Balancing Growth: Tourism, Nature, and Heritage on Bonaire

Study into the impact of tourism on Bonaire

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BONHATA
BONAIRE HOTEL AND TOURISM ASSOCIATION

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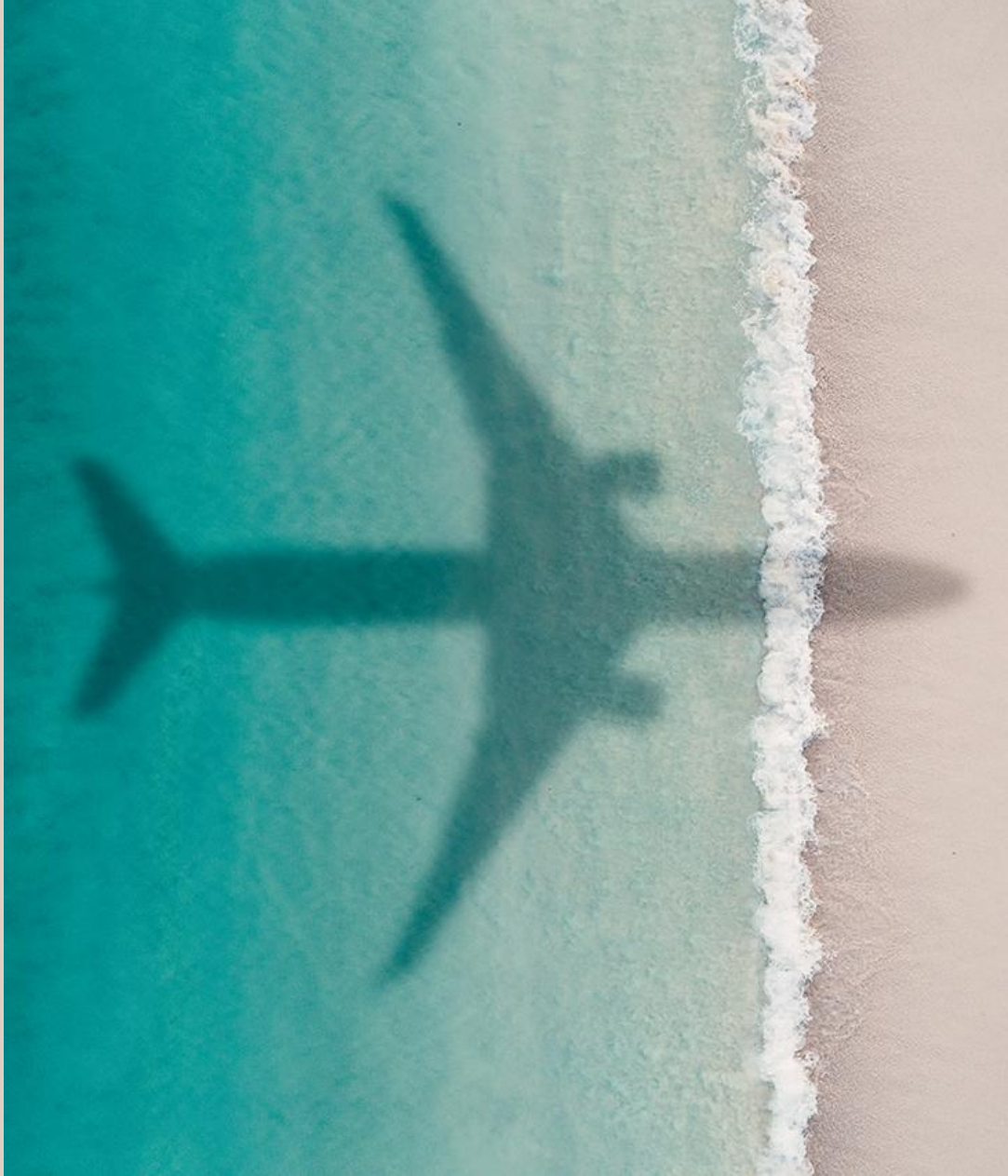
Conclusions

Tourism is the most important economic pillar for Bonaire and contributes 50 percent to the GDP. The majority of the population of Bonaire recognizes tourism's importance for economic development. Currently, tourism also has negative environmental and social effects. For a sustainable future development of tourism, nature and cultural conservation and tourism development must go hand in hand. Sectors in which Bonaire can diversify are agriculture, blue economy and the financial sector.

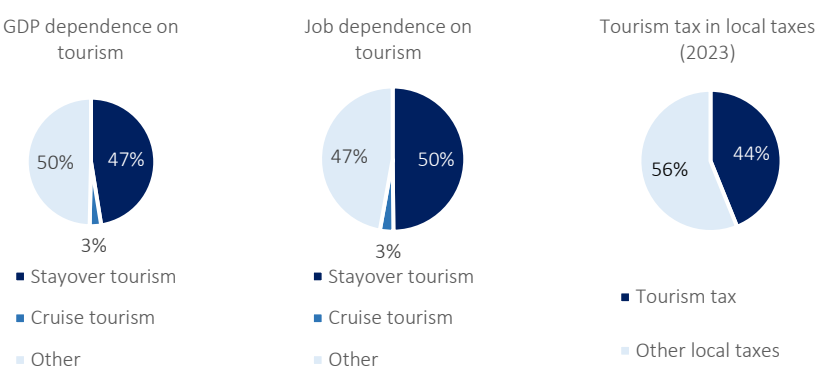


Conclusion

Tourism is Bonaire's most important economic pillar. The sector provides half of Bonaire's national income, more than half of the jobs on the island, and is a significant source of revenues for the local government. A healthy tourism sector is therefore crucial for future prosperity, for household employment and income, and for public finances. At the same time, it is essential that the further development of tourism does not come at the expense of, but goes hand in hand with, the protection and preservation of Bonaire's natural environment and unique culture. Scenarios for tourism development that can support this aim are those focused on increasing the occupancy rate of the island's existing tourism infrastructure for stayover visitors, and on attracting affluent tourists. This would represent a controlled development of tourism and a healthy sector that can coexist with the conservation of the island's nature and cultural heritage.

Economic impact of tourism

Figure 1 Tourism generates roughly half of GDP and employment on Bonaire and 44 percent of local tax revenues.



Source: Economic Bureau Amsterdam (2025).

Tourism is the largest contributor to Bonaire's economy and generates approximately half of Bonaire's gross domestic product (GDP) and employment. There are an estimated 7,200 tourism-dependent jobs on Bonaire. Moreover, the Visitor Entry Tax accounts for 44 percent of local tax revenues.

The estimates include both direct and indirect tourism expenditure. Direct expenditure consists of spending by stayover and cruise tourists, airport and port fees and services, and tourist tax. Indirect expenditure consists of the supplies to the businesses that directly provide services to tourists. Imports have been subtracted from the estimate that tourism accounts for 50 percent of GDP.

The estimate of 50 percent of GDP falls in the range of previous estimates of the impact of tourism. The relation between direct and indirect tourism expenditure is also similar to that on Aruba and Curaçao.

The majority of Bonaire's residents recognize the economic importance of tourism, such as for job creation and increased sales. There is a general consensus that tourism should continue to grow to support the island's economic development.

Future tourism growth in Bonaire can be achieved in mild or drastic growth paths. If Bonaire merely increases the occupancy of existing hotels, attracts more affluent visitors, or focuses more on the North American than the (European) Dutch market, Bonaire can generate moderate growth that puts limited additional pressure on Bonaire's carrying capacity. Conversely, when Bonaire's tourism arrivals would grow to the levels of Bonaire's neighboring islands, this would have far-reaching consequences for the island. A fallback to the tourism levels of 2012 would have long term detrimental economic effects.

Environmental and social impacts

It is key that the development of tourism does not come at the expense of Bonaire's nature and unique culture. These characteristics play an important role in attracting tourists to the island. Bonaire's natural resources and local culture should be central

to both tourism development and economic diversification strategies. Preserving these assets is essential to avoid low-quality mass tourism and to maintain the island's long-term earning potential.

Tourism on Bonaire exerts both direct and indirect pressure on the environment. Direct effects include the physical damage tourists cause to natural sites, such as trampling seagrass. Cruise tourism, in particular, places high pressure on national parks by bringing large numbers of tourists in short periods. Urbanization, although largely driven by immigration and population growth, also harms ecosystems, especially mangrove forests. Additionally, the tourism sector contributes to carbon emissions through the cruise and aviation industries, exacerbating climate change, which is particularly harmful to Bonaire.

The rapid increase in tourism is straining Bonaire's housing market and infrastructure. Housing shortages are worsened by tourism, with a significant portion of residences being used for short-term rentals. Immigration from high-income regions contributes to demand as well. This influx has also led to cultural segregation and the weakening of community ties. The growing population and tourist numbers have also led to traffic congestion and overcrowded public spaces.

While the majority of Bonaire's residents recognize the economic benefits of tourism, they also acknowledge its negative side. Issues like rising housing costs, traffic congestion, and environmental degradation are cited as key concerns. A significant number of locals believe that tourism negatively impacts the housing market and nature on the island. 51 percent of respondents prioritize nature conservation over economic growth. However, Bonaire-born residents are less critical on tourism than immigrants from the European Netherlands.

Tourism and economic diversification strategy

Tourism is not the only economic pillar of Bonaire's economy, since the public sector (public administration, education, and healthcare) drives GDP and employment as well. The economy's diversification has often been overlooked. Although specialization helps realize economies of scale, diversification may help reduce economic vulnerability. To diversify the economy, it is key to create the right conditions to support emerging industries, such as a functioning labor market, access to capital, and a favorable business climate.

Agriculture, the blue economy and the financial sector are the most promising pathways for diversification. Building an agriculture and fishing industry will make Bonaire less dependent on imports and improve Bonaire's self-sufficiency and resilience to external shocks. The development of the blue economy, where marine resources are sustainably used, will impact the agriculture, fisheries, hospitality, culture, business services, and trade industries. Bonaire's financial sector could benefit from the Dutch regulatory and legal systems and its strong ICT infrastructure.

1. Introduction

In order to develop a vision on the development of tourism on Bonaire, there is a need to know the current importance of tourism for Bonaire's economy. Other research questions regard diversification of the economy, the negative social and environmental impacts of tourism and the consequences of a slowdown in tourism.

In order to map out a sustainable and high-value trajectory for tourism, there is a need to know the impact of tourism on Bonaire

There is a need for a strategic plan for the development of tourism on Bonaire. There is increasing debate about the direction tourism should take as tourism has grown rapidly over the past decade: whereas Bonaire had 127,600 stayover visitors in 2012, this number increased to 182,200 in 2024.[2]

For this reason, an estimate of the impact of tourism on Bonaire is needed. This estimate can serve as an objective basis to help guide investments and public policy in such a way that they create sustainable and high-value trajectory for Bonaire and its tourism industry.

The main research question concerns the economic impact of tourism, but the broader impact of tourism and diversification of the economy are discussed as well

For this reason, the Bonaire Hotel and Tourism Association (BONHATA) has commissioned Economic Bureau Amsterdam (EBA) to study the impact of tourism on Bonaire.

