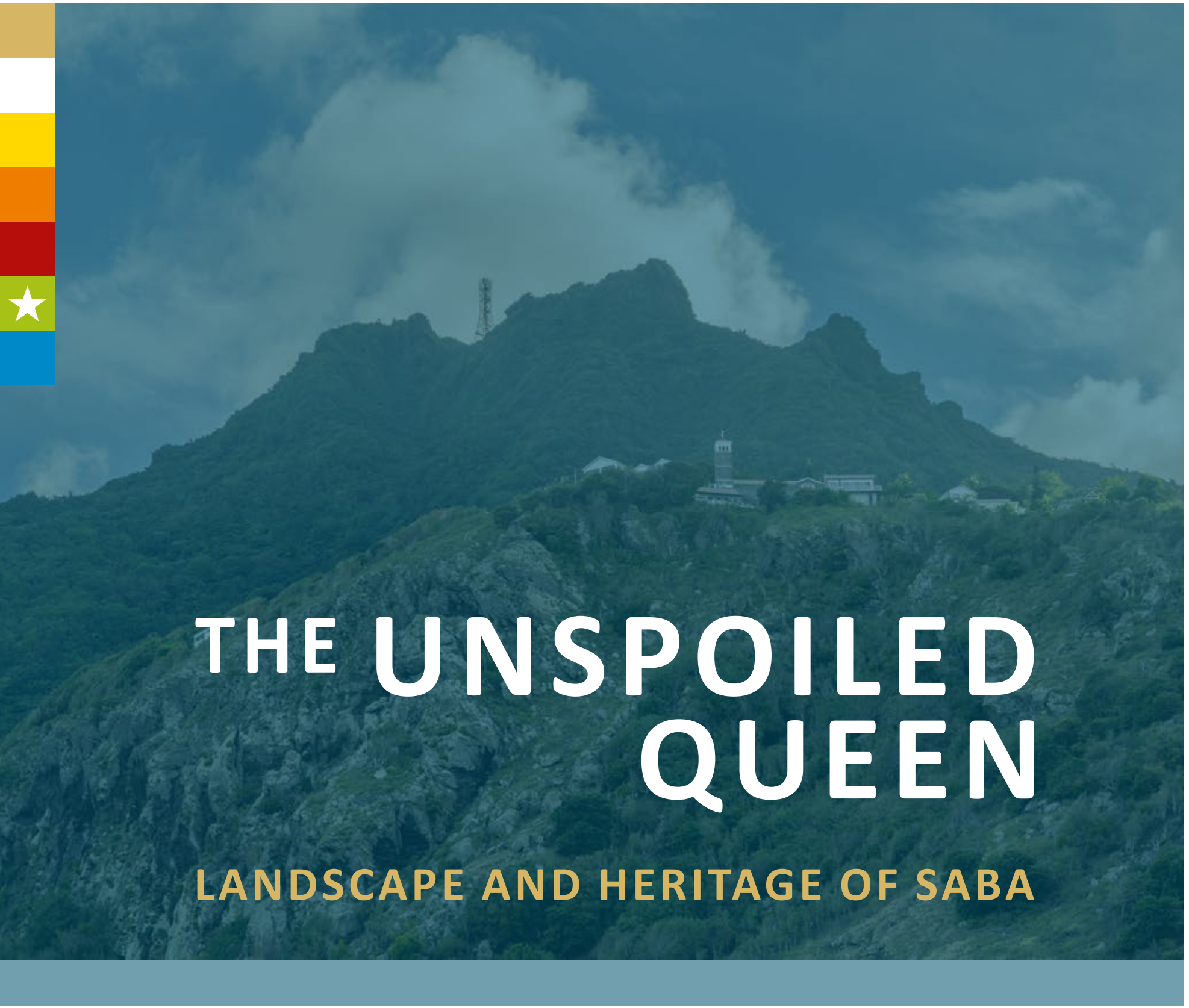
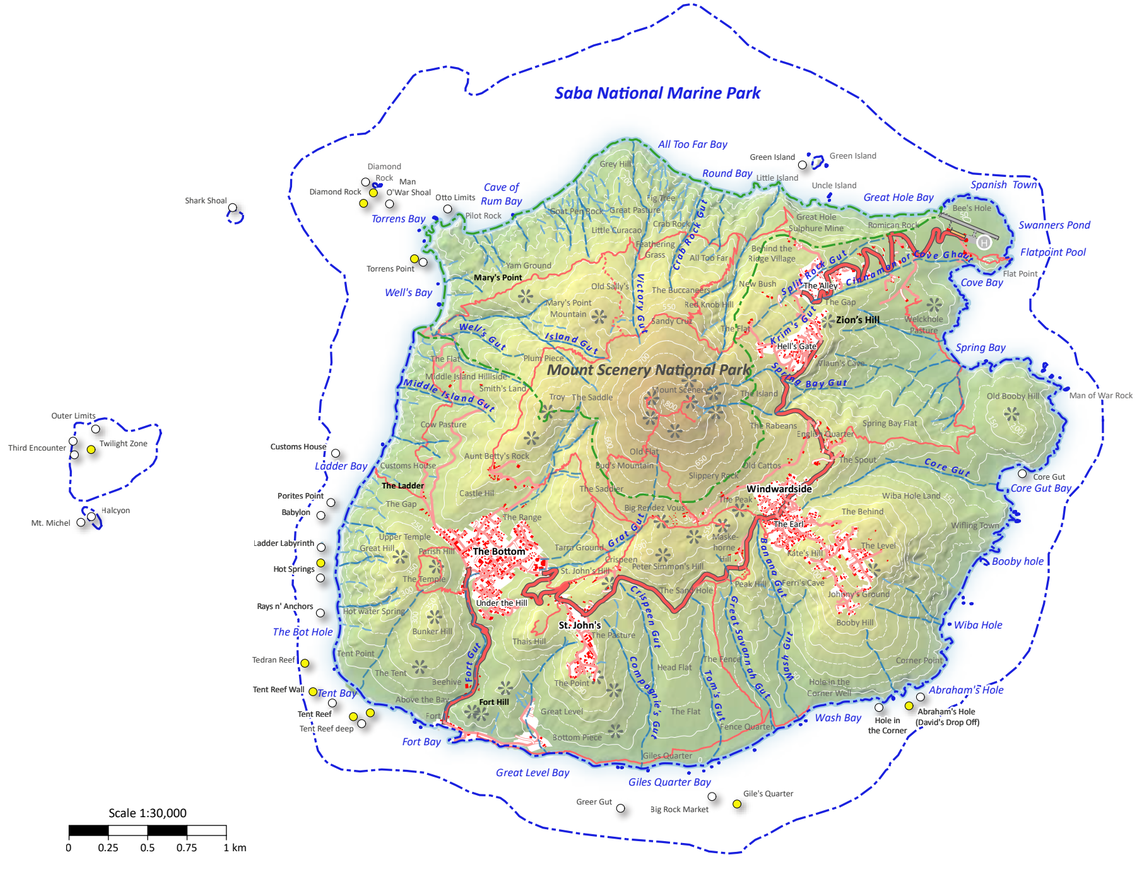


THE UNSPOILED QUEEN

LANDSCAPE AND HERITAGE OF SABA

For legend, see the same map at the last page.



THE UNSPOILED QUEEN

LANDSCAPE AND HERITAGE OF SABA

COLOPHON

ISBN 978-94-92940-46-9
NUR 691

Project Manager | Gertjan de Boer (Cultural Heritage Agency of the Netherlands)
Authors | Jet Bakels, Sharifa Balfour, Gertjan de Boer, Leon Derksen, David Koren, Suzanne Loen, Stacey Mac Donald, Martijn Manders, Michael A. Newton, Harm Jan Pierik, Michiel Purmer and Maaike de Waal
Editors | Robin Ammerlaan, Gertjan de Boer and Otto Brinkkemper

Photos | Robin Ammerlaan, unless otherwise stated in the image caption
Cartography | Marjolein Haars, Dian Jansen, Menne Kosian and Rowin van Lanen
Cross-sections | Sander de Knegt (SCHETSontwerp)
Translation | Lisa Seldenthuis
Cover photo | Mount Scenery and Zion's Hill. (Photo: Robin Ammerlaan)
Design |BLKVLD Uitgevers

Cultural Heritage Agency
Ministry of Education, Culture and Science

Saba Heritage Center

SABARC
SABA ARCHAEOLOGICAL CENTER

Cultural Heritage Agency of the Netherlands
P.O. Box 1600
3800 BP Amersfoort
The Netherlands
https://english.cultureelerfgoed.nl

Saba Heritage Center / SABARC
Windwardside
Saba
Caribbean Netherlands
www.sabaheritagecenter.org

TABLE OF CONTENTS

	Foreword	**7**
[1]	**Introduction and Reader's Guide**	**10**
	At a glance	**12**
[2]	**The Foundations: Geology, Soils, and Climate of Saba**	**16**
[3]	**Land Use in the Precolonial Period**	**30**
[4]	**The Changing Cultural Landscape Since the Arrival of the Europeans**	**50**
[5]	**Maritime Traces in the Landscape of Saba**	**78**
[6]	**Historical Settlements and Island-Specific Architecture**	**86**
[7]	**Nature as Heritage and Heritage as Nature**	**106**
[8]	**Living with and without Freshwater through the Centuries**	**126**
[9]	**Living Heritage: Celebrations, Crafts and Kitchen Secrets**	**146**
[10]	**Acknowledgements**	**164**
[11]	**References**	**166**

FOREWORD

Sharifa Balfour
Director Saba Archeological Center Foundation / Saba Heritage Center

Saba is a small Caribbean Island, where the sea, the land and life are inseparable. Its steep volcanic slopes, narrow ridges, and lush forests do not merely shape how people live, these elements have shaped who Sabans are. To speak of the island's history, culture, and heritage, is to speak of the islands' physical landscape and its relationship to the sea. The landscape biography of Saba is a way of tracing this relationship over time, how nature and human activity have continuously influenced and defined one another. In essence, this landscape biography serves as a living text that has captured particular points in time for the island and its inhabitants. Each gully, path, cemetery, cistern, ruin, cottage, story and village is a page, layered with meaning and memory. Writing or contributing to such a biography requires more than research, it requires empathy, patience, and a willingness to listen to what the land and by extension that people have to say.

My involvement in Saba's landscape biography began through my work in cultural heritage. As the director of the Saba Archeological Center Foundation, I was contacted by the Cultural Heritage Agency of the Netherlands (RCE) to serve as the local expert and connector between the research team and the people of Saba. I saw it as a unique opportunity to document and articulate the deep intertwining of

the people and their island. It had to be an independent, well-documented piece of work about who we are and where we come from.

Initially, I approached this project with the usual trepidation. It had long been the norm for foreign academics and organizations to visit our island, gather information for their theses or projects, and then disappear, without clarity on how that knowledge would benefit Saba. My expectation was for the development of a primarily technical documentation: a record of geological and ecological changes. However, I soon realized, through collaboration with the team and the residents, that this biography would focus equally on the people and their stories. Over time, trust grew that this document was being developed for the Saban people, with the help of the Saban people. I learned that a landscape biography is not just written about a place, but with a place. The mountain, the sea, and the community each contribute their own voice.

I hope that the landscape biography helps Sabans recognize the depth of their bond with the land and the value of protecting it. Our heritage lives in our paths, gardens, reefs and even in the way its people adapt to their terrain. This recognition can strengthen community spirit and foster a collective sense of responsibility for the future. I also hope it encourages dialogue between generations, connecting elders who hold memories of land use with younger Sabans who bring new perspectives. In the long term, I view the biography as both a cultural archive and an essential planning tool. It offers policymakers, educators, and conservationists a framework for understanding why certain places matter and how they can be sustainably protected. By doing so, we can prevent the unique qualities of the island from being lost.

Saba's most defining heritage is the unity between its landscape and its people. The island's isolation and steep terrain have forged a culture of resilience, independence, and cooperation. This is visible in the hand-built stone walls along the roads and pathways and in the traditional, meticulously crafted Saban cottages with their bright white walls, red roofs and green storm shutters. One example perfectly captures this spirit: "*The Road That Couldn't Be Built*". When Dutch engineers declared it impossible to construct a road on the rugged terrain, the Saban Mr. Lambert "Lambee" Hassell took correspondence courses in engineering. Together with the community, they built the road from The Bottom to Zion's Hill using only hand tools. This was an act of self-determination, and the road remains a powerful symbol of Saban persistence and ingenuity.

The most moving heritage for me, however, is not tangible, but a feeling: the profound sense of belonging that Sabans have to their island. You see it in the way that they care for their homes and gardens, the pride in ancestral stories, and the way the entire community gathers. Every stone wall, every path, and every well-maintained cemetery speaks of a people who have built not just in the landscape, but with the landscape. On Saba, the land is family. Oral tradition, through stories of hurricanes survived and ships built, is equally crucial, binding people to place and transforming geography into memory.

Looking ahead to 2050, I imagine Saba continuing to stand apart by carefully embracing and guiding change. Our small size and strong sense of community give us an advantage in maintaining the balance between development and preservation. By 2050, I hope Saba's heritage is defined by "continuity through adaptation". Traditional architecture may be modernized for sustainability; the trails may be digitized for tourism. But the heart of Saba – its respect for nature and pride in self-sufficiency – must remain intact.

Participating in Saba's landscape biography has deepened my understanding of what heritage truly means. It is all about relationships. Heritage lives in the people and their environment. In the daily acts of tending, walking, remembering, and rebuilding. Saba, though small in scale, contains an immense narrative. It tells of volcanoes and voyages, storms and survival, hands that built roads and hearts that never gave up. To study this landscape is to realize that it is not frozen in the past. It continues to evolve, just as its people do. The biography, then, is both a record and a mirror. One that allows Sabans to see themselves within their land and to understand how the island's physical form continues to shape its collective being.

In the end, writing about Saba's landscape is not just an academic act, but an emotional one. It is a way of saying thank you to a place that has taught its people, generation after generation, how to live with dignity, resilience, pride and grace upon the top of a volcano while always looking at the edge of the sea.

[1]

INTRODUCTION AND READER'S GUIDE

From the winding road, the village of Windwardside lies shrouded in mist. Behind it, as if swallowed by a cloud, rises Mount Scenery, the highest mountain in the Kingdom. The only sound comes from the whistling frogs that take over the island after sunset. The beauty of this island can take you by surprise. It seems frozen in time, as if it has always been this way and will never change. But appearances are deceiving. Saba has a long history of change and continues to evolve to this day. How this volcanic island originated, developed, and what challenges it now faces can be read in this landscape biography.

Saba is known in the Caribbean as The Unspoiled Queen, a nickname that refers to the island's pristine natural beauty. Its landscapes are both stunning and diverse, ranging from the cloud forest around the summit of Mount Scenery to the coral reefs of the Saba Bank deep below the sea. Rare iguanas, snakes, seabirds, hummingbirds, and sea turtles all call the island home, and some species are found nowhere else in the world. For visitors, this richness of nature is overwhelming and one of the main reasons to come to Saba. Yet people have lived amid this natural beauty for thousands of years. The traces of their presence can still be seen across the island today.

This landscape biography describes the remnants of the past in the landscape. For the first time, these elements have been brought together in a single publication. For many Saban residents, nature and intangible heritage are sometimes more important than the physical heritage sites that tend to receive greater emphasis in the European Netherlands. For this reason, considerable attention is given to the value of nature, as well as to festivals, crafts, and culinary traditions.

In the European Netherlands, few people are familiar with Saba. This needs to change, as the notion of "what is unknown is unloved" holds true for cultural heritage as well. The island itself lacks sufficient capacity to take this on. With just over 2,000 inhabitants, it is understandable that Saba turns to the European Netherlands for support in this matter. This landscape biography was therefore created at the request of the Public Entity Saba. It can assist policymakers, entrepreneurs, site and estate managers, spatial planners, and government officials in preserving the elements that give Saba its identity, so that its unique character can be cherished in a time of rapid change.

Like everywhere else, it is ultimately up to the residents themselves to determine what they consider worth preserving. This also applies to Saban people. With this landscape biography as a reference, they can decide which remnants of the past they want to carry into the future. Is it the annual carnival? The unique and rare animal species that inhabit the island? The remains of the first Amerindian residents? The distinctive practice of burying loved ones on their own land? Or the wooden Saban cottages with their characteristic colors?

The current identity of Saba is in jeopardy. Tourism is increasing. Infrastructure projects and new constructions are taking up more and more space. Newcomers are changing the demographics. Climate change has an increasing impact. If careful choices aren't made about what should be protected, the island is at risk of changing beyond recognition. It is therefore our hope that this landscape biography will help navigate the many spatial challenges facing Saba and aid its residents in identifying what they value most.

Reader's Guide

This landscape biography describes the heritage and landscape of Saba. It was created through a collaboration between island residents and various specialists from Saba, together with experts from the Caribbean region and the European Netherlands. Each chapter has its own author and with that comes a unique writing style.

The first five chapters are arranged chronologically. The first chapter discusses the formation of the island. It is followed by a chapter on its first inhabitants: the Amerindians. The next three chapters outline developments from the colonial period to the present, with emphasis on three themes. First, the landscape and how it has been used; next, the island's relationship with the sea; and finally, the development of the settlements on the island.

Three thematic chapters follow this chronological overview. These themes were selected based on conversations with Saban residents about what they consider valuable and what they believe deserves particular attention. Especially on Saba, nature and heritage are inseparably connected. That is the subject of the first thematic chapter. The third thematic chapter addresses intangible heritage. The biography concludes with acknowledgments to all those involved in the creation of this book, and an extensive bibliography for each chapter.

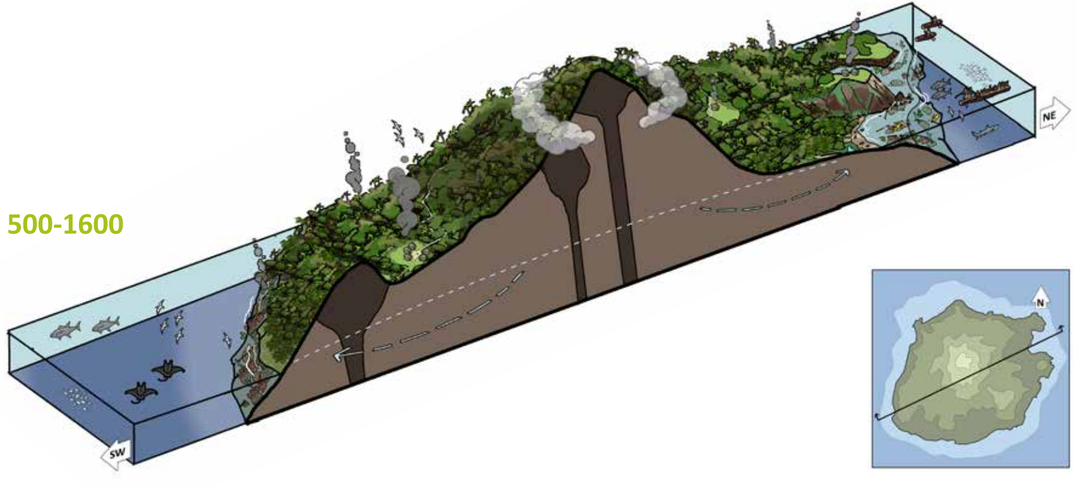
As this book was being written, it soon became clear that the story extended beyond what could be included in the main text alone. To make room for more in-depth subjects, we have added "featured" sections. These are printed in blue text. To assist the reader, a map highlighting key cultural and historical elements appears at the front and the back of this biography.

Finally, by mid-2026, the information in this publication will also be available on digital maps, allowing users to explore all heritage sites and landscape types described in this book.

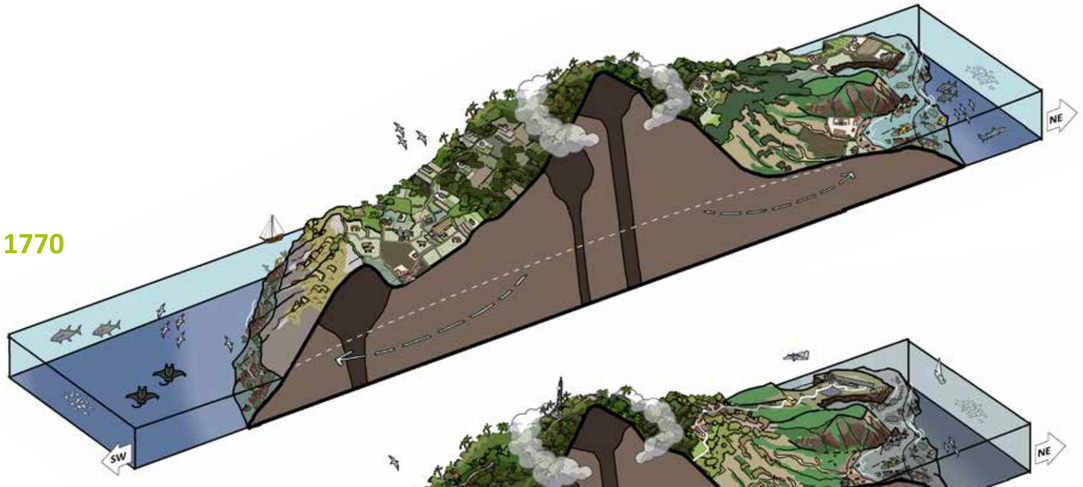
SABA AT A GLANCE

These cross sections visualize 1500 years of landscape change on Saba. They show three time periods: from approximately 500 CE to 1600, around 1770, and the present-day situation. The oldest situation shows the precolonial period when various Indigenous Amerindian groups inhabited the island. The situation from around 1770 shows the heyday of the colonial period with plantations, agricultural fields, and small settlements high up on the volcano. The last cross-section is recognizable to anyone who has been to Saba. It shows the present-day situation. On the next page, the interested reader can find an explanation and justification of the cross-sections.

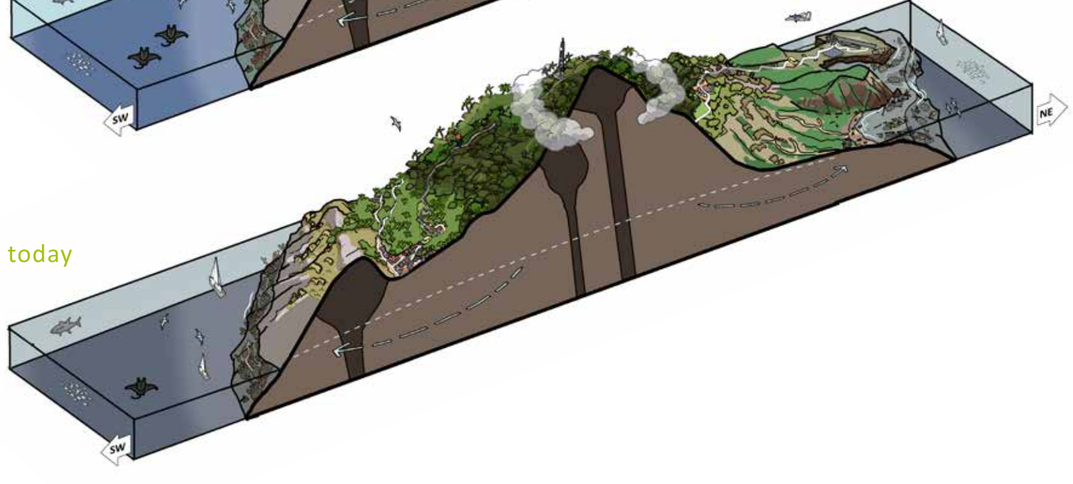
500-1600



1770



today



Explanation and justification of Cross-Sections

The cross-sections were created after a series of discussions between specialists from Saba and the European Netherlands. They can be read as a highly simplified visual summary of this landscape biography. However, some choices were made that require explanation.

The three cross-sections contain many details. We will walk through them from top to bottom. In all the cross-sections, the summit of Mount Scenery is shrouded in clouds. This is often the case. If you're lucky, you can see the island from the summit. More often, however, your view will be obstructed by clouds. Should we then descend the mountain, the cross-sections show that we would have a different experience in the three time periods. In the precolonial period, we would have to make our way through dense vegetation, interrupted by settlements. During the colonial period, we could find agricultural land high up on Mount Scenery, much of it cultivated by enslaved people. Today, we find well-maintained paths between abandoned agricultural terraces.

The locations of habitation have remained roughly the same. Saba's natural environment dictates where people live and work. It was (and is) only possible to build a life on the relatively flat areas. So Sabans today live on the remains left behind by the Indigenous Amerindian groups. This is not the case for the flora and fauna. The (local and international) impact of humans on nature has caused depletion of both land and sea. This is also visible in the cross-sections in the number of animal species, the discoloration of the coral, and the color of the sea.

But not everything has changed. The substrate has also remained relatively unchanged. This blueprint determines how Saba can be used by humans. In the cross-sections, the volcanic shafts are shown in dark colors. The shafts consist of hard rocks of solidified magma. The lighter colors represent ash and loose blocks deposited during devastating eruptions. The upper curved line just above sea level represents the groundwater table. The curved arrows pointing outward below visualize groundwater flow paths.

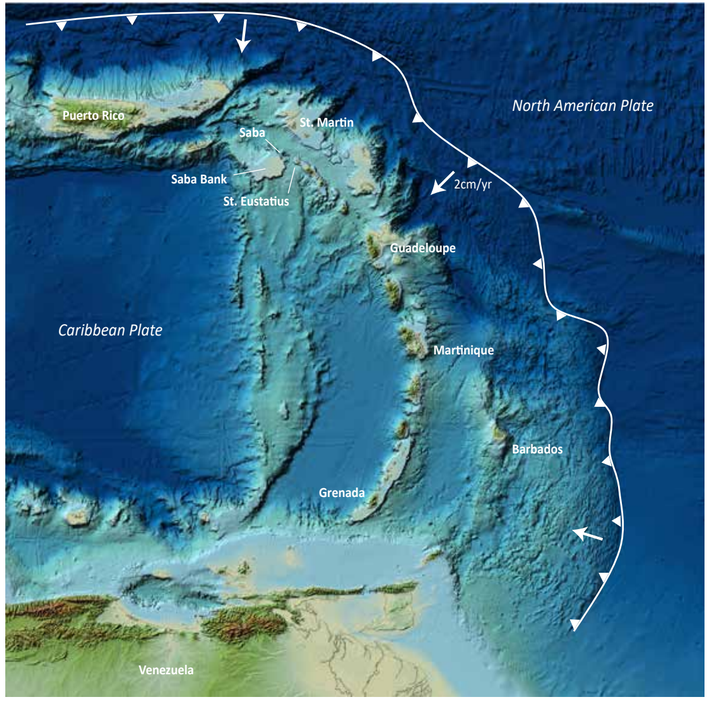
[Afb] Juancho E. Yrausquin Airport.

[2] HARM JAN PIERIK

THE FOUNDATIONS: GEOLOGY, SOILS, AND CLIMATE OF SABA

Saba rises steeply from the sea, and its volcanic origin remains clearly visible. In the past, the island has been shaped by powerful forces from deep within the earth, while in the near future erosion and extreme weather events will pose major challenges. This chapter discusses the geological evolution of Saba, along with its landforms and soils. It also considers the climate and the risks associated with weather phenomena and geology (the so-called geohazards). All of these factors are essential for understanding how the island was used in the past, the possibilities it offers today, and the future challenges Saba faces. Flora, fauna, and water systems also play a key role in understanding the island's natural formation.

[Fig] Great Hill seen from Mary's Point



[Fig] Location of Saba in the Caribbean. Saba is part of the Leeward Islands, a volcanic arc formed by the subduction of the North American plate below the Caribbean plate.

Saba is part of the Leeward Islands and, geologically speaking, it is part of the Lesser Antilles Arc. This is a chain of volcanic islands stretching 740 kilometers from Grenada in the south to Saba in the north. The arc lies along the edge of a tectonic plate known as the Caribbean Plate. The highest point on the island is *Mount Scenery*, a quiet but active volcano that rises 870 meters above sea level. Twenty lower peaks lie around this summit. The island features many steep slopes, both along the cliff coast and on the flanks of *Mt. Scenery*.

Most of the island's settlements are located on and among these lower peaks, at elevations of roughly 200 to 400 meters. Since early times, footpaths have connected the settlements. Today, a paved road built between 1938 and 1964 runs through this area, linking the villages of The Bottom and Windwardside. From there, the road continues toward the airport on one side and the harbor on the other. Beneath the sea, the island's topography follows a similar pattern. Coral reefs encircle the island, although they have deteriorated significantly in recent decades. Southwest of the island lies a large shallow submarine area known as the *Saba Bank*.

Climate

Saba has a tropical climate, with average temperatures ranging from 24 to 27 °C throughout the year. Precipitation levels increase with altitude. At the airport, roughly 760 millimeters of rain falls annually; at The Bottom (250 meters elevation), more than 1100 millimeters per year; and around Mt. Scenery, over 2000 millimeters. This summit is therefore often surrounded by clouds. July through September are the warmest months (with average minimum and maximum temperatures of 26 and 31 °C, respectively), while January through April are only slightly cooler (with average minimum and maximum temperatures of 24 and 28 °C, respectively). Rainfall varies considerably throughout the year, and there is also substantial year-to-year variation; extremely dry years are not uncommon.

Most rainfall occurs between May and November, when average monthly totals exceed 100 millimeters. Rainfall also varies across the island. There appears to be a modest rain-shadow effect, causing the western side of Saba to receive slightly less precipitation. Temperatures are projected to rise in the future, and prolonged dry periods are expected to become more frequent. By 2050, mean annual temperatures are projected to increase by 0.8 to 1.3 °C relative to the 1991–2020 period, potentially rising to as much as 3 °C by 2100. As a result, sea levels are also projected to rise, by approximately 30–80 centimeters to as much as 60–130 centimeters by 2100, depending on the scenario. In the most extreme scenario, total annual rainfall may actually decrease, by up to 44 percent by the end of the century.

The trade winds create a predominantly easterly to northeasterly wind, exposing the east coast to the strongest wave action. Hurricanes occasionally pass near the island between June and November, on average every four to five years. Hurricanes, like the trade winds, almost always approach from the east. They may bring intense rainfall and often cause significant damage. Infamous hurricanes struck the island in 1772, and 1780. More recently, hurricane Irma caused considerable destruction in 2017. In the future, hurricanes of the highest category are expected to become more frequent. While such storms now pass the island roughly once every 39 years, by 2050 this interval may shorten to once every 30–34 years, and that interval will become even shorter toward 2100.

FEATURED

Climate in the Future

To predict future climate conditions, scientists use a range of climate models based on different greenhouse-gas emission scenarios. The models simulate how the earth's climate responds. Globally, IPCC models are leading. Based on these models, the Royal Netherlands Meteorological Institute (KNMI, Koninklijk Nederlands Meteorologisch Instituut) has developed scenarios for both the European Netherlands and the Caribbean Netherlands. This biography uses the most recent KNMI scenarios from 2023.

The KNMI distinguishes four scenarios: a high- and low-emission scenario, each with a wet and a dry variant. All scenarios point to a warming climate. How earth systems respond to this warming is surrounded by a certain range. Most scenarios for the Caribbean Netherlands show a clear trend toward increasing drought and rising sea levels. The exact magnitude of these changes cannot be predicted with complete accuracy.

FEATURED

Stratovolcanoes and Their Soils

Saba is composed of a so-called *stratovolcano* that has multiple peaks. Stratovolcanoes are characterized by their steep slopes and typically form near subduction zones, where one tectonic plate sinks beneath another. Saba and the rest of the Leeward Islands emerged because the North American Plate subducted beneath the Caribbean Plate – a process that continues today at a rate of about 2 centimeters per year. Once deep beneath the earths' crust, the subducting plate melts, generating magma that finds its way upward. This type of volcano produces viscous magma, consisting mainly of *andesite* – a specific mix of volcanic minerals. Because of its viscosity, pressure can build over time, leading to explosive eruptions. A high water content in the magma further increases the potential for violent explosions.

During an eruption, part of the volcano around the crater may be blown away, and large, destructive *pyroclastic flows* may occur. These hot mixtures of gas, ash, and rock move rapidly down the slopes.

[Fig] Torrens Point with Diamond Rock in the background, rock formations composed of hard rocks from ancient volcanic domes. Active erosion is still taking place here.

Pumice, a rock full of cavities that allow it to float on water, is typically formed in such eruptions; these cavities result from the high gas content in the solidifying magma. In addition, large quantities of ash and larger rocks are ejected into the air and fall back around the volcano. The largest boulders end up closest to the crater, while finer material is deposited farther away, influenced partly by wind direction at the time of the eruption.

Only part of the magma actually flows out of the volcano. Once magma reaches the surface, it becomes lava. Due to its viscosity, lava flows on stratovolcanoes rarely reach far downslope. Some magma cools and solidifies just below the surface, forming *dome-like swellings* (domes). All the peaks on Saba are formed by such domes.

Volcanic soils are mineral-rich and consist of loose material with many pores between the grains. This enables plant roots to grow readily and allows water to infiltrate easily. Waterlogging is therefore rare. Volcanic deposits only become fertile once sufficient soil formation has occurred under warm and humid conditions. During soil formation, volcanic minerals in the upper layer of the soil weather into fertile clay minerals. Where moisture is sufficient, dead plant material accumulates as organic matter. Together, clay minerals and organic matter create fertile soils that retain water well. On Saba, this is especially true on the higher parts of the island, which receive sufficient rainfall. On the lower parts of the island, soil development only occurred in the upper few decimeters – here, vegetation benefits far less from the volcanic soil.

An Island Formed by Eruptions

Since the 1970s, the geology of Saba has been extensively studied by John Roobol and Alan Smith, with a primary focus on volcanic aspects. For this chapter, their work has been supplemented with insights from landscape archaeological studies, as well as reports and theses. A soil map, created around 1950 by the Dutch soil scientist Veenenbos has also been used, which will be discussed in the following section.

The first eruptions at the location of present-day Saba occurred underwater, before the island had formed. After multiple eruptions had occurred, the volcano eventually rose above sea level. Based on geological dating, it is estimated that the first domes of Saba emerged above the water around 500,000 years ago. The nature of the volcanic rock indicates that most of the eruptions that formed the island were quite explosive, producing destructive pyroclastic flows and large amounts of ash. After each devastating eruption, parts of the island remained barren for decades. Between eruptions, long periods of relative calm allowed vegetation to recover.

