



*AVIATION INFRASTRUCTURE FOR AFRICA GAP ANALYSIS
WORKSHOP - ABUJA, NIGERIA , 19-21 March 2019*

SUMMARY OUTCOMES/CONCLUSIONS OF SESSION 1-4

21 MARCH 2019





Session 1

The Air Transport Context in Africa



- **Success and challenges of liberalizing air transport market in Africa**
 - The framework for liberalization Air transport liberalization in Africa is the Yamoussoukro Decision which evolved towards the establishment of a Single African Air Transport Market (SAATM) under the leadership of the African Union with and AFCAC identified as the Executing Agency.
 - The revision of the prioritized action plan for the implementation of SAATM was commended, together with the step taken by AFAC in developing quantified performance indicators to evaluate the implementation of SAATM.
 - Note was taken on the need to strengthen the advocacy and promotion efforts to subscribe to the SAATM and build the necessary capacity for the implementation of SAATM by Member States.
 - African States and stakeholders continue to face challenges to access funding and/or financing to ensure modernization and expansion of the necessary infrastructure.



- **Outcomes of the Third ICAO World Aviation Forum (IWAF/3)**
 - The outcome of IWAF/3 formed the background for the demand to conduct of infrastructure gap analysis to determine the needs in Africa.
 - IWAF/3 adopted a Communique and the Declaration and Framework for a Plan of Action for Development of Aviation Infrastructure in Africa that will be implemented with the African Union Programme for Infrastructure Development in Africa (PIDA) and included in its priority projects 2020-2030, in cooperation with AfDB, AU, African Union Development Agency (AUDA).
 - An aspirational goal is “no constraints of infrastructure capacity, technology and financial resources for aviation development” and follow-up of the Gap analysis will be conducted under the existing framework, namely AFI Plan, AFI SECFAL Plan and HRDF.



- **General Observations**

- To strongly support the implementation of the PIDA in a coordinated way, African States should deepen and broaden economic and financial cooperation with African States in line with the SAATM and the African Union's Agenda 2063. and in support of the ICAO NCLB initiative.
- All investments in aviation infrastructure development and modernization in Africa should be directed to well-managed projects featuring solid business cases and due levels of accountability, transparency and quality assurance.
- Aviation infrastructure programmes should be aligned and integrated with multi-modal and urban planning initiatives under the good governance.



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Session 2

Global and Regional Requirements



The Global Perspective on GASP/GANP

- The structure and components, as well as importance and relevance of the ICAO Global Plans (GANP/GASP/GASeP) was explained;
- Information shared on the framework for regional & national planning and implementation;
- Alignment of Regional Plans with the global initiatives in terms of **Goals, Objectives, Targets & indicators** demonstrated; and
- Roles of Planning, Implementation and monitoring mechanisms through Regional Groups (**APIRG RASG-AFI**) and **AFI / AFI SECFAL** Plans emphasized.



The Global Perspective on GASP/GANP

GANP

vision: achieve an **interoperable** global ATM system, **for all users during all phases of flight**, that **meets agreed levels of safety**, provides for **optimum economic operations**, is **environmentally sustainable** and **meets national security requirements** of Global, Regional and National planning

Objectives: Through the **Aviation System Block Upgrades (ASBU)**, provide a consensus-driven modernization framework for integrated planning based on performance



The AFI Regional Air Navigation Plan (AFI ANP)

- ✓ Aligned with the ICAO GANP & ASBU provisions
- ✓ Developed under AFI/RAN & APIRG frameworks
- ✓ Monitoring & Reporting through:
 - The AFI Air Navigation Deficiency Database (AANDB);
 - The Air Navigation Reporting Forms (ANRFs)



Revised Abuja Safety Targets including ANS targets

- Most of the 16 regional safety/ANS Targets are related to aviation infrastructure development;
- However, achievement of Airports/ANS related targets lags behind other safety related ones;
- In some cases equipment and facilities for efficient air navigation and airport operations is either insufficient or outdated.