The main, central research question is:

1. What is the impact of tourism on the economy of Bonaire?
    a. What does the tourism sector in Bonaire look like in terms of key figures (stay-over, cruise, origin, spending, etc.)?
    b. What are the direct effects of tourism on the economy of Bonaire?
    c. What are the indirect effects of tourism on the economy of Bonaire?
    d. What is the overall contribution of tourism to Bonaire's GDP?
    e. How much (direct and indirect) employment does tourism account for?
    f. How much tax revenues does tourism generate?
    g. How are the economic effects of tourism distributed amongst different stakeholders?

The objective is to answer the main research questions quantitatively.

In addition to this main research question, the economic impact study aims to answer the following questions:

2. How plausible is short term diversification of the economy of Bonaire?
3. What are the negative environmental and social impacts of tourism on Bonaire?
4. What would be the consequences if the growth of value added generated by the tourism sector would slow down or diminish?

The research questions 2 and 3 are answered qualitatively. The answers are based on a literature study and interviews with stakeholders. Research question 4 is part of the quantitative analysis.

[2] 2023 amount: CBS Statistics Netherlands (2024, May 17).
2024 amount: Information retrieved from the Tourist Corporation Bonaire.

2. Economic impact of tourism

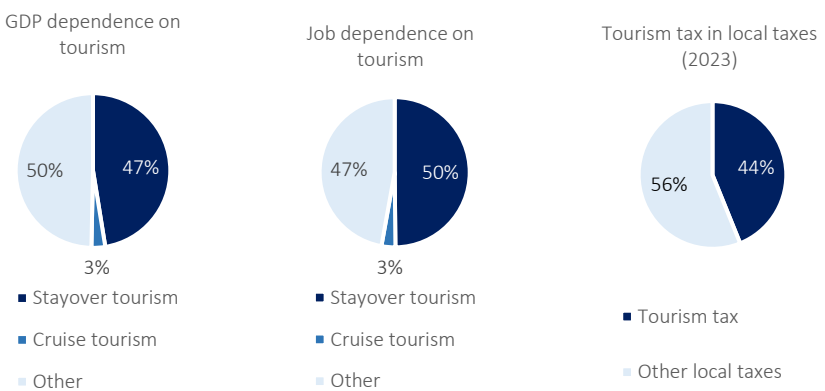
Tourism constitutes about half of Bonaire's tourism and jobs. Moreover, 44 percent of local tax revenues consists of the Visitor Entry Tax. Additional tourism growth can be generated without expanding hotel capacity if the occupancy of existing hotels is increased, if more affluent visitors are attracted, or if more North Americans are attracted instead of (European) Dutch visitors.

The current economic impact of tourism

Half of Bonaire's economic activities is generated by tourism

Tourist spending is estimated to comprise 50 percent of GDP on Bonaire in 2024, which means that value added by tourism is about $ 372 million. Moreover, tourist spending creates an estimated 7,200 jobs (53 percent of total employment). In both cases, stayover tourism is the most important contributor. In 2023, the Visitor Entry Tax was equivalent to 44 percent of local taxes. Other local taxes include, among others, vehicle tax and property tax. Central government taxes (such expenditure tax and wage tax) are not considered, however, given its economic importance tourism is expected to be a major contributor to income taxes and expenditure tax (ABB) as well.

Figure 2 Tourism gene rates roughly half of GDP and employment on Bonaire and 44 percent of local tax revenues.



Source: Economic Bureau Amsterdam (2025).

Tourism has become increasingly important to Bonaire's economy in recent years. For example, the amount of stayover visitors increased from 148 thousand in 2018 to 182 thousand in 2024. The Visitor Entry Tax yielded $ 15.0 million in 2023, whereas its predecessors (room tax and car rental tax) yielded $ 4.3 million in 2018.

Approximately half of the value added by tourism consists of employee compensation

The major part of the value added in tourism consists of employee compensation. $ 186 million out of the value added of $ 372 million is paid to or in behalf of employees as wages, salaries and social contributions. Profits generated by tourism amount to $ 109 million and the remainder of the value added consists of so-called 'consumption of fixed capital'. The Visitor Entry Tax generates approximately $ 15 million.

Figure 3 The major part of value added generated by tourism is paid for the benefit of employees.

Source: Economic Bureau Amsterdam (2025).

The tourism impact is directly generated by tourist spending and indirectly due to supplies within the economy

The estimates of the economic impact of tourism includes both direct and indirect tourist spending:

- Direct spending: About two-thirds of the impact of tourism is generated by spending directly to Bonaire's businesses and government. This includes:

  - Spending by stayover tourists: Stayover tourists spend money on hotels, food, shopping, activities, etc. Stayover tourists are any visitors that are not residents of Bonaire and arrive by plane.
  - Airport charges: Airlines pay charges to Bonaire International Airport.
  - Spending by cruise tourists: Cruise tourists coming ashore spend money on shopping, activities, etc.
  - Port fees and services: Cruises make payments to the harbor and pay for other maritime services.
  - Tourist tax: Bonaire has had a Visitor Entry Tax since Mid-2022. The rates are $ 10 for cruise ship visitors and $ 75 for most stayover tourists.
- Indirect spending: Tourist payments to businesses cause a multiplier effect in Bonaire's economy. For example, when a tourist spends money in a restaurant, this restaurant also needs utilities and supplies from a wholesaler. The wholesaler and the utilities company will need supplies as well, as do their suppliers. In this way, a dollar's worth on tourist spending is spent more than once. The analysis takes these indirect effects into account as well. Indirect spending is estimated at $ 0.51 for every dollar of direct spending, implying a multiplier of 1.51.

Besides tourism, the public sector is another important economic pillar: the public administration, health and education sectors accounts for 28 percent of gross value added.[3]

The estimate of 50 percent of GDP should not be interpreted in terms of international trade and should not be confused with the share of tourism in total exports, which may be a higher figure than 50 percent.

Box: Economic impact results from Input Output Analysis

The indirect effects of tourist spending are calculated using input output analysis. In this method, an input output table (IOT) is constructed with inputs on one axis and outputs on the other. The inputs axis shows to whom the economy's production is paid and breaks it down to intermediate production by industry, imports, taxes on products and gross value added. The output axis shows how the economy's production is consumed and breaks it down to intermediate production by industry, exports, consumption by government and households, investments and inventory changes. In input output analysis, this table is used to calculate the multiplier effect of a dollar's worth of tourist spending (output) throughout the economy (the inputs).

This study's IOT is based on supply and use tables from 2004 and then updated based on the latest GDP data. However, changes in the structure of the economy since 2004 are not taken into account. This is problematic, as the constitutional reforms of 2010 have led to significant changes in the public sector.[4] For this reason, it is recommended that the CBS compile a new input output table for Bonaire to improve the reliability of economic impact analyses. A technical description of the compilation of the IOT and its update is in Appendix A.

A limitation of input output analysis is that it is a linear model, not taking into account economies of scale, substitution between different inputs, supply restrictions ('crowding out') and heterogeneity among firms in an industry.[5] In this study, this assumption implies , for example, that economies of scale in terms of employment are not taken into account when hotels increase their occupancy.

Imports are subtracted from the tourism value added

The value added of tourism consists of employee compensation, profits, and taxes less subsidies on products, and import are subtracted. This means that the income generated does not flow abroad. However, there is no data on where the money is spent. For example, it is unknown whether profits are reinvested on Bonaire, saved, or transferred to other countries. The same applies to wages and consumption.

Scenarios for tourism development and their impact

There are different paths possible for tourism to develop on Bonaire. These all differ in their consequences in terms of numbers of tourists, hotel occupancy and economic impact, among others. This section presents these scenarios and their impact. It

[3] CBS Statistics Netherlands (2024, September 26).
[4] Wolfs et al. (2015).
[5] Wolfs et al. (2015).

should be noted that these scenarios may not all be easy or realistic to realize. This report does not address the question which scenarios are feasible nor does it conclude which scenario is desirable. It only presents the economic impact of each scenario.

Scenario 1 'Baseline'- The economy becomes less reliant on tourism in the baseline (status quo) scenario

The baseline scenario is the status quo. In this scenario, nothing changes in terms of tourism: spending only grows proportionally to inflation and the numbers of tourists are equal to those in 2024.

The table below summarizes Bonaire's tourism sector in 2024. The largest group of stayover tourists are those from the European Netherlands, followed by North Americans. However, North Americans spend more during a shorter stay. North and Latin Americans are most likely to stay in hotels or resorts. Cruise passengers spend less on Bonaire per day than stayover tourists.

The revenue per available room (RevPar) is lower on Bonaire than on certain other islands in the region. Bonaire had a RevPar of $ 140 in 2024 ($ 131 in 2023),[6] whereas Aruba and Curaçao had a RevPar of $ 266 and $ 162, respectively, in 2023.[7]

Table 1 American stayover tourists spend most on each day of their stay on Bonaire. The numbers on expenditure are indexed to 2024 price levels and the numbers of crew members and disembarking passengers on cruises are estimates based on previous years.

Type of visitor	Origin	Number of visitors	Spending per visitor	Nights per visitor	% in hotels
Stayover visitors	Dutch Caribbean	28,611	$1,180	4.3	48%
	(European) Netherlands	82,286	$2,450	12.0	54%
	North America	51,259	$2,673	8.2	63%
	Latin America	3,009	$1,677	15.5	65%
	Other	17,018	$2,587	10.9	49%
Cruise visitors (Disembarked)	Passengers	358,500 (295,403)	$ 74	-	-
	Crew members	130,362 (39,633)	$ 46	-	-

Source: Economic Bureau Amsterdam (2025). See Appendix A for further sources and assumptions.

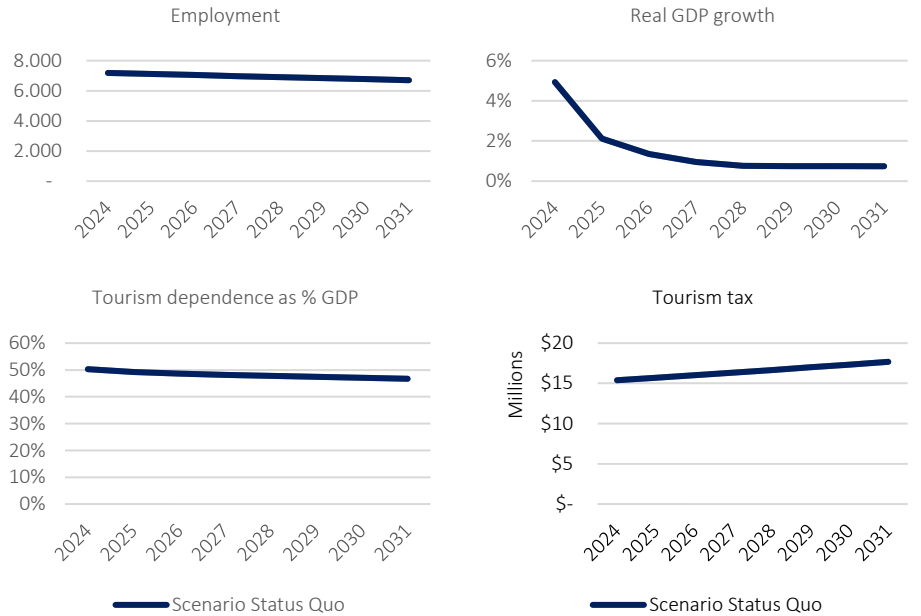
The Figure below shows the major economic indicators in this scenario. The various indicators change over time due to several assumptions:

- Increasing labor productivity: Tourism employment is expected to decline due to increasing labor productivity. The labor productivity increase is assumed to be 1 percent annually. Increasing labor productivity is the result of developments such as labor-saving technologies. In scenario analyses as these, it is common to assume moderate increases in labor productivity.
- Population growth: The share of the economy not generated by tourism is assumed to grow proportionally to the population. The population grew by 4.3 percent in 2024.[8] Between 2025 and 2031, population growth is expected to decline from 4.2% to 1.4% annually.[9] This causes GDP growth from 2025 onwards to be positive and the share of tourism in GDP to decline, even though there is no tourism growth.