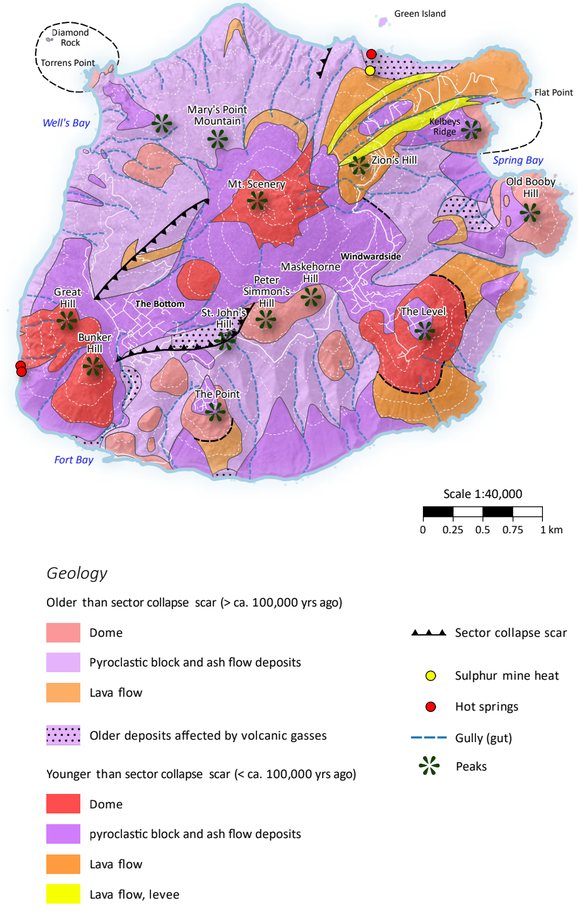
This volcanic history produced a volcano with multiple domes, many of which still rise prominently in the landscape. Around Mt. Scenery, as many as twenty slightly lower domes rise 200–500 meters above sea level. Examples include Old Booby Hill (224 meters), Bottom Hill, and Great Hill (421 meters). These domes have cores of hard rock composed of solidified magma. The domes are mainly surrounded by pyroclastic deposits – ash with stones (see text box featured Stratovolcanoes and Their Soils) – formed from hot material that flowed down the slopes of the domes. This type of deposit is the most widespread on Saba. A fault system runs across the island from southwest to northeast, contributing to the expression of volcanism on Saba.

One striking feature is the pair of large, steep escarpments (sector collapse scars) flanking the village of The Bottom. They descend from high on the slope downwards. These escarpments were formed during a major landslide that likely occurred around 100,000 years ago. During this event, an enormous mass about 1.2 kilometers wide slipped roughly 2.5 kilometers downslope. It must have been an incredibly spectacular event. The effects extended beyond the island itself; this landslide very likely triggered a large tsunami.

[Fig right] Geological map of Saba. The lava domes (red hues) consist mainly of hard, solidified magma, while the pyroclastic deposits (purple hues) are composed of loose or partly lithified volcanic block and ash deposits.

Another prominent feature of Saba is the lava flow in the island's northeast. It has distinct levees with steep sides on both flanks. The lava flow begins at Zions Hill and extends all the way to Flat Point, where the airport was constructed on the flow's flat terminus. Between the levees, the road to the airport was built atop the lava. This lava flow is younger than 100,000 years. It could travel farther downslope due to its relatively lower viscosity.

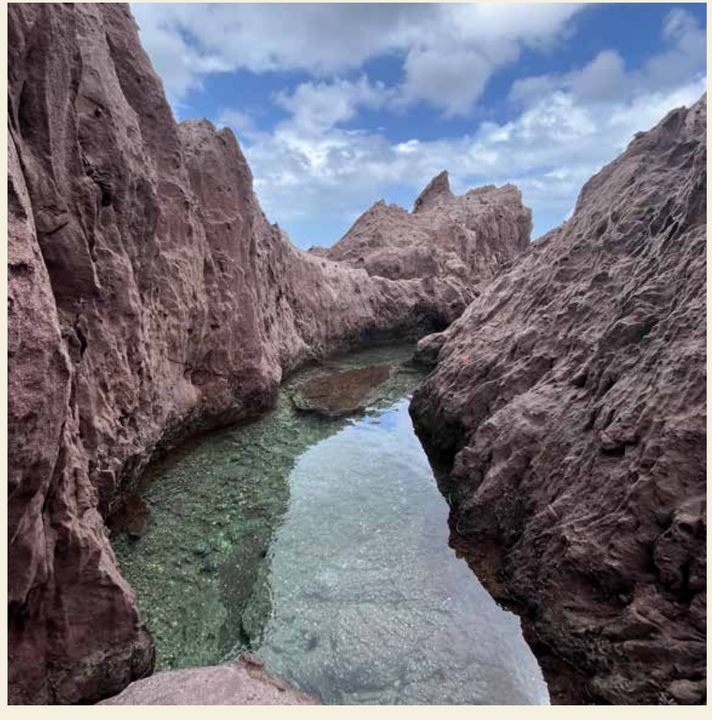
Geologically, a distinction can be made between domes and deposits either older or younger than the major landslide at The Bottom. The oldest and most eroded domes are Torrens Point–Diamond Rock, Fort Bay, and Kelbeys Ridge. Other examples of older, more intact domes formed before the landslide include Thais Hill, St. John's Hill, Peak Hill, and Old Booby Hill. The domes of The Bottom Hill, Bunker Hill, The Level–Booby Hill, and Mt. Scenery are younger than the landslide structure. They overlie the landslide structure, which means they were formed within the past 100,000 years. From these hills, Bunker Hill is thought to have been the most recently active. These



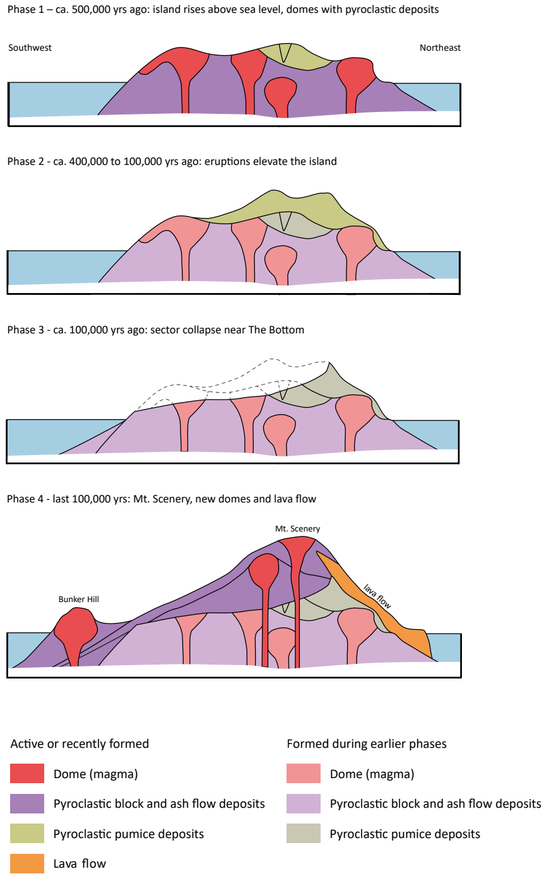
younger hills often still consist of loose ash and blocks, while the older ones have become more lithified.

Archaeological research at The Bottom indicates that the most recent eruption occurred after Amerindian occupation but before the first European settlement, i.e., before AD 1640. The fact that volcanic activity on Saba has not ceased is illustrated by the presence of several warm springs on and around the island, such as near Well's Bay and Green Island along the coast. Geothermal heat is still detectable in the sulfur mine on the north side of the island, where also volcanic gases are released.

Saba has few flat areas, and most slopes exceed 15°. Along the coast, steep cliffs dominate, with even steeper slopes above them, often exceeding 45°. There are also a few small beaches, such as Cave of Rum Bay, Wells Bay, and Spring Bay. Parts of the island composed of harder material—older lithified deposits or solidified lava—tend to have relatively steeper slopes or jut out into the sea. The domes of Bunker Hill, St. John's Hill, Booby Hill, and The Level all have rather steep flanks. The latter two domes also form the rounded portions of the island that extend into the sea. This is because these domes not only have a core of solidified magma but also contain hard, solidified lava flows on their flanks, known as coulée lava flows. The lava flow at the airport similarly forms a distinctly jutting section of the coastline. The southern slope of the island consists mainly of loose pyroclastic material. This part of the island is therefore less steep and does not extend into the sea.



[Fig] The tidepools near the airfield where waves crash into jagged volcanic landforms. (photo: Elske van Dalfsen)



[Fig] Schematic geological evolution of Saba.

Incised erosion gullies, the so-called guts, only transport water after heavy rainfall. These gullies can be deeply incised and often have multiple branching channels. The largest gully systems occur on the southern and eastern slopes of the island. Along steep cliffs, traces of landslides are visible, for example on the flanks of Great Hill and Bunker Hill.

Soils on Saba: steep, stony, and loamy

Soil development is strongly influenced by the composition of the subsurface, by slope, and by moisture levels. As explained in the featured text on Stratovulcanoes, soils in the wetter, higher areas of the island are more fully developed, containing greater amounts of clay minerals and organic matter, which enhances fertility. On the steep slopes, finer soil material has been washed away by erosion, leaving poorly developed soils dominated by stones. Particularly on slopes around the lower domes and within lava flows, very stony soils have developed. These slopes are therefore the least arable parts of the island. On the gentler slopes, sandy clays and loams are found, for example on the plateau of Booby Hill and in the valley of The Bottom.

In the 1950s, soil scientist Veenenbos distinguished eight main soil units, based on soil composition (e.g., clay, sand, or stones) and the degree of soil development. In total, sixteen subunits, or so-called phases, were identified, partly based on slope class and stone content. He also produced a derived soil suitability map, classifying soils as suitable for arable farming, grazing, or natural vegetation. Below, the soil types are described from the summit of Mt. Scenery down to sea level. Around the summit, the soils are the most fully developed (“Mt. Scenery clay loam”), with clay-rich profiles and a thick organic topsoil on the flatter areas. On the adjacent slopes, a more eroded variant, known as the steep phase, occurs. “Rendez-vous stony loam” is a somewhat stonier soil found on the lower slopes of the mountain. “Middle Island very stony loam” forms a band even lower around Mt. Scenery. These soils have a fairly thick organic topsoil and good drainage, but due to the steep terrain, all these soil types are still considered largely unsuited for farming.

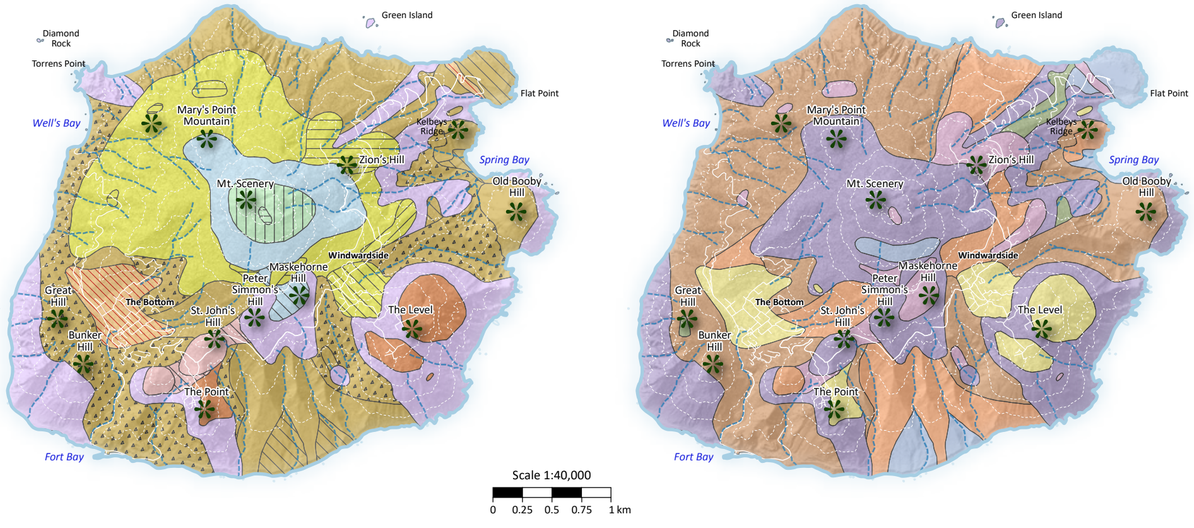
At Zions Hill and Mary’s Point, small areas show a variation of the latter described soil type: “Middle Island very stony loam – terraced phase”. These soils have been cultivated using terraced slopes, making them slightly more permeable and better suited for farming. In the lower parts of Saba, soils are less deeply developed due to drought. On the north and west sides of the island, however, greater shade reduces evaporation, allowing the moister “Middle Island very stony loam” to extend to slightly lower elevations (250 meters versus 450 meters in the east and south). Below this zone lies “Gile’s cherty sandy loam”, a dry variant of the higher “Middle Island stony loam”. On the steepest, low-lying slopes, “Very Steep Stony Land” occurs, largely unsuitable for agriculture, grazing, or forestry. The upper, flatter parts of the Booby Hill and The Level domes have their own soil types. “Booby Hill coarse sandy loam” consists of loose or cemented volcanic ash, while “St. John’s sandy loam” formed in pumice deposits atop the dome, representing a somewhat drier and less fertile variant of the soils described above. In the relatively flat landslide area of The Bottom, sandy material occurs at the surface (“The Bottom sandy loam”). This soil developed from material washed downward from the surrounding higher slopes. Once suitable for farming, this land is now largely built over.

All of these loamy soils – sandy clays and loams – tend to become compacted after rainfall. Nevertheless, they drain reasonably well, as water moves easily through the pore spaces. It then flows beneath the surface toward the edges of the island, often emerging below sea level. There are also (historical) freshwater springs on the land. The most important factor affecting suitability for agriculture is slope: steeper soils are more prone to erosion and therefore less suitable.

According to Veenenbos’s mapping, only 13 percent of the land is suitable for agricultural use, with or without limitations. The usable areas are mainly found on the flatter domes of The Level and Booby Hill, as well as in the zones between domes, for example near the villages of Windwardside and The Bottom. Most Amerindian sites and plantation-era agricultural plots are also located in these relatively flat areas. On some of the steeper, slightly higher slopes, small-scale terraced farming continued well into the twentieth century. The characteristic construction of these terraces helped reduce susceptibility to erosion. With such small-scale cultivation, the soils were fairly workable, particularly due to their fertility and good moisture retention at higher elevations. Today, most of these areas have largely reverted to forest.

Geohazards and Climate Impact

Geohazards are geological processes that can pose a threat to people. Examples include earthquakes, volcanic eruptions, flooding, erosion, and landslides. Furthermore, a volcanic eruption on a nearby island may



Soil

- Bo Booby Hill coarse sandy loam
- Bt The Bottom sandy loam
- Gi Gile's cherty sandy loam
- Gi3 ... sloping phase
- Gi4 ... very stony phase
- Jo St. John's sandy loam
- Jo3 ... very stony phase
- Rs Very steep stony land
- Mi Middle Island very stony loam
- Mi2 ... terraced phase
- Mi3 ... sloping phase
- Mi6 ... moderately steep phase
- Re Rendez-vous stony loam
- Re3 ... gently sloping phase
- Sc1 Scenery clay loam - steep phase
- Sc7 ... poorly drained phase

Soil suitability

Land suited for cultivation
- II - Cultivation with minor limitations
- III - Cultivation with major limitations

Land suited for limited cultivation
- IV - Best suited to pasture and hay, can be cultivated occasionally

Land not suited for cultivation
- V - Grazing or forestry with slight or no limitations
- VI - Grazing or forestry with minor limitations
- VII - Grazing or forestry with major limitations
- VIII - Wildlife and recreation only

- Gully (gut)
- Peaks

[Fig left] Soil map and soil suitability map of Saba. Especially on the steeper slopes, Saba's soils are stony. These areas are the least suitable for horticulture, arable farming, or grazing. Less steep areas are generally more suitable.

generate a tsunami. All of these *geohazards* have played and continue to play a role on Saba.

A Future Eruption?

Saba is an active volcano. Although there has been no volcanic activity for centuries, an eruption in the future is certainly possible. On nearby Montserrat, which is geologically comparable, a series of eruptions took place beginning in 1995. These eruptions followed a period of 450 years of dormancy. Earlier, in 1902, the eruption of Mont Pelée (Martinique) claimed about 30,000 lives, making it one of the deadliest volcanic eruptions in the recent history of the Caribbean. The fact that volcanic activity on Saba is not over is confirmed by the presence of several warm springs. Even a relatively small eruption can have highly destructive effects, as the inhabited areas are extremely vulnerable to pyroclastic flows and ashfall.

For this reason, the Royal Netherlands Meteorological Institute (KNMI) monitors signs of increased volcanic activity with a network of instruments. This monitoring network was started in 2006 and has been expanded several times since. The network detects possible increases in tremors or deformation of the earth's surface. The thermal spring near Green Island is also monitored to track any sudden increases in temperature. Such signals may indicate that magma is rising. They can appear weeks or even years before a possible eruption, making timely warnings quite feasible. The instruments transmit data around the clock to the KNMI, where it is automatically processed and manually checked. In urgent, potentially dangerous situations, a protocol is followed to notify the island authorities

[Fig] View from Zion's Hill toward Spring Bay. The prominent, higher, and steeper hills are the domes Old Booby Hill (right) and Kelbey's Ridge (left). Spring Bay formed where less erosion-resistant pyroclastic deposits intersected by gullies ("guts") are present.

and the Departmental Coordination Center for Crisis Management of the Ministry of Infrastructure and Water Management. A warning system with four alert levels is used: normal (green); advisory (yellow); watch (orange); and warning (red).

Water-related Hazards, Erosion and Landslides

A volcanic eruption is not the only hazard on Saba. Due to climate change, it is likely that flooding and erosion will increase. Flooding currently occurs mainly in localized, short-lived events caused by intense downpours. During such heavy rainfall, the permeability of volcanic soils is sometimes insufficient, causing large amounts of water to flow downslope, potentially resulting in flooding. This can also lead to soil erosion, with material subsequently washed into lower-lying areas. Erosion is more pronounced on slopes where vegetation has been heavily degraded, for example due to intensive grazing. Even when grazing pressure decreases, vegetation recovery on bare, dry (lower) slopes is slow, leaving these areas vulnerable to erosion for longer periods.

Climate change may lead to more intense peak run-off, mainly because the most powerful hurricanes are expected to become stronger. These storms are often accompanied by extremely heavy rainfall. As a result, gullies and slopes are forced to carry increasing volumes of water, which heightens the risk of erosion. Where these gullies and slopes intersect with inhabited areas, this can cause significant inconvenience. Cultural heritage may be washed away or buried. More sediment-rich water flowing into the sea can also accelerate the degradation of coral reefs. Coral reefs are already under pressure due to rising seawater temperatures. In addition, increasing drought will have a major impact on the island. In dry years, severe (drinking) water shortages may arise, along with problems for agriculture and an increased risk of wildfires. Drier soils are also more susceptible to erosion.

Along Saba's steep coastline, active cliff erosion occurs. The northern and western sides of the island are particularly prone to erosion, with steep slopes and sparse vegetation cover. In addition to ongoing, relatively slow erosion and the incision of gullies, landslides also occur in these areas. Several are historically documented: more recent events took place near the harbor in 1997 and at Tent Bay in 2014. At Mary's Point, severe erosion in the 1930s led to the evacuation of the local population. Erosion along the steepest coastal sections – especially on the west and north sides – is difficult to prevent, most notably along the northeast coast where wave action is strongest. Due to the combined effects of the rising sea level and increasing hurricane activity and extreme rainfall, cliff erosion may accelerate in the future. Because of Saba's rugged topography, accelerated sea-level rise is expected to have a relatively limited impact overall, with the exception of the island's lowest fringe areas.

The exact impact of climate change on accelerated erosion and flooding still requires further study. The extent of the impact will largely depend on the measures implemented to counter erosion, especially in the island's interior. This could involve vegetation management (to prevent overgrazing), as well as strategically placing check dams or culverts along roads to help divert run-offs from peak flows early. Reinforcing cliffs at vulnerable locations together with vegetation management on top of the cliffs could help reduce both shoreline retreat and coastal erosion.

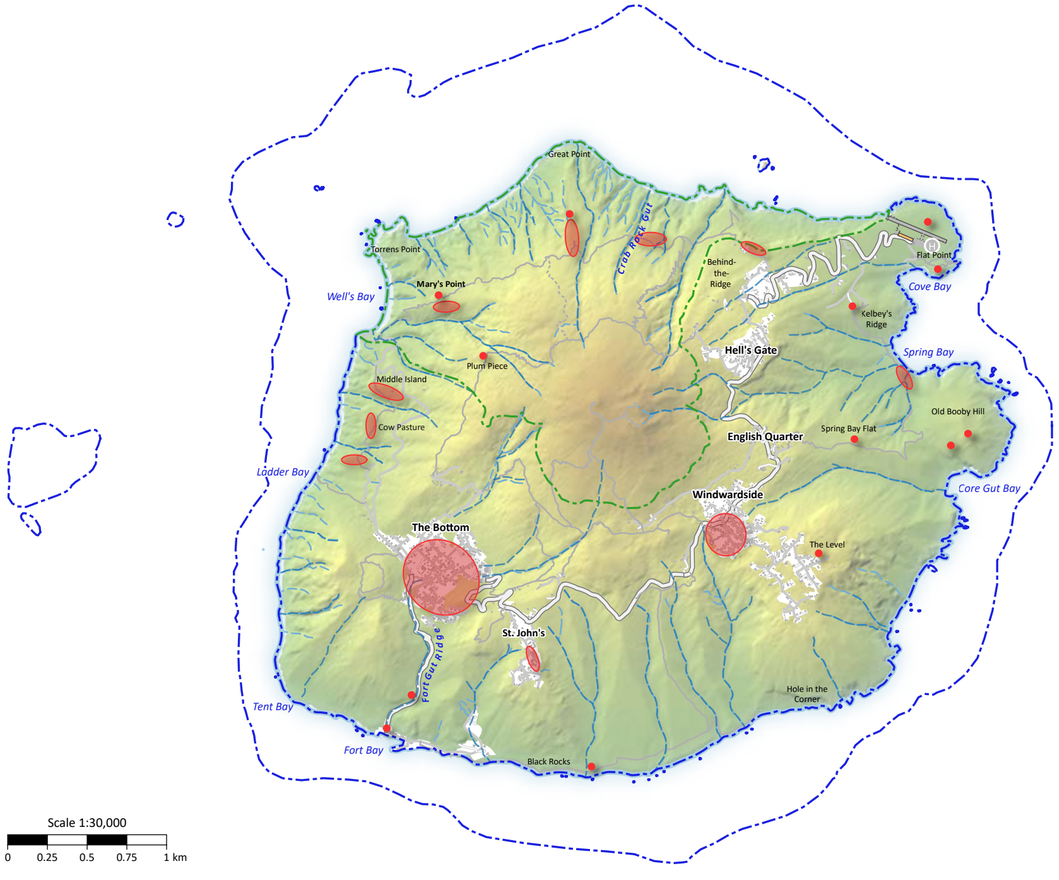
[Fig] Active erosion in the Spring Bay guts.

[3] MAAIKE DE WAAL

LAND USE IN THE PRECOLONIAL PERIOD

History books about Saba tell us that Columbus discovered the island on November 13, 1493. He named it San Cristóbal, but the island already had a name. Amonhana, “the rock”, was what the original inhabitants called it in their Arawakan language. The island had already long been discovered before 1493, and it had been inhabited for many centuries before Columbus first saw it. Archaeological traces in the landscape tell us about the first inhabitants of Saba.

[Fig] View from the tidal pools. (Photo: Maaike de Waal)



[Fig] A map of Saba with the approximate locations of a selection of Amerindian sites and reported distributions of archaeological materials.

Archaeology

Indigenous Amerindian sites

- Sites
- Site areas

Topography

- Built-up areas

Roads

- Public main road
- Public road
- Private road
- Footpath or trail
- Footpath or trail (under construction)

Airport taxiways

- Runway
- Taxiway
- Apron
- Helipad
- Parking

Geology

- Gullies

The first human presence in Saba has been dated to 3484 BCE, indicating that people already travelled to Saba more than 5500 years ago. This is incredibly early, also when looking at neighboring islands. The earliest people of Saba were nomadic people, with origins in the South- and Meso-American mainland. Attracted by locally available natural resources, they seasonally moved between different islands and built small temporary camps. Their short stays only left few traces in the landscape.

Permanent settlement started from c. 400 CE onwards, when Amerindian people started to build settlements where they stayed year-round. These locations obviously had to be suitable to maintain the groups in terms of subsistence. Because people stayed longer in one area, they left more and clearer traces in the landscape.

The latest Indigenous habitation in Saba has been dated around 1450 CE, just a few decades before Columbus first sailed by. The end of the Amerindian period for Saba is commonly placed around the arrival of European colonizers, in 1493. However, a historic account from 1645 speaks of an Amerindian settlement in Saba and local tales relate of Amerindian people inhabiting or using Spring Bay in the seventeenth century. So far, there is no archaeological evidence to confirm this.

Indigenous Landscape and Site Location Factors

Indigenous settlement required a few essentials: freshwater, rich fishing grounds and/or fertile soils, and flat areas to build huts.

Freshwater could be collected at several locations in Saba. Today there are only two permanent potable water sources, at Tent Bay and Spring Bay, the latter at 8 meters depth. Still, Amerindian people probably knew how to get access to run-off water streams that are at shallow depths in gullies close to the shoreline. In later periods, wells were built, tapping into the same water systems. The east coast of Saba has wells at Spring Bay, Core Gut Bay, and Hole in the Corner, and there is a small well at Middle Island, at the west coast. Three other wells, one at Cove Bay and two at Well's Bay, have been recently destroyed. Tent Bay, in the southeast of the island, has a very small spring. Natural depressions that could contain water have also been reported, for example at Big Rendez-Vous, to the west of Windwardside.

Easy access to rich fishing grounds must have been one of Saba's major attractions. Saba is only 3-6 km from the Saba Bank, offering unparalleled fishing opportunities. Many parts of the coastline also provide fishing and shellfish collecting opportunities

[Fig] View from the tidal pools towards Amerindian sites in the distance. From left to right: Old Booby Hill, The Level, Spring Bay and Spring Bay Flat. (photo: Maaike de Waal)

[Fig middle] View from Saba's highest point towards Amerindian sites in the northwest. From left to right: Flat Point, Kelbey's Ridge, Spring Bay, Old Booby Hill, Spring Bay Flat, and The Level. (photo: Maaike de Waal)

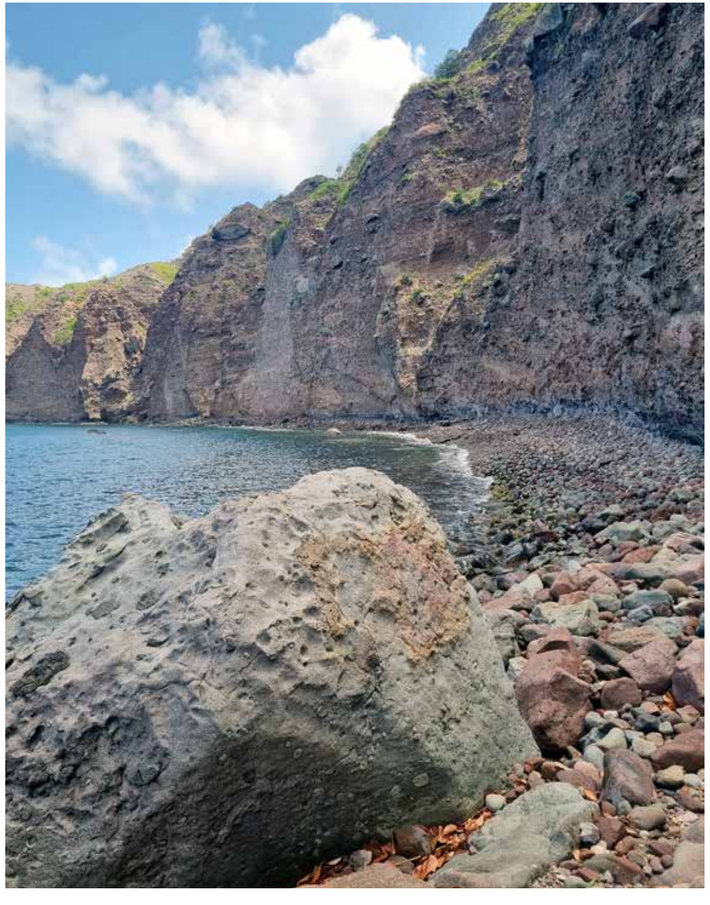
closer-by. A special, sheltered, location are the Flat Point tide pools, enclosed and accessible natural seawater basins. These are close to several Amerindian sites, whose inhabitants surely would have been attracted by the easy opportunity to collect sea urchins, small fish, and crabs.

The steep topography has greatly determined landscape use in the past, resulting in that most (relatively) flat areas in Saba, no matter how highly elevated, (can) have Amerindian sites. These heights came with challenges for collecting water, but with advantages in the form of strategic and defensive site locations, overviewing large parts of land and sea.

For their settlements, Amerindian people choose lower, gently sloping, coastal stretches, preferably close to a spring and a bay that would allow landing of canoes, as well as open coastal elevations and sheltered inland locations. They also selected locations to carry out special activities, depending on particular natural features, such as rock overhangs, or resources being present, such as the abundant seasonal availability of Wedrego (Sargasso Shearwater) birds, a fat-rich food source, and Black Land Crab, providing tasty and protein rich meat.

Other valued resources included lithic raw materials to make tools, clays to make pottery, and wood to build houses and dug-out canoes. Another important resource is conch shell, used as a food source and raw material for tools and ornaments. Considering the small dimensions of Saba, most of these resources would have been in walking distance of many Amerindian settlements. Turtles, a protein-rich food source which was valued by Amerindian people, were less easy to obtain because of

[Fig] Rock overhang, northwest of Mary's Point ruins, with the visible profiles of a 1 m^2 excavation unit, dug in 2018, in which a fire pit and Amerindian artefacts were identified. In more recent times, children living in the historic Mary's Point village used this overhang as a play area. (photo: Maaike de Waal)



[Fig] Well's Bay, in northwestern Saba, covered in pebbles. Well's Bay had an underground fresh water resource. (photo: Maaike de Waal)

the scarcity of beaches for nesting. Coral banks, providing coral as a raw material for tools and ornaments, surround Saba's coastline, except for Spring Bay, Fort Bay, The Ladder and Well's Bay, where safe landing bays could be found. Still, Amerindian canoers needed great seafaring skills to overcome the strong currents and rocky shores. These bays were essential for fishing parties to return home safely, and for mobility over sea, allowing short-distance and long-distance intergroup contacts and exchange.

For Amerindian people, Saba had it all, and it is no surprise that they started living there from very early onwards.

[Fig] Rock overhang on Old Booby Hill, used for shelter. In front are the collapsed remains of a historic animal pen. (photo: Ryan Espersen)

Traces in the Landscape: Indigenous Communities and Lifeways

The earliest inhabitants of Saba left few traces in the landscape. However, we do know quite a bit about these small, mobile communities who started exploring the island 5500 years ago. Amerindians carefully selected different types of locations in the landscape to camp and to use. They used open coastal areas (e.g., Black Rocks), elevated inland areas (e.g., Plum Piece, Fort Gut Ridge), tops of hills bordering the sea (e.g., The Level, Great Point, Old Booby Hill), and rock shelters (e.g., Old Booby Hill).

As some of these locations have largely been destroyed, or only had some isolated finds, our knowledge is largely based on what excavated sites tell us. Black Rocks, being the closest location in Saba to the Saba Bank, was centred upon fishing. Here, people produced sisal rope for fishing nets, and they mined white volcanic ash, that could be used to protect their skin from sunburn while out on the sea. A rock overhang on Old Booby Hill was used for shelter. Conch shell cutting tools, sharp Antigua flint flakes and large amounts of bird bones found here made clear why people were using this area: they hunted sea birds. At the 210 m high top of Old Booby Hill, Wedrego birds were butchered in large numbers over a long period of time.

Wedrego birds were also eaten at inland Plum Piece, well hidden in the densely vegetated slopes and valleys in northwest Saba. A small group of people had managed to find this flat area in the hilly tropical forest, at c. 400 m high, to camp and to carry out seasonal activities. Apart from Wedrego, they also ate Black Land Crab, and a bit of fish, shellfish, fruits, and tubers.

The many conch shell axes on the site show that people also came here to build canoes. However strange to outsiders, building boats in highly elevated settlements and lowering these to the sea in a well-orchestrated group effort has been a well-documented practice for Saban boat builders until recent times. To successfully

[Fig] Conch shell cutting tool (c. 17 cm) from Old Booby Hill. (photo: Robbert Jan Looman, Museum of Antiquities, Leiden)

[Fig] Shell adzes from Plum Piece, on display in the Heritage Centre in Windwardside. These objects were made by hammering off the lip from the conch shell, pounding it in the shape of the desired tool and finishing it by grinding the sides until smooth, and the edge until sharp. These adzes originally had wooden hafts. The axe to the left is c. 20 cm long. (photo: Maaike de Waal)

achieve this, long lines were needed to hold and guide canoes down the gully sides. Tools that survived the passage of time include large pebbles, carried all the way up to the site from Well's Bay, to be used as grinding stones to process vegetable foods and to sharpen shell tools, and flint flakes. Flint is not locally availably in Saba and was collected in Antigua, c. 170 km from Plum Piece. Use-wear research has indicated that these flint tools have been mainly used for working wood and plants, and to prepare food.

The group using Plum Piece had obviously very well adapted to local, and seasonally changing, resources. Living this mobile life, temporarily settling in different islands to use local resources, required detailed knowledge of the islands, and highly developed seafaring skills. Plum Piece inhabitants probably used Well's Bay, where they could also collect water. Water could probably also be found in the wettest parts of the bordering gullies, at just a few minutes' walk.

During the earliest habitation period of Saba, the elevated inland sites such as Plum Piece and Fort Gut Ridge were the most significant, repeatedly used, camp sites we know of.

Permanent settlement has been identified in a variety of locations. They range from open coastal areas (e.g., Spring Bay), tops of hills bordering the sea (e.g., Kelbey's Ridge, St. John's), to sheltered inland areas (e.g., the Bottom). Some of these locations were so attractive, for example Spring Bay, which has freshwater, that successive habitation phases took place. For some locations, such as The Bottom, it is almost impossible to identify where one Indigenous settlement stops and where the other begins. Amerindian finds occur almost everywhere, and intensive historic agriculture and historic and modern building activities have destroyed many archaeological locations. Especially the excavations at Spring Bay and Kelbey's Ridge have yielded insights in the organization of Indigenous communities living permanently in Saba. These were small groups, consisting of one or a few households. People were living in round or oval wooden houses, with diameters of c. nine meters. They buried their deceased family members in the houses during intricate burial rituals, to make sure that ancestors remained closely linked to the living community.

Regardless of location and height of the settlements, their inhabitants were largely living on a marine diet. They collected shellfish along the coasts, and they fished, most likely on the Saba Bank. Close to the settlements were small horticultural plots with manioc and maize. In addition, they collected fruits, nuts and seeds, caught land crabs, iguanas and sea turtle, and hunted rice rat, agouti and birds.

