scheduled commercial flights, (41,788 airfields with military and general aviation).
- ✘ 173 Air navigation service providers.
- ✘ 26,065 commercial aircraft in service.
- ✘ \$226 billion amount the world's airlines' fuel cost.
- ✘ \$278 billion litres of jet fuel used by commercial operators.
- ✘ 80% average aircraft occupancy, much higher than other forms of transport
- ✘ \$6.4 trillion value of cargo handled by air.
- ✘ 54% of international tourists travel by air.
- ✘ 51.2 million tons of freight handled by air in 2015.

## Asia-Pacific Data

- ✘ Air transport supports 28.8 million jobs and \$626 billion in GDP in Asia-Pacific
- ✘ 1.1 billion passengers carried by air
- ✘ 9,925,268 flights were operated
- ✘ 359 airlines registered.
- ✘ 6,957 aircraft in service.
- ✘ 1,197 commercial airports.
- ✘ 44 air navigation service providers.
- ✘ 78% average regional load factor
- ✘ Projected average annual growth rate for international traffic by region, 2014-2034 for Asia-Pacific is 5.1%.

## Nepali Data

- ✘ 49 Airports including one international.
- ✘ 28 international airlines companies, including 3 from Nepal.
- ✘ 7 domestic airlines, 3 charter operators, 9 helicopter operators, 3 recreational aviation companies.
- ✘ Air Service Agreement with 38 countries.
- ✘ Financial - net profit: Rs. 2562.15M, Tax: Rs. 393.43 million, cumulative Gain: Rs. 6756.20 million in F.Y 2071/72.
- ✘ International flight movement: 26,563, passenger: 3.22 million, cargo: 24512 Tons in 2015

## Second International Airport:

- ✘ Land: 11875.5 Bigaha
- ✘ Place: Nijghadh, Bara District.
- ✘ Cost: \$10,550 million
- ✘ Gautam Budhha Regional International Airport. Cost: Rs. 6.22 billion
- ✘ TIA Modernisation. Cost: \$92 million
- ✘ Pokhara Regional International Airport. Cost: \$215.965 million

## Aviation in Nepali Context

Nepal is land locked country and has no access to sea. It has limited ground access due to geographical terrain. Country's economy is affected if ground connections are disturbed or become inaccessible. Most of the trade, supply and mobilization in remote area rely on air transportation due to lack of ground transportation. This requires easily accessible, safe, standard, economical and reliable air service as well as efficient cargo services. The availability of affordable air travel has widened aviation's role in our society. The air travel is not a luxury but basic need in our country. It contributes to sustainable development by facilitating tourism and trade. It generates economic growth, provides jobs and increases revenues from taxes paid by aviation industries.

Similarly the air transport network facilitates the delivery of emergency and humanitarian aid relief which was experienced during the devastating Gorkha Earthquake in 2015 and other disasters like floods. The worldwide air transportation network has made it accessible to the global business and tourism from Nepal. It plays a vital role in facilitating economic growth of nation. The air transport helps to improve living standards of people and alleviate poverty in remote areas, thus promoting social activities. To manage the air service safely we need to have good air route and airspace management.

## Aviation Safety

Considering the economic aspect of the aviation industry in Nepal, there should be serious understanding of aviation safety. Aviation safety system will automatically enhance the economic and social growth in the country. The aviation safety will control the huge losses from air incident and accident. In order to understand the aviation safety, we need to know the following terms:

- ✘ **Aviation safety** is a term encompassing the theory, investigation, and categorization of flight failures, and the prevention of such failures through regulation, education, and training. It can also be applied in the context of campaigns that inform the public as to the **safety** of air travel.
- ✘ **SMS** is a structured process that obligates organizations to manage safety with the same level of priority that other core business processes are managed. This applies to both internal (CAAN) and external **aviation** industry organizations (Operator & Product Service Provider).
- ✘ **Aviation sector** – airports, airlines, general aviation, air navigation service providers and those activities directly serving passengers or providing airfreight services;
- ✘ **Civil aerospace sector**- comprises the manufacture and maintenance of aircraft systems, frames and engines.

## Points considered in Aviation Policy:

- ✘ Top priority will be accorded to the enforcement of the standards and recommendations set and made by the International Civil Aviation Organization (ICAO) for the enhancement of flight safety.
- ✘ Necessary standards shall be set in order to discourage imports of old aircrafts.
- ✘ Oversight capacity will be enhanced by developing institutional and legal infrastructures to carry out study and research works on air transport, aircraft accident inquiries and flight safety oversight, as well, in consonance with international standards.
- ✘ Management of air flights with satellite communication, guide and oversight facilities or other appropriate systems will be carried out and pursued.
- ✘ Air routes will be restructured and developed in order to render air traffic control service through the instrumental flight system in the air space of Nepal

## Safety Consideration

As envisaged in 14<sup>th</sup> plan published by National Planning Commission:

- ✘ Priority will be given to aviation safety management considering local meteorological information, regular monitoring of aviation safety, upgrading of several aerodromes for emergency landing etc.

This gives us clear message that safety consideration is the prime importance in aviation field to obtain maximum benefit of the air transportation in the country. State Safety Program of Nepal was published in September, 2011 and Aviation Safety Report in 2016. But, during its audit in May 2009, ICAO USOAP has given deficiency points in the following sectors of the country which need to be resolved

within the given time to maintain the safety standards in aviation activities in Nepal.

- Legislation (LEG)
- Organisation (ORG).
- Personnel Licensing (PEL).
- Operations (OPS).
- Airworthiness (AIR).
- Accident Investigation (AIG).
- Air Navigation Services (ANS).
- Aerodrome (AGA).

ICVM (ICAO Coordinated Validation Mission) visited Nepal in 2013 to validate progress made so far. They have published Significant Safety Concern (SSC) after assessing air safety in Nepal. One of the SSC is to unbundling of the CAAN in to regulatory and service provider organisations. Similarly Doc 9756, Part II, of ICAO contains information on techniques and procedures, as well as checklists, to assist states in aircraft accident and incident investigations. It also provides guidelines on an investigation management system used in major accident investigations. The Doc 9962 of ICAO offers guidance to states in the development of policies and procedures for investigations. These are the procedure which need to be implemented in Nepal.

### Safety Recommendation:

- ✘ To maintain the safety standard in accordance with ICAO, there must be *Continuous Monitoring Approach (CMA)*. Computer-based training (CBT) must be conducted to prepare auditors and experts to perform CMA activities, including ICAO Coordinated Validation Missions (ICVMs) and USOAP audits.
- ✘ There should be Plan of Action to resolve, in a timely manner, ICAO-identified Significant Safety Concerns (SSCs) and/or safety oversight deficiencies.
- ✘ *There should be Air traffic service contingency planning.*
- ✘ *There should be Regular check-up of aviation fuel contamination and this should be conducted collaborative work with the industry.*
- ✘ There should be Dangerous Goods programme to transport by air.
- ✘ *The Next Generation of Aviation Professionals (NGAP) must be used to develop the future safety consideration.*
- ✘ Consumer interest should be given due regards in the development of policy and regulation of international air transport.
- ✘ States need to give due consideration to the planning and development of aviation infrastructure to efficiently meet future air travel demand.
- ✘ To promote and support the establishment of multidisciplinary runway safety teams (RSTs) at airport.
- ✘ Regular communication with international organisation for implementing the flight safety enhancement in the country.

### References:

1. ICAO Documents.
2. Aviation Policy of Nepal.
3. CAAN Published Documents.
4. ATAG published Documents.
5. NPC published Documents.

# TIA and the Aviation Museum

✉ Ramesh Man Joshi  
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Not too long ago, pilgrims visiting Lord Pashupatinath in Kathmandu also used to go to nearby Gaucharan, now known as TIA (Tribhuvan International Airport), to have a glimpse of a "chilgadi" otherwise heard by the name of "Pushpak Biman" in the epic "Ramayana" that can fly like a bird in the sky, a DC-3 airplane, from a distance. Now they can go there and have the hands-on knowledge and feel of it, a 218 ft. long and a wide-body jet aircraft with its giant wheels, passenger seats etc., in place, thanks to the visionary Bed Upreti who has just established an Aviation Museum in the premises of TIA. Surely a great many people will enjoy a visit to this place for obvious reasons, an added tourist attraction in the valley.

Bed Upreti Trust (BUT), the operator of this Museum, pays TIA the rental for the land as well as royalty on tickets sold to the visitors. Entrance is free for the high school students of class 9 to 12. This museum will definitely attract a very large crowd because it is easily visible from the Ring Road at Sinamangal and can be reached by bus.

All major airports around the world are privatized and operated in two ways, one regulated by a regulatory authority of the country and the other by an operator as a service provider. This philosophy has proved to be an excellent catalyst for the fast development of airport infrastructure, not to mention the effect on the enhancement of safety, security and facilitation to passengers.

In Nepal too, the then whole Civil Aviation Department was converted into a semi-autonomous body, Civil Aviation Authority of Nepal (CAAN) on 31 December 1998, a great step forward in the long process of demarcating and distinguishing between a Regulator and a Service Provider. This process of distinction and enhancement in aviation services in Nepal also has now reached the final stage. Nevertheless, one golden formula for the successful implementation of this principle, as ICAO (International Civil Aviation Organization) and ICAA (International Council of Airports Association) prescribe, have always been the increment of the sources of Non-Aeronautical Revenue of the Airport. Those who are fast at it, have shown a good result, such as, Changi Airport in Singapore, Chep Lak-Kok Airport in Hong Kong, Heathrow Airport in London and many more across the globe.

The benefit to the country from the opening of this Museum is immense. Dubai Airshow, held in October 2017 in Dubai, gave us a good clue as to what the world of aviation is going to be like in future. While the countries in the Middle East have placed orders for hundreds of wide-body aircraft alone, producers of narrow-body jets with latest fittings and designs also did not lag behind in bagging the orders. Studies have revealed that, regionally, aviation in Asia and Pacific belt has the fastest growth rate in the whole world and will maintain this growth in the future, too. Additionally, last but not the least, overall economy of our neighbours, China in the North and India in the South, will continue to grow taking aviation along in their stride for development.

It is a "Do or Die" situation for Nepal, alias CAAN, for the development in aviation sector, pun not intended. Nepal cannot lag behind. But, how to go ahead? A million dollar question, it seems. Currently, Pilots, Aircraft Maintenance Engineers, Air Traffic Controllers are in great demand in Nepal and elsewhere. But it takes a very long time to prepare them. The only pilot training institute established at Bharatpur Airport some years ago could not produce a single pilot. AME License is only accorded to them who have a long and adequate training and experience. Even a 'graduate' has to successfully undergo a vigorous one year course and a long on-the-job training before getting a license of Air Traffic Controller-Basic.

It is a universal belief that only a wide-based and good education system can make a country prosperous. In order to have adequate and trained manpower in the aviation market, institutions that produce these manpower must have enthusiastic students first. In this sense, BUT must be appreciated for making the aim of attracting the student group in Class 9-12 to this Museum as its main purpose.

There is one hitch which though looks small at the first instance, but "bujhane lai yo kuro gahiro...." (the matter is intense for those who understand) as any human being, a driver of a bus, car or bike will also be attracted to have a look at a real big aircraft at a place where it should not normally be, while driving through a busy traffic. We have yet another "say" for this situation, "Subhena kinchit, asubhena samaptam." One can only hope for the best that nothing unpleasant will happen due to the distraction to the driver while he drives along.

This 'distraction' could cause-a minor incident, a minor accident causing bodily damage to the vehicle or the person, and worse - two vehicles may collide causing a flash point for their fuel. Of course, aviation fire brigade is stationed right inside TIA and they are equipped with foam compound and quick in responding to any alarming situation if needed. But, one must not forget that a big aviation fuel depot is just on the other side of the boundary wall to the east. One cannot guarantee that the fire caused by the petrol of the vehicle will not reach the fuel depot. We must always think positive. All the philanthropists and psychiatrists say so. But what if the fire reaches the fuel depot? Then, probably, one can only say for the people residing in the area that "God save the Queen...."

Nevertheless, all aviation activity (operational and technical) in an international airport anywhere in the world is governed by ICAO Requirements. Annex – 19, Doc 9859 and Doc 9734 on Safety Management deals with all the details of safety measures that must be undertaken inside an international airport by all the contracting States. Nepal is one of the contracting States of ICAO. CAAN is obliged to have made needful Risk Analysis/Safety Assessment in this case.

If one agrees to the aforementioned scenario, the solution is very simple. Just raise the wall between Aviation Museum and the Ring Road, whereby the driver is not distracted while driving in the area. Que sera sera-whatever will be, will be.



Biratnagar Airport

## नेपालमा विमानस्थल सञ्चालन: चुनौती र संभावना

शिशिल चित्रकार  
निर्देशक, ने.ना.उ.प्रा.



विश्वका कम विकसित तथा भुपरिवेष्टित मुलुक नेपालको भुवनोटको कारण यातायात पूर्वाधारको आवश्यकता बमोजिम विकास नभएकोमा दुईमत नहोला । एकातिर सडक यातायातको पहुँच नभएको स्थानको विकास नहुनु अस्वभाविक भएन भने यातायातको अर्को साधन हवाई यातायातको लागि चाहिने विमानस्थल र सो सँग सम्बन्धित अन्य सेवाहरूको समेत विकास गर्न कठिनाई भइरहेको महसुस हुन्छ । सामान्यतया सडक सञ्जाल नभएको स्थानमा मुख्य विकल्प मानिएको हवाई यातायातको सञ्चालन हाम्रो जस्तो पहाडी मुलुकमा भन चुनौतिपूर्ण भएको छ । यहाँ सम्झनु पर्ने कुरा के छ भने विमानस्थल/विमानघाट हुनुले मात्र हवाई यातायात सञ्चालनको पूर्वाधारको आवश्यकता पूरा गर्दैन, अन्य थुप्रै क्षेत्रहरूको विकास गर्नु पर्ने हुन्छ । यहाँ विमानस्थल क्षेत्रको परीभाषा उल्लेख गर्नु सान्दर्भिक हुन्छ ।

“विमानस्थल क्षेत्र” भन्नाले विमानस्थल वा हवाई उडानको सुरक्षित सञ्चालन तथा नियन्त्रण गर्ने वा तत्सम्बन्धी आवश्यक सूचना तथा जानकारी आदानप्रदान गर्ने कामको निमित्त प्रयोग हुने कुनै यन्त्र तथा सञ्चार वा उड्डयन सहाय (नेभिगेशनल एड) उपकरणहरू जडान भएको वा नभएको जुनसुकै स्थान, भवन, टहरा, टावर, जहाज, डुङ्गा र घाट सम्झनु पर्छ ।

**संगठन :** नेपालमा विमानस्थल सञ्चालन हेतु नेपाल नागरिक उड्डयन प्राधिकरण संगठनको रूपमा रहेको छ । यो नेपाल नागरिक उड्डयन प्राधिकरण ऐन, २०५३ बमोजिम स्वायत्त संस्थाको रूपमा स्थापना भएको हो । ऐनमा उल्लेखित भएका काम कर्तव्य अधिकारबाट नै यो संगठनको कार्य क्षेत्रको दायरा विविध सेवासँग गाँसिएको छ । अझ यसमा उल्लेखित काम कर्तव्य अधिकारबारे समयसापेक्ष परिमार्जन हुनु पर्ने हो की ? यसमा उल्लेखित काम कर्तव्य अधिकारप्रति संवेदनशील हुनका लागि यसका विविध सेवाका समूह उपसमूहमा कार्यरत कर्मचारीमा कत्तिको सीप दक्षता साथै आफ्नो काम कर्तव्यबारे जानकारी र अन्य सेवासँग हुनु पर्ने समन्वय, सूचना आदानप्रदानबारे कति सजग छ भन्ने बारेमा समेत पुनरावलोकन, पुनःअनुसन्धान तथा परिवर्तन व्यवस्थापनको आवश्यकता देखिन्छ ।

**विमानस्थल क्षमता :** कुनै पनि विमानस्थलको धावन मार्गको प्रकार र क्षमता, कुन प्रकारको वायुयान उडान अवतरण योग्य छ, मौसमी प्रतिकूलतामा के कस्तो सुविधा छ, टर्मिनल भवनमा यात्रुहरूको क्षमता, अन्य भौतिक सुविधा, विमानस्थलदेखि शहर जाने आउने अन्य सवारी साधन सुविधा, शहरमा उपलब्ध अन्य सुविधा र वायुसेवा संस्थाहरूको क्षमता, ति कम्पनीमा संलग्न कर्मचारीको क्षमता तथा हवाई सुरक्षा र अन्य सेवा प्रदायकहरूको समेत क्षमतामा भर पर्ने कुरा हुन ।

देशको एकमात्र अन्तराष्ट्रिय त्रिभुवन विमानस्थललगायत अन्य विमानस्थलका विविध समस्याहरू बेला-बेलामा पत्रपत्रिका तथा अन्य सञ्चारमाध्यमहरूमा प्रकाशन प्रसारण भइरहेको हुन्छ । तर, ती समस्याहरू खाली विमानस्थलको मात्र समस्या हुन कि, अन्य निकायका पनि हुन ? वा विमानस्थल सञ्चालनमा हुनुपर्ने सोच अनुरूप व्यवस्था हुन नसकेको हो ? वा नेपाल नागरिक उड्डयन प्राधिकरण ऐन २०५३ को काम कर्तव्य अधिकारमै केही अपुरो छ ? वा सांगठनिक संरचनामा केही अपुग छ ? वा विमानस्थल नागरिक उड्डयन कार्यालय र अन्य सरोकारवाला निकायहरूबीच हुनु पर्ने सहकार्य समन्वय, सम्झौता आदि नभएर हो की ?

**विमानस्थल र सञ्चालन हुने वायुयानका प्रकार :** हाल नेपालमा विभिन्न प्रकारका विमानस्थलहरू रहेका छन् । अन्तराष्ट्रिय विमानस्थल, आन्तरिक विमानस्थलहरूमा पनि पक्की, ग्राभेल र कच्ची तथा सबै मौसमी अवस्थामा खुल्ने, सिजनमा मात्र खुल्ने विमानस्थलहरूमा जेट इन्जिनदेखि सानो जम्भियउतभच र ब्खषतष्यल कउयचत वायुयानहरू समेत हाल उडान

भइरहेका छन् । विभिन्न विमानस्थलहरूको क्षमता, र वायुयानहरूको आवश्यकता बमोजिम धावनमाको लम्बाई चौडाई तथा अन्य सुविधासम्बन्धी विभिन्न आवश्यकताहरूको पहिचान गर्नु पर्ने र सोको निरन्तर मर्मतसंभार गर्न विभिन्न प्रकारका जनशक्तिको समेत आवश्यकता रहन्छ । कुन विमानस्थलमा कुन वायुयानले सञ्चालन गर्न पाउने वा नपाउने कुरा पहिले नै यकिन गरिएको छैन भने सोको अध्ययन नितान्त जरूरी देखिन्छ ।

**विमानस्थल सञ्चालन :** सही र सक्षम विमानस्थल सञ्चालन हेतु विमानस्थलमा सञ्चारका विभिन्न उपकरणहरू इलेक्ट्रोनिक्स, मेकानिकल उपकरण, अग्नी निवारणको व्यवस्था, विमानस्थल क्षेत्रको सुरक्षालगायत सम्पूर्ण परिसरको सरसफाई, पशुपंछी र अन्य जनावरहरूबाट हुने खतराबाट जोगाउन चाहिने भौतिक सामग्री र जनशक्ति विमानस्थलको अवस्था र आवश्यकताअनुरूप व्यवस्थापन हुनु नितान्त जरूरी छ । साथै, विमानस्थलको क्षमता, वायुयानको प्रकार आदिलाई दृष्टिगत गरी विमानस्थल सञ्चालकले के कस्तो वायुयानलाई उडान अवतरण गर्न दिने, कुन समयमा दिने जस्ता कुराको जिम्मा सम्बन्धित विमानस्थललाई नै दिने व्यवस्था गर्न आवश्यक देखिन्छ । आवश्यक जनशक्तिको व्यवस्थापन, विकेन्द्रीकरण तथा प्रत्येक विमानस्थललाई सोही अनुरूप विकास तथा विस्तार, काम कर्तव्य र दायित्व समेतको अधिकार सम्पन्न नबनाएसम्म विद्यमान अवस्थामा विमानस्थल सञ्चालन भन चुनौतिपूर्ण हुँदै जाने देखिन्छ ।

एकातिर विमानस्थल सञ्चालनमा अन्तराष्ट्रिय नागरिक उड्डयन संगठनको सदस्य राष्ट्रको हैसियतले विभिन्न एनेक्सहरूद्वारा निर्धारित मापदण्डबमोजिम कार्य सञ्चालन गर्नुपर्ने आवश्यकता छ भने अर्कोतर्फ संगठनको कमीकमजोरी र विमानस्थल सञ्चालनका लागि चाहिने प्रमाणपत्रको आवश्यकता (हाल सवैमा लागु भएको छैन) र त्यसको आवश्यकता परिपूर्ति गर्न चाहिने भौतिक पूर्वाधार तथा जनशक्ति र कार्य प्रणालिको अभावमा विमानस्थल सञ्चालन भइरहेका छन् । यो निश्चय पनि चिन्ताको विषय हो ।

विमानस्थलको निर्माणलाई मात्र आयोजनाको रूपमा हेर्ने तर विमानस्थल सञ्चालनमा एकिकृत आयोजनाको आवश्यकता नदेख्ने प्रवृत्ति नै कतै आजको विमानस्थलहरूको समस्याको मुल जड त होइन ?

**आयोजना :** नेपाली शब्दकोषमा आयोजनाको परीभाषा दिइएको छ "विशेष कार्य वा कार्यक्रमका लागि गरिने प्रबन्ध, बन्दोबस्त, आयोजन" । "निश्चित अवधिमा पूरा हुने विकासको योजना वा कार्यक्रम, योजना, परियोजना" ।

नेपाल नागरिक उड्डयन प्राधिकरणको हकमा विमानस्थल निर्माण र अन्य भौतिक पूर्वाधार विकास गर्नु मात्र आयोजना हुन कि कुन क्षमताको विमानस्थल निर्माण गर्ने, ती विमानस्थलहरू सञ्चालन हेतु नेपाल नागरिक उड्डयन प्राधिकरणलाई कस्तो र कति जनशक्ति चाहिन्छ, सांगठनिक संरचना कस्तो हुन्छ, अन्य निकायसँगको समन्वय के कसरी हुन्छ, कार्यप्रणाली तथा प्रमाणपत्रको व्यवस्था र आवश्यकता, संचालनमा के कस्तो चुनौति हुन सक्दछ, वायुसेवाहरूको माग, क्षमता, यात्रुहरूको माग आदि सवैको अध्ययन गर्नु पनि एकिकृत आयोजनाको आवश्यकता हुन् ? कि खाली विमानस्थलको निर्माणलाई मात्र आयोजनाको रूपमा हेरी सञ्चालनको जिम्मा अन्य निकायलाई हस्तान्तरण गर्नु मात्र आयोजना हो ? यहाँ सम्झनु पर्ने कुरा के पनि छ भने कुनै सांगठनिक संरचनामै नभएको आयोजनामा संस्थाका अन्य पदमा रहेका स्थाई कर्मचारीहरू त्यसमा रहने प्रवृत्तिबाट आयोजना र हालको कार्यप्रणालीमा समेत नकरात्मक असर त पुगेको छैन ।

**यात्रु वर्ग/सेवाग्राहीको चाहना :** विश्वको बदलिंदो विकासअनुसार हवाई यात्रुले पनि विभिन्न सेवासुविधा खोज्नु अस्वाभाविक होइन तर व्यवस्थापन सक्षम नभइ सबै इच्छा परिपूर्ति गर्न निकै कठिनाई हुने मात्र नभइ, अपूर्ण तथा कमसल सेवाबाट सुरक्षित सेवामा नकरात्मक असर पुग्ने हुनसक्छ । यात्रु वर्ग, हवाईसेवाको माग बमोजिम आपूर्ति र विमानस्थलको पूर्वाधारदेखि कार्यशैली, सांगठनिक संरचना, सेवामा विस्तार आदिमा निरन्तर परिवर्तन भई नै रहन्छ र रहनु पर्छ तर के यो परिवर्तन समयसाक्षेप छ, ?

यात्रुवर्गहरू वायु सेवा संस्थाका ग्राहक हुन भने यात्रु तथा वायुसेवा दुवै नेपाल नागरिक उड्डयन प्राधिकरणको ग्राहक मान्न सकिन्छ । वायुसेवा संस्थाहरूको यात्रु ओसारपसार र कार्गो ढुवानी सेवाको स्तरियता र सो वापत तथा अन्य सेवा वापतको शुल्क असुली र सो को आवश्यक निगरानी तथा समय साक्षेप परिवर्तनको संभावना छ की छैन ? यात्रु र अन्य पत्यक्ष र अप्रत्यक्ष पञ्चयोगकर्ताको माग र आपूर्ति पूरा गर्न नेपाल नागरिक उड्डयन प्राधिकरणले लगानी र कार्य क्षेत्र बढाउन आवश्यक देखिन्छ । यसैमा गैरएरोनटिकल आम्दानीको श्रोतको संभावना र विमानस्थलको विकासको संभावना अन्तरनिहित देखिन्छ ।

**ऐन, नियम, नियमावली :** गैरसैनिक हवाई उडान ऐन, नेपाल नागरिक उड्डयन प्राधिकरण ऐन, विभिन्न नियम नियमावली, रिक्वायरमेन्टस सूचना संग्रह, आदिहरूको प्रभावकारी भूमिकाबाट सुरक्षित हवाई सेवा सुचारु हुन्छ भने ती सबै प्रकाशनहरूको स्तरीय र सही व्याख्या गर्न सक्षम जनशक्ति नेपाल नागरिक उड्डयन प्राधिकरण लगायत सबै सरोकारवाला निकायहरूमा छन् की छैनन् ? प्रश्न गहकिलो छ र यसको को सूक्ष्म अध्ययनविना हवाई सेवा स्तरीय र प्रभावकारी भइरहेकोमा पनि शंका नगरी रहन सकिंदैन । विमानस्थल सञ्चालनमा सहभागी हुने विविध प्रकारका प्राविधिक कर्मचारीहरूलाई लक्षित गरी बनाउनु पर्ने नियम, दिग्दर्शन, सेवा शर्त सम्बन्धी सुविधा प्राविधिकमैत्री छ वा छैन विचारणीय छ ? कैयौं नियम नियमावली, दिग्दर्शन समयसाक्षेप परीवर्तन नहुनु, एक आपसमा वाफिनु, गलत छापिनु, एकद्वार प्रणालीबाट छपाइ र प्रकाशनको साटो विभिन्न निकायहरूबाट फरक फरक प्रकाशन हुनु, गलत हुनु र सही कार्यान्वयन गर्न नसक्नुले यस्ता दस्तावेज भारा टार्ने मात्र प्रकाशन भएको देखिन्छ ।

**पहाड देखि तराइका विमानस्थलहरू:** पूर्व मेचीदेखि पश्चिम महाकालीसम्मका विभिन्न प्रकारका विमानस्थल (सञ्चालनमा रहेका वा नरहेका)हरूको क्षमता, सबै सेवाहरूको परिपूर्ति भएको नभएको आदि विहंगम दृष्टिकोणबाट पुनरावलोकन गर्न एउटा बृहत आयोजनाको आवश्यकता देखिन्छ । धावन मार्ग, भवन, भौतिक साधन पयाप्त वा अपर्याप्त के कति छन् ? चाहिने नहुनु नचाहिने उपलब्ध हुने त भइरहेको छैन ? आवश्यकताको पहिचानविना विमानस्थलको कुशल संचालन हुनै सक्दैन । हाल सञ्चालन भइरहेको विमानस्थल, निर्माणधीन विमानस्थल र भविष्यमा निर्माण हुन विमानस्थलहरूको दुरी, विमानस्थल सञ्चालन गरे वापत उडान अवतरण अन्य सेवाको आय तथा सोमा लाग्ने खर्च आदिको वस्तुपरक मूल्यांकन तथा लागत खर्च फिर्ता पाउने (Cost recovery) अवस्था बारे विस्तृत रूपमा अध्ययन हुनु पर्छ । सडक यातायातको सञ्जाल नपुगेका र निकै उपयोगी सिद्ध भएका कैयौं विमानस्थल बन्द भएको अवस्था पनि नभएको होइन ।

**विमानस्थलमा हुने अन्य सेवा:** नेपाल नागरिक उड्डयन प्राधिकरणको आफ्नै संगठनभित्र पनि विविध प्रकारको प्राविधिक प्रशासनिक सेवाहरू छन भने ती सेवाहरूको स्वार्थ वाफिनु तथा अझ एकिकृत आयोजनाको अभाव हुनुबाट समग्र हवाई यातायात सञ्चालनमा चुनौति देखिन्छ । कतै यस्तो हुनुमा सांगठनिक संरचनाको गल्ती, कमजोरी वा परिमार्जनको आवश्यकता त होइन ? अर्को शब्दमा भन्नु पर्दा विमानस्थल सञ्चालन र सोसँग गाँसिएका विविध प्राविधिक सेवा, एअर नेभिगेशन सेवासँग गाँसिएका विविध प्रकारका प्राविधिक सेवा र सो सँगसँगै नड्छ र मासु भै हुनुपर्ने प्रशासन, लेखा र कर्पोरेट भिन्दै निकायको रूपमा रहनु पनि कतै गलत त छैन ?

माथि उल्लेखित संगठनात्मक संरचना त नेपाल नागरिक उड्डयन प्राधिकरणको मात्र भयो अझ विमानस्थल सञ्चालनमा प्रत्यक्षअप्रत्यक्ष सहभागी हुने अन्य विभिन्न सरकारी गैरसरकारी र निजी संघसस्थाहरूका पनि कमी कमजोरी पक्कै छन होला ?

**अन्त्यमा :** नेपाल नागरिक उड्डयन प्राधिकरणको साना, मझौला र ठूला आयोजनाहरूमा, विमानस्थल र त्यससँग जोडिएका अन्य सेवाहरूको सञ्चालनमा विहंगम दृष्टि नपगेकै हो त ? यदि होइन भने विमानस्थल सञ्चालनमा हाल देखा परिरहेका समस्या देखा नपर्नु पर्ने हो । यदि हो भने अव आयोजनाको समीक्षा, एकिकृत आयोजनाको विकास र सांगठनिक संरचनामा (सेवासँग सम्बन्धित निकायको विकास, परिपूर्ति, सम्बन्धित सेवा र अन्य निकायहरूको बीचको सम्बन्ध प्रष्ट हुन पर्ने, असम्बन्धित निकायहरूले आफ्नो सम्बन्ध नभएको कार्य समेत गरिरहेको वा वाध्य भएर गरिरहनु पर्ने अवस्था) समेत परीमार्जनको आवश्यकता देखिन्छ ।

#### **सन्दर्भ सामग्री :**

1. Annex 14
2. Annex 15
3. AIP Nepal
4. Pans Aerodrome ICAO- doc 9981
5. CAAN Aerodrome certification regulation
6. CAAN Airport service charge regulation
7. Organization structure
8. CAAN Civil Aviation policy
9. CAAN Employee's Facility, services and condition regulation
10. Different Directives

# राष्ट्रिय गौरवका आयोजनामा प्राधिकरणले भेल्लुपरेका समस्या

विनोद प्रसाद न्यौपाने  
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## परिचय

देशको आर्थिक समृद्धिको लागि रणनीतिक महत्वका पूर्वाधार क्षेत्रका केही आयोजनाहरूलाई नेपाल सरकारले २०६८ सालमा आर्थिक विकास र समृद्धिको तत्कालिन कार्ययोजना जारी गर्दै प्राथमिकताक्रममा अगाडि राखेको थियो। आ.व. २०७०/७१ को बजेट वक्तव्यमार्फत अन्य आयोजनाहरू समेत थप गरी जम्मा २१ वटा आयोजनाहरूलाई राष्ट्रिय गौरवका आयोजनाको रूपमा वर्गीकरण गरी कार्यान्वयन गर्दै आएको छ। संचालन भैरहेका र सञ्चालनको क्रममा रहेका राष्ट्रिय गौरवका आयोजनाहरूमा सिंचाईका ४, जलविद्युतका ३, अन्तर्राष्ट्रिय विमानस्थल ३, सम्पदा संरक्षणका २, राजमार्ग/रेलमार्ग/द्रुतमार्गका ७, खानेपानीको १ र वातावरण संरक्षणको १ आयोजना रहेका छन्।

देशको सुदुर भविष्यसँग जोडिएका, दीर्घकालिन महत्व राख्ने, राष्ट्रिय स्वाभिमानलाई उँचो पार्ने आयोजनाहरूलाई उच्च प्राथमिकता दिने चलन अन्य देशमा पनि रहेको छ। हालैका वर्षहरूमा भारतले गंगा सभ्यताको जगेर्ना र अन्तरिक्ष कार्यक्रमलाई राष्ट्रिय गौरवको रूपमा लिएको छ। चीनले Belt and Road Initiatives लाई राष्ट्रिय गौरवको रूपमा अघि बढाई रहेको देख्न सकिन्छ। सन १९९० को दशकमा जापानले मेट्रो रेल परियोजनालाई राष्ट्रिय गौरवको रूपमा लिएको थियो भने रूस र अमेरिकाजस्ता मुलुकले सन १९६० को दशकमा अन्तरिक्ष कार्यक्रमलाई राष्ट्रिय गौरवको रूपमा अघि बढाएका थिए। अन्य मुलुकहरूले पनि पूर्वाधार निर्माणका ठूला आयोजनाहरूलाई सम्पूर्ण राष्ट्रको ध्यान केन्द्रित गरी तोकिएको समयमा पूरा गर्न र साधन श्रोतको सहज परिचालन गर्न बेलाबेलामा राष्ट्रिय गौरवका आयोजनाको रूपमा अघि बढाएको देखिन्छ।

## राष्ट्रिय गौरवका आयोजनाको कानूनी आधार

राज्य पुनसंरचनाको वहस चलिरहेको बेलामा र संक्रमणकाल लम्बिएर एक दशक नाघिसक्दा चालु रहेका विकास निर्माणका ठूला आयोजनाहरूको गति अत्यन्त सुस्त रहेको छ। अनुत्पादक प्रशासनिक खर्च धान्ने नसकिने गरी बढ्दै गएको र पूँजीगत खर्च घट्दै गएको अवस्थामा पूर्वाधार निर्माणसँग सम्वन्धित सडक, सिंचाई, जलविद्युत, पर्यटनक्षेत्रमा स्रोत साधन परिचालन गर्न सहज होस भनि देशको कायापलट गर्न सक्ने ठूला आयोजनाहरूलाई राष्ट्रिय गौरवका आयोजना घोषणा गरिएको भए तापनि त्यस्ता आयोजनाहरूको प्रगति सन्तोषजनक देखिएन। आ.व. २०७०/७१ देखि आ.व. २०७४/७५ सम्मका ५ वटा बजेट वक्तव्यमा पहिलो प्राथमिकता तोकिएका स्रोत साधनको सुनिश्चितता गर्दा समेत यी आयोजनाहरूले अपेक्षित गति लिन नसकेको र जटिल समस्याहरूले गाँज्दै लगेका कारण छुट्टै कानून नै बनाउनु पर्ने आवश्यकता बोध भएको देखिन्छ। तसर्थ, राष्ट्रिय गौरवका आयोजनाहरूको समयवद्ध सञ्चालन, जग्गा प्राप्ति, स्रोतसाधन परिचालनमा सहजता ल्याई सुनिश्चितता प्रदान गर्न आवश्यक कानूनी व्यवस्थाको लागि राष्ट्रिय योजना आयोगले एक समिति बनाई कार्य गरिरहेको छ।

## राष्ट्रिय गौरवका आयोजनाहरू कार्यान्वयनका प्रमुख उद्देश्यहरू

१. देशको पूर्वाधार क्षेत्रको द्रुत विकास र विस्तार गरी आर्थिक सामाजिक रूपान्तरण,
२. स्रोत र साधनको सुनिश्चितता र वहुवर्षीय योजनाको रूपमा कार्यान्वयन,
३. मुलुकमा विद्यमान स्रोत र साधनको अधिकतम उपयोग,
४. लगानीमैत्री वातावरण सिर्जना गर्दै प्रत्यक्ष वैदेशिक लगानीको वृद्धि,
५. कृषिको आधुनिकीकरण तथा वैज्ञानिकीकरण गर्दै खाद्यान्नमा मुलुकको आत्मनिर्भरता,

६. गुणस्तरीय सडक सञ्जालको निर्माण,
७. मुलुकलाई उर्जा संकटबाट मुक्त बनाउँदै औद्योगिकीकरण,
८. रोजगारी सिर्जना र गरीबी निवारण,
९. धार्मिक सम्पदाको संरक्षण,
१०. पर्यटन क्षेत्रको तिब्र विस्तार गरी पर्याप्त रोजगारी र उच्च आयस्तरको प्राप्ति ।

### राष्ट्रिय गौरवका आयोजनाहरूको व्यवस्थापनमा देखिएका साभ्भा समस्याहरू

राष्ट्रिय गौरवका आयोजना भनि अलग्गै वर्गीकरण भएतापनि ऐन नियमको छुट्टै प्रवन्ध नभएको तथा प्रक्रियागत भ्रष्टाचरहरू यथावत नै रहेका कारण अन्य आयोजनाहरूले भोगिरहेका समस्याहरू राष्ट्रिय गौरवका आयोजनामा पनि ज्यूँकाट्यूँ रहेका छन । आयोजना तर्जुमाको प्रारम्भिक चरणबाट नै समस्या शुरु हुन्छन । Far Field Looks Green भने जस्तो आयोजना शुरु नहुँदै सपनाको खेती गरिन्छ, जनताको आकांक्षा ह्वातै बढाइन्छ । समय घर्किँदै जादा समस्याको चाड थपिदै जान्छ; अन्ततः समाधानको पहल भैरहेको खबर सुन्दासुन्दा आयोजना आकाशको फल हुन पुग्छ । यसरी आयोजना तर्जुमाको चरणदेखि कार्यान्वयनको चरण हुँदै अनुगमन मूल्याङ्कनको चरणसम्म आइपुग्दा देखापर्ने साभ्भा समस्याहरू देहाय अनुसार छन ।

### आयोजना तर्जुमाको चरण

१. आयोजना छनौट राजनैतिक दवावको आधारमा हुने गरेकोले रणनीतिक महत्वका आयोजनाको अभाव,
२. श्रोतको प्रभावकारी परिचालन हुन नसकेको,
३. विस्तृत संभाव्यता अध्ययन विना नै हल्लाखल्ला गरी स्रोत छुट्याउने प्रवृत्ति ।
४. अधिकांश आयोजनाहरू जनताको माग र आवश्यकता भन्दा दातृ निकायको सिफारिसमा केन्द्रका पहुँचवालाहरूको इच्छाले छनौट हुने अर्थात संभरणमूखी (Supply Driven) हुने गरेका ।
५. बैदेशिक सहायताको नाममा आवधिक राष्ट्रिय योजनासँग तादात्म्यता नराख्ने आयोजना/क्षेत्रमा समेत लगानी संभ्रौता हुने गरेको ।

### कार्यान्वयनको चरण

१. ठूला आयोजना संचालनको लागि व्यवस्थापकीय दक्षता (Managerial Efficiency) को सर्वथा अभाव देखिएको ।
२. आयोजनामा खटिने कर्मचारीहरूको जवाफदेहिता नतिजाबाट होइन प्रकृयाबाट खोजिने प्रवृत्ति ।
३. आयोजनाको स्वामित्व (Ownership) कसैले नलिने सबैले आफ्नो भूमिका मात्रै खोज्ने परिपाटी । अर्थात, Public property is nobody's property भन्ने उक्तिको सार्थकता देखिएको ।
४. भ्रष्टाचरिलो खरीद प्रणाली । टेक्कापट्टामा हुने भित्री र बाहिरी चलखेलका कारण गुणस्तरहीन काममा समेत तालुकवाला निकायले सार्थक हस्तक्षेप गर्न नसकेको ।
५. स्थानीय जनतामा ठूला आयोजना समयमै सम्पन्न गरी दीर्घकालीन लाभ लिने इच्छाशक्तिको अभाव । आजकै दिनमा त्यो पनि नगदमै लाभ खोज्ने प्रवृत्तिका कारण मुआब्जामा भै-भमेला, क्षतिपूर्तिको अस्वाभाविक माग, रोजगारीको लागि अनावश्यक दबाव दिँदै निरन्तरको बन्द, हडताल हुने गरेको ।
६. आयोजनाको लागि बर्षेनी थोरैथोरै बजेट व्यवस्था गर्ने प्रवृत्ति । समयमै आयोजनाको बजेट र अख्तियारी प्राप्त नहुने । कार्यक्रम स्वीकृत हुन महिनौं कुर्नुपर्ने कारण पूँजीगत खर्च Freeze हुने गरेको ।
७. आयोजनामा खटिने जनशक्ति छनौटको कुनै मापदण्ड (Standard) तय हुने नगरेको कारण दक्ष कर्मचारीको अभाव । आयोजना प्रमुखहरूको छिटोछिटो फेरबदली हुने । कार्यसम्पादन करारको प्रभावकारी प्रयोग नभएको ।

## अनुगमन मूल्यांकनको चरण

१. अनुगमन मूल्यांकनको लागि स्पष्ट सूचकहरू (Indicators) तय नगरी प्रश्नोत्तरमा सीमित हुने अनुगमन प्रणाली विद्यमान रहेको । नतिजामुखी (Result Oriented) अनुगमन मूल्यांकन प्रणाली लागू हुन नसकेको ।
२. अनुगमन तथा मूल्यांकनको आधारमा आयोजना प्रमुखलगायत जिम्मेवार सबै प्राविधिक/कर्मचारीहरूको कार्यसम्पादनसँग तादात्म्यता गर्न नसकिएको । आयोजनाको प्रगति शून्य तर कर्मचारीको कार्यसम्पादनस्तर उत्कृष्ट हुने विडम्बनापूर्ण अवस्था ।
३. आयोजनाहरूको प्रभाव र असरको मूल्यांकनलाई प्रभावकारी बनाउने परिपाटीको अभाव ।
४. सार्वजनिक सुनुवाई (Public Hearing), नागरिक अनुगमन र सामाजिक परीक्षण (Social Audit) जस्ता पारदर्शी विधि (Transparent Methods) को प्रयोग भन्दा कागजी प्रगति विवरण तयार हुने गरेको ।

## प्राधिकरण मातहतका राष्ट्रिय गौरवका आयोजनाहरू

पर्यटन क्षेत्रको विकासलाई उच्च प्राथमिकता दिएको राज्यले पर्यटक संख्या बढाउन हवाई यातायात क्षेत्रको विस्तारलाई अपरिहार्य आवश्यकता ठानेको छ । पर्यटक संख्या बढाउन हवाई सीट संख्यामा बृद्धि हुनुपर्दछ । हवाई सीट संख्यामा बृद्धि हुन पूर्वाधार विकास हुनुपर्दछ । भूपरिवेष्टित देश नेपालको लागि विदेशी पर्यटक भित्र्याउने मूलबाटो नै हवाई मार्ग भएको तथ्य निर्विवाद छ । भारत र चीन जस्ता सीमा जोडिएका विशाल मुलुकका पर्यटकहरूको नेपालसम्मको पहुँच सडक भन्दा बढी हवाईमार्गबाट नै जोडिन्छ भने सात समुन्द्रपारका अन्य मुलुकबाट नेपाल आउन चाहने पर्यटकहरूको लागि त यो नै एक मात्र विकल्प हो । यही आवश्यकता बोधले देशका ३ महत्वपूर्ण स्थानमा अन्तर्राष्ट्रिय विमानस्थल निर्माण गर्ने आयोजनाहरूलाई राष्ट्रिय गौरवका आयोजनाहरूमा सूचीकृत गरी नेपाल नागरिक उड्डयन प्राधिकरण मातहत कार्यान्वयन गरिदै आएको छ ।

पहाडी मुलुक भएको र पर्यटकीय आकर्षणको केन्द्रविन्दु हिमाली क्षेत्र तथा साहसिक पदयात्रा क्षेत्रसम्म पुग्नको लागि पनि गुणस्तरीय सडक सञ्जाल तयार नभएको कारण स्वदेशी/विदेशी सबैको पहिलो रोजाई नै हवाई यात्रा हुन पुगेको देखिन्छ । हवाई यातायातको बढ्दो माग र हवाई क्षेत्रमा लगानी गर्न चाहने उद्यमीहरूको बढ्दो चाहनालाई पूरा गर्न अति आवश्यक भैसकेको तथ्य महशुस गरेर नै सरकारले अन्तर्राष्ट्रिय विमानस्थल आयोजनालाई उच्च महत्व दिएको हो ।

## (क) गौतम बुद्ध अन्तर्राष्ट्रिय विमानस्थल आयोजना

हालको गौतमबुद्ध विमानस्थल भैरहवालाई अन्तर्राष्ट्रिय विमानस्थलको रूपमा स्तरोन्नति गर्ने आयोजनाको शुरुवात आ.व. २०७०/७१ बाट भएको हो । बौद्ध धर्मका जनक भगवान गौतम बुद्धको जन्मस्थल लुम्बिनी क्षेत्रमा बैकल्पिक अन्तर्राष्ट्रिय विमानस्थल निर्माण गरी दीगो पर्यटन विकास गर्ने लक्ष्य राखिएको छ ।

## लगानी/श्रोत व्यवस्था

- कुल लागत अनुमान = रु. ८ अर्ब ५६ करोड (यसमध्ये एसियाली विकास बैंकको ऋण/अनुदान रु. ६ अर्ब ३१ करोड)  
ठेक्का रकम = रु. ६ अर्ब २२ करोड  
जग्गाको मुआब्जा वितरणको लागि थप रकम आवश्यक = रु. १७ अर्ब

## आयोजनाको मुख्य कार्य

- हालको १५०० मी×३० मी. को धावनमार्गलाई स्तरोन्नति गरी ३००० मी.×४५ मी. को नयाँ धावनमार्ग निर्माण
- अन्तर्राष्ट्रिय टर्मिनल भवन, एयरपोर्ट अपरेशन भवन तथा प्रशासनिक भवन
- कन्ट्रोल टावर
- अग्नि निवारण तथा जिवनोद्धार भवन
- संचार तथा पथप्रदर्शक उपकरण जडान ।

## जग्गा अधिग्रहण

- ✘ अन्तर्राष्ट्रिय विमानस्थलको लागि पर्याप्त पूर्वाधार निर्माण गर्न आवश्यक करीब ५०० विगाह थप जग्गा र त्यहाँ निर्माण भएका घर टहरा अधिग्रहणको कार्य जारी,
- ✘ हालसम्म ३७ विगाह जग्गाको मुआब्जा वितरण भैसकेको ।

## जारी निर्माण कार्य

- ✘ रन वे एप्रोनमा Sub-Base को कार्य प्रारम्भ
- ✘ फेन्सिङ्ग कार्य जारी
- ✘ अन्तर्राष्ट्रिय टर्मिनल भवनको पहिलो तल्ला ढलान
- ✘ उपकरण जडान सम्बन्धमा बोलपत्र आह्वान गरी ठेक्का दिइएको ।

## सिभिल तथा विल्डिङ कार्यसँगै अधि बढाउनु पर्ने काम

- ✘ वायुयान भुमिस्थ प्रवन्ध Ground Handling
- ✘ टयाक्सी सेवा तथा ड्यूटी प्री पसलहरू
- ✘ एअरस्पेश तथा एअर रुटका लागि भारत सरकारसँग वार्ता र सहमति ।

## आयोजनाले भेल्लुपरेका समस्याहरू

१. आयोजना निर्माणका लागि ठेक्का पाएको चिनिया कम्पनी North West Civil Aviation Airport Construction Group र स्थानीय निर्माण सामग्री आपूर्तिकर्ताहरू बीचको रकम भुक्तानी विवाद ।
२. निर्माण सामग्री (ढुंगा, गिट्टी, वालुवा) को पर्याप्त आपूर्ति नभएको, दक्ष इन्जिनियर र पर्याप्त कामदार नभएको कारण निर्माण कार्य ज्यादै सुस्त गतिमा अधि बढेको ।
३. मुआब्जा वितरणमा रु. ३० लाखभन्दा माथिको रकम भुक्तानी गर्दा पूँजीगत लाभकर कट्टा गर्नुपर्ने भएकोले स्थानीयको गुनासो रहेको ।
४. नेपाल विद्युत प्राधिकरणबाट Dedicated Feeder लाइन जडान गर्ने सम्बन्धमा निर्णय हुन ढिलाई भएको ।
५. ठेकेदारको कमजोर व्यवस्थापन क्षमताका कारण अपेक्षा अनुरूप आयोजना निर्माणले गति लिन नसकेको ।

## (ख.) पोखरा क्षेत्रीय अन्तर्राष्ट्रिय विमानस्थल आयोजना

मध्यपश्चिम नेपालको पर्यटकीय नगरी पोखरामा पर्यटन क्षेत्रको विकास र विस्तारमा टेवा पुऱ्याउने उद्देश्यले क्षेत्रीय अन्तर्राष्ट्रिय विमानस्थल निर्माण आयोजनाको शुरुवात आ.व. २०६९/७० बाट भएको हो । यद्यपि आयोजना निर्माणको लागि वि.सं. २०३२ देखि नै करीब ३९०६ रोपनी जग्गा अधिग्रहण गरी तारवार गर्ने कार्य शुरु भएको थियो ।

लगानी/श्रोत व्यवस्था

कुल लागत अनुमान = रु. २९ अर्ब ६० करोड

## आयोजनाको मुख्य कार्य

- ✘ Boeing 757 सम्मको जहाज सञ्चालन गर्न सक्ने गरी २५०० मी. × ४५ मी. को धावनमार्ग रहने क्षेत्रीयस्तरको अन्तर्राष्ट्रिय विमानस्थल (ICAO - CODE - 4D) को रूपमा विकास गर्ने,
- ✘ नयाँ विमानस्थल भएकोले आवश्यक सम्पूर्ण भवन, यन्त्रउपकरण र सुरक्षा व्यवस्था निर्माण गर्ने ।

## जग्गा अधिग्रहण

- ✘ २०३२ सालमा अधिग्रहण गरिएको ३,१०६ रोपनी जग्गामा थप ६२९ रोपनी जग्गा अधिग्रहण गर्ने निर्णय बमोजिम हालसम्म ५२१ रोपनी जग्गा तथा ३७ वटा घर टहराको मुआब्जा रकम वितरण भएको ।
- ✘ पेरिमिटर सडकका लागि थप ५० रोपनी जग्गा अधिग्रहण गर्ने मन्त्रीपरिषदको मिति २०७३/११/२५ को निर्णयअनुसार घर टहराको मुआब्जा वितरण कार्य प्रारम्भ ।

## जारी निर्माण कार्य

- ✘ जुलाई ११, २०१७ देखि चिनियाँ निर्माण व्यवसायीबाट निर्माण कार्य प्रारम्भ ।
- ✘ मुख्य संरचना निर्माण पूर्वको जग्गा सम्प्राप्त गर्ने कार्य भैरहेको ।

## आयोजनाले भेल्लुपरेका समस्या

१. जग्गा अधिग्रहण प्रक्रियामा मुआब्जा रकम न्यून रहेको भनि स्थानीयबासीबाट पटकपटक विरोधका कार्यक्रम भई आयोजनाको सहज कार्यान्वयनमा अवरोध भएको ।
२. आयोजनाको शिलान्यास २०७३ बैशाख १ मा भएता पनि China Exim Bank ले Escrow Account खोल्ने विषयमा मूल सम्झौता भन्दा पृथक प्रस्ताव गरेको कारण भण्डै १ वर्ष विलम्ब ।
३. ऋजुप्लब भन्ने घबलप सँग गरिनुपर्ने Implementation Agreement र Advance Payment का लागि पूरा गर्नुपर्ने शर्तहरू बाँकी रहेको ।

## (ग.) दोश्रो अन्तर्राष्ट्रिय विमानस्थल आयोजना

देशको एकमात्र अन्तर्राष्ट्रिय विमानस्थल ज्यादै व्यस्त हुनुका साथै ठूला विमान उडान अवतरणमा समेत कठिनाई भैरहेकोले सबै किसिमका विमान उडान अवतरण हुनसक्ने अत्याधुनिक विमानस्थलको रूपमा दोश्रो अन्तर्राष्ट्रिय विमानस्थल, निजगढ, बारालाई प्रस्ताव गरिएको छ । तराई क्षेत्रमा प्रशस्त क्षेत्रफल ओगट्ने यस विमानस्थलको निर्माणबाट मुलुकको दोश्रो Gateway को रूपमा पर्यटकीय गतिविधि अभिवृद्धि गर्न महत्वपूर्ण भूमिका खेल्ने अपेक्षा गरिएको छ । सन १९८० को दशकदेखि नै चर्चामा रहेको भएतापनि आ.व. २०७१/७२ देखि बजेट विनियोजन हुन थालेको यस आयोजनाको निर्माण मोडालिटी भने तय भैसकेको छैन ।

## लगानी/श्रोत व्यवस्था

कुल लागत अनुमान = प्रथम चरणको निर्माण कार्यको लागि प्रारम्भिक अनुमान रु. १ खर्ब २१ अर्ब

## आयोजनाको मुख्य कार्य

- ✘ River Training कार्यको निरन्तरता रहेको (हालसम्म ४०% कार्य सम्पन्न),
- ✘ नेपाली सेना र नेपाल नागरिक उड्डयन प्राधिकरणबीच २०७४/५/१९ मा दोश्रो अन्तर्राष्ट्रिय विमानस्थलको चार किल्ला वरिपरी सडक निर्माण, पहुँचमार्ग र विमानस्थलको संरचना निर्माण कार्यको लागि वन क्षेत्रमा रहेका रुखविरुवा कटानी गर्ने सम्झौतामा हस्ताक्षर भएकोले कार्य आरम्भ हुने क्रममा रहेको,
- ✘ विमानस्थलको धावनमार्गको अवस्थितिको लागि आवश्यक पर्ने धरुम म्बतब संकलन गर्न Wind Data Logger जडान गरिएको,
- ✘ वातावरणीय तथा सामाजिक प्रभाव मूल्यांकनको साथै पुनर्वास (Resettlement) कार्यका लागि परामर्श सेवाको कार्य जारी रहेको,
- ✘ Detail Project Design तयार गर्न अन्तर्राष्ट्रिय परामर्शदाता छनौट गर्ने कार्यको EOI स्वीकृतिको चरणमा रहेको ।

## जग्गा अधिग्रहण

- ✘ ११० विगाह जग्गा अधिग्रहण कार्य प्रारम्भ, हालसम्म १२ विगाहको मुआब्जा रकम वितरण,
- ✘ जग्गा अधिग्रहण गर्दा तोकिएको मुआब्जा रकमको दररेटसम्बन्धी विषयमा स्थानीयको गुनासो रहेको ।

## आयोजनाले भेल्लुपरेका समस्या

- ✘ आयोजना क्षेत्रमा सरकारी वन क्षेत्र, सुकुम्बासी वस्ती र निजी घरजग्गासमेत रहेकोले सबैतिर समन्वय गरी जग्गा अधिग्रहण, पुनर्वास कार्यक्रम र रूखविरूवा कटानीको प्रारम्भिक काम नै शुरू हुन नसकी अलमलको अवस्था विद्यमान रहेको ।
- ✘ आयोजना निर्माणको सम्बन्धमा विस्तृत सम्भाव्यता अध्ययन (Detail Feasibility Study) गरेको कोरियाली कम्पनी Land Mark Worldwide- LMW ले २०६८ श्रावणमा संस्कृति, पर्यटन तथा नागरिक उड्डयन मन्त्रालयमा प्रतिवेदन बुझाएको । LMW सँग गरिएको सम्झौताअनुसार उसको अनुमति विना तेश्रो पक्षलाई प्रतिवेदन दिन नसकिने कारण प्राधिकरणले उक्त प्रतिवेदन हालसम्म प्राप्त गर्न नसकेको ।

## प्राधिकरणले भोगिरहेका समस्याहरू

प्राधिकरणअन्तर्गत सञ्चालित राष्ट्रिय गौरवका ३ वटा अन्तर्राष्ट्रिय विमानस्थल आयोजनाहरू र त्यस्तो वर्गीकरणमा नपरेको भएतापनि उत्तिकै महत्वपूर्ण त्रिभुवन अन्तर्राष्ट्रिय विमानस्थल स्तरोन्नति आयोजनाको सफल कार्यान्वयनमा नै प्राधिकरणको सफलता निहित रहेको छ । अबै बजेटका यी ४ आयोजनाहरू तोकिएको समयावधिमा र छुट्टयाइएको बजेटको सीमाभित्र कार्यान्वयन गर्ने सामर्थ्यले नै प्राधिकरणको सुन्दर भविष्य सुनिश्चित गर्नेछ । अन्तर्राष्ट्रिय विमानस्थल आयोजनाहरूको कार्यान्वयनमा प्राधिकरणले भोगिरहेका समस्याहरू केही विशिष्ट प्रकृतिका छन भने धेरै समस्याहरू राष्ट्रिय गौरवका अन्य आयोजनासँग मिल्दाजुल्दा रहेका छन ।

१. जग्गा प्राप्ति (अधिग्रहण) मा ज्यादै भ्रष्ट । अस्वाभाविक मूल्यांकन । निरन्तरको विरोध । जग्गा ब्यापारीको अवाञ्छित चलखेल आदिका कारण अदालती प्रक्रियामा बर्षौं अल्झिनु पर्ने बाध्यता ।
२. नेपाल सरकारले पुनर्वास (Resettlement) सम्बन्धी स्पष्ट व्यवस्था नगरेको कारण आयोजना प्रभावित नागरिकहरूको पुनर्वास तथा पुनर्स्थापनामा अन्यौल ।
३. वन तथा निकुञ्ज (Forest & Reserve) क्षेत्रको अलग्गै संरक्षण कानूनका कारण त्यस्ता क्षेत्रमा काम गर्न कठिनाई र प्रक्रियागत विलम्ब ।
४. वातावरणीय प्रभाव मूल्यांकन (EIA) को लागि लामो समय लाग्ने र यसको स्वीकृतिमा समेत ढिलाइ हुने गरेको ।
५. निर्माण व्यवसायीहरूको कमजोर व्यवस्थापकीय एवं प्राविधिक क्षमता ।
६. नेपालको अस्थिर राजनीतिक अवस्था र पटकपटक फेरिने सरकारका कारण सुक्ष्म निरीक्षण एवं नियन्त्रण प्रणालीको अभावमा आयोजनाहरू समयमा सम्पन्न नहुने । भेरियसनसम्बन्धी माग बढ्दै जाने अवस्था ।

## आयोजनाहरूको प्रभावकारी कार्यान्वयनका लागि सुझाव

नयाँ जुत्ता लगाउनेलाई थाहा हुन्छ, खुट्टा कहाँनिर दुख्छ भनेर । प्राधिकरणले १९ वर्षको किशोर वयसम्म आइपुग्दाको यस अवधिमा धेरै जुत्ता फेरिसकेको छ । अनुभवले सिकाएको छ; आयोजनाहरूमा किन विलम्ब हुन्छ ? किन लागत बढ्छ ? ठेक्का तोडनुपर्ने अप्रिय तर अन्तिम अवस्थासम्म कसरी पुग्नुपर्छ ? भनेर । भविष्यमा यस्तो नहोस र हाल सञ्चालनको क्रममा रहेका आयोजनाहरू निर्दिष्ट समयमा तोकिएको बजेटमा सम्पन्न होउन भन्ने अपेक्षा सबैमा रहेको छ । यसका लागि देहायका क्षेत्रमा सुधार हुनु आवश्यक देखिन्छ ।

## नीतिगत सुधार

१. हाल देखिएका जग्गा प्राप्ति, बन तथा वातावरण, नदीजन्य निर्माण सामग्री तथा अन्तरनिकाय समन्वयलाई लम्ब्याउने खालका नीतिगत तथा कानूनीरूपमा बाभिएका ऐन तथा कानूनहरूको संशोधन गरी राष्ट्रिय गौरवका

आयोजना वा ठूला आयोजना सञ्चालनका लागि छुट्टै एकीकृत ऐनको व्यवस्था हुनुपर्ने ।

2. ठेक्का तथा खरीद प्रणालीमा सुधार । सहज सञ्चालन (Mobilization) पेशकी प्रणालीमा सुधार गरी बैकमार्फत ठेकेदारहरूलाई भुक्तानी दिने व्यवस्था गरिनुपर्ने । समयमा कार्य सम्पन्न गरे सरकारले ब्याज व्यहोर्ने अन्यथा ठेकेदारले ब्याज व्यहोर्ने व्यवस्था लागु गर्नुपर्ने ।

### संरचनागत सुधार

1. आयोजनाहरूको सरोकारवाला निकाय धेरै हुने व्यवस्थाको अन्त्य गरिनुपर्ने । प्राधिकरण, मन्त्रालय, राष्ट्रिय योजना आयोग, लगानी बोर्ड, प्रधानमन्त्री कार्यालय र संसदीय समितिहरूमा छरिएको संरचनालाई एकत्रित गरी प्रत्यक्ष जवाफदेही संरचना तय हुनुपर्ने ।
2. आयोजनाको लागि बजेटको सुनिश्चितता एवं बैदेशिक सहायतामा सञ्चालित आयोजनाहरूको हकमा पनि नेपाल सरकारको बजेट प्रणालीमार्फत नै बजेट निकासी हुने व्यवस्था हुनुपर्ने ।
3. आयोजनाहरूको कार्यान्वयन क्षमता वृद्धि गर्न दक्ष सीपयुक्त कर्मचारी छनौटको मापदण्ड तयार गर्ने र कार्य सम्पादन सम्भौताको मूल्यांकनको आधारमा मात्र जिम्मेवारी नवीकरण गर्ने व्यवस्था हुनुपर्ने ।

### कार्य सम्पादन व्यवस्थामा सुधार

1. नतिजामा आधारित कार्य सम्पादन व्यवस्था लागु गर्ने । अर्थात्, कामसँग कार्य सम्पादनलाई आवद्ध गरी पुरस्कार तथा सजाय प्रणाली (Reward and Punishment system) को व्यवस्था गर्नुपर्ने ।
2. आयोजना प्रमुख र कर्मचारीहरू सँगसँगै ठेकेदारलाई समेत कार्य सम्पादनको आधारमा जवाफदेही बनाउने प्रणालीको विकास गर्नुपर्ने ।

### आन्तरिक तथा वाह्य पर्यावरणमा सुधार

1. आयोजनाको छनौट, कार्यान्वयन र अनुगमन मूल्यांकन सम्मका सबै चरणहरूमा राजनैतिक नेतृत्वको दृढ विश्वास र तिब्र इच्छाशक्ति जरूरी । हस्तक्षेप हैन, समस्याको गुल्थी फुकाउने नेतृत्वको आवश्यकता ।
2. आयोजनाहरूमा कार्यरत जनशक्तिको मनोबल र उत्प्रेरणामा वृद्धि गर्दै काम गर्ने र नगर्ने बीच अन्तर छुट्याउने परिपाटीको विकास गर्नु जरूरी ।

### अनुगमन तथा मूल्यांकन प्रणालीमा सुधार

1. अनुगमन तथा मूल्यांकनकर्ताले स्पष्ट सूचकमा आधारित भै आयोजनाको प्रगति मूल्यांकन गरी दिने हो भने आधा समस्या त यहाँबाटै हल हुन्छ ।
2. मन्त्रालयस्तरीय विकास समस्या समाधान समिति र राष्ट्रिय विकास समस्या समाधान समितिमा छरिएको अनुगमन संयन्त्रलाई एकीकृत गरी पर्याप्त दक्ष जनशक्ति भएको एउटै प्रभावकारी अनुगमन संयन्त्र बनाउँदा ठूला आयोजनाहरूको अनुगमन तथा मूल्यांकनमा सहजता र एकरूपता हुन्छ ।

### निष्कर्ष

लण्डनका गुलाबले सुगन्ध दिँदैनन्, किनकी तिनीहरू प्लाष्टिकले बनेका हुन्छन् । कागजमा देखिने राष्ट्रिय गौरवका आयोजनाहरू प्लाष्टिकका गुलाब भै हुन्छन्; देख्नमा सुन्दर तर सुगन्धविहीन । राष्ट्रिय गौरवका आयोजनाको सफल कार्यान्वयनले देशमा कायापलट हुन्छ भनि धेरै आशावादी भैसकिएको छ । आयोजनाहरू ढीला हुँदै जाने हो भने निराशाले छोप्नेछ । यो विषयलाई आ.व. २०७४/०७५ को बजेट वक्तव्यमा अर्थतन्त्रका मूलभूत चुनौतिको रूपमा यसरी लिपिवद्ध गरिएको छ ।

## कार्यान्वयन क्षमतामा वृद्धि

आयोजनाको अपुरो तयारी, कमजोर व्यवस्थापकीय क्षमता, निर्माण व्यवसायीहरूको कमजोर वित्तीय र प्राविधिक क्षमता, कानूनी, नीतिगत र प्रक्रियागत जटिलताका कारण आयोजनाहरू तोकिएको समयमा सम्पन्न हुन सकेका छैनन् । यसैगरी आयोजनामा संलग्न सरोकारवालाहरूको काम गर्ने उत्साहमा कमी, नतिजा प्राप्ति प्रतिको उदासीनता र समग्र मानवीय क्षमताको कमीका कारण कार्यान्वयन क्षमता कमजोर भएको छ । तसर्थ, विनियोजनामा प्रभावकारिता ल्याई लक्ष्य बमोजिमको कार्य सम्पादन गर्नु चुनौतिपूर्ण रहेको छ ।

## सार्वजनिक निर्माणको गुणस्तरीयता

निर्माण कार्यको सुक्ष्म सुपरीवेक्षणको अभाव, निर्माण व्यवसायीहरूको कमजोर क्षमता र सघन अनुगमनको अभावमा निर्माण भएका संरचनाहरू छोटो समयमा नै जीर्ण हुने गरेका छन् । सार्वजनिक निर्माणको गुणस्तर कमजोर रहेको छ । यसमा सुधार गरी सार्वजनिक निर्माणको गुणस्तर वृद्धि गर्नुपर्ने र दोहोरोतेहोरो खर्च रोक्नुपर्ने कार्य चुनौतिपूर्ण छ ।

बजेट वक्तव्यमा औल्याइएका यीनै दुई चुनौतिपूर्ण कार्य प्राधिकरणका लागि पनि उत्तिकै चुनौतिपूर्ण तगाराका रूपमा रहेका छन् । कोशौं लामो यात्राको शुरुवात आखिर तगारा नाघेर पहिलो पाइलाबाटै हुने हो ।



Chandragadhi Airport

# GBA's Operational Preparedness

✉ Shaligram Poudyal  
Former Director, CAAN



Gautam Buddha Airport (GBA) is serving domestic sector for the last 51 years. Lumbini, the birth place of Gautam Buddha, is about 20 kilometers west of this airport. Tourist from different countries such as India, Sri Lanka, Thailand, Myanmar, China and Korea come to visit Lumbini and Kapilvastu. Lumbini was declared as UNESCO World Heritage Site in 1997 in recognition of its universal religious and archeological significance. Lumbini is the main attraction of the South Asian Buddhist Circuit which includes Lumbini, Bodhgaya, Saranath and Kushinagar. There is about 526 million Buddhist population in the world, most of them residing in Asia and the Pacific region. Maya Devi Temple, the actual birth place of Siddhartha Gautam, is one of the most sacred pilgrimage destinations of that Buddhist population.

