



Report

Aviation Sector in Panama

Challenges and Opportunities

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Summary

Panama's aviation sector is regarded as one of the highest developed within the region. The Tocumen International Airport is the most important airport of the country and is considered as the hub of Central America. Furthermore, together with flag carrier Copa Airlines, **Tocumen has the ambition to become the hub of the complete Latin-American region.** A prime example of this ambition is the construction of the second terminal, a project that costs over USD 1 billion and will add 20 gates to the already 34 existent gates. As the aviation sector is expected to grow continuously the coming years, further investments are already set in motion or projected.

However, there are several challenges to overcome. Examples of these challenges are the growing risks of floods, the fuel supply of Tocumen International Airport, the further integration of regional airports and the presidential elections of May 2019. On the other hand, these challenges offer opportunities for Dutch companies as well. For instance, the government plans to invest

USD 60 million the coming years in the expansion of Panama Pacífico International Airport, Tocumen is constructing a Multimodal Zone for value added logistics and in the near future a third runway will be built at the Tocumen International Airport.

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I. Introduction

The aviation sector is of big importance to the Panamanian economy. For example, the number of passengers handled through the different airports of Panama quadrupled over the last 10 years. This enormous growth was mainly achieved through continuous investments in the biggest airport of the country, the Tocumen International Airport. However, the growth of smaller airports, such as Panama Pacífico International Airport, and other activities within the aviation sector, such the successes of Copa Airlines and new MRO (Maintenance, Repair and Overhaul) activities, contributed to this growth as well.

Because of these and other characteristics Panama was awarded with the **highest Air Transport Competitiveness score within the region according to the International Air Transport Association (IATA)**. *Table 1* shows some of the benefits of the aviation sector to the Panamanian economy. The aviation sector offers a big contribution to the GDP and provides a high amount of employment. Therefore, the sector is essential for the overall economy. On the other hand, in order to reach its full potential, there are still several challenges to overcome. In order to address these challenges, this report first provides an overview of the complete Panamanian aviation sector, its airports and airlines. Thereafter, the main challenges will be discussed. Lastly, further interesting opportunities for Dutch businesses will be highlighted.

Table 1: Impact of the Panamanian Aviation Sector on the Panamanian Economy

Source : IATA (2018).

Aviation Sector	2017
Percentage of GDP	4.5%
Employment (in number of persons)	12.000
Contribution to state revenue (in USD)	90.1 million
Aviation Sector + Tourism	
Percentage of GDP	14%
Gross Value Added to GDP (in USD)	8.5 billion
Employment (in number of persons)	238.000

II. Panamanian Airports

II.I Tocumen International Airport

Table 2 presents the different airports of Panama, the number of passengers and the amount of cargo they handled in 2017. The table shows the importance of the Tocumen International Airport. With **more than 15 million passengers passing through the airport in 2017**, the Tocumen Airport obtained a growth of 5,6 percent compared to the previous year. A closer look at these figures shows that this is mainly due to a growth of passengers in transit. *Figure 1* demonstrates the importance of this group of passengers. This group accounted for 11,5 million passengers on a total of 15,6 million passengers. The same figure provides statistics on the predicted passenger flow until 2025. The airport itself estimated that by this year some 23 million people will be handled through Tocumen.

Table 2: Airport Statistics

Source: [Georgia Tech Panama](#)

