ImpactHouse
by Grant Thornton Netherlands

# Spatial planning and nature policy goals in the Caribbean Netherlands

## Practical lessons and recommendations

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# Preface

This report was developed by Impact House by Grant Thornton Netherlands. It was commissioned by WWF-NL. The report describes an evaluation of spatial planning in the Caribbean Netherlands, specifically focusing on the islands of Bonaire, Saba, and St Eustatius. It is designed to analyze the effectiveness of existing spatial planning practices and their alignment with nature conservation goals outlined in the Nature and Environmental Policy Plan Caribbean Netherlands 2020-2030 (NEPP-CN). The study develops case studies on each island, identifying instances where spatial development has negatively impacted nature and made recommendations to improve these processes to better protect natural values and targets for sustainable use of ecosystem services. The report focuses on five specific nature conservation goals with spatial planning implications and examines specific conflict zones on each island. Through this analysis, the report aims to identify flaws and provide recommendations for improving the interface between spatial planning and nature policy.

# Acknowledgements

We would like to thank STINAPA, STENAPA and SCF for their input and constructive feedback during the development of this report.

# Acronyms

| Acronym | Full Name |
|---|---|
| **AI** | Artificial Intelligence |
| **BavPol** | Buitengewoon agent van Politie BES (Special Investigating Officer) |
| **BES** | Bonaire, Saba, and St Eustatius |
| **BNMP** | Bonaire National Marine Park |
| **CNBCN** | Commissie voor Natuurbeheer en – Bescherming voor Caribisch Nederland (Commission for Nature Management and Protection for the Caribbean Netherlands) |
| **DTH** | Department Supervision & Enforcement |
| **EEZ** | Exclusive Economic Zone |
| **FTEs** | Full-Time Equivalents |
| **I&W** | Infrastructure and Water Works (Infrastructuur en Waterstaat) |
| **LNV** | Ministry of Agriculture, Nature, and Food quality (Ministerie LNV) |
| **NCB** | Nature Committee Bonaire |
| **NEPP-CN** | Nature and Environmental Policy Plan Caribbean Netherlands 2020-2030 |
| **NGO** | Non-Governmental Organization |
| **OD** | Omgevingsdiensten (Executive Agencies for Permitting, Surveillance, and Enforcement) |
| **SCF** | Saba Conservation Foundation |
| **STENAPA** | St. Eustatius National Parks Foundation |
| **STINAPA** | Stichting Nationale Parken Bonaire |
| **UNESCO** | United Nations Educational, Scientific and Cultural Organization |
| **VTH** | Permitting, Surveillance, and Enforcement (Vergunningverlening, Toezicht en Handhaving) |
| **WWF-NL** | World Wide Fund for Nature Netherlands |

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# 1 Introduction

Nature on and around the islands of the Caribbean Netherlands, consisting of Bonaire, Saba, and St Eustatius, is vulnerable. Research indicates that many of the unique ecosystems and species are under threat (Debrot, Henkens & Verweij, 2018). Anthropogenic pressure is the primary driver of these threats and results in part from the spatial development of the islands, leading to encroachment of human activity on natural areas and leakage of harmful effects into these areas. The three islands are home to more than 27.000 inhabitants[1] in 2021 and an unrestricted tourism industry growth. The number of inhabitants on both Bonaire and Sint Eustatius grew over 2021, by four and three percent respectively. Consequently, adequate spatial planning incorporating nature policy goals on the islands is essential to maintain healthy ecosystems on the island.

Consequently, it is important to evaluate how spatial planning is currently functioning in relation to nature policy goals. The framework of nature policy ambitions from the Netherlands for the islands are described in the Nature and Environmental Policy Plan Caribbean Netherlands 2020-2030[2] (NEPP-CN), which was developed by the Ministry of Agriculture, Nature, and Food quality (Ministerie LNV) in collaboration with the Ministries of Infrastructure and Water management and the ministry of Interior Affairs. The NEPP-CN contains several explicit strategic goals to conserve nature, for example through reversing coral reef degradation and restoring and conserving unique habitats and species (Figure 1), while also recognizing the necessity to develop sustainable local economies. Based on consultation with the nature management organizations on the island, various developments and policies on the island appear not to fully align with these nature-related strategic goals. This is evidenced for example by the increase in the number of nature and environmental legislation related offences on Bonaire[3].