In view of this huge potentiality of increasing Buddhist tourists, Gautam Buddha Airport is being developed as an International Airport. Asian Development Bank (ADB) and OPEC Fund for International Development (OFID) has provided loan assistance to the Government of Nepal for GBA's international facility development. Total size of loan and grant component to be utilized in the project is US Dollars 62.45 million, equivalent NRs. 6472.318 million (calculated 1 US Dollar = Rs. 103.64, selling rate of NRB as of 24 November 2017)

Project cost of GBA International is about US dollar 85.557 million. Project works are targeted to be completed by June 2018. This airport's runway length will be 3000 meters sufficient to operate code 4E aircrafts i.e. Boeing 777-200, Airbus 330-300 and/or equivalent aircrafts. So, this airport will also serve as an alternate and back-up to Tribhuvan International Airport (TIA), Kathmandu. We analyzed TIA's international flight data of November 1-3, 2017. Out of 145 flights, only 24 flights (17%) had departed on time (delay up to 10 minutes was assumed as timely flight) and 121 flights (83%) flights had been delayed. The GBA will address the problems at the TIA's international operation to some extent.

## Passenger Forecast

Passenger movement at GBA for the opening year 2018 and from 2023 and 2033 is forecasted as follows:

Year	Passengers (Domestic)	Passengers (International)	Total
Opening Year (2018)	89,746	323,707	413,453
Phase I (2023)	144,538	408,482	55,3020
Phase II (2033)	235,437	669,786	905,223

Source: Project Brochure.

International aircraft movement after 5 years of opening is estimated to be 2,469 which comes about 7 movements per day, and after 15 years it is projected to reach 3,588, i.e. about 10 movements per day. Such a low movement itself leads to diseconomies of scale to an international airport. Research on airport investment also reveals that airports below 2.5 million passengers run with diseconomies of scale.

## Revenue and Cost Scenario:

The ADB had made due diligence analysis on economic and financial viability of this project's additional financing. As per their analysis, economic internal rate return (EIRR) is 16.1% and financial internal rate of return (FIRR) is 12.9% which justified them to finance this project. ADB considered economic cost of capital at 12 % and financial cost of capital at 4.6%. However, ADB's such analysis is difficult to

understand, since the revenue and cost projection as calculated below are not much encouraging.

**a) Revenue Forecast:** Based on the passenger forecast of GBA the following revenue is derived for the year 2023 and 2033, i.e. after 5 and 15 years of opening. Initially the main determinant of total revenue will be passenger numbers which is assumed to be about 55 % of total revenue in 2023 and 50 % in 2033 i.e. after 5 and 15 years of opening. Initially, the main determinant of total revenue will be passenger numbers which is assumed to be about 55 % of total revenue in 2023 and 50 % in 2033. The rates of Passenger Service Charge (PSC) are assumed to be Rupees 1,000 per passenger for international movement and Rs. 177 for domestic passengers. Departing passenger numbers are assumed to be half of the total passenger movement. Our calculation is shown in the table below:

Years		Departing Passengers	PSC Amount (in millions)	Other revenue (LPN & Non-aeronautical Rs. millions)	Total revenue (Rs. millions)
2023	Domestic	72,269	12.792		
	International	204,241	204.241		
	Total	276,510	217.033 (55%)	177.572 (45%)	394.605 (100%)
2033	Domestic	117,718	20.836		
	International	334,893	334.893		
	Total	452,611	355.729 (50%)	355.729 (50%)	711.558 (100%)

**b) Expected Costs:** For cost calculation we have taken interest rate at 5 % from the rate mentioned in the Subsidiary Loan Agreement (SLA) between CAAN and the Ministry of Finance. Depreciation of Assets is taken flat at 5% of total assets on fixed installment basis. The operation costs is assumed at the rate 2.5% of capital cost which is generally taken in engineering estimates as administrative overheads. Maintenance cost for the year 2023 is assumed to be 1.5% of invested capital and 3.5% for 2033. Thus, total operation and maintenance cost for 2023 and 2033 is derived to be 4% and 6% of the invested capital. Principal of SLA loan is assumed to be paid from Airport Development Fund (ADF) collected from TIA. Thus, a rough estimate of debt serving, depreciation and operation and maintenance costs for the year 2023 and 2033 are derived. From total cost we have deducted total revenue for the year. It shows that there will be Rs. 727.054 million and Rs. 339.118 million loss for the year 2023 and 2033 respectively. Details of our calculations are given in the following table:

Cost Headings	Year 2023 (Rs. In millions)	Year 2033 (Rs. In millions)
a) Debt servicing (interest only) for USD 62.45 million equivalent NRs. 6472.318 million at 5% interest	323.616	175.292
b) Depreciation charge for USD 85.557 million assets equivalent NRs. 8867.127 million at 5%	443.356	443.356
Total (a + b)	766.972	618.648
Interest and depreciation cost per Passenger (a+b)/no. of pax (in Rupees)	3755/-	1847/-
c) Operation & Maintenance cost calculated on assets base of USD 85.557 million (4% for 2023 & 6% for 2033)	354.685	532.028
Total of (a + b + c)	1121.659	1150.676
Les : Estimated Revenue Generation	394.605	711.558
Net Annual Loss	727.054	339.118
Net Loss per Passenger ( in Rupees)	3560/-	1013/-

Above analysis reveals that GBA's international operation will bring heavy annual loss even after 15 years of its opening. The cost per passenger for debt servicing and depreciation alone for the year 2023 would be Rs. 3755/- and for 2033, Rs. 1847/-. There will be per passenger net loss of Rs. 3560/ and Rs. 1013/-

for 2023 and 2033 respectively. This means GBA will not be in breakeven position until it achieves 1.5 million passenger movement. Airport revenue up to 15 year of opening will only cover the operation and maintenance cost. The interest on loan and depreciation costs will not be covered by GBA's revenue even after 15 years. This means GBA has huge financial viability gap. Therefore, CAAN needs to take strategy to recover GBA's viability gap and minimize loss.

**Manpower Consideration:** As of Kartik 2074, CAAN has 1,065 staff positions in total. Out of 1,065 positions 896 are fulfilled including 49 contracted staff. Permanent recruitment of 216 staff is in the process. Following table gives detail of CAAN's manpower situation.

ATS	Positions	Service categories			
		ETS	Fire	Others	
Total	1065	294	91	189	491
Fulfilled (contractual)	896 (49)	204	59	150	483
Vacant /In recruitment Process	216	67	32	39	78
Generally remaining vacant	45	27	-	13	5
Additional Requirement to GBA	62	18	7	28	9
New Training Requirement		45	-	41	

#### Source:

- 1). CAAN Employee's Master Information report & Information from CAAN Admin Department.
- 2). For GBA's international operation manpower requirement, informal discussion with RFF, ATM and CNS department were conducted.

Presently, GBA has 36 staff positions including ATS 8, Fire 17 and ETS 1. Other than airport cleaning and other utility staff, GBA's international operation will require additional 64 permanent positions including ATS 18 and 28 Fire staff. We can say CAAN's 1065 positions may be sufficient even for GBA's international operation. 64 positions could be managed from those generally vacant remaining 45 positions and adjusting 37 positions of level 1 & 2 to required upper level positions. Such strategy will help to control operating cost of GBA and CAAN as a whole. Critical issue is to train the ATS and Fire staffs on time. ATS is running short of 47 trained staffs and Fire 41 staffs. Civil Aviation Academy has programme to train 16 firemen this year but there is no plan of training for new ATS cadre. It takes more than a year to select and train these staff. Therefore, timely training of required additional aviation staff is vital for the GBA's international operation preparedness.

#### Operational Modality

Major international airports of the neighboring countries China and India are operating on Public Private Partnership (PPP) modality. Beijing Capital International Airport (BCIA) and Guangzhou Baiyun International Airport of China, and Indira Gandhi International Airport and Chatrapati Shivaji Maharaj International Airport of India are such examples. Our GBA may also be floated to international competitive bidding for operation under PPP model. But with such loss status private parties may not be interested to involve. Therefore, for the time being, CAAN has to be prepared for self-operation of GBA.

#### Air Service Development

Air service development is key strategy to address the increasing traffic movements in airports. Air connectivity with Buddhist population countries like Sri Lanka, Thailand, Myanmar, China and Korea is important. Flight connectivity to India's Gaya Airport and Cambodia's Siem Reap Airport is also important, so CAAN needs to work in advance to establish air routes connecting these locations. Government's ambitious plan to host 2.5 million tourists by 2025 can be, to a great extent, supported by this airport with more routes connectivity with the Buddhist countries. Our national flag carrier, Nepal Airlines Corporation (NAC), also needs to play an important role in this regard. CAAN should work with the Ministry of Tourism and NAC to establish and increase international air connectivity to GBA.

## Co-ordination with Government Agencies

Operation of International Airport requires co-ordination of different Government agencies and the airport operator. Immigration and passport control, customs clearance, airport security, plant quarantine and metrology services are provided by the government. Therefore, CAAN needs to communicate and co-ordinate with these government agencies for their timely planning to establish offices and deploy staff in GBA by 2018.

## Ground Handling and Cargo Management

Ground Handling is one of the key service required to operate the airport. CAAN has to float tender for interested parties to get competitive proposal on ground handling services. Because tendering and procurement process takes months to finalize and selected party also need some preparation time, tender process to procure GH service should be started this year. CAAN needs to be prepared for the cargo handling service, too.

## Charging System

CAAN Airport Charges Rules 2067 provide rate of PSC for international flights in TIA and other airports. Rate of PSC for other airports is Rs. 500/ per passenger for SAARC countries and Rs. 750 for passengers flying to other countries. This rate should be revised and increased as par to TIA rates. Likewise, rates for vehicles parking, CIP, videography, terminal and room rents, hangar rent, land lease rent, advertisement charge etc. should also be fixed for the GBA.

## Airport Service Quality and Quality Management System

It will be good to participate in the ISO 9001/2015 quality management system (QMS) for general management of GBA from the first year of opening. QMS is based on principles of strong customer focus, motivation & implication of top management, process approach and continual improvement. From the second year, participating Airport Service Quality (ASQ) Survey of Airport Council International (ACI) will be desirable. The ASQ Survey is designed for airports that require up-to-date feedback on their service performance to drive superior operational and strategic decision-making. It helps the airport operator understand today's performance and change over time, as well as allowing benchmarking and comparison of performance against other airports. Participation in QMS & ASQ will be highly beneficial to GBA's passenger enhancement and sustainability. As the GBA will have to face competition with nearby airports Kushinagar (159 km) and Gorakhpur (101 km. of India, better service quality will help sustain the competition.

## Airport Development Fund (ADF)

At present CAAN is collecting ADF from international passengers at the TIA. ADF is mainly collected to fill viability gap of airport development cost. For example, Delhi airport was allowed to charge ADF until April 2016 to compensate its investment's viability gap of INR. 3,415 crore. In our case, on ADB's insisting on GBA's viability question, Ministry of Finance (MOF) has given approval to collect Rs. 1000 (Including VAT) for ADF at TIA. MOF has approved ADF to spend on other Airport development and Loan payment as well. In 2073/74 TIA collected Rs. 1780.5 million from ADF.

## Conclusion:

Our discussion on GBA's international operation preparedness is intended to brainstorm some critical issues on this matter. We have taken loan to build this airport. Loan should be timely paid back with interest and principal. Any delay to optimally utilize GBA's built facilities would only increase economic and financial loss. For that, CAAN has to prepare from now in terms of the required manpower training, deciding on operational modality and strategically minimizing operation costs. Another important question here is how to minimize heavy annual loss on GBA's operation. One solution would be paying in advance the ADB loan from ADF collected in TIA to avoid annual interest expenses burden. Even though interest burden is avoided this airport will bear loss until 1.5 million passenger movements is reached. Therefore, ADF charging should also be continued further. ADF rate after five year would be about Rs. 500 (including VAT) per passengers.

## Reference

<http://aera.gov.in/upload/order/56b1e700247acOrderNo47201516.pdf>  
"Project Brochure of GBA"

ने.ना.उ. प्राधिकरण विमानस्थल सेवा शुल्क नियमावली २०६७ .

# CAAN Day: Time For Togetherness

✍ Birendra Kumar Singh

Former Joint Secretary, MOCTCA



Civil Aviation Day, that falls on 31 December every year, is a day of reckoning, reflecting, and above all, putting all the pieces together to ensure that civil aviation of Nepal makes a frog leap in its development embodying safety, security, efficiency and on the dot arrival/departure (in case of Nepalese aviation). It is high time that we not only do the actual appraisal and the audit in the aviation arena but the concerned authorities also warranty and put ICAO (International Civil Aviation Organization) rules, regulations and the concerned legal documents of CAAN and of the Ministry of Culture, Tourism and Civil Aviation into practice. CAAN and the Ministry have the rules and regulations to steer and manage the aviation sector but monitoring and putting the rules into actual practice is lacking to a greater extent. Due to the poor implementation of the rules and regulations, CAAN has to face criticism of the airlines and public when an accident or incident occurs.

## Putting CAAN first

Today when we all are celebrating CAAN Day with huge enthusiasm, fanfare and great gusto, justice can only be done if all the concerned pledge to perform their parts for ensuring betterment in the civil aviation sector of Nepal, that the Nepali sky becomes safe, secured and does not get overcrowded both on ground and in the sky. This can only be achieved if its employees are self-motivated and all concerned staff grinds their noses to their assigned jobs. Objective of celebrating this day will be achieved when all concerned pledge their solidarity for the reform in civil aviation and are able to confront the odds and encroaching difficulties of Nepali aviation.

Although Nepali aviation is in doldrums with many incidents, it is encouraging that Nepal has been able to receive a clean chit from the ICAO audit. The result has amplified the spirit of CAAN. But let us not rest here as much needs to be done to warrant that we get a green chit from other concerned agencies like European Union or Federal Aviation Agency. Hence, we need to push ourselves to a greater degree while performing our jobs so that CAAN becomes able to facelift the Nepali aviation sector. For this CAAN must, at least, see that the recommendations of the Accident Investigation Committee are sincerely abided by the airlines companies. It is necessary to ensure that the airlines companies do not repeat the mistakes and support to improve the image of Nepali aviation. At this juncture, if we browse through the various themes of ICAO, we note that it has given top priority to safety, security and efficiency. We need unity, cooperation and collaboration among various stakeholders both the government and private sector to meet the international standards.

Air transportation has been the backbone for the financial development of all nations regardless of their economic situation. Every nation should be able to run and sustain airlines services.

Air transportation has not been able to become reliable in case of remote areas. Passengers flying to and fro far flung areas, unpredictable cost of aviation fuel, high maintenance cost, unfavourable government policy and other factors dwindled the aviation sector. Flying to the remote areas have always been a challenge both to the airlines (as they try to avoid these remote flights as far as possible), the government and the concerned authorities. But, there is no alternative to air transportation to those areas. The tug-of-war between the airlines and the government has prevailed till today and nothing charismatic can occur unless both become serious in operating the flights to remote areas. But, its equally true that certain policies need to be formulated to address the problems and encourage the airlines to fly to the remote areas. I would like to put forward some recommendations in this regard:

- Subsidiary rates for the airlines companies that have daily scheduled flights to the locations like Bajura, Bajhang, Simikot and other airports in the mountains. If weather forces the airlines to cancel the flights, their landing charges should be waved.
- Some compensation should be made if the airports they fly to are not paved (this is for the

- damage in the tires and heavy bumps the aircraft has to face)
- Awarding the airlines which has shown great enthusiasm to ensure that they have provided maximum service to the remote stations thereby fulfilling their duties in serving the Nepali people who are often deprived of air transportation, and it's happens the most when there is an emergency such as the need of medical services or the like.

These ideas are just some tips for the authorities. If they want to encourage the domestic airlines to serve the downtrodden society of this nation, which is deprived of timely transportation services due to difficult geographical conditions which pose great challenge to the airlines companies including the loss of money, aircraft and valued human resources, the authorities should inspire the private companies through favourable policy implementation.

As we celebrate the CAAN Day, let us not forget that unity of the nation can be achieved through air transportation coupled by the economic stride it can accomplish. But, for this Ministry of Culture, Tourism and Civil Aviation need to be more vigilant, strict and take stringent steps to combat any abnormalities it faces that manifests hindrance in safety, security and efficiency. I wish that the government takes positive steps to ensure that the SARPS and other aviation related policies are implemented and regular monitoring is conducted for the quality enhancement of the air transportation. Future of CAAN should be bubbling with self-motivated, highly encouraged, well trained and sustained human capital to perform their duties. This way CAAN Day will have been well served rather than just having seminars or workshops as it may merely be chit chat with slogans and gatherings. At his juncture let us not sway away from our duties of serving aviation to the fullest.



Dhangadhi Airport

# Status of Effective Implementation of ANS Safety Oversight System in Nepal

✉ Suwarn Raj Upadhyay  
Dy. Director, CAAN



## Background

Under the Article 37 to Chicago Convention, ICAO sets out various aviation standards through its different annexes. All the contracting states throughout the world should adhere to such standards while executing air transport operation. Such Standards not only bring uniformity in the delivery of all types of aviation services but also facilitate and improve the level of those services. As empowered by CAAN Act 1996, Civil Aviation Authority of Nepal (CAAN), except for Aircraft Accident and Incident Investigation (AIG), is the responsible authority for ensuring adherence to such standards.

Air Navigation Services Safety Standard Department (ANSSSD) on behalf of CAAN plays the role of an State Authority that oversees the ANS activities for the conformance of compliance to the relevant ICAO SARPs. On top of that, ICAO - through its Universal Safety Oversight Audit Programme Continuous Monitoring Approach (USOAP CMA) - oversees all eight Critical Elements (CEs) of safety oversight system of the country in all eight protocol areas and determines the level of Effective Implementation (EI) of all those CE. Such activities bring global harmony in the delivery of aviation services including the ANS as well as enhance the safety and efficiency of those services.

## Snapshots of USOAP CMA data<sup>1</sup>

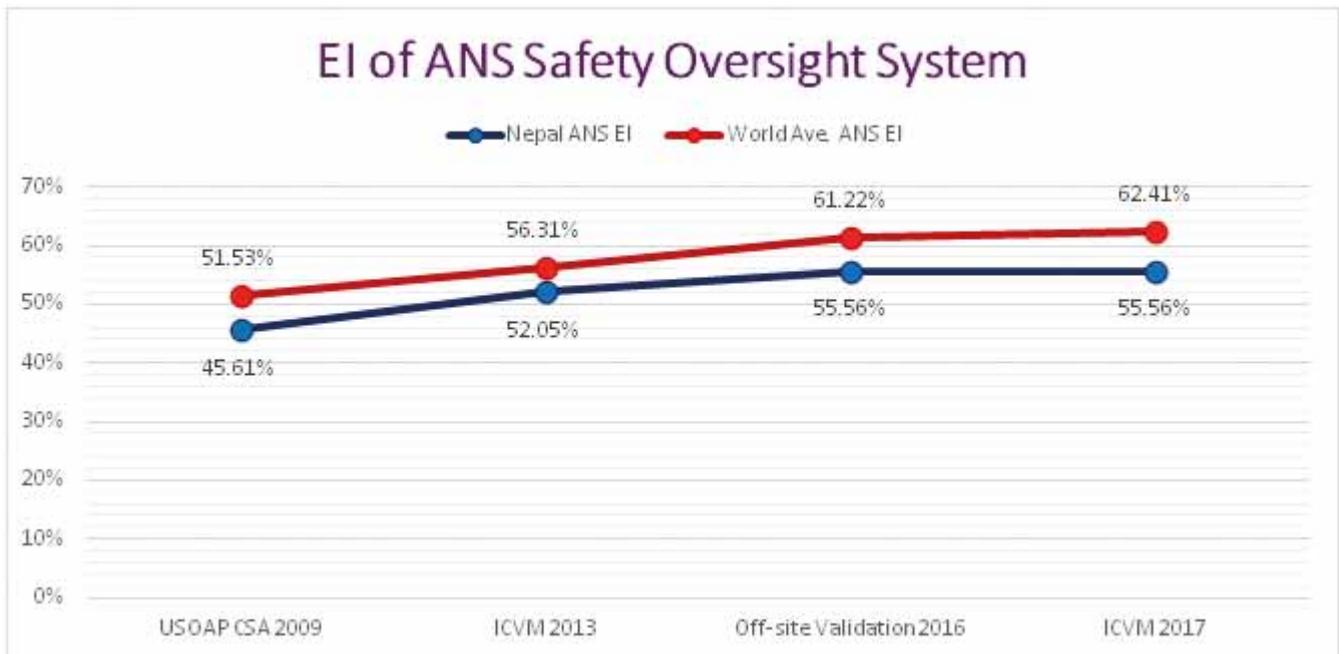
Overall PQs concerning all protocol areas	1047
Total number of ANS PQs	191
Total number of Unsatisfactory ANS PQs (Nepal)	76
Global Benchmark for overall EI	60%
World Average Overall EI	65.3%
Nepal Average Overall EI	66.08%
World Average ANS EI	62.4%
Nepal ANS EI	55.56%

If we look at the OLF at present date, it seems that 8 Corrective Action Plans (CAPs) submitted by CAAN related to 2 PQs concerning CE3 and 6 PQs concerning CE4 are qualified and waiting on-site mission for validation. There is high probability that those 8 PQs will be closed and ANS EI will be increased by 4.19% to the higher EI value of 59.76%. There are other 16 PQs to which we and ICAO both are indicating in OLF as 'CAP fully addresses the finding'. This, in on our part, leads to the expectation of further increase in ANS EI by another 8.37 % once ICVM in ANS areas will be conducted in future, increasing the expected overall ANS EI to 68.13%.

1 <https://portal.icao.int/space/Pages/USOAP-Report.aspx>; 14:40 pm, 10 December 2017

## Effective Implementation of Safety Oversight System

Effective Implementation (EI) is the measure of state's safety oversight capability. This capability is mostly measured in terms of effective implementation of CEs of safety oversight system. USOAP audit 2009 pointed out ANS EI as 45.61% whereas World Average ANS EI was 51.53%. ICAO Coordinated Validation Mission (ICVM) 2013 pointed out ANS EI as 52.05% whereas World Average ANS EI was 56.31%. Off-site Validation Mission 2016 pointed out ANS EI as 55.56% whereas World Average ANS EI was 61.22%. ICVM 2017 did not cover ANS. So, ANS EI for 2017 carries the same previous value. But as of now, World Average ANS EI has been increased to 62.41%. The trend as shown in the chart below shows that as we progress towards higher value of EI, the world average EI value also goes high. So, to achieve the world average, our pace in the ANS area must be faster than the average pace of the world in that area.



Source: USOAP Report, iSTARS, 21:50 pm, 10 December 2017

## Subarea-wise Analysis of Effective Implementation of ANS Safety Oversight System

At present, ICAO USOAP CMA OLF indicates that there are altogether 191 Protocol Questions (PQs) in the ANS area; out of which, 76 are unsatisfactory. Distribution of these unsatisfactory PQs among different ANS sub-areas are shown in the Table 1 below.

**Table 1. Unsatisfactory PQs in ANS Area (Analysis of ANS Sub-areas)<sup>2</sup>**

ANS Sub-areas	Unsatisfactory ANS PQs		Difficult PQs
	Number	Percentage	
ATS	17	22.4%	1 = PERG issue, 1 = ATC Capacity, 5 = SMS, 1 = ALSOP
PANS OPS	5	6.5%	----
AIS	6	7.9%	1 = Aeronautical Data Quality
CARTO	11	14.5%	1 = Aeronautical Data Quality
CNS	7	9.2%	----
MET	19	25.0%	17 = MET
SAR	11	14.5%	2 = SAR Coordination procedure/RCC
Total Unsatisfactory PQs	76	100%	Total difficult PQs = 29

Above table also indicates to some major problem areas in ANS. As MET falls under the jurisdiction of a government department, i.e. Department of Hydrology and Meteorology (DHM), the oversight of

<sup>2</sup> <https://soa.icao.int/CMAUnifyLogin/StateOptions.aspx>; 08:30 am, 8 December 2017

MET seems to be totally ineffective despite having several efforts from CAAN side. So, MET associated PQs seemed toughest PQs to be resolved under the current mechanism. In terms of CAAN, SMS related PQs in ATS are other major issues that are hard to resolve under the current structure. The tabulated values are more clearly portrayed in the following Charts 1 and Chart 2.

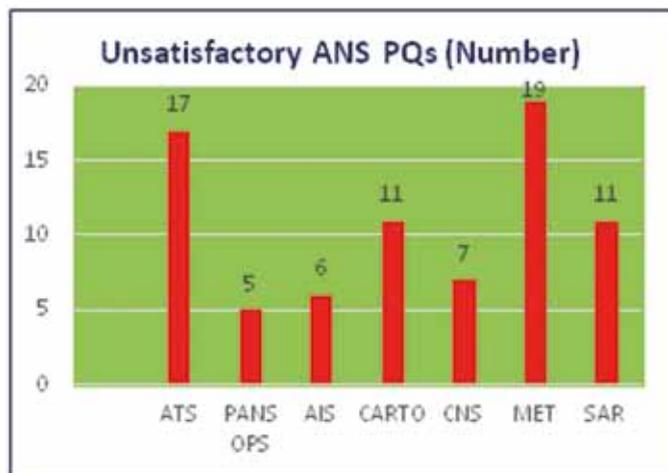


Chart 1

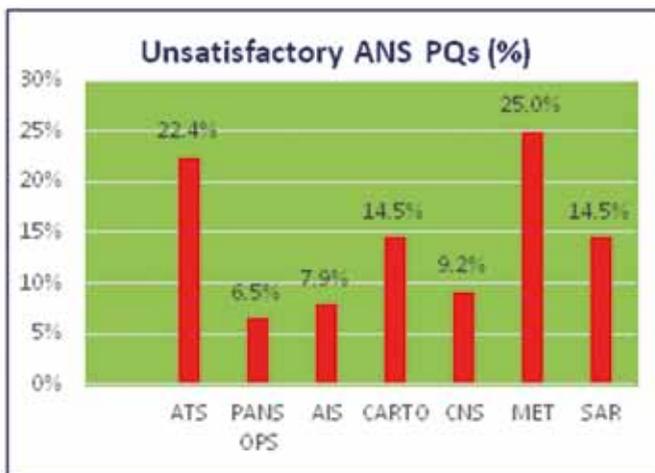


Chart 2

### CE-wise Analysis of Effective Implementation of ANS Safety Oversight System

Out of total ANS PQs, 76 are unsatisfactory which also points towards the ineffectiveness in implementing CEs in the areas of ANS. Distribution of those unsatisfactory PQs among different CEs are given in the Table 2 below. This table shows the CEs where major problems exist. As extracted from OLF, it seems that the most problematic CE is CE4. Then, CE6, CE3 and CE7 rank successively. Only CE that has no problem seems to be CE1 where there is no unsatisfactory PQ.

**Table 2. Unsatisfactory PQs in ANS Areas (Analysis of CEs)<sup>3</sup>**

CEs	Unsatisfactory ANS PQs		Difficult PQs
	Number	Percentage	
CE1 (Primary Legislation)	0	0%	----
CE2 (Specific Operating Legislation)	3	3.9%	1 = ALSOP
CE3 (Civil Aviation System and Safety Oversight Function)	10	13.2%	3 = MET, 2 = SAR/RCC
CE4 (Technical Personnel Qualification and Training)	29	38.2%	5 = MET
CE5 (Technical guidance, tools and provision of safety critical information)	3	3.9%	2 = Aeronautical Data Quality
CE6 (Licensing, Certification, Authorization and Approval Obligations)	18	23.7%	1 = ATC Capacity, 2 = SMS, 6 = MET
CE7 (Surveillance Obligations)	9	11.8%	3 = SMS, 2 = MET
CE8 (Resolution of Safety Concern)	4	5.3%	1 = PIRG issue, 1 = MET
Total Unsatisfactory PQs	76	100%	Total difficult PQs = 29

From the above table, it is evident that there is 100% EI in CE1. In the rest of the CEs, there are some difficult issues that need to be resolved by the CAAN to uplift the ANS EI at least equal to the world average ANS EI. To resolve the unsatisfactory PQs related to MET and SAR related issues, facilitation from the Government's side is highly desirable. The tabulated values are more clearly depicted in the following Charts 3 and Chart 4.

<sup>3</sup> <https://soa.icao.int/CMAUnifyLogin/StateOptions.aspx>; 08:30 am, 8 December 2017

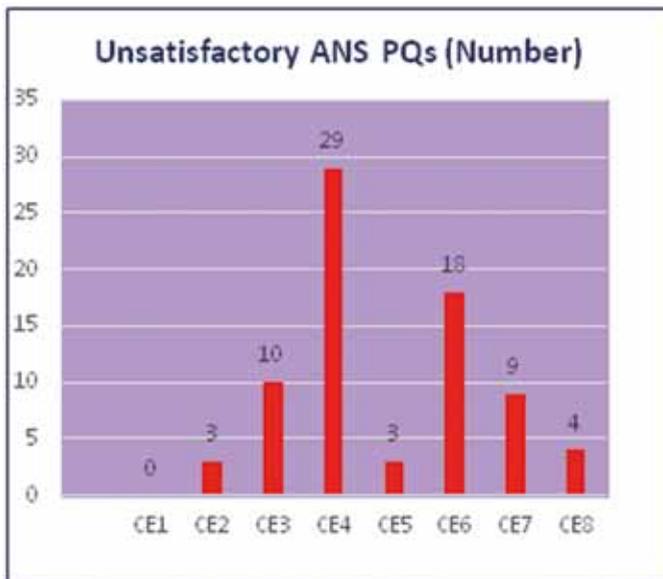


Chart 3

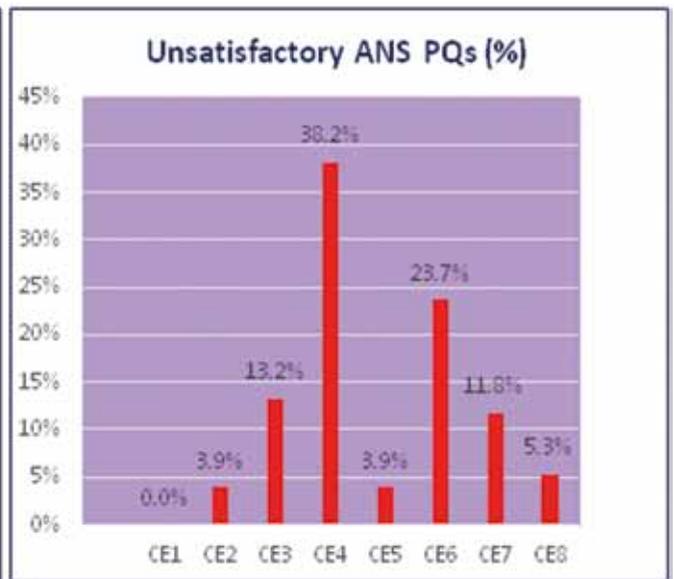


Chart 4

### Activities to Enhance the Status of Effective Implementation of CEs

On part of CAAN, ANSSSD has undertaken many steps in resolving the unsatisfactory PQs thereby reducing the gap between our ANS EI and World Average ANS EI. However, our implementation part in some issues, like SMS implementation, ALOSP development, ATC Capacity declaration, Aeronautical Data Quality and Quality Management Procedure, is still very weak. As far as training part is concerned, CAAN is putting its significant efforts in resolving ANS training related issues. ANSSSD has developed ANS Regulatory Training Plan and Programme, and communicated them to concerned for effective implementation. Activities of CAAN as per each CE are detailed below:

By 2016 CMA Audit Cycle:

In CE1, there were altogether 3 PQs and all of them are already closed. So, as of now, there is no any issues with this CE.

In CE2, there were 12 PQs. Among them, 9 are already closed with the development of many regulatory provisions that are almost incorporated in the ANS regulations. Further, to address the other unresolved PQs, ANSSSD developed or revised the existing regulatory requirements, like revised Interception procedure in CAR-2, constructed document development, amendment and difference filing procedure, etc. But, due to the lack of safety data, the determination of ALOSP is still a difficult issue for CAAN.

In CE3, there were 36 PQs. Among them, 26 are already closed. Further, to close the remaining unsatisfactory PQs, revised CAP for functional separation between ANSP and Regulatory body was submitted. ANS Policy and Procedure Manual has been developed to incorporate roles, responsibilities and qualifications of Inspectors. JDs for inspectors are revised. Methodology for the determination of staffing need in ANSSSD inspectorates has been developed and uploaded in OLF.

In CE4, there were 38 PQs. Among them, 9 are already closed. Further, to attend the remaining PQs, CAAN developed training plan and programme, and provided Basic and On-the Job Trainings to Inspectorate staffs. ANSSSD has also developed two-yearly training plan and detailed Inspector Training Programme, and communicated it to the concerned department for necessary action. To maintain the training record appropriately, despite paper filing system, the excel programme has also been developed and uploaded in the OLF.

In CE5, there were 13 PQs. Among them, 10 are already closed. To address the other remaining PQs, CAAN has developed provisions in CAR-4, CAR-15 and ANS Policy and Procedure Manual to ensure that the data quality requirements are met by AIS provider. Separate checklist for Maps and Charts is also developed. However, there seems to be a problem in the implementation part.

In CE6, there were 50 PQs. Among them, 32 are already closed. Further, to resolve the other PQs, CAAN has developed provisions in MATS Nepal and ANS Policy and Procedure Manual for ensuring the ATC Capacity and SMS implementation, and audit checklist has been modified accordingly. However, there is also the problem in the implementation part.

In CE7, there were 31 PQs. Among them, 22 are already closed. For further improvement, CAAN has developed provision in MATS Nepal and ANS Policy and Procedure Manual for ensuring the surveillance over SMS implementation. ANSSSD is doing surveillance, both scheduled and random, over the ANSP under its annual surveillance programme and identifying the deficiencies. In 2016, ANSSSD performed five surveillance/audit activities at different airports.

In CE8, there were 8 PQs. Among them, 4 are already closed. Steps were taken to resolve the APANPIRG deficiencies also, but no progress has been observed in this issue. ANSSSD is communicating the identified audit deficiencies to ANSP, recommending them the appropriate remedial measures. ANSSSD is conducting follow up activities for the appropriate CAPs. ANSSSD is also supporting them by conducting awareness programmes as well. In 2016, ANSSSD conducted seven awareness programmes in different locations.

## Conclusion

CE-wise analysis indicates that the bulk of issues are concerned with the training plan and programme of inspectorate staffs and their qualifications, and therefore, our weakest component seemed to be CE4. CAAN has done a lot to strengthen the element CE4 by developing training plan and programme, and imparting basic trainings to inspectorate staffs. We hope that if there were ICVM in future, some unsatisfactory PQs concerning this element would be closed increasing the ANS EI. Next weakest component seems to be CE6 which is licensing, certification, authorization and approval obligation where majority of issues are concerned with the SMS and MET. Issues concerned with rest other CEs seemed to be lesser alarming.

Subarea-wise analysis of ANS indicates that Aviation MET is the weakest area where we need to put a lot of efforts to overcome the identified deficiencies. MOU between DHM and CAAN has been revised to address most of the operational issues raised by USOAP Audit. CAAN has developed CAR-3 for Aviation Meteorological Requirements in coordination with DHM. ICAO wishes such oversight mechanism to be independent from service provider mechanism. At present, DHM does not have proper infrastructure for the delivery of Aviation MET oversight functions with the trained inspectors. So, the past Off-site Validation Mission 2016 did not cover any MET related PQs, and therefore, number of total unsatisfactory PQs concerning MET is as it was. Next weakest ANS sub-area is ATS where majority of significant issues are concerned with the SMS implementation and oversight.

With the analysis of the elements presented above as well as the illustrated activities of CAAN, we can be very much optimistic that, despite having some difficult issues, our ANS EI will be increased above the world average ANS EI once ICVM will be conducted in ANS areas in future. But, if it's a CSA audit, we must be ready for extensive audit starting again from the beginning.

## Recommendations

CAAN must prioritize addressing the issues as per the associated weight and volume. In some issues linked with outside agencies, CAAN may play a role as a facilitator. In brief, following steps must be taken to significantly elevate the level of EI of ANS safety oversight system:

1. Bring Aviation MET into the umbrella of CAAN Oversight Mechanism (preferable option), or Develop independent Aviation MET authority (tough and expensive option).
  - a) For this, seek ministerial level commitments and supports.
  - b) Conduct high level intensive interaction programme between CAAN and DHM, involving Ministerial level participation from both sides.
  - ✕ ANSSSD should play the role of focal point to expediate the action, once decision is taken in this line.
2. Modify operational LOA between DHM and TIACAO to address the provisions of latest MOU between CAAN and DHM.
  - ✕ ATS SAR Division, TICACAO should play the role of focal point to materialize the issue.
3. Implement training plan and programmes effectively.
  - a) Maintain regularity and consistency in such activities.
  - ✕ CAAN HRD should play the major role for effective implementation.
4. Initiate implementing SMS, start with any component as per necessity; don't just wait for a full formal structure to emerge.
  - a) Like, train the staffs on SMS and formally initiate Safety Assessment or Safety Review.

- ✍ ATS Safety Office, TICA00 should play the frontline role for the initiation.
- 5. Expediate ministerial approval of SAR LOAs between Kathmandu FIR and neighbouring FIRs.
  - ✍ SAR Division/ATM Department with CAAN consent to formally play coordinating role with the ministry.

### References:

Universal Safety Oversight Audit Programme Continuous Monitoring Approach (USOAP CMA), ICAO Doc 9735

ICAO USOAP CMA OLF

ICAO iSTARS 3.0

Status of CEs of Nepalese Safety Oversight System and associated LEIs, Suwarn Raj Upadhyay, CAAN Souvenir 2015



Control Tower TIA

# The Operating Status of TIA and Improvement Need

✉ Shyam Kishor Sah  
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## Introduction

Tribhuvan International Airport (TIA) is the only air-gate to Nepal and is located to the east of the capital city, Kathmandu. It is the only international airport in the country and has an overwhelming contribution to the promotion and sustainability of civil aviation in the country. This airport provides a wide network of flight connections to two and a half dozen cities in Asia, Europe and Middle East. It has crucial role in promoting tourism which is the vibrant sector creating employments and boosting economic activities in the country. Currently, 30 international carriers from 15 countries are operating flights to and fro daily and connecting this land-linked country with the outer world. Similarly, one and a half dozen domestic carriers are operating over 200 scheduled and chartered flights from morning till late night daily, making the topographically challenged airport a narrow gateway.

Since its establishment in 1950, it has been transformed massively to meet with the traffic demand estimated previously. The available facilities such as the single runway, five taxiways, international and domestic aprons, and the helipad are over utilized to meet the demand. It has been able to generate significant level of revenue to meet the airport expansion and development need for the aviation industry. But, the surge in aircraft and passenger flow in the international as well as domestic sector since last few years is posing challenge for the robust expansion of facilities and infrastructures essential to cope with the rapidly growing future demand. The growing number of international and domestic operators as well as fleets have resulted in crowded terminals and insufficient parking bays.

## Operating Status

The two decades old infrastructures are getting much more congested day by day and posing threat on safe operation of the aerodrome. At present, TIA seems to be saturated with the existing facilities for aircraft operation and passenger movement. Besides the growing challenges, the TIA Civil Aviation Office is able to operate the airport from sunrise till midnight for the arrival and departure of aircrafts to facilitate the increasing number of international and domestic flights. Similarly, despite limited space in the terminal buildings attempts are made to accommodate the increasing number of passengers and provide hassle free check-in, security screening and other services. In the year 2016, TIA handled 27,118 aircraft movement and 3,510,742 passengers in international sector and 73,876 aircraft movement and 1,757,596 passengers flow in domestic sector. The addition of new carriers and additional fleet in the country's aviation system shows that at least 10 percent growth in the aircraft movement and passenger flow will be recorded in the year 2017.

## Objectives

TIA, operated by the Civil Aviation Authority of Nepal - the regulator of aviation industry in the country, is fully responsible for providing standard, reliable and affordable services to air travelers. Besides facilitating air connections within the country and beyond, the TIA Civil Aviation Office has obligation to fulfill the following objectives:

- To operate the only international airport in safe, secured and efficient way;
- To ensure high level of services and facilities for passengers and other users;
- To provide air traffic services, communication, navigation and surveillance services for the safe, efficient and expeditious flow of aircrafts;
- To provide slots for aircraft arrival and departure;
- To provide ground handling and cargo handling services to the carriers;
- To facilitate and coordinate with concerned government and other agencies to ensure

- effective and hassle-free services;
- To provide airport restricted area entry pass to the staffs, workers and visitors.

## Challenges

Though the decades-old infrastructures and physical facilities at the TIA are fully utilized in serving the increased number of aircraft traffic and to generate huge amount of revenue, it has bad reputation for the continued delay in flights. The terminals are getting congested due to continuous growth in passenger flow that is resulting in degradation of passenger services and comfort. Besides the congestion in passenger terminals, the air cargo complex is also being unable to handle the increased air cargo flow in the country. The only international airport is also getting congested due to crawling infrastructure development plan and delayed completion of ongoing projects for the expansion of terminal building and aircraft parking bays. The available facilities are becoming insufficient for handling the growing air traffic in safe and expeditious manner which is imposing great challenges to the CAAN and TIA management to cope with it.

## Improvement Need

To cope with the growing demand of air traffic, there is urgent need to improve physical facilities and capacity of TIA in short span of time. After a couple of years, at least two international airports will be in operation to serve the future air traffic demand. Therefore, there is an urgency to increase the capacity of the TIA to handle the current demand of air traffic efficiently. The following areas need special priority for improving overall capacity of the airport immediately and ensure smooth flight operation and passenger processing.

✂ To ensure efficient Air Traffic Management:

- Implement Air Traffic Flow Management (ATFM),
- Revise the slot of international carriers to ensure smooth distribution of flights,
- Enhance ATC capability through advanced training and rating,
- Separate Frequency for helicopter operation and reduce communication jam,
- Review the Instrument Flight Procedures and enhance reduced visibility operation,
- Increase aircraft parking capacity for international and domestic aircrafts,
- Start Helicopter operation from the open field to the south east corner,
- Allocate parking for STOL aircraft to the east of runway,
- Link parallel taxiway to the runway end to reduce runway and bay occupancy time.

✂ To increase the capacity for Aircraft Ground Handling Services:

- Operate more ramp buses for passenger transportation on international ramp,
- Operate additional Tow Tractors (Tug) for timely push back and reposition of aircraft,
- Increase the number of ground support equipment to expedite turn round of aircrafts,
- Ensure timely repair and maintenance of ground support equipment (GSE),
- Relocate the GSE Hangar of NAC to south of international apron,
- Operate more Fuel Trucks to ensure timely refueling of aircrafts.

✂ To enhance the level Passenger Service and Comfort Facilities:

- Operate Automatic Passenger Information System (APIS) in Immigration,
- Real time Flight Information Display System (FIDS),
- Advanced Way Finding and Boarding Gate information display,
- Operation of Self Checking Kiosk and Baggage Drop to reduce check in time and queue,
- Smooth operation of all four baggage belt to reduce arrival baggage presentation time,
- Advanced Aviation Security Measures and Body Scanners for hassle free screening,

Besides the fulfillment of above short term improvement need, utmost priority should be given to the management commitment to ensure timely completion of the ongoing projects to enhance capability of the only international airport in handling the surge in air traffic safely, smoothly and efficiently.

# The Role and Status of CNS Personnel in CNAD, CAAN:

Er. Sanjay Kumar Thakur  
Dy. Director, CAAN



## A Brief Introduction

Civil Aviation Authority of Nepal is a multidisciplinary organization where many stake holders work for a common goal to make air transportation safe, reliable and efficient.

## Role of CNS Personnel (ATSEP)

CNS personnel of CAAN, commonly known as Air Traffic Safety Electronics Personnel, looks after planning, installation, maintenance and up-grading of Communication, Navigation, Surveillance Systems, Aviation Meteorological Equipment, Security and Facilitation System and their accessories in TIA & all the domestic airports of Nepal. With the demand of more domestic airports, construction of new Regional and International Airports and addition of new technologies for safe and reliable CNS facilitation, the role of ATSEP become more crucial. Planning, selection and application of new technology in Communication, Navigation and Facilitation are difficult in many of Nepalese Domestic Airports due to difficult terrain and topography.

## Identification and Role of CNS Facilities in an Airport

The minimum CNS facilities required for an airport depend upon the category and design of the airport. All the airports in operation in Nepal have been facilitated with following minimum CNS and associated facilities for VFR operation:

- ✘ High Frequency (HF) Ground- to Ground Communication
- ✘ Very High Frequency (VHF) Air-to-Ground Communication
- ✘ Meteorological Equipment and their accessories.
- ✘ Navigational Aid ( in limited airports only)
- ✘ ASR/SSR/MSSR (in TIA only)
- ✘ ATC Automation ( in TIA only)

Identification, planning, installation, maintenance and upgrading of the facilities in Tribhuvan International Airport Civil Office is looked after by its own Technical Service Department where as the same works for the rest of the domestic airports are under the responsibilities of Communication and Navigational Aid Department and CNS Planning and Development Department, the departments under ANS Service Directorate.

## Following Domestic Airports have been facilitated with CNS facilities for VFR operation only:

S.N.	Airports	S.N.	Airports
1	Bajura Airport	15	Tenzing Hillary Airport [Lukla]
2	Bharatpur Airport	16	Megouli Airport
3	Bhojpur Airport	17	Phaplu Airport
4	Chandragadhi Airport	18	Pokhara Airport

S.N.	Airports	S.N.	Airports
5	Chaurjahari Airport	19	Ramechhap Airport
6	Dang Airport	20	Rara Airport
7	Dhangadhi Airport	21	Rumjatar Airport
8	Dolpa Airport	22	Salley Airport
9	Janakpur Airport	23	Simikot Airport
10	Jomsom Airport	24	Surkhet Airport
11	Jumla Airport	25	Taplejung Airport
12	Khanidanda Airport	26	Thamkharka Airport
13	Kangeldanda Airport	27	Tumlingtar Airport
14	Lamidanda Airport	28	Kangeldanda Airport



A CNS Personnel (ATSEP) at CNAD Workshop, Sinamngal.

**Following Domestic Airports have been facilitated with Navigational Aid Facilities:**

- S.N. Airports
1. Janakpur Airport (NDB)
  2. Bharatpur Airport (NDB)
  3. Biratnagar Airport (DVOR/DME/NDB)
  4. Nepalgunj Airport (DVOR/DME/NDB)
  5. Simara Airport (DVOR/DME)
  6. Gautam Buddha Airport (DVOR/DME)
  7. Pokhara Airport (DME/NDB)

## Following Domestic Airports have been facilitated for IFR operations:

S.N. Airports

1. Biratnagar Airport
2. Gautam Buddha Airport
3. Simara Airport
4. Nepalgunj Airport

Note: Details of CNS facilities and status of the airports can be viewed in CAAN Website: [www.caanepal.org.np](http://www.caanepal.org.np)

Here, it will be appropriate to have the introduction and functions of the Navigational Aid mentioned above.

### a. Distance Measuring Equipment (DME) as a Navigational Aid

Distance Measuring Equipment or DME is a standard navigational aid used by all members of the International Civil Aviation Organization (ICAO) for civilian aircraft operation. It provides slant-range distance information between aircraft and a ground station.

### b. Doppler Very High Frequency Omnidirectional Radio Range (DVOR) as a Navigational Aid

The DVOR provides an omnidirectional navigational aid that enables an aircraft to determine its bearing in azimuth relative to the ground beacon. The DVOR system has been designed to give a signal which as far as the aircraft VOR receiver is concerned, is compatible with the signal provided by a conventional VOR (CVOR) system. VOR and DME are co-located to facilitate slant range and omnidirection to an aircraft.



DVOR/DME site at Gautam Buddha Airport Bhairahawa

### c. Non-Directional Beacon (NDB) as a Navigational Aid

The Non-Directional Beacon is a radio navigational aid used by the aero-planes for finding directions while flying from one point to other. Non-Directional Beacon is a ground station that transmits a low frequency or medium frequency signal, which is radiated omni-directionally in the horizontal plane (azimuth) with vertical polarization. Direction finding is done in the aircraft using an Automatic Direction Finder (ADF) receiver.

At present, all the responsibilities of planning, installation, maintenance, upgrading and replacement of CNS facilities at the domestic airports are under centralized department. Looking at the present scenario of demand of more domestic airports, planning of expansion and upgrading of present domestic airports and concept for development of Regional and International Airports, it has been

realized that the responsibilities have to be de-centralized establishing Regional CNS Division at least at Eastern and Western Sectors. Establishment of Regional CNS Centre with sufficient competent and rated ATSEP will enhance planning, installation and prompt deputation and maintenance of CNS equipment in the airports covered by the concerned Region. This concept is imminent as DVOR/DME and associated equipment for Dhangadhi and Chandragadhi are in the phase procurement and technologies in the domestic airports are being upgraded.

Moreover, dedicated ATSEP will be needed with CNS Centre at Gautam Buddha International Airport and Pokhara Regional International Airports upon the completion of construction of those airports. The airports will be equipped with new CNS equipment of modern technologies. Furthermore, introduction of Instrument Landing System CAT II for precision approach acquires highly skilled rated ATSEP.

Therefore, human resource development in multi-disciplinary fields of CAAN is highly required. A strategic human resource management plan should be implemented.

### References:

- ICAO Annex 10 Vol. I
- Airport Profile



Manang Landscape

# Wayfinding: Standards and Design Requirements

✉ Er. Sunil Kumar Kushwaha  
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## Background:

Aviation is the world's most "global" industries: connecting people, cultures and businesses across the continents. It provides the only rapid worldwide transportation network, which makes it essential for global business. It generates economic growth, creates jobs, and facilitates international trade and tourism. It starts from airport and ends at the airport. In modern day of globalization people (passengers) travel around the globe from under developed countries to most developed parts of the world. The expectation of the passengers becomes high regarding the facilities at the airports. The wayfinding is one of the essential infrastructure that the airport needs to consider while facilitating the passengers.

Wayfinding is the act of finding your way to an intended destination. Often travelers transit through intermediate airports in addition to their origin and destination airports. Many travelers may be unfamiliar with the terminal layout or the location of gates and other facilities. Every Passenger do not feel comfortable while asking someone for what he needs at the airport. For a small airport terminal like Tribhuvan International Airport (TIA) standard wayfinding signage has become the need of the hour. Travelling passengers often get confused due to lack of proper wayfinding signage in the terminal as well as outside the terminal. Wayfinding is helpful to passengers, as well as meeters and greeters, if airports have uniform wayfinding and signing systems.

## Purpose

The purpose of efficient wayfinding is to facilitate the safe, convenient and efficient movement of passengers within each airport, and from one airport to another.

The way finding system for an airport covers the following areas:

- ✉ On-airport roadways/off-airport access roads
- ✉ Parking
- ✉ Curbside/ground transportation
- ✉ Terminal, including concourses/gates, ticketing/check-in, security checkpoints, custom inspection services, baggage claim

## Signing and wayfinding process

The signing and wayfinding process helps airport operators understand the need for and the benefits of a sound wayfinding system. Continuity and connectivity help the airport operator solve wayfinding problems without sacrificing the integrity of the airports wayfinding system.

## Airport user categories

Airports must consider the user categories at the airport. These, among others, include:

- ✉ Unfamiliar passengers or drivers picking up or dropping off passengers
- ✉ Familiar passengers or drivers picking up or dropping off passengers
- ✉ Passengers with disabilities
- ✉ Non-traveling visitors coming to greet or send off passengers
- ✉ Ground transportation drivers
- ✉ Delivery drivers
- ✉ Airport employees

Airports must systematically consider each user category to make sure all origin-destination signing needs are included in the planning and design of the signage system.

### Structuring the signing system

Airports should determine sign content by the wayfinding tasks for each category of users. First, determine the most common wayfinding chains for each airport user category. For unfamiliar passengers, the most important wayfinding chain starts with a nearby roadway or arterial, and proceeds to the desired terminal and arrivals level, and continues to the gate. Airports also must determine wayfinding chains in the reverse direction (e.g., from the airport gate back to the roadway).

To avoid user information overload, airports should use a hierarchy of destinations. For example, typically for arriving passengers, airports place baggage claim and ground transportation signs at the gates. Most passengers, based on experience, expect to find information about the airport exit, rental cars, taxis, limos, buses, and parking once they reach baggage claim. A simple hierarchy of signage guiding passengers from the gate to baggage claim and ground transportation simplifies the number of messages and eliminates information overload. Using such signing hierarchies greatly simplifies signing by providing information on a need-to-know basis. The wayfinding chains assist in identifying the hierarchy of destinations.

Airports should standardize sign systems with respect to terminology, lettering style, location, and meaning of color within any one area of the airport (e.g., roadways, parking garage, and terminal). When confronted by a complex environment, users can more easily locate sign information when presented in a consistent format.

### Passenger wayfinding experience

The customers, in this case passengers, expect to find their way through the airport, so each passenger looks for the information guiding him/her to the correct terminal, parking lot, etc. Information overload is presenting too much information on one sign or too many signs in a given area. The violation of customer expectancies and information overload can have serious consequences. Lost and confused passengers inside the terminal risk missing a flight.

### Ways to avoid these consequences are:

- ✗ To present the wayfinding information in a uniform and standardized manner and place signs consistently. Violating user expectations results in lost passenger confidence in the airport's wayfinding system, which in turn creates a negative perception of the airport.
- ✗ To establish a clear and concise messaging hierarchy and apply the hierarchy consistently throughout the wayfinding experience from roadway to gate.



**Arrival Hall TIA** near custom X-ray Wayfinding sign required as per standard.



**TIA Sterile Hall** too many wayfinding sign meshed, advertisements boards encroaching the sign

## Wayfinding begins with airport design

Many factors impact an airport's wayfinding system.

The first goal of creating a well-designed signing and wayfinding system begins with the design of the airport itself. Well designed signs and wayfinding create a direct response to the airport environment. The configuration of the roadways and parking, the relationship of the curbside areas to the terminal, and the architecture and layout of the terminal and gates all have a major impact on the passenger wayfinding experience. Airports should integrate wayfinding at the beginning of the planning process and continue throughout.

The second goal of a wayfinding strategy is to value it. It is critical to think of airport's wayfinding system as a building system (e.g., the Heating, Ventilation, and Air Conditioning (HVAC) system, Electrical system etc.). All of these systems require maintenance and service in order to operate efficiently. The wayfinding system should not be treated differently. This is an important concept which should be made part of every airport's culture. To make the airport's wayfinding effective, treat it as an integral part of the airport's building systems.

## The airport way finding Areas

### A. Roadway

Drivers entering to the airport roadway system bring with them all of their experience and expectations about roadway design and traffic control. Drivers gain this experience by driving on conventional roads and highways. The more an airport road looks and functions like a regular road, the more it conforms to driver expectations, which leads to a safer and less frustrating driving experience.

Many airports try to unify their roadway signs to look like their terminal interior signs presenting a unified facility identity. It is important to remember roadway signs are fundamentally different than interior signs. The users of roadway signs are moving at much higher than walking speeds and their attention is primarily directed toward the safe operation of their vehicle. Drivers more easily and safely navigate when they can rely on their previous experience with roadway signs. When airport roadway signs look and feel like other roadway signs, they better serve the need of the driver.

### B. Parking

All areas of signage should be an extension of a global philosophy so the wayfinding experience is consistent as a person moves from one functional area to another. People at an airport do different things in each functional area.

With regards to parking, signage needs to address vehicle traffic and pedestrian traffic. While a driver needs to either find a parking space or find the exit from the parking facility, pedestrians are attempting to locate themselves and determine the most direct route to the terminal or back to their vehicle. For each group place readily identifiable, succinct, and repeated signs so users receive both directions and confirmation of their travel paths. The more direct and safe the route for both drivers and pedestrians within a parking facility, the less stress and frustration users experience.

### C. Curbside and ground transportation

The terminal curbside is often the most hectic and confusing area at an airport. Although signage cannot overcome physical limitations and geometric difficulties, a well-planned sign system at and along the terminal curbside can boost the efficiency and safety of the space. Examine regulatory and information signage as a whole and consider the philosophy that less signage may be more useful at the curbside where so much activity is already taking place. The effective management of the limited real estate at terminal curbsides becomes critical and signage may be the most important factor outside the physical layout of the area.

### D. Terminal

There is relevant research we can apply to develop a systematic process for evaluating an airport terminal which will yield improvements in the passenger wayfinding experience by understanding why passengers get lost. When we combine this process with consistent application of the recommended guidelines for design elements (typography, semiology, arrows, legibility, etc.), the net result is continuity within an airport as well as across the aviation industry. When airports follow the new guidelines, passengers traveling from one airport to another airport find consistent and uniform information.

## Conclusion and Recommendations

Factor impacting the sign visibility in the terminal is designating information zones so advertising and retail signs do not encroach on the wayfinding information. While advertising and concessions generate revenue, passengers will not feel comfortable taking time to shop or read the ads if they are lost or confused and worried about missing their flight. Viewing angles are also an important part of sign visibility. As per standards, airports should avoid exceeding a 10-degree angle from the natural line of vision, particularly spaces with high ceilings or transition areas involving changing levels.

Standards recommend 40 feet of viewing distance for every inch of letter height for the vast majority of pedestrian conditions. A 3-inch tall letter is legible from 120 feet. So far as the right number of signs is concerned, philosophically, the fewer signs the better because it helps simplify the wayfinding, reduce visual clutter, and it also helps reduce the cost of the sign system. If there are no key decision points along a given route airports should consider placing these signs every 150 to 250 feet. Based on current practice, airport surveys highlighted three fonts currently used for interior signs i.e. Helvetica 55 roman, Clearview, Frutiger Roman. While considering the Color coding system, Yellow is for flying activities (ticketing, gates, etc.), Green is landing (parking, ground transportation, etc.), Black is for services (restrooms, elevators, etc.).

Consistency, connectivity and continuity are the fundamental requirement for wayfinding sign system. Wayfinding should meet the global standards as well as local requirements. Airports should design and place the wayfinding system as per latest standards. Properly designed and placed wayfinding not only helps the passenger but also have positive impacts on the beauty of the airport. The terminal of the Tribhuvan international Airport being so beautifully designed, it is high time to replace the old wayfinding system with the latest standard system.

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CAT-IX RFF Vehicles, TIA

# Aviation Law: An Overview

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The researcher would like to extract the meaning of 'air law' as defined by the scholars. Here, he has also covered how it evolved from its domestic shape to international form, and with some historical case laws. The article also covers the nature and the scope of the air law starting from air space comprising of sovereignty and private rights therein, airport comprising its operational and regulatory aspects, aircraft with its nationality/airworthiness and other operational aspects, acts and occurrences on board aircraft comprising criminal and civil jurisdiction, and crime against aircraft comprising piracy and hijacking. The research comprises some case laws as well.

"Air law" has been retained as a general term for what is essentially "Aviation Law" today. It is in this respect that Air Law can be considered as a "young law".

Aviation law is the branch of law that concerns flight, air travel, and associated legal and business concerns. Some of its area of concern overlaps that of admiralty law and, in many cases, aviation law is considered a matter of international law due to the nature of air travel.

Aviation law governs the operation of aircraft and the maintenance of aviation facilities. Both federal and state governments have enacted statutes and created administrative agencies to regulate air traffic.

Air law is the body of law directly or indirectly concerned with civil aviation. Aviation in this context extends to both heavier-than-air and lighter-than-air aircraft. Air-cushion vehicles are not regarded as aircraft by the International Civil Aviation Organization (ICAO), but the practice of individual states in this regard is not yet settled. The earliest legislation in air law was a 1784 decree of the Paris police forbidding balloon flights without a special permit. Because of the essentially international character of aviation, a large part of air law is either international law or international uniform law (rules of national law that have by agreement been made internationally uniform). Insofar as international air law is concerned, it need hardly be mentioned that an international agreement or an amendment thereto is binding only on states that are parties to it.

Air Law is a series of rules governing the use of airspace and its benefits for aviation, the general public and the nations of the world. Definition of which is plenty but it cannot be applied indiscriminately or without exceptions. Like, the terms of Aviation Law and, or Navigation Law are becoming out-dated, the designation of Air Transportation Law has been employed on occasions, but the areas it covers are only conveying a narrow interpretation. The term 'Aeronautical Law' is currently being used especially in Roman languages while 'Air Law' is practically adopted in the rest regimes.

Air Law is found interesting as it arouses interest in ever-larger circles. For instance, when a person boards an aircraft as a passenger and reads the small print on his ticket, he suddenly realizes that he is bound by the provision of the Warsaw Convention. It will be useful to possess some knowledge on the advantages and disadvantages of the rules to which he is bound. Besides, Air law is intertwined with other areas of law. It involves many aspects of Constitution law, Administrative Law, Civil law, Commercial law and especially Criminal Law. Its international nature is always paramount.

This highly specialized field of law encompasses most facets of air travel, as well as the operation and regulation of business and issues relating to air travel, which requires a comprehensive knowledge of FAA regulations, specific laws regarding flight, and an in-depth understanding of aviation. Aviation law pertains to nearly all individuals connected to the operation and maintenance of an aircraft.

The practice of Aviation law can include litigation on behalf of families who are suffering from loss or injury due to an aircraft tragedy and the defense of an aviation professional accused of violating Federal Aviation Regulations.

Most aspects of aviation law fall under the oversight of the Federal Aviation Administration (FAA). Although, air traffic regulation polices, laws and administrative agencies have been created by both

federal and state governments, with certain restrictions preventing states from regulating routes, services or the rates, all air carriers are authorized to provide interstate air transportation by the Federal Aviation Act. States may alter existing remedies and enact state laws consistent with federal mandate, though. Additionally, Federal law does not preempt state products liability law, and in most defective product cases, aviation manufacturers may be held strictly liable.

## Case Law

Some of the historical Case Laws which helped to further develop the aviation law also require to be mentioned here.

The case of *Bury v. Pope* (1586, Cro. Eliz. 118) in the Common Law to the codes of the Civil Law adopted in the 19th and 20th century which was for the 'rights in the airspace'.

*Guille v. Swan* (1822) which was the first case of a tort committed by an aviator as decided by the New York Supreme Court.

'*Sotts Trustes v. Moss* (1889) which was about the property damage by the parachute.

In *Swetland v. Curtiss Airports Corp.*, 1930" one of the leading cases in the field of aviation, it was stated: "Maxims are but at-tempted general statements of law." 'A maxim', said Sir Fredrick Pollock, 'is a symbol or vehicle of the law.'