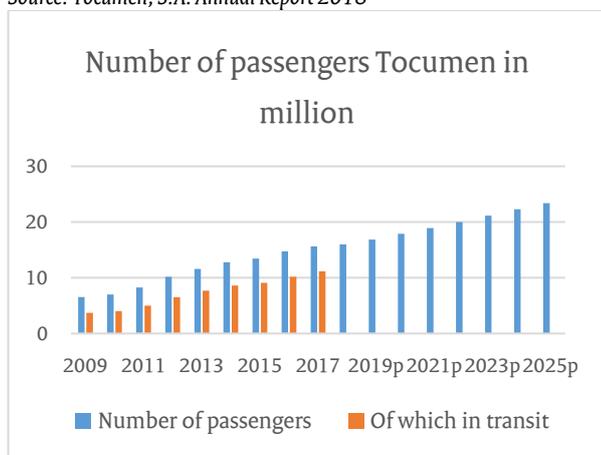
Airport	Number of Passengers (2017)	Amount of Cargo (2017)
International Airport Tocumen	15.616.065	174.098 (tons)
International Airport Marcos A. Gelabert	275.938	420.585 (kg)
International Airport Enrique Malek	270.291	--
International Airport Panamá Pacífico	255.737	--
International Airport Scarlett Martínez (Rio Hato)	62.385	--

In order to reach this expected amount of passengers, some large investments are needed. General Manager of Tocumen, Oscar Ramírez, stated that the airport's current capacity is 12 million passengers per annum. This means that Tocumen is operating with an overcapacity of around 30 percent at this

moment.¹ Therefore, the second terminal which is currently being constructed is of big importance for the further development of the airport. **The new terminal will add 20 gates to the current 34 and will cost over USD 1 billion.** Dutch company Vanderlande is constructing the baggage handling system and will also be responsible for the operations and maintenance (O&M) at the new terminal.² It is expected that the terminal will be officially opened in April, 2019.

Figure 1: Number of passengers Tocumen

Source: Tocumen, S.A. Annual Report 2018



Connectivity

In terms of connectivity the Tocumen International Airport is one of the 50 most connected airports in the world according to the OAG (Official Aviation Guide) International Index. **OAG states that Tocumen is the best connected airport in Central-America, the fourth in Latin-America and the 47th in the world.**³ This score is (among other things) based, on single international connections only to/from the chosen airport, the minimum connection time and a maximum connection window of six hours.⁴ Based on these parameters, the Tocumen Airport received a score of 104. To make this figure more concrete, Tocumen serves **85 international destinations of which 71 destinations have a frequency of two flights per day or more.** Figure 2 visualizes these destinations. The high score is also due to the excellent geographic location of the airport. For example, it is only a 5,5 hour flight towards Toronto and a 7 hour flight towards Buenos Aires.⁵ Lastly, the outstanding punctuality of

¹ Oscar Ramírez during a presentation about the Logistics Zone of Tocumen, November 2018.

² Vanderlande

³ OAG, Megahubs International Index 2018

Tocumen is also worth mentioning. Namely, in January 2019 the airport became the most punctual middle-size airport in the world, with a punctuality of 91.11% over 2018.

Figure 2: Destinations from Tocumen International Airport

Source: Blue Swan Daily



Multimodal Zone

To capitalize even more on Panama’s geographical location, Tocumen started the construction of the Multimodal Zone in November 2018. **The Multimodal Zone consists of a Cargo Terminal and a Logistics Zone.** The first is already existent, but is to be modernized in order to increase its capacity and improve its security standards. The adjacent Logistics Zone will be newly constructed and will be a Free Zone. After completion, this will be the first Airport Free Zone in the region. The Logistics Zone facilitates value added activities in products such as perishables, clothes & shoes and hi-tech. By combining both zones into the Multimodal Zone, companies who deliver logistics services will become more competitive. It will be easier to add value to cargo that arrives in Panama, because of shorter distances and it will be stored in a highly modernized Cargo Terminal. Furthermore, this integrated approach adds to the understanding of Panama as a logistics-hub. As shown in figure 3, products arrived in the Cargo Terminal, processed in the Logistics Zone can thereafter be transported easily by land, sea or by air again. This made several multinationals, such as Airbus and Boeing, recognize Panama as the new node regarding to cargo in Latin America. Moreover, FedEx states that ‘the project of Tocumen is an

⁴ All parameters

⁵ Carmen de Pagés during a presentation about the Logistics Zone of Tocumen, November 2018

opportunity to add value to cargo and to position itself even more as the hub of the Americas’.