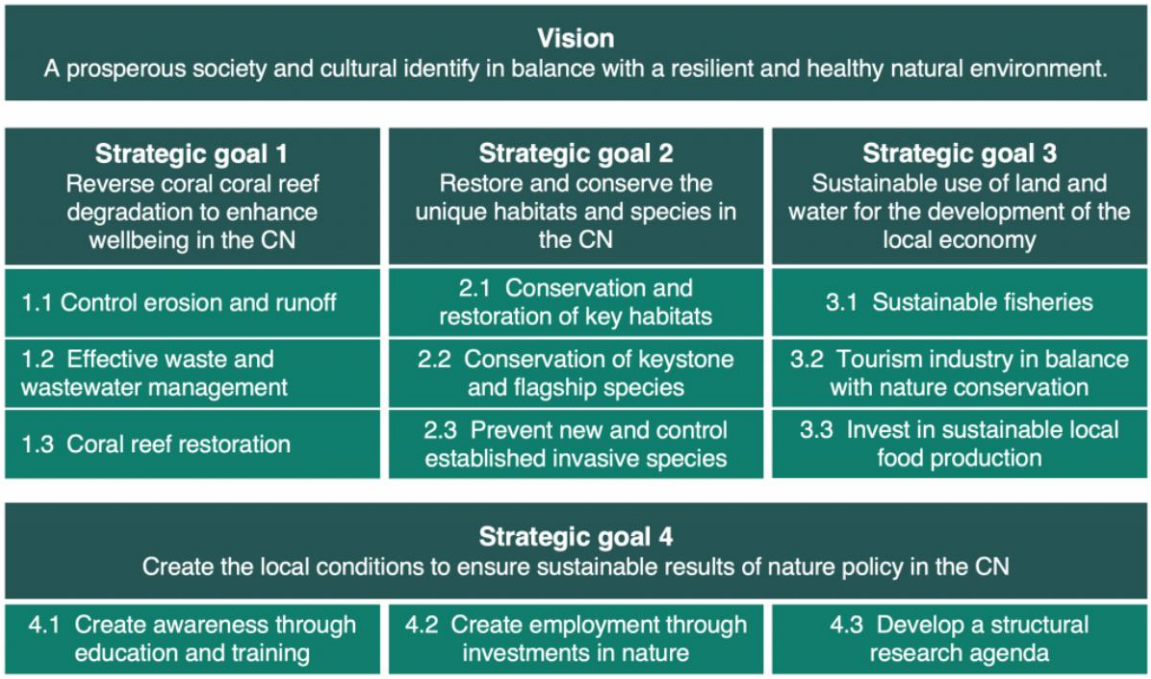


*Figure 1 Strategic Goals of the Nature and Environmental Policy Plan Caribbean Netherlands 2020-2030.*

[1] Number of inhabitants on 1st of January 2022; https://www.cbs.nl/nl-nl/nieuws/2022/17/bevolking-caribisch-nederland-in-2021-met-ruim-900-toegenomen
[2] https://english.rijksdienstcn.com/agriculture-nature-and-food-quality/documents/leaflets/agriculture-horticulture-and-livestock/nature-policy-plan/nature-policy-plan/nature-and-environment-policy-plan-caribbean-netherlands-2020-2030
[3] https://dossierkoninkrijksrelaties.nl/2022/11/23/veel-meer-processen-verbaal-voor-natuur-en-milieuovertredingen-op-bonaire/

The present report develops case studies on each of the three islands where spatial development had a negative impact on nature. The purpose of this study is to understand which potential recommendations on the amelioration of spatial planning processes in the Caribbean Netherlands can be made, to better incorporate and protect natural values and targets for sustainable use of ecosystem services.

More specifically, the case studies should offer insight into specific inadequacies in spatial planning policy, as well as the implementation and enforcement thereof, in relation to the nature policy ambitions as set out in the NEPP-CN. Particular focus will be on five sub targets from the NEPP-CN (Figure 1) that have an evident spatial planning implication, these being:

**1.1 Control erosion and runoff**

**1.2 Effective waste and wastewater management**

**2.1 Conservation and restoration of key habitats**

**3.2 Tourism industry in balance with nature conservation**

**4.2 Create employment through investments in nature**

Each case study, one for each of the BES islands, focuses on a spatial development that is in conflict with nature conservation goals in distinct spatial zones. The zones that we will look at on each of the islands are as follows:

- On **Bonaire**, we look at the coastal zone of the western (leeward) side of the island that borders the part of the Bonaire National Marine Park which is most intensely used for both residential, recreational and business purposes. Demand for recreational and residential accommodations is high in this zone while risks of negative environmental impact are high due to the proximity of these developments to the protected coral reefs.
- On **Saba** we look at the border zone of the Mount Scenery National Park, where construction activities are encroaching upon the border zone of the park. Based on information by the Saba Conservation Foundation (SCF) construction is occurring along the border of the park and therefore leading to the destruction of natural areas.
- On **Sint Eustatius**, we focus on the coastal zone with an emphasis on the Guyeau property located on the northeastern coastline. The development of this property into recreational accommodations as well as lots for villas has affected the area and appears to have potentially negatively affected nature.

