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State Action Plan: the first step into the environmental aviation dimension

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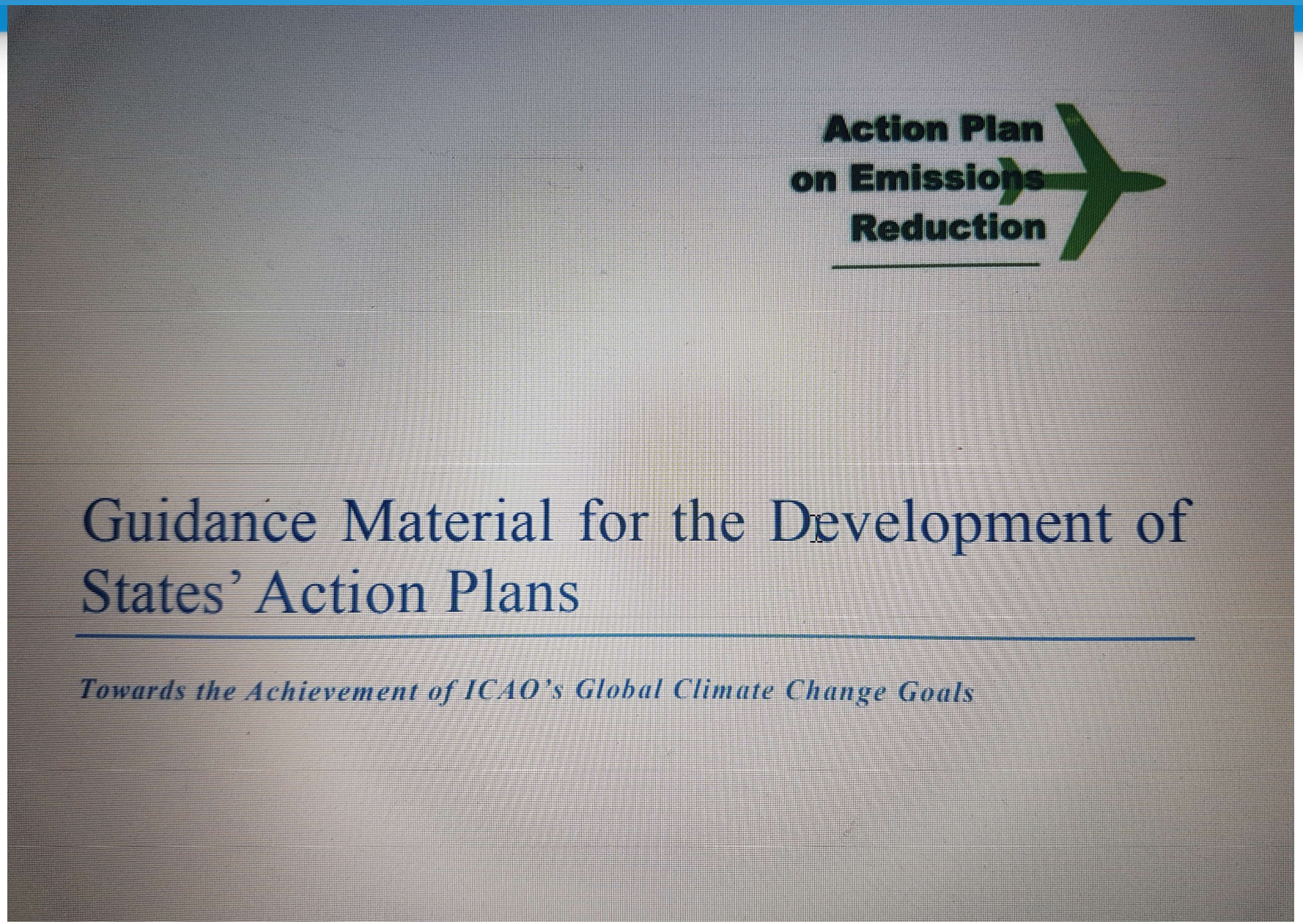
    - It is getting interesting…I can help my country.. If I plan and programme well in advance
      - We really need to act like a team
        - Like a team we plan our future, we protect our skies, we protect us


Action Plan
on Emissions
Reduction
Guidance Material for the Development of States' Action Plans
Towards the Achievement of ICAO's Global Climate Change Goals


ICAO
Doc 9988
Guidance on the Development of States' Action Plans on CO_2 Emissions Reduction Activities
Second Edition, 2016
INTERNATIONAL CIVIL AVIATION ORGANIZATION

WHAT IS STATE ACTION FOR CO2 EMISSION?