Figure 3: Infrastructure Panama

Source : [Tocumen Logistics Hub](#)



The new zone also needs to increase the amount of cargo coming to Panama. Currently, there is **174.098 tons of cargo** moved through the Tocumen International Airport (2017). **Therefore, the airport positioned itself in the top tier regarding international cargo movement in Central America and the Caribbean.** Furthermore, it is placed third in this regard in Latin-America. The projected added value to the Panamanian economy of the new zone is displayed in table 3. Eventually the **Multimodal Zone will contribute around USD 300 million in Gross Value Added to the GDP, USD 50 million in taxes, close to 2000 permanent jobs and 1500 extra jobs** during the construction period. As stated earlier, the construction started in November 2018 with phase 1 of the construction of the Logistics Zone. This first phase has a **budget of USD 14 million** and it is projected to be completed in late 2019. After completion of phase one, several other phases will follow that might provide opportunities for Dutch companies active within the logistics sector.⁶ These opportunities will be stressed in the section *Opportunities*.

Table 3: Projected added value of the Multimodal Zone

Source: Carmen de Pagés during a presentation about the Logistics Zone of Tocumen, November 2018

	2020	2025	2030
Gross Value Added in million USD	103,9	203,8	299
Taxes in million USD	12,5	33,6	51,2
New jobs created	1022	1529	1943

II.II Smaller International Airports

Next to the Tocumen International Airport there are several other international airports in Panama. *Figure 4* shows the locations of these airports and the most important ones are listed in table 2. In this regard, the second biggest airport of the country in terms of passengers handled is the **Marcos A. Gelabert International Airport** in Panama City. This airport handled 275.938 passengers and 420.585 kilogram of cargo in 2017. It is regarded as the most important airport in relation to national destinations. In 2016 the Panamanian government invested USD 3 million to renovate the terminal of the airport. This investment was divided in, amongst other things, USD 800.000 for the improvement of the airplane taxi-road and USD 500.000 for the renovation of the security network. The third biggest airport is the **Enrique Malek International Airport** in David. In 2017, 270.291 people traveled through the Enrique Malek International Airport. The airport became part of the Tocumen S.A. (the overarching entity of Tocumen International Airport) in 2014. **Tocumen S.A. is planning to invest USD 3 million in this airport during 2019.** These investments are related to the improvement of the landing platforms, the renovation of the illumination and the increase of the combustible storage capacity.⁷

⁶ Carmen de Pagés during a presentation about the Logistics Zone of Tocumen, November 2018

⁷ [La Prensa](#)

Figure 4: Airports of Panama

Source: [La Estrella de Panamá](#)



A close number four in the ranking is the **Panama Pacífico International Airport**, part of Tocumen S.A. as well. This airport handled 255.737 people in 2017. The amount of passengers handled **has grown by 700%** over the last three years, as it only handled 30.860 passengers in 2014. Tocumen, S.A. aspires to handle three million people through Panama Pacífico within 20 years. This ambition goes hand in hand with some big investments. For example, in 2018 Tocumen, S.A. presented an ambitious expansion until 2038 plan for Panama Pacífico. **The plan includes an initial USD 60 million investment for the construction of a new passenger terminal, an airport apron and the purchase of buses.** The new terminal will have a capacity of 700.000 people per year, doubling the current capacity. The construction of the fourth bridge over the Panama Canal will also provide an important impulse to the accessibility of the airport. This bridge will be connected with the metro-system and will thus increase the connectivity between the city and the airport. Something that is lacking at this moment. The construction of the bridge will be finalized around 2023. Currently the only airline that operates from the airport is Wingo, the price fighter of the Panamanian company Copa Airlines. However, Carmen de Pagés emphasized that several airlines with a similar business model have shown interest in operating from the Panama Pacífico International Airport.⁸

The airport **Scarlett Martínez International Airport** in Rio Hato handled 62.385 people (2017). The airport offers domestic and international flights. Regarding the latter,