[6] Based on information provided by BONHATA.
[7] Aruba Tourism Authority (2024); Curaçao Tourist Board (2024).
[8] CBS Statistics Netherlands (2024, June 10).
[9] CBS Statistics Netherlands (2024, July 25).

- Growth 2024: Although the baseline scenario assumes no tourism growth after 2024, tourism value added grew in 2024 compared to 2023. This growth is caused by the 6.5-percent increase in the number of stayover tourists.[10] Meanwhile, the number of cruise visitors declined by 8.6 percent.[11]
- Inflation: The tourism tax is assumed to increase with inflation. An inflation rate of 2 percent per year is assumed.

Figure 4 In a status quo scenario, the economy becomes relatively less dependent on tourism.



	2024	2025	2026	2027	2028	2029	2030	2031
Employment	7,187	7,116	7,046	6,976	6,907	6,838	6,771	6,704
Real GDP growth	4.9%	2.1%	1.4%	1.0%	0.8%	0.8%	0.7%	0.7%
Tourism as % GDP	50%	49%	49%	48%	48%	47%	47%	47%
Tourism tax	$ 15 M	$ 16 M	$ 16 M	$ 16 M	$ 17 M	$ 17 M	$ 17 M	$ 18 M

Source: Economic Bureau Amsterdam (2025).

[10] 2023 amount: CBS Statistics Netherlands (2024, May 17).
2024 amount: Information retrieved from the Tourist Corporation Bonaire.

[11] CBS Statistics Netherlands (2025, January 21).

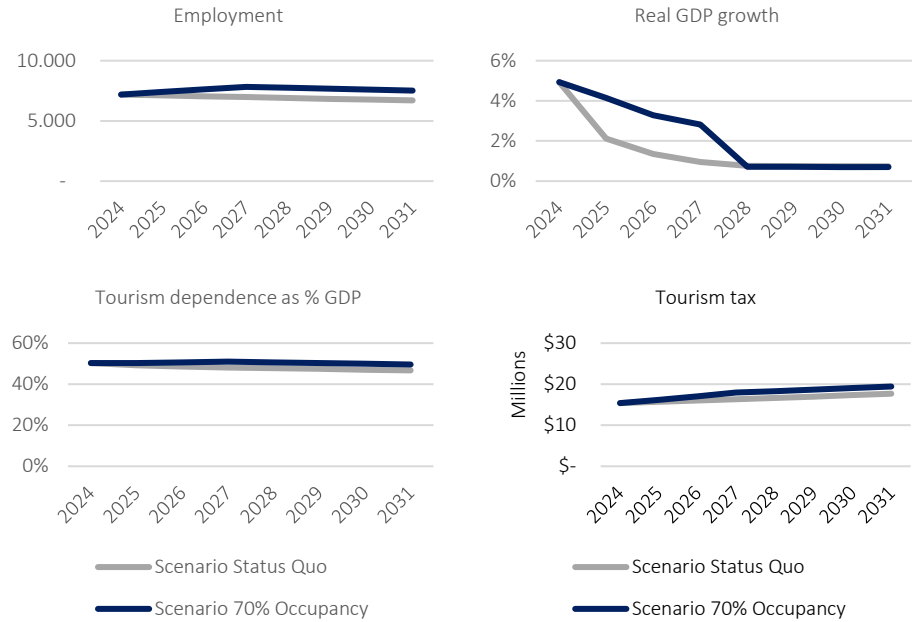
Scenario 2 '70 percent occupancy' - When hotels attain an occupancy of 70 percent, Bonaire accommodates approximately 206 thousand tourists

When the occupancy rate of existing hotels increases, Bonaire can accommodate additional tourists without expanding hotel capacity. In this scenario, the occupancy rate increases from the present 62 percent in 2024 to 70 percent by 2027. In that case, 205.690 tourists visit Bonaire. The capacity during the high season is challenging in this scenario, when the occupancy rate is higher (79 percent in February 2024). In this scenario, occupancy increases to 90 percent during high season. This is considered an absolute maximum, as hotels usually need to save about 10 percent of their capacity for maintenance. The revenue per available room is $ 20 higher in this scenario than in the status quo.

In the 70-percent occupancy rate scenario, employment grows by almost 9 percent by 2027, given the assumed increase in labor productivity. Annual GDP growth is about 1.9-2.0 percentage points higher in 2025-2027 than in the status quo and the share of tourism in GDP remains constant. Tourism tax revenues in 2031 are 10 percent higher than in the status quo.

***What stays the same**: Other types of accommodations proportionally increase their occupancy. There are no changes in the shares of visitors (by region) staying in the different kinds of accommodations. The number of visitors from each region grows by the same percentage. The regions that are distinguished are the Dutch Caribbean, the European Netherlands, North America, Latin America, and other countries. Cruise tourism and spending patterns (by region) do not change. The distribution of total stayover tourists over different seasons stays the same.*

Figure 5 In a scenario with 70 percent occupancy, tourism employment grows moderately.



	2024	2025	2026	2027	2028	2029	2030	2031
Employment	7,187	7,405	7,617	7,825	7,748	7,671	7,595	7,520
Real GDP growth	4.9%	4.1%	3.3%	2.8%	0.7%	0.7%	0.7%	0.7%
Tourism as % GDP	50%	50%	51%	51%	51%	50%	50%	50%
Tourism tax	$ 15 M	$ 16 M	$ 17 M	$ 18 M	$ 18 M	$ 19 M	$ 19 M	$ 19 M

Source: Economic Bureau Amsterdam (2025).

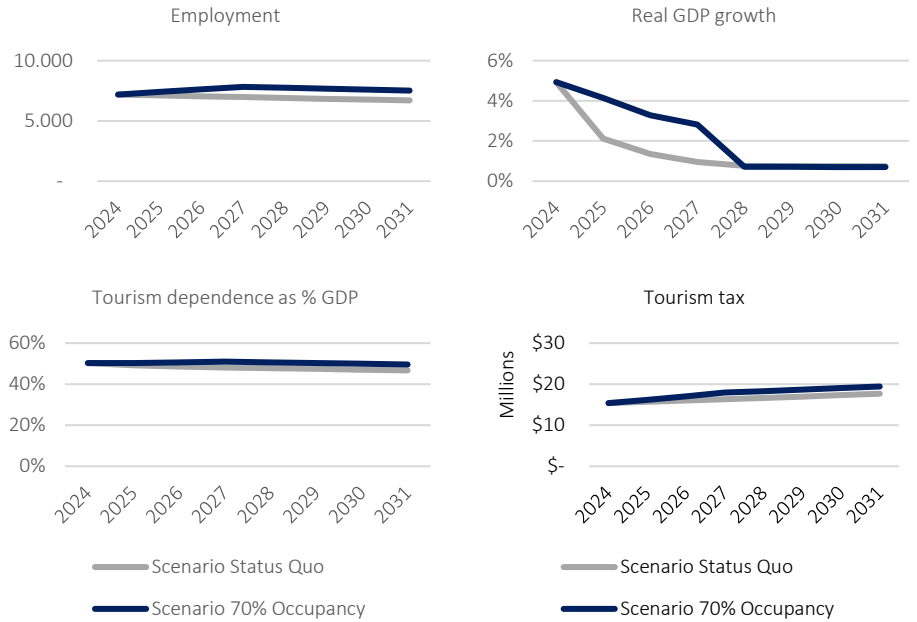
Scenario 3 'Slow growth' - The slow growth scenario allows for more economic growth than the status quo scenario

In the slow growth scenario, tourism on Bonaire only increases moderately. The number of stayover visitors gradually increases to 190,000 by 2027. This means that at the current hotel capacity, the occupancy rate of hotels will increase to 65 percent. The slow growth scenario is based on a World Bank study.[12] The World Bank study did not include cruise tourism.

In the Slow Growth scenario, tourism employment first increases. This growth evaporates in the years after due to increasing labor productivity, causing tourism employment to be lower in 2031 than in 2024. In 2025-2027, real GDP growth is higher than in the baseline scenario. In the years after, the growth rate is similar. Although tourism's share in GDP declines, it is higher than in the status quo scenario. Tourism tax revenues are slightly higher than the status quo scenario as well.

***What stays the same**: The number of visitors from each region grows by the same percentage. There are no changes in the shares of visitors (by region) staying in the different kinds of accommodations. Cruise tourism and spending patterns (by region) do not change. The distribution of total stayover tourists over different seasons stays the same.*

Figure 6 The outcomes in the Slow Growth scenario are slightly higher than in the status quo scenario.



	2024	2025	2026	2027	2028	2029	2030	2031
Employment	7,187	7,212	7,236	7,258	7,186	7,115	7,045	6,975
Real GDP growth	4.9%	2.8%	2.0%	1.6%	0.7%	0.7%	0.7%	0.7%
Tourism as % GDP	50%	50%	49%	49%	49%	48%	48%	48%
Tourism tax	$ 15 M	$ 16 M	$ 16 M	$ 17 M	$ 17 M	$ 18 M	$ 18 M	$ 18 M

Source: Economic Bureau Amsterdam (2025).

[12] Zapata et al. (2023).

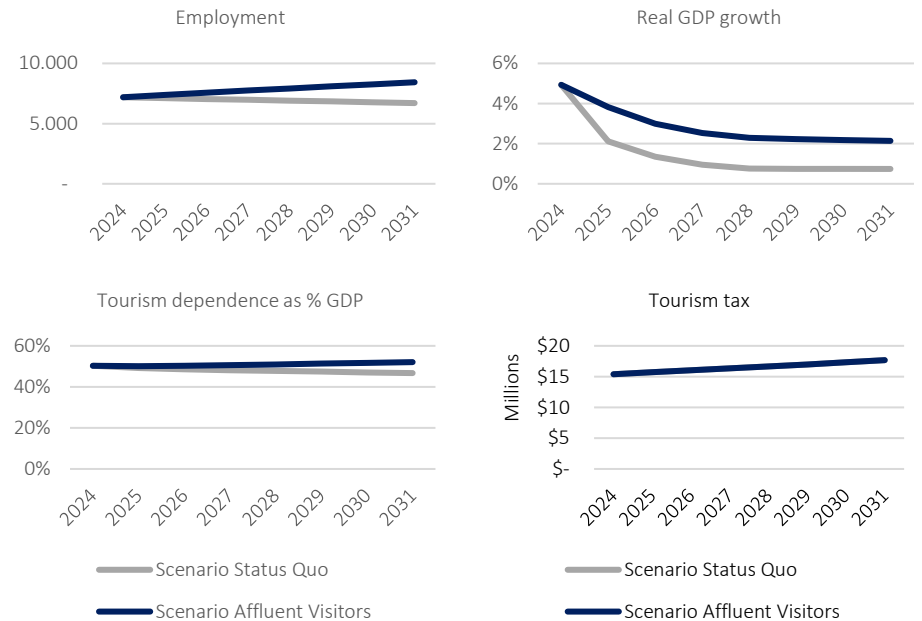
Scenario 4 'The affluent tourist' - By attracting affluent visitors, Bonaire can generate more income without putting additional pressure on the carrying capacity

If Bonaire attracts affluent visitors that spend more than Bonaire's current visitors, Bonaire's tourism industry can grow without much more pressure on Bonaire's carrying capacity. In the affluent tourist scenario, stayover tourists spend 35 percent more by 2031 in most expenditure categories. Exceptions are taxis (constant spending pattern) and groceries (70 less spending by 2035). The reason for this is that affluent tourists are assumed to prefer rental cars over taxis and use restaurants more at the expense of groceries.

