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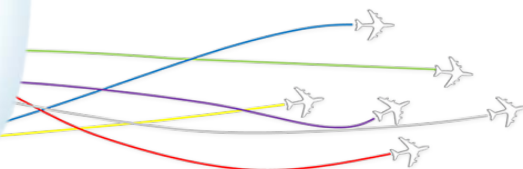
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ICAO CAPACITY BUILDING SEMINAR ON LOW EMISSIONS AVIATION MEASURES

# Supporting the implementation of Sustainable Aviation Fuels for Aviation

ICAO – European Union Assistance Project



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PROJECT FUNDED BY



European Union

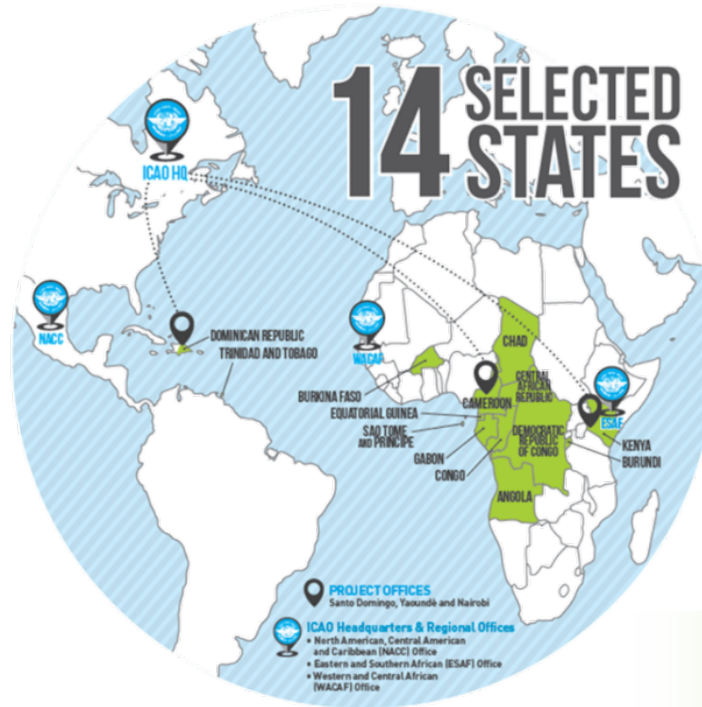
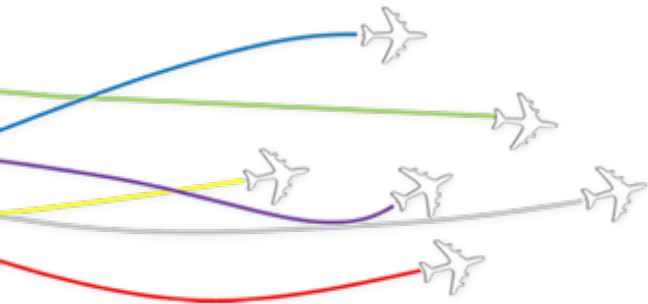


# Capacity Building for CO<sub>2</sub> Mitigation from International Aviation

**6.5** Million Euros

**1<sup>st.</sup>** Agreement  
for assistance

In the area of ENV at ICAO



**36+** focal points and  
**130+** stakeholders involved  
in Africa and the Caribbean

## OBJECTIVE 1

### ACTION PLANS DEVELOPMENT:

Improved capacity of the National Civil Aviation authorities to develop an Action Plan on CO<sub>2</sub> emissions reduction from international aviation in accordance with ICAO recommendations

## OBJECTIVE 2

### AVIATION ENVIRONMENTAL SYSTEMS (AES):

Efficient CO<sub>2</sub> emissions monitoring system for international aviation developed in each selected Member State

## OBJECTIVE 3

### IMPLEMENTATION OF MITIGATION MEASURES:

Priority mitigation measures identified, evaluated and partly implemented



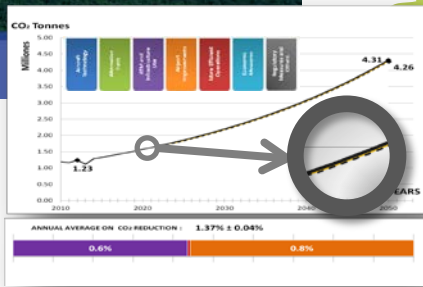
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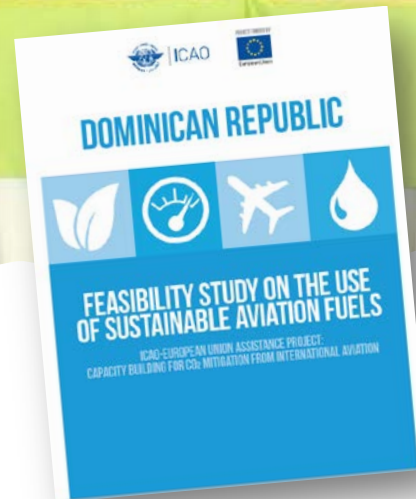
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# NEW ACTION PLAN ON EMISSIONS REDUCTION OF THE DOMINICAN REPUBLIC