Canadian destinations are the most important. Namely, the Canadian airlines Air Transat and Sunwing Airlines operate the Rio Hato Airport. Big investments in the airport are currently not expected. The last airport discussed in this section is the **Enrique A. Jiménez International Airport**. After an investment of USD 58 million, the airport was inaugurated in 2013 by then president Ricardo Martinelli. This investment was used to increase the passenger-capacity towards 1000 passengers a day, built a new control-tower and a new runway that allows the landing of airplanes Boeing 757-200 with a capacity up to 228 passengers in charter flights. However, two years later, La Prensa wrote that ‘there is only tumbleweed like in the Wild West missing, to make [the airport] feel more desolate’. Furthermore, the annual report for 2017 of Tocumen, S.A. shows that the airport **did not handle any passenger in 2017**. This is mainly due to the fact, that there is no carrier flying on the airport. On the other hand, positive news arrived in September 2017, when the airport signed a memorandum of understanding with the Management of the Colon Free Zone. Within the memorandum it is stated the airline *Transporte de Carga Aérea del Caribe, S.A.* (TAECA) is in charge of international cargo movement once a week. The amount of cargo handled is not yet published, but the **strategic location** of Enrique A. Jiménez (next to the Colón Free Zone) creates potential.⁹

III. Airlines

III.I Copa

The Panamanian Airline Copa was founded in 1947 as *Compañía Panameña de Aviación*. The company currently operates in 31 countries and serves **75 destinations. 89 percent of all the flights passing through Tocumen International Airport are Copa flights**, stressing the importance of Copa to the Panamanian aviation sector. *Table 4* shows the company’s revenue and profits for the period 2013-2017. After a steep decline in revenue and profit, amongst other things due to the economic crisis in Brazil, these figures rose again in 2016 and 2017. However, preliminary statistics on 2018 prove to be less positive. Although overall revenue grew with 2,1 percent,

⁸ [La Prensa](#)

⁹ [La Estrella de Panamá](#)

revenue per average seat mile fell with 4,2 percent. This is mainly due to a current increase in fuel prices, but economic downturns in Argentina, Brazil and Venezuela also contributed to this drop in performance. On the other hand, Copa CEO Pedro Heilbron is still optimistic. He states that the earlier mentioned second terminal of Tocumen, will play a key role in Copa's growth for the years to come. Regarding this expansion, Heilbron argues that this '50% growth', is 'going to give us an opportunity to leverage [the] new infrastructure to improve passenger's experience of connecting through the hub of the Americas in Panama'.¹⁰

Table 4: Revenue and Profit Copa 2013-2017

Source: [Copa](#)

x million USD	2013	2014	2015	2016	2017
Revenue in USD	2.614	2.711	2.253	2.221	2.527
Net Profit in USD	427	361	224	334	370

The expansion of Copa's fleet is another sign of growth. For example, Copa operated its first flight with a **Boeing MAX** on September 20, 2018. The flight went from Panama to Tampa, United States. This new type of airplane 'elevates the airline's daily world-class services' thanks to the comfort, convenience and sustainability of these models. Not only it provides comfort, it also brings 'more efficiency in our [Copa's] operations, but above all it represents a symbol of development and growth that motivates us to continue innovating and promote Panama as a powerhouse of the industry' states Heilbron. They will operate on the airlines longest routes, starting with San-Francisco in December 2019. Therefore, this is called the start of the 'Max-era', according to Copa. The overall fleet plan shows that over the coming years the number of Boeing MAX's will increase rapidly. Whereas this number was 5 for the year 2018, it will be 13 in 2019 and 22 in 2020.¹¹

¹⁰ Flight Airline Business, October 2018

¹¹ [Copa Airlines](#)

¹² [Copa Airlines](#)