A document aimed at pointing out information on activities aimed at CO2 emissions reduction in the aviation sector.

WHAT SHALL THE STATE ACTION PLAN INCLUDE?

1) National actions
2) Activities implemented regionally
3) Activities implemented on a global scale in the framework of bilateral/regional/multilateral agreement

IMPORTANT

Keep in mind that not all emissions from the aviation sector shall be included in the state action plan, and **not all mitigation actions** linked to reduce these emissions shall be considered

INDEED

Emissions from domestic aviation shall be separated from those of international aviation

BUT

At the same time they have to be regarded as a co-benefit to support ICAO in reaching its aspirational goals

- DOMESTIC EMISSIONS which might be included are only **those related to AIRPORT and/or GROUND SUPPORT OPERATIONS** which are out of the scope of RES A37-19

BUT IF YOU WANT TO INCLUDE INTO THE SAP

YOU HAVE TO:

-explain principles

-explain strategies beyond the decision

- Difference between domestic and international flights: the pivotal issue to tackle

WHAT IS A DOMESTIC FLIGHT?

IT IS DEFINED AS THE OPERATION OF AN AIRCRAFT FROM TAKE-OFF AT AN AERODROME OF A STATE OR ITS TERRITORIES AND LANDING AT AN AERODROME OF THE SAME STATE OR ITS TERRITORIES

WHAT IS AN INTERNATIONAL FLIGHT?

IT IS DEFINED AS THE OPERATION OF AN AIRCRAFT FROM TAKE-OFF AT AN AERODROME OF A STATE OR ITS TERRITORIES AND LANDING AT AN AERODROME OF ANOTHER STATE OR ITS TERRITORIES

OTHER DEFINITIONS

IPCC

They are based on whether the departure and arrival airports for a specific flight are in the same or in different countries(i.e. mainly used for reporting of GHG emissions from domestic and international aviation under the UNFCCC.)

FROM IPCC GUIDELINES

Criteria of IPCC for defining international and domestic aviation (apply to individua journeys with more than one take-off and landing)

Journey type between two airports	Domestic	International
Departs and arrives in same State	Yes	No
Departs from one State and arrives in another	No	Yes

Source: 2006 IPCC Guidelines (http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_3_Ch3_Mobile_Combustion.pdf)

UNFCCC negotiation process

	ICAO	IPCC
WHAT IS INCLUDED?	-Differentiation between domestic and international flights -Commercial scheduled and non-scheduled fights -National carriers -Carriers registered in the State -Carriers whose principal business is in the State	-Differentiation between domestic and international flights -All commercial flights(scheduled, non-scheduled, on demand etc.) -All carriers irrespected of where they are registered
WHAT IS NOT INCLUDED?	-Carriers registered in other States -Commercial on-demand flights	
COMPATIBILITY	-ICAO Fuel Form -ICAO statistical information system	-Reporting requirements under the UNFCCC -CAEP work on MBMs
SOURCE: ICAO, Characteristics of the ICAO and IPCC definitions for domestic and international aviation		

Form A - This form is for the reporting of '**Traffic of commercial air carriers' of their scheduled and/or non-scheduled flights**. The statistics to be reported on this form should exclude air taxi, commercial business aviation or other on-demand revenue flights. Form A should be completed on either a monthly or an annual basis

Form C - This form is for the '**Traffic by flight stage** (TFS) for scheduled services (Revenue) of international operations', i.e., by aircraft operators who have international scheduled air services. This form should include aggregated data for the twelve months of the calendar year

Form M –

-This form is used to report **fuel consumption and traffic statistics by aircraft type for each of their commercial air carriers that operates scheduled and/or non-scheduled flights.**

-The fuel consumed, tonne-kilometres performed and tonne-kilometres available shall be calculated and reported separately **for each aircraft type**.

-**Data should be reported for the total fleet operated by the air carrier for commercial air transport broken down by aircraft type**. Total services (international and domestic scheduled and non-scheduled, excluding on-demand flights), which include international total and domestic total services.

IT IS ADVISABLE THAT AN AVIATION ENVIRONMENTAL DATABASE WILL BE ESTABLISHED AT THE LEVEL OF DCA.

BENEFITS AND WHY?