## History of Air Law Before 1919

It is generally agreed that the first air law promulgated was an ordinance of one Lenoir, a "lieutenant de police" in Paris, prohibiting balloon flights without special permits as from April 23, 1784. This was one year after the first aircraft, a hot-air balloon constructed by the Montgolfier Brothers, had left the ground. In the same year, the City Council of Ypres in Belgium, promulgated a similar enactment concerning balloon flights, so did the Council of Namur in 1785, and the Senate of Hamburg in 1786.

The first regulation for safety in air navigation was made in 1819 by Count d'Angles, Police Prefect of the Seine Department, requiring balloons to be equipped with parachutes, and prohibiting aeronautic experiments during the harvest.

In 1908, the Council of Kissimee City (Florida) enacted the first air traffic regulation which stated that the airspace was subject to the legal control by the city extended upward to a limit of twenty miles. The enactment contained further provisions for the regulation of aerial traffic above the city and recommended that the Council should "as soon as practicable, purchase an aeroplane to enable them to properly enforce the provisions of the ordinance".

The first customs regulations for aviation were introduced in 1909 by a circular of the French Prime Minister, Clemenceau, imposing duties on balloons from abroad."

In 1910, U.S. Congressman Sheppard introduced the first bill relating to the carriage of air mail.

From 1910 to 1914, aviation decrees were enacted in Brandenburg, Prussia, Great Britain, Connecticut, Pennsylvania, California, France, Austria, Serbia, Germany, Massachusetts, Russia, Switzerland, and Italy.

The first air navigation company was incorporated in New York by Dr. Andrews, in 1865. In 1910, an air-transportation company, organized by Count Von Zeppelin, began a scheduled dirigible service between Friedrichshafen and Dusseldorf (Germany). In 1914, an air transport service was opened between St. Petersburg and Tampa (Florida); the first regular air mail service started in the spring of 1918, between New York and Washington. At the same time, scheduled air transportation was attempted in Italy and Austria- Hungary.

While looking at the history of air law, it seems to be evolved as the domestic sphere but it obtained an international shape after the event of 1910 i.e. the first diplomatic conference to consider flight regulation in Paris on May 10, 1910.

The first concerted attempt at codification of an international scale took place before 1910, when German balloons repeatedly made flights above French territory."

## The Scope of Aviation Law

State and federal laws govern the operation of aircraft and the maintenance of aviation facilities in the United States, as well as the regulation of air traffic. Subsequent to September 11, 2001, Congress created the Transportation Security Administration as part of the Department of Homeland Security, giving authority of most of the aviation matters to the federal government. States are prohibited from

regulating airline rates, routes or services of any carrier that provides interstate air travel or operates in interstate commerce.

Aviation law is the branch of law that governs the legalities and business aspects of flight and air transport, such as air traffic rights, aviation safety and security, economic regulations of airlines, and the operation of airports.

It is one of the most complex branches of law. This is due to a number of factors, including the globalization of aviation, number of countries involved, commercial and business competition, and overlapping requirements.

The most important role of the law of aviation is to provide a framework that keeps the aviation industry safe, fair, and efficient.

This branch of law contains both national and international aspects. Established by the United Nations in 1947, the International Civil Aviation Organization (ICAO) governs international law. It mediates international air navigation, conducts flight inspections, develops air transport standards, prevents unlawful interference, and facilitates cross-border protocols for international civil aviation.

The ICAO also regulates the procedures for investigations of air accidents in countries that are party to the Convention on International Civil Aviation, or Chicago Convention.

The International Air Transport Association (IATA) is an international industry trade group of airlines concerned with the business aspects of aviation. It is not to be confused with the ICAO, as both are based in Montreal and regulate aviation law.

The organization moderates the competition between aviation companies, ensuring fair play and uniformity in pricing. The IATA divides the world into three regions, consisting of North, South, and Central America; Europe, Middle East and Africa; and Asia, Australia, and New Zealand.

Aviation Law has a vast scope with necessary infrastructure and facilitation thereof for the convenient, regular, safe and secured and efficient air services requiring all the facilities including due regulation.

## Airspace

### Sovereignty

A basic principle of international air law is that every state has complete and exclusive sovereignty over the airspace above its territory, including its territorial sea. At the turn of the 20th century the view that airspace, like the high seas, should be free. But the principle of airspace sovereignty was unequivocally affirmed at the Paris Convention on the Regulation of Aerial Navigation (1919) and subsequently by various other multilateral treaties. The principle is restated in the Chicago Convention on International Civil Aviation (1944).

### Private rights

The principle of airspace sovereignty in international law is probably well reflected in the maxim, *Cujus est solum ejus est usque ad coelum et ad inferos* (he who owns the land owns what is above and below it). In private law the acceptance of this maxim for a long time posed little difficulty, and the Code Napoléon of 1804 adopted it almost verbatim. In one celebrated case, *Clément Bayard v. Coquerel* (1913), the Court of Compiègne, lending judicial authority for the first time to the theory of abuse of rights, awarded damages to a plaintiff whose balloon had been destroyed by "spite structures" erected by the defendant on his own land and ordered the offending spikes to be taken down.

In the course of the 1920s it became clear in most countries, either through judicial decisions or express legislation that aircraft would be allowed to fly over the private properties of others in normal flight in accordance with aeronautical regulations. This immunity applies only to the mere passage of the aircraft and does not extend to damage caused by it or to other encroachments on the use or enjoyment of the land, such as excessively low flights.

### Airports

In most countries airports may be privately, municipally, or nationally owned and operated, and the siting of an airport may be subject to town and country planning or zoning regulations. Whether or not the establishment of an airport requires special permission, aircraft leaving or entering a country will normally be required to do so at an airport having customs and immigration facilities. Airports that are open to public use are generally subject to some form of licensing or control in order to ensure

compliance with minimum safety standards. Members of ICAO, in order to comply with their obligations under the Chicago Convention, have to make certain that such airports are open to aircraft of all other ICAO members under the same conditions as they are open to national aircraft. Restrictions may also be imposed for safety purpose. Annex 14 and the national law is applicable for the safe and regular operation of airports.

## Aircraft

### Nationality

Among the most important points resolved in the 1919 Paris Convention were that aircraft should have a nationality, that they should have the nationality of the state in which they were registered, and that no aircraft could be validly registered in more than one state. The 1944 Chicago Convention retained these principles. Annex 7 and national laws also apply for nationality and registration of the aircraft and airworthy legislation also is required for the sake of aircraft operation.

## Acts and occurrences on-board of an aircraft

### Criminal jurisdiction

Although some systems of national law still adhere to the view that ships and aircraft are part of the territory of the state the nationality of which they possess, this is merely a crude metaphor. In international law, a distinction has to be made between three types of state jurisdiction: territorial jurisdiction over national territory and all persons and things therein; quasi-territorial jurisdiction over national ships and aircraft and all persons and things thereon; and personal jurisdiction over all other nationals and all persons under a state's protection, as well as their property. In case of conflict, territorial jurisdiction overrides quasi-territorial jurisdiction and personal jurisdiction, while quasi-territorial jurisdiction overrides personal jurisdiction.

### Civil jurisdiction

In most countries, the general civil law applies where necessary. In order to avoid statelessness, most states confer their nationality on those born on aircraft of their registry; but there is no general principle law of the flag (i.e., the law of the state of registry) being applicable to every occurrence on-board. There are, however, various international agreements that affect the exercise of civil jurisdiction by states.

## Crimes against aircraft

### Piracy

The 1958 Geneva Convention on the High Seas intends to be declaratory of general international law when it defines the offense of piracy principally as any illegal acts of violence, detention or any act of depredation, committed for private ends by the crew or the passengers of a private [i.e., nongovernmental and not noncommercial] ship or a private aircraft, and directed: (a) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft; (b) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State.

### Hijacking

Unlawful seizure is the legal name that states at the international organizations have given to aircraft hijacking. Thus, the 1963 Tokyo Convention obliges contracting states to take all appropriate measures to restore control of an aircraft hijacked in flight to its lawful commander, and obliges the state in which the aircraft lands to allow the passengers and crew to continue their journey, and to return the aircraft and its cargo to those lawfully entitled to possession. In response to a wave of hijackings that began in 1968, the 1970 Hague Convention for the Suppression of Unlawful Seizure of Aircraft was concluded in an effort to prevent hijackers from finding immunity in any of the contracting states.

Exclusive sovereignty as meant by the article 1 is actually for the safety, security, efficiency of the flight and the aspect of self-defense of the concerned State for the development of air services.

Besides Tokyo Convention 1963 and Hague Convention 1970, there are other air law instruments relating to the aviation security, they are Montreal Convention 1971, Montreal Protocol 1988, Convention on the Detection of Plastic Explosives 1990 and Annex 17/AVSEC Manual (Restricted), and the National laws (C A Act 2015, CAR 2073 and so on for the aviation security.

Whatever air law instruments and legislations are mentioned above in terms of ingredients of aviation law, most of them are of safety and security concern which are known as the public air law and few of them are of private concern which is known as private air law. They can be named as national or international as per their scope of operation.

## Conclusion

Aviation law can be concluded as the very essential law which has a lot of significance in today's busy and fast growing global life as it helps in the safe, secure, regular, economic and efficient air services providing due regulation and facilitation thereto. Aviation law including case law regulates aircraft and necessary infrastructure and facilities required for the safe and secured flight operation. All the activities and the business transaction concerned to such aircraft activities are the subject matter to be regulated by the aviation law. The aircraft and its flight become international when the aircraft operation crosses the international border so the aviation law regulation also requires to be of international nature. All the Contracting States are obliged to comply with the ICAO Standards with respect to the civil aviation operation either adopting ICAO Standards through monism or dualism as to Treaty Act 2047.

## References

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- Books
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Nepalgunj Airport

# Importance of AIS in Aviation and Role of AIS Inspector

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One of the least known but most vital roles in supporting the international civil aviation is filled by the Aeronautical Information Services (AIS), whose objective is to ensure uniformity and consistency in the flow of aeronautical information/data to satisfy the need of safety, regularity and efficiency for the operational use of international air navigation.

The way in which aeronautical information is gathered and managed is governed by Annex 15 of the Convention on International Civil Aviation. There was no provision as such for aeronautical services in the twelve original Annexes to the Chicago Convention (1944). But, there was a high degree of similarity in the procedures recommended by the four Regional Air Navigation meetings, which took place between February and October 1946, for notifying airmen and other interested parties of changes in air navigation facilities, services, procedures or regulations. As a result, the first requirements for the aeronautical services were developed by the PICAQ Air Navigation Committee and the first Procedures for International Notices to Airmen Services (Procedures for Air Navigation Services: PANS-NOTAM) were approved by the PICAQ Council on 7 January 1947. Member States in the North Atlantic, European-Mediterranean, Caribbean and Middle East regions, where air navigation meetings were held, were asked to bring them into effect as soon as feasible and start the development and implementation of the international exchange of NOTAMs. The NOTAM Procedures were also circulated to Member States in other regions for comments, with a view to world-wide adoption.

The manner in which aeronautical information is gathered and managed is governed by Annex 15 to the Convention on International Civil Aviation (ICAO Annex 15), which defines how an aeronautical information service shall receive and/or originate, collate or assemble, edit, format, publish/store and distribute specified aeronautical information/data. The goal is to satisfy the need for uniformity and consistency in the provision of aeronautical information/data that is required for operational use by international civil aviation.

ICAO Annex 15 specifies that aeronautical information should be published as an integrated aeronautical information package (IAIP), composed of the following elements:

## a) The Aeronautical Information Publication (AIP), including amendment services

In aviation, an Aeronautical Information Publication (AIP) is defined by the International Civil Aviation Organization as a publication issued by or with the authority of a state and containing aeronautical information of a lasting character essential to air navigation. It is designed to be a manual containing thorough details of regulations, procedures and other information pertinent to flying aircraft in the particular country to which it relates. It is usually issued by, or on behalf of, the respective civil aviation administration.

The AIP forms the basic element of the Integrated Aeronautical Information Package. It contains aeronautical information of a permanent nature and temporary changes to this information of long duration. It is the task of the AIS provider to provide a comprehensive document, to maintain it up-to-date and to make it simple to use.

The structure and contents of AIPs are standardized by international agreement through ICAO. AIPs normally have three parts:

**PART 1 — GENERAL (GEN)**, consist five sections and contains information of an administrative and explanatory nature which is not of such significance/importance that NOTAM need be issued;

**PART 2 — EN-ROUTE (ENR)**, consist seven sections and contains information concerning airspace and its use; and

**PART 3 — AERODROMES (AD)**, consist four sections and contains information concerning aerodromes/hel-

ports and their use.

AIPs are kept up-to-date by regular revision on a fixed cycle. For operationally significant changes in information, the cycle known as the AIRAC (Aeronautical Information Regulation and Control) cycle is used: revisions are produced every 56 days (double AIRAC cycle) or every 28 days (single AIRAC cycle). These changes are received well in advance so that users of the aeronautical data can update their flight management systems (FMS). For insignificant changes, the published calendar used.

Many States may be able to produce the AIP in one volume. Where this is not practicable and the AIP is produced and made available in more than one volume, each volume must include a separate amendment and supplement service, and the following separate sections must be included in each volume:

- Preface
- Record of AIP Amendments
- Record of AIP Supplements
- Checklist of AIP pages
- List of current hand amendments

### Notification of differences in the AIP

The primary purpose of reporting differences is to promote safety and efficiency in air navigation by ensuring that governmental and other agencies, including operators, concerned with international civil aviation are made aware of all national rules and practices so far as they differ from those prescribed in the ICAO Annexes and Procedures. If identified in AIP, significant differences would not only provide a clear picture of the operational significance of the differences to the users of that document, but facilitate the process of isolating and eliminating those that do not have an important bearing on the safety of air navigation or are inconsistent with the objectives of the ICAO provisions.

Civil Aviation Requirement – 15 (CAR-15) requires that a Contracting State shall record in its AIP any significant differences between its national regulations and practices and the related ICAO provisions. It is intended that any such differences be included in GEN 1.7 of the AIP. This is to ensure that an AIP will provide up-to-date information on the status of implementation of Standards, Recommended Practices and Procedures (SARPs), particularly those concerned with aircraft operations and the provision of facilities and services. Any deviation from SARPs that needs to be taken into account in aircraft operations, as indicated below, constitutes a "significant difference".

All significant differences notified to ICAO must also be included in the AIP in a form that will enable a user to differentiate easily between the national rules and practices of CAAN and the related ICAO provisions. They comprise differences from:

- a) Any of the International Standards;
- b) Recommended Practices that are important for the safety of air navigation or, in the case of facilitation, for the speedy handling and clearance through customs, immigration, etc. of aircraft and the loads they carry;
- c) Procedures for Air Navigation Services (PANS) that are important for the safety of air navigation.

### b) AIP supplements

The AIS provider shall ensure that temporary changes of long duration (three months or longer) and information of short duration, which contains extensive text and/or graphics, are published as AIP Supplement.

Each AIP Supplement shall be allocated with a serial number which shall be consecutive and based on the calendar year. AIP Supplement pages shall be kept in the AIP as long as all or some of their contents remain valid.

The AIS provider shall issue a checklist of valid AIP Supplements at the first month of the year for distribution. The NOTAM summary with the list of valid AIP supplements and AIC, shall be issued either through the medium of the monthly printed plain language or electronic copy.

### c) Aeronautical Information Circulars (AIC)

The AIS shall originate an AIC whenever it is necessary to promulgate aeronautical information, mainly of an administrative nature, which does not qualify for inclusion in the AIP or NOTAM. An AIC shall

be originated whenever it is desirable to promulgate:

- 1) a long-term forecast of any major change in legislation, regulations, procedures or facilities;
- 2) information of a purely explanatory or advisory in nature liable to affect flight safety;
- 3) information or notification of an explanatory or advisory in nature concerning technical, legislative or purely administrative matters

#### **d) NOTAM (Notice to Airmen)**

A Notice to Airmen (NOTAM) is a notice filed with an aviation authority to alert aircraft pilots of potential hazards along a flight route or at a location that could affect the safety of the flight. NOTAMs are unclassified notices or advisories distributed by means of telecommunication that contain information concerning the establishment, conditions or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel and systems concerned with flight operations.

NOTAMs are created and transmitted by government agencies and airport operators under guidelines specified by Annex 15: Aeronautical Information Services of the Convention on International Civil Aviation (CICA).

In our context, Civil Aviation Authority of Nepal has issued the NOTAM As specified in Civil Aviation Requirement- 15 (CAR -15).

A NOTAM is filed with an aviation authority to alert aircraft pilots of any hazards en route or at a specific location. The authority in turn provides a means of disseminating relevant NOTAMs to pilots.

- alerts aircraft pilots of any hazards en route or at a specific location
- Checklists and lists of valid NOTAM

#### **e) Pre-flight Information Bulletins (PIB)**

At any aerodrome/heliport normally used for international air operations, aeronautical information essential for the safety, regularity and efficiency of air navigation and relative to the route stages originating at the aerodrome/heliport shall be made available to flight operations personnel, including flight crews and services responsible for pre-flight information.

Each element is used to distribute specific types of aeronautical information.

The ICAO Council first adopted the original Standards and Recommended Practices in 1953. Annex 15 has its origins in Article 37 of the Chicago Convention.

A total of 39 amendments updated Annex 15 over the years to meet the rapid changes brought about by air travel and associated information technology. In recent years, Annex 15 amendments have reflected the increased need for the timely provision of quality aeronautical information/data and terrain data as they have become critical components of data-dependent on-board navigation systems.

The Annex now contains many provisions aimed at preventing corrupt or erroneous aeronautical information/data which can potentially affect the safety of air navigation.

The philosophy underlying Annex 15, which stems from Article 28 of the Convention on International Civil Aviation, is that each State is responsible for making available any or all information of civil aviation interests which is pertinent to and required for the operation of aircraft engaged in international civil aviation within its territory, as well as in areas outside its territory in which the State has air traffic control or other responsibilities.

#### **Transition from AIS to AIM**

*“To achieve a uniform and efficient aeronautical information management structure, based on system wide information management, to support all phases of flight”*

AIM requirements: The information management resources and processes established by an aeronautical information service shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the ATM system.

Aeronautical Information Management (AIM) describes the global and interoperable provision of aeronautical data of the required quality. It covers the needs of the present and future ATM system and all phases of flight, in a data oriented, holistic approach. The role of AIM is to monitor and control the quality of the shared data and to provide mechanisms that support the ATM Community in establishing

and managing information sharing in a collective effort from all suppliers of data. It provides the basis for improved decision making by all ATM Community members during the strategic, pre-tactical and tactical planning processes.

Despite the age of the Internet, satellite navigation and computer networks, the approach to aeronautical information distribution is still based on paper charts, paper documentation and telex-based text messages. Much of the data is entered more than once in different computers using a keyboard rather than by file transfer or database transactions.

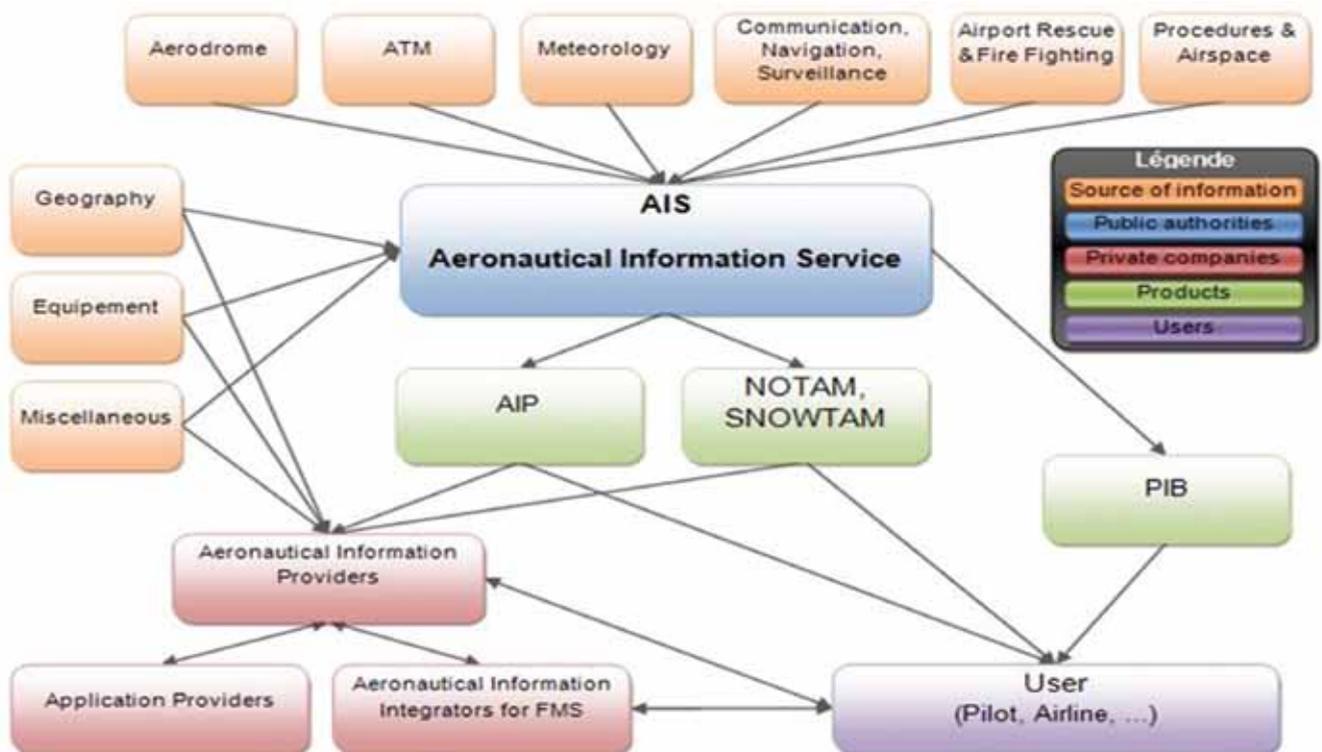
The role and importance of aeronautical information/data changed significantly with the advent of the internet era, the implementation of area navigation (RNAV), required navigation performance (RNP), air traffic management requirements, and airborne computer-based navigation systems. Hence, the traditional AIS has quite evolved to obtain quality and timely aeronautical information. Aeronautical information services have shifted to a broader concept of aeronautical information management (AIM), with a different method of information provision and management given its data-centric nature as opposed to the product-centric nature of AIS.

The computer-based navigation systems, and area navigation (RNAV), required navigation performance (RNP) and air traffic management requirements, introduced a need for new corresponding AIS requirements for quality and timeliness of aeronautical information.

The role of present AIS is to transform to an information management service, changing duties, responsibilities and scope to satisfy these new requirements and to cope with and manage the provision of information. The definition of a future high-level view as to the shape, nature and content of a strategy for the evolution from traditional product-centric AIS to the enlarged scope of data-centric aeronautical information management (AIM) began and ICAO took the lead at the global level with regard to the transition from AIS to AIM.

The aeronautical information services must transit to a broader concept of aeronautical information management, with a different method of information provision and management given its data-centric nature as opposed to the product-centric nature of AIS. The expectations are that the transition to AIM will not involve many changes in terms of the scope of information to be distributed. The major change will be the increased emphasis on data distribution, which should place the future AIM in a position to better serve airspace users and air traffic management in terms of their information management requirements.

The following chart is the basic principle of information flow in the aeronautical domain, the central role of AIS in the transmission of this information is striking: (This information flow may vary country to country)



## Role of AIS Inspector

- The Role of AIS Inspector is to ensure the flow of aeronautical information necessary for the safety, regularity and efficiency of international air navigation.
- Each ICAO Contracting State is responsible for ensuring that these obligations are discharged, whether a State itself directly provides the services defined in Annex 15 or whether this is undertaken by non-State organization(s).
- Develop and amend Inspector Handbook/Checklist necessary for inspection.
- Formulate and implement AIS Safety Audit Surveillance Program
- Prepare safety oversight inspection schedule to inspect AIS Division at CAAN Head Office, AIS Division at TIACAO, International NOTAM Office and other Aerodromes concerning AIS matters.
- Carry out safety oversight inspection and surveillance of AIS service provider to ensure the proper implementation of Annex-15, CAR- 15, related documents, manuals and directives issued by CAAN as per the approved program of the department and report deficiencies noted for remedial action.
- Prepare inspection report and highlight the deficiencies, if any to ensure flight safety, issue immediate directives to the service provider if there are any issues that need immediate attention.
- Coordinate with concerned units to amend AIS related documents to incorporate changes in ICAO SARPs and advise the Head of the Department.
- Prepare documents, manuals related to AIS.
- AIS Inspector has the authority to enter into necessary places for inspection, enquire related person and agencies, take explanation in written and verbal, collect evidences/proof etc.
- During the inspection if it is deemed that the equipment or service is unsafe in view of safety, the Inspector may stop or forbid operation of such equipment.
- During the inspection, if any unsafe activities related to AIS is identified, provide immediate order and direction for improvement and may stop such activities if necessary.



Taplejung Runway Strip

# Creating Public Awareness: Aviation Security Aspect

✉ Khageswor Aryal  
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## Introduction

Air transportation has become an indispensable part of modern day life. It is one of the fastest, safest and the most comfortable means of transportation. While talking about air travel, we cannot ignore or minimize the essence of security in aviation. Security means safeguarding civil aviation against acts of unlawful interference. Each Contracting State shall have as its primary objective the safety of passengers, crew, ground personnel and the general public in all matters related to safeguarding against acts of unlawful interference with civil aviation.

Unlawful acts can be unlawful seizure of aircraft (hijacking), destruction of an aircraft, hostage-taking on board aircraft or on aerodromes, forcible intrusion on board an aircraft, introduction of a weapon or hazardous device or material intended for criminal purposes etc. Weapons, explosives or other dangerous devices, articles or substances etc. may be used to commit an act of unlawful interference. Every state, therefore, manages security system at all airports to protect passengers, crew, ground personnel and the general public. Thus, every individual should respect aviation security norms rather than feeling harassment, fear, shy and uncomfortable.

## Security and Facilitation

Willingly and unwillingly, every individual has to go through aviation security channel. It is better to understand the basic concept of aviation security system and accept its basic norms so that nobody should feel uncomfortable and panic from the system. Generally, security norms and baseline standards are similar everywhere but depending upon a country's physical development, scenario, threat levels, different types of security measures are applied. What may be the search procedure, no person can get into the aircraft without security screening. Without compromising security controls and procedures, security personnel try to facilitate passengers in their best ways. The security personnel may be aware of the facilitation aspect of passengers but it's everybody's obligation to respect the rules and regulations of the concerned nations.

## Baggage or Items of other persons

Many people use to carry baggage, goods of relatives, friends or other persons in good faith. But, it can be a very serious case. Before accepting baggage, one should know about the items in the baggage and their nature. Ignorance of law is not excusable. It should be confirmed that whether they are legally permitted items or not. Otherwise, it may create a big trouble to the passengers. Media often carry news like passengers sent to jail as criminal because he/she was carrying some contraband items. Such types of cases happen more in the country like Nepal where people are not aware about the aviation security.

## Be in Time

Generally, a passenger should reach to airport two hours prior to departure for international travel. But, depending upon the size and air traffic volume of airport, reporting time may be changed. Airline staff or travel agency will advise to their passengers while buying tickets or it can be checked through internet. Anyway a passenger should reach to airport or transit airports in time or before time to be

comfortable and relaxed.

## Signage and Information

Varieties of signage are displayed at the airport including flight information, facilities of airport and security. Every passenger should properly understand all the signage and behave accordingly. If we want to bring unpackaged foods or animal or plants, there may be quarantine office or desk within airport for quarantine check. Thus, all those items should be passed through quarantine process. Likewise, statue or metal craft should not be carried without approval from concerned government agency.

Carrying a big amount of foreign currency beyond regulation limit, drugs, contraband are also illegal. Thus, a passenger should carry only permitted amount of foreign currencies and avoid carrying illegal items. Such types of sensitive information of travelling country should be understood before leaving for that country.

## Types of Baggage

Not only the persons, but all their belongings such as hand baggage and hold baggages are screened. There might be two types of baggage: cabin or hand baggage which is carried by the passenger, and hold baggage which is handed over to the airline staff at checking counter and kept in hold of the aircraft. Generally, three size of baggage are produced by different manufactures. Small size bag is for cabin, medium and large size baggage is for hold of aircraft. Cabin baggage should fit in the cabin baggage compartment. Some airlines measure the size of the cabin baggage at checking counter to ensure that it fits the compartment. They also check the load of all baggage as per airline company rules which vary from company to company and sector to sector.

## Dangerous Goods

Dangerous goods are articles or substances which are capable of posing a risk to health, safety, property or the environment. Certain articles or substances are classified as dangerous goods by International Civil Aviation Organization (ICAO). ICAO Documents list over 3,000 dangerous goods, and with the exception of a small number of permitted items. Dangerous goods must not be carried by passengers or crew members on their personal or cabin or hold baggage.

Some examples of forbidden dangerous goods in passenger cabin and hold baggage are as follows:

- a) explosives such as grenades, fireworks, and flares;
- b) gases such as propane and butane;
- c) flammable liquids such as gasoline and methanol;
- d) flammable solids and reactive substances such as magnesium and firelighters;
- e) oxidizing substances and/or organic peroxides such as bleach and car body repair kits;
- f) toxic and/or infectious substances such as rat poison and infected blood;
- g) radioactive material such as medicinal or commercial isotopes;
- h) corrosive substances such as mercury and vehicle batteries; and
- i) miscellaneous dangerous substances and articles such as vehicle fuel system components.

Some examples of permitted dangerous goods and items which may be carried by passengers or crew under certain conditions are as follows:

- a) Medical necessities (medical devices, cardiac pacemakers etc.)
- b) Articles used in dressing or grooming (toiletry article, hair curlers etc.)
- c) Consumer articles (alcoholic beverages, watches, calculating machines, cameras, cellular telephones, laptop computers, video recorders, etc.)
- d) Security-type equipment (attaché cases, cash boxes or bags.)

## Notice

Such types of alert information are displayed in notice board at the airport. Some examples are as follows:

- DO NOT LEAVE ITEMS OF BAGGAGE UNATTENDED

- DO NOT PLACE DANGEROUS GOODS IN BAGGAGE
- DO NOT ACCEPT BAGGAGE FOR CARRIAGE FROM OTHER PERSONS
- IF YOU ALREADY HAVE, DECLARE IT TO THE AIRCRAFT OPERATOR
- IF YOU HAVE ACCEPTED ITEMS FROM OTHER PERSONS, DECLARE THEM AT CHECK-IN FOR INSPECTION

Electric or electronic devices have the potential to be used to conceal explosive devices. If your baggage contains electric or electronic devices, it shall be declared at the check-in counter. Otherwise, if such items are discovered, the aircraft operator may refuse to carry the baggage.

## LAGs and STEBs

Generally passengers carry basic items such as water, other drinks, soups, syrups, jams, stews, sauces and pastes, other foods in sauces or containing a high liquid content, creams, lotions, cosmetics, oils, perfumes, sprays, gels including hair and shower gels, contents of pressurized containers, shaving foam, other foam and deodorants, toothpaste, liquid-solid mixtures, mascara, lip gloss or lip balm, and any other item of similar consistency at room temperature etc. They are categorized as Liquids, Aerosols and Gels (LAGs) in aviation security. All LAGs carried in hand baggage for personal use should comply with the security procedure which means such items should not be bigger than 100 ml container each and should be placed in a transparent re-sealable plastic bag with maximum capacity not exceeding 1 litre.

The other term frequently used in aviation security is STEBs that is abbreviated form of security temper-evident bags. STEBs are specially designed bags that should only be used for the sale of LAGs, Liquor, and Perfume etc. in airport outlets or on board an aircraft. The seal of the bags should not open until crossing customs point of destination airport. It is practiced on the basis of bi-lateral or multilateral agreements of the concerned countries.

## Security Equipments

To detect weapons, explosives or other dangerous devices, articles or substances which may be used to commit an act of unlawful interference and prevent civil aviation from such activities, different types of security equipment are installed at airports. They may be Walk-Through Metal Detector, Hand Held Metal Detector, Hold Baggage X-ray machine, Hand Baggage X-ray, Body Scanner, Multimode Threat Detector, Liquid Checker, Close Circuit Television (CCTV) and many more. On top of these, manual search can be done according to severity or some provision of ICAO.

Aero bridge can be used for facilitation and security purpose. It is adjusted to the aircraft from terminal sterile area for embarking and disembarking passengers. There may be security check of passenger and their carry baggage at different transit points. In some countries, there is no security check of transit passenger based on their security provision between bilateral security agreements between the countries. During security check at any point, passengers should not hide or lay anything and try to take illegal items that may harm the passengers themselves.

## Deportees

A person can be returned from the airport as a deportee. Deportee is a person who had legally been admitted to a state by its authorities or who had entered a state illegally, and who at some later time is formally ordered by the competent authorities to leave that state. Passport, visa and other related document, therefore, should be verified from concerned authorities in time. These days, cases of human trafficking or women trafficking are being increased. Everybody should be aware of these activities.

## Disruptive Passenger

There might be chances of being disruptive passenger even though all legal formalities are fulfilled during travel. A disruptive passenger is a passenger who fails to respect the rules of conduct at an airport or on board an aircraft, or to follow the instructions of the airport staff or crew members and thereby disturbs the good order and discipline at an airport or on board the aircraft. Operating cell phone or other electronic devices during take-off or landing phase of flight, disturbing other passengers and crew members after drinking alcohol, not following any advice and instruction given by airport staffs and crew members may be make one a disruptive passenger. Failing to adhere to the rules of conduct may be punishable according to the laws of concerned authority.

## Public Announcement

When passengers get off from an aircraft, they should be aware that nothing should be left in the aircraft, otherwise it will create havoc. All baggage or items at airport or in aircraft must be identified and attended. Otherwise they should be screened and controlled by security personnel or concerned authority. A passenger passes through number of security control points, and at every point, nobody should feel nervous and harassed but should be conscious at all the time and take care about their belongings. There will be public announcement by the airlines staff to call the passenger, and to give information about the flight and other information. Crew members inform the passengers about safety rule, security rules, weather condition and other relevant information in the aircraft. It can be made during take-off phase, cruising phase and landing phase of the flight and at any other time as may be required. Thus, passenger should pay high attention to the announcements and behave accordingly.

## Transit Airport

Passenger body or their hand baggage can also be searched at transit airport even though they are already screened at the source airport. It can be exempted if there is bilateral security agreement between countries. At some airports, there might be less security formalities as it is considered that departing airport comprehensively screened persons and their belongings and protected them from any contamination of unlawful acts up to the destination airport.

## Customs and Immigration

Along with the security rules, there may be customs rules, immigration rules and other prevailing rules and regulation applicable at the airport. Everybody has to obey all the rules and regulation of the country. There may be two channels in customs. One is green channel and other is red channel. Green channel is for those passengers who don't bring taxable items and can go without paying tax to the concerned authority whereas red channel is for those who bring taxable items and has to pay tax. If there is confusion regarding taxable item, then information should be obtained from custom personnel. There may be information desk or notice board at immigration and customs premises. Most of the information towards the destination can be found inside airport. It is better to take guide books, maps relating to the journey.

## Conclusion

There might be various matters or issues to be considered before and during travel for an air traveler. Different situations may be aroused and may demand unique solution. As per the changing scenario, it should be understood and tackled in different ways. ICAO has fixed standards and recommended practices (SARPs) to manage each and every activities. Among them, some of basic points or issues or conditions as per ICAO guidelines have been discussed above. If these points are considered and kept in mind seriously, certainly the travel will be more pleasant, joyful and trouble-free.

## Reference Materials;

*Civil Aviation Act, 1959*

*Civil Aviation Security Rules 2016*

*Security (ICAO, Annex 17)*

*The Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO, Doc 9284)*

*Aviation Security Manual (ICAO, Doc 8973)*

*National Civil Aviation Security Programme (2013)*

# Recreational Airlift: Pleasant Tourism

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## Concept:

Recreational aviation is a courageous flying activity within the airspace through powered or non-powered air equipment (aircraft) consuming airspace and aviation infrastructures to some extent as per the rules, regulations and procedure set for general aviation activities. If these done with the involvement of physical exertion and skill for competing each other among an individual or team or flying single as solo flyer, it is virginally an aviation sport. And if such activities are done for the enjoyment of other for some price, it is business with recreational airlift. Hence, it depends on where and how it is used either for commercial or sports purposes.

The air equipment having the Maximum Takeoff weight (MTOW) of 600 Kg or Less, activities remains within certain airspace (generally from point A to A) and having maximum extent up to two individuals is known as air sports equipment. The Ultra/Micro-light aircraft, Para trike, Para motor, Para glider, Hang glider, Hot Air Balloon are some examples. These can be used mainly in recreational airlifts such as; skydiving, free falls, Paragliding, hang gliding, Para motoring. Additionally, can also be used either in training flights, television documentary, video shooting, aerial photography, ecological monitoring of terrain, expeditions, forums, camps, patrol, site seeing, film shooting, Advertising, banner towing, flyers, flowers and gift hampers distribution and more.

Tourism is travel for pleasure or business; also the theory and practice of touring, the business of attracting, accommodating, and entertaining tourists, and the business of operating tours and related events. Particular activities chosen and undertaken outside the home are the tourism activities. So, Tourism is a collection of activities, services and industries that delivers a travel experience, including transportation, accommodations, eating and drinking establishments, retail shops, entertainment businesses, activity facilities and other hospitality services provided for individuals or groups traveling away from home. Tourism may be international, or within the traveller's country. International tourism has both incoming and outgoing implications on a country's balance of payments. Today, tourism is a major source of income for many countries, and affects the economy of both the source and host countries.

## Nepalese Tourism:

Tourists from any part of the world are free to visit Nepal. This was not so easy before 1950 due to autocratic Rana rulers. But the advent of democracy has opened its doors to all people of the world. Nepal is a small but very beautiful country, so it is the one which shouldn't be missed among the different destination of the world. Tourism can be very important and largest industry and the country's largest source of foreign exchange and revenue. The Snowcapped mountain peaks, the green forests, the rushing torrents, the deep gorges, the roaring falls, the tranquil falls, the fine flora and fauna, the antique and artistic temples attract many people to this country. It has the highest mountain, Mt. Everest, the ever flowing Himalayan rivers, glaciers, large lakes, green valleys, and lovely water falls, national parks in the Terai and Himalayan range. Lumbini, the birth place of Gautam Buddha, can be next attraction. These all natural resources will be very important for our tourism industry. The recreational airlifts are also increasing accordingly since 1996 in Nepal. Nowadays, the recreational airlift activities, specially the paragliding, have become one of the major attractions.

## The favorable topography and all season weather

Nepal lies in between 26°12'N to 30°27'N longitude and 80°04'E to 88°12'E Latitude and on Northern Hemisphere and upper equatorial region on world map. It has the diversified landscape in terms of elevation. The hill region, that covers 68 per cent of country's land, has very favorable topography and all season auspicious weather for recreational aviation activities. So, Nepal is becoming the choice of adventure enthusiasts from around the world. The stay period of tourist can be extended with such

activities. Nepal is the destination where they enjoy by paraglider, hang-glider, para-motor and ultra-light as well as can get training of for such activities throughout the year. Popular season for this adventure sport is September-November. However, paragliding is becoming popular as an all-season activity among the visitors.

### Pleasant tourism event

Recreational aviation services have become synonymous to pleasant tourism in Nepal. The following tables show the international tourist arrival to Nepal in the last two year and the number of tourists who went for recreational airlift.

Table - 1

### International tourist arrival

Arrival by/Year	Year 2015	Year 2016	% Change
Air	407,412	572,563	+41
Land	131,558	180,439	+37
Total	538,970	753,002	+40

Source: [www.tourism.gov.np](http://www.tourism.gov.np)

Table - 2

### Ultra-light and Para gliding users

Adventurers/ Year	Year 2015			Year 2016			% Change
	Ultra Light	Para gliding	Total	Ultra Light	Para gliding	Total	
Foreigner	3,872	5,692	9,564	1,780	14,666	16,446	+72
Nepalese	864	3,307	4,171	792	4,675	5,467	+31
Total	4,736	8,999	13,735	2,572	19,341	21,913	+60

Source: [www.tourism.gov.np](http://www.tourism.gov.np) & CAAN Record

According to the above tables, the international tourist arrival is increased by 40 percent in aggregate and the foreign consumer of recreational airlift services uplift grew with 72 percent and the aggregate increment of consumer of paragliding and ultra-light is up by 60 percent from year 2015 to 2016.

Approximately 9,564 and 16,446 foreigner used the recreational aviation service out of 538,970 and 753,002 in 2015 and 2016 respectively which is 1.77% and 2.18% of the total foreign tourist in the past two years..

Table - 3

### Recreational Aviation Operators and Revenue Collection in 2016

Types/Details	Existing companies	Upcoming companies	Fleets	Employment Generated	Revenue to CAAN (Rs)	Tax to NG	Remarks
Ultra-light	4	1	17	111	1,050,000	0	
Para motor	1	1	8	11	105,000	0	
Para glider	66	3	325	353	9,000,000	0	
Hot Air Balloon	0	1	0	0	0	0	
Recreational Schools	3	0	10	35	90,000	0	
Total	74	6	360	510	10,245,000	0	

Source: CAAN Record

Altogether 74 recreational aviation operator companies are in operation. 66 paragliding, 4 ultra-lights, 3 recreational flying schools and 1 para motor companies are in operation across the country. Additionally, 1 ultra-light, 1 para motor, 3 para gliding and 1 hot air balloon operator companies are in

the process.

In the past 21 years, about 3 to 4 recreational aviation companies are established per year in average. About to 90 percent of them are operating in Pokhara that makes that area a hub for recreational aviation activities. A few companies have been permitted to operate in Bandipur, Bhedetar, Surkhet, Syangja and Palpa and some are in upcoming process to operate in Bandipur (Tanahu), Kanyam (Ilam) and Dhampus (Kaski).

The industry has generated direct employment for 510 people. The contribution on revenue of civil aviation authority of Nepal from this industry is about Rs. 10 million per annum. But as per CAAN statistics, the contribution of income tax from this industry to Nepal Government is zero in 2016. It means the industry either in commercial loss or the submitted proofs of profit and loss status are manipulated.

## Conclusion

The growing trend of Recreational Aviation Commercial Operators shows that recreational airlift event is becoming one of the major activities for tourists. The promotional as well as regulatory role of the state and the continued craze of users and stakeholder on particular area ensures its future. It has to be encouraged to open more spots of recreational airlift activities all over the country with federal balance. It can play a crucial role in tourism promotion and economic progress of the country. The players involved in this sector are: MOTCA, CAAN, operators, pilots, adventurer and Nepal Air Sports Association (NAA). They have to be more rational and pro-active (till now they seem to be reactive only) to accomplish the regulation as well as promotional goal and to reap the benefits of this growing industry.



Ramechhap Airport

# Aspects of Mega Project Management:

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Mega projects are large-scale projects which combine multiple public and private stakeholders, cost a billion dollars or more, take many years to develop and build, are complex and transformational, and impact millions of people. Mega projects are a completely different breed of project in terms of their level of aspiration, lead times, complexity, and stakeholder involvement.

Mega projects are increasingly used as the preferred delivery model for goods and services across a range of businesses and sectors, like infrastructure, water and energy, information technology, industrial processing plants, mining, supply chains, enterprise systems, banking, defense, intelligence, air and space exploration, urban regeneration, and major events. Examples of mega projects are high-speed rail lines, airports, highways, motorways, hospitals, national health system, the Olympics, large-scale architecture, dams, large scale irrigation projects and hydropower generation etc.

Generally, there are four major sublime parameters that really add the value of mega projects and those are strongly associated with them:

1. Technical: technological innovation, competition, better design, bigger size infrastructure etc.
2. Economical: Job creation, involvement of private organization, investors, bankers etc.
3. Political: manifesto, garner attention, media magnets, type of public exposure that helps get politicians re-elected.
4. Aesthetic: pleasure of designers, good design, iconically beautiful.

The main intention of policymakers and decision makers for the investment in infrastructure of mega projects seems particularly coveted, because, if done right, such investment:

- Creates and sustains employment.
- Contains a large element of domestic inputs relative to imports.
- Improves productivity and competitiveness by lowering producer costs.
- Benefits consumers through higher-quality services.
- Improves the environment when infrastructure is environmentally sound.

Mega Construction Projects (MCPs) are the strategic tools for achieving the ultimate development goal. Generally, MCPs are characterized with the need for high design knowledge and technical skills; competent human resources and managerial capabilities as well as excessive cost investment. Unfortunately, developing countries experience shortage of many of these requirements, which obstruct the development of MCPs. Approximately 85.4% of the world's population lives in developing countries. Such countries should develop MCPs to achieve their social and economic sustainable development objectives. This is accomplished through constructing infrastructural, industrial, educational, cultural, transportational, medical, and residential projects that provide societies with their needs and fulfill their requirements. MCPs are complex, risky and time-consuming undertakings that are usually commissioned by governments and delivered by national and international participants with a variety of cultural differences, backgrounds, political systems, and languages. They attract high levels of public attention and political interest due to the substantial cost, direct and indirect impact on the community, environment and budgets.

Large scale mega projects have much more complexities and they are hard to manage. Conventionally managed mega projects are highly problematic in terms of its associated cost and its benefit delivery. The following characteristics of mega projects are typically overlooked or glossed over when the four sublime parameters are at play and the megaproject format is chosen for delivery of large-scale ventures:

1. Mega projects are inherently risky due to long planning horizons and complex interfaces.
2. Often projects are led by planners and managers without deep domain experience and who keep changing throughout the long project cycle that apply to megaproject.
3. Decision-making, planning, and management are typically multi-actor processes involving multiple stakeholders, public and private, with conflicting interests.
4. Technology and designs are often non-standard, leading to "uniqueness bias" amongst planners and managers, who tend to see their projects as singular, which impedes learning from other projects.
5. Frequently, there is over commitment to a certain project concept at an early stage, resulting in "lock-in" or "capture," leaving alternatives analysis weak or absent, and leading to escalated commitment in later stages. "Fail fast" does not apply, "fail slow" does.
6. Due to the large sums of money involved, principal-agent problems and rent-seeking behavior are common, as is optimism bias.
7. The project scope or ambition level will typically change significantly over time.
8. Delivery is a high-risk, stochastic activity, with overexposure to so-called "black swans," i.e., extreme events with massively negative outcomes. Managers tend to ignore this, treating projects as if they exist largely in a deterministic Newtonian world of cause, effect, and control.
9. Statistical evidence shows that such complexity and unplanned events are often unaccounted for, leaving budget and time contingencies inadequate.
10. As a consequence, misinformation about costs, schedules, benefits, and risks is the norm throughout project development and decision-making. The result is cost overruns, delays, and benefit shortfalls that undermine project viability during project implementation and operations.

### **Characteristics of Mega Projects in Developing Countries:**

Development of infrastructure with mega project management in developing countries like Nepal is not a simple task. Following are the characteristics existed with mega projects in developing countries.

#### **Characteristics related to Project Nature, Objective, Location, Time, Cost, and Risk**

- Colossal in size and scope, takes decades to plan, design, finance and build.
- Located in remote and/or inhospitable areas.
- Costly and often under-estimated.
- Controversial and often have financing difficulties.
- Risky undertakings, especially when project priorities and objectives are changed.
- Shortage of labour and suppliers.
- Lack of planning and cost estimate.
- Poor technology and traditional delivery methods.

#### **Characteristics related to Client(s) and Performing Organization Structure**

- The client is often a government or public sector organization.
- The main contractor or consortium of contractors are usually privately owned, financed and often from various countries with variety of cultural differences, backgrounds, political systems, and languages, seeking success with different objectives.
- Complex management structure and the matrix and project organizational forms are used interchangeably.
- Insufficient experience of performing organization in managing complex undertakings.
- Continuous organizational restructuring may be necessary as each project goes through a different life-cycle phase.
- The performing company often retains an ownership stake in the project after completing the construction phase in a special purpose vehicle and is paid by the client for the service that flows from the asset's operation or use over a number of years.

#### **Characteristics related to Engineering Design and Technical Requirements**

- Complex projects that demand high design knowledge, professional technological skills and

logistical support.

- Necessitates multidisciplinary contributions from various organizations.
- Long-term projects require program planning, control and highly trained employees especially in the field of Project Management.
- Requires clearly defined rules and procedures as well as effective communication at all levels.
- Requires quality front-planning.
- Projects captivation due to their size, engineering achievements and aesthetic design call for virtual enterprise for the implementation of the project through exploiting fast-changing opportunities and confronting problems as early as possible.

### Characteristics related to Environment, Society, Economy and Policy

- Public acceptance or hostility due to the social, economic, political and environmental impacts.
- Important role of politics in senior management appointments and other activities.
- Poor risk analysis and inappropriate identification of the project consequences.

### Some Challenges of Mega Projects:

The MCPs require high design knowledge and technical skills, competent human resources, professional managerial capabilities and large-scale investment. In contrast, developing countries suffer from the inability in providing these essential knowledge, skills, capabilities, and finance, which ultimately challenge the development of MCPs.

Based on their nature, the identified challenges were classified into four categories, namely,

- (1) Engineering Challenges,
- (2) Human Development Challenges,
- (3) Managerial and Political Challenges and
- (4) Sustainability Challenges.

Various challenges are associated with the development of megaprojects in developing countries like Nepal which are listed as follows.

- Lack of design knowledge and experience related to (MCPs)
- Lack of professional expertise and full consideration of technical requirements
- Misunderstanding and partial achievement of project objectives
- Lack of financial resources, cost-control and venture capital
- Lack of research capacity and business innovation
- Missing intermediary bodies
- Unfavourable regulatory framework
- Lack of high-skilled human resources
- Bureaucracy and corruption practices
- Lack of political support and inefficiency
- Difficulty in resourcing the right skills that match with project demands and geography
- Lack of experienced staff to accept critical roles which they are not prepared of
- Governance decisions fail to strike a balance between short-and long-term objectives and effective risk mitigation
- Improper identification and engagement of various stakeholder groups in the early project phases.
- Tight service market and lack of internal capacity.
- Improper implementation of project management processes and training of key project staff.
- Lack of on-site skilled workers or local labour forces.
- Lack of properly trained on-site supervisors.
- Huge number of people and organizations of different specialties involved in mega projects development.
- Ill-defined rules and procedures as well as inappropriate use of prior experience to review contingencies.

- Inadequate communication at all levels and poor coordination as well as interface management among stakeholders.
- Lack of quality front-end planning.
- Improper decision making, and neglecting specialists and stakeholders consultation during the decision making process.
- Lack of construction material availability.
- Ignorance of health and safety considerations as well as the absence of health and safety acts.
- Weak governance of project management.
- Political imperatives and authority misuse.
- Inability in exploiting uncertainties.
- Project authorization pressures on individuals.
- Failure to invest sufficiently.
- Unachievable targets cause sub-optimal project outcomes.
- Lack of efficiency and effectiveness of the Project Management.
- Unrealistic risk analysis and inappropriate identification of the project consequences.
- Inappropriate behavior of the client organization and absence of national policy for the resettlement of affected people.
- Poor understanding of environmental requirements, preserving historical sites and natural resources.
- Poor use of experience and competency of client and contractor organizations.
- Inability in managing complexities of work content and work processes.
- Lack of strategic project planning and effective leadership.
- Inability to manage social and cultural complexity
- Inappropriate level of scientific and technological knowledge and application.
- Lack of quality education and professional training programmes.
- Political tension between countries.
- Stakeholders change project requirements at later stages of the project life cycle.

## Conclusion:

Successful projects are those which are not only completed within the given timeframe and cost; but also yield expected outcome and fulfill the expectation of general public i.e. the targeted beneficiaries. There are some important success factors for public construction projects, which are awareness of and compliance with rules and regulations; pre-project planning and clarity in scope; effective partnering among project participants; and external monitoring and control.

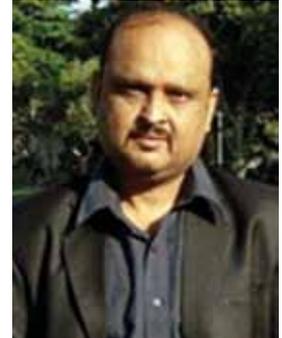
Similarly, other factors that make a project successful are monitoring, coordination, design, training, and institutional environment. The control and management of projects are, of course, the factors determining project success in an operational perspective, but we argue that a focus on the initial phases is even more important. Common success factors are: a clear vision and a strong political will, an independent and stable project delivery organization implemented at an early stage, a charismatic, highly professional project manager, a sound financial setup from the start of the project based on a realistic business case, adequate procedures for legal consents with fallback options, a comprehensive and systematic stakeholder management with open communication, and a stringent change management process.

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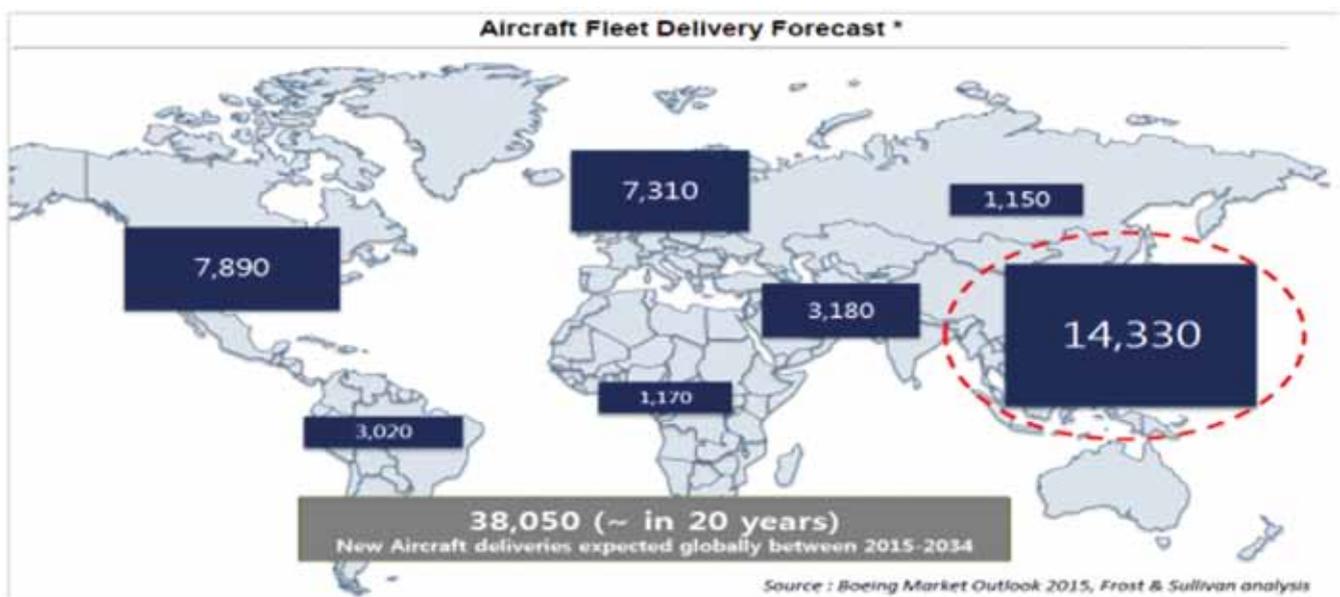
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# Seamless ATM and ASBU Strategy: An introduction

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Despite considerable challenges in many parts of the world, the Asia Pacific region has been achieving an unprecedented growth in aviation sector to lead the global economic growth. Connectivity, frequencies, seat capacities, and number of destinations have increased significantly in Asia Pacific countries, while fares have mostly gone down with the entry of low cost carriers in the market over the last decade; in turn, greatly improving direct benefits for passengers. In fact, 60% of the world's population is in this region. With the rise of middle class with higher purchasing power in China and India and entry of competitive low cost carriers with the adoption of new technology and new business models in Southeast Asia, the aviation is contributing to the regional economic development as a whole. Furthermore, economic integration and labor mobility are also to see a consistent growth of travel within and between various nations/regions which are the drivers for continued contribution to air traffic growth and the nations/region's aviation development.



In this regards, some of the development may be at risk, however, if aviation infrastructure capacity and management fails to keep pace with emerging growth in demand. As aviation is interdisciplinary in nature, one of the indispensable system to enable the growth of air traffic for the sake of smooth operation of traffic with the necessary enhancement of air transport capacity, safety, efficiency and also to continue to reduce impact on environment is Seamless Air Traffic Management (ATM).

## Seamless ATM:

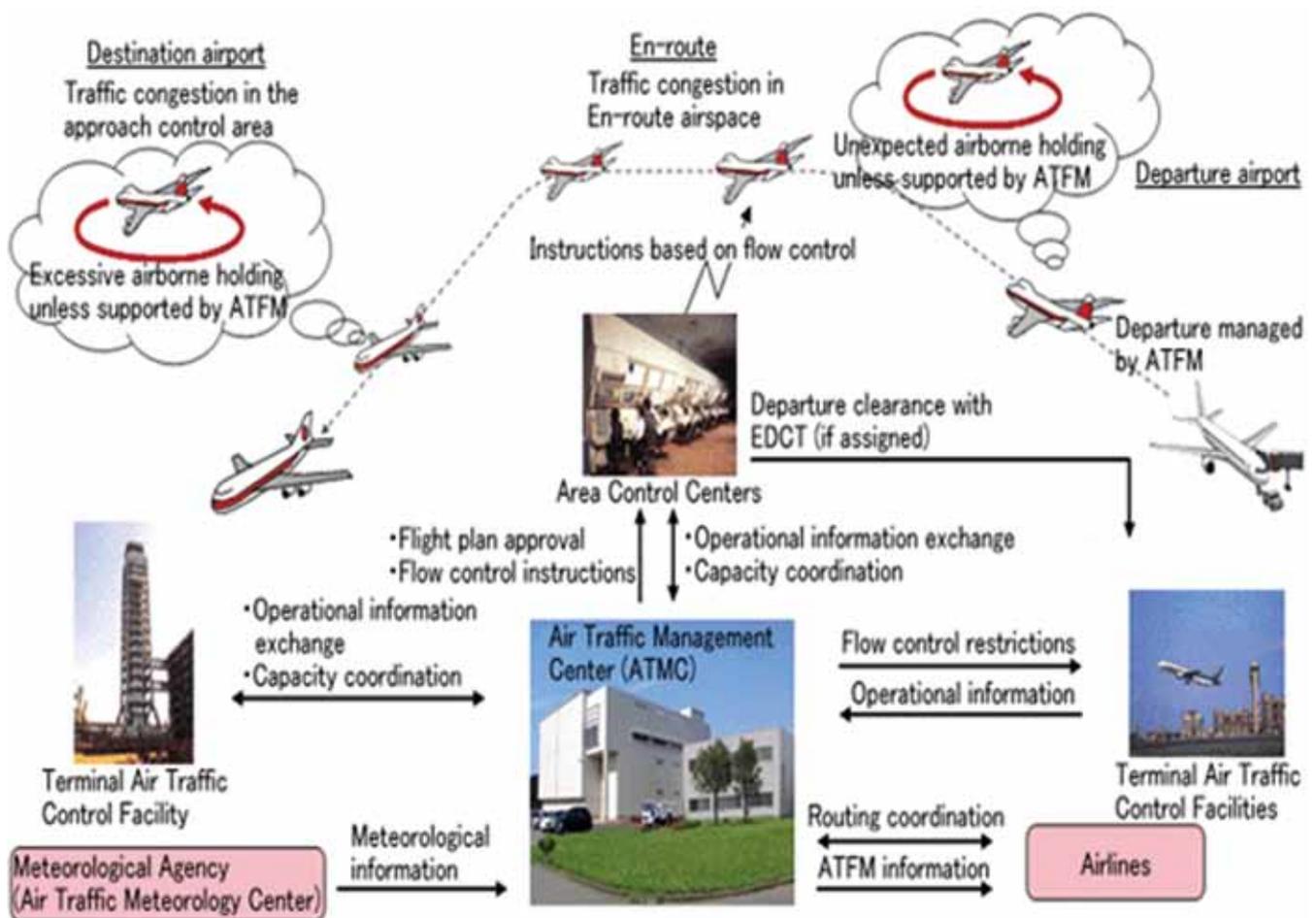
A dynamic, integrated management of Air traffic and airspace including Air traffic services (ATS), Air Space management (ASM) and Air traffic flow management (ATFM), in collaboration of all ATM communities, with smooth, continuous or uniform in quality of the provision of facilities and services for safe, economic and efficient operation of aircraft in all phases of flight with the involvement of airborne and ground-based systems is Seamless ATM.

ATC systems have been developed by individual states with the involvement of limited number of ATM community that concentrated on their own requirements, creating different levels of service and

capability around the world. The Asia Pacific region provides many opportunities but the only way these can be realized is by collaboration among the ATM providers, airlines, regulators and the respective countries. Currently, there is little harmonization across FIRs, resulting in different levels of ATM infrastructure and capability, and uneven traffic flows. The Seamless ATM system will enable ANSPs throughout Asia Pacific to enhance safety, capacity and operational efficiency to meet the future demands of civil aviation.

Seamless ATM is recognized by ICAO as an integrated, harmonized and homogeneous form of system by virtue of which the ICAO is aiming to address the increasing emphasis of modern ATM to deliver the safe and interoperable provision of a harmonized and consistent ATM service that allow an aircraft to operate with the minimum of performance change from one airspace to another appropriate to the airspace category and free of transitions due to a change in the ANSP or FIR over borders and across the whole region.

Even though Seamless ATM is much more complex business involving many actors and systems, it needs to be well planned, organized and structured through the principle of collaborative decision making with ATM community to ensure a high safety standard. Thus the Seamless ATM Asia/Pacific concept was raised by ICAO in the 46th DGCA Conference (Osaka, 2009) by issuing the Kansai Statement through which it is expected that the traffic growth and emerging issue will be resolved.



### Need of Seamless ATM:

Presence of vast oceanic airspace and lack of access to airspace administered by military has impeded efficient utilization of airspace while due to unequal economic, social and political scenario, air navigation infrastructure are diversified and the nations in the region have different level of aviation activities. Organizations/States/ANSPs like: ICAO, FAA, IATA, Euro-control, APAC, MoCTCA have been developing their own infrastructure tailored to suite their own national needs, and established future plans without having any integrated means of coordination process, leaving behind integrated and harmonized ATM modernization plans. Thus ICAO as a uniting organization, recognized the Seamless ATM system as a measures to cope with emerging issues. It will facilitate air navigation systems planning and implementation and assist to define homogenous ATM areas for the regions. Without effective regional

Seamless ATM implementation, there will be a significant economic and environmental penalty, as well as safety implications. So, Seamless ATM is indispensable system to unite and bring all the nations in a same line through harmonized and interoperability ATM process.

CAA, Nepal should also take some initiation to acquire some opportunities from the vary development.

### **The Principles of Seamless ATM:**

As agreed by Asia Pacific Seamless ATM plan Group (APSAPG) and endorsed by Asia Pacific Air Navigation Plan Implementation Regional Group (APANPIRG), States/ANSPs should follow the following basic principle for effective implementation of Seamless ATM System:

1. High-level political support including development of educational information for decision-makers to support Seamless ATM initiatives, including military cooperation and Aeronautical Information Management (AIM).
2. Education and implementation of non-punitive reporting and continuous SMS improvement systems through the appropriate application of aviation regulations, standards and procedures.
3. Harmonized regional or sub-regional rules and guidelines, modeled on the regional application of common regulations incorporated by reference into local legislation.
4. Shared ATM operational standards, procedures, guidance materials through common manuals and templates.
5. The promotion of mutual recognition of ATM qualifications between States.
6. An emphasis on delivery of ATM services based on CNS capability, resulting in flexible and dynamic systems.
7. The use of high-fidelity simulators to train controllers on the optimal application of ATC separations and procedures that support Seamless ATM applications, emergency and contingency responses and may serve as a backup ATM platform.
8. Cross-border/FIR cooperation for use of aeronautical facilities and airspace, collaborative data sharing, airspace safety assessment and ATM Contingency planning.
9. Promoting flexible use airspace arrangements and regular review of airspace to ensure it is appropriate in terms of purpose, size, activation and designation.
10. The optimization of airspace structure and ATM facilities through unification and use of technology including automation, satellite-based systems and remote facilities.
11. Early implementation of AIM, including cooperative development of aeronautical databases and SWIM to support interoperable operations.
12. Encouragement of aerodrome operators to actively participate in ATM coordination in respect of Airport Collaboration Decision Making (A-CDM) development and operational planning, including aerodrome complexity and capacity.
13. Planning and coordination with local authorities and government agencies to take in account of environmental issues, obstacles, aerodrome and PBN development for augmentation with regional systems in terms of interoperability and increased service areas.
14. Encouragement of appropriate technologies that support Trajectory-Based Operations, ATFM, SWIM, Arrival/Departure Manager (AMAN/DMAN) tools, CCO/CDO, MSAW/STCA, and Inter-facility Flight Data Processing System capability, ADS-B/MLAT, AIDC, ATN/AMHS, VDL, ATIS and VOLMET systems.
15. Inter-regional cooperation for the research, development and implementation of ATM projects and focus on technologies for earliest deployment and best cost benefits.
16. Collaboration by ANSPs for evaluation and planning of ATM facilities.

