



# The impact of the corona crisis on compiling the CPI in the Caribbean Netherlands (version Q3 2020)

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## Summary

The corona crisis has had an impact on how the Consumer Price Index (CPI) for the Caribbean Netherlands is compiled. This is primarily due to the fact that particular goods and services became unavailable, which means that there were no prices for these goods and services. In addition, the purchasing behaviour of consumers has changed while, at the same time, it has become more difficult – and in some cases even impossible – to observe prices. The latter was the case for Saba in the month of April, during the shelter in place, and for Bonaire during the soft lockdown in September

Depending on the situation, Statistics Netherlands (CBS) employs different methods to arrive at a fictional price for these goods and services. In this publication, we explain why we do this and how. The methods are in accordance with those we apply to calculate the Netherlands' CPI. For the CPI Netherlands, we follow the guidelines drawn up by Eurostat, the EU statistical office. This means there is consistency between the solutions we have provided for both the Netherlands and the Caribbean Netherlands. The solutions adopted will enable CBS to continue to publish the CPI in full

and to ensure that in due course the price development calculated between the post-corona and pre-corona period will reflect reality.

## 1. Introduction

To calculate the Consumer Price Index (CPI) of the Caribbean Netherlands, CBS measures the price development of all consumption expenditure by consumers in the Caribbean Netherlands on a quarterly basis. The CPI is an important measure for inflation and indicates how the prices develop for an 'average shopping basket' of goods and services consumed by Caribbean Dutch households.

The corona crisis has had an inevitable impact on the way in which the Consumer Price Index (CPI) is compiled. Due to the fact that our daily lives have changed, we are also spending our money differently: the contents of our average shopping basket have changed. Sports clubs and fitness centres were closed, flights were unavailable, and cafés and restaurants were closed temporarily on Saba and St Eustatius in Q2. Instead, consumers are more likely to buy more products in supermarkets. At the same time, it was difficult to observe all the prices we needed to compile the CPI, as it meant we had to visit shops.

Yet this is a time when compilation of the CPI is necessary for our users. How do we do this if we cannot collect prices? For services that are no longer being purchased, we have to make choices that reflect how people use the CPI. In this article, we will explain how we approached this task during the corona crisis. In Chapter 2 we will delve into the background of the CPI and set out the important aspects of how it is used. In Chapter 3, we will go on to describe the problems that arise in compiling the CPI during the corona crisis and the ways in which we have decided to solve them. Finally, Chapter 4 explains which expenditure categories in the publication are most affected.

## 2. Why do we compile the CPI?

The main measure of consumer price development is the change in the CPI over a period of twelve months. We compare the price level in Q2 2020 with the price level in Q2 2019. As price changes from quarter to quarter are more noticeable for consumers, we focus on these as well.

The year-on-year change in the CPI is an important measure of inflation. The CPI shows to what extent household income has to rise in order to buy the same products and services. It is therefore widely used for indexation. If income rises in line with the CPI, the purchasing power of local households will be preserved and they can buy the same. Indexation is used not only to adjust salaries or pensions, but also to help set rental prices and all kinds of other consumer contract rates.

## 3. Problems affecting the CPI due to the corona crisis

During the corona crisis, three factors have had a significant impact on how we compile the CPI:

1. Consumers' purchasing behaviour changes (hoarding, for instance);
2. Price observation made more difficult or even impossible;
3. Certain goods and services are no longer available (e.g. sports and fitness clubs, casinos, dance venues, flights).

The first factor has no effect on how the CPI is currently compiled, because we follow the price development of a fixed 'shopping basket' of goods and services. In the long term, however, it may have an effect if patterns of consumption alter permanently. On Saba, price observation was difficult during the month of April; it was halted due to the enforcement of the shelter in place between 12 April and 8 May 2020 and the soft lockdown on Bonaire from 21 to 30 September.

The almost complete absence of certain goods and services (e.g. flights) is a unique situation for the CPI and poses a problem for price statistics in general. In the following sections, we will look at the three factors outlined above in greater detail and examine the solutions that CBS has chosen.

### 3.1. Changes in consumer purchasing

When compiling the CPI, we record the prices of a large number of goods and services. This 'average shopping basket', has a fixed composition. It can be broken down into various commodity groups (the COICOP breakdown<sup>1</sup>). Each commodity group is given its own weighting, in line with the average amount that consumers in the Caribbean Netherlands spend on goods in that particular group. Bonaire, St Eustatius and Saba each have their own basket and weightings, as well as their own price observations. The price development of a commodity group on which consumers spend a lot of money therefore counts for more than the development of a group on which less money is spent. The CPI's focus on measuring price development means that this weighting is not adjusted in the course of a calendar year. If we were to do so, it would no longer be clear whether the results were due to changes in the weighting or changes in price.

For the Caribbean Netherlands, we have opted for the fixed weighting approach that will be kept for a number of years. The current weightings date from 2013 and involve converting the weighting to the price level of 2017.