-It will allow to track record for each airline

-It will allow to create the basis for the MRV to be established

-Especially for form M, it will allow to have figures from the fuel used and therefore estimation of CO2 emissions

-It will facilitate the work of DGCAs while working with aggregation data

CHALLENGES

-The environmental management system needs to be designed and IT staff shall be appointed to work at it and the related implementation.

-Dedicated section to be created for each aeroplane operator.

-It will change the approach of dealing with data at aviation level: increase of work for both DGCAs and aeroplane operators, but it will settle the basis for the MRV

-The EMS shall be settled as soon as possible

HOW IS THE STATE ACTION?

It is **free format template**, but it shall contain at least the following information:

1)Contact details of Authority in charge of submission;

2)Annual historic and projected consumption fuels and CO2 emissions 2010-2020-2050 years shall be quoted

3)Statement to % and definition of Domestic and international emissions

HOW IS THE STATE ACTION?

4) Statement of the voluntary contribution to ICAO's aspirational goals including base year/baseline

5) List of actions to address CO2 emissions from international aviation, pointing out those already in place (if any) and those to be set in the future. The description shall be a detailed one and shall explain how they can contribute to reaching ICAO's aspiration goal

6) Description of the needs and requirements (i.e. financial assistance if needed) to implement the mitigation actions

WHO SHALL REPORT TO ICAO?

In point 1 of the SAP, the authority is the competent body in charge of reporting

BUT

The AP of a State is made of the measures coming from the sector and

therefore

it requires a coordinated and a continuous communication process between all involved stakeholders from the sector

WORK TOGETHER…EACH OF YOU HAS A ROLE…BUT YOU ARE ALL PART OF A DESIGN: YOUR STATE ACTION PLAN

HOW OFTEN SHALL A STATE REPORT?

State shall provide updated AP with updated mitigation actions every 3 years, by the end of the year.

THAT IMPLIES

-SAP is an ongoing work to reduce emissions from the aviation sector;

-SAP implies continuous work and communications between involved stakeholders and aviation authority to exchange information on mitigation measures implementation, challenges and problems;

-SAP implies to use climate indicators and targets to monitor mitigation measure progress;

FIRST STATE ACTION PLAN: NOT SO EASY

To represent the sector through numbers is not so easy as it can appears…and that is why successfully stories from others shall help you.

CAAT'S representative will explain you the process we did to submit the second state action plan

REMIND: mitigation measures shall be realistic representing concretely how you will work in the next future with GHG emissions reduction.

You need to ponder them well, program and plan


PLANNING

FIRST STATE ACTION PLAN: NOT SO EASY

To help states in their work with SAP, ICAO has identified minimum information to be reported by State on CO2 emissions from international aviation:

1) Statement on definition on HOW TO DIFFERENTIATE DOMESTIC FROM INTERNATIONAL EMISSIONS
2) Total fuel consumption, CO2 emissions and RTK from international aviation, starting from 2010

STATE ACTION PLAN IN DETAILS

SAP IS COMPOSED MAINLY OF THREE PARTS:

Section 1 - Background information and contacts

Section 2 - Baseline and expected results

Section 3 - Mitigation measure

SECTION 1: BACKGROUND INFORMATION AND CONTACTS

-Especially for the first state action plan you have to describe your sector in order to allow the reader understanding how you are progressing and how you are planning to deal with GHG emissions reduction.

SECTION 1: BACKGROUND INFORMATION AND CONTACTS

Name of the Authority .....

Point of Contact .....

Street Address .....

Country .....

State/Province .....

City .....

Telephone Number .....

Fax Number .....

E-mail address .....


WEEKS OF
PROGRAMMING
CAN SAVE YOU
HOURS OF
PLANNING

SECTION 1: BACKGROUND INFORMATION AND CONTACTS

This part shall contain the following info:

1. BACKGROUND, INFORMATION AND CONTACT

1.0. **CONTACT INFORMATION**

1.1. HISTORICAL OVERVIEW OF LAO PDR AVIATION SYSTEM

1.2. **STRUCTURE OF THE AVIATION INDUSTRY IN LAO PDR**

1.2.1. INSTITUTIONAL STRUCTURE (who is doing what and how involved stakeholders dealing with climate interact with the sectoral one)

1.2.2. STAKEHOLDERS IN THE AVIATION SECTOR (please describe: i) commercial, cargo, charter airlines and related details in terms of passengers and type of airline; ii) airports international/domestic etc.)