### **Seamless ATM Plan - Asia/Pacific:**

As agreed by 46th DGCA conference, APANPIRG will be a platform to discuss and plan on a future ATM system for the Asia Pacific Region. APANPIRG (Bangkok) formed the APSAPG to develop a Seamless ATM Plan and endorsed by APANPIRG/24 in June 2013 which is consistent with the Global ATM Operational Concept (Doc 9854). The plan is intended to set expectations for ATM upgrades in the region's busiest aviation with the objective to facilitate Asia/Pacific Seamless ATM operations, by

developing and deploying ATM solutions capable of ensuring safety and efficiency of air transport throughout the Asia/Pacific region to meet future performance requirements.

The Plan provides a framework for a transition to a Seamless ATM environment. It will provide the opportunity for the Asia/Pacific region to adopt the benefits from research and development conducted by various countries, including the NextGen programme (USA), the European Single European Sky ATM Research (SESAR), and Japanese Collaborative Actions for Renovation of Air Traffic Systems (CARATS).

homogeneous ATM area based on similar characteristics of traffic density, complexity, air navigation system infrastructure requirements or other specified considerations are identified by the plan so that common detailed plan will be developed with a common ATM interest to foster the implementation of interoperable ATM systems. Moreover, it is expected that such homogeneous ATM areas may extend over states, specific portions of states, or groupings of states and may also extend over large oceanic and continental areas. In this regards, the Plan is expected to encourage more partnering relationships among the countries within sub-regions for the integration, harmonization and globally interoperable ATM System with a planning horizon up to and beyond 2025.

### Scope and priorities of Seamless ATM Plan

Since the Seamless ATM Plan was developed as part of a suite of Asia/Pacific air navigation plans, and thus, the Plan should not be considered in isolation. It incorporated the Regional ATFM framework, ATM Contingency Plan and SAR of the Asia Pacific. The PBN Plan of Asia Pacific region is also forms a part of the aforementioned suite of planning and guidance material connected to the Plan. Moreover, the ICAO's Global Aviation Navigation Plan (GANP) together with the Regional Air Navigation Plan (RANP) is expected to incorporate key components of the Seamless ATM Plan and information on the mechanisms that enable these objectives to be met though high-level support necessary from regional bodies such as ASEAN; APEC and SAARC, which might be a challenge for effective implementation of the Plan.

Besides many expectation from the plan, there are some basic regional priorities and targets endorsed by APANPIRG/25 for the effective implementation of the Plan:

- a) PBN: Where practicable, all high density aerodromes (scheduled operations in excess of 100,000/year) with instrument runways serving aeroplanes should have precision approaches or APV or LNAV.
- b) Network Operations: All High Density FIRs supporting the busiest Asia/Pacific traffic flows and high density aerodromes should implement ATFM incorporating CDM using operational ATFM platform/s.
- c) AIM: ATM systems should be supported by digitally-based AIM systems through implementation of Phase 1 and 2 of the AIS-AIM Roadmap

### Aviation System Block Upgrade (ASBU):

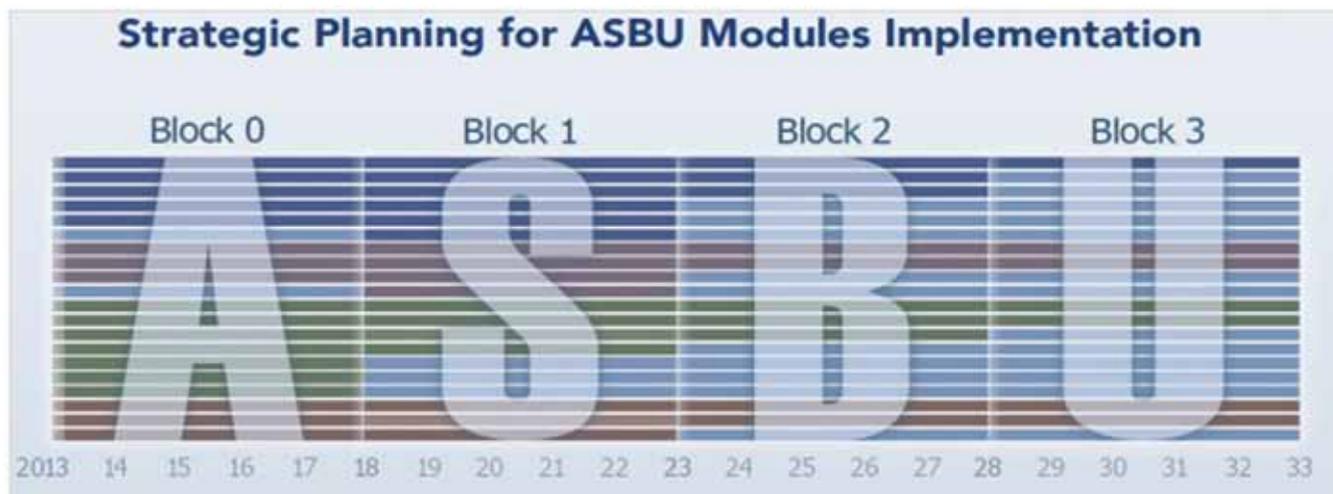
Seamless ATM plan should be consistent with the GANP that comprises a framework of Aviation System Block Upgrade (ASBU) for harmonizing avionics capabilities and the required ATM ground infrastructure as well as automation. Hence, ASBU is considered as only a part of the solution of the seamless ATM plan in the implementation phase.

The ASBU framework is ICAO's systems engineering approach to achieve Seamless ATM and the Block Upgrades are the product of inclusive and prolonged collaboration between ICAO, ANSPs, member states and industry stakeholders from around the world. A number of air navigation improvement programmes, namely NextGen, SESAR, CARATS and others, undertaken by ICAO member states such as Canada, China, India, and the Russian Federation are being implemented with the ASBU framework. Thus the ASBUs are being a programmatic and flexible strategy to provide a roadmap to assist ANSPs in the development of their individual strategic plans and investment decisions with a goal of global aviation system interoperability, which allows ANSPs to advance their air navigation system based on their individual.

The Block Upgrades present target implementation time frames for sets of operational improvements, referred as modules. A single module defines a single capability (operational improvement) and its required technologies and procedures. Each Block Upgrade has been organized into a set of unique modules that are linked to four aviation performance improvement areas (PIAs): Airport Operations, Globally interoperable system/data and Optimum capacity and flexible Flights and Efficient flight path.

Even though all ASBU modules (Block 0, 1, 2 and 3 including 18 modules) may not be applicable to

every region/state as each region/state has different operational environments, traffic volumes, airspace structure together with the capabilities of aircraft, many ANSPs like CAAN, do not provide an ATC service as per ASBU framework. Regardless of the scenarios to harmonize global planning of technology, ICAO has initiated various activities like training and filing ATM status on website to explore and develop the ASBU measures for harmonization of the Seamless ATM so that the future ATM system will be transformed from the existing systems for a broad community of ANSPs into seamless worldwide operations and support progressive levels of avionics equipment. Hence ASBUs will become an enabler for future aviation systems worldwide to manage traffic demand efficiently and enhance safety, capacity, predictability, security, effectiveness, and environmental protection.



### Phase of Seamless ATM Plan and ASBU:

The Seamless ATM Plan is expected to be implemented in two phases. Neither phase nor any element is binding on any state, but should be considered as a planning framework. The Seamless ATM Plan itself is therefore a guidance material. It is important to note that the Plan's Phase commencement dates are planning targets, and should not be treated like a 'hard' date such as the implementation of RVSM. However, states should consider the impact on stakeholders and improving capacity of the ATM system overall by not achieving target implementation dates. The draft phase dates should be chosen as an achievable target for the majority of states. However, the dates should not be designed so as to accommodate the least capable state, otherwise the region as a whole would fall behind the necessary urgent ATM improvements required by ANSPs and APANPIRG.

The Seamless ATM Plan references at different levels. At the upper level is a global perspective, which is guided mainly by references to the GANP (Doc 9750), the Global ATM Operational Concept (Doc 9854) and the Global Aviation Safety Plan (GASP). Beneath this level is regional planning, primarily provided by this plan and other guidance material, in order to define goals and means of meeting state planning objectives, such as: Asia/Pacific Regional Air Navigation Plan (RANP, Doc 9673).

ASBU comprises four Phases: Phase 1 (2013/Block 0), Phase 2 (2019/Block 1), Phase 3 (2023/Block 2) and Phase 4 (2028+/ Block 3). Neither phase nor any element is binding on any State, but should be considered as a planning framework. The timing is not mandatory, but if applicable, states need to achieve these dates as close to the targets as possible.

### Updating process of the Seamless ATM Plan:

As an iterative process, the Seamless ATM Plan requires regular updating to keep current with aviation system changes. If the element of the ASBU: Block 0, 1, 2 and 3 and their associated technology become mature then the plan should be updated. It is intended that APANPIRG and its contributory bodies conduct a complete review every three years or a shorter period determined by APANPIRG of the Plan to align with the review cycle of the GANP. The Plan and its subsequent revisions should be endorsed by APANPIRG. Thus review of the CNS strategies needs to result in the update to the Seamless ATM Plan to ensure consistency. Periodic updates to the plan are also required in respect of the economic information contained therein. The Seamless ATM Plan Version 1 and 2 were endorsed by the APANPIRG in Sept. 2013 and Sept. 2016 respectively.

### Status of the seamless ATM/ASBU strategy in Nepal:

Nepal as a developing and landlocked together with contracting state of ICAO, may grasps lot of opportunities from the Seamless ATM Plan/ASBU strategy with technical and financial support, specially from rapidly developing adjacent countries: India and China, which might be milestones for the adoption of the plan and the strategy. Thus, CAAN can proceed with the implementation according to the plan for harmonized operations. Nepal itself is trying to catch and align up gradually with the ICAO Seamless ATM/ASBU strategy by adopting principle and measures guided by APANPIRG. e.g filing deficiencies-preparing corrective action plans and taking initiation for their remedy and again filling remaining deficiencies which help to gear up for the gradual implementation of Seamless ATM plan-Asia/Pacific.

Slow progress of development and implementation of ATS infrastructure with corresponds to traffic growth is a major deficiency of Nepal, resulting inefficient operation of the Seamless ATM plan/ASBU strategy. Deadlock position for the transformation of AIS to AIM, implementation of AIDC and SAR agreements with adjacent FIRs and slow progress of ATS route restructure for enhancing efficiency, and increasing capacity are major challenges for the implementation of the plan and strategy in Nepal. Immediate construction of SIA, Nijgad, and installation of ADS-B, AIDC, ATFM, A-CDM and establishment of PBN based bidirectional RNAV Domestic/International Cross-Boarder Route with user friendly Entry/Exit point together with the operation of Trans-Himalaya Route might be the contributing factors for the adoption of Asia Pacific Seamless ATM plan and ASBU strategy in Nepal.

## Conclusion

The ICAO vision of global harmonization by means of Seamless ATM and ASBU strategy which are based on the need for uniform level of safety and optimized traffic flows across all regions, sub-regions and states together with physical system-to-system connectedness and sharing pertinent data across systems and regions. Common performance requirements/standards and operating procedures with Common aeronautical information exchange are the essential component for the success of Seamless ATM. ASBU strategy is designed so that regions and state like Nepal can adopt and implement the system and technologies based on their respective needs. Whenever system is implemented, it will be harmonized and interoperable with the rest of the world.

Thus the seamless ATM will play vital role to cope with the emerging challenges in aviation industry by taking account of the application of Seamless ATM Principles with involvement of People (human performance), Facilities (physical equipment), and Technology/ Information. The close collaboration between airport management and other stakeholders is also essential for the development of the capacity of the regional air transport network. CAAN as a service provider organization is committed to adopt seamless ATM and ASBU strategies for the enhancement of Nepal's ATM field gradually.

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# नेपाल नागरिक उड्डयन प्राधिकरणमा आन्तरिक पर्यटन भ्रमणसम्बन्धी गतिविधि

✎ निरञ्जन मल्ल ठकुरी  
प्रबन्धक, ने.ना.उ.प्रा.



## १. पृष्ठभूमि

नेपाल नागरिक उड्डयन प्राधिकरणका कर्मचारीहरूलाई आन्तरिक रूपमा आफ्नो देशको सामाजिक, सांस्कृतिक, भौगोलिक सम्पदा एवं विविधता आदिको चिनारीबाट कर्तव्यपरायण भई राष्ट्र र राष्ट्रियताको उत्थान गर्ने कार्यमा सदा तत्परताका साथ उत्साहित गराई राख्न तथा आन्तरिक पर्यटन प्रवर्द्धनमा समेत सघाउ पुऱ्याउन उपर्युक्त देखिएकोले, नेपाल नागरिक उड्डयन प्राधिकरण कर्मचारीहरूको सेवाका शर्त र सुविधासम्बन्धी नियमावली, २०५६ (संशोधनसहित) को नियम ५.३ को उपनियम (६) ले दिएको अधिकार प्रयोग गरी नेपाल नागरिक उड्डयन प्राधिकरणले देहाय वमोजिमको निर्देशिका बनाई मिति २०७०/९/१ देखि लागु गरेको हो । तत्पश्चात नेपाल नागरिक उड्डयन प्राधिकरण प्रधान कार्यालय र अन्तरगतका कार्यालयमा नियमानुसारको अवधि पुगेका कर्मचारीहरू सो निर्देशिकाको अनुसूची -१ मा रहेको आन्तरिक पर्यटनका लागि छनौट भएका स्थानहरू २० मध्ये जुनसुकै स्थानमा आन्तरिक पर्यटन भ्रमणमा जान थालेका हुन् ।

## २. गतिविधि

प्रस्तुत लेखमा नेपाल नागरिक उड्डयन प्राधिकरण प्रधान कार्यालय र त्रिभुवन अन्तरराष्ट्रिय विमानस्थल ना.उ.कार्यालयका कर्मचारीहरूलाई आधार बनाई निजहरूले मिति २०७० पुस १ देखि २०७४ असार ३१ सम्मको अवधिमा कुन कुन स्थानहरूको आन्तरिक पर्यटन भ्रमण गरे, तिनका अनुभव के कस्तो रह्यो र यस्तो भ्रमणका बारेमा तिनले के कस्ता राय सुभावा प्रस्तुत गरे भन्ने बारेमा पुनरावलोकन गर्ने जमर्को गरिएको छ ।

### २.१ सर्वाधिक भ्रमण गरिएका स्थान

(क) प्रधान कार्यालयबाट

आ.व. सर्वाधिक भ्रमण गरिएका ५ स्थान (संख्या)

२०७०/७१ पोखरा (२१), धरान (१५), चितवन/इलाम (१२/१२), लुम्बिनी/काठमाडौं उपत्यका/भेडेटार (११/११/११),  
मनकामना/जनकपुर/भापा (९/९/९)

२०७१/७२ पोखरा (२३), चितवन (१२), लुम्बिनी (११), इलाम (७), हलेसी (६),

२०७२/७३ पोखरा (२४), चितवन (१४), लुम्बिनी (१७), धरान (१३), मुक्तिनाथ (१२)

२०७३/७४ पोखरा (१८), इलाम (१५), जनकपुर (१४), लुम्बिनी (१२), धुलिखेल (९)

(ख) त्रि.अ.वि.ना.उ.कार्यालयबाट

आ.व. सर्वाधिक भ्रमण गरिएका ५ स्थान (संख्या)

२०७०/७१ पोखरा (१०५), मुक्तिनाथ (४८), लुम्बिनी (४४), धरान (३७), धनकुटा(३२)

२०७१/७२ पोखरा (७७), चितवन (६९), लुम्बिनी (५९), जनकपुर (२०), इलाम (१५)

२०७२/७३ पोखरा (६५), चितवन (६९), लुम्बिनी (४६), इलाम (२५), जनकपुर (२४),

२०७३/७४ जनकपुर (३७), पोखरा (३२), लुम्बिनी (२२), चितवन (१९), मुक्तिनाथ/धरान (१८/१८)

### २.२.१ प्रमुख ५ आन्तरिक पर्यटन भ्रमण गन्तव्यहरू

१. पोखरा (प्रथम स्थान ७ पटक, दोश्रो स्थान १ पटक)
२. लुम्बिनी ( दोश्रो स्थान १ पटक, तेश्रो स्थान ५ पटक, चौथो स्थान २ पटक)
३. चितवन ६ (दोश्रो स्थान ३ पटक, तेश्रो स्थान २ पटक, चौथो स्थान १ पटक)
४. जनकपुर ५ (प्रथम स्थान १ पटक, तेश्रो स्थान १ पटक, चौथो स्थान १ पटक, पाँचौ स्थान २ पटक)
५. इलाम ५ (दोश्रो स्थान १ पटक, तेश्रो स्थान १ पटक चौथो स्थान २ पटक, पाँचौ स्थान १ पटक)

### २.२.२ अन्य प्रमुख गन्तव्यहरू

१. धरान ४ (दोश्रो स्थान १ पटक, चौथो स्थान २ पटक, पाँचौ स्थान १ पटक)
२. मुक्तिनाथ ३ (दोश्रो स्थान १ पटक, पाँचौ स्थान २ पटक)
३. काठमाडौं उपत्यका १ (चौथो स्थान १ पटक)  
भेडेटार १ (चौथो स्थान १ पटक)
४. धनकुटा १ (पाँचौ स्थान १ पटक)  
हलेसी १ (पाँचौ स्थान १ पटक)  
मनकामना १ (पाँचौ स्थान १ पटक)  
भापा १ (पाँचौ स्थान १ पटक)  
धुलिखेल १ (पाँचौ स्थान १ पटक)

### २.२.३ अन्य गन्तव्यहरू

दोलखा, रिडी/रारा/सुर्खेत/नुवाकोट, पाथीभरा/गोरखा, जिरी/हिले/घान्द्रुक, बन्दिपुर, टीकापुर, स्वर्गद्वारी, खिम्ती/पाख्रीबास, शुक्लाफाँटा/चाँदनी दोधारा, लमजुङ/गोसाईकुण्ड, कोहलपुर, खप्तड/नाम्चेबजार, चिसापानी, मेलम्ची/तेह्रथुम/मनाङ्ग, गढीमाई, दाङ्ग, घोडाघोडी, रेसुंगा/अन्नपूण, बर्दिया

### २.२.५ हालसम्म आन्तरिक पर्यटन भ्रमण नगरिएका गन्तव्यहरू

भोजपुरको ट्याम्के डाँडा, सालपा पोखरी, पिके दुधकुण्ड ट्रेल, सोलुखुम्बु, तामाङ्ग हेरिटेज ट्रेल, चेपाङ्ग हिल, घन पोखरी, सिरुवारी, सल्यानको खैरावाङ्ग भगवतीको मन्दिर, बाजुरा बडिमालिका, रामारोशन

### २.२.५ आन्तरिक पर्यटन भ्रमणमा जाने कर्मचारीले लिने गरेको विदा – भैपरी/पर्व विदा, सट्टा विदा

### २.२.६ भ्रमण दिन – २ देखि ७ दिनसम्म

### २.२.७ भ्रमण समय– तुलनात्मक रूपमा बढी असोज, कार्तिक, चैत्र र असार

२.२.८ भ्रमण अनुभव– त्यस्तो भ्रमणमा जाने सबै कर्मचारीहरूले खुसी प्राप्त गर्ने गरेको, अधिकांश कर्मचारीहरूले पारिवारिक आनन्द लिन पाएको, नयाँ ठाँउ र जनजीवनको जानकारी हासिल गर्न पाएको, कार्यालयको दैनन्दिनीबाट केही समयका लागि भएपनि ताजगी एवं स्फूर्ति प्राप्त गरेको, सबैको भ्रमण आ-आफ्नै प्रकारले रमणीय भएको, आफूले इच्छा गरेको ठाउँको भ्रमण गर्न पाएकोमा अपूर्व आनन्दको अनुभूति भएको जस्ता अनुभव वर्णन गरेका छन् ।

### २.२.९ सुझाव निष्कर्ष

सबै कर्मचारीहरूले कार्यालयले प्रदान गरेको यस अवसरको लागि धन्यवाद दिँदै यसको निरन्तरताको अपेक्षा गरेका छन् । भ्रमणबाट फर्केपछि पेश गर्नुपर्ने बिलभर्पाई भ्रमणको लागि एकमुष्ट रकम प्रदान गरेपछि बिलभर्पाई खोज्नु नपर्ने, बरु भ्रमण प्रतिवेदन र फोटोलाई आधिकारिक मान्नुपर्ने, पारिवारिक भ्रमण हुने हुँदा खर्च रकम वृद्धि गर्नुपर्ने, नयाँ नयाँ भ्रमण गन्तव्य तोकियो पर्ने, भ्रमणको लागि विदा लिन नपर्ने व्यवस्था गर्नुपर्ने, बरु आन्तरिक पर्यटन विदा

भनी नयाँ विदाको व्यवस्था हुनुपर्ने, कुनै कुनै ठाउँ अन्त्यन्त टाढा हुने भएको तिनका लागि भ्रमण अवधि पनि बढाउनु पर्ने भ्रमण प्रतिवेदनहरू पुस्तकालयमा राख्नु पर्ने जस्ता सुझाव दिएका छन् ।

### ३. उपसंहार

मिति २०७० पुस १ मा आन्तरिक पर्यटन विदा सम्बन्धी निर्देशिका, २०७० स्वकृत भएपछि ने.ना.उ.प्रा. कर्मचारीहरूले प्राप्त गरेको आन्तरिक पर्यटन भ्रमणको अवसरलाई कर्मचारीहरूले स्वागत र सराहना गरेका छन् । अधिकांश कर्मचारीहरू यस किसिमको सुविधाबाट लाभान्वित भएका छन् । नागरिक उड्डयन जस्तो अत्यावश्यकिय सेवामा खटिनु पर्ने भएको पुनर्ताजगीको लागि यस्ता भ्रमण सुविधाले कर्मचारीको मनोबललाई उत्प्रेरित गरेको रहेछ भन्ने कुरा निजहरूले व्यक्त गरेका अनुभवबाट छर्लङ्ग भएको छ । त्यसैले तिनीहरूले यस्ता भ्रमण क्रमको निरन्तरताको लागि सुझाव पनि दिएको देखिन्छ । यसबाट निर्देशिकाले अपेक्षा गरेको पाँचवटा उद्देश्य कुनै न कुनै रूपमा सफल भएका महशुस गर्न सकिन्छ । निर्देशिका लागू भएको ४ वर्ष पूरा हुन लाग्दा यसको पुनरावलोकन पनि गरिनुपर्ने देखिन्छ भन्दै निर्देशिकाको दफा ५.२ मा यसको व्यवस्था पनि भएकोले प्रशासन विभागले एक उच्चस्तरीय कार्यदल बनाई हरेक २/२ वर्षमा पुनरावलोकन गरी/गराई आवश्यक देखिएमा संशोधनका लागि संचालक समिति समक्ष पेश गर्नुपर्ने देखिन्छ ।

यदाकदा कर्मचारी वृत्तबाट केही कर्मचारीहरूद्वारा यस सुविधाको दुरुपयोग हुने गरेको भन्ने गुनासो पनि नसुनिएको होइन । यस्ता गुनासोहरू हटाउने/घटाउने गरी अब हुने पुनरावलोकनका क्रममा संबोधन गर्नुपर्ने पनि देखिएको छ । निर्देशिकाको दफा ५.१ (४) मा प्रशासन विभागले अनुसूची १ मा उल्लिखित पर्यटन गन्तव्य स्थल थपघट गर्न सक्नेछ भन्ने व्यवस्था गरेको हुँदा चाँडै प्रशासन विभागले यस सम्बन्धी कार्य गर्नु पर्ने आवश्यकता छ । त्यसरी थपघट गर्नुपर्दा हालसम्म कर्मचारीहरू सर्वाधिक गएका र जाँदै नगएका गन्तव्यहरू पुनरावलोकन गर्नुपर्ने वाञ्छनीय देखिन्छ । आन्तरिक पर्यटन भ्रमणका लागि नयाँ गन्तव्य तोकदा पर्यटन प्रवर्द्धनको प्रचुर संभावना बोकेका ऐतिहासिक स्थल जस्तै विभिन्न गढीहरू र पुरातात्विक महत्वका क्षेत्रहरू धार्मिक/सांस्कृतिक विभिन्न जातीय विशिष्टीकृत सम्पदाहरू भौगोलिक/सिमसार प्राकृतिक सौन्दर्य र जैविक विविधतायुक्त क्षेत्रहरू, कुनै उत्पादनको लागि ख्याति आर्जन गरेका स्थानहरू, पदयात्राका लागि प्रसिद्ध स्थानहरू आदिलाई आधार मान्नु गलत नठहरिएला । पुनरावलोकनका क्रममा कर्मचारीहरूका सुझावहरूलाई मनन गरी आवश्यक संशोधन गनुपर्ने देखिएमा सो समेत गर्न हिचकिचाउनु नपर्ला ।

गन्तव्य स्थान कुनै टाढा र कुनै नजिकका हुने हुँदा आन्तरिक पर्यटन भ्रमणमा जाने गन्तव्य हेरी सोही अनुसार भ्रमण अवधि स्वीकृत गर्नु जायज देखिएला । निर्देशिकाको ५.४(२) बमोजिम भ्रमण सम्बन्धी भुठो विवरण पेश गरेको पाइएमा दफा ७.२ बमोजिम कारवाही गर्नु अन्यथा नठहरिएला । निर्देशिका सम्बन्धी धेरै कार्य सम्पादन गर्नुपर्ने भएकोले प्रशासन विभागले निर्देशनालयहरू, अर्थ विभाग र आन्तरिक लेखापरीक्षण विभागसँग अझ बढी समन्वय गरी कार्य गरेमा आन्तरिक पर्यटन भ्रमण कार्यक्रम भन्ने सफल हुनेमा दुई मत छैन ।

# नेपाल नागरिक उड्डयन प्राधिकरणमा बोनस

☞ सुनिल मूल  
प्रबन्धक, ने.ना.उ.प्रा.



## पृष्ठभूमी :

राष्ट्रको सर्वाङ्गिक विकासका लागि हवाई क्षेत्रको विकास अपरीहार्य रहन्छ । भौगोलिक विकटता एवं भू(विषमताले जकडिएको र निरपेक्ष गरीबीको रेखामुनिको ठूलो जनसंख्या रहेको नेपालमा हवाई क्षेत्रको विकास, विस्तारले भौगोलिक निकटता, सन्तुलित क्षेत्रीय विकास र गरीबी निवारणमा समेत विशेष टेवा पुऱ्याउन सक्छ । त्यसैले पनि राज्यले यस क्षेत्रलाई उच्च प्राथमिकतामा राख्दै आएको पनि छ । त्यसैले हवाई क्षेत्रको सुदृढीकरण कार्यमा संलग्न जनशक्तिको क्षमता अभिवृद्धि गरी कार्य सम्पादनमा सुधार र मनोबल अभिवृद्धि गर्दै गुणस्तरीय उड्डयन सेवाको विकास गर्नु आवश्यक छ ।

## वित्तीय स्थिति:

प्राधिकरण स्थापना वर्ष ०५५/५६ (२०५५ पौष १६ देखि) अन्तिम लेखापरीक्षण सम्पन्न भएको वर्ष ०७२/७३ सम्मको वित्तीय तथ्याङ्कअनुसार संचित नाफा तथा नोक्सानको स्थिति हेर्दा स्थापना वर्ष ०५५/५६ देखि ०५९/६० सम्म खुद नाफा नकारात्मक रहेकोमा आ.व. ०६०/६१ देखि आ.व.०६४/६५ सम्म सकारात्मक रहेको र आ.व.०६५/६६ मा पुनः नकारात्मक रही त्यस पछिका वर्षहरू आ.व.०६६/६७ देखि खुद नाफा सकारात्मक रही आएको देखिन्छ । त्यसैगरी प्राधिकरण स्थापना वर्ष ०५५/५६ देखि खुद नाफाको गणनाबाट हेर्दा संचित नाफा आ.व.०६७/६८ सम्म नकारात्मक देखिएको र आ.व.०६८/६९ देखि सो नाफा सकारात्मक रही आएको देखिन्छ । जसको विवरण देहाय बमोजिम रहेको छ ।

Income & Expenditure Scenario (Figures in Million)

F/Y	Income	Exp.	NPBIDT	Int.	Dep.	Extra Ordinary	I.Tax	Net Profit (Loss)	Cumulative Loss	Remarks
2055/056*	418.34	89.86	328.48	106.01	568.96	0.00	0.00	(346.49)	(346.49)	Certification
2056/057	912.44	293.44	619.00	222.81	1046.44	0.00	0.00	(650.25)	(996.74)	Certification
2057/058	1177.61	276.75	900.86	259.54	1028.51	0.00	0.00	(387.20)	(1383.94)	Certification
2058/059	1235.60	357.04	878.56	306.61	871.73	0.00	0.00	(299.78)	(1683.71)	Certification
2059/060	1162.10	399.07	763.03	308.73	743.10	0.00	0.00	(288.80)	(1972.51)	Certification
2060/061	1258.20	401.64	856.56	121.90	629.33	(651.98)	0.00	757.30	(1215.21)	Certification
2061/062	1375.59	425.79	949.80	287.42	537.34	(35.81)	0.00	160.85	(1054.35)	Certification
2062/063	1551.82	485.38	1066.44	262.77	464.46	(3.19)	0.00	342.40	(711.95)	Certification
2063/064	1567.04	545.42	1021.62	169.99	404.88	357.57	45.64	43.55	(668.40)	Certification
2064/065	1952.88	545.51	1407.37	153.98	611.90	73.00	152.00	416.49	(251.91)	Certification
2065/066	2339.31	1441.41	897.90	237.09	782.40	1318.42	(338.41)	(1101.60)	(1353.51)	Certification
2066/067	2444.83	1007.54	1437.30	219.07	714.77	310.45	(14.19)	207.20	(1146.31)	Certification
2067/068	2738.06	1100.45	1637.61	152.17	651.87	(20.46)	156.99	697.05	(449.27)	Certification
2068/069	3365.44	1157.83	2207.62	154.85	615.67	38.91	(44.91)	1443.10	993.83	Audited
2069/070	3546.14	1405.39	2140.76	146.64	566.90	(913.77)	392.02	1948.97	2942.81	Audited
2070/071	4047.51	1722.10	2325.41	96.06	603.25	(42.24)	417.08	1251.25	4194.05	Pro.State
2071/072	4426.03	2128.82	2297.21	56.92	666.58	(1381.88)	393.43	2562.15	6756.20	Pro.State
2072/073	4591.16	2000.93	2590.22	31.55	667.02	0.00	472.91	1418.74	8174.95	Pro.State

\* Half Yearly Figure

## वजेट विनियोजन :

प्राधिकरणको गत वर्ष ०७३/७४ को स्वीकृत वार्षिक वजेट तथा कार्यक्रममा बोनस ऐन, २०३० बमोजिम संचित नाफा सकारात्मक रहेको वर्ष ०६८/६९ देखि ०७१/७२ सम्मको वित्तीय विवरणबाट देखिएको संचित नाफाको आधारमा कर्मचारीहरूलाई बोनस वितरणका लागि रु. ५३ करोड २७ लाख र श्रम ऐन, २०४८ बमोजिम नाफाको ५ प्रतिशत कर्मचारी आवास सुविधाको लागि छुट्याइनु पर्ने कानूनी प्रावधानअनुरूप यस वर्षका लागि अनुमानित नाफाको ५ प्रतिशतले हुन आउने रु. ३८ करोड ३५ लाख बजेट व्यवस्था गरिएको थियो । त्यसैगरी नेपाल सरकारलाई लाभांश वापत प्राधिकरणको संचित नाफाको आधारमा आ.व. ०६८/६९ र ०६९/७० सम्म भएको लगानीको ३.५ प्रतिशतका दरले र आ.व. ०७०/७१, ०७१/७२, सम्ममा भएको लगानीको २ प्रतिशतका दरले रु. १ अर्ब ४७ करोड ६२ लाख व्यवस्था गरिएको थियो । यसै सिलसिलामा सोही कार्य प्रयोजनार्थ चालू वर्ष ०७४/७५ को वजेट तथा कार्यक्रममा समेत कर्मचारी बोनसका लागि रु.७४ करोड ८१ लाख, नेपाल सरकारीको लगानी वापत लाभांश भुक्तान गर्न रु. १ अर्ब ६३ करोड ५९ लाख र आवास व्यवस्था अन्तर्गत रु. ५३ करोड १५ लाखको वार्षिक वजेट विनियोजन गरिएको छ ।

## बोनस सन्दर्भमा जारी निर्देशन र कार्यान्वयनको स्थिति :

वोनस ऐन, २०३० बमोजिम प्रत्येक प्रतिष्ठानले एक आर्थिक वर्षमा गरेको खुद मुनाफाको १० प्रतिशत बराबरले हुन आउने रकम कर्मचारीलाई बोनस वापत छुट्याइनु पर्ने (दफा ५) र एक आर्थिक वर्षमा गरेको खुद मुनाफा निर्धारण गर्दा आयकर ऐन, २०५८ बमोजिम कायम हुन आउने खुद आयबाट श्रम ऐन, २०४८ बमोजिम कर्मचारीहरूको वासस्थानको व्यवस्था गर्नका लागि रकम कट्टी गर्नुपर्ने (दफा ४१ को उपदफा १) मा व्यवस्था रहे अनुरूप कानूनमा रहेको उक्त व्यवस्थाबमोजिम नै प्राधिकरणबाट कार्यान्वयनका लागि वजेट विनियोजन गरी यस प्रक्रियाको थालनी गरिएको हो । ऐन, नियममा भएको व्यवस्थालाई अक्षरशः पालना गर्दै अन्तिम लेखापरीक्षणको प्राप्त प्रतिवेदन समेतको आधारमा यस तर्फको कार्यान्वयन प्रक्रिया अघि बढेको हो ।

प्राधिकरण नेपाल सरकारको पूर्ण स्वामित्वमा रहेको संस्थाको हैसियतले माथि उल्लेखित व्यवस्था कार्यान्वयन पूर्व नेपाल सरकारबाट यससम्बन्धी आवश्यक सहमति प्राप्त गर्नुपर्ने हुन्छ । सोही सिलसिलामा आवश्यक सहमति माग गर्नु पूर्व प्राधिकरणबाट यस सम्बन्धमा जारी निर्देशनहरू पालना गर्दै उक्त कार्यहरू सम्पन्न गरी प्राधिकरण सञ्चालक समितिबाट भएको सैद्धान्तिक निर्णयबाट संस्कृति, पर्यटन तथा नागरिक उड्डयन मन्त्रालयमा सहमतिका लागि अनुरोध भई गएको र मन्त्रालयस्तरबाट यससम्बन्धी निर्णय भई नेपाल सरकार, अर्थ मन्त्रालय समक्ष कार्यान्वयन सहमतिका लागि अनुरोध भएको अवस्था छ ।

कर्मचारीहरूलाई बोनस वितरण तथा नेपाल सरकारमा लाभांश वापत भुक्तान गर्ने सम्बन्धमा तत्सम्बन्धी बेलाबखत नेपाल सरकारबाट जारी भएका निर्देशनहरूलाई मध्येनजर गर्दै यस कार्यको कार्यान्वयन गर्ने सिलसिलामा देहायअनुरूप यस प्राधिकरणबाट कार्य सम्पन्न भई सकेको अवस्था छ :

(क) बोनसका लागि आकर्षित भएको नाफा वर्षको वासलात लगायतका वित्तीय विवरणहरू अन्तिम लेखापरीक्षकबाट प्रमाणित भएको हुनुपर्ने कानूनी विषयका सम्बन्धमा प्राधिकरण स्थापना वर्षदेखि आकर्षित भएको आर्थिक वर्षसम्मको सम्पूर्ण वित्तीय विवरणहरूका साथ वासलात हिसाब तथा विवरणहरू अन्तिम लेखापरीक्षकबाट प्रमाणित भईसकेको छ ।

(ख) प्राधिकरण, नेपाल सरकारको पूर्ण स्वामित्वको लगानीमा सञ्चालित संस्था भएको हुँदा नेपाल सरकारको शेयर तथा ऋण लगानीका हिसाब खातापाताहरू दुरुस्त अद्यावधिक राखिनु पर्ने हुन्छ । यसका लागि प्राधिकरण तथा नेपाल सरकारमा रहेका दुवै निकायतर्फका शेयर तथा ऋण लगानी हिसाबहरू विगत धेरै वर्षदेखि एकरूपता हुन नसकी बाँकी रहेकोमा दुवै निकायमा रहेका उक्त हिसाबकितावका खातापाताहरू अद्यावधिक गर्न र प्राधिकरण स्थापना बखत प्राधिकरणका लागि नेपाल सरकारबाट हस्तान्तरण भई आएका सम्पति हिसाबमा भएका गणितीय त्रुटीहरू समेत मिलान गर्दै दुरुस्त हिसाव कायम गरी अद्यावधिक गर्नु पर्ने छ । यस सिलसिलामा अर्थ मन्त्रालयअन्तर्गत रहेको महालेखा नियन्त्रक कार्यालय र यस प्राधिकरण सम्मिलित दुवै पक्ष रही हिसाव मिलानका सन्दर्भमा अध्ययन छलफल गरी संयुक्तरूपमा सिफारिस सहितको प्रतिवेदन पेश भई यस सम्बन्धमा मन्त्रिपरिषद्बाट निर्णय हुनुपर्ने भएकोले प्राधिकरण, सञ्चालक समितिबाट निर्णय भई संस्कृती, पर्यटन तथा नागरिक उड्डयन मन्त्रालयमार्फत् मन्त्रिपरिषद्मा तत्सम्बन्धि निर्णयका लागि अनुरोध भई गएकोमा यस सम्बन्धमा अर्थ मन्त्रालयबाट सहमति स्वीकृति भईसकेको अवस्था छ ।

(ग) सार्वजनिक संस्थानअन्तर्गत सञ्चालनमा रहेका सरकारको पूर्ण स्वामित्वमा परिचालित संस्थाहरूको लेखामान ढाँचा र सोको वित्तीय विवरण विद्यमान समयानुकूल सर्वमान्यतामा आधारित लेखाङ्कन अभिलेखिकरण गरी पारदर्शी ढङ्गले आर्थिक



उपभोग गर्नु सर्वथा अनुचित होइन । कानूनले दिएको सुविधा नै कार्यान्वयन गर्ने हो । प्राधिकरणले पुन्याउनु पर्ने सेवाको स्तर खस्किएको छैन बरु हिजो सरकारको पूर्ण लगानीमा रही पूर्ण सरकारी कर राजश्वको व्ययभारमा आधारीत रही सञ्चालनमा आइरहेको अवस्थामा आज प्राधिकरण स्थापनापश्चात प्राधिकरण कै आयआर्जनले आत्मनिर्भर भई राज्यलाई विशेष टेवा पुन्याउँदै आइरहेको छ । यस अलावा सरकारको लगानीको प्रतिफलस्वरूप साँवा व्याजको नियमित भुक्तान र संस्थागत आयकर समेतको ठूलो परिमाणमा नियमित रूपमा समयसीमा भित्रै बुझाउँदै आइरहेको छ । यस तथ्यबाट राज्य सञ्चालनको आर्थिक प्रणालीमा विशेष टेवा पुन्याउँदै आइरहेको प्रष्ट हुन्छ । वास्तवमै भन्नुपर्दा विशेषतः प्राधिकरणले कुनै कानूनी छिद्रलाई आधार बनाएर बोनसको प्रक्रियालाई अघि बढाएको पक्कै होइन । न त हिजो संस्थागत घाटाको अवस्थामा पनि प्राधिकरणले कुनै सरकारी तथा अन्य अनुदान नै प्राप्त गरेको थियो । यस्तो स्थितिमा विद्यमान ऐनमा भएको व्यवस्थाअनुरूप कार्यान्वयन भएको बोनसको मागलाई अन्यथा सोच्नुमा कुनै तुक छैन । अतः यस प्रक्रियालाई कार्यान्वयनस्तर सम्म पुन्याइनु नै पर्छ । अन्यथा विद्यमान सार्वजनिक संस्थामा बोनस वितरण गर्ने भन्ने व्यवस्था नै हटाई दिए हुन्छ, या ऐनमा कमजोरी छ भने सच्याउँदा नै हुन्छ ।

त्यसैगरी, सार्वजनिक संस्थानले जुन वर्षमा नाफा आर्जन गर्‍यो त्यही वर्षको आँकडालाई लिएर बोनस खाने गलत प्रवृत्ति रहेको भन्ने सोच आममानिसहरूमा व्याप्त रहेको देखिन्छ, विशेषगरी उपल्लो वर्गमा आसिन सरकारी सेवामूलक संस्थासँग आवद्ध पदाधिकारीहरूमा । यसमा सञ्चार जगतमा आवद्ध समुदायहरू पनि अछुतो रहेको देखिँदैन । वास्तवमा यस्तो स्थिति देखिनु कुनै अनौठो कुरा भने होइन, किनभने सरकारी निकायमा कार्यरत पदाधिकारीहरूमा सेवारत वर्गका लागि यस्तो व्यवस्था रहेको छैन र विश्वभरीका मूलुकहरूमा यसको प्रचलन रहेको पनि पाइँदैन । यसका प्रमुख कारण हेर्दा राज्यस्तरबाट जनतालाई पुन्याउनु पर्ने अनिवार्य सरकारी सेवामा कार्यरत राष्ट्रसेवकहरू यस प्रकारको व्यवस्था अन्तर्गत पर्दैनन् पनि । यस दृष्टिकोणबाट हेर्दा सरकारको सम्बद्ध निकायबाट निर्णय हुनुपर्ने बाध्यात्मक व्यवस्थामा जुन वर्गले यस सुविधा उपभोग गर्नबाट बञ्चित रहेको कारणले पनि नकारात्मक सोच उत्पन्न हुनु स्वभाविकै ठहर्दछ । त्यसलाई बुझाईमा मात्र गलत मान्न सकिन्छ । वास्तवमा नाफा भएकै वर्षको आधारमा बोनस वितरण हुने भने होइन । एक अवधिले देखाएको नाफाको अंक अघिल्लो अवधिहरूको नाफा घाटा सँग सम्बन्धित रही संचित भएर आएको हुन्छ । घाटामा रही आएको संस्था कुनै वर्ष नाफामा गयो भन्दैमा बोनस आर्कषित हुने होइन । अघिल्लो वर्षहरूको घाटाको अङ्कलाई पूर्ति गर्दै पछिल्लो लगातार कम्तिमा तीन वर्षको अवधिलाई आधार मानेर खुद मुनाफाको आधारमा मात्र बोनस आर्कषित हुने हो । अतः यस विषयमा निकायगत बुझाई बारे व्यापक बहस जरूरी छ ।

नेपालका सार्वजनिक संस्थानहरू पाँच प्रकारका ऐनद्वारा गठन गरिएका छन् । निश्चित उद्देश्य र लक्ष्यसहित स्थापित भएका यसप्रकारका संस्थानहरूमा कम्पनी ऐनअनुसार २६ वटा, संस्थान ऐनअनुसार २ वटा, संस्थानसम्बन्धी विशेष ऐनअनुसार ७ वटा, सञ्चार ऐनअनुसार २ र बैंक तथा वित्तीय संस्थासम्बन्धी ऐनअनुसार ४ वटा रहेका छन् । प्राधिकरण ऐन अनुसार नेपाल नागरिक उड्डयन प्राधिकरण रहेको छ । नेपालमा रहेका सार्वजनिक संस्थानहरूको गत वर्षको तथ्याङ्कलाई हेर्ने हो भने मुलुकमा छरिएर रहेका सार्वजनिक संस्थानमध्ये २३ वटा नाफामा र १२ वटा नोक्सानीमा रहेका देखिएका छन् भने नागरिक उड्डयन प्राधिकरण खुद नाफामा रहेको संस्थानअन्तर्गत रहेको छ । यस प्राधिकरणको वित्तीय अवस्थाको विवरणअनुसार नाफाको अङ्कलाई प्रत्येक वर्षहरूमा क्रमशः सुधार गर्दै पछिल्लो वर्ष अर्थात् गत वर्ष ०७२२७३ मा १ अर्ब ४१ करोड ८७ लाख रुपैयाँ खुद नाफा गर्न सफल रहेको तथ्यांक हामी सामू विद्यमान रहेको छ ।

### निचोड :

नेपालमा सरकारी लगानीबाट सञ्चालनमा रहेका अधिकांश सार्वजनिक संस्थानहरू क्रमशः घाटा तर्फ लम्किँदै गइरहेको अवस्थामा संस्थागत आर्थिक प्रगतिका लागि दत्तचित्त रहने जनशक्तिलाई बोनसको व्यवस्थाअनुरूप मूर्त अनुभूति दिलाउनु श्रेयष्कर हुनेछ । अन्यथा संस्थामा आवद्ध कर्मचारीको मनोबलमा कमजोर रहन गई नाफा आर्जन गरिरहेको संस्था घाटामा पुग्न बेर लाग्दैन । त्यसैगरी सार्वजनिक संस्थाले नाफा, नोक्सान भन्दा पनि संस्थाले गर्ने आम्दानी र पूँजीगत लगानीहरूमा विशेष ध्यान पुन्याइनु पर्ने देखिन्छ । संस्थागत सार्वजनिक उत्तरदायित्व सँगै यदि बोनसका लागि छुट्याइएको रकम तत्सम्बन्धिका निम्ति कार्यान्वयन नहुने हो भने विनियोजित रकम पूर्वाधार विकासमा लगाउनु उचित हुने देखिन्छ । अर्थात् संस्थालाई क्रमशः उत्पादनमूर्खी बनाउँदै यसको व्यापक विस्तृतीकरणको दिशामा ध्यान केन्द्रित तुल्याइनु वान्छनीय हुन्छ ।

# Increasing Difficulties at the TIA

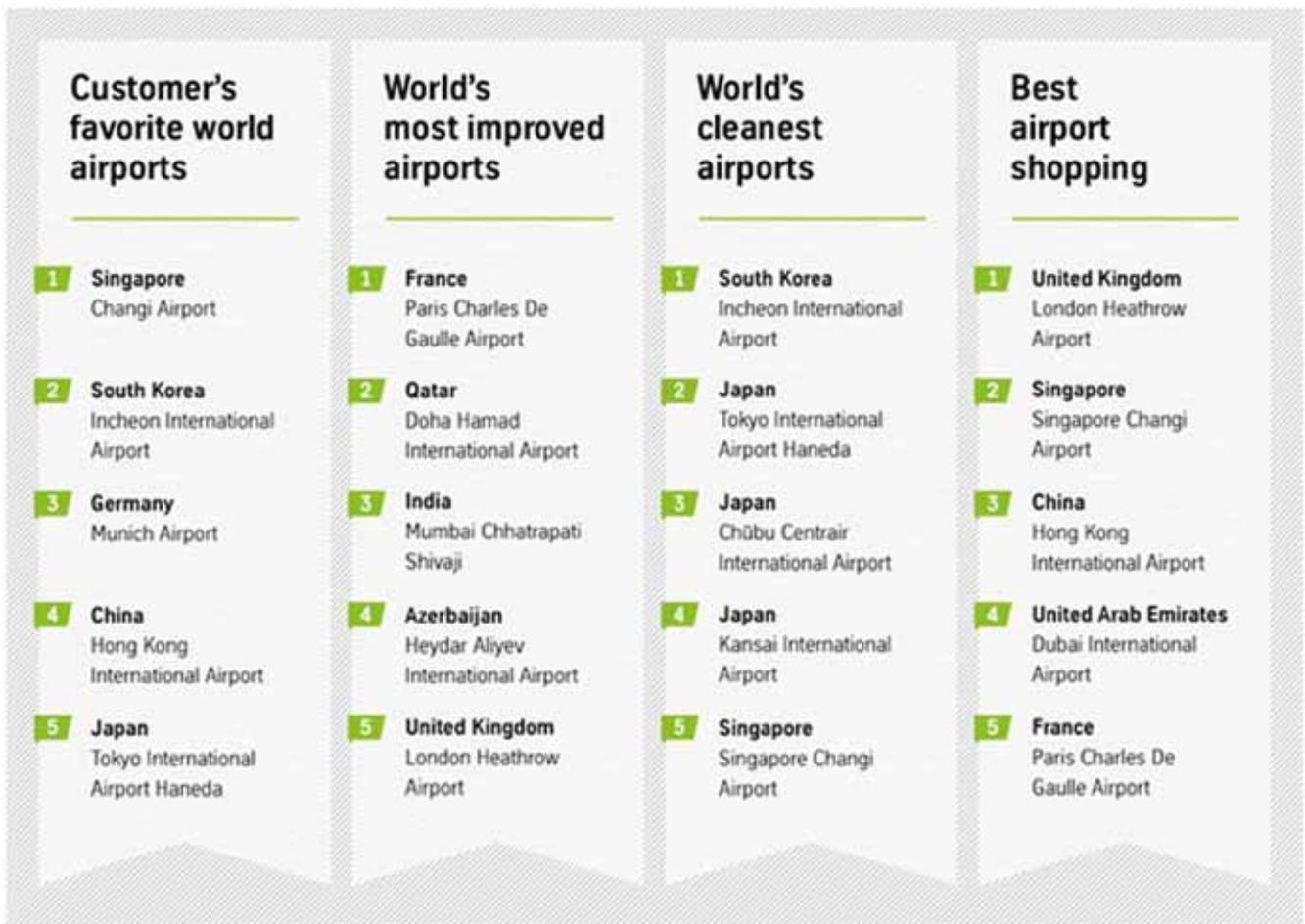
✉ Nabin Pd. Acharya  
Manager, CAAN



Aviation in Nepal started with the landing of 4 seated aircraft on the grassy land of Gauchar 68 years ago in 1949. In the long journey of aviation, Nepal has only one international airport, the Tribhuvan International Airport (TIA), connecting to the world through air-link. TIA has developed massive infrastructure from its early stage of grassy land but still these facilities are not sufficient to meet the present demand of air traveller and flight movements as the both are increasing rapidly.

Bowl shape of Kathmandu valley, limited land for expansion as well as the proximity to the dense city area are the main geographical limitation for this airport. Now the major concern of TIA for user and operators is flight delay. Travellers are facing delayed flights, missed connection, ground congestion, parking shortage and long waiting times in the terminal building. Airlines, air traffic management, ground handling and other services of airport are interconnected and there should be efficient cooperation and coordination to cope with the arising challenges. Action is needed to make the best possible use of its existing infrastructure, at the same time quality and efficiency of services at airport must be improved.

Airport and its infrastructure are very important for economic development of any country. Airports are not limited to transport people and goods, now airports have developed into more complex airport cities. Airports have highly important role to play for the development of country and providing connection at regional and global level.



If we look the worldwide aviation activities, as per ICAO data, 3.8 billion passenger travelled on schedule service in 2016, which is 6.8 percent higher than the previous year 2015. Similarly, approximately 53 million tons of freight were carried in 2016. The growth rate in the movement of cargo was 3.8 percent from the 1.3 percent recorded in 2015. According to IATA, air traffic is expected to grow by 5.4 percent per year, reaching 3.9 billion passenger by 2017. The Asia Pacific region is the largest region with 33 percent of world air traffic, 10.2 percent growth in 2016. ICAO estimates that air traffic in the Asia Pacific region will triple by 2030.

With the growing economic development, Nepal has a lot of tourism potentialities. As a major gateway to Nepal for air traveler, facilities and overall services at the TIA reflects our country image.

For the flight safety and aviation security, airport boundary is categorized in 2 parts; 1) Airside and 2) Landside area including Terminal buildings.

1. Airside area: The area where aircraft loading and servicing takes place, these area includes Runway, Taxiway and Apron gate areas and directly used in the arrival and departure of an aircraft. TIA airside covers those parts of the airport that do not allow access to the general public, airside includes apron, hanger and perimeters related with the operation of aircraft.

## **Increasing difficulties at Airside:**

### **1. Airfield Characteristics**

The physical characteristics and layout of runway, taxiway, and apron are the basic determinants to accommodate different types of aircraft which they can handle. The type of equipment (lighting, navigation aids, radar,) installed on the airfield are also important. If we change or extend the present configurations of airfield, traffic handling capacity will be increased. The TIA has geographical limitations such as one way approach, Single Runway, surrounding terrains and limited land for extension. Parking bay problem for domestic and international flights as well as taxiway congestion are the challenges. For this, link taxiway at the both end of the runway should be extended. We must build new domestic parking bay at north-east side of the Runway, open area of existing Radar antenna site. International parking bay should be extended towards the whole area of existing domestic parking area. New feasibility study should be done for the possibility of making new parallel runway of 2000 feet length towards Northeast of the airfield, so that all the STOL aircraft to Lukla can operate flight from there without disturbing others, or is it possible to extend Runway 16/34 of old Gauchar further east by 2000 feet from the existing runway intersection point so that it can be used for STOL aircraft operation.

We can change our air traffic control procedure accordingly with the changing Runway layout and flight operation procedure. This type of plan will be cheaper and can complete in short time. We have the other option of making new STOL airfield at nearest point east of Kathmandu. Pokhara and Bhairahawa airport extension project plan for bigger aircraft will definitely increase our capacity. But timely completion is very crucial to cope with the increasing challenges.

## **Airspace Characteristics:**

The geography for a particular airfield cannot be changed and airspace has been designed accordingly. But, satellite based technologies are being used in aviation. Area navigation as well as RNAV approach procedure are designed for safe and efficient operation. In Nepali FIR we have categorized our airspace in Class C and Class G airspace and have been providing service to all flights accordingly. With the changing pace of time and technology, we have to review our airspace characteristics so that we can increase our traffic handling capacity.

## **Air Traffic Control Equipment and procedures:**

ATC rules and procedures have an especially important influence on capacity of and delay at airport. The rules and procedures of air traffic control, related to assure safety of flight, are basic determinants of airport capacity and delay. The rules for aircraft separation, runway occupancy, spacing of arrivals and departures can have an overall effect and can make delays between successive operations. To reduce the increasing difficulties at TIA, the ATC rules and procedures that govern flight operation should be reviewed. Improvements in aircraft surveillance, navigation, and communication equipment will greatly increase the ability of pilots and controllers to maintain high capacity in all weather conditions. The newly established MSSR system at TIA will enhance traffic handling capacity. Automation system with less communications with pilot and ATC can minimize the frequency jamming problem in the air and ground. Specific operation procedure for helicopter flyers and separate Heli lane with fixed wing will increase the

flight handling capacity.

### **Meteorological Conditions: For most airports,**

it is the combined effect of weather, runway configuration, and ATC rules and procedures that results in the most severe loss of capacity and create delay. Airport capacity is usually highest in clear weather, when visibility is at its best. Fog, low ceilings, precipitation, strong winds, or accumulations of snow on the runway can cut capacity severely or close the airport altogether. Even a common occurrence like a wind shift can disrupt operations.

### **Difficulties in Land side and Terminal building are as:**

This is the area within airport boundaries excluding the airside, generally the landside area is accessible to the general public, including those not travelling. Ground handling service is a very important service based on the landside and airside of airport, which covers a wide variety of services for airlines. It includes not only technical services such as maintenance fuel and freight handling but also provides services to passenger such as checking, catering, baggage handling as well as surface transport at the airport .

Airports are developing as business centres around the world, and the landside (terminal building) area within the boundary of airport has rapidly increasing with various facilities, where millions of people are travelling every day for business or pleasure. In the recent days, passengers are facing enough stress during travel due to long queue in security check. The passenger experience at the airport should be stress free and entertaining as much as possible.



Traditionally aviation sector; airlines, airports and air navigation services used to be run and controlled by the state. But now the airport business is becoming multidimensional, extending to real estate, commercial, and other ventures. These activities are categorized as follows:

- a) the provision of airside or aeronautical services (runways, taxiways, aprons, terminals) and
- b) The provision of landside (terminal building) services (passenger and aircraft services, food and beverage concessions, duty-free shopping, parking, hotels), where a wider variety of supply is possible.

The revenue earnings from landside is vital for airport development and for its sustainability. Definitely, increasing movements of passenger has extended landside business. We must build infrastructure for land side development at the TIA.

We have the example of Qatar's newly built Doha Hamad airport and Dubai international airport.

The size of Hamad international Airport in the desert of Pursian Gulf is roughly two-third the size of Doha city itself which is built on 60% reclaimed land. This airport's capacity is 50 million passengers and 2.5 million tons cargo annually. The area of airport is 29 sq. km with 138 check-in counters and 65 boarding gates. It has 25 sq. km retail space. (Source: Doha airport website)

The Dubai International airport has 3 terminals, operated by the Dubai Airport Company with the handling capacity of 90 million passenger annually. In 2016 Dubai airport handled 83.6 million passenger and 2.59 millions of cargo with 418,220 aircraft movements. As of Jan 2016, there are over 7,700 weekly flights operated by 140 airlines to over 270 destination. This airport is an important contributor to the UAE economy. It employs approximately 90,000 people, indirectly supporting over 400,000 jobs and contributes over 26.7 billion Dollar to the economy. (Source: Dubai airport website)

TIA is becoming congested and management is facing a tough time keeping the business in profit and to maintain security round the clock. There are challenges ahead such as to develop the airport as a complex hub to serve increasing aircraft movements, cargo and passengers services and surface movement of passengers and general public.

At present CAAN has dual responsibility of service provider and regulator .To achieve the mission of CAAN of ensuring safe, secured, efficient, standard and quality service in civil aviation and airport operation, privatization of service providing area is very necessary. Privatization in the area of service providing facilities is a worldwide accepted model. Privatization can provide several benefits. It can remove the financial burden of the government and introduce ways to improve efficiency and competition which will pave ways for better airport management. For example, if the airport is run under a government department, commercialization of facilities would be difficult. Private management can reorganize the accounting so that the airport's costs and revenues can be monitored and adjusted, costs can be cut, and revenues boosted.

Privatization refers to the shifting of functions, responsibilities, and sometimes ownership in whole or in part to the private sector. There are different models of privatization of airport services such as service contract, management contract, lease or concession, transfer of minority ownership; public-private partnerships; private sector ownership and control, developer financing/operation and long-term lease.

TIA can be profitable by sharing the responsibility. We can re-invest the revenues generated through the use of airport and ANSP resources in developing the facilities. The users of the TIA and the ANSP can contribute directly to the maintenance and development of the infrastructure or facilities that they use. It will encourage the growth of a business culture, and increase efficiency and quality of services at TIA.

Under the ADB master plan, some infrastructure development work in the area of airside and landside including terminal building at TIA are carried out but the working progress is very slow. Unstable government, unnecessary political interference, lengthy process, bureaucratic rules and regulation, lack of coordination /cooperation among stakeholders as well as inefficiency of human resources of CAAN are the main hurdle for the timely completion of the project.

Service delivered at TIA reflects our country image. So, from the government level, there should be clear vision and mission plan for TIA improvement project. The government led high level committee with expert should monitor the project closely as the international airport reflects the image of the country and is directly related with the social and economic development.

## Reference:

*airport council international journal*

*IATA journal*

*ICAO related website*

*Dubai and Doha airport website*

*Airport privatization pilot program FAA website.*

# E - Tourism in Nepal's Perspective

Bishnu Gautam  
Manager, CAAN



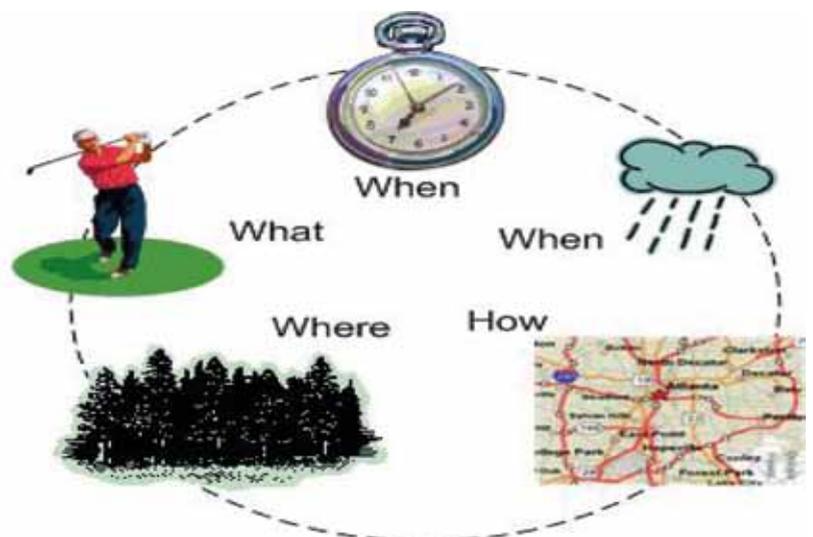
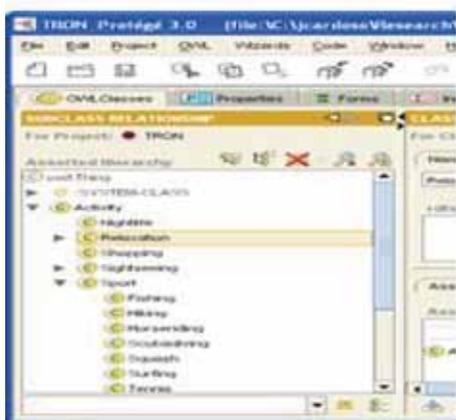
## Background

Nepal is a popular tourist destination due to its natural beauty, unique culture and unparalleled heritage. Many economists and researchers have indicated that tourism can be a means of country's economic progress. The government has announced many promotional programs and conducted different activities in and out of the country, and has planned to invest a huge amount of money to bring more tourists in Nepal.

Information and communication technology plays a crucial role in tourism promotion and development. In modern times, technology has become the driving factor for business operation and success. Information technology has made things look simple, and a large amount of data can be processed in a few seconds. People can research on the net, create their networks, and sell their product online. With the innovation of technology, the tourism business has also greatly impacted and become more accessible and reliable business. One of the important activities of tourism marketing is the creation and distribution of tourism information. This is required by consumers, tourism agencies and tour operators in order to facilitate search and to monitor related products and services. Tourism information includes information regarding potential tourism activities, tourism sights, the means to reach them and other information concerning a destination.

Technology has affected tourism by directly influencing the ability of potential tourists not only discover potential destinations, but travel there easily after investigating about them at their leisure. With instant information, reliable travel networks, and great tools to overcome language and cultural barriers, travelling today has become much easier and improved as compared to the past.

In the past, tourism was once focused on the seasonal cities and locations that were already well-known only to those that lived in the region, or were previous visitors. Nearly all information and details of destinations were passed by word of mouth, and the payment was made only at the destination. For a common person, it was too difficult to predict schedules of visiting to and returning from any destination. It discouraged them from making trips to new destinations. Today, the traveling has been improved dramatically, people are able to go anywhere, anytime as if they were traveling to already visited destinations.



Source: [www.w3.org](http://www.w3.org)

## What is e-tourism?

The term 'e-tourism' is used here to refer to e-business and e-information in the field of travel and tourism. The world tourism organization describes e-business for tourism destinations and businesses as being about the use of Internet-based systems to link tourism product providers with customers and linking the tourism providers with their own suppliers.

E-tourism offers the potential to make information and booking facilities available to large numbers of consumers at relatively low cost. It enables the tourism business to make large-scale savings on the production and distribution of print and other traditional activities such as call centers and information centers. It also provides a tool for communication and relationship development with the end-consumers as well as tourism suppliers and market intermediaries. Considering the fierce market competition, it is a competitive advantage and it must be seen as a new business model which enhances a customer centric culture within destination organization.

## Use of Internet

The world is completely covered by web of internet and the internet users are multiplying day-by-day – nearly ten-fold over the past 10 years. Estimates of the number of internet users worldwide vary due to different methods of counting, according to the Internet World statistics, 3,885,567,619 people are using internet up to date June 30, 2017.

WORLD INTERNET USAGE AND POPULATION STATISTICS JUNE 30, 2017 - Update						
World Regions	Population (2017 Est.)	Population % of World	Internet Users 30 June 2017	Penetration Rate (% Pop.)	Growth 2000-2017	Internet Users %
<a href="#">Africa</a>	1,246,504,865	16.6 %	388,376,491	31.2 %	8,503.1%	10.0 %
<a href="#">Asia</a>	4,148,177,672	55.2 %	1,938,075,631	46.7 %	1,595.5%	49.7 %
<a href="#">Europe</a>	822,710,362	10.9 %	659,634,487	80.2 %	527.6%	17.0 %
<a href="#">Latin America / Caribbean</a>	647,604,645	8.6 %	404,269,163	62.4 %	2,137.4%	10.4 %
<a href="#">Middle East</a>	250,327,574	3.3 %	146,972,123	58.7 %	4,374.3%	3.8 %
<a href="#">North America</a>	363,224,006	4.8 %	320,059,368	88.1 %	196.1%	8.2 %
<a href="#">Oceania / Australia</a>	40,479,846	0.5 %	28,180,356	69.6 %	269.8%	0.7 %
<b>WORLD TOTAL</b>	<b>7,519,028,970</b>	<b>100.0 %</b>	<b>3,885,567,619</b>	<b>51.7 %</b>	<b>976.4%</b>	<b>100.0 %</b>

Source: [www.Internetworldstats.com](http://www.Internetworldstats.com)

There is every indication that this growth will continue for the foreseeable future. It is not yet clear when this is likely to reach saturation point or maturity.