2015-2018



Feasibility study on SUSTAINABLE AVIATION FUELS



# Needs and Benefits



- Mitigating CO<sub>2</sub> emissions
  - Sustainable Aviation Fuels could save up to **80%** CO<sub>2</sub>
- International agreements: need to reduce GHG emissions
  - cannot be achieved just with technological measures
- Promoting **new national industries** and production schemes
- Improving **competitiveness** at long term of the sector: **Green Tourism**
- Improving Local Air Quality



## Objectives of the Study | DOMINICAN REPUBLIC



Define the singularities and opportunities of the Dominican Republic for a **potential value chain** of sustainable aviation fuels



Define **potential capacity**: Feedstocks and Biojet production



Define **demand**, considering cost/benefit and prices



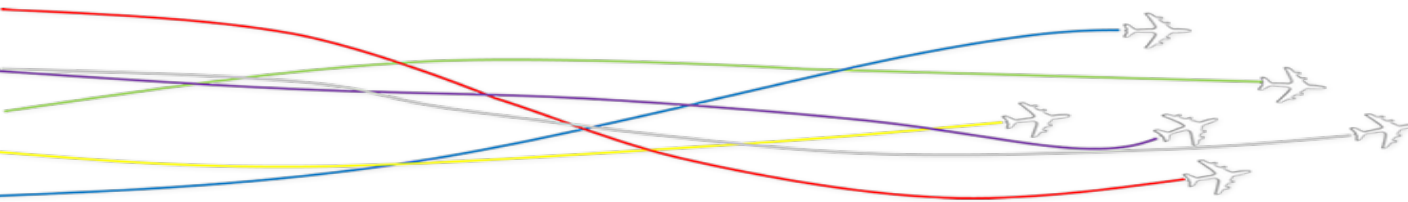
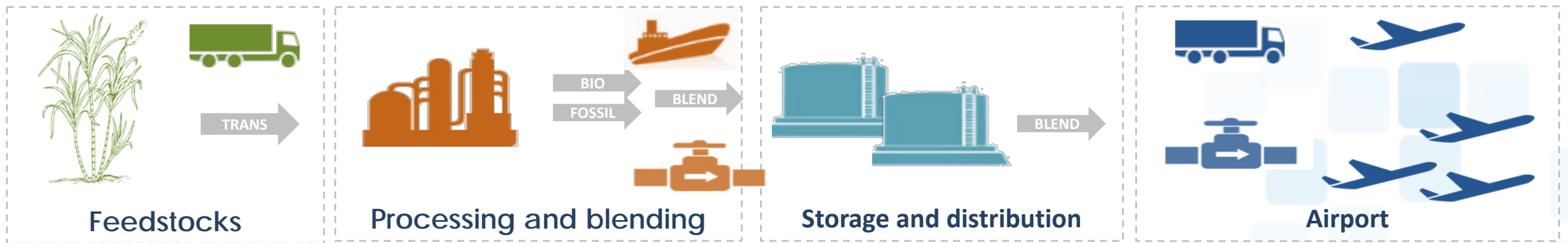
Evaluate the **environmental impact** (GHG, water, resources) and local development impact



Look for **implementation keys** (policies, challenges and alternatives)



# Value Chain





# Feedstock Analysis

- ✘ vegetable oils & fats → low potential
- ✘ production of municipal or industrial **wastes** is limited and disperse
- ✘ major **agricultural residues** are being currently used.