GASeP, Windhoek Declaration and Targets for security and facilitation

GASeP

▪ **Objectives**

- ✓ Manage traffic growth in a secure and efficient manner
- ✓ Help establish public confidence in aviation systems
- ✓ Provides guidance for priority setting for States

▪ **Key Goals and targets**

- ✓ 80% States above 65% EI by 2020
- ✓ 90% States above 80% EI by 2023
- ✓ 100% States above 90% EI by 2030



GASeP, Windhoek Declaration and Targets for security and facilitation

AFI SECFAL Plan- Objectives

- Enhance aviation security and facilitation in Africa in a sustainable manner
- Coordinate and align all capacity-building efforts in the field of AVSEC and FAL
- Address the need to strengthen various AVSEC and FAL aspects related to organizational, managerial, institutional, economical, educational and political factors within the Region



GASeP, Windhoek Declaration and Targets for security and facilitation

Windhoek Declaration and targets

- Reinforce the political commitment of African States for successful implementation of the AFISECFAL Plan
- Establish a coordination framework for the activities of African States, donor community and industry to ensure the effective implementation of the AFI SECFAL Plan;
- Identifying possible funding and mobilizing resources for the Plan(financial and human)
- Formulating common Security /Facilitation targets and goals



Conclusions

- Lack of alignment of national infrastructure implementation ~~by States~~ with the Global & Regional Plans;
- Low pace of effective implementation of the regional Plans & Targets;
- Insufficient financial resources;
- Need to factor evolution of SARPs, Global/Regional Plans, technology and traffic growth investment decisions.



- General lack of a coordinated approach to aviation infrastructure development
- Challenges of increasing operation of UAS and other emerging issues
- ensure security and resilience of infrastructure and systems against Cyber threats



1. To develop National Civil Aviation Master Plan as component of the National Development Plan;
2. To consider the evolution of the aviation system (Traffic, SARPs, technology) to define /update the national/regional policies governing the aviation industry;
3. To strengthen Collaborative Decision Making with all stakeholders to optimize investment for infrastructure and operation of systems
4. To consider the emerging challenges (Cyber threats, UAS and space vehicles operations) for planning and implementation



Session 3

Aviation Infrastructure Gap Analysis and Master Plan Development Process: Exchange of Experience and lesson learned



Aviation Infrastructure and Master Planning: ICAO Perspective

- Development of national and regional Civil Aviation Master Plans (CAMP) is key to addressing gaps in infrastructure and thus recommended to States to promote the importance of aviation development, noting that aviation contributes significantly to national, regional and global economy.
- Taking into consideration socio-economic and environmental aspects, priorities of aviation should be included within relevant national plans, and, as necessary, national budgeting, which might be vital to unlocking funding for aviation needs.
- A clearly-defined relationship between national development plan, national transportation policy, national aviation policy, CAMP, as well as its underlying plans and programmes, is essential to enable the prioritization and optimum allocation of resources to aviation.



- **ASECNA: Air Navigation Infrastructure Perspective**
 - States, Airport and Air Navigation Services Providers (ANSPs) should develop forwarding-looking Master Plans which are fully aligned with regional plans.
 - A phased implementation roadmap with allocation of necessary financial arrangements can facilitate the deployment of the enabling service and equipment infrastructure to address gaps that are necessary for the attainment of the SAATM goals.



- **ACI: Airport Infrastructure Perspective**

- Critical gaps that needs to be must be addressed as a matter of urgency include: lack of pavement management systems, including lack of data on years of construction, pavement strength, deteriorated Apron surfaces and shoulders, friction testing and high accumulation of rubber.
- Lack of accurate declared distances, compliance with Runway Safety End Area (RESA), non-availability of documents to support the published data, obsolete lighting system, inadequate or non-standard apron marking and signage, were also noted as gaps that have to be addressed.
- Lack of reliable electric power, notably from national grid, is prevalent at many aerodromes, seriously impacting to safe and efficient operations.
- Lack of safety culture as being inherent in aerodrome management and operations is a latent failure.



- **IATA: Airline and Infrastructure User's Perspective**
 - Reports of Aeronautical Mobile Communication Survey between 2010 and 2018 indicates fluctuations to varying degrees, which are attributable partly due to ATC communication infrastructure gaps.
 - AFI ATS Incidents Analysis Group Report of March 2018 indicates the coordination failure between ATS Units, Airspace Organization, and increasing trend of Human Factors related incidents, including Controller Proficiency, Human Machine Interface issues.