## What are all these people doing online?

Now the Internet is a main source of information worldwide. Every traveler searches about the details of his/her journey over the internet before their departure. The internet has already become the number one source of information consulted by Americans choosing or planning a vacation, and this is rapidly becoming true for other major markets (source: Travel Industry Association of America, [www.fia.org](http://www.fia.org)). This is having direct impact on travel and tour business as internet-users are now using travel agents and tourism offices less often. A recent study has shown that 66% of American users believe that e-tourism websites provide better services than travel agents and 90% of Americans who have access to the internet search information electronically over the internet (<http://www.etourismnewsletter.com/>). About 88.1% Americans have access to internet. It means that 66% of American internet users think that the services provided by their travel agent are not as good as the ones provided by e-tourism websites and 90% collect information through e-tourism sites.

Recent studies have found that internet users enjoy the advantage that it can be accessed from the comfort of home (or the office) at any time, and does not require additional sources of information to be obtained. The internet offers huge breadth and depth of information, and instant response on availability. The Internet is their first choice when it comes to booking accommodation.

The above figure not only indicates American and European internet users' interest, this is a good sign for Nepali tourism business also. It should move to –tourism because potential tourist visiting Nepal from the developed countries search information online. Therefore, Nepal should increase its online presence.

Because of the growing number of online travel portals, the travel and tours business has become one of the most competitive one with the entry of many multinational companies. The demand of customers is ever changing and tourists' expectations are increasing with the growing use of internet, and they look for more convenience and value while the travel portals served as the source of knowledge for the international tourists.

## Some research facts on e-tourism

### Online Booking Behavior

- Almost 40% of all tour and activity bookings are being made online (Rezdy data)
- 60% of leisure and 41% of business travelers are making their own travel arrangements, generally via internet (Amadeus)
- More than 148.3 million people use internet to make reservations for their accommodations, tours and activities. That's more than 57% of all travel reservations each year! (Statistic Brain)
- Internet travel booking revenue has grown by more than 73% over the past 5 years (Statistic Brain)
- 65% of tourist book hotels reservations for the same day on a mobile device (Statistic Brain, 2015)
- Nearly 32% of leisure travelers will request more information through website before booking a tour (Google)

### Online Reviews

- 95% of travelers read reviews before booking (Tnooz)
- 85% of consumers read up to 10 reviews before they feel that they can trust a business (Search Engine Land, 2014)
- The most important sources that influenced the decisions of global travelers were travel review websites (69%), online travel agencies (57%), and tour operator sites (56%) (Tourism Research Australia)
- 93% of global travelers say their booking decisions are impacted by online reviews (Trip Barometer)
- 88% of consumers trust online reviews as much as personal recommendations (Search Engine Land, 2014)

### Social Media

- 82% of consumers trust a company more if they are involved with social media (Forbes)
- 77% of consumers said they are more likely to buy from a company if the CEO uses social media (Forbes)
- 36% of online travelers visit social networking sites to influence destination selection (World Travel Market London)
- 52% of travelers use social media to plan a trip (Eye for Travel)
- 52% of travelers were so influenced by social media that they changed their original travel plans (Sprout Social)
- 87% of those younger than 34 are using Facebook to solicit advice before making bookings (Sticky Media)
- 50% of travel companies have said that direct bookings have been generated from social media (Tnooz)
- 80% of travelers are more likely to book a trip from a friend liking a page rather than responding to a traditional Facebook ad (Eye for Travel)
- 70% of social media users update status/share photos while on holiday (Eye for Travel)
- 76% of social media users post vacation photos to their social networks (Webbed Feet)

## Current Status in Nepal

During the last decade, Nepal saw the emergence of e-tourism, its innovation and growth. It is because of the online revolution and its utility where the tourists are more interested to get information about destinations, facilities, availabilities, prices, geography and climate, and present status of friendly relation. This led to the development of e-commerce strategies in tourism industry and more services such as booking of hotel, flight, car, bus and other services become available online. Large travel industries like visitnepal.com, welcomenepal.com, nepallink.com, nepal.com, traval-nepal.com, explorenepal.com, adventureinnepal.com, nepaltourism.net, nepaltourism.info etc. are offering online booking services for tourists visiting Nepal. On these sites, the travelers have wide option of exploring details of hotels, flights, cars, buses and other allied services. Nepali government also shows the presence of e-truism through some web portals such as tourismdepartment.gov.np, tourism.gov.np, kathmandu.im etc.

Nepal saw the growth rate of more than 2460 per cent of internet users over the last decade. The following figure shows current status of internet user in Nepal.

Year	User	Population	% Penetration
2000	50000	23151423	0.2%
2007	249400	25874519	1.0%
2017	6400000 (Facebook users)	29187037	21.9 %

Source: www.Internetworldstats.com

This is a healthy sign to grow the e-tourism in Nepal. The growing number of internet users definitely increases development and surfing of e-tourism sites. E-business is becoming more and more reliable and popular among the Nepali entrepreneurs.



Simara Airport

# Work Motivation Among the Employees of CAAN.

## Abstract:

The work world is very complex due to the technological change, workforce diversity, job diversity, globalization, competition, increasing size etc. Work motivation is essential for organizational betterment. Work motivation includes all those internal conditions which pushes employees to begin an activity and sustain it in job setting. It determines and controls the activity of employees. The answer of the question what motivates employees in job setting is very difficult. Work motivation is relatively less investigated topic in the context of Nepalese job setting. The study is mainly focused to the level of work motivation among the employees of Civil Aviation Authority of Nepal (CAAN), head office. For that purpose 52 employees were selected as a sample through convenient sampling. A survey was conducted with the standard questionnaire developed by [www.aspina.com](http://www.aspina.com). The study reveals that the level of work motivation among the employees of CAAN head office is high. Female employees are found more motivated than male employees. CAAN needs to launch some fitness and wellness programs for its betterment.

**Key words:** work, globalization, diversity, organization, convenient, aviation, CAAN etc.

## Introduction:

The term motivation was derived from the Latin word 'movere' which means to move. It ensures the movement of individuals towards the achievement of goals. Motivation is the process that accounts for an individual's intensity, direction, and persistence of effort towards attaining a goal (Robbins, S. P., 2001). It is an individual's willingness to exert efforts for the achievement of goals. (Decenzo & Robbins, 2002). The process of motivation starts with a physiological or psychological deficiency (Luthans, F., 1995). Organizations have made tremendous strides in applying the findings of Industrial & Organizational psychology to recruit, select and train their workers and to provide effective leadership. But none of these functions can improve the quality of work being performed if employees are not motivated to do the best job possible (Schultz & Schultz, 2006). Motivation is an essential aspect of the utilization of human resources (Agrawal, 2004). To motivate employees, we should know first about "what employees want from their job." The physiological and psychological motives of employees can be satisfied through the effective administration of intrinsic and extrinsic factors in job setting.

Motivation is central to any discussion of work behavior because it is believed that it has a direct link to good work performance. In other words, it is assumed that the motivated employees are the productive employees. But it is also true that the systems, technology, group dynamics and individual difference variables also affect the performance of employees in job setting. Research indicates that motivation is correlated with the job behaviors of employees like absenteeism, turnover, satisfaction and productivity.

Individual motivation is indirectly proportional to the rate of absenteeism in a particular organization. Higher rate of motivation leads to a lower rate of absenteeism. Similarly, the indirect proportion also exists in the case of turnover. Higher the rate of motivation lowers the rate of turnover. Young employees can be expected to act differently from old employees; if they act in the same way, it is usually because of different motives which occupy different relative positions. Married employees will act differently from unmarried employees. Men will act differently from women on a job because they have different motives, or motives of different relative strengths. So we need to assess the level of work motivation of our staffs for planning the intervention for the betterment of the staffs and the organization. There is a huge job diversity in the aviation sector. The aviation activities are the output of joint efforts of several agencies like civil aviation authority, airlines, custom, immigration, security agencies and other service providers. It requires effective coordination among all agencies for better air transportation. Air transportation plays vital role in the development of psychological image of the country. So it is essential to focus on the work motivation among the employees of aviation sector. Civil Aviation Authority of Nepal has dual responsibility of service provider and the regulatory. It may results role conflicts among the employees of CAAN. The objective of the present research is to measure the level of work motivation among the employees of Civil Aviation Authority of Nepal.

**Methodology:** Following scientific methodology was adopted for the research study.

### Universe of the Study:

The study was mainly focused at the head office of Civil Aviation Authority of Nepal, Babarmahal, Kathmandu. CAAN was established as an autonomous body on 31 December 1998 under Civil Aviation Act, 1996. CAAN was set up with the objective of ensuring aviation safe, secure, efficient, regular and environmentally sustainable. CAAN is one of the well paid organizations of Nepal. The opportunity of self-development through training is relatively high in CAAN.

### Sample Size:

There are 200 technical and administrative employees working at the CAAN head office. The sample size of the study consists of 52 employees.

### Sampling Method:

Convenient sampling method was used to secure the sample size for this study. It is also known as grab, convenience or opportunity sampling. It is a type of non-probability sampling which involves the sample being drawn from that part of the population which is close to hand or ease to access and meet accidentally. That is, a population is selected because it is readily available.

### Data Collection Method:

As a data collection method, survey was used. The data was collected in various setting, where all the participants were given information about the study and its importance. Convenient employees were provided a standard questionnaire. Before responding to the questionnaire they were provided necessary instructions to fill up the questionnaire. They were asked to respond openly and sincerely. They were highly assured about the confidentiality of their responses. After they had completed the questionnaires they were thanked for their valuable time, cooperation and information they had provided.

### Data Collection Tool:

The major data collection tool of this study was questionnaire. The questionnaire contained structured questions in order to obtain data on the topic, work motivation. The questionnaire included 20 statements adopted by aspirine.com. The response options were "fully agree", "Not sure" & "fully disagree". The questionnaire focuses on the intrinsic and extrinsic factors of job setting. It also focuses on the current, past and future behaviors.

### Results and Interpretation:

After the collection of data statistical analysis was done through descriptive statistics and the result of this research study is following.

**Table No. 1:**

The responses of respondents with different category are presented in this section.

S.N.	Category.	Score in Average.	Level of Motivation.
1	Male	73.28	Highly Motivated.
2	Female.	82.82	
3	Married.	75.26	
4	Unmarried.	74.22	
5	Administration service.	78.2	
6	Technical service.	71.9	
7	Age 20-40	76.11	
8	Age 41-58	74.54	
9	Aadibasi /Janjatis.	78.88	
10	Brahmin / Chhetri.	74.86	

Source: Field Study, 2017.

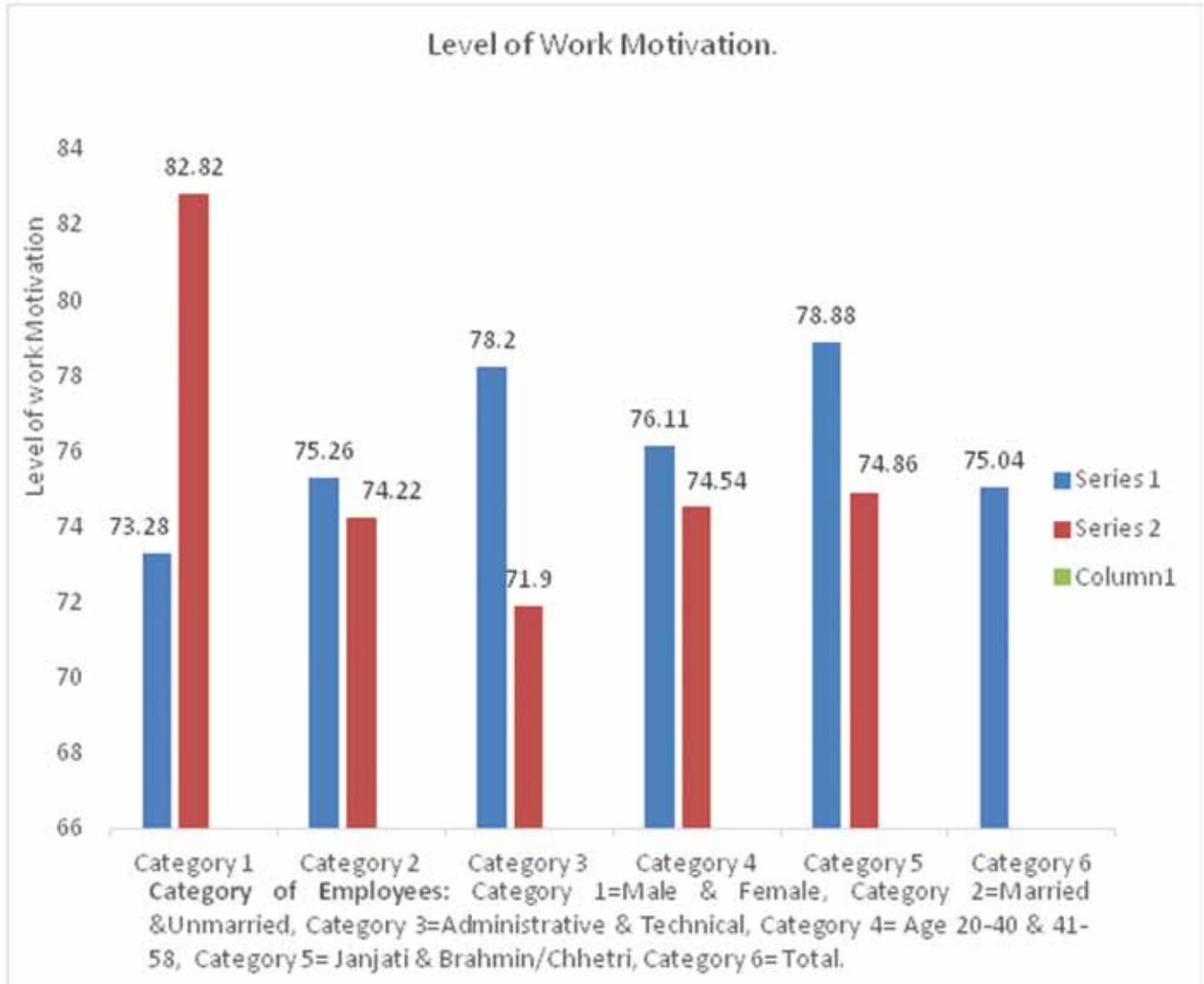
**Table No. 2:**

The responses of all respondents are presented in this section.

S.N	Sample size.	Score	Level of Motivation.
1.	52	75.04	High

Source: Field Study, 2017.

According to the manual the, scores between 60 -100 indicates high motivation, 40 - 59 moderate and below 40 indicates low level of work motivation. (www.aspina.com).



Source: Field Study, 2017.

The study found that the most of the respondents of CAAN head office had a positive attitude towards their organization and working conditions of their organization. They seemed to be highly motivated towards their current role at their job. As they are all provided with the required equipment's, instruments and materials to do their best at their work and they have adequate opportunities to innovate on their own initiative. The friendly relationship between the boss and subordinates had made the employees able to open and discuss their work problems and concerns. And the working relationship in the team had resulted in more flexibility and creativity. Some respondents were found with the lack of motivation. They seem to have problem with the organizational structure of CAAN and unhealthy relationships with their boss. Several research studies by industrial and organizational psychologists concluded that poor remuneration is also one of the major factors for poor work motivation in job setting. In this study, most of the respondents were found satisfied with their remuneration for what they do and most of them were enthusiastic towards their role. As in common learning, motivation may lack in employees just because of not recognizing or praising them for doing something very good or not having freedom to choose their

own methods of working, and not providing sufficient or required material for them to perform their best. In this study some respondents reported about the lack of autonomy and poor reinforcement system of CAAN.

The data reveals that the score of the total sample is 75.04 which indicates the high level of work motivation. The score of Brahmin/ Chhetri is 74.86 and the score of Janjati is 78.88, which reveals that the Janjati employees are more motivated than others in CAAN. The score of male employees is 73.28 and the score of female employees is 82.82, which shows the females are more motivated than male employees. Similarly, married and unmarried employee's scores are 75.26 and 74.22 respectively which indicates married employees are relatively highly motivated. Newly joined employees are also found more motivated than older employees. The score of technical and administrative employees is 71.9 and 78.2 respectively, which reveals that administrative employees are more motivated than technical employees of CAAN.

## Conclusion:

From the above discussion, we can conclude that the level of work motivation among the employees of CAAN head office is high. Motivation is an essential factor in job setting which ensures the psychological wellbeing of employee and the organization.

From the conclusion of the study, we would like to suggest the management of CAAN for the improvement in the rewarding system and performance appraisal system of CAAN, apply the concept of right person at the right time at right place to address the group dynamics and individual difference variables, and establish the organizational wellness and fitness programs for the wellbeing of employees and betterment of CAAN.

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# नेपालको साभेदारी विकास मोडेलमा एयरपोर्ट : एक चर्चा

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## परिचय

सार्वजनिक र निजी क्षेत्रलाई अधिकतम परिचालन गरी सार्वजनिक पूर्वाधार निर्माण तथा सेवा सुविधाको व्यवस्थापन र सञ्चालन गरिने परिपाटी नै साभेदारी विकास हो यसमा सार्वजनिक क्षेत्रअन्तर्गत सरकार वा स्थानीय निकायहरू पर्दछन् भने निजी क्षेत्र अन्तर्गत सरकार र यस बाहेकका अन्य क्षेत्रहरू जस्तै सहकारी, गैरसरकारी संस्था एवम् नागरिक समाज पर्दछन् ।

साभेदारी विकासको अवधारणा प्रायः व्यापारिक क्षेत्रसँग बढी प्रचलित छ जसमा दुई वा सो भन्दा बढी व्यक्ति, फर्म वा कम्पनीहरूले साभेदारको हैसियतमा ब्यापारव्यवसाय सञ्चालन गर्दछन् र जोखिम बहन गर्ने र नाफा घाटा बाँडफाड गर्ने कार्यमा समान सहभागिता जनाउँछन् । सन् १९८० को दशकपछि जव सानो, छरितो र गतिशिल एवम् सक्षम सरकारको अपेक्षासँगै आर्थिक उदारीकरण र निजीकरणको नीतिले प्रार्थामिकता पाउन थाल्यो तव समाज परिवर्तनको अभियानमा साभेदारी विकासको सार्थकता बढ्दै गएको पाइन्छ । विभिन्न क्षेत्रको सहभागिता र संलग्नता, सहयोगात्मक सम्बन्ध, पारस्परिक जवाफदेहिता, शक्ति र जिम्मेवारीको विभाजन, सेवा प्रावाहको बिधि र गुणस्तर दुवैको सुनिश्चितता र पारदर्शी कार्यपद्धति यस मोडालिटीका विशेषता हुन् । साभेदारी विकासको मुख्य उद्देश्य भनेको विभिन्न क्षेत्रमा रहेको पूँजी र सीपको उपयोग हो । यसका लागि विभिन्न मोडेलहरू प्रचलनमा छन् :

## निर्माण, सञ्चालन, तथा हस्तान्तरण (Build, Operate, and Transfer)

यसमा सार्वजनिक क्षेत्रले सम्पादन गर्नु पर्ने कुनै पूर्वाधार निर्माण निजी तथा साभेदारी लगानीमा सम्पन्न गराई निश्चित अवधि निजीक्षेत्रले नै सञ्चालन गरी लगानी र मुनाफा फिर्ता भैसकेपछि सार्वजनिक क्षेत्रलाई हस्तान्तरण गर्ने गरिन्छ ।

## निर्माण, हस्तान्तरण तथा सञ्चालन (Build, Transfer, and Operate)

यसअन्तर्गत सार्वजनिक क्षेत्रले सम्पादन गर्नु पर्ने कुनै पूर्वाधार निर्माण निजी साभेदारको लगानीमा सम्पन्न गराई उक्त संरचनाको रेखदेखको मुख्य जिम्मेवारी सार्वजनिक क्षेत्रले लिई निश्चित अवधि निजीक्षेत्रले नै सञ्चालन गरी लगानी र मुनाफा फिर्ता भैसकेपछि सार्वजनिक क्षेत्रलाई हस्तान्तरण गर्ने प्रक्रिया पर्दछ ।

## व्यवस्थापन करार (Management Contract)

यसअन्तर्गत सार्वजनिक क्षेत्रको स्वामित्वमा रहेको कुनै संगठन, त्यसको कुनै निश्चित काम वा कामको केही अंश अर्थात् निश्चित शुल्क प्रदान गरी निजीक्षेत्रलाई सञ्चालन गर्न दिने प्रक्रियाहरू पर्दछन् ।

## सेवा करार (Service Contract)

यो सार्वजनिक क्षेत्रले प्रदान गर्नु पर्ने कुनै काम वा सेवा निश्चित शुल्क लिई निजी साभेदारमार्फत प्रदान गर्ने गरिने व्यवस्था हो ।

## निर्माण तथा हस्तान्तरण (Build and Transfer)

यो सार्वजनिक क्षेत्रले गर्नु पर्ने कुनै पूर्वाधार निर्माण निजीक्षेत्रको लगानीमा सम्पन्न गर्ने र त्यसपछि एकमुष्टरूपमा वा किस्ताबन्दीमा लगानी फिर्ता गर्ने गरी सार्वजनिकक्षेत्रलाई हस्तान्तरण गर्ने प्रक्रिया हो ।

## लिज, निर्माण, सञ्चालन, तथा हस्तान्तरण (Lease, Build, Operate, and Transfer)

लामो अवधिका लागि कुनै सार्वजनिक सम्पत्ति निजी साभेदारले भाडामा प्राप्त गरी आफ्नै लगानीमा तोकिएको पूर्वाधार निर्माण गरी सञ्चालन गर्ने र निश्चित अवधिमा लगानी तथा मुनाफा फिर्ता भएपछि सार्वजनिकक्षेत्रलाई हस्तान्तरण गर्ने कुराहरू यस मोडालिटीअन्तर्गत पर्दछन् ।

## निर्माण, स्वामित्व, सञ्चालन र हस्तान्तरण (Build, Own, Operate and Transfer)

कुनै सेवा प्रदानका लागि आवश्यक पर्ने सम्पूर्ण पूर्वाधार निजी साभेदारको लगानीमा निर्माण गर्ने, केही समयसम्म स्वामित्व समेत आफैँ राख्ने र निश्चित अवधिमा लगानी र मुनाफा फिर्ता भएपछि सार्वजनिक क्षेत्रलाई हस्तान्तरण गर्ने प्रक्रिया यस अन्तर्गत पर्दछ ।

- ✘ उपभोक्ता समितिमाफर्त गर्ने
- ✘ कार्यक्रम सञ्चालन र मर्मत साभेदारी गर्ने
- ✘ बहाल सम्भौता गर्ने र संकलन गर्ने
- ✘ केही अवधिका लागि आस्थायीरूपमा निजीकरण गर्ने आदि

## विषय प्रवेश :

नेपालको ग्रामीण भेगमा सञ्चालित विमानस्थलहरू कुन मोडेलमा सञ्चालन गर्नु उपयुक्त होला भन्ने कुरा बहस को विषय हुन सक्छ । लामो समयदेखि रिक्त रहेका स्थानीय निकायको भर्खर सम्पन्न चुनाव र यसपछिको राजनीतिक स्थिरताको कल्पना गर्दा नाफारहित विमानस्थलहरू स्थानीय निकायलाई नै सञ्चालन गर्न दिने पनि एक भरपर्दो विकल्प हुन सक्छ । कतिपय अवस्थामा उद्योग वाणिज्य संघ लगायतका विभिन्न संघ, संस्थाको संलग्नतामा यस किसिमको कार्य भइरहेको पनि छ । यसको प्राविधिक पाटो प्राधिकरण र अन्य पाटो स्थानीय निकायको मातहतमा लैजाँदा प्राधिकरणलाई आर्थिक भार कम गर्ने आँकलन गर्न सकिन्छ यसले यात्रु र विमान सञ्चालकको विचमा मध्यस्थता गर्ने र यसको नियमन गर्ने जिम्मा प्राधिकरणमै रहने हुनाले वायुयान सञ्चालक, स्थानीय निकाय र प्राधिकरणको त्रिपक्षीय साभेदारी हुन जान्छ । सबैको सहभागितामा हुने यस किसिमको कार्यबाट गुणस्तरीय सेवाको प्रत्याभूति हुन सक्छ भन्न सकिन्छ । पारस्परिक र सामुहिक उत्तरदायित्व साभेदारी विकासका लागि अपरिहार्य तत्व हो ।

त्रिभुवन अन्तरराष्ट्रिय विमानस्थलमा बढ्दो चापलाई मध्यनजर गर्दै विभिन्न विमानस्थलको सम्भाव्यता अध्ययन भैरहँदा काठमाडौँ कै २५ र ३० मिनेटको दुरीमा रहेका विमानस्थलहरू उपेक्षित भैरहनु आफैँमा उदेकलाग्दो छ । निजीक्षेत्रको संलग्नतामा रामेछाप, लामिडाडा, रूम्जाटार एयरपोर्टको रात्री बिसान (ह्यांगर) मर्मत कार्य गर्न सकिन्छ । निश्चित सुविधा र शर्तका आधारमा ति विमानस्थल केही अवधिको लागि उनीहरूलाई दिन सकिन्छ । यसले त्रिभुवन विमानस्थलको अस्तव्यस्ततालाई त हटाउँछ नै साथै ति एयरपोर्टका पूर्वाधारको प्रयोग हुने र राजश्व वृद्धि हुने जस्ता फाइदा हुन्छन् । आर्थीकरूपमा वायुसेवा सञ्चालकलाई पनि सहयोग पुग्ने नै छ । यसरी निजीक्षेत्रसँग सहकार्य हुन सक्थो भने पनि भएका पूर्वाधारको अधिकतम प्रयोग र फजुल आर्थिक खर्चमा कटौती हुन जान्छ भन्न सकिन्छ ।

नेपालमा एयरपोर्टकेन्द्रित शहरको विकास आगडि बढेको अवस्था छ । विमानस्थलको सेवा र सञ्चालनलाई प्रभाव नपार्ने तवरले ननएरोनटिकल आयलाई बढावा दिने गरी निजी साभेदार भित्र्याउन अब ढिला गर्नु हुन्न । निजीक्षेत्रको संलग्नतामा हुने यस किसिमको साभेदारीले आर्थीकरूपमा निकै फाइदा हुन जान्छ जुन प्राधिकरण, निजीक्षेत्र र अन्य निकायको प्रत्यक्ष संलग्नतामा हुन्छ । नेपालको संबिधान २०७२ ले पनि स्वोदेशी तथा विदेशी लगानीलाई प्रोत्साहन गरेको अवस्थामा नागरिक उड्डयन प्राधिकरणले पनि यसलाई आफू अनुकूल हुने गरी प्रयोग र कार्यान्वयन गरेर साभेदारी विकासलाई प्रोत्साहन गर्नु जरूरी छ ।

## निष्कर्ष :

विकास एक अपरिहार्य तत्व हो । सबै साधन र स्रोत एउटै पक्षसँग हुनु सम्भव पनि छैन । त्यसैले सहकार्य गरेर विकासलाई प्रभावकारी बनाउनु जरूरी छ । जोखिम र प्रतिफलको सन्तुलित हिस्सेदारी सुनिश्चित गर्न पनि यस किसिमका मोडालिटी अगाडी सारिएको पाइन्छ । रोजगारी तथा आर्थिक विकासका लागि समेत यस किसिमका कार्य गर्नु पर्छ । निजीक्षेत्रलाई विकासको मूलधारमा ल्याई सहकार्यको अभिवृद्धि गर्नु अपरिहार्य छ । निजीक्षेत्रको सीप, पूँजी र प्रविधिलाई अधिकतम प्रयोग गर्न सकेको खण्डमा आर्थिक वृद्धि धेरै टाढा छैन भन्न सकिन्छ । त्यसैले साभेदारी विकास वर्तमान समयमा एक दुरदर्शी सिद्धान्तको रूपमा अगाडी आएको पाइन्छ ।

# Potential of Nepali Tourism

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## Introduction

Tourism refers to the movement or journey of human beings from one place to another, whether it's within one's own country or other countries. It can be for pleasure, business, pilgrimage and other purposes. It is recognized as an important sector in the development agenda of most of the countries. This recognition seems to be based on perception that development of tourism has potential for the expansion of income and employment opportunities in the economy. It has potentiality to enhance foreign exchange earnings through international tourism, which, of course, is vital for strengthening import capacities of the economy to support the development process (Dahal, 2004).

Nepal is one of the major tourist destinations in the world due to its extraordinary natural beauty, plentiful bio-diversity, multi-religious and multi-cultural identities. Tourism has been one of the vital sectors in service industry in Nepal for economic growth from the perspective of comparative and competitive advantages. Diversification and expansion of tourism sector has enhanced people's livelihoods and employment opportunities thereby raising their living standard.

Tourism is valued as the major contributor to a sustainable Nepali economy, having developed as an attractive, safe, exciting and unique destination through conservation and promotion, leading to equitable distribution of tourism benefits and greater harmony in society (Tourism Vision 2020).

## Overview

Tourism is one of the fastest growing and, perhaps, the most accomplished industries globally. It is the prime industry in Nepal and the largest source of foreign exchange and revenue. Possessing eight of the ten highest mountains in the world, Nepal is hotspot destination for mountaineers, rock climbers and adventure-seeking people. The Hindu and Buddhist heritages of Nepal and its cool weather are also strong attractions.

Various programmes were organized in Nepal with a view to attract large number of tourists. 'Visit Nepal 1998'; Destination Nepal Campaign in 2002 and 2003; 'Visit Pokhara Year Campaign' in 2007; 'Nepal Tourism Year 2011'; and 'Visit Lumbini Year' in 2012 had a significant contribution to attracting a large number of tourists to Nepal.

The number of tourist arrival other than Indian via land totaled 383,926 in 2006 while this number rose to 753,200 in 2016. The number of tourist arrival in 2015 was dropped by 32 percent due to the negative impact of the devastating Gorkha Earthquake and obstruction at the Nepal-India border. Tourism sector saw gradual progress in subsequent years. The tourist arrival that stood at 538,970 in 2015 grew by 40 percent in 2016. It is shown in the figure given as below.

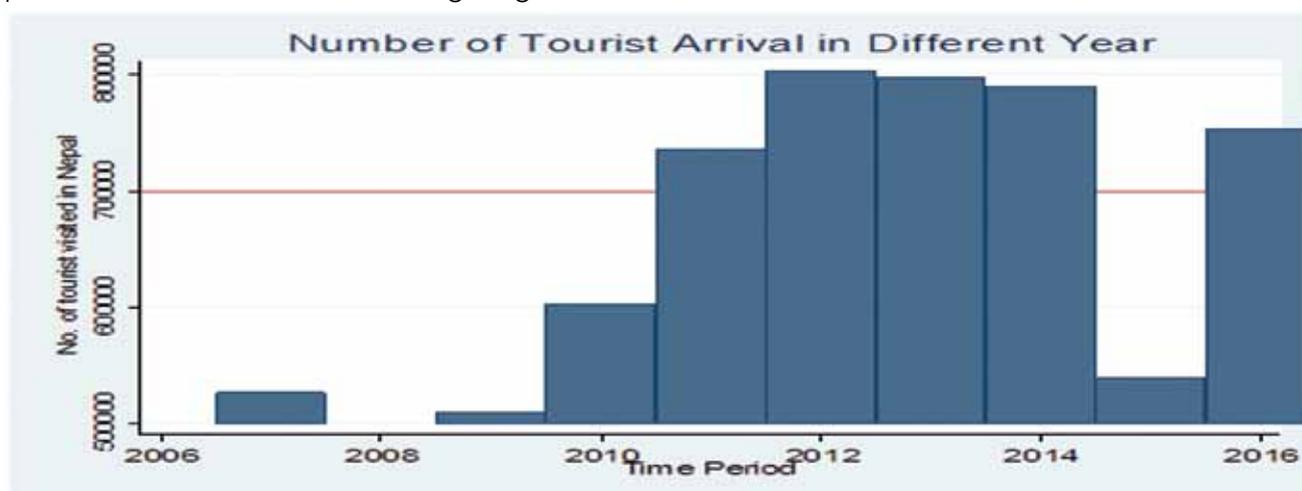


Figure 1: Tourist arrival in the last decade

Top five tourist source countries are India (15.7%), China (13.8%), Sri Lanka (7.6%), USA (7%) and UK (6.1%) in 2016. The share of tourists coming to Nepal from these countries is more than 50 percent in total. In 2015, the share of India was 14 per cent, China 12 per cent, USA 10 per cent, Sri Lanka 8 per cent and Thailand 6 per cent. Most of the tourists come to Nepal for entertainment and use and vacation. About 65 per cent of total tourist in 2016 came to Nepal for vacation/entertainment. Likewise, 11 per cent of them arrived here for religious tour, 8.83 per cent for mountaineering and trekking, 3.23 per cent for trade, 2.86 per cent for official visit, 1.7 per cent for meeting/conference and the rest 7.41 percent for other purposes. While analyzing tourist arrival statistics of the last decade (from 2006 to 2016), more than two-thirds of tourists were here for vacation and recreation, trekking/mountaineering and religious purposes (Economic survey, 2017).

Nepal earned foreign currency equivalent to Rs. 41.765 billion from tourism sector in FY 2015/16. It was 55.8 per cent to the total foreign currency earned through export of goods while 19.6 per cent earned through the export of goods and services. Foreign currency equivalent to Rs. 36.149 billion was earned through this sector in the first eight months of current fiscal year 2016/17. This is 66.8 per cent of the total foreign currency earned through export of goods, as 23.3 per cent of the total foreign currency was earned by the export of goods and services.

**Table 1:**

Foreign currency earning from tourism sector and average-stay of tourists

Fiscal Year	Foreign Currency Earning from Tourism (in Rs. Million)	Ratio to Foreign Currency Earned through Goods exports (%)	Ratio to Foreign Currency Earned via Export of Goods and Service (%)	Ratio to Total Foreign Currency Earned (%)	Ratio to GDP (%)	Length of Average stay (days)
2007/2008	18653	30.1	17.9	5.5	2.3	11.78
2008/2009	27960	40.0	22.8	6.5	2.8	11.32
2009/2010	28139	44.5	24.6	8.1	2.4	12.67
2010/2011	24611	35.8	20.2	9.0	1.8	13.12
2011/2012	30704	37.7	20.0	4.7	2.0	12.87
2012/2013	34211	39.8	18.9	4.8	2.0	12.51
2013/2014	46375	45.9	20.5	6.0	2.4	12.44
2014/2015	53429	54.4	21.6	6.1	2.5	12.8
2015/2016	41765	55.8	19.6	4.5	1.9	13.4
2016/2017 (first eight month)	36199	66.8	23.3	6.4		

Source: Economic Survey F/Y 2016/2017

The length of average stay of tourists in Nepal was 12 days in the past decade. In Nepal about 1406 tourism related industries are in operation and they have been providing employment opportunities to more than 61,163 people. However, the contribution of hotel and restaurant sector to GDP that stood at 2 percent in F/Y 2015/16 is estimated to remain at 1.98 percent by the end of current fiscal year 2016/17.

## SWOT Analysis

Nepal has strong natural bequests and some unique assets needed for tourism development. These assets give the country a comparative advantage in the sector. It has potential for establishing it as a key pillar of the economy. Let's have the SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of tourism sector to know whether it is an important contributor to the Nepali economy:

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Unmatched natural products: Mt. Everest, Himalayan range and eight of the world's fourteen peaks higher than 8,000m, diverse landscape, sublime natural scenery, protected areas with diverse flora and fauna, fast flowing rivers, year-round pleasant weather.</li> <li>• Ultimate adventure destination: Number one destination for mountaineers and trekkers, white water rafting, largest assortment of aerial, terrestrial and aquatic sports.</li> <li>• Rich culture: Multi-cultural, multi-ethnic; multi-lingual yet harmonious society; unique Newari architecture of the Kathmandu Valley, Lumbini and other UNESCO world heritage sites; Kumari - the Living Goddess; more festivals than days in a year; tourist friendly and hospitable people, diverse cultures in Terai region etc.</li> </ul>	<p><b>Others:</b></p> <ul style="list-style-type: none"> <li>• A model of successful peace process, able private sector, awareness at community level, public-private-people partnership approach, gateway to the Himalaya region. Weaknesses</li> <li>• Insufficient infrastructures.</li> <li>• Inadequate investment in tourism sector.</li> <li>• Limited air connectivity and weak national carrier.</li> <li>• Poor coordination among different stakeholder agencies.</li> <li>• Weak public-private partnerships.</li> <li>• Scarcity of resources for massive publicity and consumer promotion.</li> <li>• Tourism patterns limited to only in a few geographic areas.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Government has given high priority to tourism.</li> <li>• Growing number of outbound tourists in India and China.</li> <li>• Competitive ground handling costs.</li> <li>• Spillover effects from adjoining destinations of India and China.</li> <li>• Growing demand for adventure tourism.</li> <li>• Sustainability of nature and cultural heritage through tourism.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Transitional political environment.</li> <li>• Global terrorism.</li> <li>• Cross-border diseases.</li> <li>• Strong competing destinations.</li> <li>• Unfavorable travel advisories.</li> <li>• Global economic downturn.</li> <li>• Climate change.</li> </ul>

The existing strength, weakness, opportunity and threat to Nepal's tourism recommend that strong strength would help overcome weakness by improving efficiency in management. The most threatening issue at present is the political instability. Therefore, peace and security should be given topmost priority not only to foster tourism but also for the overall economic development.

The opportunities for tourism development are massive in Nepal once the political situation is improved. Tourists choose Nepal as their destination to spend peaceful, safe and relaxed holidays or for adventure purposes.

## Prospects and Potential of tourism in Nepal

<p><b>Aerial</b></p> <p>Mountain flight, Hang gliding, Paragliding, Cable car, Bungee Jumping, Ultra- light aircraft, Hot air ballooning, Sky diving etc.</p>	<p><b>Aquatic</b></p> <p>Rafting, Kayaking, Canoeing, Boating, Fishing, Angling, Cannoning, Cascading, Jet ski etc.</p>
<p><b>Potentiality</b></p>	
<p><b>Terrestrial</b></p> <p>Mountaineering, Trekking, Jungle safari, Wild life tourism, Honey hunting, Mountain biking, Rock climbing, Caving, Skiing, Golf, Elephant polo, Motor rally, Himalayan marathon, Pony treks etc.</p>	<p><b>Niche</b></p> <p>Eco tourism, Village tourism, Community-based tourism, Agro-tourism, Cultural tourism, Pilgrimage and Spiritual tourism, Educational tourism, Health and wellness tourism, Special interest tours etc.</p>

Source: Tourism Vision 2020

Nepal has enormous possibilities in tourism. The Himalaya nation is famous for its natural beauty, world's highest peaks, national parks, flora and fauna, extraordinary trekking routes, wonderful lakes and welcoming people. Nepal is rich in its cultural and religious diversity, and has beautiful range of Himalaya. Nepal is an attractive location for mountaineers, rock climbers and adventure seekers. Apart from being an attractive destination for adventure, Nepal's enjoyable climate and ever welcoming nature of Nepali people show there is a tremendous prospect of tourism in Nepal.

Nepal is quite rich in terms of tourism resources, both natural and man-made. But, it has not been able to harness optimum benefits from those resources. There is a need to transform these resources as tourism products to the extent that the country and people could derive benefits from them. To tap the potential of tourism resources, the country needs: (a) Identification of available tourist resources, (b) Assessment of tourists' preference and interest, and (c) Determination of the value of the resource in quantitative and qualitative terms. This would actually be the strategic planning to transform resource potential of Nepal into a tourism product in a sustainable manner (Dahal, 2004).

## Way Ahead

### Way Ahead with long-term action:

Even though the tourism sector in Nepal hit the rock bottom due to 2015 earthquake, it managed to bounce back through careful planning, strong promotion and large investments. Nepal Tourism Board, private sector businesses and government authorities must exhibit the same spirit in order to promote domestic tourism.

We must not forget that the long-term investment in domestic tourism will also serve Nepali economy. The study by World Tourism and Travel Council (WTTC) on the economic impact of travel and tourism in Nepal reveals that in 2016, the direct contribution of travel and tourism to GDP was Rs 85.2 billion which is 3.6 per cent of the total GDP. Meanwhile, the same study shows that in 2016, the total contribution of travel and tourism in providing employment, including jobs indirectly supported by the industry was 6.4 per cent of total employment. The study clearly indicates that development in tourism sector paves the way for economic growth. It's now time for Nepali tourism sector to come up with concrete plans and take charge of domestic tourism. At the same time, there should be promotion campaigns to attract the domestic tourists to visit new destinations. The following are some common long-term actions that Nepal should do in order to promote tourism sector in Nepal.

- Infrastructure development in tourism including construction of international airports in Pokhara and Bhairahawa into regional international airports.
- Identification and development of tourism products in potential tourism areas.
- Development and promotion of home stay and community based tourism products.
- Promotion of domestic tourism activities.
- Capacity building of the service providers and improve service standards through training and management development programmes.
- Preparation and implementation of long-term fleet plan and strengthening of Nepal Airlines Corporation.
- Development of tourism master plan, Integrated Regional Tourism Management Plans of all seven provinces and corresponding long-term tourism strategic plan.
- Formulation of investment-friendly policies and regulation to attract domestic as well as foreign direct investment in tourism sector.
- Lobbying with other government line agencies to create land transportation network to link Nepal with India, Bangladesh and China.
- Application of Satellite Accounting System in tourism industry.
- Initiative to mitigate the negative consequences from the climate change.

(Source: Ministry of CT&CA)

### Some basic techniques which help to promote tourism sector:

- Creating a tourism marketing plan for destinations.
- Drive exposure with influencer programmes.
- Create an amazing guide about your area.

- Build a discussion platform on Facebook.
- Create awesome destination videos.
- Use a challenge to spark interest in a destination.
- Gather user-generated content and promote it.
- Show off what makes you unique on social media.
- Focus your marketing on traveler type.
- Make the most of mobile.
- Highlight what's new in your area.
- Contact tourism marketing companies and ask for ideas.

## Analysis

Tourism is one of the most important industries in the world which gives significant economic outcomes. The contribution of tourism sector to the GDP of Nepal is 2 percent in an average in the past one decade. Whereas Gross Domestic Product (GDP) is function of number of tourist arrived in Nepal (numtourist) as well as that of foreign currency earning form tourism sector (eartourism). Thus for analysis of this relation, Linear Regression Model is used.

The Liner Regression function is defined as,

$$GDP = \beta_1 + X_1 \text{numtourist} + X_2 \text{eartourism} + \mu$$

Where,  $\beta_1$  = constant,  $X_1$  &  $X_2$  are elasticity for each term,  $\mu$  = disturbance term

**Table 2:**

The estimated result of regression

Dependent variable = GDP				
Variables	Coefficient	Std.error	T-statistics	Probability
constant	3.608	2.189	16.48	0.00
numtourist	0.020	0.0035	5.86	0.01
eartourism	0.410	0.0361	11.24	0.00
F	1274			0.00
R2				0.97
Adj R2				0.96
Level of significance = 5%				

According to the assigned regression model (after using STATA software for last 10 years data) we have positive relationship between GDP and number of tourist arrived in Nepal. It means when number of tourist arrival increases by a single unit, the GDP of country is increased by 0.020 units when other things remain constant. It is statistically significant at 5 per cent level of significance. While dealing with the contribution of foreign currency earing from tourism sector in GDP, there is positive relationship between them. It means GDP is increased by 0.41 units while foreign currency earning in tourism sector increased by 1 unit. It is also statistically significant at 5 percent level of significant. In this analysis 97 percent of the model is explained by the included independent variables viz. numtourist and eartourism and the overall model is statistically significant at 5 percent level of significance. So there is positive impact of tourism sector in economic growth in Nepal.

## Conclusion

Nepal has great tourism potential because of its natural beauty, biodiversity, ethnics, linguistic and social diversity, historical and cultural wealth. Tourist arrival in Nepal has grown from just over 6,000 in 1962 to over half a million today, despite a decade-long conflict and earthquake which left prime tourist attractions damaged and under developed. The sector has great potential and could contribute significantly to revenue generation. Even a small reform in culture and tourism sectors means that the country can earn foreign currency and generate employment and other opportunities which will ultimately contribute to the economic growth.

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Rara Runway Strip

# Understanding Fire Fighting Foams

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## 1 Introduction

Fire can be extinguished by removing or interfering with any one of the elements that cause fire which are heat, fuel, air (oxygen) and a chemical chain reaction. Fire is classified according to the type of fuel.

- Class A Fires consist of ordinary combustibles such as wood, paper, trash or anything else that leaves an ash.
- Class B Fires are fueled by flammable or combustible liquids, which include oil, gasoline, and other similar materials.
- Class C Fires consist of Energized Electrical Fires
- Class D Fires are combustible metal fires. Magnesium and Titanium are the most common types of metal fires.
- Class K Fires are fires that involve cooking oils, grease or animal fat.

There are different types of fire extinguishers designed to put out the different classes of fire. Selecting the appropriate fire extinguisher is an important consideration.

Types of Fire Extinguisher (The Occupational Safety and Health Administration (OSHA))

S.N	Fire Extinguisher Type	Classes of Fire It Extinguishes	Remarks
1	Dry Chemical	A, B,C	Multipurpose use
2	Foam	B	Effective on Class B only
3	Water	A	Good only for Class A Fires
4	Metal X	B,C,D	Must be kept dry. Ineffective on Class A
5	Carbon Dioxide	B, C	If used in confined areas, will create oxygen deficiency; not effective in windy conditions
6	Halon	B, C	Not Effective in windy conditions; Toxic gas may be released in extremely hot fires because of decomposition
7	Potassium Acetate	K	Wet chemical extinguisher for commercial cooking operations using oils and fats

While preparing to fighting liquid fires, one should know that there are two basic flammable or combustible fuel groups; one being standard hydrocarbon fuels such as gasoline, diesel, kerosene, jet fuel etc. which all float on water & for the most part don't intermix with water and the other being polar solvent or alcohol type fuels that are miscible with water.

The foam is extensively used as a fire-extinguishing medium for flammable and combustible liquids unlike other extinguishing agents such as water, dry chemical, and CO<sub>2</sub>. A firefighting foam is simply a stable mass of small air-filled bubbles, which have a lower density than oil, gasoline or water. Foam is made up of three ingredients - water, foam concentrate and air. When mixed in the correct proportions, these three ingredients form a homogeneous foam blanket. Water, if used on a standard hydrocarbon fuel, is heavier than most of those liquids and if applied directly to the fuel surface, will sink to the bottom having little or no effect on extinguishment or vapor suppression. If the liquid fuel heats above 100 °C, the water may boil below the fuel surface throwing the fuel out of the contained area and spreading the fire.

(Chemguard: Speciality Chemicals and Equipments)

The National Fire Protection Association (NFPA) 11 – Standard for Low, Medium and High Expansion Foam defines firefighting foam as "...an aggregate of air-filled bubbles formed from an aqueous solution which is lower in density than flammable liquids. It is used principally to form a cohesive floating blanket on flammable and combustible liquids, and prevents or extinguishes fire by excluding air and cooling the fuel. It also prevents reignition by suppressing formation of flammable vapours. It has the property of adhering to surfaces, which provides a degree of exposure protection from adjacent fires." (National Fire Protection Association, 2016)

While firefighting foam does not interfere with the chemical reaction, the foam used during firefighting extinguishes fire by following ways:

- The foam blankets the fuel surface smothering the fire.
- The foam blanket separates the flames/ignition source from the fuel surface.
- The foam cools the fuel and any adjacent metal surfaces.
- The foam blanket suppresses the release of flammable vapors that can mix with air.

## 2 Foam Classification and Types

Firefighting foam is divided into Class A and Class B.

### 2.1 Class A Foam

As a synthetic based foam concentrate, Class A foam is applied at low concentrations ranging from 0.1% to 1.0%. Cooling and wetting are the primary extinguishing mechanisms. The use of Class A foam makes "water wetter" on average increasing the effectiveness of water tenfold. These application rates make the use of Class A foam a cost effective means of combating fires because smaller amounts of foam concentrate can be used to make effective foam and is biodegradable and non-toxic, so it is environmentally sustainable. Class A foam is deployed through a variety of portable and fixed devices, ranging from firefighters' backpacks, brush and fire apparatus, to rotary and fixed wing aircraft.

As we look to the future, the use of and application for Class A foam will certainly advance technologically. A current example to point to is the recent generations of nozzle-aspirated induction systems and Compress Air Foam Systems (CAFS) have been more reliable than earlier generation models.

### 2.2 Class B Foam

There are several types of available Class B foams. Each foam concentrate is developed for a specific application. Some firefighting foams are thick and form a heavy, heat-resistant covering over a burning liquid surface. Other types of foams are thinner and, because of that, they will spread much more quickly over the fuel surface. Still, other types of foams will generate a vapour sealing film on the surface of the fuel. Additional foam concentrate types, such as medium and high expansion foams, can be used in applications requiring large volumes to flood surfaces and fill cavities within the hazard.

Foam produced by most vehicles to be used for aircraft firefighting will utilize solutions, either in premixed forms or by the use of a proportioning system, which are delivered at a predetermined pressure to nozzles. The pressure can be provided by a pump or compressed gas. Fire-fighting foams are classified according to their liquid fraction or expansion ratio into low (5:1 to 20:1), medium (up to 200:1) and high expansion foams (up to 1000:1). Expansion ratio is defined as the ratio of the volume of the finished foam to the volume of the foam solution used to produce it. Low and medium expansion foams are created by the use of a branch pipe, which is the device that aerates the foam concentrate to produce the finished foam. As the expansion ratio is increased, the ratio of water in the finished foam decreases, this has an adverse effect on the heat resistance of the foam. In addition, the low density of the foam causes problems for outside applications, where the foam might be blown away by wind (Hill & Eastoe, 2017) .

## 3 Types of Foam B Concentrate

### 3.1 Protein Foam Concentrate:

This type of concentrate is based on hydrolyzed protein, foam stabilizers and preservatives. It will produce highly stabilized air foam. Protein foam must always be used with an air aspirating type discharge device. Protein foam can be contaminated with fuel if plunged in directly from the fuel surface; therefore, the application technique for Protein foam is quite critical. The foam should be applied as gently as possible to the flammable liquid surface where a dry chemical powder is to be used as the

complementary agent in conjunction with protein foam. It is essential to determine the compatibility of these agents for simultaneous application.

### **3.2 Aqueous Film Forming Foam Concentrate (AFFF):**

These concentrates are manufactured from synthetic type materials such as synthetic foaming agents (hydrocarbon surfactants), solvents (i.e., viscosity leveler, freezing point depressant, foam booster), fluoro-chemical surfactants, small amounts of salts and foam stabilizers (slow drainage, increases fire resistance).

AFFF generated foams extinguish hydrocarbon flammable liquid fires the same way as the protein or fluoroprotein foams; however, there is an additional feature. An aqueous film is formed on the surface of the flammable liquid by the foam solution as it drains from the foam blanket. The foam produced acts to provide a barrier to exclude air or oxygen and, by the drainage of a chemically impregnated fluid from the foam to provide a film on the fuel surface capable of containing fuel vapor. The produced foam does not have the density and visual appearance of foams produced from protein or fluoroprotein concentrates. The AFFF foams are compatible with all currently available dry chemical powder agents.

### **3.3 Fluoroprotein foam concentrate:**

Fluoroprotein foam concentrates are manufactured using the same method as protein but with the addition of fluorocarbon surfactants. The addition of these surfactants in the concentrate improves the performance of fluoroprotein foam over protein foam in two areas. It makes the fluoroprotein foam more resistant to fuel contamination/pickup and makes the foam blanket more mobile when discharged onto the flammable liquid. Because the fluoroprotein foam is more resistant to fuel contamination, it allows the discharging foam to apply directly to the fuel surface and the foam blanket will not become as saturated by fuel vapor. Fluoroprotein foam is sometimes used in the hydrocarbon processing industry for storage tank fire-fighting. It is necessary to use with air-aspirating discharge devices.

### **3.4 Film Forming Fluoro-protein (FFFP):**

FFFP is a derivative of AFFF and fluoroprotein. These concentrates are based on fluoroprotein formulations to which an increased quantity of fluorocarbon surfactants has been added. FFFP concentrates were developed to obtain the quick knockdown of AFFF with the added burn back resistance of standard fluoroprotein foam. It appears that the FFFP concentrate performance factor lies somewhere between AFFF and fluoroprotein. FFFP concentrates do not have the quick knockdown of the AFFF's when used on a spill fire such as an aircraft crash or a highway spill. When used on fuel in-depth fires they do not have the burn back resistance of fluoroprotein. FFFP foam can be generated with either air-aspirating or non-air-aspirating nozzles. When used through a non-air-aspirated nozzle they do not provide expansion ratios as good as AFFF when used through the same type of nozzle.

### **3.5 Synthetic/detergent (high expansion) foam concentrate:**

Normally used at a concentrate rate between 1.5% to 2.5%, this type of foam concentrate is manufactured from a combination of hydrocarbon surfactants and solvents. High expansion foam solution is normally used through devices that give high expansion ratios such as the medium or high expansion type foam generators. Fires involving solid material as well as flammable liquids can be controlled and extinguished using high expansion foam. It also has a special value for dealing with spillages of liquefied natural gas (LNG). Because of the high expansion ratios being achieved, there is very little water used; even with large discharges of the high expansion foam. High expansion foam has little water content within the bubble wall, making it very light and not suitable for outdoor use. Medium expansion foam normally has an expansion of around 50 - 60 to 1. This foam is denser and can be used outdoors but is still affected by weather conditions.

### **3.6 Alcohol Resistant-Aqueous Film Forming Foam (AR-AFFF):**

AR-AFFFs are available in a 3%-6% type or 3%-3% type concentrate. Flammable liquids that readily mix with water are a more difficult fire to extinguish as opposed to a hydrocarbon fire. Polar solvent/alcohol liquids destroy any foam blanket that has been generated using standard AFFF or fluoroprotein type concentrates. Water in the generated foam blanket mixes with alcohol causing the foam blanket to collapse and disappear until the fuel surface is completely exposed again. To overcome this problem, AR-AFFF type concentrates were developed. Using plain AFFF concentrate as a base material, a high molecular weight polymer is added during the manufacturing process. When AR-AFFF is used on a polar

solvent fuel fire, the polar solvent fuel tries to absorb water from the foam blanket. A polymer precipitates out forming a physical membrane/barrier between the fuel surface and foam blanket. This barrier now protects the generated foam blanket from destruction by the alcohol fuel.

AR-AFFF concentrates are very viscous. Initial impression of this type of foam concentrate may lead one to believe that the concentrate has “gelled” and somehow gone bad. This appearance is caused by the presence of polymers, which are the main components required for polar solvent applications.

#### 4 Future of Firefighting Foams

As environmental regulations on fluorinated synthetic foam concentrates increase around the world, a new generation of environment friendly foam concentrates are being developed. These concentrates are environmentally sustainable fluoro surfactant and fluoro polymer-free firefighting foam used to effectively extinguish Class B fuels with no environmental or toxic breakdown. They use synthetic based foam technology designed to replace traditional AFFF and AR-AFFF foam concentrates and older fluoroprotein foams. These fluorine-free products (some first generation and others second or third generation) will continue to evolve in both agent chemistry and firefighting performance with the goal of achieving high performance on flammable and combustible liquids, improved burn-back resistance for firefighter safety and provide for many additional years of shelf life over foams derived from protein.



Rara lake

# Security Equipment in airports and associated radiation risks

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After your check-in at any airport, you need to go through different security checks. While your luggage goes to the airplane you wait in a line; take off your shoes, your belt, your wallet, any jewelry, you take out your laptop out of the bag; put them on a plastic basket and send the basket to the conveyer for scanning; and you go through a pair of bars that gives a cacophonous BEEP BEEP BEEP sound. You are then sent back and asked to check if you have forgotten to take out any metal object (surprisingly aluminum foils wrapping your medical drugs), put them in the basket and walk through the metal detector once more. Once you become metal free and the metal detector no more contests with you, you rush to collect all your-belongings from the x-ray machine deposit area; walk to the lounge and wait for boarding. Besides this in some airports -TIA in near future - have some other machine you need to pass through: the body scanner. While all these time-consuming and sometimes annoying security equipment are meant for flight safety, many of us don't know the sciences behind them and the associated risks.

The basic airport walk through metal detector may use a single coil acting both as a transmitter and receiver or two coils to generate and detect the magnetic field produced by a technique called pulse induction (PI). A very powerful, short pulse of current is sent in the coil placed on one arch of the gate. Each such pulse generates a brief magnetic field. As soon as the pulse ends, magnetic field reverses polarity and collapses suddenly resulting in a sharp reflected spike of current. This reflected current lasts momentarily for a short period and dies completely. In the absence of metal, the magnetic field decays at uniform rate. However, if a metal is present in the magnetic field, a small current would be induced in the metal creating an opposite magnetic field in the object and thus the time for reversed current to decay would increase. By use of electronic wave the precise time delay is calculated and an alarm is generated. Most of the metal detectors currently used are multi-zone, they have multiple transmit and receive coils, each at a different height so that the exact location of the metal can be determined. It is like having several metal detectors in a single unit. Though the magnetic field created by the machine is large and encompasses all the space underneath the rectangular arch, they are not harmful to the person beneath it. According to Health Physics Society, "even though the magnetic fields [created by metal detectors] are a form of radiation, the radiation the machine emits is nonionizing... [and] does not cause biological damage. Therefore, even repeated exposure to metal detectors has no associated radiation risk."

Airport baggage scanners, on the other hand, use ionizing x-rays for examining the baggage. It works as the same principle as used in the medical imaging. X-rays, like light waves are electromagnetic waves but they are more energetic and so they can penetrate many materials. The object to be inspected are transported through lead-line curtains to the inspection tunnel by a conveyer belt. When the object enters the tunnel, it is detected by a light barrier system, and triggers the x-ray generator to turn on. A thin fan-shaped x-ray beam is then generated by means of collimeter, which penetrates the object in the course of inspection. The beam is partially absorbed by the object and finally strikes a detector line. X-ray machines used in the airport usually are dual-energy x-ray system. That means, dual detection of the x-rays pass through the object. When x-rays hit the first detector, their energy and position is recorded. This detector then passes the x-rays to a filter, which blocks out the lower-energy x-rays. The remaining high-energy x-rays hits the second detector. By comparing these two detector's output, the machine constructs an image showing not only the position of objects, but also finds out what they are made of and their density. Since baggage scanners use lead curtains in both entry and exit openings, the radiation leaking out are minimal but what if any esculent things are in your bags being scanned? Will the food in the baggage be harmful to consume? According to United States FDA, "There are no known adverse effects from eating food, drinking beverages, using medicines, or applying cosmetics that have been irradiated by a cabinet x-ray system used for security screening." The radiation is not stored in the food, but instead it is turned into heat by the food. Even if a chocolate melts, it would be no risk eating.

The more controversial than others, the body scanners, unlike metal detectors can detect both metallic and non-metallic contrabands, even those concealed under layers of clothing. There are two types of full-body scanners in use: backscatter machine and millimeter wave (mmw) imaging. The backscatter machine like baggage scanners use x-rays for inspection of the body. The only difference is the dose used which is low and while baggage scanning uses x-rays that passes (penetrate), backscatters use radiation that reflects of the body. The x-ray source generates parallel stream of low

energy x-rays that strikes the passenger standing in the machine. The images form when x-rays, which penetrate clothing, bounce off the person's skin and returns to the detectors. Radiation also bounces off anything that is a threat to aviation. Because x-rays don't penetrate the body, two scans-front and back-is needed. Therefore every machine uses two radiation sources. Millimeter waves imaging works on the same principle except for x-rays they use special microwaves termed as millimeter waves. The machine consists of a series of small disc-like transmitters stacked one on top of another like a vertebrate in a spine. A single machine contains two such stacks, each surrounded by a curved protective shell and are connected by a bar that pivots round the central point. Each transmitter emits a pulse of energy, that travels as waves to a person standing in the machine, passes through the person's cloths and reflects off the skin or any concealed solid and liquid objects. The transmitters now acts as a receiver and detects the reflected waves. Because several transmitters/receivers are stacked vertically and they rotate around the person, the device can form a complete 3D picture of a person from head to toe and front to back. Body scanning is something like electronic strip to the person being scanned. While there are concerns about the images that are displayed in by the body scanner monitors, let's concentrate on the radiation that we are exposed to at the body scanners. According to an article, "Airport Full Body Screening: what is the Risk?" by the US National Library of Medicine, the millimeter wave scanners in each scan delivers a small fraction of energy of a cellphone transmission and as these radiations are non-ionizing, they are not harmful. However, ionizing radiations by backscatter machines, being of low dose, can still cause some biological damage, but cells repair these damage rapidly. According to the article, x-ray scanners expose individuals to 0.03-0.1 Sv per scan that is equivalent to 3-9 minutes of radiation received from naturally occurring from the sources of daily life.

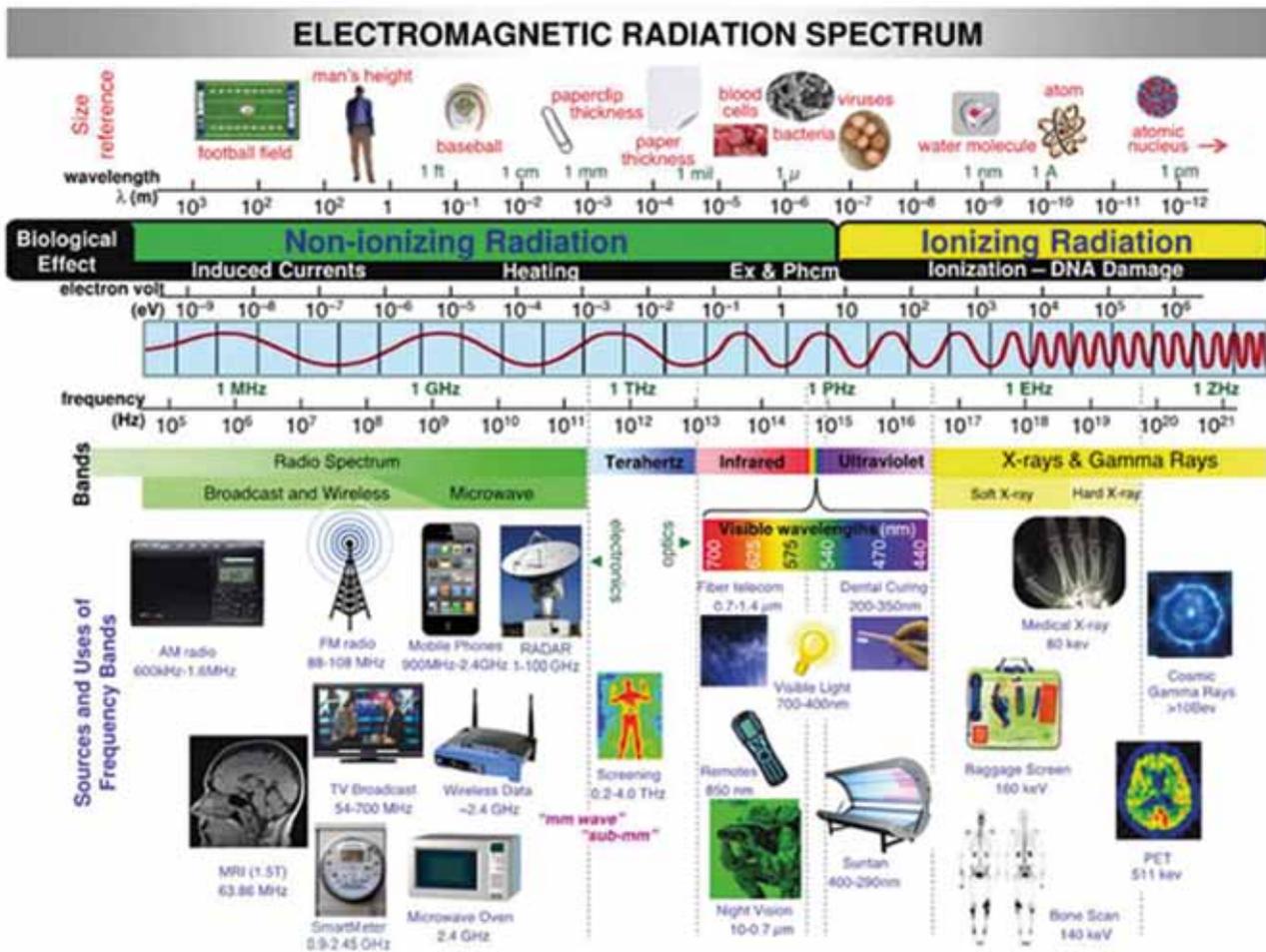


Image source: Scientific American

While the radiation risks from all these security measures may be trivial safety precautions, risks may be higher for the maintenance personnel and the operators. Even frequent flyers may not be exposed to the amount of radiation that the operators may be exposed of. Machines break down frequently. The precautions and the safety measures from these radiations should be planned for situations like this. In many countries film badge dosimeter is used by these personnel for monitoring cumulative dose due to the ionizing radiation. Even passengers can choose not to go through the body-scanners and opt for the metal detectors and pat down instead.