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# Most suitable Feedstock for Dominican Republic



Significant potential for  
**Sugarcane Production**

Which could be converted into  
sustainable aviation fuels through:

**SIP** SYNTHETIC ISO-PARAFINS

**ATJ** ALCOHOL-TO-JET-FUEL

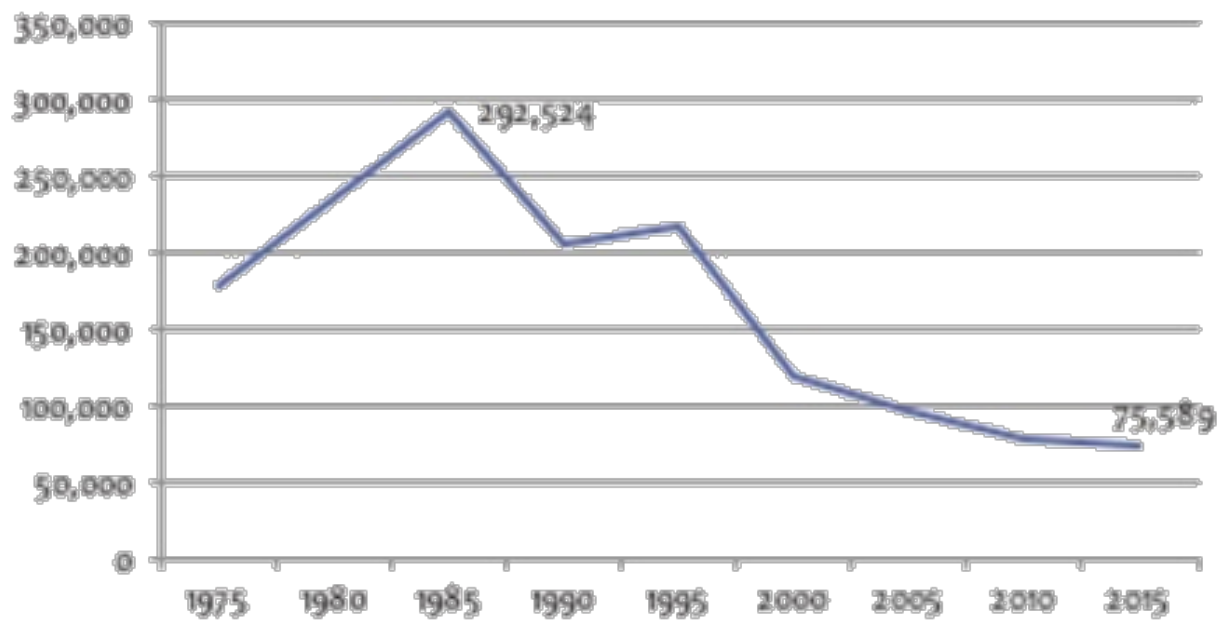




# Sustainable Production

*No change in land use*

Historical harvested sugarcane in Dominican Republic (ha)



Sugarcane production has been declining for the last 30 years

The production of **SAFs from sugarcane** would not compete with other crops



# Regulatory Framework

- Sugarcane production is already regulated. Additional production for SAF may be regulated by the government
- Dominican Republic has **relevant laws and regulations** concerning benefits and incentives for **the production of alternative fuels and renewable energy**
- Hydrocarbon market is **commercially regulated** for distributors which can facilitate the establishment of incentives and/or regulations for the introduction of alternative fuels.



# Jet Fuel Infrastructure



The main potential area for sugar cane production and the possible storage area are located closer within three international airports, that represent more than 70% of the air operations.



jetBlue

- MDCY Catey
- MDLR La Romana
- MDPC Punta Cana
- MDPP Puerto Plata
- MDSD Las Américas
- MDST El Cibao

United Airlines

- MDPC Punta Cana
- MDPP Puerto Plata
- MDSD Las Américas
- MDST El Cibao

AIR FRANCE

- MDPC Punta Cana
- MDSD Las Américas



MDPC Punta Cana



MDPC Punta Cana



MDSD Las Américas



MDSD Las Américas



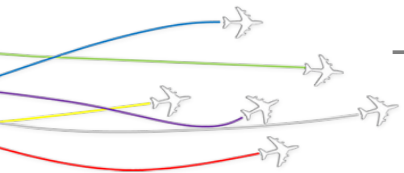
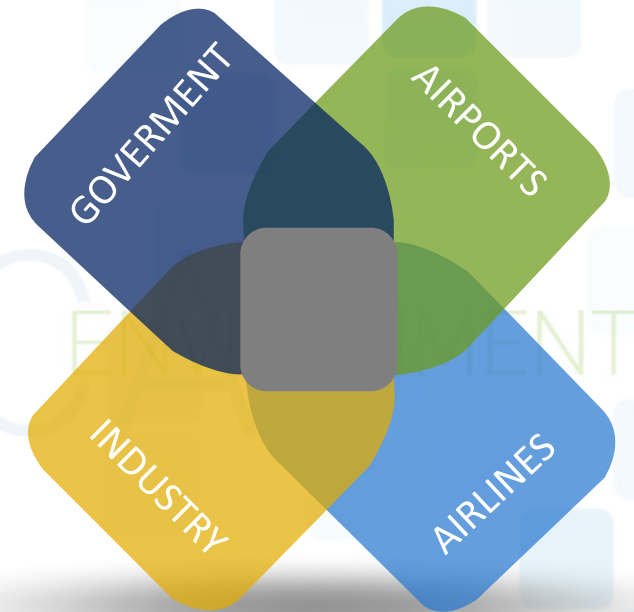
MDPC Punta Cana