The economic impact of tourism considerably increases in this scenario. Employment increases by more than 1,200 jobs, real GDP growth is about 1.5 percentage points higher than in the status quo, and tourism becomes responsible for an increasingly large part of GDP. Tourism tax revenues are equal to those in the status quo, since the Visitor Entry Tax is a fixed amount for each tourist.

***What stays the same**: There are no changes in the shares of visitors (by region) staying in the different kinds of accommodations. The number of visitors and cruise tourism do not change. The distribution of total stayover tourists over different seasons stays the same.*

Figure 7 The economic outcomes in the Affluent Visitor scenario are substantially higher than in the status quo and Slow Growth scenarios.



	2024	2025	2026	2027	2028	2029	2030	2031
Employment	7,187	7,378	7,565	7,748	7,926	8,099	8,269	8,434
Real GDP growth	4.9%	3.8%	3.0%	2.5%	2.3%	2.2%	2.2%	2.1%
Tourism as % GDP	50%	50%	50%	51%	51%	51%	52%	52%
Tourism tax	$ 15 M	$ 16 M	$ 16 M	$ 16 M	$ 17 M	$ 17 M	$ 17 M	$ 18 M

Source: Economic Bureau Amsterdam (2025).

Scenario 5 'Excessive growth' - A scenario with excessive tourism growth generates large economic revenues, but is currently not attainable

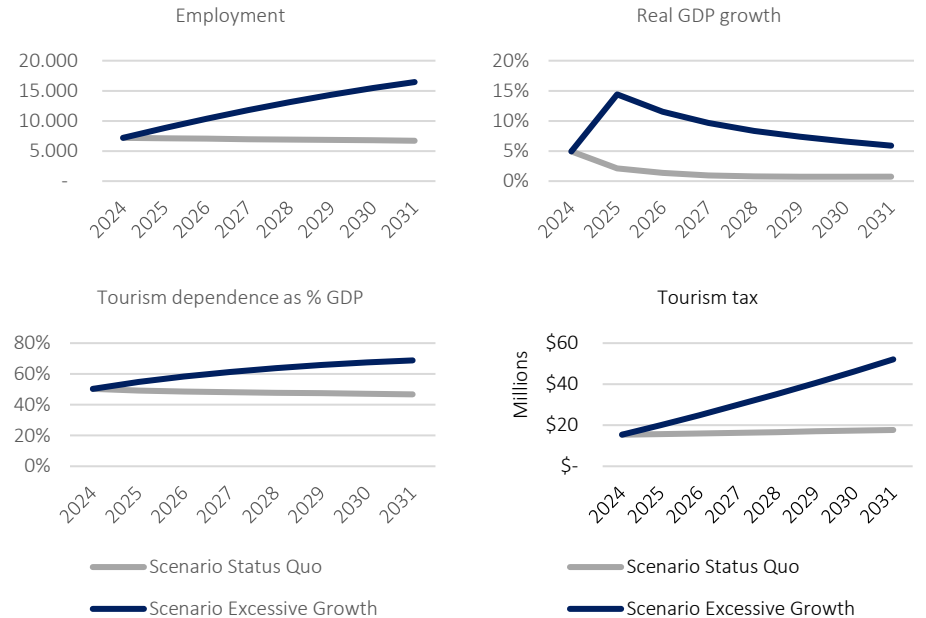
A worst-case scenario for Bonaire's carrying capacity would be when Bonaire would attract a vast number of tourists that spend less than the current visitors. In this scenario of excessive tourism growth, Bonaire accommodates about 238,000 stayover visitors from the European Netherlands, 106,000 North Americans, 65,000 Latin Americans and 81,000 other stayover visitors. Bonaire will accommodate roughly 835,000 cruise tourists in this scenario. These numbers are based on the tourism data for Curaçao in 2022 and 2024.[13] The numbers for Curaçao would be excessive in the case of Bonaire, as Bonaire has a much smaller population than Curaçao. In this scenario, there are 18 stayover tourists per capita in 2031, which is similar to the ratio on Aruba in 2019.[14]

An additional assumption in this scenario is that the stayover tourists spend 14 percent less on accommodation than the current visitors, 35 percent less on restaurants and 70 percent less on diving. As the tourists go to restaurants less often, they spend 70 percent more on groceries. The transition is completed by 2031.

The economic impact of this scenario is enormous. Tourism employment more than doubles by 2031, GDP grows between 6-14 percent annually and tourism comprises more than two-thirds of GDP in 2031. Tourism tax revenues more than triple.

Note, however, that this scenario is not attainable at this moment. At the current hotel capacity, the average occupancy rate of hotels in this scenario is 205 percent, or even 262 percent in the high season. Additionally, there is a need for about 16,500 tourism employees, while Bonaire only had 17,606 inhabitants of the age 15-65 in 2024.[15]

Figure 8 The scenario with extreme mass tourism leads to unprecedented economic growth.



	2024	2025	2026	2027	2028	2029	2030	2031
Employment	7,187	8,833	10,367	11,792	13,110	14,324	15,437	16,451
Real GDP growth	4.9%	14.4%	11.5%	9.7%	8.3%	7.4%	6.6%	5.9%
Tourism as % GDP	50%	55%	58%	61%	64%	66%	67%	69%
Tourism tax	$ 15 M	$ 20 M	$ 25 M	$ 30 M	$ 35 M	$ 41 M	$ 46 M	$ 52 M

Source: Economic Bureau Amsterdam (2025).

[13] Central Bureau of Statistics Curaçao (n.d.-a; n.d.-b).
[14] Economic Bureau Amsterdam (n.d.).
[15] CBS Statistics Netherlands (2024, December 5).

***What stays the same (Scenario 'Excessive Growth')**: There are no changes in the shares of visitors (by region) staying in the different kinds of accommodations. The distribution of total stayover tourists over different seasons stays the same.*

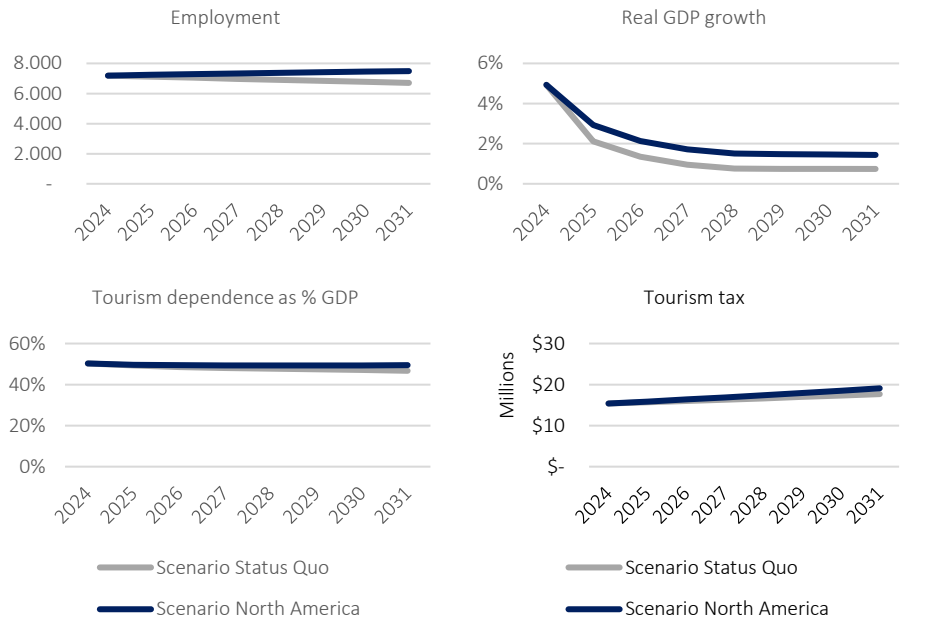
Scenario 6 'North America' - By attracting more North American visitors at the expense of Dutch visitors, more impact can be generated with the same number of tourist nights

Since North American tourists spend more per day than visitors from the other regions, Bonaire could increase economic impact by focusing on this target group. In this scenario, the number of North American stayover tourists doubles by 2031. This implies that Bonaire attracts about 51,000 additional North American stayover tourists, equivalent to one daily flight. The growth in North American stayover tourists is assumed to come at the expense of visitors from the European Netherlands. The total number of tourist nights remains constant in this scenario. This means that the number of visitors from the (European) Netherlands decreases by almost 35,000. In sum, Bonaire attracts an additional 16,000 tourists in this scenario. This growth is possible since North Americans typically spend less nights on Bonaire than Dutch tourists.

This scenario allows for additional tourism growth without additional tourist nights, only by attracting tourists from a different geographical markets. Employment is 12 percent higher in 2031 than in the status quo, real GDP growth is 0.7-0.8 percentage points higher, the tourism share in GDP remains constant and the Visitor Entry Tax revenues will be slightly higher than in the status quo scenario.

***What stays the same**: There are no changes in the shares of visitors (by region) staying in the different kinds of accommodations. Spending patterns (by region) does not change. The distribution of total stayover tourists over different seasons stays the same.*

Figure 9 The scenario with a doubling of North American visitors at the expense of Dutch tourists leads to 12 percent more employment than in the status quo and 0.7-0.8 percentage points higher real GDP growth.



	2024	2025	2026	2027	2028	2029	2030	2031
Employment	7,187	7,235	7,280	7,325	7,367	7,408	7,448	7,486
Real GDP growth	4.9%	2.9%	2.1%	1.7%	1.5%	1.5%	1.5%	1.4%
Tourism as % GDP	50%	50%	49%	49%	49%	49%	49%	49%
Tourism tax	$ 15 M	$ 16 M	$ 16 M	$ 17 M	$ 17 M	$ 18 M	$ 19 M	$ 19 M

Source: Economic Bureau Amsterdam (2025).