## सार्वजनिक संस्थानमा सुशासन

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



शासन व्यवस्थालाई बढी भन्दा बढी उत्तरदायी, पारदर्शी, जनमुखी, प्रभावकारी र सहभागी बनाउनु नै सुशासन हो । सन् १९५० भन्दा अघि विकासोन्मुख देशका सरकारको प्रकृति Police state थियो भने दोस्रो विश्व युद्ध पश्चात विकास व्यवस्थापनतर्फ ध्यान गएको पाइन्छ । दोस्रो विश्वयुद्ध पछि नै पहिलो विश्वका देशहरूले तेस्रो विश्वका मुलुकहरूलाई सहयोग गर्ने इच्छा व्यक्त गरे । तर, विकासशील मुलुककै आन्तरिक विकृतिका कारण विकसित देशबाट प्राप्त सहयोगका बावजुद त्यहाँ अपेक्षित र लक्षित विकास हुन सकेन । सन् १९८० को दशकपछि सहयोग प्राप्त गर्ने मुलुकले पनि आफुमा भएका विकृतिहरू निराकरण गर्नु पर्ने तथा नीतिगत सुधार गर्नुपर्ने आवश्यकताको बोध भयो ।

वैदेशिक सहयोगको पूर्ण रूपमा सदुपयोग गर्नु पर्ने दातृ निकायको शर्तबाट नै सुशासनको जन्म भएको हो । परिभाषित शब्दको रूपमा सुशासनको प्रथम प्रयोग सन् १९८९ मा विश्व बैंकले गरेको थियो । पश्चिमी देश तथा विभिन्न दाताहरूले तेस्रो विश्वका देशहरूको शासकीय प्रणालीलाई सुशासनयुक्त बनाउन सहयोगका शर्तको रूपमा यसलाई अगाडि सारेका हुन् । आज सुशासन विश्वका सबै राष्ट्रका लागि लोकप्रिय शब्द बनेको पाइन्छ । नेपालमा लोक कल्याणकारी राज्यको अवधारणालाई वलियो बनाइ दिगो, फराकिलो र समावेशी आर्थिक वृद्धि हासिल गरी न्याय र नैतिकतामा आधारित स्वस्थ समाज निर्माण गर्न सार्वजनिक संस्थानको स्थापना गरिएता पनि अपेक्षित लक्ष्य हासिल हुन सकेको छैन । यसको मुख्य कारण नै सुशासनको अभाव हो ।

गरीबी निवारण, वस्तु तथा सेवाको सुपथ मुल्यमा उपलब्धता, रोजगारीको सिर्जना, बैकिङ्ग तथा वित्तीय क्षेत्रको विकास, गार्हस्थ उत्पादनमा वृद्धि, उद्यमशीलताको विकास, वैदेशिक व्यापारमा सहजीकरण, सामाजिक आर्थिक विकासमा योगदान, पूर्वाधार क्षेत्रको विकास, आर्थिक स्रोत र साधन सीमित व्यक्ति वा संस्थाको हातमा जान नदिनु, स्रोत र साधनको कुशल उपयोग गर्नु आदि जस्ता महत्व बोकेर स्थापना भएका सार्वजनिक संस्थाहरू कमजोर सुशासनका कारण आज आफ्नो उद्देश्य हासिल गर्न प्रायः असफल भएका छन् ।

### सार्वजनिक संस्थानमा सुशासनको अवस्था

वर्तमान संविधानको प्रस्तावनाले सुशासनलाई आत्मसाथ गरेको भएता पनि यसको व्यवहारिक प्रयोग न त सरकारले गरेको पाइन्छ, न त यस अन्तर्गतका सार्वजनिक संस्थानहरूले । अधिकांश सार्वजनिक संस्थानहरूलाई अविच्छिन्न उत्तराधिकारवाला एक स्वशासित र संगठित संस्था हुने कुराको सुनिश्चितता विभिन्न संस्थान सम्वन्धि ऐन र कानूनले गरेका छन् तर के व्यावहारिक रूपमा सार्वजनिक संस्थान आफै स्वशासित छन् त ? सरकारले आफूले संस्थानलाई सुम्पेको दायित्वअनुसार काम गर्ने वातावरण सिर्जना गरेको छ ? सार्वजनिक संस्थानले आफ्नो क्षमताअनुसार इमनदारी साथ काम गरेका छन् त ? यी प्रश्नको उत्तर पाउन सहज छैन । सार्वजनिक संस्थानहरूले आफ्नो क्षमता अनुसार आम नागरिकलाई सेवा र सुविधा पुऱ्याउन सकेका छैनन् । सरकारले पनि समय समयमा अनावश्यकरूपमा सार्वजनिक संस्थानमा हस्तक्षेप गर्ने गरेको पाइन्छ । यस्ता किसिमका कार्यले संस्थागत सुशासनलाई कमजोर बनाउने मात्र होईन कि जनताको सरकारप्रतिको दृष्टिकोण समेत नकरात्मक बन्न पुग्छ ।

सार्वजनिक संस्थानमा व्यावसायिकता र प्रतिस्पर्धा प्रवर्द्धन गरी उत्पादन र उत्पादकत्व अभिवृद्धि गर्ने उद्देश्यका साथ नेपाल सरकारले "सार्वजनिक संस्थान निर्देशन बोर्ड गठन तथा कार्य संचालन आदेश, २०६८" जारी गरी बोर्डको गठन गरे पनि त्यसले अपेक्षाकृत रूपमा कार्य संचालन गर्न सकेको छैन । यसको प्रभाव संस्थानको कार्यकारी प्रमुखको छनौटमा पर्नुका साथै सार्वजनिक संस्थानले सम्पादन गरेका कार्यहरूको पनि अनुगमन र मूल्यांकन प्रभावकारी हुन सकेको छैन । आजको

एककाइसौ शताब्दीमा योग्यता, ज्ञान, सीप र क्षमताका आधारमा नभइ राजनीतिक प्रभावका आधारमा कार्यकारी प्रमुखको छनौट हुनु आफैमा सुशासनलाई कमजोर पार्ने कार्य हो ।

आ. व. २०७२/०७३ मा जम्मा ३७ संस्थानमध्ये २३ वटा नाफामा, १२ घाटामा छन भने २ कम्पनी संचालनमा रहेका छैनन् । धेरै संस्थानहरूले आफूले गरेको आम्दानी र खर्चको विवरण देखाउन सकेका छैनन् । प्रायःजसो संस्थानहरूले समयमा नै लेखापरीक्षण गर्न नसक्नु आफैमा एउटा चुनौतीको पहाड हो भने बेरुजुको मात्रामा बढोत्तरी भइरहनु अर्को अप्ठ्यारो पक्ष हो । कुल बेरुजुमा सार्वजनिक संस्थानको हिस्सा समेत वर्षेनी बढदै गइरहेको स्थिति छ । आर्थिक पारदर्शिता प्रवर्द्धन गरी निजीक्षेत्रको पनि मार्गदर्शक बन्नु पर्ने सार्वजनिक संस्थानको हालको अवस्था समय सापेक्ष छैन । आर्थिक पारदर्शिता कायम गरी सेवा र सुविधालाई आमनागरिक सम्म सहज रूपमा पुऱ्याउन सक्ने अवस्थाको सिर्जना गर्नु पर्नेमा त्यस किसिमको वातावरण निर्माण भएको पाइँदैन ।

सार्वजनिक संस्थानहरूमा विभिन्न राजनीतिक दलआवद्ध ट्रेड युनियनका आठ दश वटा बोर्डहरू भुन्ड्याइएको हुन्छ । सार्वजनिक संस्थानबाट हुने कर्मचारी एवं पदाधिकारीहरूको नियुक्ति, सरुवा, वढुवा, सार्वजनिक खरीद तथा अन्य आर्थिक क्रियाकलाममा कर्मचारी ट्रेड युनियनको प्रत्यक्ष हस्तक्षेप हुने परिपाटीले संस्थानको व्यावसायिक तथा व्यवस्थापकीय क्षमतामा ह्रास आइरहेको छ । संस्थागत सुशासन र संस्कृतिको विकास नगरी संस्थानहरूमा आर्थिक दायित्वमात्र थप गर्ने कार्यले सुशासनलाई त कमजोर पारेकै छ, साथै नागरिकको सरकारी सेवाप्रतिको अपेक्षालाई पनि निराशामा परिणत गरेको छ । संस्थानको संचालक समिति गठनमा राजनीतिक दलको जुन खालको सोच र चिन्तन छ र जसरी ट्रेड युनियनले त्यही सोचलाई साथ दिन्छन, त्यसले समग्रमा संस्थानको कार्य प्रकृति र कार्य संस्कृतिमा असर पर्ने गई संस्थानको उत्पादन र उत्पादकत्वमा कमी आएको छ, र आर्थिक पारदर्शीतामा प्रश्न चिन्ह खडा गरेको छ ।

निजीकरण ऐन, २०५० ले आर्थिक उदारीकरण र विश्वव्यापीकरणलाई आन्तरिकीकरण गरेको सन्दर्भमा सार्वजनिक संस्थानहरू आवश्यकताका आधारमा निजीकरण हुनु स्वभाविक हो । तर निजीकरण भएका अधिकांश सार्वजनिक संस्थान या त बन्द भइरहेका छन या विवादको घेरामा रूमल्लिरहेका छन् । निजीकरण गरेका संस्थानबाट अपेक्षित परिणाम आउनुको सट्टा निजीकरणप्रति नै नकरात्मक धारणा बन्दै गइरहेको छ । निजीकरणपश्चात निजीक्षेत्रलाई ति संस्थान संचालन गर्न कठिन परिरहेको छ । निजीकरण भएका संस्थानहरूको भूमिका र कार्यप्रति आमनागरिक र सरकारले प्रशस्त प्रश्न उठाउने गरेका छन् । सार्वजनिक संस्थान निजीकरण गर्ने मोडालिटीबारे पनि विभिन्न राजनीतिक दलबीच फरक बुझाइ रहेकाले पनि अपेक्षित परिणाम आउन कठिन छ । निजीकरण अर्थतन्त्रको साध्य नभई साधन मात्र हो । यो साधनलाई सही किसिमबाट उपयोग गर्न सकेमा मात्र अर्थतन्त्र र समाजमा अनुकूल प्रभाव पर्नेछ । निजीकरणमा लामो समय लाग्नु, कर्मचारी व्यवस्थापनमा कठिनाइ हुनु, उतरदायित्व बोध र जवाफदेहिताको कमी हुनु, स्थानीय जनताबाट विरोध हुनु जस्ता समस्याले गर्दा पनि संस्थानको निजीकरण प्रक्रियामा कठिनाइ भएको पाइन्छ ।

संचालनमा रहेका संस्थानहरूका लागि एउटै छाता ऐन आवश्यक भइसकेको छ । ३७ वटा संस्थान विभिन्न ५ प्रकारका ऐनहरूबाट संचालित छन् । कम्पनी ऐन अनुसार २३ वटा, संस्थान ऐन अनुसार ३ वटा, सम्बन्धित संस्थान ऐन अनुसार ७ वटा, संचार ऐन अनुसार २ वटा र बैंक तथा वित्तीय संस्थासम्बन्धी ऐन अनुसार ३ वटा संस्थानहरू संचालनमा रहेका छन् । फरक फरक ऐनद्वारा स्थापित र संचालित भएका कारणले एउटै प्रकारका बस्तु तथा सेवा उपलब्ध गराउने संस्थानमा पनि सेवा, सुविधा, नियुक्ति, सरुवा, वढुवा आदिमा फरक व्यवस्था रहेका छन् जसले सुशासन प्रवर्द्धनमा असर गरेको छ । कार्यप्रणाली र कार्यविधिमा आउने फरकपनलाई वस्तुनिष्ठ ढङ्गले व्यवस्थापन गर्न सकिएको छैन । सेवा सुविधाका विषयमा समेत एकरूपता कायम गर्न सकिएको छैन । स्थापना गरिएका संस्थानहरूको स्पष्ट लक्ष्य, रणनीति, दृष्टिकोण र कार्यनीति तर्जुमा गरी कार्य सम्पादन गरिएको अवस्था पनि छैन । विगतमा पहुँच र प्रभावका भरमा संस्थानमा जागिर खाने चलनमा वर्तमान संविधानले अंकुश लगाइ दिइएको छ जुन सुशासन कायम गर्ने दिशामा महत्वपूर्ण उपलब्धी हो । व्यवस्थापकीय कमिकमजोरीका कारण संस्थानहरूले लागत अनुरूपको सेवा र सुविधा उपलब्ध गराउन सकेका छैनन् । सार्वजनिक संस्थानमा नीतिगत, कानूनी, संरचनागत र व्यवहारगत सुधारको खाँचोलाई सार्थकतामा परिणत गरी सुशासन कायम गर्नु आजको आवश्यकता हो ।

### सार्वजनिक संस्थानका विद्यमान समस्या

अधिकांश संस्थानहरूले आफ्नो उद्देश्यअनुसार कार्य सम्पादन गर्न सकेका छैनन् । संस्थानहरूले आफ्नो औचित्य पुष्टि गर्न नसकेको अवस्था छ । उनीहरूको प्रतिस्पर्धात्मक क्षमता एकदमै कमजोर छ । वित्तीय कार्यकुशलतामा प्रभावकारीता कायम

गर्न सकिएको छैन । सरकारले लगानीअनुरूपको प्रतिफल प्राप्त गर्न सकेको छैन । प्रायः संस्थानको सेवा प्रवाह तथा बस्तुको आपूर्ति नियमित, पर्याप्त र गुणस्तरीय छैन । बजारमा प्रतिस्पर्धात्मक क्षमता कमजोर हुँदा जहाँ निजीक्षेत्रको उपस्थिति बलियो छ, त्यहाँ संस्थान असफल देखिएका छन् । संस्थानहरूले सामाजिक सेवालाई रोज्ने कि व्यवसायिकतालाई रोज्ने भन्ने स्पष्टता छैन जसले उनीहरूको उद्देश्यमा नै विरोधाभास सिर्जना गरेको छ । क्षमता र कार्य सम्पादनको तुलनामा धान्ने नसक्ने किसिमबाट सेवा र सुविधाको माग गर्ने प्रचलन बढ्दो छ । संस्थानलाई सुधार्ने कुरामा कर्मचारीतन्त्र र सरकारको प्रतिवद्धता तथा इच्छा शक्तिको अभाव रहेको छ ।

आवश्यकता भन्दा बढी ट्रेड युनियन र राजनीतिक हस्तक्षेपले संस्थानहरूमा संस्थागत सुशासन कमजोर हुँदै गइरहेको छ । सार्वजनिक संस्थानमा व्यावसायिक आदर्श र उद्यमशीलताको अभाव छ । अस्थिर सरकारका पटके नीतिहरूले संस्थानको रणनीतिक लक्ष्य प्राप्तिमा बाधा उत्पन्न गरेको पाइन्छ । कार्य सम्पादनमा स्वतन्त्रता र स्वायत्तता प्राप्त गर्ने कुरामा आज पनि सार्वजनिक संस्थानहरूले संघर्ष गर्नु पर्ने अवस्था छ । संस्थानको अनुगमन र मूल्यांकन प्रणाली फितलो भएको कारण बस्तु तथा सेवा उत्पादनमा गुणस्तर अभिवृद्धि भएको छैन । अधिकांश संस्थानहरूमा कर्मचारीहरूको आकार ठीक छैन ।

### संस्थान सुधारका उपायहरू :

- ✘ प्रत्येक सार्वजनिक संस्थानको स्थापनाका उद्देश्य स्पष्ट पार्ने,
- ✘ सार्वजनिक संस्थान बोर्डलाई ऐनद्वारा स्थापना गरी अधिकार सम्पन्न र सक्रिय बनाउने,
- ✘ अध्यक्ष, महाप्रबन्धक, प्रमुख कार्यकारी तथा सञ्चालक समितिका सदस्यलगायत उच्चस्तरीय व्यवस्थापन समूहको नियुक्ति गर्दा योग्यता, इमान्दारी, व्यावसायिकता, भावी योजना र प्रस्तुतीकरणका आधारमा खुल्ला प्रतिस्पर्धाका माध्यमबाट गर्ने, नियुक्ति पाएकासँग कार्य सम्पादन सभौता गर्ने र कार्य सम्पादन मूल्यांकनका आधारमा थप निरन्तरता दिने वा नदिने निर्णय लिने,
- ✘ सार्वजनिक संस्थानमा राजनीतिक र सरकारी हस्तक्षेपको अन्त्य गर्ने,
- ✘ उचित संख्यामा कर्मचारी भर्ती गर्ने र दक्ष जनशक्ति आपूर्तिको लागि लोकसेवा आयोगको भूमिकालाई अभिप्रभावकारी बनाउने,
- ✘ आवश्यकता र औचित्यका आधारमा संस्थान संचालन वा खारेज गर्ने, केही निजीकरण गर्ने, सहकारीकरण गर्ने, कुनै गाभ्ने आदि,
- ✘ एउटा मात्र आधिकारिक ट्रेड युनियन रहने व्यवस्था गर्ने, ट्रेड युनियनलाई हुने राजनीतिक संरक्षणको अन्त्य गर्ने,
- ✘ संस्थानको कुनै पनि तहको नेतृत्वमा मन्त्री नवस्ने र सार्वजनिक संस्थानमा राजनीतिक नियुक्ति गर्ने कार्य अन्त्य गर्ने,
- ✘ कार्य सम्पादनमा आधारित तलब प्रणाली (एभचायचबलअभ दबकभम उबथ कथकतभ) सहित वस्तुनिष्ठ कार्य सम्पादन प्रणाली लागू गर्ने,
- ✘ सार्वजनिक संस्थानहरूको व्यावसायिक योजना तर्जुमा गरी बजेट र कार्यक्रमलाई वैज्ञानिक, सहभागितामूलक र पारदर्शी बनाउने,
- ✘ लेखाप्रणालीलाई वैज्ञानिक र अन्तराष्ट्रिय लेखामान अनुरूप बनाउने,
- ✘ सार्वजनिक संस्थानमा रहेको कोषको व्यवस्था नभएको दायित्वको सम्बन्धमा स्पष्ट सीमांकन गरी आर्थिक क्षमता र हैसियत नभएका संस्थानमा यस प्रकारका दायित्व सिर्जना गर्ने कार्यलाई निरूत्साहित गर्ने,
- ✘ सार्वजनिक संस्थानहरूलाई संघीय ढाँचाअनुरूप पुनर्संरचना गर्ने,
- ✘ व्यावसायिक र रणनीतिक साभेदारमार्फत क्रमशः निजीक्षेत्रलाई भित्र्याउने,
- ✘ निजीकरणबारे राजनीतिक दलवीच सहमति कायम गरी उपयुक्त मोडालिटी तोक्ने,
- ✘ नियमित लेखापरीक्षण गराई आर्थिक पारदर्शिता कायम गर्ने,
- ✘ विद्युतीय शासनको प्रवर्द्धन गरी प्रविधिमैत्री व्यवस्थापन पद्धति लागू गर्ने,

- ✘ नतिजामा आधारित अनुगमन र मूल्यांकनका सूचकहरू तर्जुमा गरी लागू गर्ने,
- ✘ अनुगमन र मूल्यांकनबाट प्राप्त पृष्ठपोषणलाई मार्गदर्शन बनाइ सुधारलाई निरन्तरता दिने,
- ✘ सूचनाको हक सम्बन्धी ऐन, २०६४ को पूर्ण पालना गर्ने व्यवस्था मिलाउने,
- ✘ एउटै प्रकृतिको कार्य गर्ने संस्थानहरूलाई गाभ्ने ।

## उपसंहार

सार्वजनिक संस्थानहरू जुन उद्देश्य र प्रयोजनले स्थापना भएका हुन् ती उद्देश्य र प्रयोजन पूरा हुन सकेको देखिदैन । यसले राज्यकोषमा अनावश्यक भार बढाएको छ । उत्पादन लगत घटाउने, आपूर्ति प्रणालीमा सुधार गर्ने र नियमित गर्ने, चुहावट नियन्त्रण गर्ने, संचालन खर्च घटाउने, वस्तु तथा सेवाको गुणस्तर बढाउने, कार्यप्रणाली र प्रक्रियामा सुधार गर्ने, नयाँ प्रविधिको प्रयोग बढाउने जस्ता उपायबाट संस्थानको प्रभावकारिता र उपादेयता बढाउन सकिन्छ । सार्वजनिक संस्थानमा विभिन्न कमीकमजोरी भए तापनि नेपाल जस्तो मिश्रित अर्थतन्त्र अवलम्बन गरेको मुलुकमा यस्ता संस्थाको सान्दर्भिकता कम आँकलन गर्न मिल्दैन । जसरी निजामती सेवा अन्य सेवाका लागि मार्गदर्शन मानिन्छ, सार्वजनिक संस्थान पनि निजी संस्थाहरूका लागि मार्गदर्शन बन्न सक्नु पर्दछ ।

नेपाल अतिकम विकसित मुलुक भएकाले पनि निजीकरणको विकल्प तेर्स्याएर सरकारले हात भिकिहाल्ने अवस्था छैन । राष्ट्रिय उत्पादकत्व वृद्धिमा अपेक्षित योगदान प्रदान गर्न नसके पनि निजीक्षेत्र पूर्णरूपमा व्यावसायिक नभएसम्म निजीकरणलाई विचार गरेर मात्र कार्यान्वयनमा ल्याउनु उपयुक्त हुने देखिन्छ । विश्वव्यापीकरण र उदारीकरणले पारेको प्रभाव र निजीक्षेत्र विकसित हुँदै आएको सन्दर्भमा सार्वजनिक संस्थानका लागि अब सरकारले ठोस कदम चाल्नु पर्ने अवस्था छ । सरकारको भूमिकामा आएको परिवर्तनलाई दृष्टिगत गरी सार्वजनिक संस्थानलाई पुनर्संरचना गर्नु आवश्यक छ ।

## सन्दर्भ सामाग्रीहरू

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३. सोपान मासिकका विभिन्न अंकहरू
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गोमा बज्जाडे  
अधिकृत, ने.ना.उ.प्रा.



### पृष्ठभूमि

आधुनिक युगमा कुनै पनि पुस्तकालयमा सूचनाका स्रोतहरू जम्मा गरी सूचीकरण र वर्गीकरण गरेर मात्र पाठकहरूलाई छिटोछरितो तरीकाले सेवा पुऱ्याउन कठिन हुन्छ । पाठकहरू व्यस्त हुने र आफैँ पुस्तकालयमा गएर आवश्यक सामग्री खोजी गर्दा धेरै समय लाग्ने भएकोले उनीहरूको समय बचाउन भौतिकरूपमा उपस्थित नभए पनि चाहिएको सूचना सामग्री सम्बन्धित पुस्तकालयमा छ कि छैन भन्ने जानकारी घर, कार्यालय वा जुनसुकै स्थानबाट प्राप्त गर्न सूचीकरणलाई अनलाइन गर्नु पर्ने हुन्छ जसको लागि इन्टरनेटको आवश्यकता रहन्छ । इन्टरनेट र पुस्तकालय एक अर्काका परिपूरक भएको हुनाले दुवै उत्तिकै महत्वपूर्ण एवम् अपरिहार्य छन । त्यसकारण इन्टरनेटमा सबथोक पाइन्छ, हातहातमा मोबाइल र ल्यापटप कम्प्युटर छन्, पुस्तकालय किन चाहियो भन्ने भ्रमलाई चिर्ने उद्देश्यले यो लेख तयार पारिएको हो ।

### पुस्तकालय र इन्टरनेट

पुस्तकालयले बौद्धिक पुस्तक, अखवार, ज्ञानकोष तथा अन्य छापिएका सन्दर्भ सामग्रीहरू निःशुल्क प्रयोग गर्ने सुविधा प्रदान गर्दछ भने इन्टरनेटमा आधिकारिक बौद्धिक सामग्रीहरू बाहेक अन्य अरू धेरै सूचना सामग्रीहरू निःशुल्क पाइन्छ, आधिकारिक बौद्धिक सामग्रीको लागि निःशुल्क एवम् सशुल्क सदस्यता लिनु पर्ने हुन्छ ।

### इन्टरनेटको युगमा पुस्तकालयको महत्व

इन्टरनेटमा हजारौं वेबपेजहरू हेर्दा पनि कुनै आवश्यक चीज फेला पार्न कठिन हुन्छ । हामीलाई आवश्यक महत्वपूर्ण सामग्रीमध्ये एकदमै थोरै मात्र इन्टरनेटमा निःशुल्क पाइन्छ । हेरिङ् (२०१०) का अनुसार विश्वमा प्रकाशित जर्नलहरूमध्ये केवल ८५ जर्नलहरू मात्र वेबमा राखिएका हुन्छन् र अझ महत्वपूर्ण पुस्तकहरूका त केही अंश मात्रै राखिएका हुन्छन्, पूरा पुस्तक वा लेखहरू निःशुल्क उपलब्ध हुँदैनन् । प्रत्येक पाठकले महँगो मूल्य तिरेर छापिएको तथा डिजिटाइज्ड गरिएको सामग्री किन्न असम्भव प्रायः हुने भएकोले पुस्तकालयको महत्व छ । पुस्तकालयले आफ्नो संस्थाको प्रकृति अनुसार सिमित संख्यामा आवश्यक सूचना सामग्री खरीद गरी सकेपछि त्यसका सम्पूर्ण सदस्यहरू उक्त सामग्रीबाट लाभान्वित हुन सक्छन् ।

इन्टरनेट भनेको सूचीकरण नभएको ठूलो पुस्तकालय हो । त्यसकारण इन्टरनेटमा अत्यावश्यक सूचना सामग्री खोजी गर्न विशेष सीप चाहिन्छ, सीपविना इन्टरनेटमा अत्यावश्यक सूचना सामग्री खोज्न घाँसे मैदानमा हराएको सियो खोज्नु जत्तिकै कठिन हुन्छ । खोजिएको शीर्षकको सूचना सामग्री पाइए तापनि आधिकारिक र समसामयिक नहुन सक्छ । यदि दक्ष पुस्तकालयकर्मीले व्यवस्थित गरेको एउटा साधनस्रोत सम्पन्न पुस्तकालयमा आवश्यक सूचना सामग्री खोजियो भने केही क्षणमै सम्बन्धित विषयमा यति संख्याका लेख तथा पुस्तकहरू रहेछन् भन्ने जानकारी हासिल गर्न सकिन्छ । यसको अर्थ पुस्तकालयकर्मी बाहेक कसैले गर्न सक्दैनन् भन्ने नलागोस, त्यो क्षमता राख्ने विशेष पाठकहरूले पनि आवश्यक सामग्री खोज्न सक्छन तर त्यस्तो क्षमता सबैमा नहुने भएकाले पनि पुस्तकालयविद् तथा पुस्तकालयकर्मीको महत्व रहेको हो ।

इन्टरनेटमा जहाँ जसले जे पनि राख्न सक्छ । त्यहाँ रहेका सामग्रीको गुणस्तर अनियन्त्रित हुन्छ । ख्यातिप्राप्त प्रकाण्ड विद्वान विदुषीहरूले मात्र नभएर अल्पज्ञानीहरूले समेत जे मन लाग्यो त्यही सामग्रीहरू अपलोड गर्ने सम्भावना हुन्छ । त्यसैले राजहंसले दुध र पानी छुट्याए भै गुणस्तरीय सामग्री खोजी गर्न दक्ष पुस्तकालयकर्मी सहितको पुस्तकालयको अहम भूमिका रहन्छ ।

जर्नलहरूको डिजिटाइजेशन पुस्तकालयको लागि वरदान हो तर जर्नलमा पाइने पूर्ण पाठ वेबसाइट (full-text site) हरूमा पनि लेखहरू पूरा हुँदैनन् । फुटनोट मात्र नभई कतिपय लेखहरूका मुख्य अंश नै छुटेका हुन्छन् । टेबल, ग्राफ तथा फर्मूलाहरू प्रिन्ट गर्दा पढ्न सकिने अवस्थामा आउँदैनन् । डिजिटाइज्ड गरेका शीर्षकहरू सो कार्य गर्ने संस्था र व्यक्तिको इच्छानुसार निरन्तर परिवर्तन भइरहेका हुन्छन् ।

## डिजिटल पुस्तकालयको युगमा भौतिक पुस्तकालयको महत्व

भौतिक रूपमा उचित स्थानमा रहेको दिनभर सेवा प्रदान गर्ने साधनस्रोत सम्पन्न पुस्तकालयले पाठकहरूको व्यक्तित्व विकास गर्नको लागि अध्ययन/अनुसन्धान गर्न अत्यन्त राम्रो वातावरण बनाइदिन्छ । कार्यालयमा रहने यस्तो पुस्तकालयले कर्मचारीहरूलाई कार्यालय समयको मध्यान्तर एवम् कार्यालय समयभन्दा अघि र पछि पनि केही न केही ज्ञान हासिल गरौं भन्ने भावना जागृत गराइदिन्छ । जसरी प्राथना गर्न एउटा मन्दिर, चर्च र मस्जिदमा गएपछि दिनभर एक किसिमको उर्जा प्राप्त हुन्छ त्यसरी नै पुस्तकालय गएपछि अध्ययनप्रति रूची जागेर आउँछ । शान्त, उज्यालो र उचित तापक्रम भएको भौतिक पुस्तकालयमा डिजिटल सामग्री तथा आवश्यक संख्यामा इन्टरनेटसहित कम्प्युटरको व्यवस्था गर्न सके पुस्तकालय अध्ययन/अनुसन्धानको आकर्षक केन्द्र बन्ने कुरामा दुईमत हुन सक्तैन ।

पुस्तकालय नै शान्ति र समृद्धिको प्रतिक हो । पुस्तकालय बौद्धिक एकाई हो जसले अध्ययनशील भई शान्त, सभ्य र सहयोगी भएर बाँच्न प्रेरित गरिरहेको हुन्छ । कुनै समुदाय, कार्यालय र राष्ट्र कति सभ्य छ भन्ने कुरा त्यहाँ रहेका पुस्तकालयले भल्काउँछन् । व्यवस्थित र साधन सम्पन्न पुस्तकालयले त्यहाँका पाठक पुस्तकालयप्रति सचेत, संगठन पुस्तकालयप्रति संवेदनशील र पुस्तकालयकर्मी दक्ष छन भन्ने बुझाउँछ ।

व्यवस्थित र साधनस्रोत सम्पन्न पुस्तकालय कुनै पनि कार्यालयमा कार्यरत श्रेणीविहिन कर्मचारीदेखि उच्च ओहदाका पदाधिकारीहरूका लागि बौद्धिक तथा वृत्ति विकासको आधार हो । कार्यप्रति उत्प्रेरणा र आफ्नो मनोबल बढाउन, तनाव, द्वन्द्व तथा संकट व्यवस्थापन आदि विविध पक्षमा पुस्तकालयले जादुको चमत्कार जस्तो रूपमा होइन, नजानिंदो तरीकाले बिस्तारै जनशक्तिमा परिवर्तन ल्याउन सघाउ पुऱ्याउँछ ।

नेपाल नागरिक उड्डयन प्राधिरणको पुस्तकालयमा पनि आवश्यक स्रोत र साधनको व्यवस्था गरेर Online Public Access Catalogue (OPAC) र इ-पुस्तकालय सहितको वर्णशंकर (Hybrid) पुस्तकालयको व्यवस्था गर्न अत्यावश्यक देखिन्छ । अधिकारी (२०७३) का शब्दमा भन्नुपर्दा "हाइब्रिड लाइब्रेरी भन्नाले पाठकहरूको इच्छा र सुविधालाई मध्यनजर गरी परम्परागत कागजी तथा विद्युतीयस्वरूप दुवै किसिमका पाठ्य सामग्रीहरूको संकलन गरी परम्परागत र विद्युतीय दुवै किसिमले पुस्तकालयले सेवा प्रदान गर्नु हो ।"

## निष्कर्ष

इन्टरनेट पुस्तकालयको विकास र बिस्तारको लागि वरदान हो । इन्टरनेट र कम्प्युटरको कारणले दिनानुदिन पुस्तकालयले गर्ने कार्य र प्रदान गर्ने सेवामा परिवर्तन हुँदै आएको छ । नयाँनयाँ पुस्तकालय स्वचालिकरण सफ्टवेयर (Library Automation Software) तथा विद्युतीय पुस्तकालय सफ्टवेयर (E-library software) पनि विकास भइरहेका छन् । जसले गर्दा पुस्तकालयकर्मीलाई मात्र होइन, पाठकहरूलाई समेत पुस्तकालयसम्बन्धी ज्ञान आवश्यक छ । इन्टरनेट पुस्तकालयलाई स्रोत साधनसम्पन्न बनाउने एउटा औजार हो । पुस्तकालयहरू हाम्रा साँस्कृतिक तथा बौद्धिक सम्पदा संरक्षणका धरोहर हुन् । इन्टरनेट छ भन्दैमा पुस्तकालयको बेवास्ता गर्नु भनेको इन्टरनेटमा सबै छ शिक्षक र विद्यालय किन चाहियो भन्नु जस्तै हो । सभ्य, शिक्षित, सुसंस्कृत र नैतिकवान नागरिकको विकासको निम्ति प्रत्येक समुदाय, विद्यालय, गाउँपालिका, नगरपालिका, प्रत्येक सरकारी तथा गैरसरकारी संस्थामा एउटा पुस्तकालय हुनु आवश्यक छ ।

## सन्दर्भ सामग्री

अधिकारी, इन्द्रप्रसाद (२०७३) । पुस्तकालय तथा स्रोत केन्द्र: व्यवस्थापन एवम् सञ्चालन । परिवर्तित तेस्रो संस्करण। काठमाडौं: लिमिसेक ।

स्मारिका : दशौं पुस्तकालय दिवस २०७४, काठमाडौं: दशौं पुस्तकालय दिवस ।

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# Transforming Aviation with IT: Advancements & Cyber Security

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Information Technology (IT), now commonly known as Information and Communication Technology (ICT) is the use of computers or related technologies to store, study, retrieve, transmit, and manipulate data, or information, often in the context of certain purpose.

The process of storing, retrieving, manipulating, and communicating information by human dates back to around 3000 BC when the Sumerians in Mesopotamia developed writing. However, the term 'information technology' was specifically used in its modern sense with the publication of an article in the Harvard Business Review in 1958. The authors Harold J. Leavitt and Thomas L. Whisler commented that "the new technology does not yet have a single established name. We shall call it information technology (IT)." They categorized IT in three categories: techniques for processing, the application of statistical and mathematical methods to decision-making, and the simulation of higher-order thinking through computer programmes.

Now let's move our focus towards aviation and IT. The financial resources being invested in modern airports is increasing exponentially. With the advancement of new technologies, the airport IT departments now serve as the backbone of the business, supporting systems and processes that reach all areas of operation. While the investment in technology is exponentially growing, improvement of overall safety and security of airports has become more critical than before as the enhancement of productivity and efficiency; cutting costs and increasing revenue; and in facilitating the passenger experience have become the issues of prime concern.

Like the saying, "With new power, comes new responsibilities", these emerging technologies are offering opportunities but with an additional challenge of integration, centralization, and general management and maintenance of IT support.

According to Kevin Molloy, Vice President of Simplified Passenger Travel and CIO at the Vancouver International Airport (YVR), IT is not only a game changer but it actually has the ability to radically affect how a business operates. Dominic Nessi, CIO and Deputy Executive Director for the Los Angeles World Airports (LAWA) relates that as airports have invested billions of dollars over the years into networks and consolidated servers and data centers, it became apparent more and more that there was a need for an organization that pulled all of it together. However he also sees it as a challenge as the IT organization itself has not risen within the organization and has not been trusted with high level of responsibility, and is not involved in planning at the senior level.

The immediate future seems both exciting and worrying. As the technology sector moves forward faster than other industries can keep up the pace, issues such as cyber security is becoming challenging at alarming rate.

International Air Transport Association (IATA)'s Housman Goudarzi recommends 6 technologies to revolutionize aviation and airport industry.

## Blockchain Technology

Blockchain technology for aviation has been the talk of the town in the last couple of years. A blockchain is a continuously growing list of records, called blocks, which are linked and secured using cryptography. Each block typically contains a hash pointer as a link to a previous block, a timestamp and transaction data. By design, blockchains are inherently resistant to modification of the data. A blockchain can serve as "an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way. For use as a distributed ledger, a blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for validating new blocks. Once recorded, the data in any given block cannot be altered retroactively without the alteration of all

subsequent blocks, which requires collusion of the network majority.

Blockchain offers amazing opportunities that goes well beyond financial transactions, albeit most of the popularity has been gained through Bitcoin and projects initiated by major international banks. Some promising case studies in the aviation sector aided by Blockchain includes Identity Management or Identity and Access Management (IAM), Tokenizing Frequent Flyer Programs, Item Custody-Change Tracking and so on.

For the additional safeguarding of the information, Encryption and Hashing can be included.

## Drones

An aircraft without a human pilot aboard or better known as Unmanned Aerial Vehicle (UAV), drones are a component of an unmanned aircraft system (UAS); which include a UAV, a ground-based controller, and a system of communications between the two. The flight of UAVs may operate with various degrees of autonomy: either under remote control by a human operator or autonomously by onboard computers.

Not only they have gained a massive popularity, they are also becoming affordable for the users. From Combat Drone using missiles and drone strikes in war to multicopter that can be used in a wide range of services from photography to journalism, drones are everywhere. There are delivery drone that can be utilized to transport packages, food or other goods. Soon passenger drone (also known as a drone taxi or pilotless helicopter) will be a means that carries passengers. The first passenger drone was introduced at the Computer Electronics Show (CES) 2016 by Chinese entrepreneurs and is called the Ehang 184. Even agricultural drones are applied in farming.

However the concern of security is always at priority when it comes about drones. Challenges of Regulation, Air Traffic Management, Vertiport Infrastructures, Pilot Training, and so on all needs to be considered.

## Augmented Reality

Unlike Virtual reality (VR) where a computer technology uses VR headsets or multi-projected environments, combined with physical environments or props, to generate realistic images, sounds and other sensations that simulate a user's physical presence in a virtual or imaginary environment, an Augmented Reality (AR) is a live, direct or indirect view of a physical, real-world environment whose elements are "augmented" by computer-generated or extracted real-world sensory input such as sound, video, graphics, haptics or GPS data. It is related to a more general concept called computer-mediated reality, in which a view of reality is modified by computers.

Augmented Reality can be a part of the aviation industry where they can be used for buying lounge access or supporting ground operations on the airport ramp.

## AI (Chatbots)

The term Artificial Intelligence (AI) is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving". A Chatbot is a computer program that conducts a conversation via auditory or textual methods. It goes by many names - talkbot, chatterbot, Bot, IM bot, interactive agent, or Artificial Conversational Entity. They are often designed to persuasively simulate how a human would behave as a conversational partner, thereby passing the Turing test. Typically used in dialog systems for various practical purposes including customer service or information acquisition, Chatbots use sophisticated natural language processing systems, but many simpler systems scan for keywords within the input, then pull a reply with the most matching keywords, or the most similar wording pattern, from a database.

2017 is likely to be the year of dialogue around associated chatbot engines that could act as a single gateway for customers.

## Airline New Distribution Capability

The new airline distribution space is presenting a dynamic model where Global Distribution System provides opportunity to build new products and services. New Distribution Capability (NDC) industry program has been the driving force since couple of years making the necessary standards and guidance available to the industry. NDC is a travel industry-supported program (NDC Program) launched by IATA for the development and market adoption of a new, XML-based data transmission standard (NDC Standard).

## Indoor Positioning Systems (Beacons Technology)

While Global Positioning Systems (GPS) isn't fit enough for indoor purpose where satellite signals are poor and accuracy is insufficient, an Indoor Positioning System (IPS) helps to locate objects or people inside a building using radio waves, magnetic fields, acoustic signals, or other sensory information collected by mobile devices. Now it's possible to accurately know the location of moving objects (e.g. people) inside buildings. However, the IPS system still lacks a standard.

With the rise of Beacons technology, airlines, and airports are very likely to start using this technology to provide better/customized services to passengers as they travel through the airport terminal. As the International Airport Review states, Beacons make it possible for airports and airport vendors to know where people are and send them relevant, personalized information. The information might be a gate number, a baggage carousel, flight status, or even a passenger's favourite coffee shop.

IPS uses different technologies, including distance measurement to nearby anchor nodes (nodes with known positions, e.g., WiFi access points), magnetic positioning, dead reckoning. They either actively locate mobile devices and tags or provide ambient location or environmental context for devices to get sensed.

With all these advancements around, Cybersecurity has become one of the top-of-mind issues of the day.

Cyber Security, another name for Computer security or IT security, is the protection of computer systems from the theft and damage to their hardware, software or information, as well as from disruption or misdirection of the services they provide. Cyber Security ranges from controlling physical access to the hardware to protecting against harm that may come through network access, data and code injection. Also, due to malpractice by operators, whether intentional, accidental, IT security is susceptible to being tricked into deviating from secure procedures through various methods. Due to the increasing reliance on IT, Internet and other smart technology, the field of cyber security is gaining importance.

Vulnerabilities in a computer system can be exploited. The most common threats can be classified as: backdoors - a secret method of bypassing normal authentication or security controls, Denial of Service Attacks (DoS) - designed to make a machine or network resource unavailable to its intended users, Direct Access Attacks - unauthorized user gaining physical access to a computer is most likely able to directly copy data from it, Eavesdropping - surreptitiously listening to a private conversation, typically between hosts on a network, Spoofing - masquerading as a valid entity through falsification of data (such as an IP address or username), Phishing - acquire sensitive information such as usernames, passwords, and credit card details directly from users and many more.

As the aviation industry is made of complex systems, it is very much reliant on such systems which could be attacked. A simple power outage at one airport can cause repercussions worldwide, disrupting the reliable radio transmissions on much of the system and controlling aircraft over oceans is especially dangerous because radar surveillance only extends 175 to 225 miles offshore. There is also potential for attack from within an aircraft. In Europe, with the (Pan-European Network Service) and NewPENS, and in the US with the NextGen program, air navigation service providers are moving to create their own dedicated networks. The consequences of a successful attack range can range from loss of confidentiality to loss of system integrity, air traffic control outages, loss of aircraft, and even loss of life.

A security breach in a cyber system causes serious financial damage. However there are no any standard model to compute the cost of an incident as the only data available is that which is made public by the organizations involved. Several computer security consulting firms produce estimates of total worldwide losses attributable to virus and worm attacks and to hostile digital acts in general. The loss estimates by these firms range from \$13 billion (worms and viruses only) to \$226 billion (for all forms of covert attacks). The reliability of these estimates is often challenged; the underlying methodology is basically anecdotal. Security breaches continue to cost businesses billions of dollars but a survey revealed that 66% of security staffs do not believe senior leadership takes cyber precautions as a strategic priority.

Protecting against these breaches requires countermeasures. In computer security a countermeasure is an action, device, procedure, or technique that reduces a threat, a vulnerability, or an attack by eliminating or preventing it, by minimizing the harm it can cause, or by discovering and reporting it so that corrective action can be taken. Some countermeasures include:

- Security by design or secure by design – involves designing software from the ground up to be secure. In this case, security is considered as a main feature. It can include Principle of Least Privilege, Code Reviews and Unit Testing, Defense in Depth, Audit Trails, etc.
- The Open Security Architecture organization defines IT security architecture as "the design

artifacts that describe how the security controls (security countermeasures) are positioned, and how they relate to the overall information technology architecture. These controls serve the purpose to maintain the system's quality attributes: confidentiality, integrity, availability, accountability and assurance services".

- Security Measures – It is a conceptual idea, attained by the use of the three processes: threat prevention, detection, and response.
- Vulnerability management - identifying, and remediating or mitigating vulnerabilities, especially in software and firmware.
- Other Measures – Secure Operating System (OS), Hardware Protection Mechanisms, Response to Breaches, etc.

As Aviation Sector is scaling at a large scale with all these advancements and integration of the high techs, it would be normal to say that these new technologies or these IT specs to be exact are gradually becoming the backbone of this industry. For a country like ours, we may not be able to adapt all of them at once but we can integrate all of these, even new ones, and one after another. And soon, someday our aviation sector will leap forward from existing technologies to the next generation where technology will take over, ease our task than usual, increase efficiency and productivity at a larger scale and make Nepali aviation one of the best one.

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Rajbiraj Runway Strip

# Error and Contributing Factors

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Error is an action or inaction that leads to deviation from organizational or professional intention or expectations, which tends to reduce the margin of safety and increase the probability of accidents or incidents.

Generally, people do not commit error intentionally. We can anticipate that human errors can occur at any time, therefore everybody should be alert all the time not to commit any error. This article will focus on correcting the factors that contribute to human error. This is also the fact that error can be countered/reduced but cannot be eliminated.

## Action Error

During any action a person can commit error beginning from one or other of the following types of actions.

1. Slip
2. Lapses
3. Mistakes
4. Violations

## Slip

Slip is an attention failure, caused mainly by distraction and preoccupation. Some examples are, unknowingly or due to distraction touching similar knob which is not correct or which looks similar to the correct knob. Comment made accidentally on pre-occupied subject by a speaker instead of what was supposed to comment on the occasion is also another example of slip.

## Lapses

A lapse is a memory failure, caused mainly by poor recall procedures which may be rules and/or skills. Missed any action or failed to do something due to lapses of memory and/or attention; such as missed/incorrect read backs by the pilot during conversation with Air Traffic Controller in flight. Forgetting an A/C wheels to put down during landing of the aircraft or neglecting to point out something important at shift handover are some examples of lapses. Slip and Lapse are considered "Unsafe acts" causing by unintentional actions of the person.

## Mistakes

Mistake can be caused that somebody do something believing it to be correct, in fact which is wrong. Mistakes can be caused by an error of wrong judgement. Mistakes can be divided into two: rule-based and knowledge-based.

### (a) Rules-based mistakes are,

- ✉ Wrong rules,
- ✉ Right rules – wrong time
- ✉ Right rules – Poor application

### (b) Knowledge-based mistakes are,

- ✉ Inadequate Knowledge or data
- ✉ Insufficient time
- ✉ Poor problem solving
- ✉ Poor decision making

## Violation

Deliberate violation means somebody doing something knowing it to be against the rules and deliberately failing to follow the procedures, which are supposed to be followed.

Illegal action(s) are also violation, such as pilot leaving Flight Crew Position in flight without following procedures or allowing an infant to drive the car etc. Violation of such rules procedures may invite immediate danger/potential danger/unlikely danger.

## Contributing factor to human error in flight

Most of the aircraft accident investigation reports indicate the reasons of the accidents are human errors.

One of the main contributing factors to human error is stress. As human life is filled with stress, a pilot must cope with his work load and personal problems in order to function well on a daily basis. A pilot needs to learn early about developing discipline, specially during flying, which is necessary to manage stress. Some types of stress or situations emerge due to the lifestyle or situations such as marital problem, unprofessional flying, immaturity and instability. Stress can also erode the margin of safety. Creating environment to exceed the margin of safety resulting flight task requirements, exceeds the pilot's capability. The difference between pilot's capability and task requirement is the margin of safety.

## Area of stress

Stress areas can be divided in to four:

1. Physical stressors are conditions associated with aircraft and environment, such as temperature, noise, vibration, turbulence and lack of Oxygen.
2. Physiological stressors include fatigue, physical fitness, sleep loss, missed meals and poor diet. We must discipline ourselves to stop flying if these stressors are present. We must ask other pilots to monitor our performance under these conditions.
3. Psychological stressors include factor such as self-imposed demands and perfectionism. Mental workload is a major factor and includes items such as decision making, maintaining proper instrument scan, positional awareness, emergencies, etc.
4. Sociological stressors are what we normally associate with stress, such as the death of someone important to us, job pressures, financial problems, etc. These stressors can be the most significant since they are often the most difficult to control.

## Warning Signs

It is known that family conflicts, work problems, illness, financial worries, etc., create the kind of stress that adversely affects Flight Safety. Stress creeps up on a person and manifests in three types of symptoms - emotional, physical and behavioral. If any of the three symptoms are detected, it should be understood that it's time to evaluate the source and evaluate the effect on pilot's ability to make good decisions while flying.

## Taking Control

Good cockpit stress management begins with good life stress management. While not all stress can be eliminated, there are many techniques that can reduce stress in your life or at least help you better cope with it to reduce the margin of error.

1. Avoid situations that distract you from flying.
2. When stress is high, reduce your workload to give yourself time for making good decisions.
3. If an emergency occurs, remain calm and use a rational decision-making process to assess the situation.
4. Maintain proficiency, because proficiency builds confidence.
5. Know and respect your personal limits.
6. Don't let mistakes bother or hamper your decision-making for the remainder of the flight. Wait until you land to debrief yourself.
7. If flying is adding to your stress, either stop flying or seek professional help to reduce stress to acceptable levels.

## Start Managing

While stress is a fact of life, we must manage it appropriately in order to be safe pilots. Normal way to manage stress is a proper diet and a regular exercise program which are the essential first steps towards managing stress. Stress reduction techniques such as biofeedback and relaxation exercise have also proved successful in helping people cope with it.

## स्वास्थ्यका लागि हाइकिङ

रामदेवी महर्जन  
हाइकिङ विज्ञ



स्वस्थ रहन हामीले उचित आहारविहार र विचारमा जोड दिनुपर्छ । शरीर र मन दुवै स्वस्थ भए मात्र निरोगी र आनन्दित रहन सकिन्छ । स्वस्थ रहन हरेक व्यक्तिले दिनको कम्तिमा ४५ मिनेट देखि एक घण्टा विहानीको चिसो हावामा हिँड्नु पर्छ । त्यसैगरी सहरको भिडभाड र व्यस्त जीवनबाट टाढा स्वच्छ हावापानी भएका गाउँघरमा सके हप्तामा एक दिन नभए महिनाको एक दिन हाइकिङ गर्नु उचित विहारान्तर्गत पर्दछ । यसरी पदयात्रा गर्दा शरीरका जोर्नीको राम्रो कसरत हुन्छ, फोक्सोले स्वच्छ अक्सिजन पाउँछ । पसिनामार्फत शरीरभित्रको विकार निस्कन्छ । साथै, गाउँले जीवनशैली बुझ्न सकिन्छ र स्वस्थ पर्यटनमा टेवा पुग्छ ।

एकलै होइन, समूहमा हाइकिङ गर्नु राम्रो हुन्छ । काठमाडौं उपत्यकाको उत्तरतिर सेताम्मे हिमालले पहरा दिइरहेका, दक्षिणतिर नागबेली महाभारत श्रृंखला, प्राचीन कला, संस्कृति भएका बस्तीहरू, खोला-नाला र सपक्क मिलेका खेतका गरा छन् । उकाली ओरालीमा पसिना चुहाउँदै, चराको चिरविर सुन्दै चिसो सिरसिरे हावामा हिँड्दा मन चंगा हुन्छ, हप्ताभरीको थकान मेटिन्छ । मन र शरीर दुवै फ्रेस हुन्छ ।

काठमाडौं सेरोफेरोमा थुप्रै हाइकिङ रूट छन् । जता उकालो चढे पनि हुन्छ । तर, मनपरी खाएर मनपरी ढंगले हाइकिङ गर्नु हुँदैन । स्वास्थ्यलाई केन्द्रविन्दुमा राखेर हाइकिङ गर्दा सबैलाई राम्रो हुन्छ ।

### बल्थली

काभ्रेको बल्थली (१,७०० मिटर) तामाङ, नेवार, बाहुन, क्षेत्री र सन्यासीलगायतको साभ्ना फूलबारी हो । जताततै हरियाली, उर्बरा जमीन । अग्ला डाँडा र खेतबारीका मिलेका गरा । कृषि कर्म, सूर्योदय, सूर्यास्त र हिमाली सौन्दर्य । हिमाल हेर्ने याममा उत्तरदेखि पूर्वसम्म हिमालको लस्कर देखिन्छ । डाँडाबाट गणेश, लाडटाङ, दोर्जे लाक्पा, गौरीशंकर, रोल्वालिङदेखि सगरमाथा हिमालसम्मको दर्शन मिल्छ ।

गाउँ मुनि खोला किनारमा लङ्केश्वर महादेव छन् । त्यहाँ ठूलो एकादशीमा मेला लाग्छ । खोलामा स्नान गरी व्रत बसेमा चिताएको पूरा हुने जनविश्वास छ ।

बल्थलीमा केही रिसोर्ट छन् । बल्थली हाइकिङ गर्दा नेवार वस्ती खोपासीबाट सुरु गर्नुपर्छ । खोपासीमा रेशम खेती छ । त्यहीं नेपालको तेस्रो जलविद्युत गृह छ । विसं २०२२ सालमा बनेको पनौती जलविद्युत केन्द्र ।

कसरी पुग्ने : काठमाडौं-बल्थली ४० किमि । काठमाडौंको पुरानो बसपार्कबाट छुट्छन् बनेपा हुँदै पनौती जाने बस । पनौतीबाट ४ किमि खोपासीसम्म बसमा । खोपासीबाट ख्याकु भन्ज्याङ, कमलामाई मन्दिर, न्यौपाने गाउँ हुँदै लङ्केश्वर महादेव (१,१०० मिटर) र त्यहाँबाट लङ्केश्वर खोला किनारैकिनार हुँदै खोपासीसम्म ११ किलोमिटर पदयात्रा । समय ६ घण्टा । मोटरबाइक र जीप गाउँसम्मै पुग्छन् ।

### फूल्चोकी

काठमाडौं उपत्यकाको सबैभन्दा अग्लो डाँडा फूल्चोकी (२,८०० मिटर) हो । डाँडामा फूल्चोकी मन्दिर र चैत्य छ । हिन्दु र बौद्धमार्गीको साभ्ना तिर्थ फूल्चोकीमा खुल्ला आकाशमुनि ढुंगैढुंगाका मूर्ति र त्रिशुल छन् । नजिकै सेताम्मे चैत्य पनि । वैशाख १ गते त्यहाँ मेला लाग्छ ।

पुस-माघमा डाँडामा हिउँ पर्छ । चैत-बैशाख फूल्चोकी चढ्ने उत्तम समय, त्यतिबेला बाटैभरी रंगीविरंगी फुलहरू गुराँस, लालुपाते, काफल र ऐंसेलु हुन्छ । डाँडामा हवाइजहाज र टेलिभिजनलाई सिग्नल पठाउने टावर छन् । सैनिक क्याम्प पनि छ । होटल तथा रिसोर्ट छैनन्, सामान्य खाजा घर मात्र छ ।

फूल्चोकी हाइकिङ ललितपुरको गोदावरी (१४,००मिटर) बाट सुरु गर्ने । त्यहाँबाट फूल्चोकी जाने दुई बाटा छन् ।

पहिलो नौधाराबाट जंगलको ठाडो बाटो र दोस्रो कुण्डबाट कच्ची मोटर गुड्ने तेर्सो बाटो । भरी पर्दा तेर्सो मोटर बाटो हिँड्ने र अरुबेला गोरेटोमा ।

कुण्डबाट २ घण्टामा चापाखर्क पुगिन्छ । खर्कमा चौबाटो छ, पूर्व ओरालो भरे काभ्रेको न्याले पुगिन्छ । खर्कबाट दक्षिण उकालो चढ्ने, २ घण्टामै फूलचोकी पुगिन्छ । फर्कदा पश्चिम ओरालो भरेर गोदावरी नौधारासम्म हिँड्ने ।

फूलचोकीको आधारशिविर गोदावरी वनस्पति केन्द्र हो । यो प्रख्यात पिकनिक स्पट पनि हो । गोदावरीमा नौधारा र कुण्ड छन् । थुप्रै खाजा घर, रिसोर्ट र होटल छन् ।

गोदावरीबाट फूलचोकीसम्म हाइकिङ, बाइकिङ, मोटर ड्राइभिङ र साइविलिङ गर्न सकिन्छ ।

कसरी पुग्ने : काठमाडौँ-गोदावरी १५ किमि । लगनखेल बसपार्कमा गोदावरी जाने गाडि पाइन्छ । गोदावरीकुण्डबाट पिकनिक स्पट, चापाखर्क जंगलको बाटो हुँदै हाइकिङ गर्ने । फुल्चोकी टप पुगेर नौधारासम्म पदयात्रा गर्ने । हाइकिङ दुरी करिब १८ किमि । समय ८ घण्टा । जीप र मोटरबाइक फुल्चोकीसम्मै पुग्छ ।

## रानीकोट

भक्तपुरको गुण्डु र सिपाडोल अनि काभ्रेको न्यालेको साँधमा छ -रानीकोट (२,१००मि) । जहाँ एकै थलोमा उभिएर कञ्चनजंघा, सगरमाथा, मकालु, चोयु, सिसापाङ्गमा, मनास्लु, अन्नपूर्ण, धौलागिरीलगायत दर्जनौँ हिमाल हेर्न पाइन्छ । त्यतिमात्र होइन, भक्तपुर, काठमाडौँ र पाटन सहर छ्यांगे देखिन्छ ।

रानीकोट ऐतिहासिक थलो पनि हो । थुम्कामा पुराना इँटाका टुक्रा भेटिन्छन् । इतिहासविद्का अनुसार रानीकोट लिच्छवीकालीन गढी हो । उहिल्यै दक्षिणपूर्वबाट काठमाडौँ उपत्यका प्रवेश गर्ने एउटा प्रमुख नाका थियो रानीकोट ।

भक्तपुर, दधिकोटको अनन्तलिंगेश्वरबाट रानीकोट पदयात्रा गर्ने । अनन्तलिंगेश्वर-रानीकोट ६ किमी । सूर्योदय, सूर्यास्त, हिमाल र चराको चिरबिर सुन्न सकिन्छ रानीकोटबाट । रानीकोटमा बाघभैरव मन्दिर छ । बाघभैरवमा मंसिर र वैशाख पूर्णिमामा मेला लाग्छ ।

रानीकोटबाट घ्याम्पेडाँडा ३ किमि । घ्याम्पेडाँडामा तामाङ समुदायको बस्ती छ । डाँडाको पुछारमा पाइलट बाबा आश्रम छ । आश्रममा योग र ध्यान गर्न सकिन्छ । १३ रोपनी क्षेत्रफलमा फैलिएको आश्रमबाट चारैतिर सुन्दर दृश्य देखिन्छ । त्यहाँ सोमनाथ मन्दिर, ध्यान कक्ष र पुस्तकालय छन् ।

घ्याम्पेडाँडाबाट सूर्यविनायक ४ किमी दूरीमा छ । सूर्यविनायक जंगललाई चिडियाखानामा रूपान्तरण गर्ने योजना छ । रानीकोट र घ्याम्पेडाँडामा केही रिसोर्ट छन् ।

कसरी पुग्ने : काठमाडौँ-रानीकोट २२ किमि । अनन्तलिंगेश्वरबाट रानीकोट र रानीकोटबाट पाइलटबाबा आश्रम हुँदै सूर्यविनायक सम्म पदयात्रा । पदयात्रा दूरी : १५ किमि । समय : ६ घण्टा । मोटर बाटो रानीकोटसम्मै पुगेको छ । तर, सार्वजनिक सवारी साधन चल्दैनन् ।

## तारकेश्वर

श्रीस्वस्थानी ब्रत कथा अनुसार महादेवले मृत सतीदेवी च्यापेर हिँड्दा उनको दाहिने तिघ्रा पतन भएको ठाउँ तारकेश्वर (१,७१८ मि) हो । त्यहीं पछि महादेव उत्पन्न भए । लक्ष्मीले पनि त्यहीं ठाउँमा तपस्या गरेको विश्वास गरिन्छ । यो ठाउँ काठमाडौँको शिवपुरी नार्गाजुन राष्ट्रिय निकुञ्जभित्र पर्छ ।

महादेव दर्शनले मनोकांक्षा पूरा हुने जनविश्वास छ । तारकेश्वर शक्तिपिठ हो । जहाँ शिवरात्री, जनैपूर्णिमा, स्वस्थानी ब्रतकथाको समय, बाला चर्तुदशी र सोमवार मेला लाग्छ ।

ध्यान र योग साधना गर्नेका लागि तारकेश्वर पूण्यभूमि हो । त्यहाँ कविर आश्रम पनि छ । मन र इन्द्रियलाई वशमा राख्न सक्ने, बोली र व्यवहारमा एकरूपता ल्याउने मान्छे नै कविर हो । भारत, उत्तरप्रदेशका विशालदेवको इच्छाले त्यहाँ विसं २००४ मा आश्रम बनाइएको थियो । पहिलापहिला आश्रमले त्यहाँ ध्यान तथा योग शिविर चलाउँथ्यो । अचेल चलाउँदैन ।

तारकेश्वर मुक्तिर पाँचमाने भञ्ज्याङ छ । भञ्ज्याङबाट आधा घण्टामा उत्तर तारकेश्वर, दक्षिण आधा घण्टा ओरालोमा तीनपिप्ले, पश्चिम दुई घण्टामा ककनी र पूर्व सवा घण्टामा काभ्रेस्थली पुगिन्छ ।

पासाङ ल्हामु राजमार्गको तीनपिप्लेबाट सोभै उकालो चढ्दा ५ किमिमा तारकेश्वर महादेव पुगिन्छ । तीन पिप्लेबाट तारकेश्वर उक्लेर अल्ले हुँदै गुर्जे भञ्ज्याङसम्म हाइकिङ गर्न सकिन्छ । तीनपिप्ले-तारकेश्वर ५ किमि । तारकेश्वरबाट गुर्जे भञ्ज्याङसम्म मोटर बाटो छ । साइकल र मोटरबाइक चलाउन मिल्छ ।

पाँचमानेमा सामान्य खाजा पसल छन् । बस्ने सुविधा छैन ।

कसरी पुग्ने : काठमाडौँको बालाजु बाइपासबाट पासाङ ल्हामु राजमार्गको तीनपिप्लेसम्म ८ किमि । तीनपिप्लेबाट

२ किमि पर ठूलो खोलाबाट उकालो चढे १.५ किमि पाँचमानेसम्म मोटर बाटो छ । पाँचमानेबाट आधा घण्टा पदयात्रामा तारकेश्वर । हाइकिङ गर्दा तीनपिस्लेबाट ५ किमि उकालोमा तारकेश्वर । तारकेश्वरबाट ५.५ किमिमा गुर्जे भञ्ज्याङ पुगिन्छ । पदयात्रा दूरी १०.५ किमि । समय : ४ घण्टा ।

### जामाचो

हिमाललाई शीर र उपत्यकालाई पाउ बनाएर बसेकी जामाचो (२,१५० मिटर) बौद्धमार्गी र हिन्दुको साभ्रा तीर्थ हो । चारैतिर हरियाली । सिरसिरे वतासमा बौद्धमार्गी भण्डा लुङ्दा फर्फराउँछन् ।

शान्त वातावरणको डाडाँमा बौद्ध स्तुप छ । स्तुपमुनि लश्करै देवीदेवताका मूर्ति । स्तुपको पूर्वपट्टि बुद्धको स्यानो मूर्ति । नजिकै नाग आकारको ढुंगा अनि बत्ती बाल्न राखिएका दियोहरू । स्तुपको उत्तरतिर भ्यू टावर छ जहाँबाट चारैतिरका दृश्य देखिन्छ । काठमाडौं उपत्यकालाई नजिकैबाट नियाल्न सकिन्छ । त्यहाँको चौरबाट हिमालका लश्कर देखिन्छन् ।

पहिला नागार्जुन शाही वन थियो । रानीहरूलाई जंगल घुम्ने र शिकार खेल्न बनाइएकाले रानीवन भनिन्थ्यो । त्यहाँ नागार्जुन दरबार छ जहाँ पूर्व राजा ज्ञानेन्द्र बस्छन् ।

त्यहाँबाट सूर्योदय र सूर्यास्त मनमोहक हुन्छ । डाडाँमा योग र ध्यान गर्न सकिन्छ । हाइकिङ, बाइकिङ र साइक्लिङका लागि नागार्जुन उपयुक्त छ । साँभ ५ बजेभित्र निकुञ्जबाट बाहिरिसक्नु पर्ने नियम छ । अचेल फूलबारी गेटबाट मात्र पदयात्रा गर्न दिइन्छ । अरु बाटा बन्द गरिएको छ ।

निकुञ्जमा होटल, लज र खानेकुराको सुविधा छैन ।

कसरी पुग्ने: काठमाडौंको नेपाल वायुसेवा निगम अगाडिबाट बस चढे ४५ मिनेटमा बालाजू बाइपास पुगिन्छ । बाइपासबाट अष्टनारायण हल हुँदै फुलबारी गेट ३ किमि । फुलबारी गेटबाट ढुंगा ओच्छाइएको सिँढी चढेर करीब साढे दुई घण्टा उकालो चढे जामाचो पुगिन्छ । फर्किँदा गएकै बाटो फर्कने । पदयात्रा दूरी १० किमि । समय ४ देखि ५ घण्टा ।

### पाथीभरा

शरीरमा रातो साडी, निधारमा रातो टीका, हातमा त्रिशुल र खड्ग, छातीमा चुराको माला लगाएकी । सिंहमा चढेकी । देवीका खुट्टाको दायाँ र बायाँ दुइटा पाथी राखिएको । ताप्लेजुङमा प्राचीन पाथीभरा मन्दिर छ । त्यहाँकी देवीसँग हुबहु मिल्ने मूर्ति नल्लुमा पनि छ । ललितपुरको दक्षिणी भेक महाभारत श्रृंखलामा पर्छ नल्लु ।