Access to freshwater was of course vital. Some settlements had water close-by, but inhabitants of others had to walk and climb considerably to collect drinking water and carry it home in heavy ceramic jars.
The Amerindian people who started to live year-round in Saba used pottery. They made containers, cooking pots, baking plates, and spindle whorls (to process cotton and other vegetable yarn). Pottery was largely made locally from Saban clays, and incidentally from clays from Anguilla, St. Martin and St. Eustatius. They shaped their pottery using coiling techniques, smoothed the surfaces with pebbles until strong and shiny, and decorated some of it with incised, modelled or painted patterns. People belonging to particular groups and living in a certain time used similar pottery styles, as an identity marker and to maintain and emphasize intergroup social connections.

Other objects used in the settlements include shell, stone, and coral tools. Like the earliest inhabitants, conch shell axes

[Fig] Flint flakes from Plum Piece, on display in the Heritage Centre in Windwardside. These tools were made by hitting flint nodules with another rock, precisely directing the blow, aiming at the production of sharp and ready-to-use cutting, drilling and scraping tools. Flint was procured through expeditions to Antigua. The flake top left is c. 3.5 cm long. (photo: Maaike de Waal)

[Fig] Gully close to Plum Piece. (photo: Maaike de Waal)

and adzes were used to clear parts of the forest for housing and gardening plots, and Antigua flint flakes were used for cutting, drilling and scraping. Grinders, made from coral or rock, were used to process food, and to grind coloring pigments for decoration of pottery as well as the human body. Often these tools were made from readily available materials, simply using the natural rough surfaces. Other stone tools include axes, some of which from non-local materials such as St. Martin greenstone. Special finds include shell and stone beads and pendants for bodily adornment.

Really exceptional are the discoveries about Amerindian spiritual life in Saba, that match historic descriptions in early colonial accounts. Apart from the burials, which clearly followed complex and delicate rituals that had meaning for the living and played an important role in ancestor veneration, there are also special ceremonial objects, such as zemis. These are carefully chipped, ground and polished three-pointers, made from shell, rock or coral. These objects played a role in ancestor rituals, and they were also linked to fertility of the land.

One of the most exciting ceremonial objects found in Saba is a snuff inhaler in the form of a finely carved fish, made from manatee bone. It has openings in the mouth and behind the gills, and it was used to inhale hallucinogenic matter through two long, hollow, bird bones via the nose of a shaman. This ritual and sacred activity aimed to transfer the boundaries between the world of the living and that of the ancestors.

Other indications for Amerindian spiritual beliefs can be recognized in the depictions of particular animals on pottery vessels. Frogs, for example, were linked to fertility, and turtles, playing an important role in Indigenous origin myths, to wisdom and the earth. Bats, closely linked to caves, were also meaningful in Indigenous mythology, as caves were considered entrances to ancestral worlds. It is no surprise that bats are therefore linked to the death and have been depicted to portray ancestral spirits.

Contacts within the world of the living were also closely sustained, by forging and maintaining social, political, economic and probably also ceremonial ties between different communities. These ties considered islands at short distances (e.g., St. Eustatius, St. Martin and Anguilla), as well as relatively long distances (e.g., Antigua, and the Greater Antilles). Community members travelled to different islands to find marriage partners and to obtain raw materials for tools. They were in close contact with groups in St. Martin to acquire greenstone axes and calcite zemi three-pointer-stones. We think that they may also have exchanged perishable items, such as food and artefacts made from wood, calabash, plant fibre and feathers.

Of course, people also frequented different parts of the island, to optimize the yields of everything Saba had to offer. We find their traces, in the form of pottery sherds and worked shell, in many different locations all over the island. Some villages had locations close-by where inhabitants carried out special tasks. For example, the coastal site of Black Rocks probably functioned as a base from which fishing trips to the Saba Bank were organised, and where nets were made and repaired, for the elevated village in St. John's.

Landscape Impact and Cultural Continuity up to Today

By using all these different locations, Saba's first inhabitants impacted the island's natural environment. They not only came to Saba to harvest trees for their canoes, and hunt Wedrego birds, but they also needed clearings for their huts. The more

[Fig] Animal representation in coral (c. 10 cm), from the Fort Bay Ridge site, in storage in the Heritage Centre in Windwardside. With some effort one can identify large, round, eyes and a protruding snout. These elements were often used to depict bats, representing the ancestral world, or felines. Felines are not native to Saba, and their representation can be a stylised memory of the original homelands of Indigenous Sabans in the South- or Meso-American mainland. (photo: Robbert Jan Looman, Museum of Antiquities, Leiden)

[Fig] Snuff inhaler from Kelbey's Ridge (c. 9 cm), made from manatee bone, on display in the Heritage Centre in Windwardside. (photo: Robbert Jan Looman, Museum of Antiquities, Leiden)

permanent settlements became, the more wood was needed for houses, the larger the clearings in the once pristine forest became, and the more land was opened for small-scale horticulture. They likely introduced crops and animals from South- and Meso-America. Animals included agouti, common opossum, dog, guinea pig, and armadillo. Botanical introductions were manioc, sweet potato, maize, arrowroot, and common bean. They clearly felt strongly connected to the land, depicting local animals and natural features from their original homelands in their ceremonial objects.

In turn, Amerindian lifeways were also impacted by natural factors. The Indigenous inhabitants choose to adapt to living in an island with few low-lying or relatively flat areas, with large distances and steep climbs to overcome to collect freshwater, and a quite limited amount of terrestrial fauna that could be hunted. With their flexibility, creativity, and ingenuity, they adapted well to these local circumstances, even in periods of increased temperature and dryness.

However, the effect of sudden natural disasters, such as hurricanes, storm surges, tsunamis, earthquakes and volcanic eruptions must have been enormous. During hurricanes, the Indigenous population could find temporary shelter in caves or rock shelters, for example in the gaps at Great Hill, which is directly west of The Bottom. Storm surges and tsunamis would largely impact low-lying areas, which are quite rare in Saba, but they can contaminate coastal freshwater sources with salt water. Earthquakes could probably be lived out in the relatively flexible huts Indigenous people lived in.

Some consider Indigenous heritage a valuable and intriguing asset of their living environment. For others this may be something abstract and hardly visible instead. Whether or not school curricula cover the topic plays an important role in this. Fortunately, primary and high school educators increasingly include Saba's Amerindian past in their teaching. However, the absence of direct descendants from the original inhabitants can still create a feeling of alienation. Looking at cultural continuities might ease this.

Some crafts, such as basketry, have continued into historic and recent times, the skill of weaving Saba baskets having recently been revitalized in the Saban community (albeit short lived). For this, vines need to be debarked, as the earliest inhabitants were already doing at Plum Piece and Black Rocks, more than 3800 and 5500 years ago. Another long-continued tradition involves the making of cassava bread.

Amerindian people introduced manioc to Saba. The continued tradition of preparing manioc and baking cassava bread by more recent communities has been historically documented in photographs and filmed documentaries.

Other long continued traditions include the already mentioned custom of building boats in highly elevated settlements, where the boat builders live, and lowering them hundreds of meters down to the sea once finished. Also think of the typically Saban tradition to bury deceased family members very close to the family home.

The most obvious continuity, however, is the use of the landscape. Amerindian people choose to settle Saba. They depended on the same natural resources as Sabans today, as they also needed freshwater, fertile soils, and healthy fishing grounds. In addition, they preferably selected relatively flat areas for their houses and gardens. Since such areas are very limited in Saba, these have been used over and over again. Amerindian, historic, as well as modern groups repetitively returned to the same locations. Examples of this can be found all over the island. Also, many of the present-day trails are probably largely following routes that used to connect settlements, agricultural plots and water sources, likely walked by Sabans not only in historic but also in Amerindian times. This is a unique element that not many Caribbean islands share: the opportunity to virtually follow the footsteps of people who lived in Saba tens, hundreds and maybe even thousand years ago.

Cultural and Natural Threats

Repeated use of locations that were originally used by Amerindian groups, as described above, has inevitably resulted in partial or complete destruction of archaeological sites by construction of houses and infrastructural works.

Agriculture also disturbs archaeological sites, by turning over the soil, including archaeological layers. Very large areas of Saba have been cultivated in the past, even mid and high elevation zones. Although most of these grounds have long been deserted, and have become overgrown again, the damage done to Amerindian sites cannot be undone.

On the other hand, repeated use of areas, and building and agricultural activities can also lead to the discovery of sites. Amerindian objects are found virtually everywhere you walk, build or cultivate. In many parts of Saba, vegetation is so dense that archaeological finds would go unnoticed. It is often thanks to attentive property owners developing plots that site locations are being reported to the Saba

[Fig top] Spring Bay, on Saba's east coast, from south to north. The heavy gullying erosion, removing artefacts from their original contexts, is clearly visible in the lower parts of the bay.

[Fig left] Amerindian pottery, food remains, and lithics eroding out of a Spring Bay gully profile. (photo: Maaike de Waal)

Archaeological Center Foundation (SABARC). Natural conditions can also threaten the archaeological record. Saba's steep slopes are all easy prone to erosion, especially in gaps and gullies. One area where this erosion, and its destructive effect on archaeology, can be seen very clearly is Spring Bay. The Spring Bay gullies have steeply carved out profiles and artefacts are washing out of their original contexts. The build-up of the island also results in coastal erosion, making rock falls and collapsing cliffs common in Saba. In several areas, Amerindian finds have been found close to current ridges, for example at Middle Island, Behind-the-Ridge, Crab Gut, and Mary's Point. Probably, many sites have partly or completely been lost to erosion already.

It is not expected that these natural erosion processes will stop or slow down. Regeneration of vegetation, by reforestation and a continuing ban of free-roaming goats, helps. However, climate change deteriorates the current situation, causing more and heavier tropical storms and hurricanes, diminution of hilltop vegetation, and of soil humus.

A combination of natural and cultural threats is particularly damaging to sites. The Bottom, for example, is very vulnerable. It has Amerindian material throughout and a lot of development threatening the survival of archaeological layers. At the same time, landslides reportedly happen, deeply covering areas in sediment.

[Fig right] Torrens Point, in northwest Saba. This headland, leading up to Mary's Point, shows unstable ridges and severe coastal erosion. Diamond Rock (left), once connected to Saba, is now c. 400 metres separated from Torrens Point.

[Fig] Information panel about Amerindian inhabitants of Saba, along the road, east of St. John's, made possible by the Sea and Learn Adopt-A-Box Project. (photo: Maaike de Waal)

FEATURED

Local Organizations, Outreach, and Community Archaeology

A few local organizations are taking care of the Indigenous archaeology in Saba. First, there is the non-governmental organization SABARC, which also runs the Saba Heritage Center in Windwardside. This Center has exhibitions, presentations and meetings about Saban heritage, and it has an archaeology storage. Also in Windwardside is the Harry Luke Johnson Museum, which houses Indigenous artefacts as well. Strength and efficiency of SABARC, regarding research, and protection of Amerindian heritage, as well as outreach and community archaeology, fluctuate with the backgrounds of SABARC staff.

SABARC has a strong history of organizing dig-along days, research presentations and publications, and social media coverage, as well as engaging Saban youth in archaeology research. The organization also strongly contributed to developing heritage trails, including the Saba Heritage Trail (Spring Bay, Kelbey's Ridge, and Spring Bay Flat), and the Mary's Point Heritage Trail. Although both trails focus largely on historic period heritage, some Amerindian archaeology is also included in the information panels. SABARC also contributed to the road-side informative heritage panels that can be found all over the island. One of them is about Amerindian communities on Saba Today, few people visit the Library and Tourism Office to collect information about the island's Amerindian past, but the Heritage Center sees an increase in educators coming by to learn about this. This is important, as Saba's unique heritage is vulnerable and deserves to be safeguarded for future generations.

The Future of the Indigenous Past

The Public Entity Saba is responsible to manage its archaeology, and to do so they need to know where sites are located. Archaeological predictive maps are practical tools for this. The existing predictive map for archaeology in Saba needs serious updating. At publication, in 2015, the map makers already made several recommendations. Among others, they emphasized the need to map (protected) archaeological monuments, as soon as established by the Public Entity, and local government regulations and archaeological advice for archaeological areas in Saba. Archaeologists can advise, but only the Public Entity can decide and set the regulations.

Since a few years, the Public Entity commissions Archaeological Impact Assessments for their own plots that await development. Examples are the 2025 archaeology research at Wathey Property, and the 2023 investigations preceding groundwork and building for the Saba Comprehensive School in St. John's. As a result of the scarcity of land to be developed, however, options for in situ protection are virtually non-existent. Also, most of the island is private property, so few archaeological assessments are carried out. Developers who find Amerindian objects during groundworks do, however, often bring these to SABARC. Out of their original context, these provide little information, but with some extra notes on where they were found, archaeologists can continue to put together the puzzle that is Saba's Amerindian past.

In 2024 the Netherlands signed the Faro Convention, focusing on heritage participation and community heritage. This also applies to Saba. In this context, new possibilities arise for inclusive community engagement and a shared responsibility for Saba's vulnerable Amerindian heritage. So, what can we all do to help preserve this heritage?

Policy makers can develop archaeology regulations and policies, commission Archaeological Impact Assessments, and seek solid archaeology advice to steer development decisions. Heritage specialists or archaeologists, whether local or not, can contribute by mapping and monitoring site locations and building a central database. It would also be good to visualize Amerindian archaeology in the landscape. Pointing attention to locations that people have been using hundreds or thousands of years ago, emphasizes the connection between past and current societies. It also shows how vulnerable these sites are, how little is left, and how much information about past lifeways and landscape use they can still provide.

If you are lucky to find Amerindian artefacts in the landscape, please leave them in place. Make pictures of the finds in their location (you can add a scale in the picture, by depicting your shoe, sunglasses, or a coin), pinpoint the coordinates (e.g., using a GPS app, or a Google Maps placemark), and send these to SABARC. Together we can help protect Amerindian traces in Saba's landscape and to maintain the testimony of the first people who lived here!

[Fig] SABARC excavations at Flat Point (2015), involving the island's youth. (photo: Ryan Espersen)

FEATURED

Research History

Professional Indigenous Amerindian archaeology on Saba was initiated by Leiden anthropologist Jan de Josselin de Jong in 1923. He excavated in The Bottom, where he discovered and documented the remains of an Indigenous village. Sixty years later, Jay Haviser, then archaeologist at the Archaeological-Anthropological Institute at Curaçao, investigated areas that the local community brought to his attention. He mapped nine Amerindian sites. In 1987, Corinne Hofman and Menno Hoogland, Leiden University archaeologists, began investigating Amerindian Saba with their students, resulting in their PhD dissertations, many scholarly publications and the booklet "Saba's First Inhabitants".

In 2012, Jay Haviser and archaeologist Ryan Espersen founded the Saba Archaeological Center (SABARC). SABARC's goal is preserving and promoting Saba's archaeology heritage through research, public outreach, and community engagement, the latter importantly aiming at involving youth. SABARC directors, each with their different specialisations, ranging from history, visual arts, creative communications, to archaeology, have approached their role in their own unique ways. Today, SABARC, the Saba Heritage Center, and the archaeological storage, are directed by Sharifa Balfour.

Most important, however, is the Saban community that has played a crucial role, in welcoming visiting and resident archaeologists, introducing them to the heritage hidden in the Saban landscape, and allowing research to be carried out in their properties. This text is based on all their help, efforts, and publications.

[Fig] Flat Point with the ruins of the plantation of the same name.

[4] MICHIEL PURMER

THE CHANGING CULTURAL LANDSCAPE SINCE THE ARRIVAL OF THE EUROPEANS

“Unspoiled queen” is written on many Saban license plates. For many tourists, this slogan accurately reflects the impression they take home from Saba: a paradisiacal island, where lush natural landscapes alternate with charming little houses that seem to cling to the slopes of a dormant volcano. Yet behind this stereotypical image lies a long and complex history – one that differs significantly from that of the surrounding islands. This chapter describes the history of Saba’s landscape from the moment Europeans arrived.

[Fig. 4.0] Terrassenlandbouw in Zion’s Hill

[Fig] An old Saban car license plate (1982) carrying the slogan 'Unspoiled Queen'. NA signifies the Netherlands Antilles to which Saba belonged at the time. (photo: Michiel Purmer)

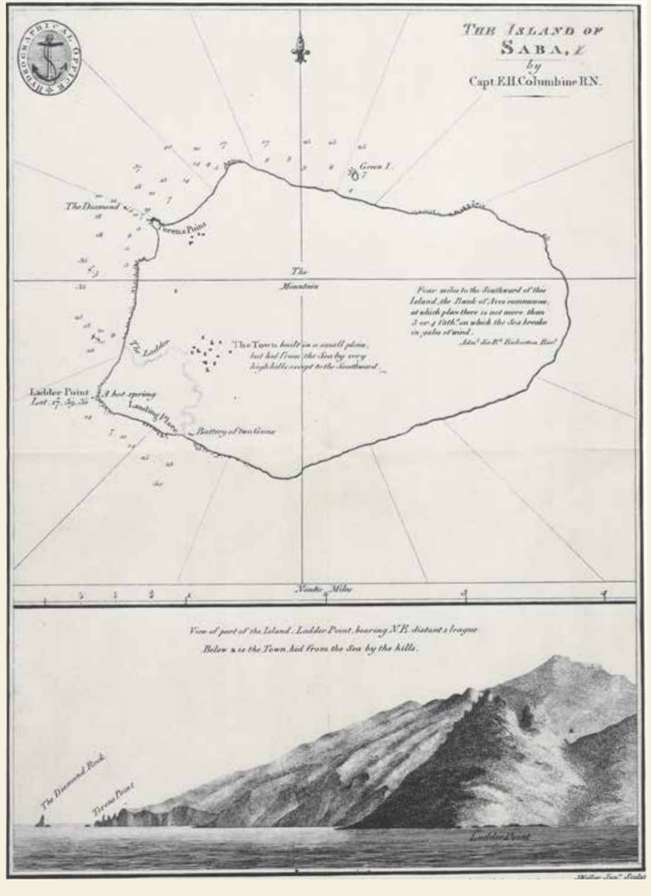
[Fig] Roaming around the island one will see that Saba is still the 'Unspoiled Queen'.

The First Europeans

The absence of large flat areas made large-scale plantations – common on many neighboring islands – impossible. The island also lacked a natural or suitable harbor. As a result, Saba's history developed differently, and reliable maps do not appear until the still rather rudimentary map of 1816. Yet Saba's landscape history is more dynamic than one might expect at first glance. This chapter begins in the period when the first Europeans set foot on Saba in the seventeenth century. Opinions differ on who they were, when they arrived, and where they came from. Tradition has it that Saba was colonized from St. Kitts. In 1629 a Spanish fleet of 32 ships occupied that island, carrying many Irishmen on board. The Spanish granted the uninhabited nearby islands, including Saba, to the Irish for colonization. They settled at Palmetto Point (later Mary's Point). The Irish are also said to have settled on Middle Island.

According to the literature, Saba was colonized around 1640 by settlers from Zeeland who arrived via St. Eustatius, drawn in by the rich fishing grounds. They established a settlement at Fort Bay. This settlement was reportedly abandoned in 1651 following a landslide. From Fort Bay, the valley of The Bottom was subsequently colonized. The flat and fertile soil there was suitable for agriculture and could supply Sint Eustatius with fresh produce.

It is uncertain whether the Europeans encountered any remaining Amerindians upon their arrival (see chapter 3). On Saba, the story is still told of a battle between the European Johnny Frau and the Amerindian Great Injun. They are said to have fought over the Spring Bay water source, with both men reportedly losing their lives in the conflict. The tale may point to contact between Europeans and Amerindians. Whether Amerindians were still living on Saba or not, traces of their culture were likely visible in the landscape encountered by the first Europeans. Colonists often



[Fig] The British 'Columbine' map from 1816 is the oldest known map presenting only the island of Saba. Only the area surrounding Fort Bay has detail. It includes a silhouette of the island viewed from the water.

settled in the same locations that had previously been inhabited by Amerindians. The Bottom, for example, is also an important Amerindian site. Nevertheless, what the settlers would primarily have seen was a lush, vegetated island surrounded by fish-rich waters – strong incentives to begin exploring the possibilities for horticulture and agriculture.

Developments second half 17th century

The colonists from Zeeland may initially have come to Saba in search of fish and fresh vegetables, but plantations were soon introduced as well. In 1654 the Portuguese conquered Dutch Brazil, prompting many Dutch colonists to flee to the Caribbean, including to Saba. This migration likely brought the sugar industry to the island and led to the establishment of several sugar plantations. By 1659, Saba was said to be home to 57 Dutch settlers and 54 colonists of English, Irish, and Scottish origin.

In addition to these European colonists, there must also have been enslaved people living on the island, possibly including

[Fig] Spring Bay is named after a freshwater spring close to the sea. It is the site of the legendary fight between Johnny Feai and Great Injun.

individuals brought over from Brazil. In 1656, 14 enslaved people managed to escape to Puerto Rico. This indicates the rapid development of a plantation economy on Saba during this period. The sugar plantations at Spring Bay and Flat Point likely date from this time, as does the plantation at The Bottom. Alongside this relatively large-scale plantation landscape, most of the island was dominated by small-scale farming and horticulture. Together with its fishing grounds, Saba thus developed into a strategic provisioning hub for the region.

In 1665, Saba was raided by English buccaneers, resulting in the destruction of the plantations and the forced deportation of Dutch settlers and enslaved people. Shortly thereafter, the Dutch recaptured the island, although presumably not all Dutch colonists returned. By the late seventeenth century, British settlers had already become the majority on Saba. After the 1665 raid, the plantations were brought back into operation, and enslaved labor was likely employed once again. Around 1680, the colonists from Zeeland transferred control of Saba to the Dutch West India Company. By 1688, five sugar mills were once again in operation.

Around 1700, Saba must have been a relatively prosperous island. The combination of fishing, plantations, and farms generated economic activity and produced surplus for export. In 1699, the island had 453 inhabitants. By that time, much of the island had already been cultivated, including the mountainous areas. The colonists may have built upon earlier Amerindian settlements. Reaching the valley of The Bottom from Fort Bay would have required considerable effort. The first paths and stairways likely date back to the earliest years of colonization in the latter half of the seventeenth century. The same probably applies to other paths that connected the oldest plantations, settlements, and farms.

A Landscape of Plantations and Farms (1700–1815)

"*In the 18th century, Saba was the most prosperous of the three Leeward Islands*," writes Johan Hartog in his history of the island. Saba was, after all, a fertile place. "*… agréable, fertile… [pleasant, fertile*]", as a 1795 geographical handbook succinctly notes. Cotton cultivation is mentioned as a means of livelihood. Yet this prosperity was unevenly distributed and certainly not shared by all inhabitants.

Throughout the eighteenth century, Saba became increasingly cultivated. Two agricultural systems continued to coexist on the island. On one hand, there were several relatively large plantations, primarily producing sugar. These plantations were owned by the colonial elite of St. Eustatius and occupied the flattest and most suitable land for farming. They were profitable for their owners, yet their scale remained rather limited due to Saba's mountainous terrain. The island would never develop into a classic plantation economy.

The most important sugar plantations were Spring Bay Plantation and Flat Bay Plantation. In The Bottom lay Paris Plantation, which was later expanded into Dinzley Plantation, named after Thomas Dinzey. He became the owner in 1778 and also served as the island's vice commander.

Near Well's Bay, there was also an indigo plantation. Since these plantations occupied much of Saba's arable land well into the nineteenth century, little space remained for small, self-sufficient farms and garden plots. Experts consider this a major reason for the impoverished conditions in which most Sabans lived. The profits from these plantations flowed to their owners on Sint Eustatius

The many more or less self-sufficient farms were concentrated around the settlements that still exist to this day, and in the two villages that no longer exist: Mary's Point and Middle Island. Farms were also found between settlements wherever the land could be made even roughly flat enough. By building terraces and creating pastures, mixed farms were established. These farms survived well into the twentieth century. The pattern of modest-sized plantations alongside small farms is characteristic of Saba. This also meant that relatively few enslaved people worked on the island. One indicator used in the literature to assess the intensity of a plantation economy is the ratio between free people and enslaved people. This further demonstrates that Saba was not a typical plantation island during this period (table 5.1).

[Table] Ratio of free people to enslaved people at the beginning of the eighteenth century (Source: Knappert, 1932, 92–93).

Island	Year	Free people	Enslaved people	Total	Ratio of free people to enslaved people
Saba	1715	336	176	512	1: 0,52
St. Eustatius	1715	524	750	1.274	1: 1,43
Jamaica	1734	7.644	86.546	94.190	1: 11,3

FEATURED

The hurricanes of 1772 and 1780

A major turning point in Saba's history were the devastating hurricanes of 1772 and 1780. The first storm, in particular, had a devastating impact on the island. Not only were 100 houses and the Anglican church severely damaged, but the plantations were also destroyed. Coffee, cotton, and sugar production on the plantations came almost entirely to a halt. This marked the end of the plantations' heyday.

In the years following the hurricanes, the houses were repaired. The Anglican church in The Bottom was also rebuilt. A collection is said to have been held on neighboring islands during its reconstruction, demonstrating the importance of regional connections.

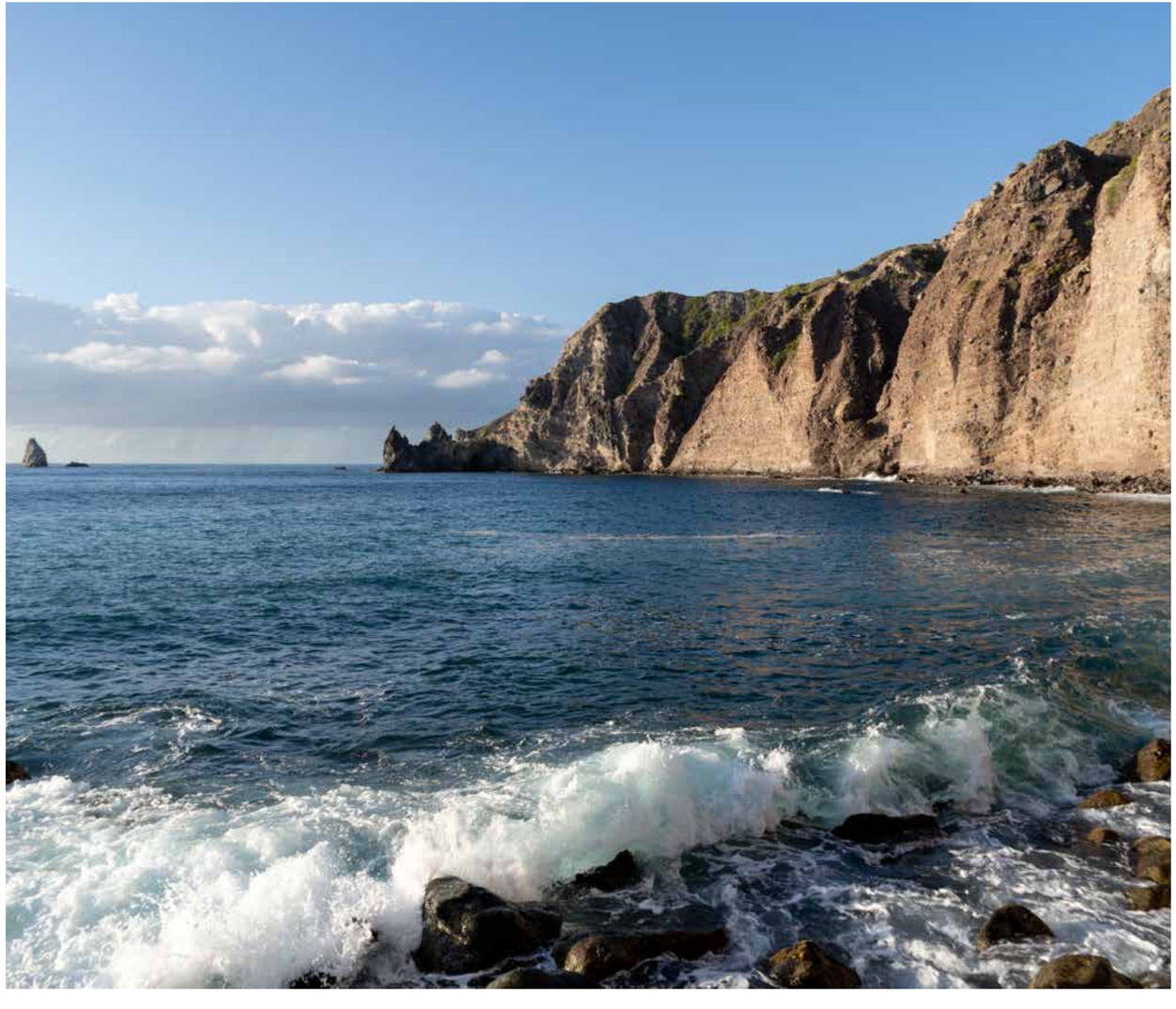
The hurricanes also marked the beginning of the Saban diaspora. An increasing number of free Sabans either emigrated to other islands for work or took to seafaring. By the late eighteenth century, Saba had already become known as the "*island of women*", as many of the men worked elsewhere.

Just like on Sint Eustatius, Saba was taken by the English in 1781, although no fighting occurred. This was the start of a period of several changes in control, until the island finally became part of the Netherlands in 1816. The plantation economy would never recover on Saba, and under French rule the Saban economy suffered a severe setback. Even so, the decline on Saba appears to have been less dramatic than on Sint Eustatius. Small-scale, self-sufficient agriculture persisted on the island throughout these numerous changes in governance.

In terms of landscape, the island was largely cultivated shortly before the 1772 hurricane. The larger plantations occupied much of Saba's arable land. Elsewhere, small farms with terraces, livestock pens, and grazing fields shaped a relatively open rural landscape. The steepest and highest slopes remained forested.

A "Neat and Tidy" Island (1815–1950)

In 1816, Saba had 1,145 inhabitants, more than double what it had been a century earlier. Forty percent of them (462 people) were enslaved. The population continued to grow gradually throughout the nineteenth century. After the collapse of the plantation system, agriculture became mostly self-sufficient, yet it continued to shape much of the island's landscape. Not everyone could work on the farms, as the available agricultural land had understandably reached its limits.



[Fig right] Wells Bay was home to piracy and smuggling at the beginning of the nineteenth century.

[Fig] A photograph dated around 1910 with some very modest housing. In the background a thatch covered hut possibly similar to the ones Teenstra described a century earlier. (photo: Wereldmuseum)

Fishing, seafaring, and small-scale crafts – primarily practiced by the women who stayed behind – became increasingly important. In the nineteenth century this included clothing production, straw-hat making, and Saba lace. The straw for the hats came from Cuba. When the Spanish-American War disrupted supply, the industry faded away. It illustrates how deeply Saba was connected to the region, both in importing straw and exporting hats. Shipbuilding also took place. Many of these activities show the strong ties between Saba, the sea, and the surrounding islands.

For a brief period (around 1818–1830), Saba's inhabitants were involved in smuggling and piracy. The independence wars in Central and South America led to a turbulent, lawless period in the Caribbean. Wells Bay served as a transshipment point for stolen goods. Carpenters from Mary's Point helped repair the illegally seized ships. This occurred with the knowledge of the Island Commander, who ultimately lost his position as a result.

European sources from this period portray a romanticized image of Saba as a poor but neat and orderly island. Marten Douwes Teenstra (1795–1864), an agricultural adviser in Suriname, wrote a book about the Antilles in 1837. He visited Saba in 1829, and his description offers a vivid picture of the island at that time: "*The houses are generally not large, but well-maintained and tidy, and the same applies to the straw huts, with their gardens and forecourts. […] Nowhere does one see ruins of destroyed and unreconstructed houses, which so greatly disfigure Paramaribo, St. Eustatius, and St. Maarten.*"

The comparison with the many ruins on the other islands is striking – in St. Eustatius, these were a direct result of the economic collapse. The straw huts he mentions are noteworthy as well. These were the homes of the poorer classes, which archaeologist Ryan Espersen has also identified and which were sometimes not regarded as proper houses.

Teenstra continues on agriculture: "*Every house – it is estimated that, in addition to several straw huts, there are 150 – has its own garden planted with sugar, cotton, and some bananas (bacoves). In the mountain ravines there are several very luxuriant coffee trees, and on the hillsides near the mountains some corn and a larger quantity of Guinea corn. Each house of any importance has a hand-operated sugar mill. […] The women, who plant the cotton, make their own spinning wheels by hand and knit very fine socks and gloves, which are both delicate and strong.*"

Livestock and vegetable cultivation were also present: "*Here one finds very handsome and fat cattle, sheep, goats, and pigs, because they find ample and good food here. […] Garden produce is also abundant, such as taro (root), potatoes and other root vegetables, as well as cabbage and greens.*"

Agriculture and horticulture were mostly for household use. Teenstra notes that the men were mostly fishermen, selling turtles and fish to neighboring islands. Boats, clothing, vegetables, and livestock were also exported, particularly through barter trade with the nearby (then Danish) island of Saint Thomas.

Espersen consistently found large amounts of European imported ceramics in his excavations, often with printed motifs. Teenstra was similarly impressed when he visited the home of his host, former vice-commander Edward Beaks, which he described as "*neat and expensively furnished*". As more Sabans worked at sea or on other islands, contact with money and imported goods naturally increased. Still, Espersen concludes that a large portion of the Saban population lived from self-sufficient farming and led rather modest lives, although they worked their land with pride.

FEATURED

Enslaved People and the Emancipation of 1863

In horticulture, agriculture, and at sea, enslaved people were put to work. In poorer households, enslaved people and their masters lived together under the same roof. The complex social relationships this arrangement created within society have been thoroughly studied from an archaeological perspective by Ryan Espersen in his book. From a European colonial perspective, Teenstra wrote: *"The slaves are treated here with exceptional humanity and scarcely feel their slavery."*

Nevertheless, the history of slavery on Saba should not be romanticized: it was also here a system of exploitation and oppression. Espersen describes the strict rules that enslaved people were required to follow and the punishments for violating them. There was also resistance among the enslaved, including court cases, which greatly concerned the colonial authorities. On occasion, enslaved individuals escaped the island.

On July 1, 1863, 730 enslaved people on Saba were freed. A contemporary source reports that some tried to build new lives elsewhere afterward, but eventually returned to Saba.

The legacy of slavery has left few traces in the landscape. However, at some old houses, narrow paths alongside the homes can still be found, allowing enslaved people to deliver goods to the rear of the house. In the course of his archaeological research, Espersen identified both houses of enslaved individuals and the grave of an enslaved woman. Saba still has villages inhabited mostly by descendants of European colonists (Windwardside, Zion's Hill) and by descendants of enslaved people (The Bottom, St. John's). Marriages between these groups remained rare until quite recently.

[Fig] The open landscape around St. Johns around 1910. Both the yards and the hillsides are without vegetation and used for agricultural production. (photo: Wereldmuseum)

The second half of the nineteenth century was a period of growth. In 1850, 1,663 people lived on Saba, considerably more than in 1816. The population grew to 2,177 by 1900 and even 2,488 by 1915, meaning it more than doubled over the course of a century. Fishing, craftsmanship, and self-sufficient mixed farming dominated daily life. This picture is supported by figures from the late nineteenth century. In 1899, for example, potatoes worth 1,760 guilders and onions worth 2,036.25 guilders were exported, with the potatoes in particular described as being of very high quality.