MRO Hangar

Furthermore, the airline is currently constructing a new MRO (Maintenance, Repair and Overhaul) hangar. This will be the only one of its kind in Panama. The MRO hangar, that needed an investment of more than **USD 15 million**, will provide Copa with the capability to carry out major maintenance work simultaneously on three of the airline's Boeing 737 and Embraer 190 aircrafts. Besides, the hangar will also include a warehouse, parts storage areas and large meeting rooms for trainings. However, the company is not planning to serve other operators. Copa rather leverages the new hangar to keep more work in-house. Work that Copa used to do outside of Panama.¹²

Joint Business Agreement between Copa, Avianca and United Airlines

The signing of a Joint Business Agreement (JBA) between Copa, the Colombian Avianca and the American United Airlines in November 2018 proves to be another interesting development. When the JBA goes into force, it will mean that Copa, Avianca and United integrate their complementary Latin America – U.S. network into a collaborative revenue-sharing joint business. In other words, it will allow the airlines to operate as if it is a single airline. It is estimated that the JBA will probably take effect in the second half of 2020.¹³ The Dutch/French Air France-KLM also has a close relationship with Copa. For example, in 2016 a new code-share agreement went into force. This means that customers of the Air France-KLM group can fly towards Guatemala City (Guatemala), Managua (Nicaragua) and Tegucigalpa (Honduras). They are transferred onto a Copa Airplane in Panama to reach their destination.¹⁴ Furthermore, in 2018 **KLM celebrated the tenth birthday of the route Amsterdam-Panama City**. Whereas KLM started out with three flights a week, they now have a daily flight to Panama.

¹³ [Flight Global](#)

¹⁴ [Aviation Tribune](#)

Wingo

Yet another promising announcement was the launch of Copa's own Low Cost Carrier (LLC) Wingo in 2016. Currently Wingo has a four-airplane fleet, 'but they have the support of a 100-plus aircraft operation' states Pedro Heilbron. At this moment Heilbron is very pleased with the Bogota based Wingo. He stresses that 'Wingo is performing better than expected. It hasn't grown ... but it's consolidating its position in the markets it serves'. Figures provided by the Colombian civil aviation regulator Aerocivil show that after their first year (2016) starting with a loss of USD 16.8 million, Wingo reported an operating profit of USD 2,42 million over 2017. Preliminary statistics on 2018 show that this growth is continuing with a 18 percent rise in ticket sales and a 21 percent rise in the amount of passengers that were handled by Wingo. The total amount of passengers served will be around 1,8 million in 2018. Promising as well, is that Wingo will present its ambitious **expansion plan during the beginning of 2019**.¹⁵

III.II Air Panama

Air Panama is the most important operator regarding domestic flights. **The company handled more than 69 percent of the available domestic seats in 2017**. This roughly translates to a domestic passenger traffic of 345.000 persons (2017). The rest of the domestic seat capacity is handled by Copa. Air Panama has 600 employees and its main airport within Panama is the Marcos A. Gelabert. The company has a 18 airplane-fleet, most of them being charter airplanes. Only their Boeing 737-300 and their Fokker 100's have a capacity of 100 passengers or more. Air Panama's most important domestic destinations are Bocas del Toro and David. Furthermore, they augmented the number of flight towards Bocas del Toro from 3 to 4 flights during the week and from 5 to 6 during the weekends in 2017. This required an investment of USD 5 million.¹⁶

¹⁵ [La Estrella de Panamá](#)

¹⁶ [El Capital Financiero](#)

¹⁷ [Arecoa.com](#)

The company operates internationally as well. Air Panama has regular flights towards Medellin, Cartagena (located in Colombia) and San José (Costa Rica). Moreover, in recent years the company tried to expand the number of destinations. For example, Air Panama is currently looking into flying towards the Dominican Republic and has completed the first ever direct flight between Panama City and Santa Marta (Colombia) on October 30, 2018.¹⁷ The latter experiment resulted in several charter flights between the Panamanian capital and the Colombian city, but Air Panama expressed the ambition to let the route operate regularly for 2 to 3 times per week.¹⁸ Less positive is the announcement of Air Panama that it will stop its flights towards Armenia (Colombia) from 1 February 2019 onwards. This measurement was taken 'only and exclusively because of administrative reason', stated Air Panama.¹⁹