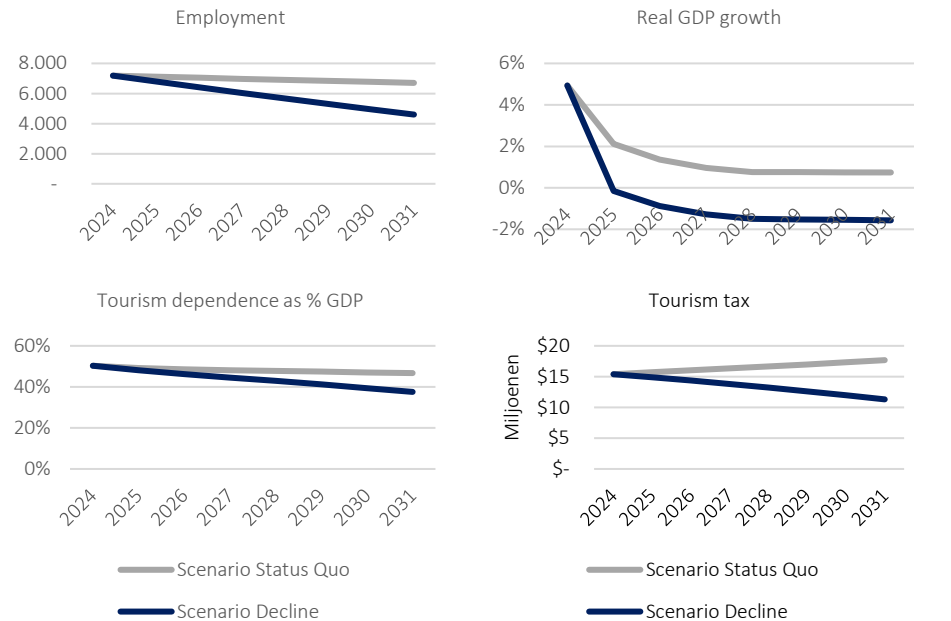
Scenario 7 'Fallback' - A tourism fallback to 2012 levels would have severe economic consequences

In the past 10 to 15 years, tourism has grown significantly on Bonaire. This scenario reveals what would happen when this growth was made undone. In this scenario, Bonaire's cruise and stayover visitors will decline until Bonaire accommodates the same amount of visitors as in 2012. This implies that at the current hotel capacity, the average occupancy of hotels will drop to 43 percent, which is not sustainable.

This scenario would cause a long-lasting economic depression. Real GDP will remain roughly constant in 2025, but will decline each year from 2026 to 2031. About 2,100 jobs will be lost relative to the baseline scenario and the relevance of tourism for Bonaire's economy will significantly decline. Tourism tax revenue falls.

***What stays the same**: There are no changes in the shares of visitors (by region) staying in the different kinds of accommodations. The number of visitors from each region declines by the same percentage. Spending patterns (by region) does not change. The distribution of total stayover tourists over different seasons stays the same.*

Figure 10 The scenario with tourism decline to 2012 levels leads to a drop in tourism employment, multiple years of economic decline and a fall in tourism tax revenues.



	2024	2025	2026	2027	2028	2029	2030	2031
Employment	7.187	6.797	6.414	6.038	5.669	5.306	4.950	4.601
Real GDP growth	4,9%	-0,1%	-0,9%	-1,3%	-1,5%	-1,5%	-1,5%	-1,6%
Tourism as % GDP	50%	48%	46%	45%	43%	41%	39%	38%
Tourism tax	$ 15 M	$ 15 M	$ 14 M	$ 14 M	$ 13 M	$ 13 M	$ 12 M	$ 11 M

Source: Economic Bureau Amsterdam (2025).

Consistency with other estimates

The estimates in this report are consistent with most other estimates on the economic value of tourism on Bonaire, but some previous estimates differ

The estimates in this report are consistent with most other previous estimates:

- Jobs similar to World Bank study: The World Bank has estimated the 'tourism job market' in 2022 at 4,925 jobs.[16] This is consistent with this study's results: the number of jobs directly created by tourist spending is estimated at 4,823 for 2022. When indirect jobs are included, this study's estimate is 6,957 in 2022. In the same World Bank study, 40 to 43 percent of respondents to a survey agreed that 'a portion of [their] income is directly or indirectly linked to the tourism industry on Bonaire'. This survey question is too broad to directly link to the results in this study.
- Chamber of Commerce estimate is familiar: The Chamber of Commerce indicated that 42 percent of companies were active in the tourism sector.[17] This is the result of a survey in 2020. Although the model in this study does not estimate the number of businesses in the tourism sector, the estimate of 42 percent is consistent to this study's estimates on the labor market. The estimate of 4,823 direct tourism jobs in 2022 is equivalent to 40 percent of the 12,170 jobs in that year.[18]
- Higher direct impact than Strategic Masterplan 2017, lower than Recovery plan: The 2017 Strategic Tourism Masterplan estimated that direct tourist spending was about $ 229 million, or 20 percent of GDP and 25 percent of jobs.[19] When the $ 229 million estimate is inflated with stayover arrivals and inflation, this figure is $ 394 million in 2024. This is somewhat lower than this study's estimate that (cruise and stayover) tourist expenditure is $ 447 million. This study estimated that the total impact of tourism on GDP is 50 percent, of which 30 percent is a direct impact. Remarkedly, the Tourism Recovery Plan from 2021 states that the direct impact on GDP was 30 percent in 2017 (rather than the 20 percent mentioned in the Masterplan), and that the total impact is 80 percent.[20]
- Higher than State Committee Demographic Developments: The State Committee Demographic Developments Caribbean Netherlands 2050 states that 23 percent of employment is related to tourism and 30 percent of GDP is directly or indirectly generated by tourism.[21] Those estimates are lower than the estimates in this study. However, the State Committee's estimate is dated, as it is based on a publication from 2020 and does not include all tourism activities and indirect effects.[22]
- Higher than TCB estimate: The Tourism Corporation Bonaire (TCB) stated in a press release that "Tourism contributes a substantial 40% to Bonaire's GDP".[23] The press release does not mention the justification of this estimate, but the present study estimates the total effect of tourism for 2024 at 50 percent of GDP.
- Lower than cruise destination report: According to a report commissioned by the Florida-Caribbean Cruise Association, cruise tourism directly created 352 jobs and 627 jobs in total in 2023-2024.[24] The estimates in the present study are a bit more conservative: for 2023, the direct and total amount of jobs created by cruise tourism are estimated at 309 and 444, respectively.

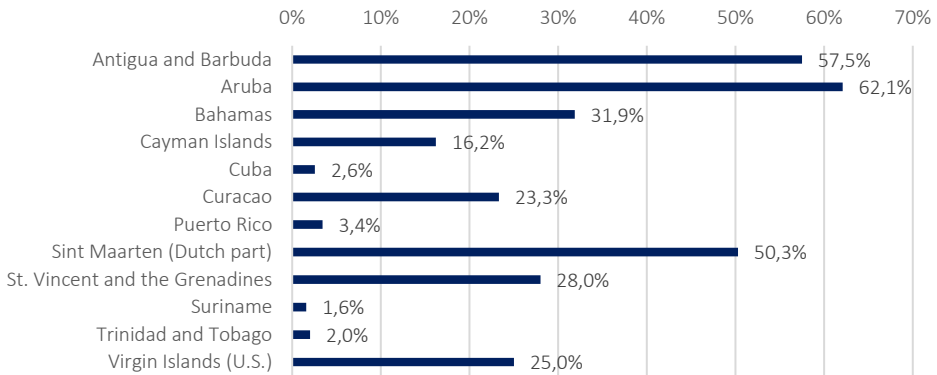
Bonaire belongs to the most tourism-dependent islands and countries in the region

Compared to the rest of the region, Bonaire is relatively dependent on tourism. This follows from a comparison of the ratio of total direct tourist spending (including cost of sales) to GDP. This ratio was 58 percent on Bonaire in 2024. The Figure below

[16] Zapata et al. (2023).
[17] Chamber of Commerce (n.d.).
[18] CBS Statistics Netherlands (2024, March 1).
[19] Croes et al. (2017).
[20] Public Entity Bonaire (2021).
[21] Van Zwol et al. (2024), P. 96.
[22] Ministries of Agriculture, Nature and Food Quality; Infrastructure and Water Management; the Interior and Kingdom Relations (2020).
[23] Tourism Corporation Bonaire (2024, October 2).
[24] Business Research & Economic Advisors (2024).

shows the Caribbean countries for which data on tourist spending is available for 2019. Of this selection, only Aruba has a higher ratio of direct tourism expenditures to GDP. All other countries have lower values.

Figure 11 In 2019, many other countries in the region had a lower ratio of tourism direct spending to GDP than Bonaire (58 percent in 2024).



Source: Economic Bureau Amsterdam (2025), based on World Bank.

The multiplier effects on Bonaire are slightly lower than on Aruba and Curaçao

The multiplier effect, which is the ratio between direct and total tourism spending, is somewhat lower for Bonaire than for Aruba and Curaçao. For Aruba, this multiplier was 1.68 in 1999.[25] This means that every dollar spent by tourists leads to $ 0.68 worth of indirect spending. For Curaçao, the direct and indirect economic impacts are estimated at $ 1.042 million and $ 663 million, respectively.[26] This implies that the multiplier effect for Curaçao is 1.64. For Bonaire, the estimated multiplier effect in the present study is 1.51. The reason behind this lower multiplier may be that Bonaire, as a smaller economy, imports more of its cost of sales than Aruba and Curaçao.

Although the model estimates are consistent with previous estimates for Bonaire and the region, the results should still be viewed with caution

Although the results are plausible when compared to previous estimates for Bonaire and for the region, the results are still estimates and the methodology has certain shortcomings. One reason for this is that the assumptions underlying the input output methodology are strong, and that the IOT constructed for this study is largely based on data from 2004. Moreover, the model does not capture what is happening in the rest of the economy. For example, when the model is used retroactively, it overestimates the economic growth in 2022 generated by the recovery from Covid-19. This is no surprise, since government support during the pandemic was phased out as well in 2022.

[25] Steenge & Van De Steeg (2010).

[26] Curaçao Tourist Board (2024).

3. A broader perspective on tourism in Bonaire

Tourism impacts Bonaire's environment by direct damage as well as by urbanization and carbon emissions. Tourism, accompanied by immigration, also leads to societal pressures. Inhabitants are positive about the economic opportunities that tourism provides, but recognize the adverse side-effects as well. People that immigrated from the Netherlands are more critical on the number of tourists than Bonaire-born inhabitants.

Together with tourism, the government is an important economic pillar on Bonaire. Additional economic diversification could be obtained by facilitation rather than active development by the government. Local food production, the blue economy and the financial sector are the most promising industries for future growth.

Besides the economic and financial effects presented in the previous chapter, tourism also has an impact on the environment and society. For a small island like Bonaire, with its small population and unique culture, and where nature is both omnipresent and fragile, it is essential to consider tourism development also in terms of its environmental and social consequences.

Environmental and social impacts

Tourism has direct and indirect effects on the environment in Bonaire

Research concludes that Bonaire's unique biodiversity is under pressure.[27] Quick urbanization, population increase and surge in tourism puts a strain on mangroves, coral, seagrass and salt lakes.

Tourism has direct and indirect effects on the degradation of nature in Bonaire. The direct effects are caused by tourists visiting natural sites, and thereby trampling nature or preventing further growth. An example is the seagrass in Bonaire. Seagrass acts as a source of food and as a nursery site for local species. Divers and windsurfers often, by accident, harm the sea grass and algae fields when visiting these natural sites.[28]

According to STINAPA, it is largely cruise tourism that puts uncontrollable pressure on Bonaire's national parks. Cruises bring large numbers of tourists to various protected locations within short periods, leading to environmental damage. In contrast, stayover tourism exerts a more distributed and therefore more manageable pressure on the natural parks.