- **ECOWAS: Regional Economic Community Perspective**
 - Major airports in the region equipped with ILS and AGL systems, have varying degrees of functionality and reliability gaps, especially electrical power supply, dilapidated fire stations and defective fire tenders, communications equipment, inadequate airfield maintenance equipment and facilities, airport security and perimeter fencing gaps, bird hazards and wildlife intrusion risks, waste water, sewage and drainage problems, traffic congestion on roads to airports, and risk of urban encroachment.
 - Regional-level Civil Aviation Master Plan was developed with support from ICAO, which intends to address the gaps described above.



- **Case Study by Nigeria (NAMA)**
 - Development of comprehensive National Civil Aviation Master Plan with clear identification of infrastructure gaps with implementation roadmap and financial proposals are fundamental to addressing infrastructure gaps.
 - Appropriate governmental support and partnership with willing financial institutions is required to achieve projected improvements and contribute to the attainment of the SAATM goals.

- **Case Study by Nigeria (FAAN)**
 - In tandem with the identification of problems and infrastructure gaps, availability and willingness of industry partners and financial institutions should be ensured to support implementation of specific implementable programmes.



- **General Observation**

- Aviation infrastructure projects are very large in scope and thus should have a long timeframe from planning to completion, usually with multiple adjustments to the original plan along the way.
- Civil Aviation Master Plan should be clearly linked with ICAO's global and regional plans, as well as national development framework.
- Identified infrastructure gaps, as well as their causes, should be quantified and included in the Civil Aviation Master Plan.
- Given the limited available resources and funds, investments to close the identified gaps should be made in order of priority and urgency, taking also into account value for money (VFM)



Session 4

Aviation Infrastructure for Africa Gap Analysis - 2019



Presentation of the result of the 2019 Aviation Infrastructure for Africa Gap Analysis conducted by ICAO

- Background
 - Information provided on the scope , methodology of survey data collection and collating, developing matrices of prioritizing evaluation item including interpretation and summary results;
 - 26 States responded to the survey questionnaire with a varying degree of detail;
 - The priority evaluation list and defined parameters/Metrics presented ; and
 - Outlined the expected feedback from the working on the Scope, data collection, methodology, analysis and Result of the Gap analysis



Presentation of the result of the 2019 Aviation Infrastructure for Africa Gap Analysis conducted by ICAO

- Airport
 - A majority of international Airports are not certified,
 - 40% have insufficient pavement strength with regard to intended use
 - 35% have insufficient aerodrome emergency planning and perimeter fencing
 - 20% have insufficient aerodrome capacity



Presentation of the result of the 2019 Aviation Infrastructure for Africa Gap Analysis conducted by ICAO

- **Air Navigation**
 - About 35% of int. aerodromes have no performance based navigation (PBN) approaches while additional 11 % have only visual approach procedures
 - CCO/DO implementation has not started to take full advantage of PBN approach procedures
 - Communication infrastructure gap is at a varying degree of implementation:
 - with a high coverage of AFTN, low level of AMHS, very low level of AIDC (OLDI) and no implementation of VoIP;
 - Good VHF & HF and increasing CPDL Coverage ; and
 - No interconnection of VDL & HF DL



Presentation of the result of the 2019 Aviation Infrastructure for Africa Gap Analysis conducted by ICAO

Air Navigation

- With regard to coverage of navigational Infrastructure, conventional Nav aids (VOR, DME, ILS) and GNSS core constellations is at a good stage implementation in the region though low pace of SBAS coverage.
- Progress registered in AIXM Based e-AIP and e-TOD implementation. Most States also developed AIS/AIM Transition Plans.
- The availability rate of OPMETs Increased over time though implementation of Volcanic Ash contingency procedures are at a very low stage.
- Implementation of SAR Operation and SAR Agreements are low in the Region



Presentation of the result of the 2019 Aviation Infrastructure for Africa Gap Analysis conducted by ICAO

- **Airline**

- Low connectivity and frequency of services among African States. Though some guarantee a potential for evaluation of direct routes, Passengers took connecting flights;
- Direct traffic from SAATM States are mainly to Europe and intra-Africa while traffic from SAATM to other regions are carried mainly through connecting flights;
- In terms of international frequencies offered a substantial portion of the service are offered by African carriers;
- In terms of origin-destination passengers, for 14 African States, over 50% of international passengers are carried by African carriers; and
- All the African States are facing load factors of their airlines lower than the world average.



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