IV. Challenges

Challenges for the Tocumen International Airport

Although the abovementioned developments show a relatively positive image of the Panamanian aviation sector, several challenges to fully grasp the opportunities remain. A good starting point for addressing these challenges is provided by the Vice-President of Strategy and Planification of Tocumen, Carmen de Pagés. During an event organized by the Asociación Panameña de Ejecutivos de Empresa (APEDE) in September 2018. De Pagés summed up the four main challenges for the Tocumen International Airport; the first challenge is the successful and in-time opening of the new terminal of the airport. A delay in the completion of the construction will mean a slowdown of the growth of the airport. The first test will be provided by the visit of Pope Francis during the *Jornada Mundial de la Juventud* in January. During this event Tocumen will temporarily open 5 of its new gates. Thereafter, full operations will start by mid-2019.

¹⁸ [La Estrella de Panamá](#)

¹⁹ [Caracol.com](#)

Secondly, De Pagés stressed that Tocumen needs to remain efficient. Currently the airport is doing well in this respect. For example, the cost per passenger for the year 2017 was relatively low. Namely, USD 12,95 compared to the world average of USD 15,50. Also, as discussed, Tocumen presents excellent figures in terms of punctuality. This is one of the reasons why **the airport has won the Skytrax Price for best Airport in Central-America and the Caribbean seven times in a row**. However, de Pagés emphasizes that the Tocumen airport has to continue its investments in order to remain ahead of the competition in the region. The third challenge is the construction and successful opening of the earlier mentioned Logistics Zone. This Logistics Zone needs to strengthen the position of Panama as the main logistics hub in the region. The last challenge that was stressed by De Pagés is the challenge to make the regional airports profitable. In this vein, investments in logistics are essential. The aforementioned investments in the Panama Pacífico Airport and the construction of the fourth bridge over the Panama Canal show that Tocumen S.A. and the Panamanian government are trying to address this challenge.²⁰

New Government

An overarching challenge is the presidential elections that are planned for May 2019. As was made clear, the majority of the challenges need government investments to be overcome. Whereas the Varela administration (2014-2019) invested heavily in the Panamanian logistics sector, it remains to be seen if the next administration will do the same. A good sign is the establishment of the **National Logistics Strategy (ENL) of Panama 2030**. This document was developed by the Logistics Cabinet through a cooperation between the private and public sector.²¹ According to Demóstenes Pérez, former president of National Logistics Advisory (COEL), this document can be considered as the road map for the national logistics strategy until 2030. Furthermore, the ENL can be presented to new governments in order to let them understand the importance of current developments in the logistics sector and the need for

further investments.²² On the other hand, the new government is able to appoint the complete ministerial body and will bring its own ideas. Therefore, it is not guaranteed that the new government will continue the policy that was set in motion under the current administration. However, the growing acknowledgment of this challenge and the actions that the private sector already undertook provides a good prospect regarding this issue.

V. Further Opportunities for Dutch Businesses

Table 5: Upcoming business opportunities

Project	Value (USD)
Expansion Panama Pacífico	60 million
Multimodal Zone Tocumen	First phase: 14 million Second phase (projected): 18 million
Third Runway Tocumen	TBA
Fuel supply Tocumen International Airport	TBA
Flood Prevention	TBA
Enrique Malek International Airport	3 million

General Government Investments

In order for the Panamanian aviation sector to grow even further several big investments are planned in the near future. One of the investments that is necessary for further growth is the redesign of the airspace. The tender for this project is already closed for proposals and the tendering process is in its final phase. It has a value of USD 8 million and once completed, the redesign of the airspace will result in a fifty percent increase in the amount of airplanes that can be handled per hour in Panama. Whereas, this amount is currently 40 airplanes per

²⁰ Carmen de Pagés during a presentation about the Logistics Zone of Tocumen, November 2018

²¹ Read the complete document [here](#)

²² [Government of the Republic of Panama](#)

hour, it will be 60 airplanes per hour.²³ This figure will be elevated even further through the construction of a **third runway at the Tocumen International Airport**. When finalized, the maximum amount of airplanes handled per hour will grow towards 100. The current ambition of Tocumen is to complete the project before 2025. However, before a tender can be published, Tocumen needs to secure the land where the third runway is to be built. Therefore it is expected that the tender will be opened late 2019 or 2020.