J. Havelaar, a civil engineer specializing in hydraulic works in Suriname, visited the Antilles to inspect hydraulic works and evaluate the islands' economic potential. Regarding Saba, he noted that the standard of living was low, but *"in general, the villages on this island have a good appearance, and the houses look properly maintained, suggesting that poverty here is not as severe as on St. Eustatius. […] The houses are mostly made of wood with shingle roofs, but everything is built on a smaller scale than elsewhere."*

The same report mentions "*many uncultivated mountain slopes*", suitable for livestock grazing or for horticulture and agriculture in sheltered spots. This aligns with the picture Johnson gives of the landscape around 1900. In his book, based on the accounts of older Saban inhabitants, he wrote that "*most Saban farmers worked several plots on the mountain slopes, ranging from the coast to the mountain tops. […] Planting at different elevations allowed for the harvesting of various crops throughout the year."*

Despite this suitability, the Dutch House of Representatives (Tweede Kamer) was advised in 1904 to relocate all Sabans to Sint Eustatius because of poverty and soil depletion. This never happened, but it underscores that the largely self-sufficient island could not sustain its rapidly growing population. Emigration reflects this as well. Hartog distinguishes two major waves, around 1870 and 1930. The first was mainly to the United States, the second to Curaçao and Aruba to work in the oil industry. Hartog estimated that by 1915, more Sabans lived in the United States than on the island itself. In the same year, 300 Sabans already lived on Barbados, where they worked in seafaring.

FEATURED

The Sulfur Mine: An Industrial Footnote in Saba's History

Sulfur was already extracted on Saba in the eighteenth century for local use. It was considered an effective remedy against scabies. By the mid-nineteenth century, it became clear that the best sulfur deposits were located along the north coast. This attracted North American companies to Saba. The McNick Sulphur Mining Company began commercial extraction in 1875, assisted by miners from Sicily. The inaccessible north coast made an aerial cableway necessary, which transported the sulfur to a nearby rocky outcrop in the sea, from where it could be loaded onto ships. The operation proved unsuccessful and was halted after just one year. According to another source, extraction did not begin until 1887, providing employment for 100 Sabans.

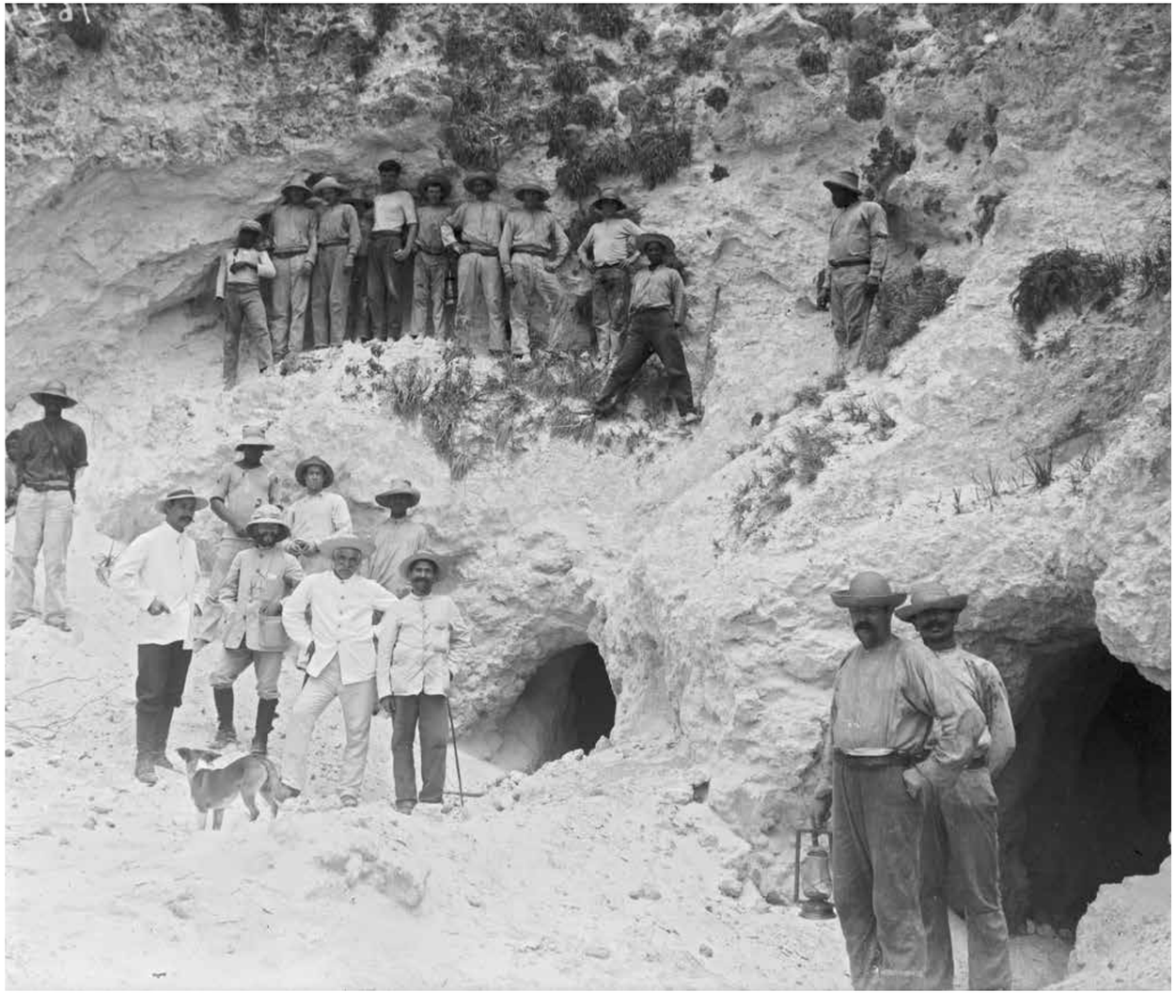
During his 1899 visit, Havelaar also inspected the sulfur mine. He wrote: "*There is no true mining activity here; one simply removes the surface of the mountainside. Only part of the excavations could be visited. […] No work has been carried out here for several years; it was the only opportunity for the people of Saba to earn income on the island besides cultivating their own land."*

Between 1903 and 1905, another attempt to restart operations was made at the government's urging, but once again, the operation was short-lived. When Joshua Bolles visited the mine in 1931, everything had already been abandoned. Bats had taken over the miners' former quarters. In the landscape, a few traces of this short-lived industry remain. The mine shafts remain, along with the ruins of a furnace. The bats observed by Bolles in 1931 are also still present.

The first half of the twentieth century was a period of population decline for Saba. At the same time, however, the island was gradually opening up, and infrastructure and services were improving. In 1909, the Navigation School opened in The Bottom to better prepare Sabans for a life at sea. The school operated until 1922. In 1931, the island received its first telegraph connection, followed by a phone connection in 1935. In 1932, a usable path was constructed between Zion's Hill and Windwardside, and in 1934, the island's smallest settlements, Mary's Point and Middle Island, were evacuated.

The Second World War passed relatively quietly on Saba. The war memorial in The Bottom commemorates the 129 people from the Netherlands Antilles who died during the war. Among them were eleven Sabans. In 2021 a plaque was added to this monument in memory of Thelma Esther Polak (1920–1943). The Jewish nurse, born on Saba, is the only Shoah victim born on the island.

The war quite literally passed the island by. When Princess Juliana visited the Netherlands Antilles in 1944, she did not set foot on St. Eustatius or Saba, but her plane did circle above the islands. Schoolchildren formed a large V for Victory and an O for Oranje, visible from the aircraft. Leaflets with the princess's cordial greetings were dropped from the plane.



[Fig left] Miners in front of the sulfur mine. Despite being dated 1909–1910, this historical photo was likely taken during the mine's brief revival from 1903–1905. (photo: Wereldmuseum)

[Fig top] One of the mine shafts of the sulfur mine.

[Fig below] Remnants of the oven at the sulfur mine.

[Fig] The jeep on the winding road from Fort Bay, 1949-1950. The road was to replace the existing path and stairs. (photo: Wereldmuseum)

Increasing Accessibility and Modern Developments (1950–Present)

"*Saba is a paradise, at the edge of which stands an angel with the flaming sword of want. And yet nowhere in the West does one see such neatly kept little houses nestled in a bed of blooming flamboyants.*" This is how Piet Bakker described Saba in 1950, as if it had always been so and would never change. Yet Saba was in fact an island in the midst of change, and its landscape was changing dramatically as well.

In 1938 construction began on the island's first concrete road, from Fort Bay to The Bottom. After its completion, an old American jeep in 1947 became the first—and for quite a long time the only—vehicle on the island. The jeep was available to prominent residents and guests, but even as late as 1950, luggage was still carried up the path on people's heads for a fee. This illustrates just how late the island was opened up to the world. Johnson wrote that Saba "*…only started to make its entry into the twentieth century in the nineteen sixties*".

The opening up of Saba received a boost through the 1956 report of the Technical Economic Council for the Netherlands Antilles (TERNA). Its conclusion for Saba was that agriculture, industry, and fisheries offered no prospects for development. Tourism, however, was seen as an economic opportunity for Saba. But in order for tourism to succeed, the island needed to be accessible. An airport, a new pier, as well as electricity and water supply were required, and Dutch funds enabled their construction.

In 1959 shrubs and other vegetation were cleared at Flat Point, allowing a single-engine aircraft to land there for the first time. In the years that followed, the airport was constructed at this site. In 1963 a regular air connection with St. Maarten and St. Eustatius began. That same year, the airport was officially opened. Meanwhile, construction of the road between Fort Bay and the airport – which had started in 1938 – continued steadily. On March 23, 1964, this road was opened for use.

In 1972, the pier at Fort Bay was completed, making it no longer necessary to ferry passengers and goods between ship and shore by small boat. During the 1960s, the island was also connected to an electricity network, and by 1970, power was available 24 hours a day.

The tourism development foreseen in the 1956 TERNA report indeed came true. The first hotel and the first guesthouse opened in 1965. In the 1960s and 1970s, Americans and Canadians were already making their way to Saba. Many purchased small houses as second homes, often for retirement. Today, tourism is one of the island's main employers, after the government. Drawn by its natural beauty, an increasing number of visitors is discovering Saba.

Nature conservation also gained momentum toward the end of the previous century. Since 1987, management has been overseen by the Saba Conservation Foundation (SCF). That same year, the first protected natural area was established: the Saba National Marine Park, which encompasses all waters surrounding Saba down to a depth of sixty meters. The SCF, a non-governmental organization, maintains the island's trail network, manages the marine park, and staffs the Saba Trail and Information Centre. It also advises the government and carries out management tasks for the island's other protected areas.

In addition to the Saba National Marine Park, the Saba Bank National Park lies just over four kilometers southwest of the island. Covering 2,600 km² of the Atlantic Ocean, it has been recognized as a national

[Fig] Naturally, one of the paths leads to the highest point of the Kingdom of the Netherlands, which, after recent measurement, turns out to be seven meters lower than the sign on site indicates.

[Fig left] Around 1910, The Bottom was a spacious, open village with scattered farms. The seemingly regular layout may trace back to that of the old plantation fields. (photo: Wereldmuseum)

[Fig right] By 2025, the built-up area has grown and become fairly dense. The surrounding hills have increasingly become covered with vegetation. (photo: Michiel Purmer)

park within the Kingdom of the Netherlands since 2012. On land, a quarter of the island is protected as Mount Scenery National Park, established in 2018, with the Kingdom of the Netherlands' highest point (870 meters) as its main attraction.

Meanwhile, Saba's population has changed significantly. The arrival of the Saba University School of Medicine in St. John's over thirty years ago brought many North American students to the island. In the past decade, numerous labor migrants have arrived, mainly from Colombia, the Dominican Republic, and the Philippines, many of whom work in the tourism sector. Today, around forty nationalities live on the island, and for the first time, native Sabans are a minority.

[Fig] Farmhouses in The Gap around 1910. Located near Ladder Bay, it provided some flat ground for farming. The photo shows how the yards are enclosed by stone walls. (photo: Wereldmuseum)

All these developments have changed the landscape of Saba. The villages have become more densely built, car traffic has increased, and advanced plans exist for a second harbor. Hotels are expanding, and plans are being developed to further grow the tourism sector.

Historical Layers in Today's Landscape

At first glance, Saba's landscape seems almost unchanged: a little paradise of white houses with green shutters and red roofs, set against a backdrop of lush rainforest. Yet beneath this stereotypical image lies a rich and dynamic history of the island's landscape. Since Europeans and enslaved people settled on Saba in the mid-seventeenth century, its landscape has been dramatically transformed. The island was used primarily for fishing, plantations, and agriculture, with the flatter, more accessible areas quickly brought under cultivation.

It was not until late in the twentieth century that agriculture began to disappear from the landscape, with nature and tourism

[Fig] Former farming terraces overrun by vegetation at The Gap.

becoming more defining features. In recent years, the island has continued to develop steadily, but the question increasingly arises: how far can Saba evolve with new developments without losing its distinctive character? Landscapes are always dynamic, and Saba is no exception. Nearly four hundred years of Dutch presence have left their mark. These traces are visible as layered imprints in the landscape. To keep telling Saba's story, it is essential that these layers remain visible.

[Fig] The slopes of Mount Scenery still clearly show the old terraces and livestock pens, even though the once open landscape has since become forested.

[Fig right] A walled animal pen on Saba with a cow and chickens, 1951. A farmhouse can be seen in the background. (photo: Wereldmuseum)

Saba as an Agricultural Cultural Landscape

It is almost impossible to imagine today, but less than half a century ago Saba was primarily an agricultural cultural landscape. Small farms, vegetable plots and kitchen gardens could be found around the villages, and earlier, even in more remote areas. The traces of this earlier, small-scale, self-sufficient agriculture are still visible throughout the island for those who look carefully.

The farm buildings themselves sometimes still stand, while in other cases, foundation ruins and cisterns mark the locations of former farms. The land around the farms had been made suitable for agriculture through terraces, stone-walled plots, and livestock pens. Old paths connected the farms.

These were mixed farms, where chickens, cows, pigs, and goats were all kept together. Land ownership often remained in the family for generations and was based on tradition and oral transmission. Boundary markers included characteristic trees, distinctive rocks, and other striking landscape features. Because much land ownership was never officially registered, it is sometimes difficult today to determine who owns which land – especially since many of the original boundary markers no longer exist.

Small-scale agriculture was widespread and had a tremendous impact on Saba's landscape. Around farms and settlements, and even high up in the hills, the land was much more open in the (still recent) past. Raymond Dowling recalled that, as a child, he milked the cow and fed the pigs on his way to school. Many crops were grown, including yams, tanyas, sweet potatoes, and regular potatoes. In his diary, Hendrik Croockewit described the crops he encountered in 1953 on the slopes of Mount Scenery, coming from Windwardside: "*The first hundred meters farmland, roots and potatoes.*" The day before, at 400 meters altitude, he had noted several mango trees and cocoa shrubs. Even at the highest elevations, fruit was cultivated: "*At the summit there is another crater basin, which is used for growing bananas.*" Elsewhere on the island, fruit trees were also common, both along roads and paths and within the villages.

This agricultural system dominated Saba's landscape well into the second half of the twentieth century. As the island became more accessible, the import of inexpensive food from outside Saba increased. As a result, the small-scale system of home gardens on family land declined rapidly. The more remote farms sometimes disappeared entirely. Fields and plots were abandoned and gradually became overgrown. Goats and chickens roamed freely across the island. In recent years, goat numbers have been reduced through systematic hunting – a controversial decision that has not been welcomed by everyone.

[Fig] Open farmland on Mount Scenery at 500 meters elevation, March 1953. Notice the walls dividing the plots, which are often still recognizable in the current landscape. (photo: RCE, Croockewit collection)

[Fig right] Protest against the systematic hunting of goats in The Bottom.

The Public Entity is encouraging the revival of agricultural production on the island. The government currently operates two farms: a modern horticultural enterprise on the slope of Mount Scenery and a more traditional farm on historical terraces in Zion's Hill. The latter gives a good impression of what large parts of the island must have once looked like.

The Remains of Plantations

Research by archaeologist Ryan Espersen mapped the remains of Spring Bay Plantation and Flat Point Plantation. At both former plantations, ruins of sugar boiling houses are still visible. Espersen also identified traces of houses, mills, and livestock pens. At Spring Bay, he was furthermore able to locate the residential area of the enslaved population. Little above-ground evidence of the plantations has survived; only the more remote boiling house complexes remain in ruin. The more accessible buildings were dismantled, and their materials were reused elsewhere.

According to local accounts, enslaved people in the mid-nineteenth century were forced to carry stones from the ruins of the Spring Bay Plantation house. These stones were used in the construction of

[Fig left] Terrace farming in Zion's Hill. An initiative of the Public Entity.

[Fig] Overhanging rocks on the site of the Spring Bay Plantation that may have served as shelters for enslaved people.

[Fig below] The landscape of the Spring Bay Plantation is still filled with walls from the plantation-era.

the Catholic church in Windwardside. Local guide James Johnson has pointed out small caves at Spring Bay Plantation where enslaved people are said to have lived. The stone walls that once enclosed and defined the plantation complex are still visible in the landscape. Nothing remains of the plantation at The Bottom, as the area was later completely built over. It is possible that the relatively rectangular street layout of the main village still reflects elements of the original plantation structure.

Roads and Trail Networks as the Framework of the Landscape

Saba's landscape is intersected by roads and trails. Remarkably, nearly all of the trails currently open for hiking have historical origins. Before the construction of the road connecting Fort Bay with the airport, these often steep paths – many with steps and significant changes in elevation – served as the main routes linking farms, villages, and boat landing sites. The old trails remain clearly visible in the landscape: they are frequently bordered by dry-stone walls and connect former settlement sites to one another. These trails represent some of the oldest visible heritage features in Saba's landscape.

[Fig top] The route from Fort Bay to The Bottom, likely the island's oldest road, prior to the highway, circa 1910. (photo: Wereldmuseum)

[Fig below] One of Saba's old paths, currently a hiking trail: the Crispeen Track. (photo: Michiel Purmer)

According to local residents, there were once even more trails and footpaths, most of them leading to individual farms and cultivated fields. As small-scale agriculture declined, the associated infrastructure disappeared with it.

Yet many of the old trails have been preserved, in part thanks to tourism. Saba has an extensive network of hiking trails, and hiking is a popular activity among visitors. Much of this network follows historical routes, which are now maintained by the Saba Conservation Foundation. As a result, many of these centuries-old paths remain actively used and fully functional. Along the trails, remnants of former structures – such as cisterns and terraces – still mark the locations of earlier farms. The well-known trail to the summit of Mount Scenery is relatively modern and was opened in 1967, although paths leading toward the summit existed even before then. Its construction reflects the growth of tourism during that period. Fruit trees once lined this trail.

The trail to the top of Mount Scenery is a popular destination for hikers. Here lies the highest point in the Kingdom, clearly marked with signs. If tourists take only one hike during their stay, this is often the one they choose.

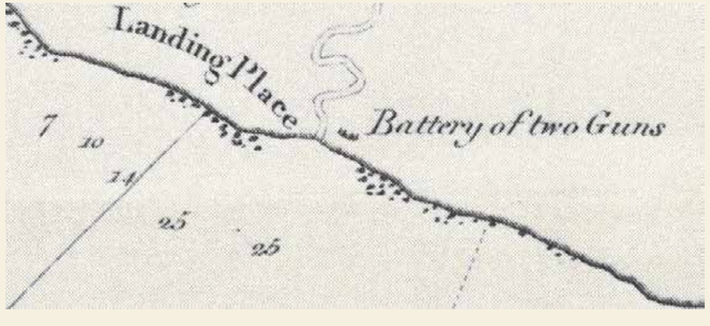
FEATURED

Fort Bay and Saba's Defense Systems

The name of the island's current main ship landing site, Fort Bay, implies the presence of a fort. However, almost nothing is known about a fortification at this location. What is known is that Saban residents had set up their own defensive system along the steep access road from Fort Bay to The Bottom. High on the slopes, they stacked boulders on wooden frameworks, which could be rolled or dropped onto the path during an attack. This proved highly effective; in 1689, Saban residents repelled a privateer captain's attack in this way.

The fort on Saba was most likely a simple battery with cannons, similar to several we know from St. Eustatius. An English map of Saba from 1816 provides few details, but at Fort Bay a "Battery of two guns" is marked.

[Fig] Detail of the 1816 Columbine map of Saba, with a battery of two guns marked at Fort Bay.



[Fig] Concrete steps, dating from 1934, in the lower part of The Ladder.

The Ladder

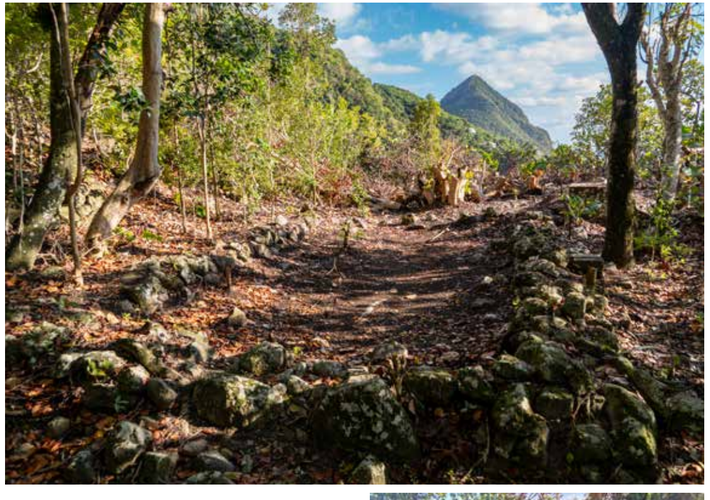
A good sense of the early conditions can be found on the steep path at Ladder Bay. This was one of the island's anchoring points and for many years served as the main landing spot for goods and people. Viewed from the sea, the path's many steps resemble a ladder, hence the name. For many visitors, this was their first impression of Saba.

The exact age of the path is unknown, but it likely dates back to the earliest period of Saba's colonization. Teenstra's description offers an impression of the island's difficult accessibility in 1829: *"The roads, or rather the paths, which lead from the landing places [Fort Bay and Ladder Bay] to the valley [The Bottom], are exceedingly steep. Each requires nearly an hour's walk and runs along such a narrow path between towering, frightening ravines that two people cannot walk side by side."*

Goods had to be carried up a long, steep stepped path from the shore. Halfway up the climb was a small customs post. From there, the ascent still required gaining a significant amount of elevation before reaching The Bottom. In 1932, the lower section of the trail, from the customs post downward, was severely damaged by heavy rains, and entire parts of the path were washed away. In 1934, the island's Governor had this section of The Ladder repaired with cement. The cement steps and walls from this portion are still clearly visible. The upper part of The Ladder, with its stone walls and steps, therefore dates from before that time. With the construction of the road to Fort Bay and the port infrastructure there, The Ladder lost its importance as the main landing site.

[Fig] Former customs house along The Ladder. (Photo: Michiel Purmer)

"The Ladder" is now a well-known tourist destination. The abandoned customs house will likely become a ranger station. Saban residents often mention The Ladder as one of the island's most iconic places. It is also a place where the island's difficult accessibility before the arrival of paved roads and cars remains vividly tangible.



[Fig] Ruins of Mary's Point, excavated and restored in the period 2016–2018, pictured: a house plan, a cistern and a terrace wall. (photos: Michiel Purmer)

FEATURED

Deserted Villages

Deserted villages capture the imagination, and this is certainly true for Saba's two cases: Middle Island, including the hamlet of Cow Pasture, and especially Mary's Point. In 1934, the island government had both small villages evacuated.

Mary's Point, formerly known as Palmetto Point, had 16 houses and 75 residents in 1865. The houses were situated on steep terrain above Wells Bay, surrounded by the farms' fields and terraces. In 1934, the residents were forced to move to The Bottom, to a neighborhood called "The Promised Land". Erosion, lack of water, limited access to medical care, and inbreeding were cited as reasons for the evacuation.

Middle Island had 19 houses and 70 residents in 1865. The small village was situated on a slope between The Bottom and Mary's Point. It was also evacuated in 1934, but it is less known than Mary's Point. Between Middle Island and The Ladder lay the small hamlet of Cow Pasture, possibly consisting of four houses dating from the nineteenth and twentieth century.

During the 1934 evacuation, the residents took not only their household goods but also reusable parts of their houses to the new location. What remained behind was quickly overtaken by lush tropical vegetation. When the site was visited in 1999, the ruins were already difficult to distinguish within the forest.

Mary's Point was archaeologically investigated between 2008 and 2014, and the ruins were subsequently restored between 2016 and 2018. The foundations of several houses, cisterns, and terraces were revealed. Interpretive panels at the site tell the story of the villages, and the trails leading to the site have also been improved for easier access.

It is uncertain how long the ruins of Mary's Point will remain accessible. The erosion, in 1934 one of the reasons for evacuating the village, continues to this day, and parts of the settlement have already slipped off the cliff. Among Saban residents, memories of both villages – and especially Mary's Point – remain vivid. For now, Mary's Point and Middle Island continue to be remarkable places on Saba, where the history of the small-scale agricultural settlements from before 1934 is still visible in the landscape.

[5] LEON DERKSEN & MARTIJN MANDERS

MARITIME TRACES IN THE LANDSCAPE OF SABA

Life on Saba is almost synonymous with life at sea. Throughout the centuries, Saba's inhabitants have been connected to the water both literally and figuratively. The first inhabitants, the Amerindians, reached the island by canoe. Their shell and fish remains can still be found today as middens along the coast. Later, European sailing ships anchored off Saba, and the island even briefly became a refuge for pirates and buccaneers. A constant stream of goods and people – including enslaved individuals – reached the island by sea. Decorated shells show that the sea even served as a source of inspiration for various cultural expressions.

Even today, Saba receives its daily necessities and other supplies via modern shipping. Pleasure yachts now also float in the small Saban harbor and at anchorages offshore. Many of these maritime activities have left their mark on the landscape. In this chapter, we therefore view Saba through the eyes of a sailor—that is, from the water. This chapter reveals Saba's maritime cultural landscape.

[Fig] Wells Bay in 2019

An Inaccessible Coastline

Saba's coastline is rugged and jagged, with deep coves and steep cliffs that made landing a challenge. Around the island, the seabed plunges into the depths almost as steeply and rockily as the island rises from the sea. What daredevil would want to sail here, let alone anchor? Especially with a deep-draft ship, navigating safely required intimate knowledge of the depths and shoals.

This was relatively easy for the Amerindians, who approached Saba in flat canoes. Exactly where they came ashore cannot be determined for certain. However, near the anchorages where Europeans would later land, archaeological traces from different periods have been uncovered. These include fish and shell middens as well as pottery. Oral tradition also tells us that they may have met each other, among other places, at Spring Bay.

For European sailing vessels, Saba posed a far greater challenge. Sailors probably felt the need to sail past the island if they could. The island did have freshwater sources in Well's Bay, and Spring Bay offered a considerable supply of fresh vegetables and fruit, which were desperately needed after a harsh Atlantic crossing. One could also obtain fish and livestock there. But those treacherous anchoring grounds… Many a captain who dared to anchor off Saba soon found himself an anchor short when a cable snapped on the sharp, rocky seabed. Lost anchors still lie scattered across the seabed of these historic anchorages. A local dive veteran, "Big Mike", is said to have counted as many as 120 of them. The rocky seabed owes its jagged shape to the prevailing easterly trade winds, which still generate strong currents.

For those who still wished to approach Saba, detailed sailing instructions existed. To enter Well's Bay, sailors had to approach from the north, navigating around Diamond Rock. Landscape landmarks like Diamond Rock are therefore part of Saba's maritime cultural landscape. When sailing instructions were unavailable, or if the approach still seemed too risky, there were certainly pilots on Saba who could, for a fee, safely guide vessels into the bay.

Written sources show that over the centuries, European ships anchored not only at Well's Bay but also at The Ladder and Fort Bay. In the seventeenth and eighteenth century, Spring Bay was also used as an anchorage because of the indigo production sites and sugar plantations.

In each case, a direct connection can be seen between human activity and the location of anchorage sites, as it was near these anchorages that the first sugar plantations were established. After all, the products being grown and processed had to be transported as easily as possible to markets located not on Saba, but many sea miles away.

Despite all the difficulties associated with anchoring, Saba became a permanent part of the maritime European-Caribbean network from the arrival of the first Europeans in 1640.

Maritime Transit Points and Provisioning

Because the ships, due to their draft, could not anchor close to shore, people and goods – including enslaved individuals – had to be transferred unto rowboats, which then made their way to the shore. As a result, the anchorage and shoreline formed, at least until the harbor was constructed in the twentieth century, a two-stage transit point within the maritime cultural landscape.

To be able to continue to provide the anchored ships with rowboats, it was essential that Saban residents possessed at least modest yet reliable knowledge of boatbuilding. Well's Bay, the only bay with a beach, proved best suited for this. In addition, eyewitness accounts and historical photographs from the nineteenth and twentieth century show that vessels were also built in Fort Bay. Small schooners were even built and transported down to the water. In 1852, for example, a 38-ton vessel was launched. These boats were constructed from the local so-called white cedar (Tabebuia heterophylla). Consequently, the areas where the timber was harvested became part of the island's broader maritime landscape.

After reaching the shore, a climb lay ahead, eventually made easier by stairways. Sometimes as much as five hundred meters, as at Ladder Bay, where the eponymous Ladder, a stairway of some 800 steps cut

[Fig] Spectators watch as the crew of the cruiser Hr.Ms. De Ruyter lands at Fort Bay, October 1955. In the foreground are several Saban boats. The pier has since been replaced by a harbor. (photo: Center for Audiovisual Services Dutch Royal Navy, Collection NIMH)

[Fig top] A newly constructed boat at Fort Bay around 1900. (photo: collection Will Johnson)

[Fig below] A large fishing boat under construction in Windwardside in the 1960s. (photo: collection Will Johnson)

into the rock in the 1930s to replace an older path, is still in use today.

The access routes to and from the anchorages naturally had to be well defended. Research by Ryan Espersen indicates that in 1689, a parapet – a type of defensive balustrade – was constructed along the Fort Bay Gut. The path through the Gut was so narrow and steep that people had to ascend it single file. Terraces were built along the edges to catch falling rocks, preventing them from blocking the path or injuring anyone. The rocks were deliberately stacked so they could be loosened with a system of ropes—and sent tumbling onto enemy climbers. Apparently, this tactic forced a Frenchman named Pinel and his buccaneers to retreat during an invasion attempt in 1689, after the Saban defenders had already killed several of his men in this manner.

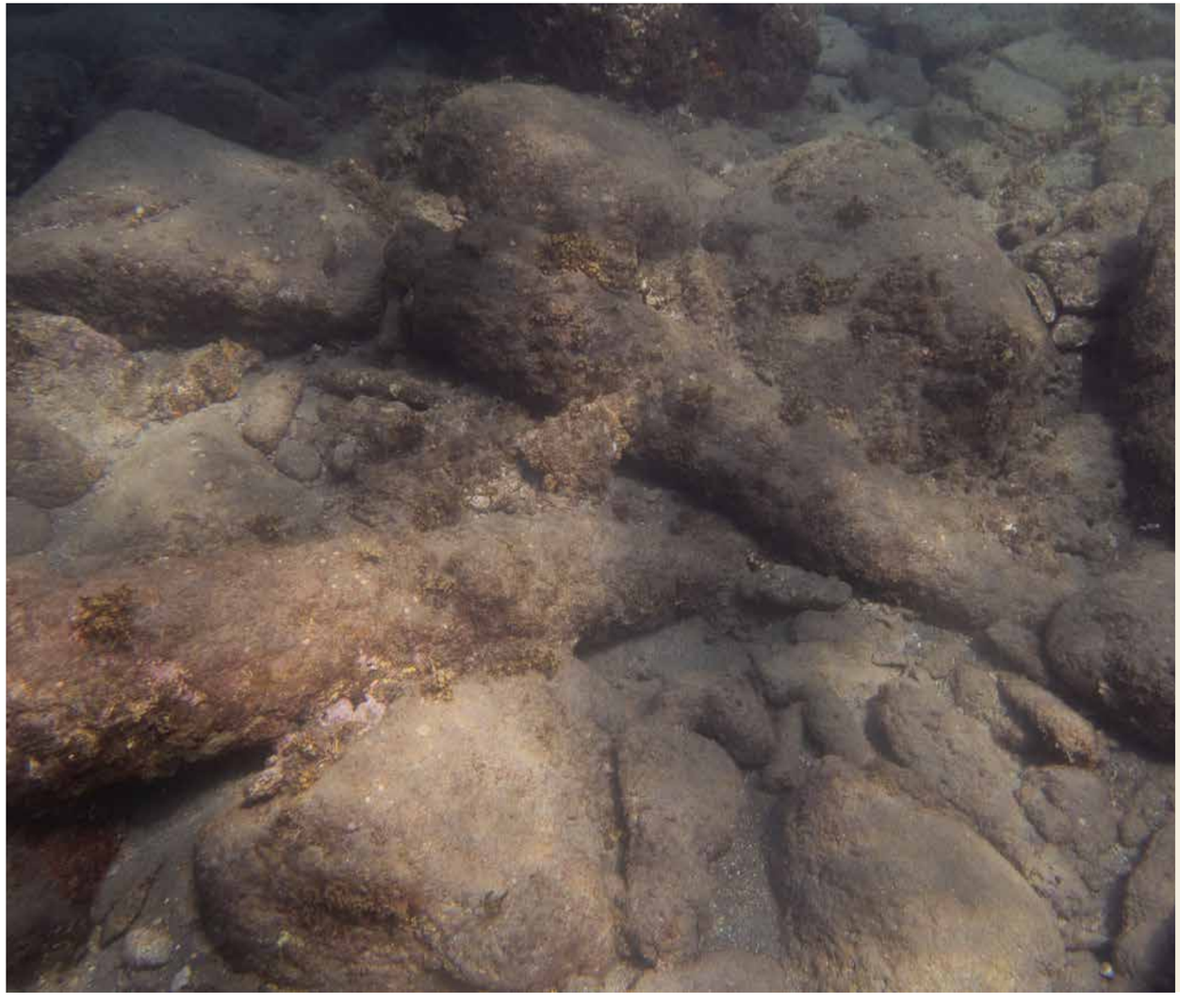
Before or after a long transatlantic voyage – which could last weeks or even months – ships could restock their provisions on Saba. These included water, dried and salted fish and meat, bread, vegetables, and fruit. Saba was well known among colonial seafarers as a sort of “maritime pantry”. There were two natural springs in Spring Bay and Well’s Bay, scarce but relatively fertile soils where, according to English accounts, cabbage had thrived since at least 1665, and livestock brought by the colonists, including cattle and goats. Saba was also known for its rich fishing grounds, including the waters around the rocks near Torrens Point and the Saba Bank. In addition, Saba supplied maritime experts such as captains, sailors, and the aforementioned pilots. Espersen also notes that local Amerindians – and even enslaved Sabans – served aboard ships.