1.3. **TRENDS OF THE AVIATION SECTOR IN LAO PDR-PROBLEMS AND CHALLENGES FOR THE COMING YEARS**

1.3.1 BACKGROUND SITUATION

1.3.2 PROBLEMS

1.3.3 CHALLENGES

SECTION 1: BACKGROUND INFORMATION AND CONTACTS

Recommendations:

-State Action plan represents you, your country and how your country is committed in supporting ICAO in reaching its aspirational goals

THEREFORE:

-PLEASE REPRESENT THE SECTOR AS IT IS REALLY POINTING OUT THE PROBLEMS AND THE CHALLENGES THE SECTOR IS FACING IN YOUR COUNTRY.

This will allow ICAO and other international donors involved in this activity to support you with concrete ACTIONS/TECHNICAL ASSISTANCE in facing the problems.

Moreover, this will allow to justify your position and your level of maturity in the second state action plan where you will have to demonstrate how you have progressed in the reduction of CO2 emissions from the aviation sector

-PLEASE INVOLVE ALL SECTOR STAKEHOLDERS IN THIS SAP EXERCISE

-PLEASE USE GRAPHIC TO REPRESENT THE NUMBER YOU MENTIONED. It will facilitate the work.

SECTION 2: BASELINE AND EXPECTED RESULTS

This part shall contain at least the following information:

2.0. INTRODUCTION

2.1. EXISTING AVAILABLE DATA (problems and challenges included)

2.2. BASELINE DEFINITION

2.3. EXPECTED RESULTS LINKED TO THE INTRODUCTION OF NEW MEASURES

SECTION 2: BASELINE AND EXPECTED RESULTS

DIFFERENT STEPS REQUIRED FOR THE CONSTRUCTION OF A BASELINE

- DEFINE TIME HORIZON AND INTERMEDIATE YEARS
- ESTIMATE HISTORICAL ACTIVITY DATA AND EMISSIONS INVENTORY
- DEVELOP FORECASTS FOR AIR TRANSPORT ACTIVITY AND FOR RELATED EMISSIONS IN THE BASELINE SCENARIO

SECTION 2: BASELINE AND EXPECTED RESULTS

- **Time horizon and intermediate years selection**: These should include the time horizon and intermediate years set by ICAO for its goals (2020, 2050 at a minimum and any other years)
- ***Estimate historical activity data and emissions inventory***: Historical air transport activity data are normally readily available within operators, airports and civil aviation authorities. Baseline emissions should be related to the air transport activity data.

SECTION 2: BASELINE AND EXPECTED RESULTS

- ***Develop forecasts for air transport activity and for related emissions in the baseline scenario:***.
  Forecasting emissions may be done using techniques. Similar to the tiered approach to developing emissions inventories, as described by the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (hereinafter referred to as the IPCC 2006 Guidelines), States have the option to select the technique that is most suitable for the national context

SECTION 2: **WHY THE BASELINE IS IMPORTANT?**

-Baseline has to to be regarded as the first step to start planning GHG reduction considering fuel consumption and forecast future scenario aiming at comparing different possible situations.

-Baseline needs to assess the starting point and fix the targets.

-Baseline properly settled allows to have a real picture of the sector and understand how the sector is progressively moving.

SECTION 2: THE IMPORTANCE OF METRICS WHILE DESIGNING THE BASELINE AND THE EXPECTED RESULTS

METRICS

You need to be able to track your progress in the implementation of your mitigation measures to reach the expected results

THEREFORE AS PER ICAO'S A37-19

YOU SHOULD CONSIDER THE FOLLOWING METRICS:

1) Volume of fuel used per revenue tonne kilometres (RTK)

2) Net CO_2 emissions

SECTION 2: **FORMULAS TO BE KNOWN**

RTK: Revenue Tonne-Kilometers: part of the routine statistics compiled by air carriers in your country and Air carrier reports have to be regarded as the main source for reporting traffic data and RTK.

RTK calculation

-Passengers carried x Flight Distance x 100kg)/1000 = Passenger tonne/km-PTKM-

-Freight tones carried x Flight Distance = Freight tonne/km-FTKM-

-Mail Tonnes carried x Flight Distance = Mail tonne/km-MTKM-

SECTION 2: **FORMULAS TO BE KNOWN**

- **CO2 calculation**

Amount of fuel burnt x emission factor (3.16 kg/CO2)

SECTION 2: BASELINE AND EXPECTED RESULTS

HOW TO CALCULATE CO2 EMISSION?

