



| ICAO

ESAF INNOVATION WEBINAR

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Civil Aviation Innovations in Kenya

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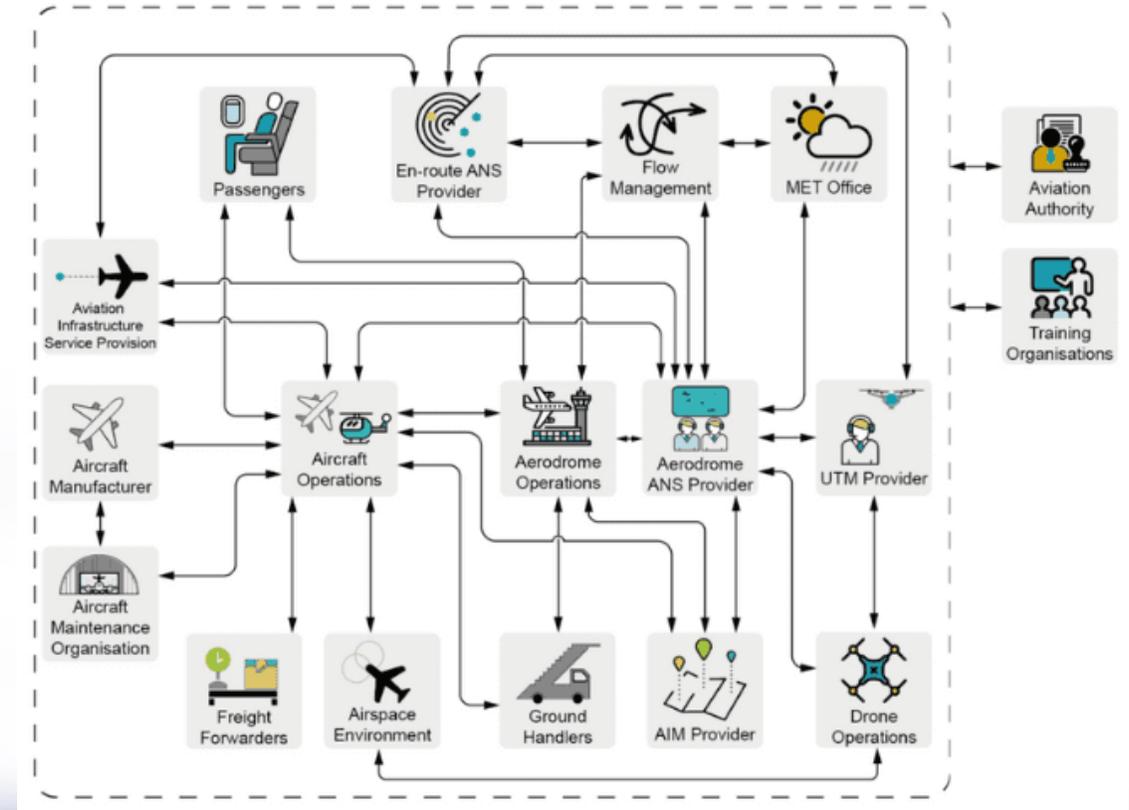
Introduction

- θ Safety based primarily on lessons learnt
- θ Very successful approach which has led the aviation industry to be recognised as 'ultra-safe' - Open and just culture
- θ Aviation system of today will be unrecognisable in 2050
- θ Innovation is key in developing the safety case for the future if we are to maintain or exceed current levels of safety performance.



Paradigm Shift For Enhancement of Future Aviation Safety

- θ Emerging Technologies
- θ Proactive safety will be based on the level of safety risk acceptable
- θ Shift toward an integrated view of safety risk management - 'safety by design' concept
- θ Future Flight challenge - delivered by UK Research and Innovation