Piracy, Privateering, and Maritime Money-Laundering

Not all maritime activities on Saba could stand the light of day. From 1817 to at least 1829, Well’s Bay briefly acquired a decidedly dark maritime function. The Saban residents living at Palmetto Point knew that Well’s Bay, on the island’s northwest side, was nicely concealed – out of sight from the prying eyes of the law. The bay was a perfect base for launching raids on nearby islands where smuggling thrived. And while European maritime powers at the time were preoccupied with matters such as the Latin American wars of independence, a culture of illegal trade, piracy, and privateering emerged from Well’s Bay.

According to Espersen, there was even a fully developed system for “laundering” captured ships. Once stripped of all cargo, the ships were first brought to Well’s Bay. There, Saban shipwrights went aboard to make them seaworthy again and repaint them. A merchant on St. Eustatius – Saba was governed by this neighboring island at the time – would then claim to the local Governor that the empty vessel anchored off Saba was his, having been stolen by pirates. The same merchant would request new ship papers from the Governor – after all, the originals had supposedly been lost during the “capture” – and the now empty ship would be sailed to St. Eustatius. From there, it was ultimately auctioned off on St. Barthélemy or St. Thomas. In 1828, an investigation revealed that the coastline at Well’s Bay was littered with evidence of these clandestine activities. Half-sunken schooners with repainted names and numerous ship parts – masts, planks, frames, bowsprits, boats, and other fragments – stood out clearly. Even today, Saban residents take pride in this rebellious past.

Despite all that maritime activity, no official shipwreck site has yet been documented at Saba. However, according to two different dive school operators, a wreck is said to lie on its side at a depth of 100 meters near Diamond Rock—the very landmark sailors once relied on for navigation. Rows of cannons are reportedly scattered around the site. Could these be the tangible remnants of Saba’s privateering landscape?



FEATURED

Flying over Sailing?

Until the opening of the airport in 1963, Saba could only be reached by sea. Even today, maritime shipping remains crucial for keeping the island supplied. Since 1972, vessels have been able to dock safely in the small harbor of Fort Bay, which now serves both recreational boating and cargo transport. A new harbor is soon to be built near Black Rocks. To make way for its construction, two seemingly isolated iron cannons and a large anchor lying at that exact spot at a depth of three meters will have to be relocated.

On land, various tools were found belonging to the Amerindians who brought their canoes ashore here around AD 400–600 and who could produce strong sisal rope from agave plants for their fishing nets. Unintentionally, these finds now link Saba's maritime past with the present, in which the sea remains just as essential as it was then.

[Fig] Two overgrown iron cannons. (photo: Ryan Espersen)

[6] MICHAEL A. NEWTON

HISTORICAL SETTLEMENTS AND ISLAND-SPECIFIC ARCHITECTURE

Every village on Saba has its own identity and distinct architectural character. There are also clear similarities in architectural style and building techniques. This chapter explores both the differences and the shared features. To illustrate them, each village is presented with numerous pictures and images of its most distinctive buildings

[Fig] The Harry L. Johnson Museum

[Fig] Saba's cultural richness lies primarily in its historic buildings, steep roads (and stairways), historic paths, and indigenous homes – Saban Cottages – featuring Saban architecture, water reservoirs, and family cemeteries.

The Settlements and the Landscape

Saba's settlement history dates back to the Amerindian period. As discussed in chapter four, the first European colonists arrived on Saba around 1640. Little is known about the homes of these earliest settlers. They were most likely very simple structures, built of wood or other materials then available on St. Eustatius and St. Maarten, and topped with thatched roofs.

The earliest detailed description of Saba dates from 1701, in which a visiting French priest, Père Labat, described Saban houses as "*small but clean and well maintained*". He also found the houses to be "*cheerful, spacious, well painted, and well furnished*". The locations of Saba's settlements were a direct result of the island's natural conditions and physical limitations, especially its mountainous terrain and the relative isolation that persisted well into the twentieth century. Unusual for a Caribbean island, none of the villages are located along the coast, due to the steep cliffs that rise straight out of the sea.

Settlements were established wherever the landscape was relatively level and cultivation was possible. The original villages of Saba form a patchwork of privately owned parcels, generously laid out, dotted with small houses and connected by narrow, stone-paved roads bordered by stone walls. Around the houses lie yards used for cultivating crops.

Across the island are four villages: The Bottom, St. John's, Windwardside, and Zion's Hill. The latter was originally called Hell's Gate, but following objections from the church the name was officially changed. Southeast of Windwardside lies the neighborhood of Booby Hill, now primarily a residential area for more affluent residents. The Bottom, Windwardside, and St. John's are situated on relatively flat ground. The exception is Zion's Hill, which is located on a steep slope on the northern side of the island.

The villages' street layouts were adapted to the rugged terrain, and with the exception of The Bottom, it is clear that no formal urban planning guided their development. None of the villages has a clearly defined center. Most developed organically, with narrow streets lined by low stone walls, behind which lie small yards with houses.

The Bottom

The Bottom (225 meters) is the island's capital and seat of government. It is also the island's oldest village, founded in the mid-seventeenth century. The village lies on flat to gently sloping land, surrounded by The Mountain to the northeast and four peaks to the west and south: Great Hill (422 meters), Parish Hill (352 meters), Bunker Hill (378 meters), and Thais Hill (389 meters).

Of all the villages, The Bottom has the most rectilinear street layout, with mostly parallel, straight, paved roads running northwest to southeast. The village has a spacious design. During his term as Lieutenant Governor (1863–1875), Moses Leverock oversaw many improvements, including paving the streets. He also had walls and fences added along property boundaries where none yet existed. The Bottom features spacious blocks, with buildings mainly along the edges.

Inside the plots, one can find vegetation, foundations of abandoned houses, water cisterns, and family burial grounds. In earlier times, crops were also grown on these enclosed yards. Since the island government is located here, many government offices are also found in The Bottom. Most of these were built during the last decades of the

[Fig] The Bottom prior to 1941. (photo: Wereldmuseum)

The Bottom nowadays, more compact than it used to be, partly due to the construction of government buildings. Northeast of the village, in the foreground, is the Saba University School of Medicine.

[Fig] The Administrative Office, built in 1982-1983, in traditional Saban style.

twentieth century, giving the village a more compact feel than it had previously.

On a site that was originally a large open area in the northeastern part of The Bottom stands the Administration Building, the island's government office. It was constructed in 1982–1983 based on a design by Cornelius Wilson from St. Maarten. The building features a two-story central block with a stately projecting portico topped by a pediment. Single-story wings extend from either side of the central block. With its white-painted walls and hipped roofs, the building clearly reflects the characteristics of traditional Saban architecture.

In addition to the traditional houses – the Saban Cottages – The Bottom also features several remarkable historic buildings, including three churches. The Anglican Church, built in 1777, is the oldest building on Saba. The Wesleyan Holiness Church (1919) and the Roman Catholic church Sacred Heart, constructed in 1935, are also located here. All are built from local natural stone. Particularly notable are the nineteenth-century Government Guesthouse and the residence of the Lieutenant Governor. Both are two-story buildings, which was unusual for Saba at the time.

New facilities continue to be built in The Bottom. Some are larger than the historic buildings, considerably increasing the overall scale of the village. These modern additions are expected to continue expanding in the coming decades, which may alter both the appearance and the identity of The Bottom.

Government Guesthouse (RCN Building)

The Government Guesthouse now serves as the office of the Kingdom Representative for Saba. It was built around 1890 by Captain Richard Wright Horton. The building is a traditional two-story wooden structure with a rectangular plan and a gabled roof. It has also served as the residence of the Lieutenant Governor, with government offices on the ground floor and the Lieutenant Governor's living quarters above.

In the 1920s, it was furnished as the Government Guesthouse. Because Saba previously received very few visitors from outside the island, there were no hotels or boarding houses. In several remote Dutch territories, both in the East and West Indies, the government provided furnished guesthouses. These were often built for visiting government officials staying for short periods, but also occasionally accommodated visitors from outside.

[Fig] The old "Government Guesthouse", constructed circa 1890, currently serving as the office of the Government Representative.

Saba likewise had such a Government Guesthouse, also known as a Pasanggrahan, a term for a guesthouse from the former Dutch East Indies. In The Bottom, guests paid only for laundry, meals, and the services of a cook, at a rate of 50 cents per person per day.

In 1964, with the rise of tourism following the construction of the airport, the building was sold to private owners and converted into Cranston's Antique Inn.

Lieutenant Governor's Residence

A prominent building in The Bottom is the former Lieutenant Governor's Residence. It was built in 1900 as the home of Captain Thomas Charles Vanterpool, one of the wealthiest residents of Saba at the time. He belonged to a family of Dutch origin called Van der Poel.

In the 1920s, it was purchased by the island government and became the residence of the Administrator (later the Lieutenant Governor). By the 1960s, the wooden building had been abandoned after severe termite damage and years of neglect, and parts of it had even become overgrown. In 1972, the building was completely demolished and rebuilt using plastered concrete blocks. The design was altered when the symmetry of the original façade was changed, giving it an asymmetrical appearance with a different arrangement of windows and doors. Later, part of the front gallery was also enclosed.

[Fig] The former Governor's residence in The Bottom, built in 1900. (photo: Michael A. Newton)

The original shingled roofs have since been replaced with corrugated steel sheets. The spacious front balcony was also built with concrete, with a balustrade made of concrete ventilation blocks. Despite these changes, the building still retains a traditional appearance, thanks in part to its red roofs, white-painted walls, green window frames, and low natural stone walls lining the street.

The building is currently used as a daycare center, but the plan is to restore it to its original function as a residence.

Anglican churches

The oldest building on Saba is the Anglican Church in The Bottom. Remarkably, this Church of England is considered the island's "native" church on a territory colonized by the Dutch. Initially, the colonists introduced the Dutch Reformed Church, but it never

thrived, mainly because there were no active ministers. Since English was spoken on Saba and the island was surrounded by English-speaking neighbors, Minister Kirkpatrick petitioned the Dutch authorities for permission to establish an Anglican congregation. In 1777 he received approval, and an Anglican parish was founded.

There was likely an Anglican parish earlier. The current Anglican Christ Church was severely damaged during a major hurricane in 1772 and restored in 1777. The present stone building is probably largely identical to the church as it was constructed in the eighteenth century. It is a simple rectangular structure with the entrance facing the street, topped by a gable roof that was originally covered with shingles and is now sheathed in corrugated steel. A small square tower with a simple spire rises at the front of the roof.

A century later, the second Anglican church on Saba was built. In Windwardside, the Holy Trinity Anglican Episcopal Church was constructed in 1878 and is still in use today, with the cemetery located beside it. Here too, the building is a simple rectangular block, with the front plastered. The rest of the exterior walls are built of local natural stone and topped with a gable roof, with a steep wooden spire featuring an open framework above the main entrance. At

[Fig] The Anglican Christ Church, built in 1777. The oldest building on Saba.

roof level, the front and rear walls are made of wood. The window and door openings have pointed arches with wooden shutters.

Saba University School of Medicine

The Saba University School of Medicine is a university specializing in medical education. The first class began in 1993. Currently, the school has roughly 500 students and about 30 staff members. There are more than sixty medical schools in the Caribbean, but the top tier is known as the “Big Four”: St. George’s University (Grenada), the American University of the Caribbean School of Medicine (St. Maarten), Ross University (Barbados), and the Saba University School of Medicine. Because it is located on a Dutch island, the university prides itself on maintaining high European standards of medical excellence.

The university buildings were constructed outside the historical part of The Bottom. The university has its own campus. Facilities include state-of-the-art classrooms, laboratories, medical libraries, administrative and faculty offices, fitness centers, and student support services.

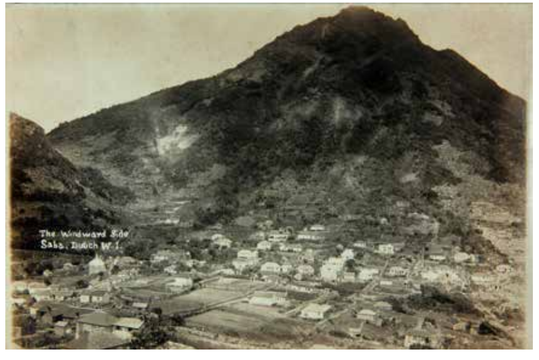
These are concentrated in the northeastern part of The Bottom. Nearby are student residences, known as The Hillside Dorm. The various departments of the university are housed in separate buildings, where the architectural character of Saba has been applied as much as possible. This complex has introduced a significant increase in scale into the traditionally small-scale urban fabric of The Bottom.

Windwardside

The village of Windwardside (400 meters) is nestled among three mountain peaks: *Maskerhorne Hill* (547 meters), *Booby Hill* (447 meters), and *The Level* (514 meters). Unlike *The Bottom,* which has a more sprawling layout, *Windwardside* is relatively compact, with its buildings closely spaced.

The surrounding mountains provide a dramatic backdrop, making Windwardside the most picturesque of Saba’s four settlements. Its location adds to this even more: the center of the village sits on flat ground, with gentle slopes to the east

[Fig] The university campus of the Saba University School of Medicine in The Bottom.



[Fig] View of Windwardside in the early twentieth century. (photo: Wereldmuseum)

and west, and gradually rising terrain to the north and south. As a result, the neighborhoods are visible from multiple directions.

The earliest development took place along the main road and in the gently sloping western area of today's village, just south of the main road. Here, small houses dating from around 1850 to roughly 1900 can be found. Apparently, the flat land that now forms the center of Windwardside was originally used for agricultural purposes. The eastern part has undergone extensive development in recent decades, causing Windwardside to surpass The Bottom as the largest village on the island.

No buildings from before 1800 are known in Windwardside. However, there are many nineteenth-century structures, including two churches: the Catholic Saint Paul's Conversion Church from 1859, situated along the main road with its cemetery directly across, and the Holy Trinity Anglican Church from 1878, also with an adjacent cemetery.

Windwardside, once a settlement whose economy relied on subsistence agriculture, now hosts the island's main tourist facilities. These include the Saba Tourism Bureau, popular hotels such as The Scenery Hotel (formerly Scout's Place), Juliana's Hotel, and The Cottage Club Hotel, as well as restaurants, shops, and the Trail Shop of the Saba Conservation Foundation—all primarily catering to divers, hikers, and eco-tourists.

Despite significant changes in recent decades, mainly through village expansion on the eastern side, Windwardside has retained its status as a historic settlement of exceptional importance. This is largely due to the dense clusters of historic cottages and farmhouses to the west and north, and to the village's unique historic character. This combination is unparalleled in the Caribbean.

Catholic church

Saba has three Catholic churches: St. Paul's Conversion Church in Windwardside, Sacred Heart Church in The Bottom, and Holy Rosary Church in Zion's Hill. St. Paul's Conversion Church, completed in 1860, was the first Catholic church built on the island. Its cemetery lies just south of the church, across the road. The site had previously housed a privately owned quarantine station for new arrivals. The stones used to build the church were brought by enslaved people from Spring Bay, where they had been part of a sugar plantation.

The church features a simple gable roof with a single span and a cross-wing of the same height at the front. Though modest in size, it has several decorative exterior elements. An open tower with a steep spire, flanked by pinnacles, is positioned above the crossing of the two roof ridges. Originally covered with shingles, the roof is now finished with corrugated metal sheets. The façade includes semicircular arched windows, all set within rectangular stepped frames, just like the main entrance door. Every window and door, including the round gable windows, is fitted with shutters.

[Fig] St. Paul's Conversion Church in Windwardside, built in 1860. (photo: Wereldmuseum)

[Fig] Sacred Heart Catholic Church in The Bottom.

Harry L. Johnson Museum

Saba's best-known museum, the Harry L. Johnson Museum, is housed in a former residence built around 1840 by Captain Josiah Peterson. This original Sabaan Cottage is set in a spacious area that is now a public park. The museum is a treasure trove of Sabaan history, featuring antique furniture, nautical artifacts and maritime stories, as well as household objects from the nineteenth and twentieth centuries, and much more.

Harry L. Johnson was born on Saba in 1913. He went to sea when he was thirteen. In the late 1930s, he moved to Aruba to work as a firefighter at the Lago Oil Refinery. After returning to Saba, he became a police officer at the age of 31, a position he held until his retirement in 1964. Following his retirement, he devoted himself to painting, a passion he had nurtured since childhood. He also began setting up a small museum in his garden and continued collecting artifacts. Before his death in 1972, he expressed his wish for a proper museum to be established on Saba.

His wish was fulfilled with the opening of the Harry L. Johnson Memorial Museum on March 5, 1978. It is housed in the former residence and its surrounding 5,550-square-meter property, which had belonged to the Peterson family. The family had sold it in 1969 to two Americans. In July 1977, the Harry L. Johnson Memorial Foundation was able to purchase the property, thanks to a private donation and support from the Dutch government.

The museum is an excellent example of a Saban Cottage, consisting of two buildings set on a stone foundation. The larger building contains the main living and sleeping quarters, while the smaller one houses the kitchen, complete with a cooking area and oven. Rising above the cooking area is an unusual vaulted brick chimney. The roof is covered with red-painted corrugated steel sheets; originally, both the roof and exterior walls were covered with shingles. The walls are traditionally painted white.

[Fig] The Harry L. Johnson Museum, an original residence dating from around 1840.

Captain's Quarter

In the mid-nineteenth century, a single-story building was constructed on the site of today's Captain's Quarter. It became the home of Captain Henry Johnson Hassell (1844–1904). The house in its current form likely dates from around 1910; a photograph from 1914 shows it as it appears today, with its distinctive "little tower" standing above the roof. It was given the name Captain's Quarter. The building served as a private residence until 1965. After the airport was built in 1963, tourism began to flourish, and Captain's Quarter became part of a prominent hotel.

The house is almost perfectly square. The central structure is an entirely white timber-framed building with two stories and a pavilion-style roof, sitting on a massive stone foundation. The street-facing façade is covered with shingles arranged in a herringbone pattern, and the roof is also shingled. A defining feature of the building is the central block that rises slightly above the roofline, fitted with small windows that bring light and ventilation to the upper room. Balconies wrap around three sides of the building.

[Fig] Captain's Quarter in Windwardside, dating from the mid-nineteenth century.

Hurricane George dealt a heavy blow in 1998 and caused significant damage to the historic building. After years of legal proceedings, the full reconstruction of the building began in 2023, based on as much historical information as possible. The wooden structure of the building was prefabricated and partially assembled in the United States, after which it was shipped to Saba. Since 2025, Captain's Quarter stands fully restored once again.

Zion's Hill

Villages on Saba were built on relatively flat terrain, with access to surrounding land for small-scale farming. Zion's Hill, formerly best known as Hell's Gate, stood out for its different layout. Following objections from the church, the government officially changed its name.

Divided into Upper and Lower Hell's Gate, the houses were built along the northeastern slopes. They are still connected solely by stairways, steep winding roads, and footpaths. Upper Hell's

[Fig] The Roman Catholic Holy Rosary Church in Zion's Hill, originally built as a wooden church in 1911, reconstructed in 1962 using natural stone.

Gate is the highest village in the Kingdom, sitting at 450 meters above sea level. The scattered homes occupy small plots, and the terraced or partly flat land was used to cultivate crops.

Until the opening of the airport in 1963, Hell's Gate was the most isolated village on Saba, farthest from Fort Bay on the western side, the island's main point of access. This isolation probably inspired its name.
The houses here mostly date from the late nineteenth century or later, making them more recent than those in The Bottom and Windwardside.

Roman Catholic Holy Rosary Church

This church is a prominent landmark along the main road through Hell's Gate. Its straight tower can be seen from far away, marking the village whether approaching from English Quarter or the new airport. Originally built of wood in 1911, it was rebuilt in stone on the same site in 1962.

The church has a simple rectangular design with a gabled roof and is built from local natural stone. Its most striking feature is the large rectangular tower adjoining the church. White horizontal bands mark each level of the tower.

The original wooden church also featured a rectangular floor plan, a gabled roof, and an openwork spire along the ridge. Interestingly, at some point the church's originally simple wooden shingled façade was made more decorative, featuring pointed-arch windows and doorways.

St. John's

The village of St. John's stretches across St. John's Hill (421 meters), which is home to Upper St. John's, and St. John's Flat (329 meters), where Lower St. John's was established. The village is made up of scattered buildings. Historically, only Upper St. John's holds significance, dating originally to the late eighteenth century. Several exceptionally well-preserved traditional Saban cottages from the late nineteenth and early twentieth century can still be found here.

The schools of Saba are centered in St. John's. The village is home to the island's only primary school, the Catholic Sacred Heart Primary School. It also hosts the island's only secondary school, the Saba Comprehensive School, founded in 1976, which provides pre-vocational secondary education (vmbo-level). A technical school is currently under construction here.

[Fig] Early 20th century St. John's. (photo: Wereldmuseum)

The 'Saban Cottages'

Architecture on Saba is part of the West Indian wooden building tradition. A similar style can be found on St. Maarten and St. Eustatius. The Saban Cottages – the island's characteristic small houses – are, however, a distinctly indigenous architectural form and shape much of the character and appearance of Saba's villages.

Moreover, these Saban houses offered more than just shelter. They functioned as enclosed homesteads, consisting of a cottage, a kitchen garden for growing vegetables, a private cistern for collecting rainwater, and a family burial ground – together forming a complete system of subsistence within the Saban environment. Over time, cottages were often expanded by adding a second building block behind or beside the original structure.

The traditional Saban cottage is a single-story wooden structure set on a stone foundation, sometimes including a cellar for storage. The basic layout is rectangular, with a living room at the center, flanked by a bedroom on one side and a combined kitchen and dining room on the other. Dimensions were always modest. This reflects the fact that wooden components had to be imported and transported overland to the building site, usually along difficult routes. As building a house was expensive, most cottages remained small.

The wood was imported, usually pitch pine from the United States, partly shipped via St. Kitts. At the time, Sint Maarten had not yet developed into a major trading hub. Exterior walls were clad with white-painted, rectangular wooden shingles. Shingles are thin wooden strips, nowadays usually made of cedar. They measure roughly 45 centimeters in length and have a highly variable width of 6 to 25 centimeters. Their thickness also varies because they taper: the lower end is up to 1 centimeter thick, the upper about 0.3 centimeters. They are applied with a vertical overlap of about two-thirds, fixed onto a base of wide horizontal wooden boards.

The sash windows are three panes across and two by two panes high, and just like the doors they are fitted with wooden storm shutters on the exterior. The shutters are usually painted green and white. The roofs, like the walls, were originally covered with wooden shingles. In recent decades these have been replaced by corrugated steel roofing, which is more durable and better able to withstand storms. Both the original roof shingles and the later metal sheets have always been painted red.

[Fig left] Traditional Saban cottage with red roofs and white-painted walls covered with wooden shingles.

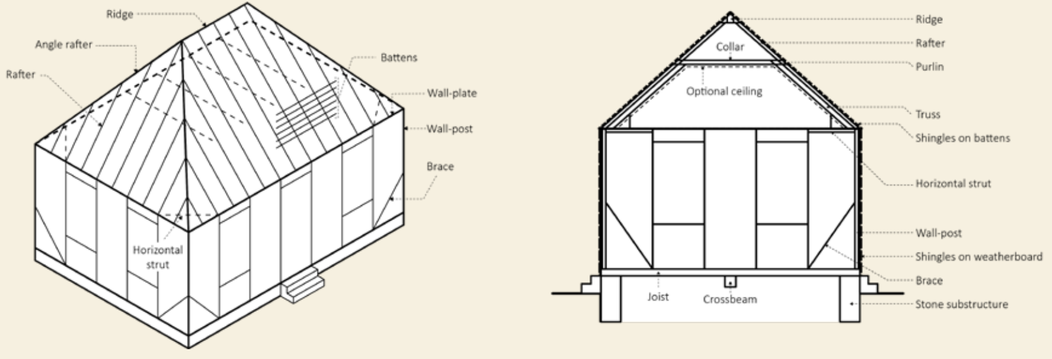
[Fig right] A Saban Cottage in Windwardside with a porch and gingerbread trim along the roof edges.

The oldest houses have hipped roofs, although gabled roofs are more common. Where original kitchens have been preserved, the buildings usually display a combination of hipped and gabled roof forms. On the side of the cooking area, the structure ends in a gable, topped by a traditional stone chimney. Only a small number of these original chimneys have survived. The cooking area itself – the fire place – was constructed of natural stone.

The more luxurious cottages are embellished with decorative “gingerbread”, which are openwork, wooden decorations against the fascia boards and balustrades. This decorative style is widespread throughout this part of the Caribbean.

The Saban cottages are built around a timber frame of vertical posts, horizontal beams, and roof rafters, creating a strong, rigid structure. This framework is set on and anchored to a foundation of locally quarried stone. Naturally, the houses had to be able to withstand the island’s annual hurricanes.

The timber members of the frame were joined with traditional mortise-and-tenon joints, not glued but secured with wooden pegs. The frame was deliberately designed to be dismantled, either to relocate the house or to allow decayed timbers to be replaced more easily. At the corners, diagonal braces set at 45 degrees reinforced the structure both vertically and horizontally, giving the houses high resistance to lateral hurricane winds. For the same reason, the roofs were built at a pitch of approximately 35 degrees and without overhanging eaves, reducing the wind’s grip on the buildings. On the exterior of the frame, wide horizontal boards were installed, onto which the shingles were nailed.



[Fig] Schematic representation of the structure of a traditional Saban cottage, based on sketches by Temminck Groll.

[Fig] Traditional wooden shingles on a dilapidated building.

[Fig] Shabby huts. Roof are either covered in thatch or wooden shingles. (photo: Wereldmuseum)

FEATURED

The Huts

In a number of historic photographs, rudimentary wooden huts can be seen, topped with thatched roofs. These were likely the homes of formerly enslaved people.

The basic construction followed the same principles as the cottages, with a load-bearing frame of vertical posts and horizontal beams. The walls were clad with a single layer of horizontal wooden boards, without any shingle finish. The roof was thatched with bundled reeds, tied together and secured horizontally with branches.

Appreciation and Protection

In contrast to the Netherlands (and other European countries), interest in built and archaeological heritage on the six islands of the former Netherlands Antilles emerged only gradually over the course of the twentieth century. The first initiative came in 1913. In that year Governor Nuijens (1909–1919) established a monuments commission charged with describing all monuments on Curaçao and advising on their preservation. The other islands were likewise asked to collect information. Only St. Eustatius responded positively to this request; the remaining islands declared that they possessed no monuments.

A first general inventory was conducted in 1967 by Dr. Ir. C.L. Temminck Groll. Nine years later, by then Professor of Restoration at the Delft University of Technology, he was asked by the government of the Netherlands Antilles to advise on heritage protection for Saba and the other islands of the Netherlands Antilles. He estimated the total number of houses of traditional and historic significance at between 250 and 300. He also recommended designating all four villages – The Bottom, Windwardside, St. John's, and Hell's Gate – as protected village landscapes.

These initial efforts were continued in 1986. In collaboration with Temminck Groll, a teacher and students from the University of the Netherlands Antilles prepared an extensive inventory, published in September 1988. This study into the possibilities for protecting Saban heritage was further explored in the first book on Saban architecture, titled The Monuments of Saba by Dr. Ir. F. Brugman.

All this attention made a difference. On July 21, 1986, the Lieutenant Governor of Saba issued a formal open letter to all building owners on the island. In it, he urged them to adhere to traditional colors when painting their buildings: red for roofs, white for walls, and white-green or brown for windows and shutters. He also called on owners to maintain their properties properly, not only to preserve the island's attractive appearance but also to support tourism. This was the first government policy aimed at preserving the historic village landscape. Even today, this "Smith Directive" is still referred to on Saba as an official guideline. In 2001, the idea arose to nominate the entirety of Saba as a UNESCO World Heritage site. Despite the formation of a Saba World Heritage Committee and the preparation of a thorough report, the nomination was never realized.

Formal protection still does not exist to this day. In 2010—almost 100 years after the first initiative for preservation—the Ministry of Education, Culture, and Science commissioned an inventory of buildings eligible for the monuments list. The Saba Island Monuments Ordinance also went into effect.

A major concern, perhaps even more important than preserving individual monuments, is the preservation of the villages' historic character in relation to the landscape. There has been a considerable increase in building scale. In recent years, more and more concrete houses and other structures have appeared on Saba. Preserving the villages' character in relation to the landscape requires careful consideration of cultural and historical values. Only then can the identity of this unique Caribbean island, with its distinctive architecture, be maintained.

[Fig]Contemporary concrete building in Windwardside, bearing no connection to Saban-style architecture. The Scenery Hotel (left) and the Unique Supermarket (right).

[7] STACEY MAC DONALD

NATURE AS HERITAGE AND HERITAGE AS NATURE

Saba, often called “The Unspoiled Queen”, has steep, forested slopes that rise dramatically from the sea, culminating in Mount Scenery at 870 meters. This forms the highest point in the Kingdom of the Netherlands. Despite its small size, Saba boasts a rich and diverse natural heritage, from mossy cloud forests and deep ravines to coral reefs, sulfur mines and tidepools. These have not only shaped the island’s unique biodiversity but also the lives, livelihoods, and identity of its people. This chapter elucidates the intimate relation of Saba’s nature and its inhabitants.

[Fig] Saba viewed from the northeast. (photo: John Hancock/Shutterstock.com)

[Fig] Sabans on the water in front of the 'Blue Peter' at Fort Bay. (photo: RCE, Croockewit collection)

Sabans and Their Natural Environment

For generations, Sabans have farmed hand-built terraces on hillsides, fished their surrounding waters, gathered bush medicine, and crafted tools and stories from the land around them. These practices are all testaments to the ways Sabans have adapted to and been shaped by their environment. The people and their environment have shaped one another, forging a shared resilience in the face of steep terrain, hurricanes, and isolation.

Many Sabans speak of their natural environment as true heritage: not just beautiful scenery, but something fundamental to who they are as a people. This understanding of nature as cultural inheritance guides how many islanders think about conservation and development today.

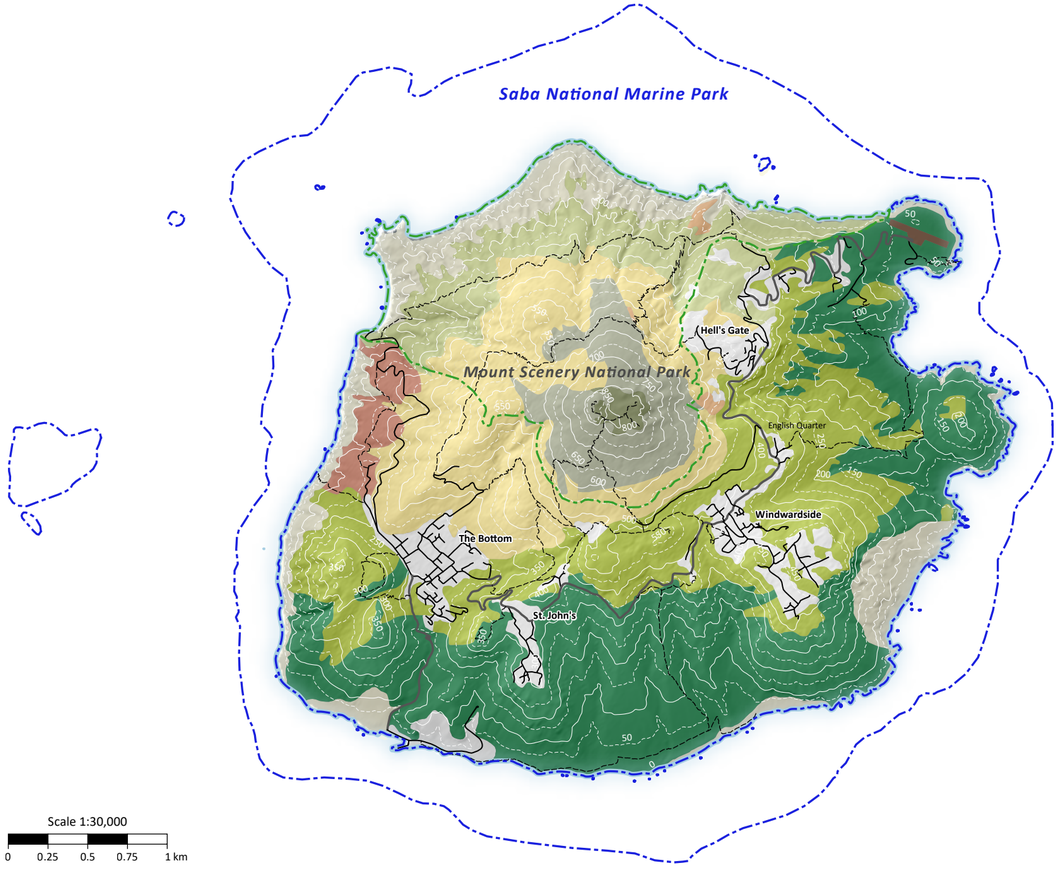
This chapter explores three key themes. First, we'll examine Saba's remarkable natural diversity, from cloud forest to coral reef. Then we'll look at how this dramatic landscape shaped Saban society and culture over centuries, creating unique traditions and ways of life. Finally, we'll consider how human activities have changed the island's ecosystems and what's being done today to protect both natural heritage and cultural traditions.

Saba's Natural Treasures

Saba's landscapes were shaped over millennia by volcanic activity, with Mount Scenery and its surrounding ridges emerging from the sea to form the island's steep slopes, rocky outcrops, and narrow coastal zone. This varied topography, combined with the small size and relative isolation in the northeastern Caribbean, has created a series of distinct ecological zones, each with its own microclimate, vegetation, and wildlife.

The island's position in the trade wind belt and its elevation changes, from sea level to 870 meters at Mount Scenery's summit, create conditions that support a remarkable diversity of life. On land, Saba's ecosystems transition from the cool, moist cloud forest at the summit to drier woodlands, shrublands, and grassy slopes lower down. The surrounding sea adds another dimension of diversity, with coral reefs and seagrass beds supporting a wide range of marine life.

Even within its small land area, Saba harbors a number of unique and endangered species that reflect both its isolation and its connections to larger Caribbean ecosystems. The Lesser Antillean Iguana, which persists on its hillsides, represents one of the Caribbean's most endangered reptiles. Endemic plants and invertebrates found



[Fig] Map of the vegetation zones.

Protected areas

National Parks

- Landbased national park
- Marine national park

Contour lines

- 50m line
- 100m line

Topography

Roads

- Footpath or trail
- Public main road
- Public road

Vegetation

Dutch Caribbean Biodiversity Database

Vegetation - 2011 Freitas et al.