To analyze whether the current state of spatial planning practices on the islands is conducive to achieving the nature policy ambitions we have analyzed the three case studies using a framework consisting of what we consider to be three distinct aspects of spatial planning. These three aspects follow the policy and governance chain involved in the spatial development of a given area:

1. **Local legislation, regulation, and spatial development plan**
2. **Process of permit issuance**
3. **Supervision and enforcement.**

By analysing the case studies through this framework, we will be able to pinpoint where potential issues arise in spatial planning that result in negative impacts on nature policy goals.

## 1.1 Approach

The case studies are built in part upon interviews with representatives from the nature organizations on the islands that are mandated to manage the nature parks. These are

Stichting Nationale Parken Bonaire (STINAPA), St. Eustatius National Parks Foundation (STENAPA) and the Saba Conservation Foundation (SCF). This study should not be seen as a comprehensive evaluation of spatial development on the islands from all viewpoints, but as a document that identifies potential flaws in spatial planning practices as it relates to nature policy goals based in part on information by the organizations that are most involved with protecting and conserving nature on the islands.

In addition to the stakeholder consultations, relevant documentation pertaining to spatial planning on the island was consulted, and for Sint Eustatius and Saba satellite imagery was observed to identify conflict areas. Apart from the case studies, we also provide insights on spatial planning and nature ambitions both in the context of small islands as well as in the Dutch context based on a literature review. Insight from the case studies and the literature review are then combined to provide a set of potential recommendations for improving the interface between spatial planning and nature policy goals.

# 2 Bonaire

## 2.1 Conflicts between spatial planning and nature policy goals on Bonaire

Bonaire's western coastal zone (the leeward side of the island) is the most built-up zone on the island, and it is where the main settlement of Kralendijk is located Figure 2 shows the area of interest that is the primary concern of this case study. This coastal zone includes both the shallow waters offshore up to the drop-off to the deeper reef as well as the many beaches and low-lying coastline. Bonaire's coastal zone is a relatively narrow band of approximately 250 meters wide as the water surrounding the island have a very steep dropping slope, the transition from water to land is formed by a band of beaches that are relatively small and narrow (compared to for instance the broad sandy beaches on neighbouring island of Aruba). In some area's there is a direct transition from sea to lime stone cliffs. Bonaire's beaches and its coastal zone are formed from coral stone dominated pocket beaches and lime stone cliffs with a width of less than 50m in most places and only 20cm of tide difference. Bonaire's reefs form a narrow band fringing the entire island. A lot of the islands recreational, touristic and natural value are concentrated in this narrow coastal zone. This zone also plays a vital role in protecting the lands and properties land inward from the effects of Climate Change such as more frequently occurring Tropical Storms and sea level rise. Infrastructure (roads) that connect the South and Northern parts of the island run close to the shoreline. As transportation of goods such as fuel, food and construction materials to Bonaire also partially takes place by water the leeward coastal zone also plays an important role in facilitating infrastructure. With all these vital functions happening in a narrow band of space there is clearly a need for sound management. The western coastal zone drives Bonaire's tourism as it is where virtually all resorts and recreational accommodations are located and is thus vital to the island's economy. In addition, the coral reefs in this coastal zone form an important ecosystem that is home to high biodiversity. Tourism facilities, recreational accommodation and residential houses are in high demand in this area. An increase in the number of facilities and accommodations can create negative impacts on the reef and beaches, through erosion and pollution that affect the health of the reef (**Fout! Verwijzingsbron niet gevonden.**). In such cases, spatial development on Bonaire can conflict with nature and environmental policy targets. Maintaining and restoring healthy coral reefs is a vital strategic goal for Bonaire as set out in the Nature and Environmental Policy Plan Caribbean Netherlands[4] (NEPP-CN).