2 methodologies:

-**Aggregated methodology**: based on the use of aggregate fuel consumption data collected by States and reported to ICAO through the ICAO Fuel Form; and

-**Disaggregated methodology**: based on the availability of detailed information for individual flight stages

AGGREGATED METHODOLOGY:

States are required to report to ICAO total fuel used by each aircraft type in the fleet of individual air carriers according to the following categories:

1) **international scheduled services;**
2) **international non-scheduled services (excluding on-demand flights); and 3) international total (scheduled and non-scheduled, excluding on-demand flights).**

States should report the mass of fuel uplifted in metric tonnes for all aircraft in each aircraft type in an air carrier's fleet. (no distinction between fuel types).

Fuel uplift can be determined based on the measurement by the fuel supplier, as documented in the fuel delivery notes or invoices. Alternatively, fuel uplift can also be established using aircraft onboard measurement systems.

The data should also include fuel consumed by the auxiliary power units (APU). In addition, States are asked to provide the percentage of biofuel contained in the total fuel used (both international and domestic).

CO_2 emissions for international services can be calculated by:

-first, estimating the amount of biofuel used (see Box 2 for the treatment of biofuels);

-second, estimating the amount of conventional fuel (e.g., jet fuel) used; and

-third, estimating CO_2 emissions by multiplying the fuel consumption figures (biofuel and conventional) by appropriate emission factor values.

DISAGGREGATED METHODOLOGY:

-It is based on the use of specific fuel consumption data for individual flight stages and could be aggregated for different aircraft types and (if possible) city pairs.

-It requires more resources and effort, compared to the Aggregated methodology, and may be better suited for use by individual air carriers who would then report aggregate data to the national authority responsible for submitting information to ICAO.

-Using such a detailed methodology would enable the identification of large sources of emissions and mitigation opportunities, and the monitoring of progress in the implementation of specific actions.

The methodology would require the following data for individual flight stages:

-Total fuel consumption; and

-Specific fuel characteristics, such as calorific value, carbon content, and type and percentage of biofuel in the total fuel amount.

The calculation of CO2 emissions for individual flight stages would be based on the disaggregated information collected by air carriers. Once all data have been collected, CO2 emissions for individual flight stages can be calculated using the same steps as those for the Aggregated methodology.

Baseline data to be included:

YEAR	TOTAL FUEL (litres)	INTERNATIONAL FUEL (litres)	TOTAL CO2 EMISSIONS (kg)	INTERNATIONAL CO2 EMISSIONS (kg)

EXPECTED RESULTS…after the introduction of the mitigation measure

YEAR	TOTAL RTK	INTERNATIONAL RTK	TOTAL FUEL (litres)	INTERNATIONAL FUEL (litres)	TOTAL CO2 EMISSIONS (kg)	INTERNATIONAL CO2 EMISSIONS (kg)

BUT NOT ENOUGH…DATA HAVE TO BE QC

ICAO Doc 9988: fuel consumption data shall be monitored using some of the QC procedures.

IMPORTANT TO GUARANTEE ACCURACY

FORM C: Traffic by flight stage - containing information on the total number of flight stages of different types of aircraft.

Using the ICAO Carbon Emissions Calculator fuel consumed is known.

-Then, cross-checking the obtained figures with the fuel consumption data of the M-form

In the case of LAO PDR where it seems that no fuel consumption data is available,

LAO PDR has to settle first the baseline, and define the trend of the sector in a scenario without mitigation measures and then in a scenario with mitigation measures.

–Mr. Pasavi from CAAT will show later how to deal with ICAO's calculator and how the missing data from CAAT have been fixed

SECTION 3: MITIGATION MEASURES

-Circular 303 ICAO detected a basket of possible feasible measures aimed at reducing fuel consumption of 8%-18%.

ICAO CIRCULAR has to be regarded as **the first real guideline** describing how to detect, identify and develop the most feasible measures capable of minimizing fuel consume and therefore emissions from civil aviation system.

SECTION 3: MITIGATION MEASURES

The main targets linked to the introduction of these measures are:

- A more appropriate use of efficient fuel by aircrafts during operations;
- Tailored improvements of airport infrastructure system;
- Tailored technical and operative improvements to ATM system;
- Tailored regulatory measures to improve sustainable development in the sector.

SECTION 3: MITIGATION MEASURES

THEREFORE:

-This part shall contain the details of the mitigation measures you have agreed to implement with sector stakeholders.