Due to the fixed nature of the weighting system, the consumption (purchase) of more or less of a certain product does not directly affect the composition of the CPI, not even if such a change in behaviour represents a shift from one commodity group to another (e.g. spending less on holidays and more on DIY materials or furniture). The various weightings remain the same throughout the year, with only quarter-to-quarter price changes being taken into account.

In the longer term, however, changes in consumption due to the corona crisis may well have an effect. The influence that the corona crisis had and still may have on our spending patterns could therefore affect the weightings in the future once CBS adjusts the system again. The extent to which we will actually take this effect into account in terms of weighting has yet to be decided. This will partly depend on whether the crisis lasts for a long time and brings on changes that are more structural, or whether it lasts for a relatively short time and only leads to a temporary change in spending patterns.

### 3.2. Price observation becomes more difficult or even impossible

In the Caribbean Netherlands, CBS encountered problems when collecting prices in physical stores, particularly on Saba during the shelter in place and on Bonaire during the soft lockdown.

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<sup>1</sup> COICOP stands for Classification of Individual Consumption by Purpose.

Aside from the price collection in shops, prices are collected through the internet (online shopping) while a lot of price information is requested via email or telephone (e.g. service providers such as water and electricity companies). All these prices have been used.

CBS therefore collects prices every month in the Caribbean Netherlands, but publishes quarterly figures. How do we do this and why? We take the average price of a given product over the three months of a particular quarter. We use this average as a basis to compare with the previous quarter. We do this because the supply of goods in the Caribbean Netherlands may fluctuate considerably. This means the methodology we apply in the Caribbean Netherlands already takes into account possible fluctuations in supply from month to month. However, due to the coronavirus crisis, a significant part of price observation on Bonaire and Saba was lost.

In order to ensure the CPI publication could still go ahead when prices are unavailable but the goods are sold nevertheless, we apply standard methodology to estimate the missing prices (i.e. imputation). By imputing a price, we temporarily give it a fictional value until its actual value can be ascertained. To determine this fictional price, we use two different methods:

1. Adjustment in line with the price development of a similar product;
2. Sticking to the last recorded price (carry forward).

The first method assumes that the product whose price we do not know is likely to have undergone the same price development as other similar products. If we have been unable to record the actual price of peppers, for example, it is reasonable to assume that their price probably develops in much the same way as the price of other types of vegetables.

The second method can be useful when estimating the price of a product or service with a very stable price development. If the price is missing from the observation, for example, it is reasonable to assume that it will be the same as it was last month.

If a price is observed again the following month, the estimated price is then replaced by the newly observed price. This applies in the case of both methods. As a result, the price level and the calculated price development always return to the right level after imputation, even if the imputation was not entirely correct.

In the case of Saba, CBS opted for the use of store prices over March that were carried forward to April, as per the second method. For Bonaire, the August prices were used for the missing September prices using the same method. For Bonaire, this concerned around half of the prices normally observed physically in shops.

Comparisons between the results from in-store price observations in March and in May 2020 on Saba have confirmed that this was the right decision.

### 3.3. Discontinuation of services

As a result of the corona crisis, and more specifically the measures taken by the government, certain services are currently unavailable or subject to tight restrictions. Virtually every country took far-reaching measures; the same was the case in the Caribbean Netherlands. Throughout the Caribbean Netherlands, facilities such as sports and fitness clubs were forced to close down over the largest part of the second quarter while passenger flights were not available to consumers.

On St Eustatius, accommodation and food service establishments had to close down from 3 April to 15 May, with the exception of take-out establishments. As previously mentioned, Saba issued the

shelter in place for the period 12 April to 8 May and Bonaire enforced a soft lockdown between 21 and 30 September.

As these prices of many services in the Caribbean Netherlands are stable in nature, we stuck to the last recorded prices. The second method mentioned above was used for these cases as well.

As soon as these services are offered once again and consumers are free to use them, we will revert to using actual prices. As with the methods described in section 3.2, the current price level and the calculated price development between the post-corona period and the pre-corona period reflect reality. This is an important condition when deciding which method to use.

## 4. Publication of the CPI

Each quarter, CBS publishes the CPI per island at aggregate level and for 12 different expenditure groups. This method has remained unchanged.

Which expenditure groups were most affected?

Q2:

In April, there were no price observations on Saba for goods in a large number of expenditure groups as in-store observations were impossible. Many prices were carried forward in the following groups: food and non-alcoholic beverages; alcoholic beverages and tobacco; furnishing, household equipment; restaurants and hotels, and miscellaneous goods and services. The latter category also includes goods and services for personal care.

Q3:

In September, it concerned a *part* of the observation on Bonaire for the following expenditure groups: food and non-alcoholic beverages; alcoholic beverages and tobacco; furnishing, household equipment; restaurants and hotels, and miscellaneous goods and services. The latter category also includes goods and services for personal care.

Due to the flight cancellations, air fares were carried forward in the expenditure group for transport on all three islands. In the expenditure group recreation and culture group, the last recorded prices were carried forward when e.g. sports and fitness clubs were closed.