Example of Future Opportunity

Wingspan – 14 Meters

Range – 670 NM

Endurance – 6 hrs 45 mins

Max Operational Altitude – 24,000 ft

Max Weight – 4,000 Kgs

Basic Empty Weight – 2,200 Kg

Payload – 1.850 Kg

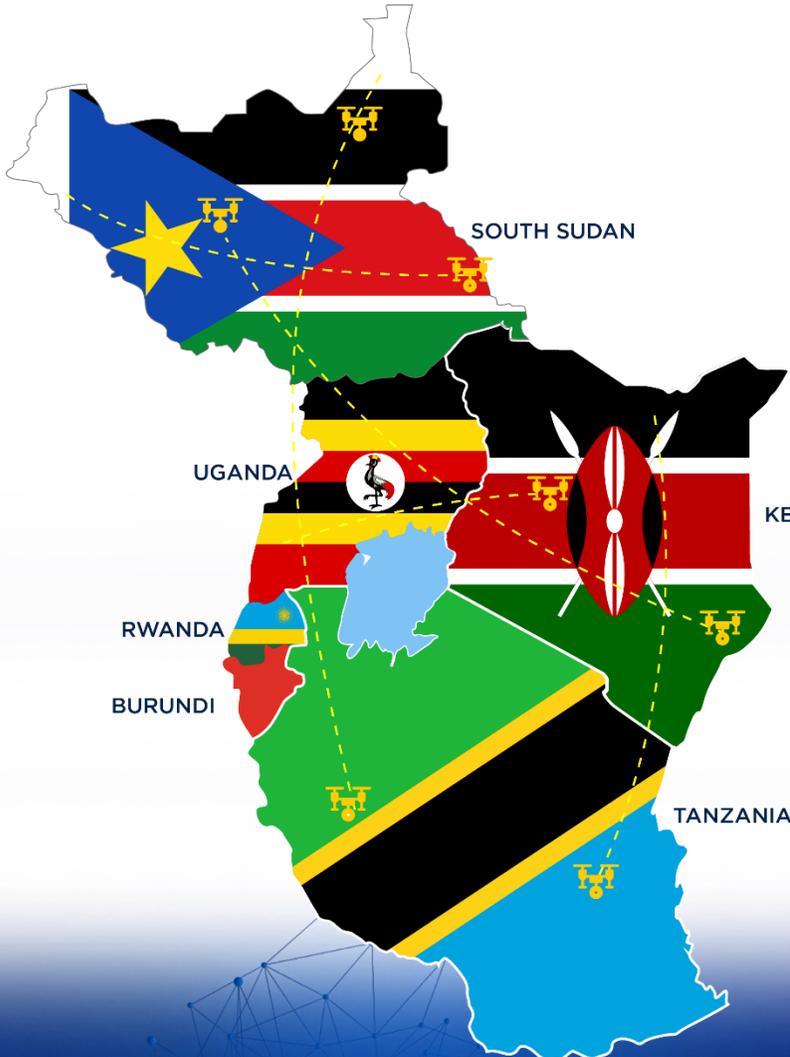
Rate of climb @ Vy – 2000 fpm

V. Cruise @75% Power – 126 Kts

V. Cruise @ 65% Power – 103 Kts

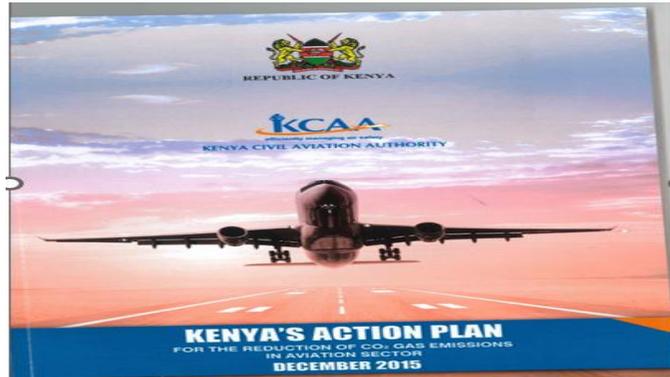


Strategic Aviation Innovative Direction



Environment Innovation for Mitigation of CO₂ Emissions From International Aviation

Kenya's Action Plan for CO₂ Reduction



Aviation Environmental Working Group (AEWG) created in **January | 2012**

1st. Action Plan submitted | **2012**



ICAO-EU Assistance Project | **2014**

2nd Action Plan Submitted | **2015**

3rd Action Plan Submitted | **2022**



Selected Mitigation Measures for the 3rd action plan

Category 1

Technology and standards

Category 2

Sustainable aviation fuels

Category 3

Operational improvements

Category 4

Market-based measures.

Category 5

Supplemental benefits for domestic sectors on Airport improvements



- 1) Implementation of Climate Change Act No. 11, 2016
- 2) Implementation of ICAO Annex 16 on Environmental protection by developing relevant regulations.
- 3) Created an Aviation environmental protection department in KCAA
- 4) Development, implementation and review **of State Action plan for the environment.**
- 5) Kenya decided to **voluntarily participate in the CORSIA** scheme with effect from 2021 to 2023.
- 6) In the spirit of the ICAO no Country Left Behind initiative, Kenya has assisted a few Partner States in the Eastern Africa Region in capacity building under ACT-CORSIA implementation in Collaboration with UK CAA



Sustainable Aviation Fuels

- 1) One of the promising **mitigation measures identified** in **Kenya's State Action Plan** was the development and deployment of sustainable aviation fuels (SAF) for international aviation
- 2) As part **of the ICAO-EU assistance project**, a study into the feasibility of a commercial SAF supply chain in Kenya was done, that showed Kenya has potential for the production of SAF
- 3) The Feasibility on Study Sustainable Aviation Fuels examined the feasibility of various potential feedstocks based on conflicting uses, logistics, co-benefits, volumes and socio-economic factors.
- 4) **The study identified paths and required actions** that could be pursued by relevant stakeholders to develop a viable SAF industry.



- θ The study recommended that focus be directed to waste-based feedstocks namely, used cooking oil (UCO) in the short to medium term, and municipal solid waste (MSW), sugarcane field byproducts (cane tops) and water hyacinth in the long term.
- θ Kenya has Agreed to Enter into ICAO ACT-SAF programme to scale up production Sustainable Aviation Fuels (SAF)
- θ Hosted a workshop on SAF scaling up including Power to Liquid to be held in Nairobi on 3rd August in Collaboration with GIZ PtX Hub
- θ Collaboration with other Partners on SAF production are under discussion.
- θ Implementation of the SAF toolkit recommendation that was launched during Cop 26 in Glasgow UK.
- θ The Ministry of Energy has done baseline studies on the potential of biofuels production in the country to promote the use of Sustainable Fuels in the transport sector



The following are the Key Areas for collaboration:

- 1. Development of Sustainable Aviation Fuels (SAF)** in Kenya for regional and global market
- 2. Technology improvement** through Innovation, research and development.
- 3. Capacity building** through technical training and Knowledge transfer.



Aviation Safety as it stands has a robust foundation but we must learn more by building on those foundations with different approaches taking into account;

- 1) the regulatory environment,
- 2) the safety management approach, and,
- 3) the culture of the people working in and using aviation.



INNOVATION
WORKSHOP



ICAO

THANK YOU!