-This is important to remind that when designed the results of the mitigation measures shall be tracked in order to be able to present the reached targets after 3 years when the second state action plan shall be submitted

ASS. RES A37-19

"The action plan shall include information on the basket of measures considered by state, reflecting their respective national capacities and circumstances, and information of any specific assistance needs"

-once more be realistic with the list of mitigation measures you can program and plan as per your national challenges. Consider those you can really do and are able to produce the first targets after three years of implementation

CLASSIFICATION OF MBMs as per programme of action on international aviation and climate change

1) Aircraft related technology development
2) Alternative fuel
3) Improved air traffic management and infrastructure use
4) More efficient operations
5) Economic measures
6) Regulatory measures and others
7) Airport improvements (…..)

SOME CONCRETE EXAMPLES

1) Aircraft related technology development

-Aircraft minimum fuel efficiency standards

-Aggressive aircraft fuel efficiency standards, setting standards for the future

-Purchase of new aircraft d. Retrofitting and upgrade improvements on existing aircraft

-Optimizing improvements in aircraft produced in the near to mid-term

-Avionics

-Adoption of revolutionary new designs in aircraft/engines

2)Alternative fuel

-Development of biofuels

-Development of other fuels with lower lifecycle CO2 emissions

-Standards/requirements for alternative fuel use

3) **Improved air traffic management and infrastructure use**

-More efficient ATM planning, ground operations, terminal operations (departure, approach and arrivals), en-route operations, airspace design and usage, aircraft capabilities

-More efficient use and planning of airport capacities

-Installation of airport infrastructure such as Fixed Electrical Ground Power and Pre-Conditioned Air to allow aircraft APU switch-off

-Construction of additional runways and taxiways if used solely to relieve traffic congestion

-Collaborative research endeavors

4) **More efficient operations**

-Best practices in operations

-Optimized aircraft maintenance (including jet engine cleaning/washing)

-Selecting aircraft best suited to mission

5) **Economic/market based measures**

-Voluntary inclusion of aviation sector in emissions trading scheme

-Incorporation of emissions from international aviation into regional or national emissions trading schemes, in accordance with relevant international instruments

-Establishment of a multilateral emissions trading scheme for aviation which allows trading permits with other sectors, in accordance with relevant international instruments

-Establishment of a framework for linking existing emissions trading schemes and providing for their extension to international aviation, in accordance with relevant international instruments

-Emissions charges or modulation of landing/take-off (LTO) charges, in accordance with relevant international instruments

-Positive economic stimulation by regulator: research programs, special consideration and government programs/legislation and accelerated depreciation of aircraft

-Accredited offset schemes. Explore extension of CDM

-Taxation of aviation fuel, in accordance with relevant international instruments

6) **Regulatory measures and others**

-Airport movement caps / slot management

-Enhancing weather forecasting services

-Requiring transparent carbon reporting

-Conferences / workshops

SOME CONCRETE EXAMPLES EASY TO TACKLE

SOURCE: ICAO

category	measure	description	Projected benefits
Improved Air Traffic Management and Infrastructure Use	More efficient ATM planning, ground operations, terminal operations (departure and arrivals), en-route operations, airspace design etc.	**CANSO, IATA and EUROCONTROL flight efficiency plan**	The implementation is expected to bring benefits amounting to a reduction of around 500,000 tonnes of CO, per year.
		NavCanada environmental management project	Improved efficiencies achieved through new technologies and procedures will save 8.4 million metric tonnes of aviation related greenhouse gas emissions in the period 2009 to 2016.
		Air New Zealand, Qantas and Airways New Zealand practice optimum arrivals	Trial designed to better define future air navigation planning, and will achieve better industry environmental outcomes.

SOME CONCRETE EXAMPLES EASY TO TACKLE

SOURCE: ICAO

Improved Air Traffic Management and Infrastructure Use	Enhanced terminal support facilities	**Malaysia Airports aims to meet, if not beat, global aviation targets**	As part of its aim for carbon neutral growth, Kuala Lumpur Airport has introduced energy-saving devices resulting in a reduction in energy use by 39 per cent, with more to come.

SOME CONCRETE EXAMPLES EASY TO TACKLE

SOURCE: ICAO

Improved Air Traffic Management and Infrastructure Use	More efficient ATM planning, ground operations, terminal operations (departure and arrivals), en-route operations, airspace design and usage, aircraft air navigation capabilities	**Civil Aviation Authority of Singapore green flight**	Demonstration flight from Singapore to Los Angeles reduced flight time by 30 minutes, saving 33 tonnes of carbon emissions.