काठमाडौंबासीलाई पाथीभरा दर्शन गर्न ताप्लेजुङसम्मै पुग्ने पर्देन, मात्र २० किमि दूरीको नल्लु (१,८९० मि) पुगे हुन्छ । चैते नवमी र बडादसैमा मन्दिरमा मेला लाग्छ ।

पाथीभराबाट चारैतिर हरिया डाँडाको लस्कर देखिन्छ । जयबहादुर स्याङतान र रमेश श्रेष्ठको सक्रियतामा मन्दिर बनाइएको हो । मन्दिर बनाउन स्थानीय स्याङतानले तीन रोपनी जग्गा दान गरेका छन् । ०६७ चैतमा मन्दिर स्थापना गरिएको हो ।

आकाश खुल्दा पाथीभराबाट उत्तरतिर सेता हिमालसँगै काठमाडौंको पूरा दृष्य देखिन्छ । सूर्योदय र सूर्यास्तको दृश्य पनि राम्रो हुन्छ । मन्दिर मुन्तिर सामान्य पसल छ ।

कसरी पुग्ने: लगनखेल बसपार्कबाट लेलेको सरस्वती कुण्डसम्म गाडिमा । पाथीभरा फेदसम्मै कच्ची मोटर बाटो छ । कुण्ड घुमेर नल्लु भञ्ज्याङ हुँदै पाथीभरा पुगेर नल्लु खोला तीरैतीर टीकाभैरवसम्म पदयात्रा गर्ने । लेले कुण्ड-पाथीभरा ८ किमि र पाथीभरा-टीकाभैरव ८ किमि । जम्मा १६ किमि । समय ६ घण्टा ।

### नमो:बुद्ध

बौद्धमार्गीहरूका लागि नेपालमा भएका प्रमुख चार धाम (बौद्धनाथ, लुम्बिनी, स्वयंभु र नमो:बुद्ध) मध्ये एक हो नमो: बुद्ध (१,८०० मि) । शाक्यमुनि गौतम बुद्धको पूर्वजन्मको इतिहास जोडिएको छ यहाँ ।

बुद्धत्व प्राप्त गरेपछि सिद्धार्थ गौतम चेलाहरूसँग काभ्रेको श्यामपाटीमा आए । र, त्यो चैत्यलाई तीनपटक घुमेर प्रणाम गरे । बुद्धले नमन गरेको ठाउँ भएकाले नमो:बुद्ध भनियो । प्राचीन स्तुप छेउमा बत्ती बाल्ने पाला छन् । ठूलो माने, नजिकै पुरानो गुम्बा छ ।

नमो:बुद्धका दुई खण्ड छन् । तल भञ्ज्याङको स्तुप सबैभन्दा पुरानो । त्यसभन्दा २०० मिटर माथि डाँडामा गुम्बा र बुद्धका ठूल-ठूला मूर्ति छन् । जुन पछि बनाइएका । अध्यात्म, प्रकृति र संस्कृतिको त्रिवेणी हो नमो:बुद्ध ।

नमो: बुद्ध धार्मिक पर्यटन गन्तव्य बनेको छ । कात्तिक पूर्णिमा र बुद्ध पूर्णिमामा ठूलो मेला लाग्छ ।

डाँडा आफैमा भ्यू टावर हो । आकाश उघ्रिएका बेला हिमाल झलमल्ल देखिन्छ । मकालु, चोयु, गौरीशंकर, दोर्जेलाक्पा, लाङटाङ, गणेश र मनास्लु हिमालहरू । त्यहाँबाट हरिया डाँडैडाँडा र सुन्दर बस्तीहरू देखिन्छ ।

त्यहाँ खाना र बास बस्ने होटल तथा रिसोर्ट छन् । त्यसैले आध्यात्मिक चिन्तन गर्न र स्वच्छ वातावरणमा चंगा हुन नमोःबुद्ध उपयुक्त गन्तव्य हो । जहाँ पुगेर भातृत्व, शान्ति र अहिंसाको पाठ सिक्न सकिन्छ ।

नमोःबुद्ध हाइकिङ, बाइकिङ, साइकिल सवैका लागि उपयुक्त छ ।

कसरी पुग्ने : काठमाडौं-धुलिखेल बसमा । धुलिखेलबाट बतासेसम्म अर्को गाडीमा । गाडीमा डेढ घण्टा । काठमाडौं-बतासे ३५ किमि । बतासेबाट ईंटे, शंखु हुँदै नमोःबुद्ध पदयात्रा । नमोःबुद्धबाट गहते सामुदायिक वन, कुइँकेल गाउँ, गुम्बा, फस्कोट हुँदै काभ्रे भञ्ज्याङसम्म हिँड्ने । पदयात्रा दूरी १४ किमि । समय : ५ घण्टा । काठमाडौं-नमोःबुद्ध ५० किमि ।

## मणिचुड

खुल्ला आकाश मुनि चिटिक्क दह । दह नजिकै स्तुप । स्तुपको बायाँ शिव-पार्वती मन्दिर । दायाँ शिव लिंग । लिंग नजिक नन्दिको प्रतिमा । दह नजिकै सानो पाटी र खुला चौर । कमण्डलु आकारको दह ।

मणिचुड राजाले राज्य चलाएको स्थान भएकाले यस ठाउँको नाउँ मणिचुड रहन गएको भनिन्छ । प्राचीन तिर्थ मणिचुडमा जनै पूर्णिमाका दिन मेला लाग्छ । मणिचुड (२,०३० मि) बाट उत्तरमा सेता हिमलहर देखिन्छ ।

मणिचुड जान साँखु पुग्नु पर्छ । साँखु काठमाडौं उपत्यकाको सबैभन्दा प्राचिन बस्ती हो । संस्कृतिविद् प्रकाशमान श्रेष्ठका अनुसार ३३१३ वर्ष अगाडि नै साँखुमा बस्ती बसेको थियो । बज्रयोगिनी मन्दिरका पुजारी जोगदेव बज्राचार्यले शंख आकारमा बस्ती बसालेका थिए ।

साँखुबाट २ किमिमा बज्रयोगिनी । १६ औं शताब्दीमा राजा प्रताप मल्लले बनाएको बज्रयोगिनी मन्दिर हिन्दु र बौद्ध धर्मावलम्बीको साभ्ना तीर्थ । बज्रयोगिनी दर्शन गरी ठाडो उकालो चढ्दा आधा घण्टामा घुमारेचौर पुगिन्छ । बज्रयोगिनी, घुमारेचौर हुँदै करीब २ घण्टा ठाडो उकालो चढेपछि नार्गाजुन शिवपुरी राष्ट्रिय निकुञ्ज कार्यालय । त्यहाँबाट दायाँ ठाडो उकालो चढेर मणिचुड पुग्ने । त्यहाँ फागुन-चैतमा गुराँस फुल्छ । कात्तिकदेखि माघसम्म हिमाल खुल्छ । डाँडामा खाजा पसल, होटल केही छैन ।

साइकिलका लागि समेत मणिचुड उपयुक्त छ । साँखु-मणिचुड हाइकिङ विशेषतः लामो दिनमा उपयुक्त हुन्छ ।

कसरी पुग्ने : काठमाडौं-साँखु १८ किमि गाडिमा एक घण्टा । रत्नपार्क र सातदोबाटोबाट चाबहिल, जोरपाटी हुँदै साँखुसम्म सार्वजनिक बस चल्छन् । साँखु-बज्रयोगिनी २ किमि । बज्रयोगिनी-मणिचुड ४ किमि । आउन र जान पदयात्रा दूरी १२ किमी । समय ६ घण्टा ।

## हाइकिङका फाइदाहरू

- हिँड्दा शरीरबाट पसिना निस्कन्छ, पसिनामार्फत शरीरमा रहेका विकारहरू बाहिर निस्कन्छन् जसले शरीरलाई स्फुर्ति दिन्छ ।
- साताभरीको कामले थाकेको शरीर र मन डाँडापाखामा पुग्दा चंगा बन्छन् । हयाडआउट हुन्छ । र, शरीर एवम् मनमा उर्जा बढ्छ ।
- धुवाँधुलो रहित स्वच्छ वातावरण भएका ठाउँमा हिँड्दा शरीरले पर्याप्त अक्सिजन पाउँछ जसले श्वासप्रश्वास राम्रो भई शरीर हल्का हुन्छ ।
- हिँड्दा हात खुट्टाका जोर्नीको कसरत भई शरीर बलियो हुन्छ । खुम्चिएका नशाहरू तन्किन्छन् ।
- पदयात्रामा नयाँ साथी भेटिन्छन्, नयाँ ठाउँ र नयाँ संस्कृतिको ज्ञान मिल्छ । साथै ग्रामीण जीवनशैलीबारे बुझ्न पाइन्छ ।
- प्रकृतिको काखमा पुग्न सकिन्छ । जति प्रकृतिको नजिक पुग्छौं त्यतिनै जीवन सरल बन्छ । प्रकृतिको नियमसँग नजिकिन पाइन्छ ।
- पदयात्राले धैर्य गर्न सिकाउँछ । विषय ज्ञान बढाउँछ ।
- जंगली जनावर, चराचुरुडी, फूलहरू र बोटबिरुवाको अध्ययन गर्न सकिन्छ । मौसमअनुसारका फलहरू जस्तै चुत्रो, काफल, ऐंसेलु, आरुबखडा, नासपाती, आरु आदि खँदै हिँड्न पाइन्छ ।
- गाउँमा दिनचर्या कसरी चल्दैछ, त्यसको अध्ययन गर्न सकिन्छ । देशको समस्या र अवस्थाबारे जानकारी मिल्छ । समग्रमा देशको अवस्था थाहा हुन्छ, देशप्रति माया बढ्छ ।
- आपसमा प्रेम, सम्मान, भाइचारा र भातृत्वको विकास हुन्छ । आपसी मेलमिलाप बढ्छ ।
- आन्तरिक पर्यटन विकासमा सघाउ पुग्छ । ग्रामीण अर्थतन्त्र मजबूत हुन्छ ।

## आन्तरिक वायुसेवा : क्षमता वृद्धिसागै प्रतिस्पर्धाको अपेक्षा

✍ अच्युत पुरी  
पत्रकार, नयाँ पत्रिका राष्ट्रिय दैनिक



सन् २०१७ नेपाली आन्तरिक वायुसेवा लगानीका दृष्टिकोणबाट संतोषजनक वर्षका रूपमा रह्यो । यस वर्ष बुद्ध, यति, समिट, सौर्यजस्ता कम्पनीले जहाज थप गर्दै आफ्नो क्षमता मजवुत बनाए भने सेड्यूल उडानमा तीन वटा जहाज भित्र्याएर श्री एयरलाइन्स बलियो प्रतिस्पर्धीका रूपमा खडा भयो । उता हेलिकोप्टर कम्पनी थपिने र पुराना कम्पनीहरूले पनि नयाँ नयाँ हेलिकोप्टर भित्राउने क्रम पनि तिब्र बन्यो । वायुसेवा सञ्चालक संघका अनुसार अहिले आन्तरिक वायुसेवातर्फ जहाजको संख्या करीव ४ दर्जन पुगेको छ ।

नेपालजस्तो सानो र थोरै जनसंख्या भएको मुलुकमा यस गतिमा भइरहेको लगानीलाई संतोषजनक रूपमा लिनुपर्छ । वायुसेवा कम्पनी परिपक्व र बलियो हुँदै जाँदा त्यसले आम यात्रुमा पुऱ्याएको सेवाको समीक्षा भने जरूरी छ ।

वायुसेवा कम्पनीको लगानी आफैमा जोखिमपूर्ण मानिन्छ । एउटा सानो परिघटनाले पनि कम्पनीको विश्वसनीयतामा आघात पर्न सक्छ, यात्रु गुम्न सक्छन् । अहिले जुन गतिमा लगानी थपिएको छ, त्यो यात्रु लक्षित हो । तर, अहिलेको अवस्थामा नेपालमा यातायातको क्षेत्रमा यात्रुका लागि धेरैभन्दा धेरै विकल्प छन् । सडक यातायातको विकास, सडकमा आरामदायी सवारी साधनको उपस्थिति र कम मूल्यका कारण हवाई यात्रा अब एक मात्र विकल्प रहेन । यस अवस्थामा वायुसेवा कम्पनीले बढी चुनौतिको सामना गर्नु पर्ने हुन्छ । त्यसका लागि स्वस्थ प्रतिस्पर्धा एउटा उत्तम उपाय हो ।

### ठूला जहाजको आकर्षण

नेपाली वायुसेवा कम्पनीले लगानी बिस्तार र थप गर्नु अगाडी पक्कै पनि बजार र मागको समीक्षा गरेकै हुनुपर्छ । सोही कारण पछिल्लो समय ५० सीटभन्दा बढी क्षमताका ठूला जहाज थपिने क्रम बढेको छ । यी जहाजको मुख्य गन्तब्य काठमाडौँबाट तराई र सुगम ठाउँका विमानस्थल बनिदिनाले भद्रपुर, बिराटनगर, भैरहवा, नेपालगन्ज, धनगढी तथा पोखरा उडानमा यात्रुका लागि पर्याप्त विकल्प उपलब्ध भएका छन् । सडक यातायातले पनि राम्रोसँग जोडिएका यी गन्तब्यमा पनि पर्याप्त यात्रु पाए पछि लगानी बिस्तार गरेका वायुसेवा कम्पनी अहिले उत्साहित छन् । बुद्ध, यति, श्री र सौर्य एयरलाइन्सबीच अहिले ठूला जहाज थप गरी सुगम गन्तब्यमा नियमित सेवा बिस्तारका लागि प्रतिस्पर्धा चलेको छ ।

### मौसमी मूल्य

वायुसेवा कम्पनीमाथि सिजनमा मूल्य हवातै बढाउने गरेको आरोप लाग्ने गरेको छ । जसले गर्दा आम यात्रुका लागि हवाई यात्रा निकै महंगो पर्न जान्छ । अफसिजनमा मूल्य त कम हुन्छ तर त्यसको फाइदा टाढाबाट यात्रुले मात्र पाउँछन् किनकी नेपालमा आम मानिसले सामान्यतया दशैं तिहार जस्ता चाडबाडमा हवाईयात्रा बढी गर्छन् । नियमित हवाई यात्रा गर्ने वर्ग भनेको व्यापारी, उद्योगी, नेता, कर्मचारी र राष्ट्रिय-अन्तरराष्ट्रिय गैरसरकारी संस्थामा काम गर्ने मानिस हुन् । जब आममजदुर, श्रमिक र कामदारले वर्षको एक दिन घरमा जाँदा हवाई यात्रा गर्नु पर्दा महंगो मूल्य तिर्नुपर्छ भने नियमित हवाईयात्रा गर्ने वर्गले सस्तो टिकटमा यात्रा गर्न पाइरहेको हुन्छ । यस अवस्थामा अझै पनि नेपाली वायुसेवा कम्पनीको लक्षित वर्ग आम नेपाली भन्दा पनि उच्चवर्गीय परिवारमात्र हुन् कि भन्ने आशंका गर्न सकिन्छ ।

### दुर्गमको पिडा

कुनै बेला नेपाल वायुसेवा निगम दुर्गमका जनताका लागि सबैभन्दा भरपर्दो सेवा प्रदायक कम्पनी थियो । बाटोघाटो नपुगेका दूरदराजका जनताको आधारभूत आवश्यकता पूरा गर्ने माध्यम थियो निगम । उसलाई साथ दिन तारा एयर, गोमा एयर, मकालु एयर, काष्ठमण्डप एयर, सीता एयर तयार भइसकेका थिए । तर, अहिले निगमको आन्तरिकतर्फको सेवा

दयनीय अवस्थामा पुगेको छ । निजी कम्पनीमाथि विदेशी र डलरमा टिकट काट्नेलाई प्राथमिकता दिएर स्थानीय यात्रुलाई बेवास्ता गर्ने गरेको आरोप लागिरहेको छ । कतिपय अवस्थामा यो सत्य पनि हो । नेपालगञ्जबाट नियमित पहाडमा उडान गर्ने गरी लाइसेन्स लिएको कम्पनीले पर्यटकीय सिजनमा जहाज काठमाडौं ल्याएर लुक्लातर्फ उडाउँछ । यसलाई खुला बजार अर्थतन्त्रको एक पाटो मान्ने हो भने ठिकै छ हैन भने जुन प्रयोजनका लागि उडान अनुमति लिइएको हो, त्यही प्रयोजनमा उडाउने सेवा प्रदायकको दायित्व र त्यसो नगर्ने माथि कारवाही गर्ने नेपाल नागरिक उड्डयन प्राधिकरणको दायित्व हो की होइन ?

### पूर्वाधारमा उदासिन राज्य

जहाज थप र क्षमता अभिवृद्धिसँगै यात्रु उत्साहित हुनु एउटा पाटो हो, तर, विमानस्थल पुगेपछि घण्टौं जहाज डिले हुने र आकासमा जहाज होल्ड भइ मानसिक तनाव थपिने मात्र होइन, कम्पनीहरू माथि पर्ने आर्थिक भार अर्को नियति बनेको छ । यसले गर्दा आम मानिसमा "बरू गाडीबाट छिटो पुगिन्थ्यो" भन्ने मानसिकता विकास हुन थालेको छ । मुलुकको एक मात्र अन्तरराष्ट्रिय त्रिभुवन विमानस्थलबाट आन्तरिक तथा बाह्य दुबै उडान हुँदै आएको छ । आजभन्दा करीव चार दशक अगाडीको यात्रु संख्यालाई दृष्टिगत गरी बनाइएको भौतिक संरचनाबाट आजको दिनमा यो विमानस्थल संचालनमा छ । यसबीचमा प्राधिकरण र नेपाल सरकार यसको क्षमता बिस्तार र सुविधा अभिवृद्धिमा गम्भीर हुन सकेनन् । अगाडी बढेका आयोजनाको नियमित सुपरीवेक्षण गर्न नसक्दा समयमा काम हुन सकेको छैन । त्यसबाट मुलुकले थप आर्थिक भार बेहोर्नु परिरहेको छ । प्राधिकरण त्रिभुवन विमानस्थलको विकल्पमा न नयाँ आन्तरिक विमानस्थलको विकल्प दिन सकिरहेको छ, न पार्किङ व्यवस्थापन गर्न सकेको छ, न न उडान व्यवस्थापन नै सही ढंगबाट गर्न सकिरहेको छ । समग्रमा अस्तव्यस्त विमानस्थलबाट अहिले उडान अवतरण भइरहेको छ । यात्रुले सास्ती पाउने र सेवा प्रयदायकले थप आर्थिक भार बेहोर्नु पर्ने अवस्थामा आन्तरिक वायुसेवाले थपेका जहाजबाट खासै उत्साहित हुनु पर्ने कारण छैन ।

### सुरक्षित सेवामा प्राथमिकता

कठिन र फरक भौगोलिक अवस्थिति, छिनछिनमा परिवर्तन भइरहने मौसम तथा कमजोर पूर्वाधारका कारण नेपाली आकाश असुरक्षित बन्दै गएको छ । जहाज दूर्घटना अभै न्यून हुन सकेको छैन । यस अवस्थामा वायुसेवा कम्पनीको पहिलो प्राथमिकता सुरक्षित सेवाको ग्यारेन्टी हुनुपर्छ । जहाज थप्नु मात्र हैन, त्यसलाई सुरक्षित संचालन गरी यात्रुको जनधन जोगाउने जिम्मा पनि कम्पनीहरूकै हो । खासगरी कम्पनीहरूले वायुयान खरीदमा कुनै सम्भौता गर्नु हुँदैन । बजार हल्ला सत्य हो भने नेपालमा नयाँ भित्रिने अधिकांश वायुयान विदेशबाट विस्थापित भइसकेका मोडल हुन् । सस्तो विमानको खोजिमा अभै पनि त्यस्तो भइरहनु बिडम्बना हो ।

### अपेक्षा स्वस्थ प्रतिस्पर्धाको

हवाई पूर्वाधार अभावको परिपूर्ति गर्ने जिम्मा नेपाल नागरिक उड्डयन प्राधिकरण र राज्यकै हो । अहिले त्रिभुवन विमानस्थलको क्षमता बिस्तारसँगै अगाडी बढेका सबै आयोजना कार्यान्वयनमा गम्भीर हुनुपर्ने बेला आएको छ । त्यसपछि मात्र वायुसेवा कम्पनीहरू क्षमता अभिवृद्धिका लागि उत्साहित हुन्छन् । यसबाट आममानिसले सस्तो र सर्वसुलभ सेवा प्राप्त गर्छन् । अहिलेको अपेक्षा पनि यही हो । जहाज थप गर्दै क्षमता बढाएपछि बजारमा प्रतिस्पर्धा बढेको छ । हिजो १५ दिन अगाडी बुक नगरे टिकट नपाइने जहाजमा अहिले दुई अगाडी नै बुक गर्दा पनि टिकट पाइन्छ । यो एउटा राम्रो पाटो हो ।

तर, मूल्यमा भने अभै पनि सही प्रतिस्पर्धा शुरु हुन सकेको छैन । वायुसेवा कम्पनी त्यस अवस्थामा मात्र नाफामुखी भएर संचालन हुन थाल्छन्, जति बेला आम मानिसको पहुँचमा उनीहरूको सेवा पुग्छ । सडक यातायातमा अगाडी बढेको आयोजना समयमा पुरा हुने हो भने महेँगो मूल्यको हवाई यात्रा किन गर्ने ? यसको एउटा गतिलो उदाहरण हो भरतपुर विमानस्थल । कुनै बेला फण्डे बन्द हुने अवस्थामा पुगेको यो विमानस्थल अहिले सबैभन्दा व्यस्त विमानस्थल हो । किनकी अहिले नारायणघाट-मुग्लिन सडक खण्ड बिस्तारको क्रममा छ । बाटो असुरक्षित भएपछि मानिस र पर्यटकको रोजाई हवाई यातायात बनेको छ । तर, यो सडक बिस्तार सम्पन्न भएपछि स्वतः मानिसको रोजाई सडक यातायात बन्नेछ किनकी अभै पनि धेरै नेपालीका लागि समयभन्दा बढी मूल्यको महत्व छ । सिमित मानिसले मात्र समयको परवाह गर्छन् । आममानिसले सस्तो र सर्वसुलभ सेवाकै अपेक्षा गरेका हुन्छन् भन्ने कुरा वायुसेवा कम्पनीले बिर्सनु हुँदैन ।

## अपेक्षा नबुझे विकल्प बन्द

मानिसको क्रयशक्तिमा वृद्धि, व्यस्त दैनिकी र आकस्मिक अवस्थामा उपयोगी सवारी भएका कारण पनि नेपालमा वायुसेवाको भविष्य उज्ज्वल छ । तर, विगतको विरासत हेर्दा के देखिन्छ भने जुन कम्पनीले बजारको अपेक्षा बुझे, ति कम्पनी स्थापित भए, जसले बुझेनन् ति बन्द भए । सामान्यतया अब कम्पनीहरू सिण्डकेट या मिलमतो मै चलन खोज्ने हो भने नयाँ कम्पनी आउनुको कुनै अर्थ छैन । नयाँ कम्पनीले मूल्य, ब्राण्ड, सेवा र समयमा केही नयाँपन दिन सके मात्र उसले बजारमा छुट्टै पहिचान बनाउन सक्छ । नत्र यात्रुले पुरानै कम्पनी रोज्न थाल्नेछन् ।

सेवा प्रारम्भ गरेको दशक पार गरिसकेका कम्पनी पनि अनपेक्षित समस्याका कारण ब्राण्ड जोगाउन नसकेर बन्द भएका छन् । निकै तामभामका साथ सञ्चालनमा आउने र लगत्तै हराउने नेपाली वायुसेवाको पुरानो रोग हो । सञ्चालनमा आएका वायुसेवा पनि आर्थिक समस्या, व्यवस्थापकीय कमजोरी र दुर्घटनामा जहाजको क्षति जस्ता कारण बन्द भएका छन् । यस्ता कुरामा पनि नयाँ तथा पुराना दुवै कम्पनी हरू चनाखो हुनु पर्छ ।

नेपालमा वायुसेवामा निजी क्षेत्र प्रवेश गरेको करीब दुई दशक भएपनि शुरुवातका केही बर्ष राम्रोसँग उडान गरेका वायुसेवा कम्पनी हाल अस्तित्वमा छैनन् । नेपालबाट अन्तरराष्ट्रिय उडान शुरु गरेका वायुसेवादेखि आन्तरिक उडानमा स्थापित ब्राण्ड र छवि बनाएका वायुसेवा कम्पनी व्यवस्थापकीय कमजोरी र अन्य वित्तीय समस्याले डुबेका छन । आफ्नो स्थापित ब्राण्ड बनाएर डुबेका वायुसेवा कम्पनीमा सन् १९९६ देखि १० वर्षसम्म सेवा प्रदान गरेको कस्मिक एयर र कम्तीमा १२ बर्ष सञ्चालन भएको सोही समयको नेकोन एयर रहेका थिए । सोही समयमा आन्तरिक वायुसेवा कम्पनी स्काई लाइन एयर, साङ्ग्रिला एयर, माउन्टेन एयर, नेपाल एयरवेज, लुम्बिनी एयर, एभरेष्ट एयर पनि सञ्चालन भएर बन्द भएका थिए ।

त्यस्तै, हेलिकोप्टर कम्पनीमा कर्णाली एयर, हेलिहन्स हेलिकोप्टर, एसियन एयरलाइन्स, मनकामना एयरवेज, हिमालयन हेलिकोप्टर लगायतका कम्पनी सञ्चालनमा आएर पनि स्थापित हुन सकेनन् ।

## बाँकि छ चाँदीको घेरा

अन्तरराष्ट्रिय हवाई यातायात सङ्घटन (आयटा)ले एशियाली क्षेत्रमा अबको केही वर्षमा नै हालको अवस्थाभन्दा दुई गुणाले वायुसेवाको व्यापार वृद्धि हुने अनुमान गरेको छ । अन्तरराष्ट्रिय नागरिक उड्डयन संगठन (आइकाओ)का अनुसार आगामी एक दशकमा विश्वभर ४ लाख ५० हजार नयाँ विमान प्राविधिक र ३ लाख ५० हजार पाइलट आवश्यक पर्नेछ । यसको मतलव दक्षिण एसियासँगै विश्वभर हवाई यातायात लोभलाग्दो प्रगतिको क्रममा छ । यसका आधारमा वायुसेवामा ठूलो सम्भावना रहेको बुझ्न सकिन्छ ।

नेपालमा भौगोलिक हिसाबले सडक यातायात जटिल र धेरै समय खर्चनुपर्ने माध्यम हो । छिटो छरितो सेवा र सुरक्षित यातायातका दृष्टिकोणबाट पनि नेपालमा हवाई यातायातले पछाडी फर्केर हेर्नु पर्ने अवस्था छैन । यस अवस्थामा यात्रुको चाहना बुझ्दै आफूलाई सोही अनुरूप संचालनको रणनीति भने आवश्यक छ । सन् १९९२ को उदार हवाई नीति पश्चात नेपालमा उडान अनुमति लिने वायुसेवा कम्पनीको सङ्ख्या हरेक बर्ष बढ्दै गएको छ । तर, तर, हाल सञ्चालनमा रहेका कम्पनीको संख्या करीब डेढ दर्जन मात्र छ जबकि विगतमा लाइसेन्स लिने कम्पनीको संख्या ७० नाघिसकेको थियो । यसबाट पनि यो क्षेत्रको लाप्रियता र जोखिम प्रष्ट हुन्छ ।

## मुख्य आकर्षण साहसिक पर्यटन

राजु बास्कोटा  
पत्रकार, अन्नपूर्ण पोस्ट



नेपाल आएका पर्यटकमध्ये अधिकांशको रोजाई साहसिक पर्यटन हुने गरेको छ । विदा मनाउने आउने अधिकांश पर्यटकको रोजाई पनि रमाइला तथा साहसिक खेल तथा गतिविधि नै हुने गर्छ । पछिल्ला दिनमा नेपालका साहसिक पर्यटकीय गन्तव्य विदेशी पर्यटकका लागि आकर्षणका केन्द्रसमेत बनिरहेका छन् । साथै आन्तरिक पर्यटकसामू पनि यसको महत्व बढेको पाइन्छ । साहसिक पर्यटकीय गतिविधिको प्रवर्द्धन बढेकाले पनि विदेशी तथा आन्तरिक पर्यटकमा यसप्रति रूची बढ्दै जान थालेको हो ।

पर्यटकले सीधै साहसिक पर्यटन रोजेर आउने तथा ट्राभल, ट्रेकिङ तथा टूर एजेन्सीसँग पर्यटकीय गन्तव्य तथा गतिविधिको विषयमा पहिल्यै जानकारी लिएर नेपाल आउने क्रम वर्षेनी उकालो लागि रहेको छ । नेपाल आउने विदेशी पर्यटकमध्ये ७० प्रतिशत भन्दा बढीले के गर्ने, कहाँ जाने र कतिसम्म खर्च गर्ने निधो गरेरै वा भ्रमण प्याकेज नै खरिद गरेर आउने गरेका छन् । यसमा पनि साहसिक पर्यटनको प्याकेज रोज्नेको संख्या ८० प्रतिशत भन्दा बढी हुने गरेको छ । त्यसो त साहसिक पर्यटनप्रतिको आकर्षण पछिल्लो समय एउटा गन्तव्यबाट अर्कोमा घुम्न जाने तथा साहसिक पर्यटकीय गतिविधिकै लागि घुम्न निस्कने नेपालीको पनि चासो हुने गरेको गरेको ट्रेकिङ एजेन्सिज एशोसिएसन अफ नेपाल (टान)ले बताएको छ ।

संस्कृति पर्यटन तथा नागरिक उड्डयन मन्त्रालयले सार्वजनिक गरेको पर्यटनको तथ्यांकमा पनि सन् २०१६ मा साहसिक पर्यटनप्रतिको रूचीमा पर्वतारोहणपछि पदयात्रा, प्याराग्लाइडिङ, न्याफ्टिङ, बज्जी जम्प, क्यानोनिङ, जंगल सफारीसहितका गतिविधि हुने गरेका छन् । पर्यटकको आगमनको तथ्यांकले पनि घुमघाममा रमाउने विदेशी पर्यटकको आकर्षण उत्साहजनक देखिन्छ । विदेशीको उत्साह बढेको र नेपालीमा पनि पर्यटकीय सचेतना, घुम्न जाने संस्कृति, खर्च गर्न सक्ने क्षमता र सामाजिक सञ्जालको प्रयोग बढेकोले विदेशीजस्तै पर्यटक बनेर एक गन्तव्यबाट अर्कोमा पुग्न थालेका छन् । कतिपय नेपाली साहसिक गतिविधिकै लागि यात्रा गर्ने समेत छन् । छुट्टीको समयमा कर्पोरेट हाउसका कर्मचारी, मध्यम वर्गीय नेपालीदेखि विद्यार्थीसम्मले साहसिक पर्यटन रोज्न थालेका छन् ।

समान्यतया पदयात्राको मौसम र पर्वतारोहण गरी वर्षमा दुईपटक करीब ५/६ महिना मात्रै विदेशी पर्यटकको लागि सिजन हुने गरेको छ । तर, पछिल्लो समय पर्यटन व्यवसायीले 'नेपाल फर अल सिजन फर टुरिष्ट' अभियान संचालन गरेको, नेपाल पर्यटन बोर्डले यही स्लोगानलाई अबलम्बन गरी प्रवर्द्धनात्मक कार्य गरेको र एउटा पर्यटकीय गतिविधि कम हुँदा अर्कोतर्फ आकर्षित गर्ने तर्फ बिस्तारै प्रेरित गर्न सकेकोले नै नेपाल फर अल सिजन फर टुरिष्टको अभियान सफल हुँदै गएको तर्क पर्यटन व्यवसायीले नै दिन थालेका छन् ।

पर्यटनमा नेपालीको चलहपहल देखिनु भनेको मनोरञ्जनात्मक गतिविधिकै लागि कर्पोरेट हाउसमा काम गर्नेदेखि सामान्य व्यक्तिको रोजाई पनि साहसिक पर्यटकीय क्षेत्र हुनु हो । आन्तरिक पर्यटकले एक दिने हाइकिङदेखि दुई-तीन दिनसम्मको पदयात्रा, हवाई खेलकूदलगायतका गतिविधिका साथमा बज्जी र न्याफ्टिङ रूचाउने गरेको छन् । विदेशी भने महिनौंसम्म नेपालको पदयात्रामा रमाउने सक्छन् । कुनै पनि हिमाल चुम्न आउनेका लागि दुईतीन महिनाको समय समान्य हो । त्यसैले पर्वतारोहणका निम्ति आउने विदेशी भने खर्च र समय दुबैको व्यवस्थापन गरेर आउँछन् ।

छोटो समयमा नै गर्न सकिने बज्जी, न्याफ्टिङलगायतका गतिविधिमा रमाईउनका लागि एक दिनको प्याकेज लिन सकिन्छ । विदेशीले आफ्नो अनुकूलता अनुसारको समय निर्धारण गर्ने र एउटा पर्यटकीय गतिविधिसँगै अरूमा पनि संलग्न हुने गर्छन् । तर, आन्तरिक पर्यटकले भने सिधै वा एजेन्सीमार्फत छोटो समयको पदयात्रा तथा अन्य गतिविधि गर्ने गर्छन् । यस्ता गतिविधिमा जाने नेपाली कम भएपनि समूह बनाएर जाने क्रम भने बढ्न थालेको छ । एजेन्सीको प्रयोग नगरे पनि तिनले गाइड र सवारी साधन भने प्रयोग गर्ने गरेका छन् । हिमाली क्षेत्रको पदयात्रामा जानु साहसिक कार्य भएकोले यसप्रति

विदेशीकै जस्तो नेपालीको आकर्षण छ । यसैले गर्दा पनि विदेशी पर्यटकसँगै नेपालीको उत्साहले पनि साहसिक पर्यटनप्रति आशा बढेको देखिन्छ । र, नेपालको पर्यटकीय विकासमा यसले ठूलो योगदान गर्न सक्ने संभावना छ ।

आन्तरिक पर्यटकलाई आकर्षित गर्ने खालका पदयात्रा मार्ग र गन्तव्यको प्रवर्द्धनमा अहिले जुन ढंगले काम भइरहेको छ, त्यसको गति बढाउन जरुरी छ । यसलाई अभै प्रभावकारी योजना बनाएर व्यवहारिक रूपमा कार्यान्वयनमा ल्याउन सकिएको अवस्थामा यसको प्रभावकारीता अभै बढ्नेमा दुईमत छैन । साहसिक पर्यटनमा नेपालीको रुची भर्खरै देखिएको हो । यो पर्यटनप्रतिको सुरुवात मात्रै भएकोले यसको प्रवर्द्धन गर्नु पनि उत्तिकै जरुरी छ । त्यसका लागि साहसिक पर्यटनका क्षेत्रमा थप प्रडक्ट ल्याउने, गतिविधि तथा प्रतियोगिताहरू आयोजना गर्ने जस्ता कार्य सञ्चालन गरिरहनुपर्छ । जति धेरै गतिविधि गर्न सक्यो त्यतिनै मात्रामा पर्यटकको रुचि र आकर्षण बढाउन सकिन्छ । हाल नेपालमा पदयात्रा, पर्वतारोहण, क्यानोनिङ, हवाई खेलकूदका गतिविधि (प्याराग्लाइडिङ, अल्ट्राग्लाइडिङ, हट एयर बेलुन), बन्जिजम्प, न्याफ्टिङ, कायाकिङ, रक क्लाइम्बिङ, हाई रोप्स, जिप फ्लायर्स, जङ्गल सफारी, स्काई डाइभिङलगायतका साहसिक गतिविधिमा पर्यटक आकर्षित हुने गरेका छन ।

हवाई वाटर राफ्टिङका लागि विश्वकै उत्कृष्ट १० साहसिक गन्तव्य मध्येको एक भोटेकोशी जस्ता आकर्षण नेपालमै रहेकाले साहसिक पर्यटनको गतिविधिमा पर्वतारोहण पछिको दोस्रो राफ्टिङ हुन थालेको व्यवसायी बताउँछन् । औपचारिक रूपमा बर्षेनी एक सय भन्दा बढी व्यवसायीले न्याफ्टिङ सञ्चालन गर्ने भएपनि यसमा संलग्न हुने सेवाग्राहीको आधिकारिक तथ्यांक भने राखिएको पाइँदैन ।

नेपाल आएका कुल विदेशी पर्यटकमध्ये कम्तिमा १० देखि १५ प्रतिशतले न्याफ्टिङ गर्ने अनुमान गरिन्छ । त्यसमा पनि कुल न्याफ्टिङ गर्नेमध्ये अहिले करीब २५ प्रतिशत त नेपाली नै हुने गरेका छन् । नेपालमा बाह्रै महिना न्याफ्टिङ गर्न सकिने नदी छन् । साथै, उत्कृष्ट गन्तव्य मानिएको भोटेकोशी र त्रिशुली नदीमा न्याफ्टिङको आकर्षण पनि उस्तै छ । नाराले न्याफ्टिङ प्याकेजमा नेपालीलाई विदेशीको तुलनामा सहूलियत प्रदान गर्ने गरेको छ । व्यवसायीले त्रिशुली नदीमा करीब १ हजार ५ सय रुपैयाँदेखि २ हजार रुपैयाँसम्म र भोटेकोशीमा २ हजारदेखि २ हजार ५ सय रुपैयाँसम्मको प्याकेजमा न्याफ्टिङ सञ्चालन गरिरहेका छन ।

## संभावना देखाउँदै स्की पर्यटन

स्की पर्यटनलाई संस्कृति, पर्यटन तथा नागरिक उड्डयन मन्त्रालयले प्रचुर सम्भावनाको प्रडक्टका रूपमा लिएको छ । नयाँ पर्यटकीय प्रडक्टका रूपमा स्कीलाई विकास गर्ने भनेर नेपाल पर्वतीय पर्यटन प्रतिष्ठानमार्फत प्रवर्द्धनको कामलाई अगाडि सारेपछि यसको संभावना खोज्न थालिएको हो । सरकारले साहसिक पर्यटनको तालीम प्रदान गर्न प्रतिष्ठानलाई दिएको वार्षिक बजेटको केही अंश स्की पर्यटनको तालीममा लगाइएको छ ।

नेपालमा स्की पर्यटनको संभावना भएको र यसका लागि आवश्यक दक्ष जनशक्ति नभएकोले तालीम प्रदान गर्न प्रतिष्ठान अगाडि सारेको हो । तर, यस्तो तालीम र जनशक्ति उत्पादनले निरन्तरता पाउनु पर्छ भने स्कीको प्रवर्द्धन पनि निरन्तर भइरहनु पर्छ । हुन त प्रतिष्ठानकै पहलमा पर्वतीय पर्यटनको पढाई पनि सुरु भएको छ । यसले सकारात्मक सन्देश दिएको छ । प्रतिष्ठानले स्विट्जरल्याण्डको स्की तालीम प्रदायक संस्थासँगको सहकार्यमा गत वर्षदेखि यसको तालीम शुरु गरेपछि यसप्रतिको अपेक्षा पनि बढेको छ । यस्तो तालीमका लागि नेसनल गाइड एसोसिएसनसँग पनि प्रतिष्ठानले सहकार्य गरेको थियो । सरकारी निकायसँगको समन्वयमा निजीक्षेत्रलाई अगाडि सारेर वर्षेनी पर्यटन प्रवर्द्धनमा अग्रसर हुन जरुरी छ ।

हिउँमा चिप्लिएर खेल्ने यो साहसिक खेलको निम्ति नेपाल विश्वकै नमूना गन्तव्य बन्न सक्छ । सर्वोच्च शिखर नेपालमै भएको र आठ हजारभन्दा अग्ला अधिकांश हिमाल पनि यहीं भएकोले पनि यसलाई प्रवर्द्धन गर्न सरकार र निजीक्षेत्र पछि पर्नु हुँदैन । संभावना भएको स्कीसहित सम्पूर्ण साहसिक पर्यटन प्रवर्द्धनमा सरकारले लगानी बढाउनुपर्छ । यसबाट भोलीका दिनमा लिने लाभ कुनै व्यक्ति वा संस्थामा मात्रै सिमित हुनु हुँदैन । राज्यका लागि यो क्षेत्र आम्दानीको दिर्घकालिन स्रोत पनि बन्न सक्छ ।

## साहसिक पर्यटक तान्ने आधार

नेपाल आउने पर्यटकको पहिलो आकर्षण नेपालका हिमशृङ्खला नै हुन । यहाँ देखिने सबैजसो हिमालले पर्यटक आकर्षित गर्न कुनै न कुनै तवरबाट महत्वपूर्ण भूमिका निर्वाह गरिरहेकै छन । नेपाल हिमालको धनी देश भएकैले अधिकांश साहसिक गतिविधि हिमाली क्षेत्रलाई दृष्टिगत गरेरै हुने गरेको छ । नेपालमा आउने विदेशी पर्यटको पहिलो रोजाई नेपालका विभिन्न क्षेत्रमा गरिने साहसिक पर्यटकीय गन्तव्य पर्नुको कारण पनि पर्वतारोहण, माउन्टेन फ्लायट, पदयात्रा, स्काई

डाइभसहितको पर्यटकीय गतिविधि नै हुन् ।

पर्यटन व्यवसायीका अनुसार मंसिर महिना नेपालमा साहसिक पर्यटनका लागि पदयात्रा बाहेकको निम्ति बेमौसम हो । पदयात्रा र सगरमाथा आरोहणमा जाने सिजन नभए पनि यो महिना सगरमाथा आधार शिविर, अन्नपूर्ण, लाङटाङ, मनास्लुलगायतका हिमाली क्षेत्रमा हुने पदयात्राको समय हो । यो समयमा देखिएको पर्यटकीय आकर्षणले पनि नेपालमा साहसिक पर्यटकीय गतिविधि बढाएको छ । पर्यटन विभागका अनुसार सगरमाथा बाहेक अटम सिजानमा सन् २०१४ मा १३८९ जना, सन् २०१५ मा १०५५ जना पर्यटकले विभागबाट साहसिक पर्यटनका लागि अनुमति लिएका छन् । सन् २०१६ मा यस्तो अनुमति लिने १४ सय पुगेका छन् ।

### साहसिक पर्यटनमा रूची किन ?

नेपालका साहसिक पर्यटकीय गन्तव्यप्रतिको पर्यटकीय रूची बढ्नुको कारणमा नेपाल हिमाली देश हुनु र यहाँ हुने हरेक पर्यटकीय गतिविधि विदेशीको रूचीमा पर्नु हो । पदयात्रा तथा पर्वतारोहणसहितका गतिविधिमा पर्यटकले नै चासो देखाउनु र नेपाल शान्तिपूर्ण पर्यटकीय गन्तव्य हुनुले पनि पर्यटक आकर्षित भएको पर्यटन व्यवसायीको बुझाई छ । हवाई यात्रा गरेर नेपाल आउन मात्रै महंगो छ तर यहाँ हुने गरेका पर्यटकीय गतिविधि र गन्तव्यमा पुग्नु सस्तो छ । नेपाल विश्वमै सस्तो पर्यटकीय गन्तव्यको रूपमा पनि परिचित भएकोले पनि पर्यटक आकर्षित भएका हुन् ।

### साहसिक पर्यटनको संस्थागत महत्व

नेपालमा साहसिक पर्यटन सञ्चालन भएको लामो समय भएपनि सरकारीस्तरबाट भर्खरै मात्रै पर्यटकीय संस्थालाई कानूनी दायरामा ल्याउने काम शुरू भएको हो । पर्यटन मन्त्रालयले पर्यटन उद्योग सेवा प्रवाह निर्देशिका २०७० जारी गरेपछि यसको कार्यान्वयनसँगै साहसिक पर्यटनले संस्थागत महत्व पाउन थालेको हो । नेपालमा १९ वर्षअगाडिदेखि नै द लाष्ट रिसोर्टले बन्जी जम्प शुरू गरेको थियो । यस्ता कम्पनी सरकारीस्तरमा दर्ता गर्ने र अनुमति लिनुपर्ने व्यवस्था भने यो निर्देशिका पश्चात मात्रै भएको हो । साहसिक क्रियाकलाप सञ्चालन गर्ने सबै पर्यटकीय संस्थालाई पनि मन्त्रालयबाट अनुमति दिने व्यवस्था लागू भएसँगै नेपालमा केवलकार, एडभेञ्चर गेमिङको पनि विस्तार हुँदै छ ।

नेपालमा साहसिक पर्यटकीय व्यवसायको सम्भावना बढ्नुका साथै पर्यटकको पहिलो रोजाइ पनि हुन थालेकोले सरकारी नियमन तथा नियन्त्रण आवश्यक परेको हो । मन्त्रालयले साहसिक पर्यटकीय व्यवसाय दर्ताको लागि ३० देखि ७५ हजार रुपैयाँसम्म शुल्क लाग्ने व्यवस्था गरेको छ भने हरेक पाँच वर्षमा नवीकरण गर्नुपर्ने व्यवस्था छ । बन्जी जम्प, क्यानोनिङ, जिप फ्लाइड, केवलकार, एमुजमेन्ट पार्क, फन पार्क, केवलकारसहितको एमुजमेन्टपार्कसहितका अन्य साहसिक गतिविधि सरकारी नियमनको दायरामा आउन थालेका छन् ।

### साहसिक पर्यटनको शुल्क (रु.)

साहसिक क्रियाकलाप	इजाजत शुल्क	नवीकरण शुल्क
केवलकार	५० हजार	२५ हजार
एमुजमेन्ट पार्क र फन पार्क	५० हजार	२५ हजार
केवलकारसहित एमुजमेन्ट पार्क	७५ हजार	३५ हजार
बन्जी जम्प	४० हजार	२० हजार
जीप फ्लायर	४० हजार	२० हजार
क्यानोनिङ	३० हजार	१५ हजार
अन्य साहसिक गतिविधि	५० हजार	२५ हजार
होम स्टे	१० हजार	१० हजार
स्रोत: संस्कृति, पर्यटन तथा नागरिक उड्डयन मन्त्रालय		

## प्याकेजमा पर्यटन

पछिल्लो समय पर्यटकीय गतिविधि प्याकेजमै सञ्चालन हुन थालेका छन । प्याकेजमा पर्यटकीय गतिविधि प्रवर्द्धन गर्न पनि सहज हुन्छ । यसले सामूहिक रूपमा आउनेलाई सहज हुन्छ । हुन त नेपाल आउने पर्यटकमा एकल पर्यटक पनि नभएका होइनन् तर एकल पर्यटकले स्वतन्त्र रूपमा हिंडडुल गर्ने भएकोले जहाँ पुग्छन त्यहीँको सेवा र सुविधा प्रयोग गर्छन । यद्यपि सहज यात्रा भने प्याकेजमै हुने गर्छ ।

प्याकेज पर्यटनको नमूनाको रूपमा भुटानलाई लिन सकिन्छ । भुटानमा दैनिक २५० डलर खर्च नगर्ने पर्यटकले प्रवेश नै पाउँदैन । जहाँ यात्रा गर्ने हरेक पर्यटकले ट्राभल तथा टुर एजेन्सीमार्फत जानै पर्छ । यो सुविधा दिएवापत राज्यले नै ठूलो हिस्साको अधिकार राख्छ भने सानो हिस्सा मात्रै निजीक्षेत्रलाई दिन्छ । भुटानले प्याकेज पर्यटनबाटै गरेको आम्दानी नागरिकको शिक्षा र स्वस्थ्यमा खर्च गर्छ । भुटान आफैमा सानो देश, थोरै जनसंख्या र एउटा मात्रै विमानस्थल भएकोले पनि यसले सीमित र गुणस्तरीय पर्यटनमा जोड दिएको हो । भुटानले सिकाएको गुणस्तरीय पर्यटनको प्याकेज पर्यटन नेपालमा पनि फस्टाउन सक्ने आधार छ । तर यसलाई राज्यले नियन्त्रण गर्नुपर्छ । राज्यले पर्यटनको विकासका लागि मुख्य ध्यान पूर्वाधारमा दिन सक्नुपर्छ । विना पूर्वाधार पर्यटनबाट अपेक्षित लाभ सकिँदैन ।

## जोखिममा हवाई खेलकूद

मन्त्रालयले हवाई खेलकूद कम्पनीको अस्वस्थ प्रतिस्पर्धालाई रोक्न नसक्दा साहसिक पर्यटन अर्न्तगतको एक महत्वपूर्ण क्षेत्र मानिएको प्याराग्लाइडको उडान जोखिम मोलेरै हुने गरेको छ । सरकारले छ दर्जन प्याराग्लाइडका कम्पनीमध्ये अधिकांशलाई एउटै लोकेशनमा उडान अनुमति दिएको छ । यसमध्ये १० प्रतिशतले पोखरा क्षेत्र (सराङ्कोट, तोरेपानी तथा मान्द्रेदुङ्गा)बाट फेवाताल किनारमा अवतरण गर्ने गरी अनुमति पाएका छन ।

पोखरामा मात्र सिमित रहेको हवाई खेल अन्य पर्यटकीय गन्तव्यहरू बुटवल, पाल्पा, बन्दिपुर, चितवनलगायतका स्थानमासमेत संचालनको संभावना देखिएको भएपनि प्रवर्द्धन गर्न सकिएको छैन । हवाई क्षेत्रको नियामक निकाय नेपाल नागरिक उड्डयन प्राधिकरणले भेडेटार, इलामको कन्याम र खोटाङमामा हवाई खेलकूदका गतिविधि सञ्चालन गर्न सकिने संभावना रहेको बताएको छ । तर, सिमित गन्तव्य बाहेकमा हवाई खेलकूद सञ्चालन हुन नसक्नुमा सरकारको पनि कमजोरी छ । पर्यटन मन्त्रालयले पोखरामा हवाई खेलकूदको चाप बढेका कारण गएको चार वर्षदेखि पोखराको लागि नयाँ कम्पनीको अनुमतिमा नदिने भनेको पनि छ । तर, पहिले नै आवश्यकताभन्दा बढी अनुमति दिइसकेर थप अनुमति नदिने भन्नु हास्यास्पद हो ।

मनोरञ्जनपूर्ण हवाई खेलअर्न्तगत इञ्जिन जोडिएर वा नजोडिकन हावाको माध्यमबाट तैरिने खेलका रूपमा प्राधिकरणले हवाई खेलकूदका संस्थालाई अनुमति दिने गरेको छ । यसअर्न्तर्गत अल्ट्रा लाइट, माइक्रोलाईट, प्यारामोटर, स्ट्रङ्ग प्याराग्लाइडर, स्काइमोटरसहितका कम्पनी पर्छन् । यसलाई सञ्चालन गर्न निवेदन दस्तुरवापत ५ हजार रुपैयाँ, बैंक धरौटी ५ लाख रुपैयाँ, इजातज शुल्क बापत ५० हजार रुपैयाँ तथा चुक्ता पूँजी १ करोड रुपैयाँ हुनुपर्ने प्रावधान छ । पर्यटकीय गतिविधि बढी हुने र साहसिक पर्यटनको आकर्षणको गन्तव्य भएकोले पनि पोखरा सबैको रोजाईमा परेको हुनसक्छ । पोखराप्रतिको आकर्षण बढाउन पछिल्लोसमय यहाँ थपिएका पर्यटकीय गतिविधिले पनि सहयोग पुऱ्याएको छ । यसको अर्थ पोखराले होस् वा अन्य कुनै क्षेत्र वा नियकाले पर्यटनको प्रवर्द्धन र विकासमा प्रभावकारी भूमिका निर्वाह गर्न सक्नुपर्छ । अबको आशा भनेकै साहसिक पर्यटनमा हो । हवाई खेलकूदका गतिविधिसँगै साहसिक पर्यटनको विकास र प्रवर्द्धन पहिलो प्राथमिकतामा पर्नुपर्छ ।

## आन्तरिक पर्यटकको सम्मान

✎ अमृत भादगाउँले  
पर्यटन पत्रकार



साथी सुरज गुरुङ र म कागबेनीबाट एउटै मोटरबाइकमा मुक्तिनाथ उकालिँदै थियौं । बाटोमा हामीलाई दुइटा मोटरबाइकले ओभरटेक गरे । बुलेट बाइकमा चार जना थिए । त्यस्तै २५ वर्ष हाराहारीका ।

मेरा आँखाले सरसर्ती तिनलाई पढ्यो । बाइक चलाउने दुबैका टाउकोमा हेल्मेट थियो । पछाडी बस्नेहरूले सामान्य क्याप लगाएका । ज्याकेट पनि सामान्य । तर, दुबै गुरुजीका खुट्टामा जुत्ता थिएन, चप्पल थियो ।

‘जुत्ता छैन ?’ मैले सोधें ।

बाइक अगाडि बढिहाल्यो । बाइकमा गुरुजीको पछाडी बस्नेले हातले इशारा गर्‍यो - छैन ।

कात्तिकमा न्याना कपडा र जुत्ताविनै मुस्ताङ घुम्न निस्केका । कस्तो बिडम्बना ! हामी घुम्न त घुम्छौं तर हतार हतारमा । भाँती पुन्याएर घुम्दैनौं । त्यसैले दुःख पाउँछौं ।

मुक्तिनाथ बेस क्याम्प रानीपौवामा होटल ग्राण्ड साम्बला खोलेर बसेका साथी सुरजले नेपालीको घुमफिर शैली राम्रोसँग बुझेका छन् । ‘आफू घुम्न जाने ठाउँको भुगोल, हावापानी नबुझिकन हचुवाका भरमा आउँछन्,’ उनी सुनाउँदै थिए, ‘अनि दुःख पाए पछि पछुताउँछन् ।’

खासमा म्याग्दी सदरमुकाम बेनीदेखि मुक्तिनाथसम्म पुग्ने सडक सजिलो छैन । मोटरबाइक यात्रा टफ हुन्छ । साहसिक मुटु भएका तन्नेरी यात्रा गर्न सक्छन् । जोखिम मोल्ने कि नमोल्ने त्यो तपाइँकै हातमा छ ।

कतिपय जोडी स्कुटरमा समेत मुक्तिनाथ आइपुग्ने गरेको सुनाए सुरजले । ख्याल गरौं, दुःख पाइन्छ स्कुटी यात्रामा । कुरा मुक्तिनाथको मात्र होइन, राराताल, तिलिचोताल, खप्तड जस्ता हिमाली गन्तव्यमा घुम्न जाने धेरैको अवस्था त्यस्तै देखिन्छ । सुभ्रुभविनै यात्रामा निस्कने प्रवृत्ति देखिन्छ नेपाली तन्नेरीमा ।

तराईमा जाँदा पातला कपडा, चप्पल आदि बोक्नु पर्छ । लेकतिर जाँदा न्याना कपडा, हिँड्न सजिलो जुत्ता, बोक्न सजिलो भोला हुनुपर्छ । गन्तव्यमा खाना र बास सुविधा कस्तो छ जानकारी लिनुपर्छ । स्लिपिड ब्याग बोक्नु पर्ने हो कि ड्राई फुड्स, बेलैमा तयारी गर्नुपर्छ ।

त्यतिले मात्रै पनि पुग्दैन । २५ सय मिटर भन्दा माथि पदयात्रा गर्दा लेक लाग्न सक्छ । त्यसैले सुस्तरीसुस्तरी आराम गर्दै शरीरलाई त्यो ठाउँसँग एकलमटाइज गराउँदै अघि बढ्नु पर्छ । त्यसका लागि अल्टिच्यूड सिक्नेससम्बन्धी ज्ञान लिनुपर्छ । अचेल इन्टरनेटको मद्दतले पनि जानकारी खोज्न सकिन्छ । त्यस बारे लेखिएका पुस्तकहरू पनि किन्न पाइन्छ ।

एकलै पदयात्रामा निस्कनु राम्रो मानिँदैन । समूहमा जाँदा सजिलो हुन्छ । हाम्रोमा चल्तिका धेरै पदमार्ग छन् - सगरमाथा, लाङटाङ, अन्नपूर्ण, मर्दी, खप्तड, रारा, पुनहिल, लो-मन्थाङ, शैलुङ, कालिञ्चोक, पञ्चासे, धौलागिरी, गुर्जा आदि ।

पदमार्गको जानकारी दिने नक्सा, गाइड बुक वा अन्य पुस्तक बजारमा किन्न पाइन्छ । साथमा बोकेर यात्रा गर्दा सजिलो हुन्छ । कुनै पनि ठाउँमा जानु पहिल्यै त्यहाँका होटल, लज वा रिसोर्टमा सम्पर्क गरेर अग्रिम बुकिङ गर्ने बानी बसाल्नु पर्छ । त्यसो भएमा साँभ्र डिलो पुग्दा समेत फ्रिक्वट हुँदैन ।

सकेसम्म घाम नअस्ताउँदै बास बस्ने ठाउँमा पुग्नु पर्छ । होमस्टेहरूमा त पहिल्यै खबर नगरी जानै हुँदैन । किनकि होमस्टे होटल होइनन् जतिबेला पाहुना आयो त्यतिबेला गाँसबास व्यवस्था मिलाउने । विशेषतः हाम्रा युवा साँभ्र खानपिन गरेपछि नाचगान रूचाउँछन् । हामीले अरूलाई बाधा पुग्ने गरी नाचगान गर्नु हुँदैन । होमस्टे हुन् या होटल राती १० बज्नु अगाडि नै सुत्नु पर्छ ।

अर्को कुरा, कुनै पनि ठाउँ घुम्नुका केही कारण हुन्छन् । घुमफिरबाट तन र मन दुवैलाई चंगा बनाउन सकिन्छ ।

घुमफिरबाट मनोरञ्जन मात्र होइन, शिक्षा पनि पाइन्छ । समाज बुझ्न सकिन्छ । विविध जातजाति र समुदाय बसोबास गरेको मुलुकका हामी नेपालीले घुमफिरबाट सद्भाव बाँड्न सक्छौं ।

विभिन्न समुदायको चाडपर्व, संस्कृति र जीवनशैली बुझ्न पाउँदा आत्मीयता बढ्छ । नेपालीपनप्रति गौरवबोध हुन्छ । राष्ट्रिय भावना बढ्छ ।

हामी नेपाली घुम्न थालेको धेरै भैसक्यो । हाम्रा बाउबाजे तिर्थाटनमा निस्कन्थे । त्यो बेला कम खर्चमा लामो यात्रा गरिन्थ्यो । विशेषतः धर्म कमाउने उदेश्यले मन्दिर र गुम्बामा घुमघाम हुन्थ्यो । आज स्वास्थ्य, मनोरञ्जन र ज्ञानजुन बढुल्न घुम्नेहरू धेरै छन् । आजका नेपाली घुमफिरमा खर्च गर्न हिचकिचाउँदैनन् ।

एक छिन तथ्याङ्क हेरौं, बर्सेनी करीब साढे आठ लाख हाराहारीमा विदेशी नेपाल घुम्न आउँछन् । जबकि त्यो भन्दा ठूलो संख्यामा नेपाली घुम्छन् । यति हो नेपाली पर्यटकको तथ्याङ्क राख्ने चलन छैन । आन्तरिक पर्यटकलाई राज्यले महत्व नदिएकाले यस्तो भएको हो ।

मनकामना, मुक्तिनाथ, रुरु क्षेत्र, बराह क्षेत्र, पाशुपत क्षेत्र, मुक्तिनाथ, भीमेश्वर, स्वर्गद्वारी, नमोः बुद्ध, हलेसीधाम जस्ता धार्मिक क्षेत्रमा बर्सेनी लाखौं नेपाली पुग्छन् । अचेल पदयात्रामा पनि नेपालीको रुचि बढ्दो छ । च्याफ्टिङ, क्यानोनिङ र बज्जी जम्प जस्ता साहसिक गतिविधिमा विदेशी भन्दा नेपाली धेरै संलग्न हुन्छन् ।

साइकिलिङ, मोटरबाइकिङ र हाइकिङमा पनि ठूलो जमात सक्रिय छ । बन्दीपुर, पोखरा, कालिञ्चोक, घान्द्रुक, जिरी, टीकापुर जस्ता गन्तव्य नेपालीले नै धानिने अवस्था आइसक्यो । धार्मिक गन्तव्यहरू त नेपालीकै कारण गुल्जार छन् ।

अचेल पदयात्रामा पनि तन्नेरीको बाक्लो भिड देखिन्छ । यात्रा महंगो भएको टिप्पणी पनि सुनिन्छ । निश्चय नै यात्रामा खर्च हुन्छ । शहर वा पदमार्गका होटलवालाले आन्तरिक पर्यटकलाई डिस्काउन्ट दिए राम्रै हो । तर, दिएनन् भने रिसाउनु हुँदैन किनकि डिस्काउन्ट हाम्रो अधिकार होइन ।

हाम्रो कमजोरी के छ भने हामी हडबडमा घुम्छौं । कुनै ठाउँ पुगेर दुई-चार तस्वीर खिच्ने वित्तिकै घुमियो भन्ने मानसिकता त्याग्नु पर्छ । त्यहाँको इतिहास, प्रकृति, संस्कृति र जीवनशैली अध्ययन गरेर त्यसमा रमाउनु पर्छ । लोकल परिकार चाख्नु पर्छ । फर्किँदा मिठो अनुभूति र केही सूचना बोकेर आउनु पर्छ ।

स्थानीयको उद्यमशीलतामा टेवा पुऱ्याउन त्यहाँ पाइने खानेकुरा वा सजाउने कुरा कोसेली किनेर ल्याउने बानी बसालौं । त्यसले स्थानीयलाई फाइदा पुग्छ र परिवार वा साथीसंगीको अनुहारमा खुशी छाउँछ ।

दुःखको कुरा-आन्तरिक पर्यटनले हाम्रो अर्थतन्त्रमा पुऱ्याएको टेवाको लेखाजोखा हुन सकेको छैन । व्यवहारिक रूपमा आन्तरिक पर्यटन फस्टाउँदै गएको छ । तर, राज्यले भर्खरभर्खर आन्तरिक पर्यटक पनि पर्यटक हुन् भन्ने बुझ्न खोज्दैछ । त्यसको एउटा उदाहरण - घुमफिर वर्ष २०७३ हो ।

नेपाल पर्यटन बोर्डले पहिलोपटक २०७३ साललाई घुमफिर वर्षका रूपमा मनायो । यद्यपी जुन रूपमा त्यसलाई व्यापकता दिनु पर्ने थियो त्यसमा बोर्ड र सरकार चुक्यो । तर, पहिलोपटक राज्यले नेपाली पनि पर्यटक हुन् भनेर मान्यता दिएको त्यही बेला हो ।

वास्तवमा दीगो पर्यटनका आधारस्तम्भ आन्तरिक पर्यटक नै हुन् । राज्यले आन्तरिक पर्यटनमैत्री नीति ल्याउनु पर्छ । सरकारले आफ्ना कर्मचारीलाई वर्षका निश्चित दिन भत्तासहित घुमफिर बिदा दिनु पर्छ । त्यसले आन्तरिक पर्यटक अझ बढाउन मद्दत गर्दछ ।

पर्वतारोहणमा नेपाली कम छन् । पदयात्रामा बढ्दैछन् । अरु सहरी क्षेत्र र धार्मिक सम्पदामा नेपालीको संख्या उल्लेख्य भैसक्यो । अब पदयात्रामा नेपालीलाई लोभ्याउँदै जाने हो भने पदमार्गहरू पनि नेपालीले धानिने दिन आउँछ । त्यो वातावरण बनाउन सबै जुट्नु पर्छ ।

राज्यले, व्यवसायी लगायत सरोकारवालाले आन्तरिक पर्यटकलाई सम्मान गर्नुपर्छ । नेपाल पर्यटन बोर्डमा आन्तरिक पर्यटन विभाग खोल्नु जरुरी छ । हामीले एकपटक भ्रमण वर्ष मनाएर पुग्दैन, हरेक वर्षलाई आन्तरिक भ्रमण वर्षका रूपमा मनाउनु पर्छ । हामी नेपालीले नेपाल चिनौं, नेपाली भएकामा गौरव गरौं । पहिला देश अनि विदेश घुमौं ।

अन्त्यमा, व्यवस्थित पर्यटक भएर यात्रा गरौं । हडबडको यात्रा कहिल्यै नगरौं ।

## नेपालमा पर्यटन विकासको सम्भावना

दधिराम खतिवडा  
पत्रकार



सामान्यतया पर्यटन भन्नाले एक ठाउँबाट अर्को ठाउँको भ्रमण गर्ने कार्यलाई जनाउँछ । विश्व पर्यटन संगठन (युएनडब्लुटिओ)को परिभाषाअनुसार आफ्नो नियमित बासस्थानबाट बिदा मनाउने, व्यापार गर्ने वा त्यस्तै अन्य कुनै उद्देश्यले चौविस घण्टा भन्दा बढी समय र लगातारको एक वर्ष भन्दा कम समय बाहिर विताउन निस्कने व्यक्तिलाई पर्यटक भनिन्छ । यस्ता पर्यटकहरूलाई सःशुल्क घुमाउने, आवासको व्यवस्था गर्ने, यातायात मिलाउने, दृश्यावलोकन गराउने आदि कार्य गर्ने क्षेत्रलाई पर्यटन भनिन्छ । यस्तो व्यवसायलाई पर्यटन व्यवसाय वा पर्यटन उद्योग भनिन्छ । प्राचिन समयमा रोमन रिपब्लिककै समयदेखि ठूला भवनहरू हेर्न, कलाकौशलको मजा लिन, नयाँ भाषा सिक्न, नयाँ संस्कृतिहरूको अनुभव लिन र विभिन्न प्रकारका स्वादिष्ट खानाहरूको स्वाद लिन सम्पन्न मानिसहरू आफ्नो घरबाट टाढाका ठाउँको यात्रामा निस्कन्थे ।