Urbanization is another stressor for local natural resources.[29] Urbanization is a threat to multiple ecosystems in Bonaire. Mangrove forests for example have experienced harm from the urbanization of Bonaire in recent years.[30] Urbanization of Bonaire is partly caused by the tourism-led economic growth of Bonaire during the past decades, but is mainly the result of the strong growth in Bonaire's population.

Future growth in the tourism industry on Bonaire will impact future urbanization processes on the island. Increases in both the number of tourists and in tourist spending will lead to an increase in jobs and labor demand. Since there is hardly any excess labor available in Bonaire – there is hardly any structural or cyclical unemployment in Bonaire – labor migration will be necessary to match increased labor demand, leading to further population growth and urbanization. Tourism therefore indirectly impacts nature through migration and urbanization.

A third, long-term effect of tourism on the environment is the emission of carbon dioxides in the atmosphere. The cruise and aviation industry are major contributors to CO2 emissions, causing long-term environmental damage and climate change.[31] Although this is a worldwide problem, Bonaire is sensitive to the effects of climate change.[32]

The increase in tourism and population adds pressure on many aspects of society

Bonaire's population has increased vastly in the recent decades. The number of tourists experienced an even larger, exponential growth in the same timeframe. These developments can affect cultural development, create shortages on the housing market and put pressure on existing infrastructure.[33]

Bonaire is facing a severe housing shortage.[34] Besides immigration, tourism is adding to the existing pressure on the housing market, as about 7 percent of Bonaire's 11.000 addresses is offered to tourists on online house-sharing platforms, such as

[27] Dutch Caribbean Nature Alliance (2020).
[28] Dutch Caribbean Nature Alliance (2020).
[29] World Bank (2023), P. 53.
[30] Dutch Caribbean Nature Alliance (2020).
[31] Maes (2024).
[32] Van Beukering et al. (2022).
[33] World Bank (2023), P. 46-47.
[34] Economic Bureau Amsterdam (2024).

Airbnb.[35] The arrival of immigrants from high-income regions, such as the European Netherlands, has put further pressure on the housing market.[36] Moreover, immigrants and native inhabitants of Bonaire often do not live in the same neighborhoods, leading to cultural segregation and loss of a sense of community.[37]

The vast increase in population and tourists also puts a strain on the island's infrastructure. The number of registered vehicles on Bonaire has increased from just under 13.000 in 2017 to over 20.000 in 2022.[38] Although the tourism industry is not the sole reason for this surge in vehicles, the similar upwards trend in vehicles and visitors on the island cannot be considered in isolation.

Bonaire hosts both cruise tourists and stayover tourists. Cruise tourists typically do not stay overnight, and visit the island during a short period of time during the day. This leads to temporary congestions of traffic and overall crowding of public spaces.[39] This unintended consequence of tourism can be a source of nuisance for the inhabitants of Bonaire.

Inhabitants acknowledge the benefits of tourism as well as its negative effects

Inhabitants of Bonaire believe in majority that tourism benefits the economy by providing employment and offering new opportunities. At the same time, the people of Bonaire are aware of the potential negative externalities of tourism, both on the environment and social structures.

- Job opportunities and increase in sales: Around 70 percent of the inhabitants of Bonaire believes that cruise-tourists provide job and sales opportunities. Around 80 percent believe stayover tourists provide similar opportunities.[40] However, there is also a sentiment that locals benefit too little from tourism. For example, Bonaire's current executive council states in their governance program that they want to 'invest in micro-tourism so that our own people can benefit from tourism'.
- Potential cultural exchange: Around 70 percent of respondents in a survey conducted in 2022 by researchers from Wageningen University claim that tourism provides an opportunity to share the culture of Bonaire with foreign tourists.
- Adverse effects on the housing market and commodity prices: Over half of the respondents of the survey conducted in 2022 agree that stayover tourism has an adverse effect on the housing market and the general price level on the island. Cruise tourists are perceived to have a less effect on the housing market and the price level.
- Social atmosphere on the island: The majority of respondents disagree with the statement that tourists have a positive effect on the atmosphere on the island. This outcome applies to both cruises and stayover tourists.
- Traffic congestions and harm to nature: Around 75 percent of the respondents agreed that tourism contributes to traffic congestions and crowds in public spaces. Just over half of the respondents believe that the tourism sector is harmful for nature on the island.
- Too much tourism on the island: A majority of respondents to a 2023 survey conducted by the World Bank agrees that there are too much tourists on the island.[41]

A majority of the inhabitants tends to agree that Bonaire should allow room for the tourism industry to grow, in order to spur further economic development. This is consistent with a 2023 survey conducted by the World Bank, which reported a small majority (51 percent) agreeing to the statement that the benefits of tourism outweigh the costs.[42] Adversely, when asked about the importance of economic growth and

[35] Economic Bureau Amsterdam (2024).
[36] Economic Bureau Amsterdam (2024).
[37] World Bank (2023), P.42-44.
[38] World Bank (2023), P. 46-47.
[39] Verweij et al. (2020), P. 14.
[40] Soma et al. (2022).
[41] World Bank (2023), P. 26.
[42] World Bank (2023), P.25.

nature conservation, 51 percent of the respondents agreed that the protection of nature should be prioritized over economic growth.

Bonaire-born inhabitants and immigrants differ in perspectives on tourism

The two surveys of 2022 and 2024 showed that inhabitants born on Bonaire hold somewhat different opinions than inhabitants that immigrated to Bonaire from the European Netherlands.

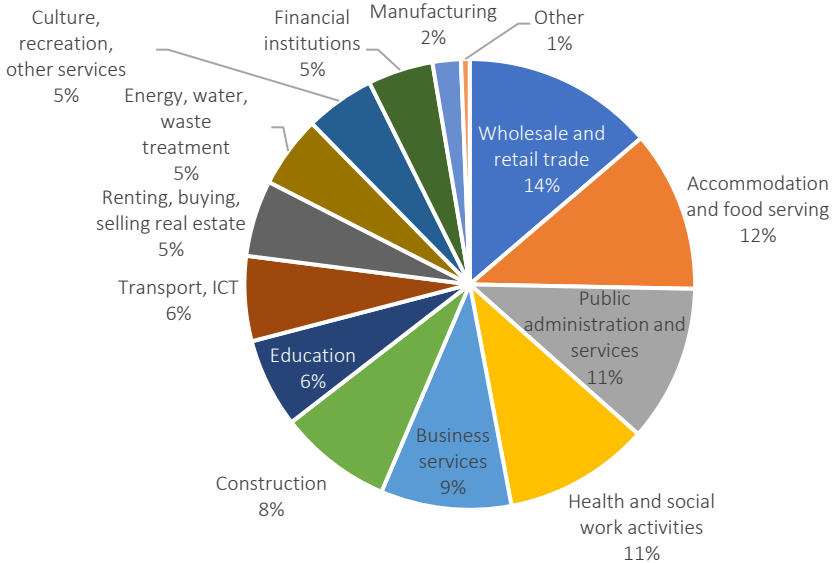
- Total number of tourists and inhabitants: People that migrated to Bonaire from the Netherlands tend to agree stronger to the statement that there are currently too many tourists on Bonaire than the people born on the island. Adversely, citizens born on the island tend to agree more to the statement that the overall population of Bonaire has grown too large.[43]
- Nature conservation and tourism: Both people born on Bonaire and people that immigrated to the island agree on the importance of nature, and that the tourism industry is harmful to nature. Inhabitants born on Bonaire agree to a lesser extent that tourism should be mitigated in order to protect nature, compared to immigrants.[44]

Opportunities for diversification

Bonaire's economy has a reasonable degree of diversification but is dominated by the public sector and tourism-related industries

Bonaire's economy is relatively diversified, with eight sectors each contributing more than 5 percent to GDP. The public sector (public administration, education, and healthcare) and tourism-related industries are the most important for employment. Bonaire's economy is more diversified than is often assumed.

Figure 12 In addition to tourism related sector, the public sector contributes significantly to Bonaire's GDP.



Source: Economic Bureau Amsterdam (2025).

Achieve economic diversification through facilitation

Economic diversification is not an end in itself. It can contribute to a more robust and less vulnerable economic development. At the same time, it is essential to emphasize that economic specialization has proven to be a successful strategy for wealth development in many countries, not least in the Caribbean region, where countries that specialized in tourism experienced strong economic growth. Examples include Aruba and Sint Maarten, which, thanks to the development of tourism, are among the most prosperous countries in the Caribbean. Furthermore, it is hard for

[43] World Bank (2023), P. 25-26.

[44] Soma et al. (2022).

governments to develop new economic sectors and to identify growth opportunities for new sectors successfully. A more effective approach is to focus on creating the right conditions that facilitate and stimulate the emergence of new economic activities, such as a well-functioning labor market, good access to capital, an attractive investment and business climate, and control over the cost of doing business.

Facilitate and stimulate activities that contribute to Bonaire's earnings capacity

Bonaire's economic growth over the past decades has been substantial but entirely driven by population growth, primarily due to immigration from the European Netherlands and Central and South America. During this period, the population grew by 60 precent, but real GDP per capita declined, and labor productivity decreased. Imports of goods have risen sharply due to population growth and tourism, while exports of goods have stagnated. As a result, Bonaire's self-sufficiency has decreased.[45]

The sectors with the highest added value on Bonaire are the public sector (education, healthcare, and public administration) and tourism-related industries such as hospitality and trade. At a macroeconomic level, agriculture, fisheries, hospitality, culture, recreation, and business services hold the greatest potential for increasing earning capacity. Growth in these sectors generates relatively high economic prosperity, contributes to greater self-sufficiency (less imports), and reduces vulnerability to external shocks.

Develop local food production with public investments and coherent policy

Bonaire imports nearly all of its food, driving up the cost of living and making the economy vulnerable to external price increases and shocks. Developing a local agriculture and fisheries sector is essential to increase self-sufficiency, lower food costs, and reduce vulnerability.

Government investments in sector-specific infrastructure, logistics, and sales channels, along with targeted subsidies and tax benefits for local producers, are necessary to support the growth of these industries.

Develop the blue economy to increase earning capacity

According to the World Bank and the United Nations, the development of the blue economy – the sustainable exploitation of oceans, seas, and coastal areas to generate economic benefits without depleting marine resources or harming the environment – is the best strategy for the Caribbean region to achieve wealth growth.

An integrated plan focused on developing the blue economy places Bonaire's nature, environment, and local culture at its core and is aimed at increasing Bonaire's earning capacity.

Central to the development of the blue economy are those sectors that have a strong positive impact on the economy: agriculture and fisheries, hospitality (tourism), culture and recreation, business services, trade, and transport. Growth in these sectors is accompanied by strong positive indirect effects on other sectors in the economy.

Assess opportunities for growth in the financial sector

Bonaire's financial sector is small, with a share in GDP of 5 percent. At the same time, Bonaire can benefit from the high-quality Dutch regulatory regime, which may enhance the island's reputation as a highly regulated investment hub.