SOME CONCRETE EXAMPLES EASY TO TACKLE

SOURCE: ICAO

Improved Air Traffic Management and Infrastructure Use	More efficient use and planning of airport capacities	**Echo 4 taxiway at Paris Charles de Gaulle Airport**	Reduced taxi time by 90,000 minutes and saved nearly 1.1 million litres of fuel during one year.
		Air France / KLM hub operations streamlining	Coordinate arrival and departure periods that link small flows of feeder traffic with intercontinental traffic, establishing the most efficient operations on the largest possible network.

SOME CONCRETE EXAMPLES EASY TO TACKLE

SOURCE: ICAO

Improved Air Traffic Management and Infrastructure Use	More efficient use and planning of airport capacities	**Echo 4 taxiway at Paris Charles de Gaulle Airport**	Reduced taxi time by 90,000 minutes and saved nearly 1.1 million litres of fuel during one year.
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SOME CONCRETE EXAMPLES EASY TO TACKLE

SOURCE: ICAO

More efficient operations	Best Practices in operations	**Asiana Eco Flight demonstration**	Emission reduction procedures resulted in a total reduction of 500 kg of carbon.
		IATA projects reduce airline CO2 emissions by 12 million tonnes	Through the IATA Green Teams programme, airlines are identifying significant savings in fuel and emissions, as well as shortening 266 routes in 2009 alone.

BENEFITS IN CC FROM MBM

Measure	Benefit/cost	
Best practices in operations	Benefit:	Reduced CO2 emissions
	Relative potential gains	Low to medium
	Co-benefits	Reduced fuel burn Possible offset carbon credits
	Cost:	Procedures design and implementation Training costs
	Cost range:	Low

SUGGESTIONS

-Be ambitious, but keep in mind that you have to implement and not only design measures.

-Keep in mind that a good mix of different actions in terms of 1,3,5,6 will allow Lao moving towards a greener aviation environment, but it will strongly reduce costs for the aeroplane operators

-Try to link aviation sector with other ongoing programs/plans dealing with RES and EE in order to program a common approach to the fight against fossil fuel solutions

EXPERIENCE FROM OTHER ASEAN MSs

-**Thailand**: a good mix of different categories of mitigation measures. RES are not considered yet, however, Thailand has designed the SAP considering short, medium and long term measures. (Mr. Pasavi will give you additional details)

-**Indonesia**: a good mix of Policy, procedures & capacity building, Operational efficiency, Alternative fuels , Aircraft modernization ,ATM improvement & PBN implementation ,Eco-airport implementation ,Implementation of CORSIA