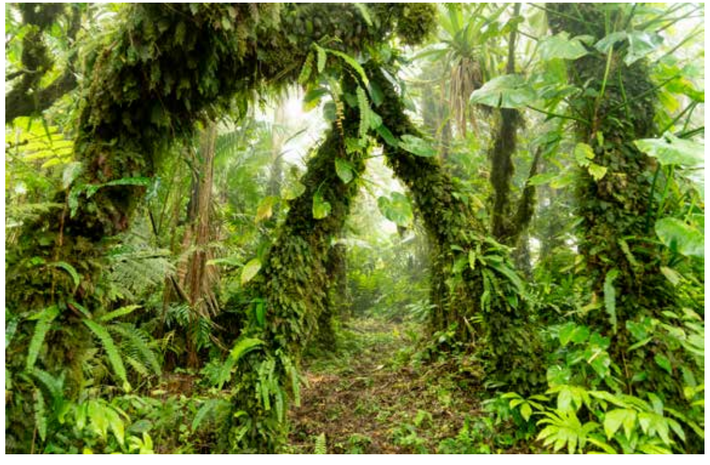
- A Airport
- C Aristida Cliffs
- M1 Cyathea-Charianthus Mountains
- M2 Philodendron-Marcgravia Mountains
- M3 Philodendron-Inga Mountains
- M4 Swietenia Mountains
- M5 Coccoloba-Wedelia Mountains
- M6 Coccoloba-Inga Mountains
- M7 Aristida-Bothriochloa Mountains
- M8 Bothriochloa Mountains
- U Urbanized areas

only in specialized niches demonstrate the island's role as an evolutionary laboratory where species have adapted to highly specific conditions.

At Mount Scenery's highest elevations, frequent cloud cover and high humidity support a dense, mossy forest where epiphytes, ferns, and orchids thrive. The persistent moisture from cloud interception creates conditions more typical of much larger tropical mountains, with trees draped in mosses and bromeliads that capture water directly from passing clouds.

What makes this ecosystem unique in the region is the presence of mountain mahogany, a species that is usually absent from other cloud forests and rare throughout the Lesser Antilles. Additionally, unlike typical cloud forests where constant wind exposure creates stunted growth, trees here grow surprisingly tall and robust. This ecosystem serves as a crucial water reserve for the island. The forest canopy intercepts fog while the soil absorbs rainwater. This creates a natural sponge that helps control water flow during heavy rainfall to the island's low-lying areas. This process allows water to filter through the ground, directing it toward underground cisterns and springs that sustain the community below.

[Fig] A comparison between the Lesser Antillean iguana (above, photo: Tommy Andriollo / CC-BYSA 4.0), a Saban black iguana (middle, photo: Michel Breuil / CC-BY 4.0) and a Green iguana (bottom, photo: Aatu Dorochenko / CC-BYSA 4.0).



[Fig] Trees in the Cloud Forest Crown.

Below the summit, this mid-elevation zone features tall trees, vines, and diverse understory plants. These include several medicinal species still used by residents, such as wild ginger, wild raspberries and “culantro”(a type of cilantro). The forest here is more structurally complex than the cloud forest above, with multiple canopy layers creating diverse microhabitats where elephant ears, palms, and tree ferns flourish.

Birds and insects thrive in this zone, while the forest helps retain soil and water on steep slopes and provides critical habitat for numerous species. This includes the

[Fig] Montane Rainforest with Elephant Ears.

red-bellied racer, a snake that has become extinct on St. Kitts and Nevis and now survives only on Saba and St. Eustatius. Many trees in this zone produce culturally significant fruits. The forest also serves as a source of fruit trees and traditional building materials. Common species include figs, red wood, soursop, and mahogany. Saba’s national flower, Black Eye Suzan or Black-Eyed Suzan, is also frequently found here.

On the lower slopes and in ravines, drier conditions support a more open forest of trees, shrubs, and vines that lose their

[Fig] Red Bellied Racer. (photo: Dan Schofield / CC-BY 4.0)

leaves when needing to conserve water. This habitat, once more extensive across the island, has been reduced in some areas by grazing and hurricanes, giving way to secondary scrub vegetation. The trees here are adapted to seasonal drought. They often shed their leaves during dry periods, creating a markedly different landscape from the perpetually green forests above. This ecosystem historically provided much of the timber used by island residents and like the tropical forest continues to support a variety of wildlife.

[Fig right] Dry Tropical Forest.

[Fig below] Black-eyed Susan.

[Fig] Dry Shrubland and Grassland.

The unforested, sun-exposed hillsides are covered by a mix of thorny shrubs, grasses, and cacti adapted to intense solar radiation and limited water availability. In some places, this vegetation represents a natural adaptation to poor soils and exposure. In others, it reflects the degradation of former forest through overgrazing and repeated disturbance. These areas are dominated by drought-resistant species, including several cacti that store water in their tissues and a range of grasses. Despite their harsher appearance, these habitats support specialized wildlife, including lizards, ground-nesting birds like terns, and various insects adapted to arid conditions.

With no year-round sandy beaches, Saba's shoreline consists mostly of sheer cliffs and rocky inlets carved by wave action over thousands of years. Tidepools and coastal ledges provide habitat for crabs, mollusks, and nesting seabirds. The cliffs themselves remain relatively undisturbed by human activity. These vertical habitats support specialized plant communities adapted to salt spray and extreme exposure. The cliff faces provide crucial nesting sites for tropicbirds and other seabirds, while the intertidal zones harbor diverse communities of marine invertebrates.

The waters around Saba include coral reefs, seagrass beds, and steep underwater drop-offs that mirror the island's terrestrial topography. These habitats are known for their biodiversity, supporting colorful reef fish, sponges, rays, sea turtles, and sharks. The coral reefs serve as nurseries for many commercially important fish species, such as the red hind. Seagrass beds in the few shallow areas provide feeding grounds for sea turtles and fish, while the deep waters just offshore support pelagic species including whales, dolphins, and large predatory fish.

[Fig top] Red-Billed Tropicbird. (photo: Dominic Sherony / CC-BY-SA 2.0)

[Fig below] Coastal Cliffs, Well's Bay.

How Saba's Landscape Shaped Its People

On Saba, nature has always been more than a backdrop. It has shaped daily life, traditions, and even the way people understand themselves and their island. The ruggedness of the landscape, the isolation of the island, and the scarcity of flat, arable land dictated not only how Sabans could live but also what it meant to belong here. The steep terrain left little space for settlement or farming, and yet Sabans found ways to work with the land. They carved terraces into the hillsides, creating vital horizontal plots where yams, cassava, beans, sweet potatoes, and cabbage could grow.

These terraces were more than just places to plant food. They were feats of ingenuity that kept the mountainsides from eroding and stood as quiet monuments to persistence. Even now, though many are no longer in use and are being overtaken by bush, the terraces remain stitched into the hillsides; visible reminders of the generations who worked them.

[Fig] The marine ecosystem. (photo: Ruud Stelten)

For many Sabans, the terraces hold deep meaning beyond their practical function. They are often tied to memories of a grandfather or uncle who built them by hand. Residents remember how these stone walls didn't just hold soil in place but also held families together, providing food and a profound sense of pride.

Yet despite this pride, farming knowledge wasn't automatically passed down. Parents often encouraged their children to pursue higher education and less labor-intensive careers, recognizing how difficult it was to make a living from the land. *"Now people don't farm anymore*," one resident observed. *"It's easier to buy rice in a bag than to grow yams and sweet potatoes."*
As Saba does not have rivers or proper freshwater sources, water scarcity presented one of the greatest ongoing challenges. Wells and cisterns were carefully placed and maintained to capture rainwater, and families learned how to stretch their use through the dry season. In earlier times, residents even placed burial grounds and homes with water access and land slope in mind. Nature dictated these decisions and permeated every aspect of daily life, creating a culture of careful resource management.

Like the land, the sea was central to life as well. Fishing was never easy on Saba's exposed coastline, but lobster, conch, and reef fish were crucial sources of food and income. The challenging conditions meant that fishing required both skill and courage, creating a culture of maritime expertise that continues to be passed down through generations. Knowledge of tides, weather patterns, and fishing grounds becoming part of the island's collective wisdom. With the rise of tourism in the 1980's, lobster fisheries, in particular, became a staple of Saban economy and identity as an export market to Sint Maarten developed.

These practices fostered a deep familiarity with both land and sea. Residents knew where to find bush medicine plants, how to read the signs of the weather, and how to coax crops from rocky ground. As one resident put it, "*We ate what we grew and what we caught. The land was our store, and the sea was our market."*

Property lands were often planted with fruit trees, like mango, guava, acerola, and sour orange, which provided food and shade while some of these trees marked property lines.

[Fig top] Historic image of productive terraces. (photo: RCE, Croockewit collection)

[Fig below] Current image of productive terraces.

[Fig] Overview of the harbor at Fort Bay.

Nature also offered and continues to offer a rare refuge of peace on this small island, where privacy is often scarce. Residents retreat into the hills, along the trails, or to the tidepools in search of solitude and reflection. Many describe Mount Scenery as a place to “clear your mind” and reconnect with something greater than yourself. Other places carry deep meaning as well, such as the Flat Point tidepools where children first learned to swim, or Wells Bay and Cove Bay when conditions allowed. These moments fostered both awe and respect for the sea’s power and beauty, while instilling water skills that serve islanders throughout their lives.

Families and neighbors would share bush medicine remedies made from local herbs and plants, creating networks of knowledge and mutual support. The rhythms of planting, harvesting, and fishing shaped music, stories, and festivals. The annual Wahoo tournament serves as a moment of community gathering to celebrate the fishing culture on the island. This maintained connections to maritime traditions even as the economy has diversified.

[Fig] Cashew tree, papaya and mango (top) pineapple and banana (bottom).

The Impact of Human Activity on Saba's Natural Environment

As much as nature shaped society, human activity has also reshaped the island's ecosystems, often with unintended consequences. The clearing of forests for farming, the introduction of goats and sheep, and the neglect of terraces have left marks on the land. What began as necessary adaptations to survive on a challenging island have, over time, created new environmental pressures that threaten the very systems that once sustained Saban life.

The most dramatic transformation of Saba's ecosystems began with European colonization in the seventeenth century. Archaeological evidence reveals the intensity of this early agricultural period. Excavations show a clear break where indigenous occupation layers are abruptly covered by colonial-era fill containing jumbled eighteenth-century artifacts, indicating rapid landscape modification and ecosystem disruption.

The establishment of plantations in the early eighteenth century brought systematic clearing of native vegetation. By 1780, Saba's population had grown to approximately 1,500 people, creating more pressure on natural systems. White cedar forests that once covered slopes down to the airport area were extensively logged for shipbuilding. This altered the island's vegetation patterns fundamentally and eliminated entire forest ecosystems. Coffee plantations joined sugar cultivation on the mountainous terrain, extending habitat destruction to higher elevations.

The clearing process generated large quantities of stones that were repurposed into the dry stone walls still visible across the landscape today. The older stone walls are referred to as "slave walls". While these walls became integral to Saban agriculture and culture, they also created significant habitat fragmentation. The systematic division of the landscape into agricultural plots disrupted wildlife movement patterns and created edge effects that favored certain species over others, altering the island's ecological composition.

However, the changes and shifts in population composition and size also created opportunities for the environment to restore itself. A significant shift occurred with the establishment of the oil refinery in Curaçao, which drew many Sabans away from the island. The population declined from 1,500 in 1916 to just 960 by the 1950's. This mass emigration triggered significant ecological recovery as abandoned agricultural lands began reverting to forest. The depopulation corresponded with widespread regrowth and reforestation across much of the island. This allowed native species to recolonize areas and create the foundation for the secondary forest ecosystems that now characterize much of Saba's terrain.

While this ecological recovery was beneficial for biodiversity, it also contributed to the erosion of traditional farming knowledge and the abandonment of agricultural terraces. The migration of families meant that generations of accumulated knowledge about working the land began to disappear. This created the disconnection from farming practices that persists today. Many terraces fell into disrepair during this period, and the skills needed to maintain them were lost as families sought opportunities elsewhere.

FEATURED

Marine and Coastal Challenges

Marine ecosystems have also suffered from both human activities and natural forces. Hurricanes and climate-driven coral diseases have weakened reefs, reducing their ability to support fish populations and protect coastlines. Anchors from visiting tankers have destroyed patches of seagrass and coral, creating dead zones in previously healthy marine habitats. Global overfishing has put pressure on local fish stocks, while coastal construction has threatened nesting sites for seabirds and eroded natural buffers against storms.

A development that had serious impact on the island's terrestrial ecosystem, was the introduction of roaming animals. Goats were likely introduced by Spanish explorers in the sixteenth century as a food source. This development exemplifies the complex relationship between culture and environment on Saba. Once managed as essential food sources and symbols of self-reliance, they now roam unchecked across hillsides, grazing young trees and preventing forest recovery. Their constant browsing has altered the composition of native plant communities, favoring hardy grasses over the diverse shrubs and trees that once covered the slopes. Soil erosion has increased as root systems that once held the mountainsides together have been weakened or destroyed. In the gaps left by overgrazed vegetation, invasive plants like coralita have taken hold. They spread rapidly across disturbed areas and further displace native species.

Yet many Sabans still see goats as part of their culture: hardy, independent, and tied to their history of self-reliance in a challenging environment. The animals represent resilience and adaptability, qualities that Sabans have long valued in themselves.

The proliferation of free-roaming animals has given rise to a new island tradition:

[Fig left and right] Goats

[Fig] The invasive ornamental Coralita.

goat hunting. Some Sabans now consider themselves traditional hunters, viewing the roaming goats as part of Saba's natural ecosystem. They venture into the rugged forest to track these once-domesticated animals that have essentially returned to the wild. For these hunters, the goats represent not just cultural heritage but an active connection to the land that defines their identity as Sabans.

These overlapping perspectives (cultural attachment, emerging hunting traditions, and the hunters' desire to preserve their newly defined practice) have created resistance and mixed feelings toward conservation efforts to cull free-roaming goats in attempts to combat erosion. The hunters, in particular, want the goats to remain wild so they can continue their tradition, viewing culling efforts as a threat to this emerging aspect of Saban culture.

This highlights a crucial shift in how goats function in Saban society. In the past, goats were carefully managed and contained, with owners knowing their animals and controlling their movements. Up until recently, many goats roam freely without supervision, their behavior unchecked by the traditional systems that once regulated their impact on the landscape. In response to this development, a goat removal project was launched which eradicated most of the free roaming goats on the island. While successful, this has also led to resistance within the community, reiterating debates that goats (including free roaming goats) are part of Saban culture and that "goat lives matter too".

The problem is not necessarily the presence of goats, but the absence of the cultural practices that once kept them in balance with their environment. As one farmer noted: "*They say the goats eat everything. Yes, they do. That's how we survived. But now no one watches them anymore. It's not the goats' fault, it's ours*."

More contemporary threats include erosion at sites like Mary's Point, where archaeological evidence of both Amerindian and seventeenth-century occupation has been lost to cliff collapse This led to the loss of important habitat areas and historical records of ecosystem change. Modern development pressures, particularly housing construction and infrastructure expansion, continue to modify ecosystems., However, this occurred at a much smaller scale than the historical agricultural clearing.

Balancing Heritage and Nature Today

These human impacts on the environment and resulting tensions reflect a broader challenge. How to balance cultural practices with ecological needs while recognizing that both culture and nature are dynamic systems that must adapt to changing conditions.

A transformation in the relationship with nature began as the economy and society evolved with the introduction of tourism in the late 1980's. Farming became less economically viable compared to wage labor and tourism, which offered more reliable income. Affordable imported goods eliminated the need to grow food or fish for survival. As one older resident explained: "*We used to live on what the island gave us. Now we live on what comes in by boat.*"

The erosion of traditional knowledge manifests in multiple ways. Many terraces now lie abandoned, putting generations of planting and soil-care knowledge at risk of disappearing entirely. Fewer people maintain fruit trees, and younger generations have lost touch with planting seasons and traditional bush medicine. Cultural foods like mami fruit cakes and fresh fish cakes have become rarer as diets shift to more westernized preferences. This represents not just the loss of food traditions. It also provokes the erosion of the social practices around food preparation, sharing, and seasonal celebrations that once bound the community together.

Paradoxically, tourism also introduced Western conservation values that emphasized protecting nature. This led to the establishment of the Saba Conservation Foundation (SCF) in 1987. Unlike many conservation organizations formed in response to ecological crisis, SCF was created to maintain an already extraordinary environment that generations of Saba residents had carefully tended. This ensured its continued quality for everyone's benefit and enjoyment.

The arrival of tourism also created new economic incentives for ecosystem preservation. Hiking trails and nature experiences became valuable resources. Initiatives such as fencing projects, reforestation programs, and marine park enforcement achieved measurable successes. They led to the protection of critical habitats and allowed degraded areas to recover. However, the long-term success of these efforts depends on continued local engagement and the development of approaches that honor both ecological and cultural values.

Yet tensions remain. Development projects, roads, houses, harbors, are welcomed by some for the jobs and income they bring. Such developments are feared by others for the risks they pose to fragile ecosystems. Some residents feel that environmental regulations restrict their access to land and fishing grounds without offering clear alternatives. As one community member put it: "*We want jobs, but not if it means tearing down what we have left. You can't eat a view, but you can't replace it either*." Many describe a fading of traditional ecological knowledge: how to predict hurricanes from bird migration, when to plant by the flowering of certain trees, or how natural signs once guided daily activities. This represents a significant cultural loss, as generations of accumulated wisdom about living in harmony with Saba's environment gradually disappear.
At the same time, nature continues to

inspire and define identity for Sabans. Many describe the island as “nature on steroids”. The hills, cliffs, and sea are powerful presences that command respect and wonder. As one resident reflected: “*Nature was our teacher and our stage. Everything we did, we did with the mountain watching*.” Wells Bay embodies these dualities. It is a place for barbecues and swimming, but also where tropicbirds nest and cliffs are eroding. As one resident explained: “*We need to take care of both*.”

Climate change now adds unprecedented pressures. Rising temperatures, prolonged droughts, and stronger hurricanes endanger the cloud forest at the summit, damage coral reefs, and erode coastal cliffs. These environmental shifts disrupt cultural practices tied to predictable seasons and stable ecosystems. Traditional activities, from planting cycles to fishing seasons, become unreliable as natural rhythms grow unpredictable. As one farmer noted: “*We used to know when to plant, when the rain would come. Now you can’t tell*.”

At the same time, there are signs of renewal. Summer camps and educational programs teach children about native plants and trails. Youth volunteers help maintain paths and replant native trees. Community-led efforts to control goats and remove invasive species are slowly improving degraded areas.

Several initiatives have emerged to bridge the divides between conservation and cultural needs. This included the establishment of the Saba Conservation Foundation and the Sea & Learn initiative, executing projects designed to pass on traditional knowledge to the next generation and foster environmental stewardship. Additionally, reforestation campaigns restore native trees on degraded slopes. Invasive species management programs target problematic plants like coralita, control goat populations, and monitor potential threats like green iguanas that could disrupt local ecosystems.
The Sea & Learn program also brings scientists and schoolchildren together each year to explore the island’s ecosystems, from tidepools to cloud forests. Students learn about native plants, invasive species, marine life, and conservation techniques, often alongside international researchers who bring global perspectives to local challenges. This educational approach helps counter the perception that conservation is imposed from outside, instead showing how environmental protection connects to Saban heritage and identity.

These efforts illustrate that conservation and culture do not have to be in conflict. Programs that combine traditional wisdom with scientific monitoring and planning could make Saba more resilient. It creates adaptive strategies that draw on both local knowledge and global research. As one guide explained: “*The land and the sea gave us everything: food, shelter, stories. If we forget that, we forget ourselves.*”

Residents see hope in blending ancestral wisdom with contemporary innovation. Older residents speak of water conservation techniques — collecting rainwater, using cisterns, planting drought-resistant crops — that could help meet today’s challenges. These time-tested practices, developed over generations of living with scarcity and uncertainty, offer proven strategies for resilience that remain relevant in a changing climate.

Some community members see value in reviving small-scale farming. Not just for food security, but to reconnect young Sabans with their heritage and improve biodiversity. Pilot programs encouraging school gardens, replanting fruit trees, and restoring terraces are small steps in this direction. These initiatives represent more than agricultural projects. They are attempts to rebuild the relationship between people and place that once defined Saban life, creating bridges between traditional knowledge and contemporary needs while ensuring that future generations maintain some connection to the land that shaped their culture.

Preserving What Matters Most

Saba’s story is one of people and nature adapting to one another through time, creating a unique synthesis of human culture and natural systems. Its steep hills, forests, reefs, and tidepools continue to sustain its people, even as they face challenges that test the limits of traditional adaptation strategies.

The path forward lies not in choosing between conservation and culture, but in recognizing them as partners. By weaving together traditional knowledge, scientific research, and inclusive decision-making, the island can protect both its biodiversity and its cultural soul. This means respecting the wisdom of elders while embracing new tools and approaches, creating space for both time-tested practices and innovative solutions.

The bond between Sabans and their environment remains strong despite these challenges. This sense of responsibility spans generations, connecting the wisdom of elders with the energy and innovation of youth in efforts to protect what matters most.

Preserving Saba’s heritage is more than conserving nature: it is about keeping alive the traditions, knowledge, and identity that have shaped life here for centuries. Every endemic species saved, every traditional practice maintained, and every young person educated about their heritage represents an investment in a future where Saba remains true to its character while adapting to new realities.

[8] SUZANNE LOEN

LIVING WITH AND WITHOUT FRESHWATER THROUGH THE CENTURIES

The Carib, early Amerindian inhabitants of Saba, are said to have called the island Amon-Hana. This may have meant “to fetch water”, a reference to the freshwater springs on the island and an indication of how essential freshwater was to the Carib. Saba is a small island with a limited landmass of 13 km². Small islands like Saba face unique challenges, especially regarding the limited availability and vulnerability of natural resources such as freshwater. This chapter explores water management through the centuries.

[Fig] Old cistern in Windwardside.

[Fig] Photo of Fort Bay, 1947. In the background a water catchment constructed following the great drought in 1944. It collects water from the Fort Bay spring at the foot of the cliff. (photo: National Archives, Van de Poll collection)

The Natural Supply of Water

Saba has no pools, streams, lakes, or rivers. The island is simply too small, and its geological composition too unsuitable, for such natural water bodies to form. What Saba does have are guts – ravines and gullies that carry water only after sufficient rainfall. The forested slopes absorb water well and slow water run-off, whereas bare slopes retain water far less effectively. Especially during heavy rainfall, storms, and hurricanes, erosion and landslides present significant risks.

Traditionally, Sabans relied almost entirely on rainwater harvested in cisterns for drinking. The coastal springs were far from the villages, and the water was less suitable for human consumption. Well water was primarily used for household purposes and during extreme drought. In addition to rainfall, atmospheric moisture — the mist that clings to the top of Mount Scenery — also plays an important role in Saba's water system.

The interaction between humans and their environment shaped what can be called Saba's "water culture". The availability of freshwater changed over the centuries, influenced by climate, geology, and human activity. On small islands, the impacts of land use are amplified: hunting, farming, deforestation, and settlements significantly altered the island's soil, ecology, and water system. Scarcity of drinking water gave rise to characteristic practices, such as terraced farming and the widespread use of rainwater cisterns.

Today, Saba's drinking water comes from desalinated seawater. This supply is costly and highly vulnerable to storms and hurricanes, which are becoming more unpredictable due to climate change. Meanwhile, demand for water grows with population increase and tourism. The island's traditional knowledge of how to capture and use scarce rainfall rainwater is therefore more relevant than ever. Fortunately, the Saban tradition of collecting rainwater is still very much alive. Supporting and preserving local knowledge strengthens the island's resilience and helps the island cope with drought, water scarcity, and flooding.

Discussions about Statia's unpredictable weather go back centuries. Many older residents recall that it used to rain more often, while others insist the climate was always capricious. What is certain is that Saba has several microclimates and highly variable weather patterns. The long-standing challenges of freshwater are evident in newspapers and reports. The Curaçaos Verslag of 1944 states: "*On Saba, severe drought prevailed at the start of the year, causing a shortage of drinking water in The Bottom and Windwardside. The inhabitants of these villages were forced to fetch water from the spring at Fort Bay, where a reservoir was built in response.*"
On the more exposed lower slopes, a dry savanna climate prevails, with high evaporation driven by the trade winds. Higher up Mount Scenery, the climate becomes more humid: above 400 meters, a monsoon climate dominates, and near the summit, a true rainforest climate exists. On average, Saba receives about 1,000 millimeters of rain annually, but extended droughts also occur. Tropical storms and hurricanes, especially between August and October, can bring extreme rainfall — up to 200 millimeters — in a short period, causing sudden run-off and erosion. Saba constantly navigates between water abundance and scarcity.

In the travel journal of an eyewitness to a hurricane in September 1889, we read: "*The rain came down with tremendous force, surging and roaring through the valley. Its natural course ran partly along The Ladder into the sea, and partly toward Fort Bay, where another waterfall tumbled down to finally reach the beach.*"

Saba was likely once completely covered in tropical rainforest. Deforestation for agriculture, livestock, and timber drastically reduced the forest. Only on the steep slopes above 600 meters did patches of original forest remain. This loss of forest had major impacts on the island's nature, soil, and water system. The volcanic soil makes Saba particularly vulnerable. Without the roots and canopy of trees, the fertile topsoil is lost – it dries out, blows away, or is washed into the sea by rain. As a result, the soil loses its sponge-like ability to retain water. Rainwater either soaks in poorly or drains too quickly into deeper layers, which plant roots cannot reach. On the bare slopes, this also hinders the regrowth of the forest.
The construction of agricultural terraces helped residents hold onto soil and water and reduce erosion. Starting in the second half of the twentieth century, agriculture and timber use declined, allowing forest cover to increase again. This new growth, however, is secondary forest. Goat grazing – especially by feral goats – has also shaped the landscape and the island's water system.

[Fig] Report on the devastation caused by the "unusual winter hurricane" Alice, which struck Saba on January 2, 1955. "*Saba, the island most severely affected by the hurricane 'Alice'. The Bottom became completely cut off from the outside world because both the road to Fort Bay and the one to Windwardside were washed away and rendered entirely impassable.*"

[Fig top] Water was sometimes carried in old kerosene cans as can be seen on this 1947 photo from Windwardside. A newspaper from 1910 reports that a can of water from Taylor's Well costs between 1 and 10 Dutch cents. People placed banana leaves or cloths on their head to ease the task. The woman in this photo was identified as Mrs. Granger during a town hall meeting. (photo: National Archives, Van de Poll collection)

72STE JAARGANG No. 9214

Amigoe di Cur

DAGBLAD VOOR DE NEDERLANDSE ANTILLEN

„Alice", eerste orkaan van nieuwe jaar, teistert Saba en zustereilanden

The Bottom door weggeslagen wegen van buitenwereld afgesloten

Hr. Ms. „Van Speyk" heden met levensmiddelen naar zwaargetroffen Saba ?

Orkaan „Alice" in Z-Westelijke richting

Columbus heeft geen fout gemaakt te hebben

[Fig] Old cisterns with catchment basins near St. Johns. (photo: Wereldmuseum)

FEATURED

The Cloud Forest of Mount Scenery

Mount Scenery is of immeasurable value to Saba, thanks to its unique flora, fauna, and striking appearance. The mountain is also crucial to the island's water system. The cloud forest at the summit, around 825 meters above sea level, is almost always shrouded in mist. This atmospheric moisture is just as important to Saba as rainfall. Forested volcanic peaks in the Caribbean, often cloaked in mist, are therefore considered "natural water towers". Moisture in the air is effectively drawn toward the cool, forested mountaintops.

[Fig] Forest cover ensures that the soil absorbs and retains moisture more effectively and replenishes groundwater.

Around the summit, moisture condenses on leaves, flowers, stems, and trunks. This captured water slowly soaks into the soil, keeping the lower slopes of the island moist as well. The canopy can hold up to 8 millimeters of water, creating a natural buffer during dry periods. This steady supply of moisture sustains the plants, animals, and the forest itself. Wildlife also depends on the water collected in the cups of plants like the Saban Lobster Claw (*Heliconia caribaea*).

[Fig] Leaves, branches, mosses, and trunks capture moisture from the air. Even without rain, water is collected and slowly released to the soil.

Water and Residents Through Time

Life on an island like Saba could—and still can—be quite isolated. At the same time, Saba has always been part of the wider network of Caribbean islands, where people, knowledge, food, and materials have continuously moved and been exchanged over the centuries.

The Amerindian communities traveled between islands in small groups, temporarily settling where food, resources, and especially freshwater were available. Europeans and enslaved Africans, who arrived later, were just as dependent on the coastal springs. However, the new settlers also introduced new methods for managing freshwater. Because of the scarcity of drinking water and the distance to the springs, they built covered reservoirs, called cisterns, to collect rainwater. Building a cistern was costly, so many residents continued to rely on well water.

[Fig]Tree ferns on deforested farmland (before 1910)

Early deforestation for agriculture and firewood left the soil vulnerable and may have contributed to a major landslide in 1651 that destroyed the first European settlement. To reduce erosion, terraces with stone walls were built to slow the flow of

[Fig] Land was farmed even on steep slopes and at very high altitudes, circa 1910. (photo: Wereldmuseum)

rainwater and protect the agricultural land. Most farming was small-scale and focused on subsistence. Terraces with cisterns for livestock and crops were built high on the volcano's cooler, more humid slopes. In good, wet years, harvests could even be produced for export. In dry years, however, scarcity and hunger were widespread. A 1912 report notes: "*Our population suffers greatly from the drought. […] The potato, tania, and cassava plants are withering […] Only the bananas flourishing at the perpetually moist summit do not yet show signs of shortage.*"

The quality of well water was not always suitable for drinking. The first public cistern was built only after an extremely dry year in 1912, next to the church in The Bottom. Because rainfall was erratic and unevenly distributed across the island, drought remained a recurring problem. In the 1920s, additional public rainwater tanks were installed at schools and government buildings due to severe water shortages, yet the problem persisted.

The extreme annual variation in rainfall is illustrated by the years 1912 and 1914. About 1912, a journalist wrote: "*The water shortage is severe. People had to go to the springs by the sea to fetch water – a climb of 800 feet [243 meters] for the residents of The Bottom and 1,800 feet [548 meters] for those in English Quarter and Hell's Gate – all while carrying heavy buckets on their heads. It is therefore thanks to our Lieutenant Governor that a large rain tank in The Bottom was built, which will provide much relief during future water shortages.*" Two years later, however, there was abundance, as a 1914 colonial report states: "*Thanks to the heavier rainfall, the rain tanks were able to meet Saba's water needs, so the population did not have to rely on the springs along the shore.*"

During extremely dry years, such as 1944, household cisterns and public rain tanks ran dry. That same year, a "water catchment basin" was built at the Fort Bay spring. In the 1950s, larger public rain tanks with spigots were installed in The Bottom and Windwardside, and rain tanks were also added at the church in Hell's Gate. When new roads were constructed, gutters and water reservoirs were incorporated to collect rainwater for farmers and help prevent flooding.

Today, rainwater is still collected in household cisterns. That this can provide enough drinking water is clear from the experience of resident Glenn Holm: "*My mother lived in her house for 50 years. Her cistern only had to be refilled twice – only during severe droughts.*" However, this is often no longer sufficient to meet growing demand. As a result, this historic cistern system is now supplemented with desalinated seawater delivered by truck.

FEATURED

The price of water

Water from government cisterns was not always free. In 1939 water from government cisterns was sold to the population 'at a low price' while, in the same year, the water on St. Eustatius was provided 'free of charge'. During droughts water was openly distributed, but could only be used as drinking water. To use it for any other purpose, one had to go to the source in Fort

[Fig] To the left of the road is a rainwater reservoir. When new roads were built, reservoirs were installed alongside them, with the road itself acting as a channel to direct rainwater. This served two purposes: during heavy rainfall, run-off from the road was captured, preventing sudden, destructive flows, and the stored water was intended for local farmers. Today, since agricultural activity has declined, the water is rarely used for this purpose

[Fig] The horticultural project The Farm is located at Zion's Hill. The building pictured sits on top of the rainwater reservoir, which the water company fills in dry periods.

[Fig top] Old cistern in Windwardside.

[Fig below] A water company truck is filled with reverse osmosis water in The Bottom. Many Sabans still collect rainwater, but use of desalinated seawater is increasing. People call the water truck to fill their cisterns. According to the driver, almost no one can live solely on rainwater anymore.

Bay. Water directly from the springs was always free.

Conversing with older Sabans one gets the impression that water from the house cisterns was always shared. Research by archaeologist Ryan Espersen shows that in the villages of Palmetto Point and Middle Island, cisterns sometimes had multiple owners or users. This is illustrated by a deed of ownership which explicitly states that, if sold, the cistern should remain accessible to a third party (a couple in this case).

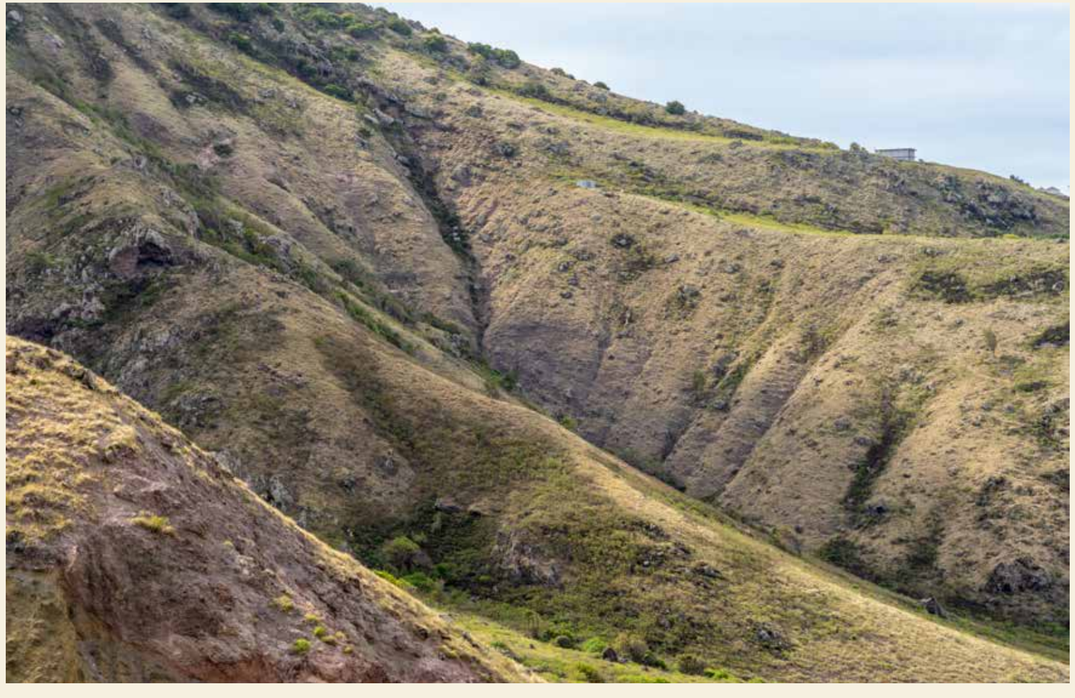
However, a letter from Father J.C. Gast to the Governor of St. Eustatius shows that some Sabans sometimes sold their water at 'extraordinary prices' during droughts. As was the case in 1857: "*Due to the lack of good water reservoirs, there will be an immediate shortage of suitable drinking water in the event of a long-lasting drought. Those with water reservoirs in good condition sometimes sell water at extraordinary prices. Those who cannot afford these prices have to get water from the coast, which is very difficult. In addition, everyone washes their clothes in the three wells on the shore. It is well known that this is unhygienic and it is the reason why most families suffer from elephantiasis.*" Generosity and the merchant spirit supposedly coexisted.