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# Roapmap Strategy

- **2017 - 2018:**
  - Establish information sharing mechanisms for aviation biofuels
- **2017 - 2020:**
  - Adapt regulations & standards
  - Disseminate about the relevance of the use SAFs
  - Increase R&D on feedstock capacity
- **From 2020:**
  - Promote sustainable implementation of a value chain
  - Establish incentive measures for stable demand





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# Punta Cana Declaration





### DECLARACIÓN DE PUNTA CANA

IMPLEMENTACIÓN DE UNA HOJA DE RUTA PARA EL DESARROLLO Y USO DE COMBUSTIBLES ALTERNATIVOS SOSTENIBLES PARA LA AVIACIÓN EN LA REPÚBLICA DOMINICANA

Los representantes del Estado Dominicano, reunidos en Punta Cana, República Dominicana, el 16 de Diciembre de 2016, conscientes de la importancia y trascendencia de las cuestiones de medio ambiente y cambio climático, y alentados por las iniciativas globales para el desarrollo y uso de combustibles sustentables para la aviación, como una estrategia a largo plazo para el transporte aéreo;

Considerando: Que la aviación es una industria clave a nivel mundial, particularmente relevante en un estado insular como la República Dominicana. El sector turístico e industrial en el país depende enormemente de un transporte aéreo eficiente y sostenible, que apoye el desarrollo y crecimiento económico;

Considerando: Que el cambio climático es uno de los mayores retos a los que se enfrenta la humanidad y, particularmente, la República Dominicana como país en vías de desarrollo altamente vulnerable a los efectos resultantes de este fenómeno global;

Considerando: Que a nivel global, la industria de aviación ha establecido de forma proactiva un conjunto de ambiciosas metas para reducir sus emisiones, mejorando la eficiencia energética de la flota mundial en promedio un 1.5% anual, estabilizando las emisiones de CO<sub>2</sub> a la mitad de las emisiones que se alcanzaron en 2005;

Considerando: Que una estrategia de sostenibilidad, seguridad e innovación energética a través de combustibles alternativos puede contribuir a alcanzar la visión de nación para largo plazo reflejada en la Ley 1-12 Estrategia Nacional de Desarrollo – END 2030, la cual, establece en dos de los cuatro ejes estratégicos: i) Una economía articulada, innovadora y sostenible, con una estructura productiva que genera crecimiento alto y sostenido con empleo decente, y que se inserta de forma competitiva en la economía global; y ii) Un manejo sustentable del medio ambiente y una adecuada adaptación al cambio climático;

Considerando: Que para fomentar el crecimiento sostenible de la aviación internacional y lograr las metas mundiales a las que se aspira, es necesario adoptar un enfoque integral que incluya, en un conjunto de medidas, que incluyen tecnologías y normas, combustibles alternativos, mejoras operacionales y medidas basadas en el mercado para reducir



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The Punta Cana Declaration signed in December 2016 by the six government agencies, endorsed the proposed roadmap and the following actions to be taken in Dominican Republic



# Progress to-date

**Amendments to the national legislation** to promote incentives for the use and production of sustainable aviation fuels from sugar cane.

Establishment of a **High-Level Committee to include all stakeholders of the aviation and energy sectors** to further develop a policy of incentives and a modification of the current fuel standards

**Link with national development plan** to include the installation of SAF production facilities as part **of the poverty reduction strategy** because of its economic and social benefits

**Cooperation with Brazil and the US** for knowledge and technology transfer



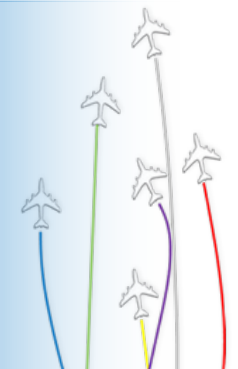


# Conclusions



**Key drivers** for the use and production of Sustainable Aviation Fuel in SIDS:

- **Importance of aviation and tourism industry**
- **External energy dependency and price of conventional fuel**
- **High vulnerability to climate change**
- **Feedstock availability (algae, Municipal Solid Waste)**





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A WINDOW FOR A  
**GREENER FUTURE**



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