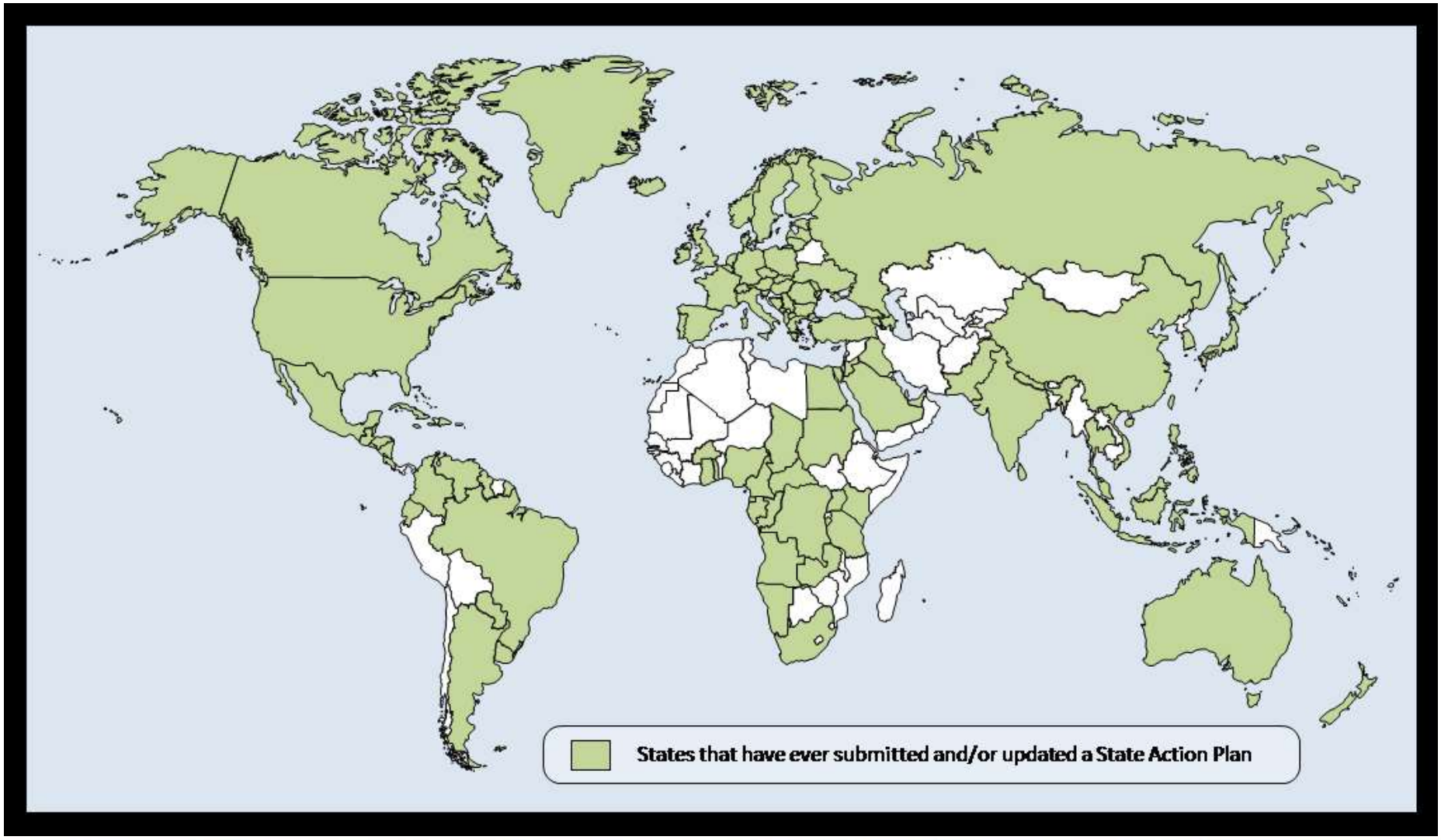
EXAMPLE OF TEMPLATE TO BE USED FOR MITIGATION MEASURES

Category:-	
Measure:-	
Action:-	
Start Date	
End Date	
Title	
Description	
INDICATOR	
BASELINE	
EXPCTED BENEFITS IN TERMS OF CO2 AND GHG REDUCTION	
Date of full implementation	
Economic cost	
Currency	
Reference to existing legislation	
Legislation is proposed	
Assistance needed	
List of stakeholders involved	
INTERMEDIATE REPORTING OUTPUTS in terms of CO2 and GHG (AFTER 1.5 YEAR)	
QA/QC	
FINAL REPORTING OUPTPUTS in terms of CO2 and GHG	

-Parts in red are the suggested one,

but they are strongly recommended as they will allow using an MRV approach at the level of state action plan. This will be hard at the beginning, especially for countries not familiar with MRV and M&E procedures, but it will ease the work in the submission of the other state action plan.

DO NOT FEEL ALONE. LOOK WHAT OTHER COUNTRIES ARE DOING



EXAMPLES OF MITIGATION MEASURES FROM OTHER ASEAN COUNTRIES

-Thailand case (better explained by Mr. Pasavi)

-Indonesia case (third state action plan to be submitted by the end of this year).

From the first state action plan they trace the path to become more and more environmental friendly including a roadmap

-Malaysia submitted 2 state action plans

-Singapore submitted 2 state action plans

-ALL THESE STATES HAVE INCLUDED CORSIA AS MKT BASED MEASURES AND THEY ARE COMMITTED TO JOIN CORSIA FROM THE PILOT PHASE

LAO PDR???

-That is only the first workshop…a strong work shall be conducted starting from January 2019 ….

-Stakeholder consultations shall take place

-Time Horizon shall be considered

-Analysis of the sector shall take place and in the meantime possible mitigation measures shall be discussed with involved stakeholders

-You will be supported…do not worry

-CAAT can show what we did together

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SAP---NOW YOU KNOW...AND PROPERLY SUPPORTED YOU CAN MANAGE...

THANKS A LOT FOR YOUR ATTENTION

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Your safety is our mission.

An agency of the European Union