The current price of drinking water in the Caribbean Netherlands is very high compared to local incomes. In 2025, a cubic meter of reverse osmosis water on Saba costs $15.85 compared to $2 on Texel in the European Netherlands. Bottled drinking water is even more expensive.

From Guts to Cisterns: The Water-Building Blocks of Saba

Instead of lakes, streams, and rivers, Saba has guts, commonly called gullies. These are steep, debris-filled channels or ravines carved by rain, wind, and erosion. In the higher parts of Mount Scenery, the guts are sometimes barely visible beneath the dense tropical vegetation. On the more exposed slopes, they stand out dramatically against the landscape. The sides of these ravines can be extremely steep, sometimes reaching tens of meters in height.

Flowing water is rarely seen in the guts, yet they play an important role in the island's water system. During heavy rains, water races down the steep ravines in great volume and at high speed toward the sea. Forests and a well-rooted, humus-rich topsoil slow the run-off, retain water, and allow it to infiltrate the ground. This rainwater replenishes the underground freshwater supply.



Guts play an important role in the use and structure of the Saban landscape. Settlements, infrastructure, farmland, and waterworks are therefore often located in the drainage basin of the guts. Like streams and rivers, guts are important markers and points of orientation. Before the construction of roads, parts of the guts served as pathways during dry periods, connecting homes and agricultural fields to the coast, where the springs and boat landings were located. The maps on the next page show the guts and the location of settlements.

[Fig] One of the guts in Spring Bay follows the course of Kelbey's Ridge.

Historical maps

Cadastral map 1963 & Veenenbos 1951/52'

- Cisterns
- Well or (hot spring) some covered in landslides
- Walls
- Fences
- Gullies

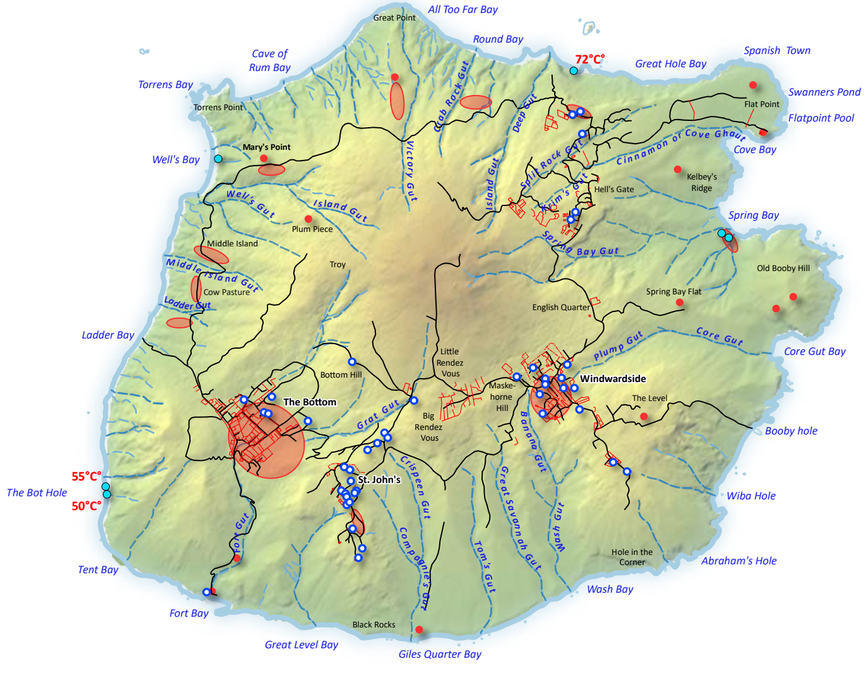
Saba in ca. 1900

- Roads

Archaeology

Indigenous Amerindian sites

- Sites
- Site concentrations



Scale 1:30,000

0 0.25 0.5 0.75 1 km

[Fig] Overview map of the water systems. The map shows that Fort Bay Road between The Bottom and Fort Bay follows the gut's course almost exactly. The Ladder likewise traces the gut toward Ladder Bay. This explains why these routes, both historically and today, become raging torrents and waterfalls during heavy rains. At the main settlements – The Bottom, Windwardside, and Hell's Gate – a connection with the guts is also apparent. In the plain of The Bottom, guts from Troy, Bottom Hill, and Little Rendez Vous converge, turning the valley into a lush, water-rich area. During rain, water would flow through the streets toward The Ladder and Fort Bay. From Maskahone Hill and Big Rendez Vous, the Banana Gut and Plump Gut flow through and alongside Windwardside.

FEATURED

Spring Bay – Wells Gut

Spring Bay was an important area during both the Amerindian and colonial periods. The drainage basins of three guts converge here, and several freshwater springs were present in the area. Archaeologist Ryan Espersen conducted research at the site and documented, among other features, the remains of indigo processing, an activity that required large amounts of water. Remains of indigo production have also been found on Curaçao.

[Fig below] The catchment areas of three guts converge in Spring Bay. The guts, natural springs, and the sheltered position of the bay made Spring Bay an attractive place.

[Fig top] Archaeologist Ryan Espersen mapped the remains of indigo processing in the drainage basins of the guts at Spring Bay. At the top a well was constructed; stepped below it are reservoirs in which water was collected. (Photo R. Espersen.)

FEATURED

Banana Gut – Ethno-botanical Garden

Banana Gut, known locally as Breadfruit Gut, is a deep, steep ravine that runs from Rendez Vous Hill, via the Trail Shop in Windwardside, down to the sea. It is hard to imagine now, but where tropical forest grows today, there were still small fields and orchards well into the 1970s. The Arnold family, the owners at the time, donated the land and the cottage to the Saba Conservation Foundation, which went on to establish a botanical garden there.

[Fig top] In Banana Gut, also called Breadfruit Gut, there are still multiple banana and breadfruit trees.

[Fig below] Harvesting bananas on Saba; their cultivation reached all the way to the top of Mount Scenery. (photo: Wereldmuseum)

Amid the lush greenery, remnants of terraces, stone walls, cut steps, and old fruit trees recall a time when every patch of ground on Saba was put to use. The dry-stacked stone walls retained water and soil and remain a characteristic feature of the landscape. The gut owes its name to the many banana and breadfruit trees that once grew there. In this fertile gut, these trees were deliberately planted, but they also spread naturally. Because residents often discarded food scraps there, a rich mix of edible plants and trees developed.

Underground Water Reserves: Springs and Wells

Saba's natural springs and wells are located along the coast and were a crucial prerequisite for human settlement. These springs are fed by underground freshwater reserves. According to recent research, there are two types of subsurface flow systems – a fast and a slow flow – both of which discharge toward the sea. The volcanic soil on Saba acts like a sponge, provided there is sufficient topsoil and vegetation cover. Rainwater infiltrates into deeper soil layers, where in the deep groundwater it forms a convex freshwater lens. This freshwater floats atop the denser seawater, forcing it downward.

At the lowest points along the coast, this groundwater re-emerges at the surface as natural springs, due to pressure. The guts, in particular, are able to capture and channel large volumes of water. It is no coincidence that springs and wells are found where gut systems empty into the sea. Because of concerns about water quality and the distance from the villages, well water was used for drinking only during severe drought, as noted in a colonial report from 1909: *"Only when the tanks [cisterns] are exhausted does the population resort to the springs along the shore, which provide fairly good drinking water."* Although the colonial government considered the well water "*fairly good drinking water*", not all Sabans agreed. As Hazel Durand recalled during a meeting with Sabans in April 2025: "*The water from the well at Mary's Point was yellow. After a few years, they sealed it with cement.*"

[Fig] The well in Well's Bay in the 1920s. According to Will Johnson, the well was provided with a circular wall in 1907. The well was also called Mary's Well, named after the village of Mary's Point. The well was an important water source for the inhabitants of the very isolated villages of Mary's Point and Middle Island.

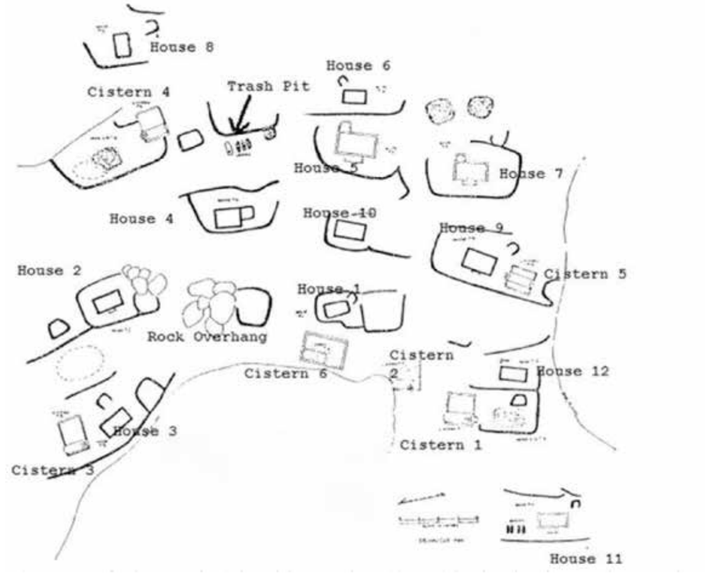
Several springs and wells have "disappeared" as a result of landslides. The spring at Spring Bay was buried by a landslide during Hurricane Alice, which struck the island in January 1955. Sabans recall that they – and their parents and grandparents before them – always had to be extremely careful with the rainwater stored in their cisterns. To do the weekly wash, people went down to the coastal wells.

[Fig] Domestic cistern in Upper Zion's Hill with the rainwater catchment basin on the left.

Cisterns and Rainwater Reservoirs

Collecting rainwater is an integral part of life on Saba. Cisterns used to store rainwater are found all across the island. They are clustered in villages near homes, schools, churches, and government buildings, as well as scattered across the landscape on former fields and pastures.

Building a cistern was expensive. Owning one was therefore not feasible for many Sabans and came to be seen as a status symbol. In the 1930s, constructing a large public rain reservoir cost about 1,250 guilders. In today's terms, that would amount to roughly €13,500 or $14,700.



[Fig] Reconstruction of the abandoned village of Mary's Point. Research by archaeologist J. Haviser showed that this highly isolated village had six cisterns (C) serving twelve houses (H). Official reports, however, indicate that the residents of Mary's Point still suffered from water shortages, despite this seemingly high number. In 1932, the village was evacuated over concerns about harsh living conditions and the health of its inhabitants.

After the abolition of slavery, most freed people could not afford to build their own cisterns. The 701 emancipated Sabans therefore suffered particularly from drought and food shortages. As an eyewitness wrote in 1863: "*Saba suffered greatly over the past year due to severe drought, and the freed people had to endure many hardships.*" The same, of course, was true for poor Sabans in general.

Research by Will Johnson does, however, provide an example of home-owners who, even before emancipation, allowed their enslaved people to use a house with a cistern: *"December 24th, 1856. Miss Elizabeth Peterson frees her slaves Rose Genette and John Henry, leaves her house and lot including cistern to them, but not to be sold. To be used until their deaths(...)"* In general, water from the wells was not suitable for consumption. As a result, a large part of the population depended on government rainwater reservoirs for drinking water, especially during drought. How were cisterns in general distributed across the island and among the population? A reconstruction map of the villages around 1900 shows one cistern in The Bottom and ten in Windwardside. St. John's and Mary's Point were, relative to the number of houses, richly supplied with cisterns. On 1 January 1909, Saba had 2,332 inhabitants. At that time there were 214

[Fig] A double house cistern for rainwater collection. (photo: Suzanne Loen)

private rain tanks on the island and 2 public rain tanks in The Bottom. That amounts to an average of about eleven people per private cistern.

The range of cistern types on Saba is remarkably diverse in age, form, size, location, and function. The arched, or traditional, cistern is the oldest type and characteristic of both Saba and St. Eustatius. The first examples were probably built in the seventeenth century. These arched cisterns have their reservoir sunk into the ground surface and are usually freestanding, separate from other buildings. They were built from brick, hewn blocks of basalt or Bermuda stone, cement, lime, and tras—a highly prized material quarried on Statia.

The simplest type consists only of the arched cistern itself. It is fed by rainwater collected from surrounding roofs. Rainwater flows from the roof into the gutter and via the downspout – or "spout" – into the cistern. Part of the cistern is equipped with a slightly sloping, plastered stone basin – the "catch" or "dish" – which directs the water toward the arch openings, where it enters the cistern. These openings, which

[Fig] At The Farm near Zion's Hill the terraces are being brought back into use and restored where possible.

were also important for ventilation, were covered with mesh to filter out debris. The raised opening, also known as the "mouth", was securely closed with a wooden or metal strainer. Sometimes stairs were built against the cistern to reach the opening. Today, cisterns are usually built as (partially) above-ground basements or substructures beneath a house.

Saba's Water Heritage – Inspiration for a Sustainable Future

"Water is Saba's liquid gold," says Saba resident Marie Petit. This reflects both the value of freshwater and the deep connection of the island's inhabitants to it. On Saba, one is literally surrounded by water-related heritage. It is the result of centuries of adaptation to a capricious climate, where periods of water scarcity alternated with floods. Limited supplies of freshwater and arable land forced residents to develop inventive solutions. This historical knowledge remains invaluable for the island's resilience, now and in the future.

Three elements form the foundation of a resilient water system: rainwater cisterns, terraced landscapes with dry-stacked stone walls, and guts. For generations, Sabans have been harvesting rainwater in cisterns. They are proud of this practice, which is becoming ever more important for the population's self-sufficiency in the face of increasing drought and climate extremes. Terraces supported by stone retaining walls once made agriculture on steep slopes possible: they prevented erosion and helped retain water. Today, tree roots and the remnants of old walls can be seen working together on the hillsides, stabilizing the soil and supporting forest recovery. The guts form a natural network for water run-off and retention. In an era of increasingly extreme rainfall, guts can be used even more as green-blue corridors that help hold water and reduce flooding.

Rising above it all is Mount Scenery, Saba's "green water tower." The mountain captures moisture from the air, retains it, and nourishes the ecosystem with it. Together, these elements create an interconnected system in which heritage, culture, and nature reinforce the resilience of both the water system and the island.

Saba's water heritage shows that traditional knowledge and local solutions are once again highly relevant. By preserving, restoring, and integrating this heritage into policy and future planning, it can continue to support a sustainable and resilient Saba.

FEATURED

Historical Structures Still in Use

Remnants of terraces – featuring dry-stacked retaining walls, dams, embankments, and low walls – can still be found across the island. These structures held water, prevented erosion, and provided protection against flooding. The building materials consisted mainly of soil and loosely stacked stones and rocks, which had been scattered across the island by volcanic activity. Their open structure allowed water to drain in a controlled way, reducing the pressure that might otherwise cause the walls to collapse. Building these terraces and retaining structures was extremely demanding work, often carried out by enslaved people. Today, Sabans with agricultural knowledge still value the terraces for their positive impact on soil quality and water management.

[Fig] Many Sabans continue to cultivate fruits and vegetables on their private plots. Enrico 'Cuchi' Klaber uses old terraces around his Windwardside home to grow crops. Both to sell and for personal consumption. (photo: Suzanne Loen)

[Fig] An overview of various cisterns on Saba.

[9] JET BAKELS

LIVING HERITAGE: CELEBRATIONS, CRAFTS, AND KITCHEN SECRETS

This chapter offers an impression of the island's "living heritage" or "intangible heritage", meaning the island's cultural traditions. These include celebrations, knowledge and practices related to nature, craft skills, and the preparation of particular dishes and drinks. These customs are typically learned from parents, grandparents, or fellow community members and passed down from generation to generation as heritage – something people wish to preserve for future generations. This living heritage plays an important role as a cultural expression of local values and practices that give life on Saba its form, color, and meaning. People often attach great importance to their intangible heritage.

[Fig] The Saba Conservation Foundation.

[Fig] Mural in the harbor.

Heritage in Motion

Cultural traditions connect people to the past, provide stability in the present, and offer a perspective on the future. They reflect and shape the identity – or multiple identities – that emerge on the island, which, like the sea around it, are always in motion. Within these traditions, we hear the voices of different individuals and groups – of various ages, genders, origins, and backgrounds. These voices meet in shared customs and habits and help create a sense of being "from Saba" – or at least of belonging "on Saba". The context in which cultural traditions emerge, evolve, and fade on this small island is central to this dynamic. "*Heritage defines who you are,*" people say with conviction. Others warn: "*We don't always realize that traditions can disappear. We used to bake and sell mammie pies here – cakes made from the mammi apple – out of economic necessity. Nowadays, we just buy brownies at the supermarket.*"

Although the island's four villages present a uniform appearance of white wooden houses with red roofs, set amid greenery and gardens, the population is diverse, shaped by waves of migration. In 2025, Saba has around 2,150 residents, roughly divided between those of Afro-Caribbean ancestry and those of European or American descent. Caribbean migration continues steadily, and more recently, an influx of Asian laborers has introduced new languages, music, and customs.

At the same time, young Sabans often leave for long periods – or permanently. This raises questions about which forms of intangible heritage residents identify with most: do they embrace the creolization and exchange of traditions practiced by different groups on the island, or do they hold on to an idea of what is "authentic" or "typically Saban"? And if so, what exactly does that mean?

Mixed marriages have reportedly been common for about 60 years. Only 23% of the current population was born on Saba. The island has four inhabited centers: The Bottom, Windwardside, Zions Hill (also known as Hell's Gate), and St. John's. Each has its own distinct character and history, sometimes with unique customs. Particularly striking are the family graves – stone tombs containing coffins – situated on private property next to the family home. *"It keeps the deceased family member close"*, is the explanation. This seems to reflect the strong village-based identity. Until recently, marriage and social life were largely confined within each village, with women in particular rarely visiting other villages. Each village could also be recognized by its distinct pronunciation of Saban English. The steep terrain and, for many years, muddy roads also reinforced these boundaries. Today, the distinctions remain mostly in culinary preferences. For example, red pea soup is said to be most popular in The Bottom and St. John's, while Saba pot is particularly common in the other two villages.

The islands of the Caribbean have always been closely connected, and this has helped keep cultural heritage in motion. In the first half of the twentieth century, many men left the impoverished island to seek work elsewhere. Many were gone for years at a time. The women stayed behind, kept society running, and found their own ways to make a living. They grew vegetables and sold handicrafts – most famously Saba lace, which became very well-known.

There is still a constant flow of people to and from Saba, as residents leave to seek work or pursue an education on other islands, in the Netherlands, or in the United States. "*Young people don't come back anymore – only for the holidays*," one mother complained. At the same time, migration from Latin America and Asia is bringing new communities to the island. Some participate in local traditions, while others maintain their own customs, each leaving an imprint on Saba's culture. The influx of Spanish-speaking Catholic groups, for example, has led to fuller Catholic churches. Heritage offers a sense of orientation and grounding as the community responds to these changes – shaping new expressions and finding new cultural anchor points. On the other hand, some groups feel that their heritage is being threatened by the growing diversity of the island's population.

Another important factor is the island's small population. Even minor changes can have a huge impact. They can shift cultural emphasis, and there is no large reserve of knowledge or skills to draw from. When, for example, a steel drum player – a percussionist playing an instrument traditionally made from cut-down oil barrels – passes away, grows too old to perform, or moves off the island, it may be impossible to find a replacement, and an entire musical style can be lost.

A third factor is the legacy of slavery within the Afro-Caribbean community. This painful history left some cultural traditions in need of being reclaimed and rebuilt over time. To this day, relatively little Afro-Caribbean heritage has been researched or documented.

A fourth factor shaping Saba's living heritage is its geographical setting. The opportunities offered by land and sea – ecosystem resources such as freshwater and air, the fields in which crops from many corners of the world are grown, and the cloud forest atop Mount Scenery visited by residents and tourists alike – structure daily life on the island. Islanders also observe that climate change has increased both the frequency and intensity of hurricanes, which can cause widespread destruction.

These experiences have strengthened a desire for self-sufficiency. On Saba, there is renewed focus on local food production, sustainable fisheries, drinking water supply, and hurricane-resistant construction. These

developments partly build on traditional knowledge and practices from the recent past, where these are still remembered. This raises the question of what the government is doing to preserve, encourage, or initiate cultural activities. One of the Saban government's ambitions is to strengthen and support local heritage. How can local talent be encouraged to flourish? Promoting culture, however, is not simple. "*How do you refresh heritage in the hope of keeping it alive?*" asks Sharifa Balfour, director of the Saba Heritage Centre. "*Older people don't want change, and young people aren't interested in old customs. On top of that, younger generations often leave the island. It's not easy to truly engage people.*"

Efforts focus on school education, while local celebrations are increasingly promoted to tourists. There is even discussion about adapting some of these celebrations to make them more accessible and appealing to visitors. Diving in Saba's coral- and fish-rich waters and hiking through the island's natural landscapes are also highlighted – both activities that draw heavily on local knowledge. Several nature guides on the island bring a wealth of expertise to this work. At the same time, the island is working on developing a Saban canon, inspired by the Dutch national canon. Nevertheless, several traditions are still practiced with great enthusiasm and joy.

This chapter highlights a few examples: celebrations such as Carnival and commemorative events, food traditions, and Saba rum – which is still made, though only by a few women. Saba is also renowned for its elegant lacework. Life as part of the island's ecosystem – including food crops, water management, fisheries, and bird conservation – is also explored.

This chapter draws on what residents of Saba consider characteristic of life on their island. These insights were collected with the help of specialists from the island's cultural department and residents who shared their time with us. This overview can only provide an impression to build upon, one that does justice to the historical depth and breadth of Saba's living heritage. It is also a snapshot in time. Some traditions survive only in memory, yet local initiatives can revive old forms or inspire new ones. Finally, the chapter considers the role of museums and heritage centers as platforms for cultural expression.

FEATURED

UNESCO and Intangible Heritage

What does ICH entail? The concept of intangible cultural heritage (ICH) has gained traction since the introduction of the 2003 UNESCO Convention for the Safeguarding of Intangible Cultural Heritage. According to this convention, intangible cultural heritage, or "living heritage", refers to the "practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity." (Source: UNESCO paper 2025.)

UNESCO distinguishes five domains of intangible cultural heritage:

- Oral heritage: storytelling, dialects, and other oral traditions and expressions, including language as a vehicle for intangible cultural heritage.
- Performing arts and music: dance, music, theater, circus, and other live performances.
- Social customs and practices: rituals, feasts, and celebrations.
- Knowledge and practices concerning nature and the universe: food culture, customs, and practices related to nature or involving animals.
- Craft skills and techniques: traditional crafts and artisanal techniques.

Women's Work: Saba Lace & Saba Spice

Saba Lace (also called "Spanish work") is perhaps the most visible and well-known form of intangible heritage on the island. The craft was brought over from Venezuela by a Saban resident, Mary Johnson-Hasell, who trained there as a teacher with Spanish nuns in the 1870s. The craft of making this lacework became popular on Saba and gradually spread among the women. The women ordered the basic materials – fine linen fabric and thread – by post. The linen cloths were carefully drawn with a needle to create openwork and decorated with intricate patterns, then sent to their mainly American clientele. In this way, the "lace ladies" secured an important source of income at a time when work was scarce. Older white women taught the craft to black women, fostering new interactions and bonds between the two groups. Men were often away from home for years, earning money elsewhere, usually at sea. Some pieces remained on the island as altar cloths for the church, or as wedding and communion dresses displayed in the island's museums. To this day, women continue to use their lacework to create elaborate wall hangings, handkerchiefs, curtains, and garments.

Lacework has not been very profitable since the 1950s, but it is still practiced, often in groups, in a government-provided space referred to as the Lace Room. Each week, a group of mostly older "lace ladies" gathers in this special public room in Windwardside to work on their own pieces. One woman explained: "*My mother used to do it; I learned from her when I was seven.*" Another learned it at school: *"By the time I was twelve, I was already making patterns. It never stopped. My daughter lives on Saba and learned the technique too, but she has no time anymore. Everyone is so busy nowadays. Back then, this lacework was our only pastime. And that extra money was very welcome.*" The lacework no longer yields that much money; it is bought incidentally by tourists. Yet the pleasure of making it remains. One of the women also teaches at the Sacred Heart School in The Bottom, but she observes that girls drop the craft after their initial enthusiasm once they reach secondary school. The group also has no women aged 30 to 40; they are too busy with multiple jobs and raising children.

In earlier times, the guide at the Major Osmar R. Simmons Museum in The Bottom tells us, people in this village mainly practiced crocheting (known locally as "croiset"), while in Windwardside, lacework was the common craft. That distinction has largely faded over time. Also vanished is the tradition of plaiting hats and baskets, which was probably mostly carried out by farm

[Fig left] A woman embroidering in the village of Windwardside on Saba. (National Archives, Van de Poll collection)

[Fig right] Ladies, and occasionally children, gather weekly in Windwardside to do lacework and embroidery. (photo: Jet Bakels)

workers. Today, this tradition survives only in the museum's collection.

Alongside lacework, Saba spice – a spiced rum-based drink – is one of the island's best-known products. Like the lacework, it is a local specialty featured in the few tourist shops. A key ingredient is fennel, also called Saba spice, whose seeds give the drink its distinctive flavor. The plant grows all over the island, including in many gardens. Other ingredients include cinnamon, cloves, and brown sugar. Some families have their own additional ingredients such as ginger and guava. Today, only a handful of women still make Saba spice. The herbs are boiled in sugar water for two to four hours before being mixed with rum. A spiced rum competition has now become part of the festivities leading up to Saba Day, helping to spark renewed interest in this traditional drink.

The sweetened rum was originally developed as an alternative for women, for whom straight rum – enjoyed during the holidays – was considered "too strong". Today, the rum is imported, but in the past, a small rum distillery operated right on Saba.

[Fig] The production of Saba spice, made from rum and various plant additives, is a genuine home-based industry. (photo: Jet Bakels)

Harvesting Sustainably from Land and Sea

Bush tea

Saba has a long tradition of using plants for medicinal purposes, often in the form of bush tea. Like on other Caribbean islands, a wide variety of herbs and plants have traditionally been used as remedies. They are steeped in hot water and consumed as bush tea to treat various ailments and illnesses. Access to medical care on the islands was – and in some cases still is – limited or even nonexistent. A 2007 publication documented that at the time, there was extensive knowledge of and reliance on a broad range of herbs, fruits, and plants. Most of the people interviewed for the study, primarily women, were already considered "older" in 2007. In addition to widely used herbs such as mint and basil, cinnamon bush, garden balm, guava berries, lemongrass, wild dagga, thyme, and vervain were popular.

More specifically, certain plants were consumed as bush tea to treat particular ailments. As on many other Caribbean islands, high blood pressure and diabetes have become widespread health issues. With the decline of local agriculture and fruit trees, combined with a diet heavy in processed "supermarket foods" rich in fats and sugars, this is hardly surprising – though genetics possibly play a role as well. One remedy frequently mentioned for these conditions was tea made from the leaves of the snakeapple bush. On Saba, this plant goes by many different names, reflecting its cultural significance. In addition, a wide variety of other plants was cited, used alone or in combination, either steeped as tea, prepared as infusions, or sometimes boiled. They were considered effective remedies for colds, coughs, fevers, headaches, and similar ailments.

Almost twenty years later, much of this knowledge appears to have been lost. "*We used to use many different herbs, now only mint and basil,*" one woman says. Yet the older generation still trusts their efficacy and insists *"they don't need the drugstore"*. In general, however, the use of bush tea has greatly declined.

Growing Food

Renewed interest in growing one's own food fits within the broader desire to be more self-sufficient and eat healthier. Growing your own food is cheaper than buying supermarket snacks, and people are increasingly worried about the health risks

[Fig] Modern farming production of the Saba Reach Foundation.

of that kind of processed "supermarket food". On top of that, the increasingly tense global political climate and the effects of climate change, with hurricanes becoming more frequent, make the benefits of greater self-sufficiency even clearer. The image of an island where fruit trees lined the roads and the plots near homes and on the hillsides were used to grow vegetables – as was common well into the post-World War II years – serves as an inspiration. *"We want a green island with the abundance of fruit we used to have,"* one resident explains. *"But the way people approach it now often isn't right. They should pay more attention to how the old farmers did it. Young people just Google everything."*

In some places, for example around Hell's Gate, gardens are still actively used, and residents grow potatoes for Saba pot, among other crops. The government has established a program to support home gardens, called the Backyard Farming Program. There are also farms that grow vegetables using aeroponic farming, an agricultural technique in which plants are grown without soil, often in stacked layers, and misted with nutrient-rich solutions.

Dishes and Goat Meat

Traditional dishes are, of course, made from ingredients available on the island. A well-known example is the so-called "Saba pot", of which the base consists of meat – preferably goat, but also pork or beef – along with potatoes and cabbage, with added herbs and other vegetables. As locals emphasize, the meat, potatoes, and cabbage should come from the island whenever possible.

"We love goat meat; it's part of our culture," locals say. This meat is ideally sourced from the traditional goats that still roam freely across the island, feeding on the island's grasses and shrubs rather than corn or grain, as is common on large goat farms. Saba pot is especially popular in Windwardside, while in The Bottom, red pea soup is a favorite. Interestingly, local dishes rarely appear on restaurant menus, and residents say they themselves only serve them on special occasions.

Whelk Fishing, Seabirds, and Nature Conservation

Fish is, of course, eaten as well, along with shellfish and crustaceans. One form of living heritage is the fishery for the Caribbean whelk (Cittarium pica). Around Easter, when the sea is calm and families gather, it's tradition to collect these large sea snails, found on rocks in shallow water.

[Fig] Saba emblem on a Saba Reach produce van. Potatoes and cabbage leaves are important for Saba pot, the fish ('trigger fish') symbolizes fishing, and the bird head represents Audubon's little shearwater (Puffinus lherminieri), a seabird breeding in island colonies and designated as the 'national bird'.

"It's fun and exciting; you really have to work together in those small boats to pry the shells off the rocks," says an enthusiast. *"But only a few young people still do it, maybe around forty. Many leave the island for school or work."* At home, the whelks are cooked and eaten, either in curry or with a dipping sauce. Everyone has their own recipe.

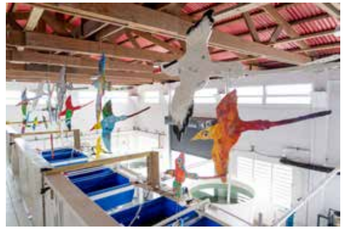
The Caribbean whelk, along with two species of sea urchins, is part of a project run by the Saba Conservation Foundation (SCF). The sea urchins and whelks are so-called grazers, feeding on algae that would otherwise smother the corals. With many local sea urchins having died from disease, supporting these animals is crucial to keeping the corals healthy. The urchins and whelks are released back into the wild and carefully monitored. Director Kai Wulf notes: *"Interestingly, the whelk fishermen leave the smaller shells behind. The locals are very conscious of this. I'm impressed by the knowledge and understanding of the local fishers."* In addition to the grazers, crabs have been included in the program to see if they could provide an additional source of income for local fishers.

The Saba Conservation Foundation, with offices and a laboratory at the harbor, also runs a variety of educational activities during and after school. Children get to

[Fig linsk en right] In addition to protecting nature, the Saba Conservation Foundation is also committed to educating schoolchildren.

touch sea urchins in the lab and participate in tented camps to foster love of nature. During the "Bird Festival" held in 2023 – now set to become an annual event – seabirds were the main focus. A local expert explained the world of the birds and the threats faced by the island's various breeding colonies. "*It was very successful," Wulf says. "Children made seabird masks and drawings. Next year, we plan to hold a coral festival.*"

Nature guide and native Saban, nicknamed "Jungle James", grew up immersed in Saba's natural environment and is one of the island's nature guides. He points out how



the islanders' relationship with nature has changed over time. "*In the past, there was little to eat. We used to collect eggs from nesting seabirds and even take the chicks. But we don't do that anymore; now people work to protect the nests from rats and feral cats using poison and traps.*"

More and more people on Saba are becoming aware of how vulnerable their environment is. The big, often invisible forces at work today – climate change being the most significant – play a major role. "*We tend to take nature for granted. We live in this safe harbor, but we need to be more conscious of it and take responsibility for our surroundings. Now we're facing climate change and intense hurricanes. Hurricane Irma was particularly terrifying. What can you do? You close your shutters and wait it out. You bring water inside. Traditionally built houses with mortise-and-tenon joints sway with the wind, like a ship on the water. Those are the best kinds of houses. Hurricane season now starts as early as June, and it keeps getting hotter,*" one resident explains. Nature guide Jungle James has also noticed changes in animal behavior. "*You can see the effects of climate change in the seabirds. If they lay eggs in December and leave in January, that's early – and then the hurricanes come early too. After Irma, some birds disappeared; a species of hummingbird didn't return, and neither did a type of thrush.*" James enjoys taking children on hikes to help them learn about and appreciate nature. "*My parents used to eat the young birds,*" he adds.

Festivals and commemorations

Saba has several holidays linked to historical events or the church calendar. These are days when families, often spread out across the Caribbean, the Netherlands, and the United States, come together. Traditional dishes are an essential part of these gatherings.

One important holiday is Emancipation Day, which has, remarkably, only been officially celebrated on Saba since 2021 and is still not recognized as a public holiday. On July 1, only civil servants have the day off, while schools and shops decide for themselves whether to close – unlike on the other Caribbean islands. The commemoration takes place on July 1, marking the abolition of slavery in the Dutch colonies in 1863. Organization lies with the Committee for the

[Fig] Emancipation Day announcement poster.

Commemoration of Emancipation and the History of Slavery on Saba, in collaboration with the Public Entity Saba and the Saba Heritage Center. The day features a variety of events, including food stalls and live music, performances by schoolchildren, and talks by speakers who reflect on Saba's past and the inspiration it offers for the future.

Another government-designated holiday is Saba Day, celebrated since 1975 on the first Friday of December. "*Saba Day is a*

[Fig] Saba's flag. The golden star refers to the island, red, white, and blue represent the bond with the Netherlands. Red symbolizes courage, white peace, and blue the sea.

big event. Maybe it has become a little quieter than it used to be, but people really do look forward to it. The whole island comes together," says a resident of Windwardside. The day is marked by parades and ceremonies, music and dance performances, barbecues, and other festivities. A major highlight today is the Culturama event, held a few days before Saba Day as part of the broader celebrations. During this "parade of cultures", groups from various Caribbean islands showcase their traditions — a relatively new addition to the festivities.

Culturama is part of the wider Culture Awareness Week, when organizations such as the Saba Heritage Center host events that highlight Saba's cultural heritage. The parade reflects the growing influence of other Caribbean cultures on the island, particularly in music, language, and dance, especially those with Spanish roots. Since 1985, the adoption of the new Saban flag has also been celebrated. The coat of arms of Saba and the national anthem were likewise launched on Saba Day in 1985.