Bonaire can explore opportunities for growth in the financial sector. The future of the financial sector – particularly in the Caribbean region – no longer lies in so-called tax haven strategies but in compliance-as-a-service and so called 'new banking'. The development of Bonaire as a highly regulated investment hub could be explored. The conditions for this are present in Bonaire: high-quality supervision, Dutch legislation, a reliable legal system, high-quality ICT infrastructure, etc.

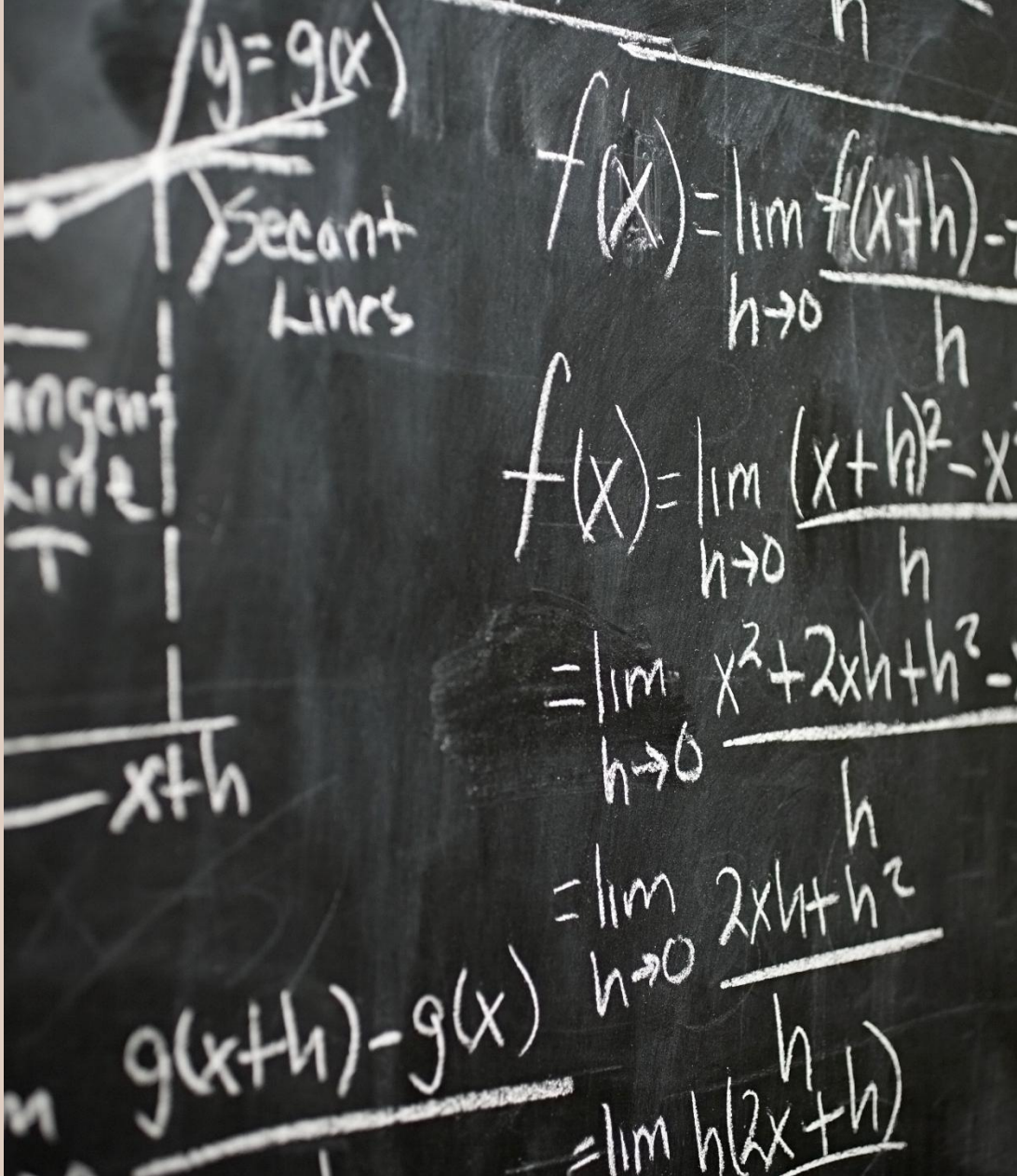
[45] Van Buiren & Gerritsen (2024).

Place Bonaire's natural resources and its unique culture at the core of strategies for tourism development as well as for economic diversification

In various integrated plans developed for Bonaire in the past, though not fully realized or only partially implemented, the island's nature, environment, and local culture have been described as its most important assets.

The preservation of, and investments in, Bonaire's nature, environment, and local culture should be central to any strategy for economic development; both tourism development and economic diversification. Without their protection, Bonaire risks falling into low-quality mass tourism and further deterioration of its earning capacity.

Appendix A. Data and methodology



Appendix A. Data and methodology

Data sources

The following data sources are used in the quantitative analysis:

Source	Data	
CBS Statistics Netherlands	-	Tourism arrivals (incl. nationality), until 2023
	-	CPI
	-	GDP/value added
	-	Population (incl. projections)
	-	Cruise passengers
	-	Jobs by industry
TCB	-	Tourism arrivals (by nationality), 2024
	-	Tourism nights per visitor (by nationality)
CBS Netherlands Antilles	-	Supply and use tables
	-	National Accounts
Grant Thornton	-	Tourism tax rates
Website of Public Entity Bonaire	-	Tourism tax rates
Tourism Exit Survey Data	-	Stayover tourist spending (by nationality and expenditure category)
Annual report of Bonaire International Airport	-	Airport charges
BONHATA	-	Hotel occupancy and daily rates
Business Research & Economic Advisors[46]	-	Spending per cruise passenger/crew member
	-	Direct payments by cruise ships
Financial report of Public Entity Bonaire	-	Local levies (incl. tourism tax)

[46] Business Research & Economic Advisors (2024).
[47] Central Bureau of Statistics Netherlands Antilles (2009).

Input output methodology

The input output table (IOT) is based on the supply and use tables (SUT) for Bonaire from 2004.[47] In order to construct the IOT, a number of modifications have to be made:

- Conversion to basic prices: The use and value added table have to be corrected to basic prices instead of purchasers' prices. This means that trade margins and taxes less subsidies on products need to be subtracted from the entries in the use table and that FISIM (Financial Intermediation Services Indirectly Measured) needs to be added. These measures are subtracted and added proportionally to each entry's share in the product total in the use table. The only exception is that inventory changes are not assumed to be taxed. FISIM and taxes less subsidies on production were subtracted from the net operating surplus as well, where taxes less subsidies on production were allocated proportionally to each industry's share in intermediate output. For details on this methodology, see Chapter 7 of the handbook by the United Nations (UN) on this topic[48] and the paper by Steenge & Van De Steeg.[49]
- Split domestic use and import: The use table has to be split up between a domestic use table and an imports table. Each entry's imports share is assumed to be equal to the total share of imports of a product total. See Chapter 8 of the handbook by the UN for details.
- Compile IOT: The SUT are converted to IOT using model D in chapter 12 of the UN handbook.
- Project the IOT to 2022: The IOT is projected from 2004 to 2022 using the GRAS ('generalized ranking and scaling data reconciliation') method (see Chapter 18 in the UN handbook). In order to determine the column and row totals for the projected matrix, a couple of assumptions are made:

[48] United Nations (2018).
[49] Steenge & Van De Steeg (2010).

  - All industry-specific row and column totals have been rescaled according to the growth in their gross value added (GVA). The two sectors that are too small to be included in the official statistics are assumed to both have a GVA of 2 million.
  - Goods imports and exports are based on CBS statistics, on the period 2021 Q4-2022 Q3.[50] Services imports are based on the statistics for 2008[51] and inflated proportionally to GDP. Services exports are based on the assumption that virtually all services exports are tourism-related, and are based on the calculations for this study.
  - Total taxes less subsidies are calculated as the difference between GDP and GVA in 2022.
  - The various GVA categories in the IOT are inflated to 2022 proportionally with total GVA.
  - Changes in inventories are assumed to be 0.
  - The other final use categories (final expenditure consumption, gross fixed capital formation) are inflated to such an extent that input matches output.
- Convert to coefficients: The table with input coefficients (see the Table below) and the Leontief inverse are constructed. See Chapter 20 of the UN handbook for details.
- Conduct analyses: Total output resulting from tourism is calculated by multiplying the Leontief inverse by the vector with tourism expenditure. Effects on other variables (such as employment, imports) are calculated by multiplying total output by the corresponding row from the table with input coefficients. For employment, the number of jobs per dollar of output is first calculated, using the IOT and CBS data on employment per industry.[52] The number of jobs per dollar of output in the domestic services sector is assumed to be equal to the economy-wide average. See Chapter 20 of the UN handbook for details.

The resulting IOT has a number of limitations due to the availability of data. First, the data are based on a dated CBS publication. Second, the information to carry out the GRAS method conventionally is not available, so that assumptions needed to be made. Third, detailed data to convert the tables to basic prices and to separate the import table are not available, so assumptions were made. Fourth, the chosen method to convert SUT to IOT is based on the assumption that 'each product has its own specific sales structure, irrespective of the industry where it is produced' (see the UN handbook).

Direct imports have not been taken into account and incomes are assumed to be exogenous. It is assumed that tourist spending other than flight tickets are made to local businesses and do not consist of direct imports. Some analyses also take induced effects into account, which means that they also calculate the economic effects that are generated by spending by employees. However, Steenge and Van De Steeg state that 'some of the assumptions involved in modeling with, especially, induced multipliers border on speculation'.[53] Moreover, the use table available for Bonaire does not differentiate between household and government consumption, so the data to carry out this analysis is not available.

[50] CBS Statistics Netherlands (2022, 8 november).
[51] Central Bureau of Statistics Curaçao. (2012).
[52] CBS Statistics Netherlands (2024, March 1).
[53] Steenge & Van De Steeg (2010).

Appendix A. Data and methodology

Table 2 This table with input output coefficients is used in the analysis.