The earlier mentioned construction of the Multimodal Zone also offer opportunities for Dutch companies. **Whereas phase 1a of the project will be completed by the end of 2019, phase 1b and phase 2 will follow.** These phases will include the further expansion of the Logistics Zone and the modernization of the Cargo Terminal. Other investment opportunities are provided by the earlier mentioned **expansion plans of the Panama Pacífico International Airport**. The complete expansion has an initial investment of USD 60 million. A tender for the increase of the storage of combustibles with a value of USD 1.5 million will be published in 2019. Further information about the tenders for a new passenger terminal, an airport apron and the purchase of buses is not yet made public. However, it is expected that high value tenders regarding these projects will be set out the coming years.

Fuel Supply

Another possible opportunity is related to the fuel supply towards the Tocumen International Airport. **Daily, 100 tanker trucks filled with fuel travel from Colón towards the airport to supply the airplanes.** This form of supply already causes problems for Tocumen, as the unloading of these trucks results in major traffic jams. As Tocumen projects that the usage of combustibles will only grow the coming years, the airport is trying to supply the combustibles without the use of tanker trucks. During a visit of a ministerial delegation of Panama to the Netherlands in 2018, then General Manager of Tocumen, S.A. Carlos Duboy spoke with a delegation of Schiphol Airport.²⁴

²³ [La Prensa](#)

²⁴ [Tocumen International Airport](#)

This meeting was held in the light of **the failed attempt to construct an oil pipeline**, that was meant to provide the airport with fuel. The approval of this plan was revoked in early 2018, because several environmental groups emphasized that the construction of the oil pipeline was not in line with environmental rules. Tocumen still has the ambition to find a solution on the growing problem of the supply of combustibles, which is now being done by fuel trucks through densely populated communities. However, all stakeholders (private sector, government and environmental groups) need to discuss the issue before a decision can be taken.²⁵ **Duboy stated that they hope to revise the plan with the help of Schiphol Airport.**

Flood Prevention

Climate change poses some serious challenges for the Panamanian economy and the aviation sector. One of the main challenges is the increasing amount of floods due to the growing number of tropical storms and heavy rainfall. To overcome these challenges some serious investments are needed. Furthermore, in the words of María Chávez of the *Red Ciudadana Urbana* (Urban Citizens Network), there is a lack of an integral plan regarding these floods. A clear example was the flooding of the Colón Free Zone and its surrounding roads during November 2018. These and similar floods disrupt commercial activities and threaten the ambitions of Panama in relation to becoming *the* logistics-hub of the Americas. Flooding from the sea may pose similar challenges in the near future for the aviation sector in specific. **Although the Tocumen International Airport is protected of floods by a mangrove belt, this belt is increasingly being destructed.**²⁶ In fact, one of the reasons the oil pipeline project fell through was because it would have harmed the mangrove belt.

Another earlier mentioned and essential project for the growth of Tocumen International Airport, is the construction of the third runway. However, the construction of this third runway would also have a negative impact on parts of

²⁵ [La Prensa](#)

²⁶ [La Prensa](#)

the mangroves. The Panamanian government proved to be interested in the Dutch know-how in this regard to overcome this problem. Namely, in January 2018 Deltares and Wetlands joined a meeting with President Juan-Carlos Varela, where he welcomed the proposal to extend their Building with Nature program. Furthermore, former General Manager of Tocumen S.A. Carlos Duboy, '**requested support from the Dutch water sector to enable sustainable, flood resilient expansion**'.

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