पर्यटक भन्ने शब्द सन् १७७२ मा र 'पर्यटन' भन्ने शब्द सन् १८११ मा प्रयोग भएका हुन् । फुर्सदको समय पर्यटककारूपमा बाहिरी वातावरणमा बिताउने प्रचलन बेलायत लगायतका पश्चिमा देशहरूमा औद्योगिक क्रान्तिपछि शुरू भएको हो र यसैको क्रम बढ्दै गएर पर्यटन एउटा विशाल उद्योगको रूपमा विकसित हुन गएको हो । थमस कुकले ट्राभल एजेन्सीमार्फत समूहगत रूपमा पाहुनाहरूलाई घुमाउन थालेपछि यसले व्यावसायिक रूप लिन थालेको हो । इन्डोनेशियाको बाली, कोलम्बिया, ब्राजिल, क्युबा, मलेसिया, थाइल्याण्ड, अष्ट्रेलियालगायतका ठाउँहरू हिउँद तथा ग्रीष्म दुवै ऋतुमा उच्च भ्रमण गरिने स्थानमा पर्छन् ।

मुलुकको पर्यटन प्रवर्द्धन र बिकासका लागि सञ्चार माध्यमको पनि उल्लेखनीय भूमिका रहेको हुन्छ । जति धेरै प्रचारप्रसार गर्न सक्यो त्यति नै पर्यटक आकर्षित गर्न सकिन्छ । त्यसका लागि सञ्चार माध्यमले विशेष योगदान गरेको छ र हाल संसारभरीकै लागि पर्यटन उद्योग सबैभन्दा ठूलो ब्यवसायका रूपमा परिणत भइसकेको छ । मानिसहरूको व्यस्तता, मुद्राहरूको सहज प्रयोग, अंग्रेजी भाषाको विश्वव्यापकता, अन्तर्राष्ट्रिय सञ्चारमाध्यम, सञ्चारको तिब्र विकास र विश्वव्यापीकरण हुनु, इन्टरनेटको सहज पहुँच हुनु, बिश्व एक गाउँजस्तो बन्दै जानु, अन्तर्राष्ट्रिय संगठनहरू स्थापित र विकसित हुँदै जानु, शिक्षा, खेलकुद, सभा-सम्मेलनको अन्तर्राष्ट्रिय सञ्जाल बन्दै जानु आदि कारणले पर्यटन उद्योग विश्वव्यापी र विशाल उद्योग बन्दै गएको छ । सन् २००० पछाडिका केही वर्षमा विश्वमा आर्थिक मन्दी बढेको समयमा केही घटन गए तापनि अन्तर्राष्ट्रिय पर्यटकहरूको संख्याले २०१६ को डिसेम्बरमा एक अर्ब नाघिसकेको छ । नेपाल संसारमै थोरै क्षेत्रफलमा सबै भन्दा बढी विविधता भएको देशमध्ये एक हो । विश्व सम्पदा सूचीमा परेका १० सम्पदा नेपालमा हुनु, संसारको सबैभन्दा अग्लो हिमशिखर सगरमाथा, लगायतका ८ वटा ८००० मिटरभन्दा माथिका हिमाल हुनु, उत्कृष्ट पदयात्रामा पर्ने अन्नपूर्णका हिम श्रृंखलाका साथै तराइका फाँट र घना जंगल हुनु, भगवान गौतम बुद्धको जन्मस्थल लुम्बिनीका साथै पशुपतिनाथ, मुक्तिनाथ, दामोदर कुण्डलगायतका धार्मिक स्थल हुनु, पर्वतारोहण, पदयात्रा, न्याफटिड, जंगल सफारीजस्ता साहसिक गतिविधिको लागि उपयुक्त वातावरण हुनु, प्याराग्लाइडिङ, अल्ट्रालाइट, जीपलाइन लगायतका नरम साहसिक पर्यटकीय गतिविधि विकास र विस्तार हुनु, अनुपम धरातलीय, जैविक र सांस्कृतिक विविधताको खानी हुनु, नेपालीहरूको जस्तै दुःखमा पनि हाँसी रहने अनुहार, अतिथिलाई सत्कार गर्ने बानी र संस्कार हुनु, अर्ब भन्दा बढी जनसंख्या भएका दुई छिमेकी राष्ट्र चीन र भारतको बीचमा अवस्थित हुनु आदिको कारणले नेपालमा पर्यटनको विकासको प्रचुर सम्भाव्यता भएको कुरामा दुई मत छैन ।

विगतका दशकहरूमा पर्यटन विकासको क्षेत्रमा सरकारी वा गैर-सरकारीस्तरमा उल्लेखनीय प्रगति भएको छ । त्यसअनुसार पर्यटनसम्बन्धी कयौँ नीति, योजना, ऐन, गुरुयोजना वा कानूनहरू बनेका छन् भने सरकारी वा गैर-सरकारी तहमा पर्यटनसम्बन्धी काम गर्नका लागि कयौँ संस्थाहरूको गठन र विकास भएको छ । पर्यटनको क्षेत्रमा भएका यी सबै कार्यहरू महत्वपूर्ण छन् । तर राष्ट्रिय अर्थतन्त्रमा पर्यटनले पुऱ्याउने योगदान र त्यसको सम्भावित भविष्य समेतमाथि ध्यान दिँदा त्यसका लागि सरकारले विनियोजन गर्ने गरेको बजेट एकदम अपर्याप्त वा कम देखिन्छ । आर्थिक वर्ष २०७३/७४ मा सरकारले कुल

बजेटको जम्मा २.४१ प्रतिशत पर्यटन क्षेत्रका लागि विनियोजन गरेबाट पनि त्यो कुरा प्रष्ट हुन्छ । त्यो बजेट पनि पर्यटनको विकासका लागि मात्र नभएर पर्यटन, संस्कृति र हवाई उड्डयनको विकास र साधारण खर्चका लागि छुट्टाइएको एकीकृत रकम हो । त्यसको ठूलो अंश लुम्बिनी क्षेत्रको विकास र पोखराको अन्तर्राष्ट्रिय विमानस्थलको निर्माणका लागि छुट्टाइएको छ । ति दुई राष्ट्रिय गौरवका आयोजनाको बजेट घटाउँदा त्यसपछि पर्यटनको विकासका लागि अत्यन्त न्युन रकम बाँकी रहन्छ । त्यो न्युनतम रकमले पर्यटनको क्षेत्रमा उल्लेखनीय कामहरू सम्पन्न हुन सक्दैन । खास गरेर ग्रामीण पर्यटन, विभिन्न जिल्लाहरूमा पर्यटकीय क्षेत्रहरूको निर्माणमा समेत जोड दिने हो भने पर्यटनका लागि बजेट कैयौं गुणा बढाउनु पर्ने आवश्यकता छ ।

पर्यटन विकासका अथाह सम्भाव्यता बोकेको भए पनि नेपालमा अपेक्षित रूपमा यसको विकास हुन सकेको छैन । सन् १९५० भन्दा पहिलेको राणा शासनकालमा विदेशीलाई पर्यटकको रूपमा आमन्त्रण गर्ने नीति नै नभएको हुनाले यसको विकास हुने कुरै भएन । सन् १९७० को दशकमा आएर नेपालमा राजमार्गहरू बन्न थालेपछि पर्यटनले व्यवसायिक रूप लिन थालेको हो । सन् १९९० मा राजनीतिक व्यवस्था परिवर्तन भएर बहुदलीय व्यवस्था स्थापना भएपछि उकालो लाग्न थालेको पर्यटन उद्योग बेलाबेलामा आयोजना गरिने बन्द, हडतालले प्रभावित हुन थाल्यो । सन् २००० तिर आइपुग्दा इन्डियन एयरलाइन्सको अपहरण, दरबार हत्याकाण्ड, राज्य र माओवादीवीच जनयुद्धकालमा भएको हिंसा, प्रति हिंसा, जनआन्दोल, मधेस जनआन्दोल लगायतका कारणले गर्दा पर्यटनमैत्री वातावरण बन्न सकेन । सन् २००६ मा भएको बृहत शान्ति सम्झौतापश्चात पुनः तन्निन थालेको पर्यटन उद्योगलाई राज्य र राजनीतिक पार्टीहरूको तर्फबाट चुनावी घोषणापत्रमा प्राथमिकता प्राप्त क्षेत्र भनिए तापनि त्यसका लागि आवश्यक पूर्वाधार, नीतिनिर्माण र वातावरण निर्माण हुन सकेको छैन । बिगत २५ वर्षदेखि आवधिक निर्वाचनताका विभिन्न राजनीतिक दलका घोषणापत्रमा महत्वकांक्षी योजनासहितका वैज्ञानिक पर्यटनका नारा लगाइए पनि क्रियान्वयन पक्षमा पटककै जोड दिइएको छैन ।

नेपालको पर्यटन विकासका लागि सारोकारवालाहरूमा अभि स्पष्टता आवश्यक देखिन्छ । काठमाण्डौंलाई प्रशासनिक लगायत अन्य क्षेत्रको केन्द्रको रूपमा विकास गर्नुपर्ने भएको हुनाले पोखरा, चितवन, सोलुखुम्बु, इलाम, मुस्ताङजस्ता ठाउँलाई पर्यटनको हबको रूपमा विकसित गर्नुपर्छ । पूर्व, पश्चिम, हिमाली क्षेत्र, कर्णाली क्षेत्र लगायतका ठाउँमा नयाँ पर्यटकीय केन्द्र स्थापना गरी सोही अनुसारको वातावरण र पूर्वाधार निर्माण गर्नुपर्छ । पदयात्रा मार्गहरू जोगाउने र वैकल्पिक पदयात्रा मार्गहरूको खोज, पहिचान, ग्रामीण क्षेत्रसम्म पुग्ने यातायात सन्तुलन र विकासमा स्पष्ट नीति आउनु पर्छ । पर्यटकहरूको आगमन संख्या, बसाईको अवधि, प्रतिपर्यटक खर्च आदि बढाउन पर्यटकीय सम्पदा र वस्तुहरूको बैज्ञानिक विविधीकरण तथा स्थानीय कला, साहित्य, धर्म, संस्कृतिको संरक्षण एवम् विकास गर्दै विश्व पर्यटन बजारमा बजारीकरण गर्नुपर्छ । साथै, दक्ष जनशक्ति विकासमा पनि उत्तिकै ध्यान दिनुपर्छ । सरकारले नीतिनिर्माण र पूर्वाधार निर्माणमा प्राथमिकता दिनुपर्छ भने निजीक्षेत्रले गुणस्तरीय सेवा र ब्यवस्थापनमा विशेष जोड दिनुपर्छ ।

राष्ट्रिय अर्थतन्त्रको महत्वपूर्ण अंग भएको र देश विकासका लागि पर्याप्त संभावना बोकेको क्षेत्र पर्यटन उद्योग हो । देशको अस्थिर राजनीतिक अवस्थाले थिलथिलो भएको पर्यटन क्षेत्रलाई उद्योगको रूपमा विकसित गर्नु हामी सबैको दायित्व हो । पर्यटन उद्योग पूर्णरूपमा सेवामा आधारित व्यवसाय भएकाले अन्य उद्योग व्यवसायको तुलनामा यसको विकास र प्रवर्द्धन बढी चुनौतिपूर्ण हुनुका साथै संवेदनशील पनि छ । कुनै एक पक्षमा आएको परिवर्तनले अर्को पक्षमा तुरुन्त असर पाउँछ । तर यसो भन्दैमा सन्तुलित रूपमा पर्यटन व्यवस्थापन गर्न नसकिने भने होइन । पर्यटन उद्योगको सन्तुलित व्यवस्थापनका लागि यस क्षेत्रका विज्ञहरूको सल्लाह र सुझाव अनुसार उपयोगी र प्रभावकारी कार्यक्रम तथा रणनीतिक योजना तय गरी सरकारी र निजीक्षेत्र एक भई दृढताका साथ पर्यटन क्षेत्रको विकास र प्रवर्द्धनमा अघि बढ्नु आजको अनिवार्य आवश्यकता बनेको छ । निश्चित रूपमा पर्यटन उद्योगको विकासका लागि पर्यटनसँग सम्बन्धित व्यवसायिक क्षेत्रहरू र पर्यटकीय स्थलहरूको सुधार, संरक्षण र प्रवर्द्धन गर्नुपर्छ तर यो मात्र पर्याप्त हुँदैन । आजको कडा प्रतिस्पर्धाको जमानामा सम्बन्धित क्षेत्रको योगदानका साथै व्यापक प्रचारप्रसार तथा बजार ब्यवस्थापनमा पनि विशेष ध्यान दिनुपर्छ । २०७२ को महाभुकम्पका कारण धेरै पर्यटकीय ऐतिहासिक सम्पदाहरू ध्वस्त भए पनि हाल पुननिर्माणले गति लिएको छ । नेपालको पर्यटकीय संभावना विगतमा भन्दा भन बढेको छ । भुकम्पले नेपाली पर्यटनमा केही असर गरेको छैन भन्ने सन्देश विश्वभर सम्प्रेषण गर्नु जरूरी छ ।

ग्रामीण पर्यटनको विकासबारे विचार गर्दा त्यस क्षेत्रको आर्थिक विकाससम्बन्धी योजनाहरूको क्रियान्वयनमा पनि उचित जोड दिनुपर्ने आवश्यकता छ । त्यसका लागि खास गरेर कृषिको आधुनिकीकरण र सहकारीतामा जोड दिनु आवश्यक छ । त्यसरी आर्थिक आधार बलियो भएपछि नै ग्रामीण विकासले ठोस रूप लिन सक्नेछ र त्यसबाट ग्रामीण पर्यटनलाई पनि मद्दत पुग्नेछ । ग्रामीण क्षेत्रमा आर्थिक विकासको लागि सरकारीस्तरबाट विभिन्न योजनाहरू लागु गर्ने प्रयत्न गर्नुका साथै जनस्तरमा

पनि त्यो दिशामा विकासका कार्यहरू अगाडि बढाउन प्रोत्साहित गर्ने र सहयोग गर्ने सरकारको नीति हुनुपर्दछ । तर, सरकारले प्रस्तुत गरेको पर्यटनसम्बन्धी रणनीतिक योजना (२०१६-२०२५) ले खालि पर्यटनसितसम्बन्धी परम्परागत पक्षमै बढी जोड दिएको छ । ग्रामीण पर्यटनको विकासका लागि कुनै ठोस योजना बनाइएको छैन । नेपालको आर्थिक विकासका लागि पर्यटनको ठूलो महत्व छ । विश्वमा नै पर्यटनले एउटा प्रमुख उद्योगको रूप लिंदै 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 । नेपाल सरकारले पछिल्लो दशकमा विश्वभरबाट १० पर्यटक नेपाल भित्र्याउने लक्ष्यअनुरूप 'पर्यटनका लागि सँगसँगै' भन्ने नारासहित सन् २०११ मा उक्त योजना सफलताका साथ सम्पन्न भयो । यद्यपि पर्यटकको संख्या १० लाख भन्ने पुग्न सकेन । त्यसैगरी पर्यटनको बाह्य र आन्तरिक प्रवर्द्धनका लागि २०७३ साललाई 'आन्तरिक घुमफिर वर्ष' को रूपमा मनाइएको छ भने सन् २०२० लाई 'नेपाल भ्रमण वर्ष' मनाउने गरी कार्ययोजना बनाइएको छ । दिगो पर्यटन विकास गर्न सहरदेखि गाउँसम्म होमस्टे, ग्रामिण पर्यटन, स्थानीय प्रविधि र साधनलाई प्राथमिकता दिनुपर्छ । विश्व जगतमा नेपाल सुरक्षित, शान्त र सुन्दर देश हो भन्ने सन्देश सम्प्रेषण गरिरहनु पर्छ । यसका लागि पर्यटनक्षेत्र लक्षित स्वदेशी तथा विदेशी लगानी र कार्यक्रमहरू भित्र्याउन राज्यले स्पष्ट नीति र योजना तर्जुमा र मार्गदर्शन तयार गर्नु जरूरी छ ।

अतः नेपालको विशिष्ट अवस्थिति, छिमेकी देशहरूबाट लिन सकिने फाइदाको सम्भाव्यता, नेपालमा भएका उत्कृष्ट, अतुलनीय र विश्व प्रसिद्ध पर्यटकीय सम्पदाहरू, तिर्थस्थलहरू, धरातलीय, जैविक, सामाजिक, साँस्कृतिक, धार्मिक एवम् जातीय, विविधताहरू, अनेकतामा एकता लगायतका अन्य थुप्रै साहसिक गतिविधिको प्रचुर सम्भाव्यताका पक्षहरूलाई मध्यनजर गर्दै राज्य र निजीक्षेत्रको तर्फबाट पर्यटनलाई बन्द, हडतालमुक्त क्षेत्र घोषणा गर्नुपर्छ । यसमा प्रतिवद्धता, इमान्दारी र संवेदनशीलता प्रदर्शन गरी सबै पक्ष जवाफदेही बन्ने हो भने पर्यटनक्षेत्रले अग्रगामी छलाड मार्नुका साथै मुलुकको आर्थिक विकासमा उच्च योगदान पुऱ्याउने देखिन्छ ।



Sunrise from Shri Antu, Ilam

# जीवन उपयोगी स्वास्थ्य जानकारी

नारायण बहादुर सिंह डंगोल  
भूपू उपनिर्देशक, ने.ना.उ.प्रा.



## भूपू उपनिर्देशक

मानव जीवन अमूल्य भएकोले जीवन स्वस्थ हुनु पर्छ । स्वस्थ जीवनको लागि कम क्यालोरी तर उच्च पोषक तत्वहरू भएका खाद्यपदार्थ लिनु अत्यावश्यक छ। उच्च पोषक तत्वहरू भएका खाद्य पदार्थको सट्टा फास्ट फुड वा जङ्क फुडको लोकप्रियता बढिरहेको छ ,यस्ता खाद्यपदार्थको सट्टा फास्ट फुड वा जङ्क फुडको अत्यधिक सेवनले मोटोपन,मधुमेह,हृदयरोग जस्ता समस्या फैलिदैछन् । यस्ता भोजनमा चिल्लो,नुनिलो र गुलियोको मात्रा बढी हुने भएकोले स्वास्थ्यका लागि उपयुक्त हुदैन । तसर्थ भोक र रोगको औषधिका रूपमा काम गर्ने हाम्रै गाउँघरमा उपलब्ध हुने निम्न पारम्परिक खाद्य पदार्थ खाने गरौं ।

## १) आलस

प्रकृतिले दिएको अति राम्रो उपहार हो आलस । आलसमा पाईने एउटा महत्वपूर्ण तत्व ओमेगा फ्याटी एसिड (माछामा पाईने) हो । आलसमा भिटामिन बि पर्याप्त, सूक्ष्म-पौष्टिक तत्व म्याग्नेसियम,प्रोटिन,रेसादार पदार्थ (जुन पदार्थले कब्जियत हटाउने मात्र होइन शरीरको मोटोपन घटाउन र उच्च रक्तचाप कम गर्न पनि महत्वपूर्ण भूमिका खेल्छ ) क्याल्सियम जिंक आदिले यो पोषणयुक्त छ । आलस नियमित खाँदा महिनावारीको बेलादेखापने समस्यामा फाईदा हुने, दिनमा दुई तीन चम्चा आलस प्रयोग गर्नु सबै महिलाको लागि उपयोगि हुन्छ । यसलाई अचार बनाएर,रोटी,सुप जस्ता खानेकुरामा मिसाएर खान सकिन्छ ।

## २) सिस्नो

जङ्गल,भीरपाखातिर पाईने सिस्नु छुँदा पोल्ने भए पनि भोक र रोग दुवैका लागि उपयोगि खाद्यपदार्थ हो । हाम्रो समाजमा सिस्नु परापूर्वकालदेखि तरकारीका रूपमा प्रयोग हुँदै आएको छ । सिस्नुको पातमा फर्मिक एसिड हुन्छ । हामीले सिस्नु छुँदा एसिड हाम्रो शरीरमा प्रवेश गर्छ र पोल्न थाल्छ । सुकेको वा पकाइसकेको सिस्नुको पातले भने त्यस्तो असर गर्दैन ।

वैज्ञानिक सिस्नुलाई एन्टिइन्फ्लामेटरी गुण भएको वनस्पति मान्छन् । सिस्नुको जरालाई बुढेसकालमा प्रोस्टेट बढ्ने समस्या नियन्त्रण गर्ने सम्भावना भएको औषधिका रूपमा पनि लिइन्छ । यसको क्लिनिकल उपयोगबारे भने प्रमाणहरू अब स्पष्ट भएका छैनन् ।

## ३) गिट्ठा भ्याकुर

गिट्ठा भ्याकुर, तरुल जस्ता कन्दमुलमा शरीरलाई पोषण दिने थुप्रै गुण हुन्छ । यसमा कार्बोहाइड्रेट ,रेशादार पदार्थ भएकोले कब्जियत कम गर्छ र कोलेस्ट्रॉल पनि घट्दछ । भिटामिन बी,फोलिक एसिड ,म्याग्नेसियम, पोट्यासियम, लौह तत्व ईत्यादि सूक्ष्म पोषण तत्व पाईन्छ ।

## ४) चामल

चामलमा प्रशस्त भिटामिन, कार्बोहाइड्रेट र पोलिफेनोल हुन्छन् । बजारिया ब्रेडको दाँजोमा चामलमा सोडियमको मात्रा कम हुने भएकोले यो उच्च रक्तचापका विरामीलाई लाभदायक हुन्छ । धानको बाहिरी पत्र मात्र छोडाईएको चामल ( अन्पोलिस राइस ) लाई खैरो चामल (ब्राउन राइस ) भनिन्छ । यस्तो चामलमा फाइबर, भिटामिन बी १,बी २ र म्याग्निज प्रशस्त पाईन्छ । स्वास्थ्यका दृष्टिकोणले ब्राउन राइस सेतो चामल भन्दा फाईदाजनक छ । यसको नियमित सेवनबाट कब्जियत नहुने,शरीरको बजन घट्ने, कोलेस्ट्रॉल घट्ने र हृदय रोगबाट बच्न सकिने तथा महिलामा पित्तमा पाईने पत्थरीको समस्या कम हुने अध्ययनबाट देखिएको छ । याद गर्नुपर्ने कुरा के छ भने ब्राउन राइस पकाउनु अघि करिब २०- ३० मिनेट भिजाएर राख्नुपर्दछ ।

समग्रमा, हाम्रो पारम्परिक खाना कम क्यालोरीका भए पनि शरीरलाई चाहिने प्रोटिन ,भिटामिन ,खनिज पदार्थले परिपूर्ण

हुन्छन् । त्यसैले पारम्परिक खानाबाट मधुमेह, उच्च रक्तचाप र ओवेसिटि (मोटोपन) जस्ता रोग हुने सम्भावना कम रहन्छ ।

#### ५) फापरको पीठो

फापर कम ग्लेसेमिक इन्डेक्स भएको खाद्यपदार्थ हुनाले मधुमेहका विरामीलाई लाभदायक बन्न सक्छ । फापरको पीठो नियमित खाने गरे बढ्दो चिनी, इन्सुलिन र कोलेस्ट्रॉल, न्युनीकरण हुन्छ । फाईबर युक्त स्टाचका अलावा बी १, बी २ पनि पाइन्छ ।

फापरलाई "रूटिन" भनिने एन्टिअक्सिडेन्टको धनी स्रोत मानिन्छ । रूटिन एउटा यस्तो पोलिफेनोल हो, जसमा उच्च रक्तचाप र हृदय सम्बन्धी रोग लाग्न बाट बचाउन सक्ने गुण हुन्छ । एक जापानी अध्ययन अनुसार फापरमा पित्तथैलीको कोलेस्ट्रॉल (गलस्टोन) हुन बाट बचाउने क्षमता हुन्छ । फापर खानाले बाईल (पित्त)को प्रवाह बढ्छ र अनावश्यक कोलेस्ट्रॉल घट्छ ।

#### ६) मेवा

ज्यादै स्वादिष्ट र सुन्दर फल भएर पनि होला, क्रिस्टोफर कोलम्बसले मेवालाई "द फ्रुट अफ एन्जेल" (देवदुतको फल) भनेको थिए । पाकेको मेवामा लाईकोपिन, केरोटिन, भिटामिन सी, ई, ए, का साथै पोलिफोरनोल प्रशस्त पाईन्छ । यो फोलेट र पोटासियमको स्रोत पनि हो । ती तत्वहरूले हाम्रो शरीरको इम्युन सिस्टम बलियो बनाउने तथा इन्फ्लामेसन घटाउने गर्छन् । हामीले फाल्ने मेवाको वियाँमा पेटका कीरा मार्ने (एन्टिहेल्मिन्थिक, एन्टिएमोएबिक ) गुण हुन्छ ।

#### ७) ओखर

ओखरको कडा खोलभित्र मानिसको मस्तिष्क जस्तै आकारमा रहेको गुदीमा ओमेगा ३ फ्याटी एसिड (जस्तै अल्फा लिनोलेईक), भिटामिन ई (गामा टोकोफेरॉल), आर्जिनिन एमिनो एसिड, स्टेरोल जस्ता पदार्थ पाईन्छन् । एलागि टेनिन जस्ता पोलिफेनोल अनि मेलाटोनिन पनि पाइने हुनाले ओखर एन्टिअक्सिडेन्टको धनी स्रोत हो । अर्को महत्वपूर्ण कुरा, प्रशस्त मात्रामा एलआर्जिनिन (एमिनो एसिड) पाइने हुनाले यसको सेवनबाट उच्च रक्तचापका विरामीलाई फाइदा पुग्न सक्छ । ओमेगा ३ र पोलिफेनोलको धनी स्रोत भएकोले ओखर सेवन हृदय र समग्र रक्त संचार प्रणाली स्वस्थ राख्न लाभदायक हुन्छ । टाइप २ मधुमेहका लागि पनि यो उत्तिकै उपयोगि मानिन्छ । ओखर नियमित खाए मस्तिष्क तथा अन्य अंग स्वस्थ रहन्छ ।

#### ८) कोदो

कोदोमा प्रोटीन, फाइबरका साथै प्रशस्त खनिज पदार्थ (म्याग्निज, म्याग्नेसियम ) पाईन्छन् । पोलिफेनोल टेनिजको धनी स्रोत भएकोले यसमा एन्टिअक्सिडेन्ट गुण पनि हुन्छ । कोदो खाने गरेमा मधुमेहका रोगीलाई फाइदा हुन्छ । कोदोमा ग्लेकेसन (चिनी र प्रोटीनबाट हुने प्रतिक्रिया) कम गर्ने गुण हुन्छ । ग्लेकेसनको प्रभाव हाम्रो बुद्धि, मधुमेह, मिर्गौलाको स्वास्थ्य लगायतमा पर्दछ ।

#### ९) चम्सुर

चम्सुरको साग र वियाँ दम (आज्मा), खोकीको उपचारमा प्रयोग गरिन्छ । यसले कलेजो, मिर्गौला, छाला, आँखाका समस्या निराकरण गर्न मद्दत गर्छ । चम्सुर खाने गरेमा रक्तचाप र रगतमा चिनिको मात्रा घट्छ । यसमा भाडापखाला र ब्रोकेर्डिस निदान गर्ने गुण पनि छ । चम्सुरमा अल्कलोईड, सापोनिन, विटा केरोटिन, एन्थ्रसिन, प्रोटीन, फ्लाबोनाइट, फ्याटी एसिड जस्ता विभिन्न फाइटोकेमिकल पाईन्छन् । चम्सुरको वियाँमा प्रशस्त एन्टिअक्सिडेन्ट लिग्नन पनि हुन्छ ।

#### १०) फर्सी

फर्सीमा एन्टिअक्सिडेन्ट एन्टिइन्फ्लामेटरी र एन्टिडाइबेटिक गुण हुन्छन् । यसमा पाइने केमिकल ( अल्कलोइड, पोलिफेनोल्स) फ्याटी एसिड (लिनोलेईक) हाम्रो शरीरको लागि लाभदायक छन् । जस्तोकि, लिनोलेइक एसिड हाम्रो शरीरको कोष निर्माणमा प्रयोग हुन्छ । फर्सीको वियाँमा आईरन प्रशस्त पाईन्छ । यसैले आईरनको कमीबाट हुने "एनेमिया" बाट बच्न फर्सीको वियाँ खाने गर्नुपर्दछ । यसमा प्रोटीन, चिल्लो पदार्थको अलावा पोटासियम, म्याग्नेसियम, म्याग्निज, जिंक, सेलेनियम, कपर, क्रोमियम जस्ता तत्व पनि पाईन्छन् ।

#### ११) सागसब्जी

काउली, बन्दा, रायो, तोरी, मुला, सलगम आदि सागसब्जीमा फोलेट ल्कोरोफील, सल्फरयुक्त ग्लुकोसिनोलेट पाईन्छ ।

सयग्राम काचो रायोको सागमा ११८.१ देखि ५४४.५मिलिग्राम ग्लुकोसिनोलेट पाईन्छ । साग काट्दा वा भाच्दा मेरोसिनेज भनिने ईन्जाईम निस्कन्छ जसले ग्लुकोसिनोलेटलाई आईसोथायोसाईनाईड भनिने केमिकलमा परिणत गरिदिन्छ उक्त केमिकलमा एन्टिक्यान्सर गुण रहेको अनुसन्धानहरूले देखाएका छन् । साथै कर्सिनोजनको असर निष्कृत्य बनाई क्यान्सर हुनबा जोगाउने गुण पनि हुन्छ ।

रायो तथा तोरीको गुन्द्रुकमा पनि आईसोथायोसाईनाईड पाईन्छ । यस्ता तरकारी खाने गरे स्तन, ब्लाडर र प्रोस्टेस्ट क्यान्सर नियन्त्रणमा सहयोग हुन सक्ने अनुसन्धानहरूले पुष्टि गरेका छन् । अर्को बुभ्रनुपर्ने कुरा के भने उच्चतापमा धेरै बेर पकाउँदा ग्लुकोसिनोलेट रासायनिक परीवर्तन भई नाश हुन्छ । त्यसैले यस्ता तरकारी सकभर काँचै खानु स्वस्थकर हुन्छ ।

## १२) अनार

विभिन्न स्वाद ( गुलियो ,अमिलो ) र आकारमा पाइने अनार मीठो फल त हुदैहो यसको जुस पात रूखको बोका विभिन्न खाले विरामी विशेष गरी पखाला,ह्यामरेज, इन्फेक्सनको उपचारमा औषधिका रूपमा पनि प्रयोग हुन्छन् ।

अनार कम क्यालोरी तर एन्टिअक्सिडेन्ट टेनिन ( जस्तै इलागी) धेरै भएको फल हो यसमा भिटामिन सी का साथै फाईबर प्रशस्त मात्रामा पाईन्छ जसमा क्यान्सर ,हृदयरोग ,ओविसीटिज जस्ता रोग सँग जुध्ने शक्ति हुन्छ । आधुनिक अनुसन्धानले पनि अनार सेवन बाट फोक्सो ,प्रोस्टेस्ट, कोलोन क्यान्सर नियन्त्रण हुन सक्ने बलियो सम्भावना देखाएको छ । रगतमा ग्लुकोज सन्तुलन गर्ने र कोलेस्ट्रॉल घटाउने गुण पनि भएकोले मधुमेह वा मेटाबोलिक सिन्ड्रोममा अनार सेवन लाभदायक हुन सक्छ ।

## १३) मही

दुध आफैमा एउटा पूर्ण खाद्य पदार्थ हो जसमा भिटामिन-डी ,क्याल्सियम, प्रोटीन लगायत धेरै तत्व हुन्छन् । दुध र दुधबाट बनेका पदार्थको नियमित सेवनले दाँत र हड्डीको विकासमा मद्दत पुग्छ । त्यसैले बालबालिकाका लागि दुध र दुधबाट बनेका पदार्थ (दही,महि,चिज) अति आवश्यक छ । गाईको दुध ,दही,र घिको सेवन गरे हृदयरोग ,स्ट्रोक जस्ता खतरनाक रोगबाट बच्न सकिने आधुनिक विज्ञानले नै भन्छ । हुन त दुधमा पाइने अधिक चिल्लो पदार्थ फ्याटी एसिड बढि खाए स्वास्थ्यमा नकारात्मक असर पर्न सक्छ । तर केहि रिपोर्टले दुध ,दही, महि खाँदा शरीरको मोटोपन नियन्त्रण हुने देखाएका छन् । महत्व बुभेरेनै हाम्रा पुर्खाहरूले परापूर्वकालदेखि गोरस खान सुरु गरेका होलान ।

दही वा महिमा अत्यन्त लाभदायक जीवित ब्याक्टेरिया पाइन्छ ,जुन हाम्रो स्वास्थ्यका लागि बरदान हुन सक्ने विभिन्न अनुसन्धानले देखाएका छन् । दुध नपच्ने मानिसकालागि दही वा मही बढी लाभदायक हुन्छ किनकि दहीमा ल्याक्टोज परिवर्तन भई ल्याक्टिक एसिड बनेको हुन्छ । दही सेवनबाट कोलोन क्यान्सर हुने सम्भावना कम हुन्छ ।

## १४) बेसार

आयुर्वेद अनुसार यसले शरीरलाई गर्मी प्रदान गर्छ । अनि खोकी ,कफ (खोकी )बाट बचाउन सक्दछ । त्यसैले विशेष गरी जाडो याममा रूघाखोकी हुँदा १-२ चम्चा बेसार दुध वा तातो पानीमा घोलेर खाने गर्छौ । यसले रगत सफा गर्नुको साथै छालासम्बन्धी रोग निदान गर्ने विश्वास गरिन्छ । सुक्ष्म जीवाणु मार्ने एन्टिब्याक्टेरियल गुण भएकाले विभिन्न खाद्यपदार्थ रङ्ग्याउन प्रयोग गरिन्छ । बेसारले खाद्यपदार्थलाई ताजा बनाईराख्छ । यो विष-निरोधक पनि हो । त्यसैले यसले पित्त उत्पादन बढाएर विषादी पदार्थलाई शरीरबाट निष्कासन गर्न मद्दत गर्छ । बेसारमा रोग निरोधक सक्रिय तत्व हुन्छ, जसलाई कर्कुमिन भनिन्छ । विगत २० वर्षमा कर्कुमिन सम्बन्धी धेरै अनुसन्धान भएका छन् विशेष गरी क्यान्सर ,हृदयरोग अनि अर्थाराईटिस (गठिया) नियन्त्रणका लागि सन् २०१२ को अन्त्यतिर गरिएको कर्कुमिन सम्बन्धी बैज्ञानिक अनुसन्धानबारे ५ हजार भन्दा बढी रिपोर्ट प्रकाशित भएका छन् ।

कर्कुमिनमा मलासय,पेट,मुख,र स्तन क्यान्सर बिरुद्धमा लड्ने गुण हुन्छ । अध्ययन अनुसार कर्कुमिन मिसिएको खाना लामो समयसम्म नियमित खाए कोलोरेकटल क्यान्सर हुने सम्भावना कम हुन्छ । बेसार प्रभावकारी एन्टिअक्सिडेन्ट हो यसको नियमित सेवनले हाम्रो शरीरमा उत्पादन हुने फ्री रेडिकल निष्कृत्य हुन्छ । कर्कुमिनमा कोलेस्ट्रॉल र रक्तचाप सन्तुलन राख्ने गुण भएकाले यसको सेवनबाट हृदय सम्बन्धी रोग नियन्त्रण हुन सक्छ । बेसारको नियमित प्रयोगले बुढेसकालमा अल्जाईमर रोग लाग्ने सम्भावना कम हुन्छ ।

## १५) भटमास

यसमा प्रशस्त प्रोटीन र फाईटोकेमिकल हुने र हाम्रो शरीरलाई चाहिने सबै एमिनो एसिड पनि पाइने हुनाले यसको सेवन गर्नु लाभदायक हुन्छ । भटमासमा एस्ट्रोजेनिक गुण भएका पोलिफेनोल (फाईटो एस्ट्रोजेन ) हुन्छ । एस्ट्रोजेन हर्मोनले

महिलामा वयस्क गुण विकासका लागि महत्वपूर्ण भुमिका खेल्छ । महिनावारी बन्द भएका महिलामा एस्ट्रोजनको मात्रा घटेर जाने भएकाले विभिन्न स्वास्थ्य समस्या देखा पर्छन् । त्यसैले शरीरमा घटेको एस्ट्रोजन परिपूर्ति गर्न भटमासजन्य पदार्थ खानु लाभदायक हुन्छ ।

#### १६) तरुल

तरुल २ सय भन्दा बढी प्रजातिका हुन्छन् यो स्टार्च भरिएको स्वादिष्ट पदार्थ हो यसलाई काँचो सलादका रूपमा अथवा उसिनेर, पोलेर खाने गरिन्छ । तरुलमा प्रोटीन ,चिल्लो पदार्थ, भिटामिन एवं खनिज तत्व पनि पाइन्छन् । यसमा पाइने स्टार्च हाम्रो शरीरमा विस्तारै पच्ने हुनाले रगतमा चिनीको मात्रा पनि विस्तारै बढ्ने गर्छन् जुन मधुमेहका विरामीलाई लाभदायी हुन्छन् । तरुलमा पाईने पोटासियमले रक्तचाप नियन्त्रणमा सहयोग गर्छ तरुलमा पाईने "डायसजेनिन" स्टेरोइड सापोनिनले महिनावारी बन्द भएका महिलामा हर्मोनको विकल्पमा काम गर्दछ । भोक र रोग दुवैका लागि उपयोगी भए पनि हामी कहाँ महत्व नबुझेर कहिले काहि विशेष पर्वको परिकार मात्र भएको छ ।

#### १७) सखरखण्ड

यसमा कार्बोहाइड्रेट र प्रोटीनका अलावा विटा-केरोटिन अनि पोलिफेनोल प्रशस्त पाईन्छन् । यसलाई उसिनेर ,पोलेर वा चिप्स बनाएर खाने गरिन्छ सखरखण्डमा भिटामिन ए प्रशस्त पाईने हुनाले कतिपय मुलुकमा यसलाई बालबालिकाका निम्ति भिटामिन ए को सप्लिमेन्ट (पूरक) का रूपमा पनि प्रयोग गरिन्छ । सखरखण्ड गुलियो भए पनि यसमा ग्लेसेमिकइन्डेक्स कम हुनाले मधुमेहका रोगीलाई फलदायी हुन्छ । यसको पातमा भिटामिन ,खनिज ,एन्टिअक्सिडेन्ट ,फाईबर जस्ता तत्व प्रशस्त पाईन्छन् सखरखण्डलाई अलिकति तेल वा घिउमा पकाएर खाँदा बढी फाईदा हुने विश्वास गरिन्छ । यसमा पाईने "स्पोरोमिन" भनिने प्रोटीनमा धेरै गुण हुन्छन् ।

#### १८) गहतको दाल

हुन त नेपालमा गहतलाई हेला गरेर 'जात फाल्नु गहतको भोलमा' भन्ने गरिन्छ । यसको महत्व नबुझेरै त्यसो भनिएको होला । गहत (हर्स ग्राम) प्रोटीन र भिटामिनको स्रोत हो । यसलाई विभिन्न रूपमा खाने गरिन्छ । जाडो याममा वा रुघाखोकी लागेका बेला गहतको भोल खाने चलन हामीकहाँ छ । यसको सेवनबाट मिर्गौलाको स्टोन नियन्त्रण हुन सक्ने विश्वास गरिन्छ, तर यसको सबल वैज्ञानिक प्रमाण भेटिएको छैन । गहत ब्रोड्काइटिस, मधुमेह क्यान्सर नियन्त्रणमा समेत लाभदायक हुने विश्वास गरिन्छ । गहतमा पोलिफेनोल,आइरन ,मोलिब्डेनमजस्ता तत्व प्रशस्त हुने भएकाले हाम्रो शरीरका लागि यो धेरै उपयोगी छ ।

#### १९) कोइरालो

कोइरालोको फूल हेर्दा सुन्दर मात्र छैन , यसबाट बन्ने अचारले जोकोहिलाई मोहित पार्न सक्छ । कोइरालो सहजै प्राप्त गर्न सकिने औषधिको गुणयुक्त बनस्पति हो ,जसलाई तरकारी र अचारका रूपमा खान सकिन्छ । जनावरमा गरिएको अनुसन्धानअनुसार काइरालोको फूलमा छालाको क्यान्सर नियन्त्रण गर्ने गुण हुन्छ । कोइरालोको बोक्रा कलेजो (लिभर) टोनिकका रूपमा प्रयोग गरिन्छ । यसले कलेजो स्वस्थ राख्न सक्ने वैज्ञानिकहरू बताउँछन् । दम,जन्डिस (कमलपित्त) ,कुष्ठरोग, एन्टिमाइक्रोबिएल र छालासम्बन्धी रोग निदानमा पनि कोइराला लाभदायक हुने बताइन्छ । भारतमा गरिएको अनुसन्धानअनुसार यसमा पाइने पोलिफेनोलमा एन्टिइन्फ्लामेट्री गुण हुन्छ ।

यति धेरै गुण भएको कोइरालो अचेल कहिलेकाहिँ मात्र बजारमा देखिन्छ । वनबाट कोइरालो हराउँदैछ । नयाँ पुस्तालाई त यसको महत्व थाहा पनि नहोला । त्यसैले कोइरालो रोप्ने गरौं,आफू खाऔं र अरुलाई पनि खान प्रोत्साहन गरौं ।

#### २०) सिलाम

नेपाल,भारत,चीन,जापानमा प्राचीनकालदेखि खाद्यपदार्थ र औषधिका रूपमा सिलाम प्रयोग गरिँदै आएको छ । सिलाममा अत्यन्त लाभदायक ओमेगा-३ फ्याटी एसिड र पोलिफेनोल पाइन्छन् । गाउँघरमा सिलामको अचार र तेल खाने चलन छ,जसमा ६० प्रतिशतभन्दा बढी अल्फा-लिनोलेनिक एसिड (ओमेगा-३) पाइन्छ । यसको पात अनि बियाँ रुघामार्गी, खकार निर्मूलका लागि प्रयोग गर्ने चलन छ ।

एलडीएल अक्सिडेसन रोक्ने गुण भएकाले सिलाम एथेरोस्क्लोरेसिस नियन्त्रणका लागि ज्यादै लाभदायक हुन सक्ने वैज्ञानिकहरू बताउँछन् । सिलाम प्राकृतिक एन्टिड्युमर एजेन्ट पनि हो । सिलाममा पाइने रोस्मारिनिक एसिडमा एन्टिइन्फ्लामेट्री गुण हुन्छ । त्यसैले सिलामले एलर्जीबाट पनि बचाउन सक्छ ।

## साइकलमा दाप्चा दौडाहा

देबेन्द्र बस्न्यात  
साइकिलिङ विज्ञ



मन्द गतिले पुनःनिर्माण हुदै गरेको पाटन दरवार क्षेत्र । फलामका खटहरूले घेरिएको शिखर शैलीमा निर्मित कृष्ण मन्दिर । कलिलो घामको किरणले चम्किएका मन्दिरका पहँला गजुर । शान्त, शितल वातावरण । कृष्ण मन्दिरको अद्भुत कालिगढी । मिश्रित आनन्दानुभूतिसँगै अरु साइकल यात्रीको पर्खाइमा मन्दिर सामन्ने छु ।

निर्धारित समय भन्दा अलि ढिलो आइपुगे दुई साइकले, कृष्ण गोपाल श्रेष्ठ र खड्ग पुन । दाप्चाली कृष्णगोपाल र रूकुमेली पुन डिजाइनर र आर्टिस्ट मात्र होइनन्, साइकलका शौखिन पनि हुन् । दाप्चाली दाजु मनभरी आफ्नो माटोको माया बोकेर हामीलाई दाप्चा दर्शनका लागि लैजान निकै उत्साहित छन ।

साइकलका पाउदान मार्दै गफिंदै अगाडि बढ्यौं । पुराना संरचनालाई नयाँ संरचनाले विस्थापित गर्दै गरेका इमाडोल, साना गाउँ लुभु, हुँदै लामाटार पुग्यौं । करीब १० किमि दूरी तय गरी मंगलबजारबाट लामाटार ढुङ्गिन बसपार्क पुगियो ।

लाँकुरी भञ्ज्याङ्गको फेदीबाट टुप्पोतिर हेर्दा उकालो निकै चुनौतीपूर्ण छ । करीब ३ किमि पक्की र २ किमि कच्ची बाटो पार गरेर लाँकुरी भञ्ज्याङ्ग पुगिन्छ । वर्षात भरखरै सकिएकाले होला जंगलका गँड्यौला छ्यापछ्याप्ती बाटोभरी फिँजिएका छन् । सडेगलेका गँड्यौलाका गन्धले स्वास फेर्ने मुस्किल । लाँकुरी भञ्ज्याङ्ग हुँदै पैदल र विभिन्न साधनमा आउने जानेको लर्कन छ ।

माने दोभानका दुई स्थानीय उकालोमा भेटिए । धान, चामल, अन्नपात बोकेर गाउँ शहर ओहरदोहर गरेको विगत सुनाए । गाउँबाट गाडी चले पनि हिँड्ने आनन्द हुने बताए । पुरानो बाटो पहिल्याउँदै हिँडेका उनीहरू र मूल बाटो हिँडेका हामी मोड मोडमा भेट हुनासाथ ठट्टा गर्न चुकेनौं । स्थानीयसँग ठट्टा गर्दै हिँड्दा निकै रमाइलो भयो ।

कोही साइकल यात्री उकालो लाग्दै गरेका कोही ओह्यालो । जाँगरिला, जोसिला तन्नेरी आआफ्नै समूहमा हुँकिएका । करीब पाँच किमि लामो उकालोको चुनौती पार गरियो । लाँकुरी भञ्ज्याङ्गमा धेरै साइकल पारखी भेटिए । उकालोको थकान मेटाउन, प्यास मेट्न र शरीरमा केही उर्जा भर्न हामी पनि रोकियौं । आआफ्नो गन्तव्य रोजेर हिँडेका साइकल यात्रीको एक हुलले मंगलबजार, लाकुरी भञ्ज्याङ्ग १६ किमि दूरी तय गर्न साढे दुई घण्टा लागेको बताए । उनीहरू मानेदोभान पुगेर ट्राउटले भोक र ऐलाले प्यास मेटाउन ओह्यालो हुँकिए ।

वाह ! कति अनुपम प्राकृतिक सुन्दरता । एकपटक भञ्ज्याङ्गबाट पश्चिम तर्फ काठमाण्डौं उपत्यका र पूर्व क्षितिजमा नमोःबुद्धलाई हेर्न र ओह्यालो लाग्यौं । दुई डाँडाका खोंचका नागवेली घुम्ती काटेर मानेदोभान, पर्खालचौर हुँदै पनौती पुगियो । मंगलबजार, लाकुरी भञ्ज्याङ्ग, मानेदोभान हुँदै पनौतीसम्म पुग्दा करीब ३० किमि दूरी तय गरियो । दायँबायाँ लहलह भुलेका धान खेत । सुन्दर बस्ती, आनन्दमय गाँउको दैनिकी । असाध्यै रोचक, रोमाञ्चक छ यहाँको साइकल यात्रा ।

पनौतीबाट हामी सुन्थान हुँदै नमोःबुद्ध तर्फ उकालियौं । उकालोमा भोक र प्यासले अत्यायो । बाटाका छेउमा घंगारु र रातो ऐसेलु लटरम्म पाकेको भेटियो । जंगलका फल निकै रसिला । आलसतालस ज्यानलाई घंगारु अनि कालो र रातो ऐसेलुले आराम दिए । जंगली फलको तागतले होला बाँकी उकालो सजिलै काटियो । केही बेरमै क्षणमा नमोःबुद्ध पुगियो ।

काठमाण्डौंबाट एक हुल साइकले मित्रहरू नमोः बुद्ध पुगेका रहेछन् । सम्भनाका क्षणहरू क्यामरामा कैद गरेर छुट्टियौं । हामी तीन भाई दाप्चातिर, उनीहरू पनौती हुँदै काठमाण्डौंतिर । मंगलबजारबाट नमोःबुद्धसम्म पुग्दा करीब ४० किमि दूरी तय गरिएछ । आसपासका गाँउबाट स्थानीय बजारमा ल्याएका कलिला काँकाले पुनः भोक प्यास मेटायौं ।

नमोःबुद्धबाट दाप्चातर्फ लाग्दा गोपालजीका आँखा चम्किला भए । पटक पटक दाप्चा गए पनि यो पटकको अनुभव छुट्टै रह्यो । दाप्चा पुरानो बजार पुगेपछि उनले निकै रोमाञ्चित हुँदै भने "पुरानो दाप्चा बजार यही हो ।" पाको ईटाले बनेका अग्ला घर । काठका बुट्टेदार झ्याल, ढोका र भिँगटीले छाएको छानो । खाँटी नेपाली वास्तु भल्कने संरचना । वास्तवमा निकै सुन्दर छ दाप्चा बजार । गोपालजीले बाल्यकालका स्मरण अनुभव सुनाए ।

"पहिले पहिले यो बजारको रौनक नै छुट्टै थियो । चौविसै घण्टा जागा । अफ दशैँ ताका त कम्ता रमाइलो हुँदैनथ्यो । पूर्वी पहाड र तराईबाट राजधानी प्रवेश गर्ने मुख्य नाका । सडक यातायातको विकास नहुँदा अधिकांश मान्छे हिँडेर ओहोरदोहोर गर्थे । रातभर मानिसको ओहरदोहर," उनी अडिए, वरिपरि हेरे र भने "अहिले निकै सुनसान छ । प्रायः सबै बनेपा, धुलीखेल, काठमाण्डौं लागे ।"

सुनसान बजारका अधिकांश ढोका बन्द छन् । उनी बजार आसपासका देवी, गणेश, भिमसेन आदि मठ मन्दिर, पाटी पोवाबारे बताउँदै गए । हामी अघि बढ्दै गयौं ।

“उ यो चाहीं काली कुवा,” बाटोको दायँतर्फ पानीको मूहान देखाउँदै उनले भने । परम्परागत कुवा चाहीं सिमेन्टको संरचनाले विस्थापित गरी सकेको रहेछ । हामी अगाडि बढ्यौं ।

किंवदन्तीअनुसार पूर्वतिरबाट सामानका भारी बोकेर चरखे फेदी हुँदै उक्लिएका मान्छेलाई प्यास लागेछ । वेतको जरा पच्छ्याउदै जाँदा दुई कोश पर काली कुवा पुगेछन् । प्यास मेटाएर अघि बढ्न खोज्दा लौरो काट्न भिकेको खुकुरीको दाप भेटिएनछ । दाप नभेटेपछि ‘दाप जा’ भने छन् । दाप्जाको अपभ्रंश दाप्चा भएर यो ठाउको नाम दाप्चा रहन गयो ।

मंगलबजारबाट काँके भञ्ज्याङ्गसम्म आइपुग्दा ५२ किमि दूरी तय भएछ । काँके भञ्ज्याङ्ग पुगेपछि भूकम्पले होच्याएको घरमा रोकियो । धमाधम मकै भित्रिँदै गरेको । गाँउको माहौल अत्यन्तै रमाइलो छ । भिडभाड, कोलाहल, तँछाडमछाड, घम्साघम्सी, सबै प्रकारका तित्कताबाट मुक्त । केवल आनन्द मात्र । हामी अंगेना वरिपरि बस्यौं । आत्मीय भाई राधाकृष्णले कलिला मकै पोलेर खुवाए । एकै क्षणमा रातो भालेको सितनसँग ऐला पनि चखाए । यतिज्जेलमा उनले चूल्होमा ढिंडो तयार गर्न भ्याए । एक पछि अर्को परिकार चाख्दै हामीले थकान मेटायौं, भोक हटायौं । खानपिन पछि सम्भनाका लागि फोटो खिचायौं । गानामा जस्तै विदा हुने भै गयो बेला । गोपाल दाइको बाले भन्नुभयो- डाँक पुन्याउन आको जस्तो कति हतार ?

मन काँके भञ्ज्याङ्गमै छोडें । साइकल शरीरमा सटाएँ । पाउदान मा दबाव दिएँ । गोपाल दाईको हृदयमा दाप्चाको अगाध माया भल्केको छ । भारी मन र भावुक मुद्रामा गोपाल दाई साइकल डोहोर्न्याउँदै पछि लागे । जन्मस्थलको माया, माटोको माया ।

पल्लो घरकी बुढी आमाले हत्केलाले घाम छेक्दै नियालेर हेरिन् । गोपाल दाईले परिचय दिए - म माइलो । “ए आउन नपाई गइहाल्ने बाबु । हामी त डाँडा पारी को घाम जस्तै भइसक्यौं बाबै । गाँउको मायाँ नमारेस् । बेला बेलामा गाउँ आउँदै गरेस है माइला ।”

साइकलका पांग्रा अघि वढ्दै गए । उनको आवाज विलाउँदै गए । डाँडाको टाकुरा बाट नागवेली घुम्ती देखिए । ओह्यालो देख्दा रोमाञ्चित भयौं । बादलले ओभेल पारेको हिमाल देखाउदै खड्गजी ले भने “हिमाल खुलेको बेला फेरी आउनु पर्छ ।” मैले मन मनै कल्पना गरेँ, त्यहाँ सगरमाथा, त्यहाँ नुम्बुर, दोर्जे लाक्पा, गौरीशंकर, लाडटाड, गणेश, अन्नपूर्ण आदि ।

गोपाल दाइले थपे, राति क्याम्पिङ्ग आऔं यहाँबाट लस्कुरै हिमाल देखिन्छ । फेरी कल्पना गरेँ पूर्णिमाको रात पालबाट बाहिर जुनको प्रकाशमा चम्किएका हिमाल ... सूर्योदयका दृष्य आदि इत्यादि । मन मनै संकल्प गरेँ एक पटक मात्र पर्याप्त छैन दाप्चा भ्रमण आर्को पटक पक्कै आउँछु । मन मस्तिष्क र साइकल काबुमा राखेर ओह्यालोमा तीनै जना हुईकियोँ जोडतोडले, चरङ्गे फेदीतिर ।

फेदीमा गाँउका महिलाले बाटोमा चितुवा बसेकोले सतर्क हुन सावधान गराए । हामीसँग सेल्फी लिन बाटोमा आएको हो भनेर ठट्टा गर्दै अगाडि बढ्यौं । सोम त सेल्फी खिचन लजाएर कुलेलाम । गोपाल दाई र खड्गजीसँग पुनः ठट्टा गरेँ । काँकेबाट फेदीसम्म आइपुग्दा आठ किमि पार गरिएछ । वि. पि. राजमार्गबाट विस्तारै भकुण्डेतर्फ लाग्यौं । घाम डाँडा पारी भई सकेकोले यहाँ यात्राको बिट मान्यौं ।

## अन्तमा

दाप्चालाई केन्द्र बनाएर साइकल यात्रा तथा पदयात्राका विभिन्न प्याकेज बनाउन सकिन्छ । एक दिन, एक रात दुई दिन वा दुई रात तीन दिनको । दाप्चा हुदै तीमाल कोटसम्म जोड्न सकिन्छ । अझ बौद्धमार्गीका लागि त बौद्धबाट नमो:बुद्ध, दाप्चा तिमालकोट सम्मको प्याकेज बनाउन सकिन्छ । नबोल्नेको चामल पनि बिक्दैन, उखानै छ । दाप्चाको प्राकृतिक सुन्दरताले जो कोहीलाई माया जालमा फसाउँछ । दाप्चालाई आकर्षणको केन्द्र बनाउन भौतिक पूर्वाधार अलि सुदृढ बनाउनु पर्छ । आधारभूत सेवासुविधाका लागि स्थानीय व्यवसायीहरूलाई तालीम दिनुपर्छ । पर्यटक आकर्षित गर्न प्रचारप्रसार गर्नुपर्छ । ऐतिहासिक र पुरातात्विक महत्वका भौतिक संरचनाको पुननिर्माण, पुनस्थापना र श्रृङ्गार गर्नु पर्ने देखिन्छ ।

पर्यटन प्रवर्द्धन गर्न प्रभावकारी योजना बनाई, विविध कार्यक्रमको आयोजना गर्ने, प्रचारप्रसार गर्ने गरे दाप्चालाई पर्यटकीय गन्तव्य बनाउन सकिन्छ । स्थानीयले आफ्नो ठाउँलाई माया गर्नुपर्छ । आफ्नो ठाउँको प्रवर्द्धन गर्न एकजुट हुनुपर्छ । मेहनत गर्नुपर्छ । सफलता अवश्य हात लाग्छ । काँके भञ्ज्याङ्ग, दाप्चाका भूमी पुत्र कृष्णगोपाल श्रेष्ठ दाप्चालाई पर्यटकीय गन्तव्य बनाउन प्रयासरत छन् । उनको अभियानलाई सफलताको शुभकामना ।

## कसरी पुग्ने :

पाटन मंगलबजारबाट लामाटार ढुंगिन बसपार्क, ९ किमि । लामाटार ढुंगिन बसपार्कबाट ३ किमि पिच २ किमि कच्ची सडक । मंगलबजार लाँकुरी भञ्ज्याङ्ग, १६ किमि । समय २:३० घण्टा । मंगलबजार- मानेदोभान, २१ किमि । मंगलबजार - पर्खालचौर, २४ किमि । मंगलबजार - पनौतीबजार, ३१ कि.मी । समय ३:३० घण्टा । मंगलबजार - नमो:बुद्ध, ४२ कि.मी, समय ५ घण्टा । मंगलबजार - काँके भञ्ज्याङ्ग, ५२ किमि । मंगलबजार- भकुण्डे, ६५ किमि ।

# Next Generation of Aviation Professionals (NGAP) and The Concept of Aviation Museum in Nepal

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## Background

Aviation, one of the fastest growing industry of the world, is the prime means to bring people together. It's a mirror powering economic growth, employment, trade-links and tourism supporting over 58 million jobs and over 2.4 trillion dollars in economic impact world-wide contributing over 3.4 % in Global GDP. Even in such a blooming industrial environment, this industry also foresees the impending shortage of aviation professionals in future which may impact on its way forward. It seems critical that a large number of current generation of aviation professionals will retire and the current trend of training / education and production of aviation professionals will not be enough to cope the gap, challenges and increasing demand of professionals in air transport industry.

## A statistical analysis shows:

- By next 20 years, airlines will have to add 25,000 more new aircrafts to current commercial fleet
- By 2026, aviation industry will need 480,000 new technicians to maintain the added new aircrafts and over 350,000 pilots to operate them
- Majority of Air Traffic Controllers (ATCOs) and Air Traffic Safety Electronics Personnel (ATSEPs) are in the stage of retirement.

## Concept

Foreseeing the critical and impending challenges in the aviation industry, ICAO has taken initiative to launch Next Generation of Aviation Professionals (NGAP) programme to ensure that enough qualified and competent aviation professionals are available to manage, operate, maintain and update future aviation industry smoothly.

The initiation started with the establishment of NGAP Taskforce comprising 29 representatives from different fields in Aviation Industry. The NGAP initiative, under ICAO programme, is being incorporated to ICAO Global plans, both for safety and air navigation, linked to ICAO Business Plan and Work Programme. ICAO NGAP Programme has been set under following objectives, vision and mission:

### a. Objective

To develop tools and provisions for ICAO Contracting States and the international civil aviation community that will assist them in implementing effective strategies to attract, educate, and retain the next generation of civil aviation professionals.

### b. Vision

A global aviation community that has sufficient competent human resources to support a safe, secure and sustainable air transportation system.

### c. Mission

To develop strategies, best practices, tools, standards and guidelines as applicable and to facilitate information sharing activities that assist the global aviation community in attracting, educating, and retaining the next generation of aviation professionals.

Since the launching of NGAP Task Force in 2009, ICAO has been actively working with various consortium of partner organizations and all aviation stake-holders to raise awareness regarding NGAP

issues and initiatives. The 1st NGAP Symposium, held in March 2010 in Montreal, which concluded with theme "Looking beyond the economic crisis: mobilizing the aviation community to recruit, educate, train and retain the next generation of aviation professionals" has set mile stone and guide-lines on NGAP initiatives.

In the recent ICAO's 2017 NGAP Global Summit held in November 2017 in Montreal, ICAO Secretary General Dr. Fang Liu stressed on "... to attract, train and retain the best and the brightest that our coming generations have to offer to manage the growth of the global air transport network". The Secretary General further added, "By 2036, some 620,000 pilots will be needed across our global network, and no less than 80% of these aviators will be new pilots not yet flying today. A similar story is playing out with respect to the future air traffic controllers, cabin crew, maintenance personnel and other skilled technicians needed."

In the programme, Dr. Liu further added to broaden scope and begin instilling greater aviation awareness in high school and younger students, and especially in young girls. The Secretary General also advocated for partnerships between ICAO, education and research institutions to study and develop solutions to global aviation challenges to support aviation planning and development.

#### Initiatives of Civil Aviation Authority of Nepal in NGAP

The global challenges and initiatives delineated also prevail in the Aviation Industry of Nepal. Nepal, being a Member State of ICAO, fully adhere to ICAO NGAP and Global Plan. Civil Aviation Authority of Nepal, in close co-ordination and collaboration with airline industries and its stakeholders, has been initiating following approved agenda related to NGAP in the country in phase-wise.

### Programmes

- Generate awareness among general public about the potential of jobs in aviation sector so that people are aware about the prospective career in aviation.
- Arrange counselling to the aspirant individuals and parents to take up the aviation profession.
- Issue a booklet to guide the individual to become a pilot or AMT or ATC.
- Facilitate in approving or validating the foreign training organization for the production of licensed aviation professionals.
- Enhance the capacity of the Civil Aviation Training Academy for the production of Air Traffic Controllers.
- Arrange the talk program and interaction sessions at the higher secondary level schools so that the students get motivated to embrace the aviation career once they finish the higher secondary education.
- Arrange a visit of students to the airport premises, aircraft, hangar, training centre, simulators and other aviation related premises.
- Organise public speech, debate and writing competition on topics related with civil aviation development in secondary and higher secondary level schools.

One of the highly effective tools, for materializing the above objectives and programmes, is the establishment of Aviation Museum. The Aviation Museum, set up in Sinamangal, Kathmandu, is part of the effort to fulfill the objectives. The Museum has been established utilizing the Airbus 330-300 disabled new aircraft which was damaged due to runway excursion in Tribhuvan International Airport in March 2015.

The Aviation Museum, occupying around 9000 Sq. Meter of space, has been established in joint co-operation between Civil Aviation Authority of Nepal and Bed Upreti Trust, a non-profit organization that has already set up an Aviation Museum in an abandoned Fokker 100 in Dhangadhi. With the Administrative support of CAAN and investment/ promotional initiatives from Bed Upreti Trust, it took around thirteen months to dismantle the huge aircraft and re-assemble at the present site. With the rigorous effort of Nepali and Foreign technicians, the huge aircraft was cut to smaller parts and the parts were transported in trucks assisted at narrow bends by cranes along the way to the present site. The parts were re-assembled to bring it to its original look and designing its interior and outer environment suitable for aviation museum.

As a part of NGAP initiative of Nepal, the museum focuses on:

- To encourage the younger generation in a career in Aviation Sector in Nepal
- Provide information about the history of Aviation
- Create awareness about the challenges and opportunities in the aviation sector

- Educational encouragement and inspiration to students (especially the students of secondary and higher secondary level)

In addition, the Museum also focuses on touristic attraction in Nepal by sharing knowledge and information to Nepali and Foreign visitors.

The Museum has the collection on display of more than 350 miniature models of aircraft ranging from Wright Brothers' first aircraft to fighter planes from World War I and II.

With the simulation of Air hostess courtesy, cockpit and air traffic control recording, the museum intends to give impression of activities inside an aircraft while travelling. The museum, divided into upper and lower decks, inside the aircraft has been divided into seven sections: Welcome Hall, Airforce Hall, Airlines Hall, Nepal Aviation Hall, Refreshment Hall, Humla Hall and Aviation Office. The pictures of majestic Himalayas and scenic views of Nepal hung inside on the walls, the documentaries of aviation, historical pictures etc. are other attractions to the visitors. Meanwhile, the boards surrounding the Museum space walkway provide chronological history of aviation and open space provide space of entertainment and photography.

With its soft opening in November 2017, CAAN in co-operation with Bed Upreti Trust, has set a milestone in NGAP initiative in-line with ICAO NGAP and Global Plan. The museum has attracted thousands of students, parents, and both Nepali and Foreign visitors. The knowledge the students and visitors would receive and witness will certainly encourage them to be positive in Aviation Industry and attract them to join in this field.

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