		Industries														Final use		
		Agriculture, fishing and mining	Manufacturing	Electricity, gas, and water	Construction	Trade	Hotels and restaurants	Transport, storage and communications	Financial intermediation	Real estate, renting and business activities	Public administration and defense	Education	Health and social work	Other community, social and personal service activities	Private households	Exports	Final expenditure consumption	Gross fixed capital formation
Domestic industries	Agriculture, fishing and mining	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	Manufacturing	0,000	0,000	0,000	0,000	0,002	0,017	0,000	0,000	0,001	0,004	0,000	0,004	0,001	0,000	0,022	0,018	0,000
	Electricity, gas, and water	0,213	0,017	0,004	0,006	0,055	0,085	0,019	0,020	0,028	0,015	0,022	0,025	0,144	0,000	0,002	0,023	0,000
	Construction	0,010	0,000	0,000	0,055	0,006	0,017	0,000	0,004	0,014	0,000	0,000	0,000	0,005	0,000	0,005	0,004	0,298
	Trade	0,047	0,066	0,127	0,071	0,017	0,088	0,051	0,020	0,014	0,016	0,048	0,068	0,025	0,000	0,150	0,077	0,051
	Hotels and restaurants	0,000	0,008	0,000	0,000	0,017	0,028	0,006	0,008	0,002	0,004	0,000	0,004	0,014	0,000	0,349	0,017	0,000
	Transport, storage and communications	0,089	0,032	0,036	0,009	0,048	0,014	0,078	0,017	0,009	0,019	0,004	0,016	0,033	0,000	0,082	0,016	0,000
	Financial intermediation	0,019	0,042	0,051	0,066	0,060	0,084	0,028	0,044	0,033	0,000	0,000	0,013	0,032	0,000	0,000	0,006	0,000
	Real estate, renting and business activities	0,038	0,049	0,012	0,021	0,089	0,025	0,078	0,073	0,009	0,043	0,112	0,038	0,126	0,000	0,039	0,095	0,000
	Public administration and defense	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,030	0,160	0,000
	Education	0,000	0,000	0,000	0,000	0,000	0,000	0,024	0,022	0,000	0,021	0,000	0,092	0,013	0,000	0,000	0,150	0,000
	Health and social work	0,020	0,109	0,028	0,008	0,032	0,063	0,021	0,094	0,021	0,015	0,000	0,006	0,009	0,000	0,000	0,136	0,000
	Other community, social and personal service activities	0,001	0,000	0,000	0,000	0,001	0,002	0,002	0,000	0,002	0,000	0,000	0,002	0,001	0,000	0,048	0,081	0,000
	Private households	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,004	0,000
Imports		0,169	0,069	0,111	0,038	0,120	0,166	0,077	0,074	0,045	0,041	0,081	0,083	0,072	0,000	0,253	0,202	0,642
Taxes less subsidies		0,008	0,015	0,009	0,003	0,005	0,010	0,005	0,007	0,003	0,004	0,008	0,006	0,003	0,000	0,021	0,011	0,010
GVA	Wages and salaries	0,123	0,373	0,188	0,632	0,251	0,229	0,187	0,290	0,150	0,412	0,683	0,320	0,240	0,000	0,000	0,000	0,000
	Employers' social contributions	0,036	0,060	0,054	0,083	0,031	0,030	0,043	0,000	0,024	0,197	0,044	0,091	0,044	0,000	0,000	0,000	0,000
	Other taxes less subsidies on production	0,014	0,009	0,009	0,006	0,011	0,012	0,010	0,008	0,004	0,004	0,006	0,006	0,011	0,000	0,000	0,000	0,000
	Consumption of fixed capital	0,085	0,142	0,242	0,014	0,040	0,078	0,206	0,068	0,274	0,074	0,000	0,000	0,031	0,000	0,000	0,000	0,000
	OPERATING SURPLUS/ MIXED INCOME,NET	0,129	0,009	0,130	-0,014	0,215	0,051	0,166	0,251	0,369	0,130	-0,009	0,226	0,197	1,000	0,000	0,000	0,000
Total input at basic prices		**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**	**1,000**

Source: Economic Bureau Amsterdam (2025).

Appendix A. Data and methodology

Assumptions regarding expenditure

The following methodology was used to calculate stayover expenditure:

- Stayover expenditure was based on the Exit Survey. Outliers were removed from the sample, where outliers were defined as values more than three standard deviations away from the mean. The outlier check was carried out for all data, including both years (2023 and 2024) and all nationalities.
- Next, the tourists that had booked package deals were filtered out, since it is not clear what they spent on the various expenditure categories.
- Average expenditure by nationality is the weighted average of expenditure by visitors that stay in hotels or resorts and those that stay elsewhere. Data on the share of visitors in hotels and resorts include visitors with package deals.

The tables below show the resulting expenditure by cruise and stayover tourists in each category. It also shows the corresponding macroeconomic industries from the IOT. Both tables contain 2023 data.

Table 3 Shore excursions are the most important expenditure category for cruise passengers (2023 data).

Purchase Categories	Average Spend per Party	Crew members	Industry
Shore Excursions	$ 89.17	$ 5.96	R-S
Food & Beverages at Restaurants & Bars	$ 12.17	$ 18.60	I
Taxis/Ground Transportation	$ 5.69	$ 2.33	H+J
Watches & Jewelry	$ 13.42	$ 1.30	G
Clothing	$ 12.25	$ 3.62	G
Other Purchases	$ 5.07	$ 9.13	G
Local Crafts & Souvenirs	$ 13.65	$ 2.82	G
Retail Purchases of Liquor	$ 0.92	$ 0.43	G
Personal products	-	$ 0.22	G
Average Size of Cruise Party	2.1	-	-

*Industry codes: G = Trade; H+J = Transport, storage and communications; I = Hotels and restaurants; R-S = Other community, social and personal service activities.

Source: Economic Bureau Amsterdam (2025).

Table 4 North American tourists spend more than tourists from other regions (2023 data).

Expenditure category	North America	(European) Netherlands	Dutch Caribbean	Latin America	Other	Indus-try*
Accommodation	$ 1,100	$810	$309	$553	$903	I
Flight tickets	$ 1,000	$876	$315	$507	$1.212	*Abroad*
Food and beverage	$ 482	$592	$319	$286	$516	I
Shopping and souvenir	$ 132	$104	$88	$101	$117	G
Car or scooter rental	$ 233	$290	$159	$114	$350	L-N
Local transportation (taxi)	$ 9	$4	$3	$11	$9	H+J
Tours on the island	$ 26	$48	$15	$22	$27	R-S
Local arts and Cultural events	$ 6	$9	$18	$6	$4	R-S
Diving	$ 321	$132	$13	$308	$292	R-S
Internet/Telephone	$ 11	$10	$9	$6	$7	H+J
Groceries	$ 156	$241	$103	$109	$167	G
Boat tours / boat rentals	$ 34	$51	$7	$39	$42	R-S
Entertainment / Nightlife / Casino	$ 17	$28	$59	$28	$19	R-S
Windsurfing/Kitesurfing/ Other eco-recreation	$ 14	$21	$2	$27	$26	R-S
Donations	$ 26	$21	$7	$4	$19	R-S
Other expenses	$ 40	$28	$41	$23	$23	G

*Industry codes: G = Trade; H+J = Transport, storage and communications; I = Hotels and restaurants; L-N = Real estate, renting and business activities; R-S = Other community, social and personal service activities.

Source: Economic Bureau Amsterdam (2025).

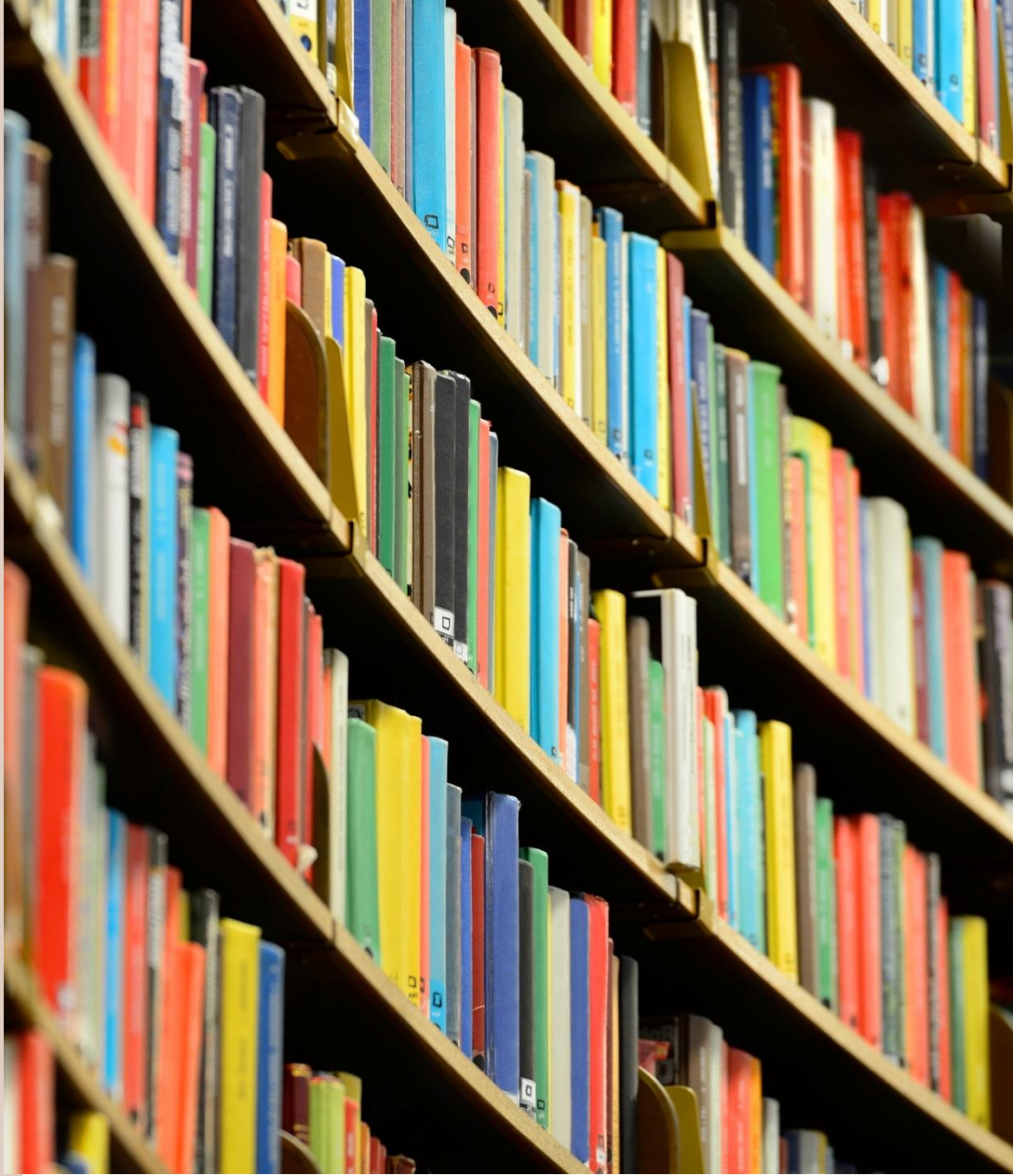
Appendix A. Data and methodology

Other assumptions

The most important other assumptions are listed below:

- Projections on all monetary variables are indexed for inflation.
- The number of crew members on cruises to Bonaire is assumed to develop proportionally to the number of cruise passengers.
- Local government revenues (excluding tourist tax) grows proportionally to value added.
- Airport charges grow proportionally to the number of stayover passengers.
- The payments of cruise ships to harbor and maritime services equal $ 5.3 million minus tourist tax. This amount develops proportionally to the number of cruise tourists.
- Bonaire can accommodate a maximum of 5,000 cruise passengers a day, for four days a week.
- The part of GDP not generated by tourism grows proportionally to the population. For the years until 2024, the parts of GDP generated by stayover tourism and cruise tourism grow proportionally to the amount of stayover visitors and cruise passengers, respectively. For 2024 and beyond, GDP generated by tourism is calculated using the input output analysis. The relationship between gross value added (GVA) and gross domestic product (GDP) is constant.
- The ratio between occupancy during high season and the average occupancy rate is constant.
- Total employment forecasts are based on the assumption that total employment grows proportionally with the number of 15 to 65 year olds.
- Total exports due to tourism are equal to total tourist spending.

Appendix B. References



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