Another important celebration on Saba is Carnival. The festival is said to have been introduced in the 1950s by Carmen Simmons, who brought the tradition over from Curaçao. It takes place in late July or early August, when families return to the island for the summer holidays. The celebration venue is the low-lying village of The Bottom, on a large flat field. For many years, Olga Miranda-Simmons helped organize the event. She recalls: "*Everyone took part. Each village had its own group with a theme — pirates, fishermen, a particular sport, or even a flower, like Black-Eyed Susan, Saba's national flower. Every year we chose a new theme.*"

Over the years, Carnival has changed dramatically in appearance. As one resident puts it: *"there were more and more feathers every year"*. The growing influence of Carnival traditions from Trinidad and other Caribbean islands has become increasingly evident. Young people travel widely and bring those styles and experiences back with them. Not everyone is pleased with these changes. Glenn Holm was a devoted Carnival celebrant. As head of the Tourism Bureau, he worked hard to promote Carnival as a tourist attraction on Saba, as well as to cultivate the island's image as a gay-friendly destination. As a Dutch island, Saba legally recognizes same-sex marriages. Yet Holm, too, felt the character of Carnival had shifted: *"Carnival used to be fun; you made your own costume. Now the outfits are ordered ready-made from Trinidad or China. Sometimes they're even vulgar, with thongs, glitter, and feathers*."

Music is an essential part of Carnival. On Saba, however, it has become heavily latinized, and the "old" music – string bands featuring guitar, triangle, baho pipe, drums, maracas, steel pan, and even water bottles – has largely disappeared. In the memoirs of J.K. Bolles, who lived on Saba in 1931, "African drums" are mentioned: instruments covered with goat skins that were played during Christmas celebrations. A more detailed account of this musical tradition, and of the role of drums within the Afro-Caribbean community, does not (yet) exist.

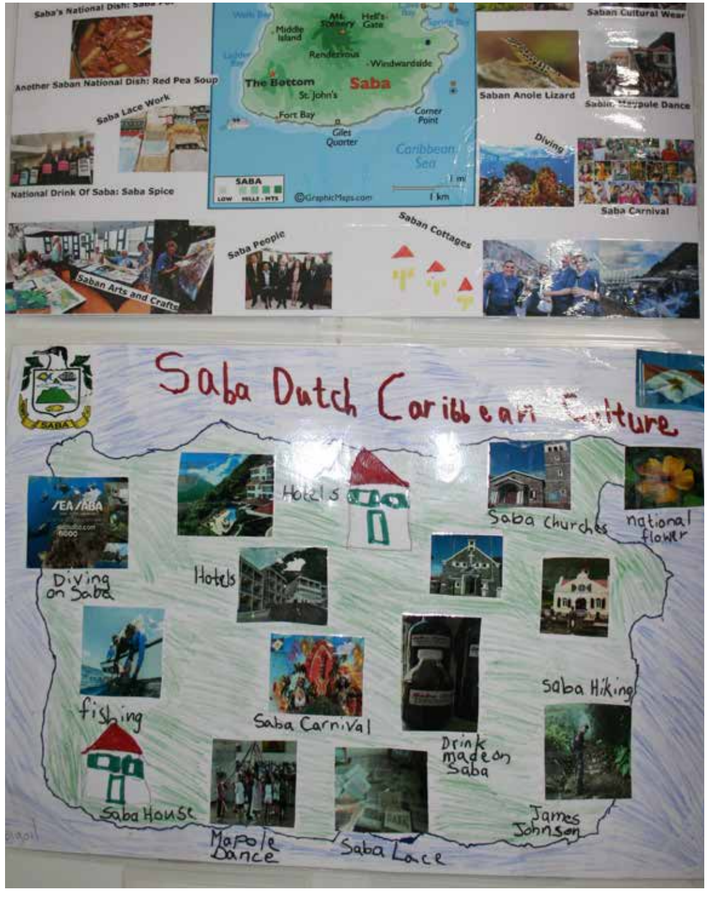
FEATURED

Caribbean Celebrations and Commemorations in the (European) Netherlands

Caribbean Dutch communities have brought their festive traditions and commemorations with them to the European Netherlands. Since 1984, for example, the Zomercarnaval in Rotterdam has been organized – a celebration that has steadily grown and has now been adopted by several other cities. Zomercarnaval Rotterdam is a vibrant form of intangible heritage that engages a growing group of participants in the carnival tradition. In 2024, it was inscribed by UNESCO on the Representative List of the Intangible Cultural Heritage of Humanity because of the cultural diversity expressed in the annual street parade.

[Fig] Feathers play a major role in carnival costumes nowadays.(photo: Rotterdam Unlimited Zomercarnaval)

[Fig] ‘Saba in a Box’ project at Sacred Heart School, St. Johns, Saba, with images including the flag, national bird (Audubon’s little shearwater), national flower (Black-eyed Suzan), Saba Pot, carnival, lacework, hiking, and typical houses. (photo: Jet Bakels)



Emancipation Day, on July 1, is also celebrated in the Netherlands under the name Keti Koti, Sranantongo for “breaking the chains”. This combined commemoration and celebration began in Amsterdam but is now observed in several cities. Many Surinamese people wear traditional Surinamese clothing during the festivities: the koto. This ensemble includes the angisa (a specially folded headscarf), the yaki (jacket), and the koto (skirt), worn to honor the ancestors. Both the mayor of Amsterdam, Femke Halsema (in 2021), and King Willem-Alexander (in 2023) used this day to formally apologize for the history of slavery.

In December 2023, Keti Koti was added to the Inventory of Intangible Heritage in the Netherlands.

Museums and Heritage Education

Developments on Saba reveal both the resilience and the vulnerability of intangible heritage on a small island. Cultural traditions have always evolved in response to changing social and environmental conditions. This dynamic, adaptive quality makes intangible heritage particularly meaningful in the face of broader social change. At the same time, there is not a great quantity of human capital on the island. When a musician grows too old to perform, the chances are small that someone new will take their place. That fragility makes living heritage especially vulnerable. Yet the desire to experience and sustain one’s own culture remains strong. As one resident explains: “*What matters most is awareness and a sense of pride. Saba is open, and that’s a good thing – but it also means we’re easily influenced. Because of that, traditions can shift quickly or be lost.*” This, perhaps, is characteristic of island cultures, where even a small influx of newcomers can have a profound impact. What should be preserved? Which practices can be left to their own internal dynamics, sustained by practitioners through a bottom-up process, and which might require guidance or coordination from higher up to remain viable and appealing? These are not questions with simple or straightforward answers.

Museums and heritage centers can play a vital role in these exchanges, as well as in documenting and researching local heritage. They do so not only by presenting the past, but also by working with the community to highlight new perspectives and social developments related to heritage and identity. In this way, they help provide a meaningful platform for local heritage – including traditional knowledge embedded in everyday practices and carrying the experiences and insights of generations – and connect it to broader networks of

knowledge. Achieving this requires sufficient human and financial investment in the island's heritage sector: in heritage centers, museums, and schools that support this work through dedicated heritage education. Much remains to be gained in this area. Olga Miranda-Simmons is Saba's Art & Culture Coordinator and teaches at Sacred Heart Primary School. "*I teach children about the art and culture of our island, and I also take them to the Major Osmar R. Simmons Museum in The Bottom. There they can see the old objects and how people used to live,*" she says when we visit her at the school. She also teaches contemporary culture and developed the project "Culture in a Box". Through this project, she invited schoolchildren to reflect on and talk about the elements they themselves recognize as part of Saba's culture. Their ideas were translated into images, which were glued onto large sheets of paper and displayed in the classrooms. The project offers a strong example of how local museums, heritage centers, and educational institutions – government bodies and non-governmental organizations – can collaborate not only to document and discuss the past, but also to capture, reflect on, and pass down contemporary cultural traditions and intangible heritage.

More broadly, museums are increasingly embracing their role as platforms for contemporary culture, navigating all the changes, debates, and challenges that come with it. This is in line with the ICOM definition: *"A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing."*

Especially in the Caribbean, with its complex history and dynamics, museums and related cultural institutions could play an even more central role. This is particularly true for heritage centers that work alongside school education programs and in close collaboration with local people – the practitioners of heritage.

[Fig] Joan Bourque's 2022 mural at Saba Heritage Centre, based on a design by Finn van der Leeden. It illustrates the tangible and intangible heritage of Saba.

[Fig] St. Eustatius and St. Kitts seen from the Heritage Trail on Saba.

ACKNOWLEDGEMENTS

For this biography, the expertise, knowledge, and experiences of many people were drawn upon. We would like to thank these individuals for their contributions. First and foremost, we thank the people of Saba who contributed in various ways. They taught us how to read the landscape, took us to places of significance, and shared special stories with us. Without their photographs, maps, and other sources, this biography would have been less complete. Thank you very much!

Special thanks go to Sharifa Balfour. As a specialist and director of the Saba Heritage Center, she was indispensable. Sharifa connected us with organizations and individuals. Her knowledge and critical perspective kept the authors attentive to details and omissions. Many people contributed to the writing of the chapters by thinking along, reviewing drafts, or providing information. We would like to thank them and list their names here in alphabetical order: Bart Makaske (Wageningen University), Bobby Zagers (Saba Cadastre), Bregje Spek, Carine Ghazzi (Public Entity Saba), Elske van Dalfsen (KNMI), Enrico 'Cuchi' Klaber (guide and taxi driver), Frank Hemeltjen (Dutch Center for Intangible Cultural Heritage), Henk Baas (Cultural Heritage Agency of the Netherlands), Iris Briels (former Archaeology student, Leiden University), Jaap Croockewit, James Johnson (Saba Conservation Foundation), Jay Haviser (formerly AINAA), Jochem Lesparre (ARGEOgraph), Johan Schaeffer (formerly SABARC), Johan van der Ven (Master's thesis on cisterns, Saba), John Angus Martin (formerly SABARC), Lukas van der Steen (Public Entity Saba), Nanette de Jong (Cultural Heritage Agency of the Netherlands), Olga Miranda Simmons, Pieter Augustinus, Pieter Soffers (former student, Faculty of Archaeology, Leiden University), Pieter Vroon (Vrije Universiteit), Remco van Riezen, Ryan Espersen (formerly SABARC), Riet de Leeuw (Dutch Center for Intangible Cultural Heritage), Sander de Knegt (Concept Design), Sasja van der Woude (Wereldmuseum), Steven de Jong (Utrecht University), Verceley Courtar (Rijksdienst Caribisch Nederland), Vito Charles, Will Johnson, and Wouter Sipkema (Cultural Heritage Agency of the Netherlands). If anyone has been unintentionally omitted, we would also like to thank you for your contribution.

Finally, we would like to thank the civil servants of the Public Entity Saba (OLS) for their cooperation and willingness to involve us in the challenges facing Saba and in how they work with landscape and cultural heritage. We hope that this biography meets your expectations and will be of value to you.

REFERENCES

Sources chapter 2

Augustinus, P.G.E.F., R.P.R. Mees & M. Prins (eds.), 1985: *Biotic and Abiotic Components of the Landscapes of Saba (Netherlands Antilles): report of an integrated research in Botany and Physical Geography*, Utrecht.

Arendsen, P., 2017: *Mapping erosion on Saba: How to keep the Unspoiled Queen from tumbling down*, Bachelor's thesis Wageningen University, Wageningen.

Bessembinder, J. e.a., 2023: *KNMI'23 klimaat scenario's voor Nederland*, De Bilt.

Davids, T., P. de Louw & J. Rozemeijer, 2025: *Understanding Saba's (ground)water system and nutrient pathways: An integrated hydrogeological and nutrient flux study of Saba, Caribbean Netherlands,* (Deltares report 11210862-002-BGS-0001), Delft.

Debrot A.O. e.a. 2025: *State of Nature Report for the Caribbean Netherlands 2024: A second 6-year assessment of the Conservation State, threats and management implications for habitats and species in the Caribbean Netherlands,* Wageningen Marine Research, Den Helder.

Defant, M.J. e.a., 2001: The geology, petrology, and petrogenesis of Saba Island, Lesser Antilles, *Journal of Volcanology and Geothermal Research* 107(1-3), 87-111.

de Freitas, J.A. e.a. 2016: *A Landscape ecological vegetation map of Saba (Lesser Antilles)*, IMARES, Wageningen.

de Palm, J.Ph. (ed.), 1985: *Encyclopedie van de Nederlandse Antillen*, Zutphen, 2nd ed.

de Zeeuw-van Dalfsen, E., 2023: *Volcano Monitoring Updates Saba and St. Eustatius 2017–2023*, De Bilt.

de Zeeuw-van Dalfsen, E. & R. Sleeman, 2018: A permanent, real-time monitoring network for the volcanoes Mount Scenery and the Quill in the Caribbean Netherlands, *Geosciences*, 8(9), 320.

Hofman, C., & M. Hoogland, 2016: *Saba's first inhabitants: A story of 3300 years of Amerindian occupation prior to European contact (1800 BC-AD 1492)*, Leiden.

Koomen, A., G., Van Dorland & B. Makaske, 2012: *Geomorphology map of Saba*, Dutch Caribbean Biodiversity Database, Wageningen.

Ministerie van I&W, 2024: *Climate change and adaptation efforts BES islands* (Den Haag 2024)

Neall, V.E., 2009: Volcanic soils, Land use and land cover, *Soils and Soil Sciences* 2(7).

Opdam, J.D.E., 2018: *Soil Erosion & Prevention on Saba*, Bachelor's thesis Wageningen University, Wageningen.

Rahn, J.L., 2017: Saba and St. Eustatius (Statia), in: C. Allen (ed.) Landscapes and Landforms of the Lesser Antilles. World Geomorphological Landscapes, Cham.

Rijkers, R., & R. Hack, 2000: *Geomechanical analysis of volcanic rock on the island of Saba (Netherlands Antilles)*, in: ISRM International Symposium, Melbourne.

Roobol, M.J. & A.L. Smith, 2004: *Volcanology of Saba and St. Eustatius*. KNAW, Amsterdam.

Roobol, M.J., A.L. Smith & J.F Tomblin, 1997: *An assessment of volcanic hazard on the islands of Saba and St. Eustatius in the northern Lesser Antilles*, Haarlem.

Smith, A.L. & J.M. Roobol, 2005: Saba, in: J. Lindsay e.a. (eds.), *Volcanic Hazard Atlas of the Lesser Antilles*, St Augustine, Trinidad.

Verstappen, T., 1977: *Geomorphological map of Saba*, Dutch Caribbean Biodiversity Database.

Veenenbos, J.S., 1955: *A soil and land capability survey of St. Maarten, St. Eustatius, and Saba: Netherlands Antilles*, Wageningen.

Vroon, P.Z., 2012: Nederlandse vulkanen in het Caribische gebied: Saba en St. Eustatius, *Grondboor & Hamer* 66(4/5), 380-383.

Westermann, J.H. & H. Kiel, 1961: *The Geology of Saba and St. Eustatius*, Utrecht (Natuurwetenschappelijke Studiekring Suriname en Antillen 24).

Sources chapter 3

Debrot, A.O. & R. Bugter, 2010: *Climate change effects on the biodiversity of the BES islands; Assessment of the possible consequences for the marine and terrestrial ecosystems of the Dutch Antilles and the options for adaptation measures*, Wageningen (Alterra-report 2081; IMARES-report C118/10).

Briels, I., 2004: *Use-wear analysis on the Archaic flint assemblage of Plum Piece, Saba: A pilot study*. Unpublished MA thesis, Faculty of Archaeology, Leiden University.

Coppier, Guillaume, 1645: *Histoire et Voyages des Indes Occidentales et de plusiers autres regions*, Lyon.

Coronet Instructional Films, 1946: *People Of Saba*. Retrieved from https://www.youtube.com/watch?v=D9PAZFIbw84.

Curtis, J.H. & D.A. Hodell, 1993: An Isotopic and Trace Element Study of Ostracods from Lake Miragoane, Haiti: A 10,500 year Record of Paleosalinity and Paleotemperature Changes in the Caribbean. *Climate Change in Continental Isotopic Records, Geophysical Monograph* 78: 135-152.

Davids, T., P. de Louw & J. Rozemeijer, 2025: *Understanding Saba's (ground)water system and nutrient pathways. An integrated hydrogeological and nutrient flux study of Saba, Caribbean Netherlands* (Deltares-report), Wageningen.

Debrot, A.O., R.J.H.G. Henkens, P.J.F.M. Verweij, M.P. van den Burg & E.H. Meesters, (Eds), 2025: *State of Nature Report for the Caribbean Netherlands 2024. A second 6-year assessment of the Conservation State, threats and management implications for habitat and species in the Caribbean Netherlands*, Wageningen (*Wageningen* Marine Research report: C001/25).

de Josselin de Jong, J. P. B., 1947: *Archaeological Material from Saba and St Eustatius, Lesser Antilles*, Leiden.

de Waal, M.S., J. Lesparre, R. Espersen & M.L.P. Hoogland, 2015a: *Archaeological Predictive Map Saba, Caribbean Netherlands.* (http://www.argeograph.nl/project/saba2015/saba2015_b1map.pdf).

de Waal, M.S., J. Lesparre, R. Espersen & M.L.P. Hoogland, 2015b: *Archaeological Predictive Map Saba, Caribbean Netherlands [Colophon]*. (www.argeograph.nl/project/saba2015/saba2015_b1map.pdf).

Espersen, R., 2017: *SB 054: Old Booby Hill Archaic Sites*, Windwardside (SABARC report 002- 2017).

Espersen, R., 2018a: *SB 037, The Fort Gut Ridge Site: An Archaeological Survey and Excavations*, Windwardside (SABARC-report).

Espersen, R., 2018b: *Archaeology and Heritage Management in Saba, Dutch Caribbean. Navigating Culture and Politics*. Paper presented at the 51st Annual Meeting of the Canadian Archaeological Association, Winnipeg.

Espersen, R., 2018c: *SB 027: A Site Report of Archaeological Surveys and Excavations at Mary's Point, Saba, Dutch Caribbean, 2008-2018*, Windwardside (SABARC report).

Espersen, R., 2019: *A Site Report of Flat Point, Saba, Dutch Caribbean: A Ceramic-Age Amerindian Site and Early Colonial Sugar and Indigo Plantation*, Unpublished report, Zemi Cultural Heritage Services.

Espersen, R. & J.B. Haviser, 2021: *Archaeological Mitigation at the Black Rocks Area of Giles Quarter, Saba, Dutch Caribbean*, Windwardside (SABARC Report 20.01).

Fitzpatrick, S.M., C.M. Giovas, M.S. de Waal & W.J. Pestle, 2025: Highlights in the Pre-Contact Archaeology of the Island Caribbean, in S.M. Fitzpatrick & J.M. Erlandson (Eds.), *The Oxford Handbook of Island & Coastal Archaeology*, Oxford.

Hartog, J., 1975: *History of Saba*, Saba: Saba Artisan Foundation.

Haviser, J.B., 1983: *Field notes, Saba Survey, July 1983*. Unpublished field notes.

Haviser, J.B., 1985: *An Archaeological Survey of Saba, Netherlands Antilles. Phase I report,* Leiden (Reports of the Institute of Archaeology and Anthropology of the Netherlands Antilles, No. 3).

Herbert, Ch. W., 1940: Saba, Crater Treasure of the Indies. Up and Down on Saba, *The National Geographic Magazine*, November 1940, 597-620. Washington.

Hofman, C. L., 1993: *In search of the native population of pre-Columbian Saba. Part one: Pottery styles and their interpretations*, Leiden (Unpublished dissertation, Leiden University).

Hofman C.L., & M.L.P. Hoogland, 2003: Plum Piece, *Journal of Caribbean Archaeology* 4, 12-27. https://www.floridamuseum.ufl.edu/wp-content/uploads/sites/44/2017/04/plumpiece.pdf.

Hofman, C.L., & M.L.P. Hoogland, 2016: *Saba's first inhabitants. A story of 3300 years of Amerindian occupation prior to European contact (1800 BC - AD 1492)*, Leiden.

Hoogland, M.L.P., 1996: *In search of the native population of pre-Columbian Saba. Part two: Settlements in their natural and social environment*, Leiden (Unpublished dissertation, Leiden University).

Johnson, W., 1983: *Tales from my grandmother's pipe - Saban Lore,* 2nd Edition, Amstelveen: Bureau Marcus.

Knippenberg, S., 2007: *Stone Artefact Production And Exchange Among The Northern Lessen Antilles*, Leiden (PhD dissertation, Leiden University. *ASLU* 13).

Pagán-Jiménez, & R. Jaime, 2013: Human–Plant Dynamics in the Precolonial Antilles: A Synthetic Update, in W.F. Keegan, C.L. Hofman & R. Rodríguez Ramos (Eds), *The Oxford Handbook of Caribbean Archaeology, Oxford Handbooks* (2013; online ed., Oxford Academic, 3 June 2013),

Ransijn, S., 2023: *An excavation of 19th to 20th century Saban houses. Archaeological mitigation before the construction of new school buildings for the Saba Comprehensive School in St. John's (SB-066)*, Leiden (Unpublished Report, Leiden University).

Roobol, M.J., & A.L. Smith 2004: *Volcanology of Saba and St. Eustatius, Northern Lesser Antilles*. Amsterdam.

Roobol, M.J., A.L. Smith & J.F. Tomblin, 1997: *An assessment of volcanic hazard on the islands of Saba and St. Eustatius in the northern Lesser Antilles*, Nederlands Instituut voor Toegepaste Geowetenschappen TNO & KNMI.

Saba Conservation Foundation, n.d. *History of Saba. Milestones/Architecture/& More*. The Bottom: Saba Conservation Foundation.

Stienaers, A., 2025: *Use of natural resources for Indigenous ceramic production in the Lesser Antilles during the Ceramic Age and Early Colonial Period* Leiden (Unpublished PhD dissertation, Leiden University/Leuven University).

Troelstra, S.R. & C.J. Beets, 2001: *Report of the geological fieldwork Guadeloupe, summer 2000*, Amsterdam (Unpublished typescript, VU University).

Veenenbos, J.S., 1951-1952: *Land Capability Map of Saba*. Curcaçao: Foundation Welfareplan Netherlands Antilles 1946 & Amsterdam: Netherlands Antilles Development Advisory Bureau.

Sources chapter 4

Bastien, J. Fr., 1795: *Dictionnaire Géographique portatif*, Deterville, Paris.

Bolles, J.K., 2013: *Caribbean Interlude*, Edited by Will Johnson, Saba.

Espersen, R., 2024: *Landscapes and materialities of race, class, and gender in pre-empancipation Saba, Dutch Carribean,* Leiden, Sidestone Press.

Hartog, J., 1964: *De Bovenwindse Eilanden. Geschiedenis van de Nederlandse Antillen deel IV*, Aruba, De Wit NV.

Hartog, J., 1975: *History of Saba* (Ongewijzigde herdruk 1982), Saba Artisan Foundation, Saba.

Hartog, J., 1993: *De geschiedenis van twee landen.* Europese Bibliotheek, Zaltbommel.

Hartog, J. (1997) *De forten, verdedigingswerken en geschutsstellingen van Sint Eustatius en Saba*, Europese Bibliotheek, Zaltbommel.

Havelaar, J., 1902: *Rapport betreffende eene reis door de kolonie Curaçao,* Algemeene Landsdrukkerij, 's-Gravenhage.

Hofman, C.L. & M.L.P. Hoogland, 2016: *Saba's first inhabitants*, Sidestone Press, Leiden.

Johnson, W., 2012: *Tales from my grandmother's pipe,* (Fifth edition), Artygraphic, Oviedo (USA).

Knappert, L., 1932: *Geschiedenis van de Nederlandsche Bovenwindsche eilanden in de 18e eeuw*, Martinus Nijhoff, 's-Gravenhage.

Purmer, M., 2003: Nederlandse cultuurhistorie overzee. Historisch-geografische relicten op de Bovenwindse Eilanden van de Nederlandse Antillen, *Historisch Geografisch Tijdschrift* 1, 1-18.

Saba Conservation Foundation, zj: *History of Saba*, Fort Bay, Saba.

Spier, J., 1948: *West. Met tekst van Piet Bakker*, Elsevier, Amsterdam/ Brussel.

Teenstra, M.D., 1837: *De Nederlandsche Westindische eilanden, Deel 2*, Sulpke, Amsterdam.

van den Poll, W., 1950: *De Nederlandse Antillen. Een fotoreportage van land en volk*, W. van Hoeve, 's-Gravenhage.

van der Horst, L., 2004: *Wereldoorlog in De West. Suriname, de Nederlandse Antillen en Aruba 1940-1945*, Verloren, Hilversum.

van Grol, G.J., 1980: *De grondpolitiek in het West-Indische domein der Generaliteit I-II-III.* S. Emmering, Amsterdam.

Archival documents

Dagboekje van H. Croockewit (zonder jaar) *Deel III, Reis 1952/53, Curaçao & Bovenwinden, 25 febr- 27 maart 1953, thuisreis Curaçao-Pernis 27 mrt- 18 april 1953.* Collectie Rijksdienst voor het Cultureel Erfgoed, Amersfoort.

Websites

www.jonet.nl/postuum-eerbetoon-op-Saba-voor-thelma-polak/

www.sabapark.org

www.saba.edu

Sources chapter 5

Espersen, R., 2019: *A Preliminary Assessment of Known and Potential Underwater Cultural Heritage of Fort Bay (SB 018), Saba, Dutch Caribbean,* Saba.

Espersen, R., 2021: Persoonlijke communicatie.

Espersen, R., 2024: *"Better Than We". Landscapes and materialities of race, class, and gender in pre-emancipation Saba, Dutch Caribbean,* Leiden.

Goslinga, C., 1971: *The Dutch in the Caribbean and on the wild coast 1580-1680,* Assen.

Johnson, W., 2014: *Boat building on Saba.* https://thesabaislander.com/2014/02/23/boat-building-on-saba/

Sources chapter 6

Brugman, F.H., 1995: *The monuments of Saba*, Walburg Pers, Zutphen.

Brugman, F., 2014: Saba: nog steeds 'Unspoiled Queen', *Heemschut* 91(2), 6-9.

Cornet, H., 1991: *Saban Cottages*, Heleen Cornet, Saba.

Gill, R., 2002: *The island of Saba as a Cultural* Landscape, Curaçao Monuments Foundation, Curaçao.

Hartog, J., 1964: *De Bovenwindse Eilanden*, De Wit NV, Aruba (Geschiedenis van de Nederlandse Antillen deel IV).

Hartog, J., 1975: *History of Saba*, Van Guilder N.V., Saba.

Hofman, C., z.j.: *Excavations on Saba 1987-1992 and 2001-2002.* (https://www.universiteitleiden.nl/en/research/research-projects/archaeology/saba).

Johnson, W., 2012: *Tales from my grandmother's pipe*, Fifth edition, Artygraphic, Oviedo (USA)

Rots, S., 2004: *Monumenten op de Nederlandse Antillen*, Stichting Nationaal Restauratiefonds, Hoevelaken.

Saba Conservation Foundation z.j.: *History of Saba*, Fort Bay, Saba.

Teenstra, M.D., 1837: *De Nederlandsche Westindische eilanden. Deel 2*, Sulpke, Amsterdam.

Temminck Groll, C.L., 1967: *Monumentenzorg in Suriname en de Nederlandse Antillen*, Driebergen

Temminck Groll, C.L., 1976: *Facetplan Monumentenzorg Nederlandse Eilanden*, Driebergen.

Temminck Groll, C.L. & F.H.Brugman, 1988: *Saban Monuments*, Curaçao (UNA cahier 29)

van Marrewijk, D. & F. Aldershoff, 2013: *Saba, de onbedorven koningen van de Antillen.*

Websites

- www.thesabanislander.com - W. Johnson
- www.en.wikipedia.org/wiki/Saba_(island)
- www.saba.edu

Sources chapter 7

Debrot, A.O., R.J.H.G. Henkens, P.J.F.M. Verweij, M.P. van den Burg & E.H. Meesters (eds), 2025: *State of Nature Report for the Caribbean Netherlands, 2024: A second 6-year assessment of the Conservation State, threats and management implications for habitats and species in the Caribbean Netherlands*. Wageningen (Wageningen Marine Research report C001/25).

de Freitas, J.A., A.C. Rojer, B.S.J. Nijhof & A.O. Debrot, 2016: *A landscape ecological vegetation map of Saba (Lesser Antilles)*, Wageningen, (IMARES report C195/15).

Espersen, R., 2017: *"Better than we": landscapes and materialities of race, class, and gender in pre-emancipation colonial Saba, Dutch Caribbean*, Leiden (PhD thesis).

Mac Donald, S., 2022: Life in Paradise, a social psychological and anthropological study of nature conservation in the Caribbean Netherlands, Leiden (PhD thesis).

Sources chapter 8

Benjamins, H. D., & J. F. Snelleman, 1917: *Encyclopaedie van Nederlandsch West-Indië*. M. Nijhoff.

Bijdragen tot de taal-, land- en volkenkunde van Nederlandsch-Indië., 1868). (3) [volgno 2]. Consulted on 13 augustus 2025 via: https://resolver.kb.nl/resolve?urn=dts:1130002:mpeg21:0001

Curaçaosch verslag 1940, 1939: Consulted on 27 augustus 2025 via: https://resolver.kb.nl/resolve?urn=MMCBS03:002437001:00001

Curaçaosch verslag 1945, 1945: Consulted on 20 augustus 2025 via: https://resolver.kb.nl/resolve?urn=MMCBS03:002442001:00001

Davids, T., P.G.B. de Louw & J.C. Rozemeijer, 2025: *Understanding Saba's groundwater system and nutrient pathways: An integrated hydrogeological and nutrient flux study of Saba, Caribbean Netherlands,* (Deltares report 11210862-002-BGS-0001), Delft.

de Freitas, J.A., A.C. Rojer, B.S.J. Nijhof & A.O. Debrot, 2016: A landscape ecological vegetation map of Saba (Lesser Antilles), Wageningen (IMARES report C195/15

Derix, R., 2016: *The history of resource exploitation in Aruba. Landscape series 2. Spatial Developments in the Aruban Landscape: A multidisciplinary GIS-based approach derived from geologic, historic, economic and housing information.* Consulted on 5 august 2020 via: http://cbs.aw/wp/wp-content/uploads/2016/12/H2_LandscapeSeries_The_History_Of_Resource_Exploitation_In_Aruba_10-10-2016.pdf

Espersen, R., 2013: Water Use at Palmetto Point and Middle Island, Saba, Dutch Caribbean: A Modeled Approach for Settlement Viability, *International Journal of Historical Archaeology* 17(4), 806–827.

Espersen, R., 2024: *Better than we: Landscapes and materialities of race, class, and gender in pre-emancipation Saba, Dutch Caribbean*, Leiden, Sidestone Press. https://public.ebookcentral.proquest.com/choice/PublicFullRecord.aspx?p=31310953

Haviser, J. B., 1985: *An archaeological survey of Saba, Netherlands Antilles: Phase I report*, Institute of Archaeology and Anthropology of the Netherlands Antilles.

Heartsill-Scalley, T., 2012: Freshwater resources in the insular Caribbean: An environmental perspective, *Caribbean Studies* 40(2), 63–93.

Hofman, C. L., & M. Hoogland, 2016: *Saba's first inhabitants: A story of 3300 years of Amerindian occupation prior to European contact (1800 BC–AD 1492)*. http://site.ebrary.com/id/11172515

Johnson, W., 1989: *Saban lore: Tales from my grandmother's pipe* (3rd rev. ed.). W. Johnson, Saba.

Rahn, J. J., 2017: Saba and St. Eustatius, in C. Allen (ed.), *Landscapes and landforms of the Lesser Antilles*. Springer, Cham.

Romeijn, P. C., 1989: Oerbos van Saba, *Nederlands Bosbouwtijdschrift* 61(7/8), 202–205. https://edepot.wur.nl/266951

Stapel, S. R., 2023: *Rainfall-runoff modelling to assess flood hazard on Sint Eustatius, Caribbean Netherlands*, Utrecht (Master's thesis, Universiteit Utrecht).

United Nations., z.j., *About Small Island Developing States. Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States*, https://www.un.org/ohrlls/content/about-small-island-developing-states

van 't Hof, T., 2010: *Saba's Unique Cloud Forest: And how it evolved during a series of major hurricanes*. [Self-published].

Verslag Nederlandse Antillen 1951, 1951: Consulted on 20 augustus 2025 via: https://resolver.kb.nl/resolve?urn=MMCBS03:002451001:00001

Verslag Nederlandse Antillen 1953, 1953: Consulted on 20 augustus 2025 via: https://resolver.kb.nl/resolve?urn=MMCBS03:002453001:00001

Westerman, J. H., 1952: *Conservation in the Caribbean: A review of literature on the destruction of natural resources in the Caribbean area, with reference to the population problem*, Natuurwetenschappelijke Studiekring voor Suriname en de Nederlandse Antillen.

Websites

De Indische mercuur: orgaan gewijd aan den uitvoerhandel, 1912: 26 november, 35(48). Consulted on 13 augustus 2025 via: https://resolver.kb.nl/resolve?urn=MMUBL09:001027049:00001

De Ontwerp-begrooting voor 1931: 1930, 5 april, Amigoe di Curaçao: weekblad voor de Curaçaosche eilanden, p. 2. Consulted on 15 augustus 2025 via: https://resolver.kb.nl/resolve?urn=ddd:010280938:mpeg21:p002

Mountain magic and cloud forests. EarthDay.org. https://www.earthday.org/mountain-magic-and-cloud-forests/

The Saba Islander, z.j., *The Saba Islander – by Will Johnson*. Consulted on 11 november 2025 via: https://thesabaislander.com/

Sources chapter 9

Eliason, E.A., 1997: *Saba Lace. The fruit of her hands*, Saba Foundation for Arts, Saba.

Hartog, J., 1975: *History of Saba*, Van Guilder, Saba.

Martin, J.A. & P. Johnson 2022: *The Canon of Saban History, Part 1*, Saba.

Murar, H.K., 2025: *Lacing Our Stories*, KITLV, Leiden.

Nielsen, S., 2007: *Folk Remedies on a Caribbean Island. The Story of Bush Medicine on Saba*, Haarmans, Beverwijk.

Saba Cultural Agenda, Priorities 2024-2028.

van Stipriaan, A, L. Alofs & F. Guadeloupe, 2023: *Caribbean Cultural Heritage and the Nation. Aruba, Bonaire and Curacao in a Regional Context*, University of Amsterdam.

Protected areas

National Parks

Landbased national park

Marine national park

Topography

Moorings

50 - 100 tons

Up to 50 tons

Roads

Public main road

Public road

Private road

Footpath or trail

Footpath or trail (under construction)

Built-up areas

Airport taxiways

Runway

Taxiway

Apron

Helipad

Parking

Geology

Gullies with names (from James Johnson)

Peaks

Contours lines

50m line

100m line