There have been a number of incidents concerning resorts along the western coastline of the island. In at least two cases artificial beaches have been developed without proper permits and in some cases without adhering to construction guidelines. Furthermore, construction activities and the removal of natural vegetation within the coastal zone bordering fragile coral reefs as well as watershed areas inland can lead to land erosion by water runoff. This in turn can lead to sediment and nutrients being deposited on the coral reefs. For example, in November 2022 exceptional rainfall on Bonaire has led to sand from an artificial beach at a resort washing into the marine park[5]. Photographs of the reef taken by STINAPA confirmed that sand was deposited on the reef [6], where it has inevitably led to stressing the corals present and could potentially lead to irreversible coral damage (Risk, 2014, Meesters et al., 2022). Apart from sand from artificial beaches, there were also other locations along the coastal zone where sediment was washed out to sea[7]. Damage to the reef is in direct conflict with strategic goal 1 set out in the NEPP-CN (Figure 1): to maintain and restore healthy coral reefs.

[4] https://english.rijksdienstcn.com/agriculture-nature-and-food-quality/documents/leaflets/agriculture-horticulture-and-livestock/nature-policy-plan/nature-policy-plan/nature-and-environment-policy-plan-caribbean-netherlands-2020-2030
[5] https://bonaire.nu/2022/11/06/gedoe-over-keermuur-was-niet-voor-niets-chogogozand-spoelt-zee-in/
[6] https://bonaire.nu/2022/11/12/gekibbel-over-zand-op-strand-chogogo-resort-duurt-voort/
[7] See photographs in this article: Bonaire kampt met hevige regenval, straten overstroomd (nos.nl)

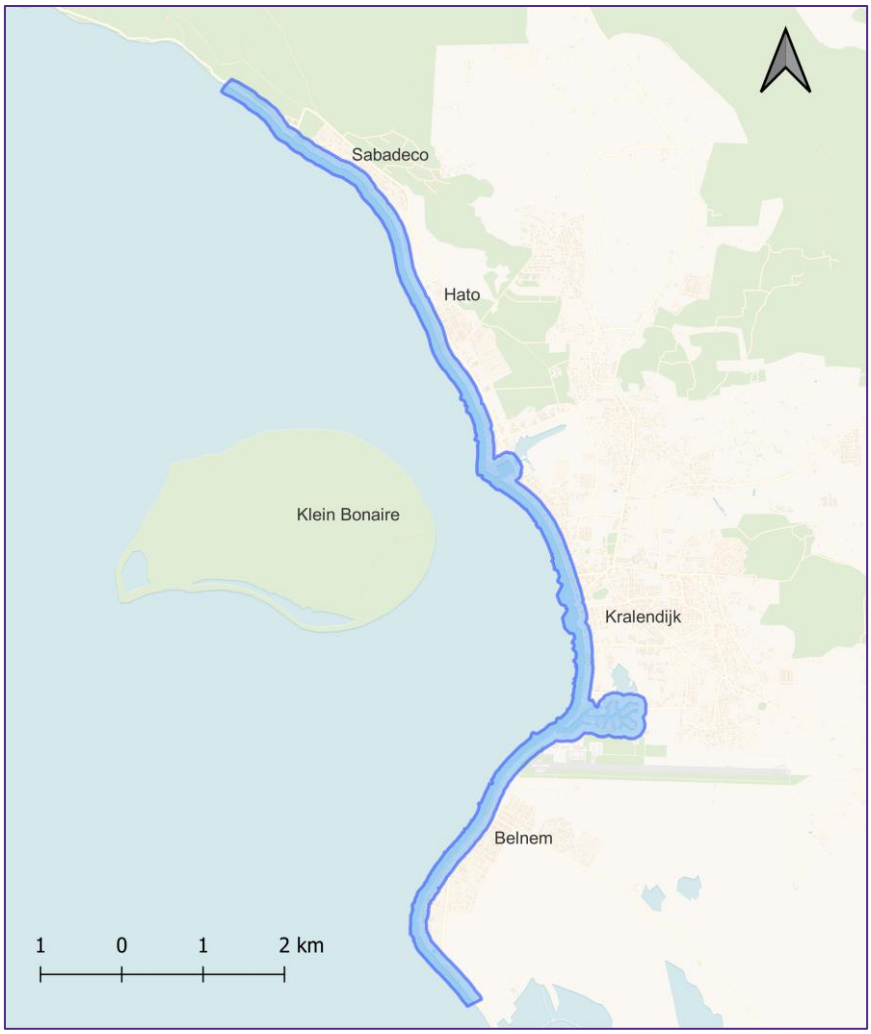


*Figure 2 Area of interest along the western coastal zone of Bonaire running along the most densely populated area of Bonaire. It includes the coastal zone up to 100 meters inland.*

## 2.2 Spatial planning policy to protect nature on Bonaire

The spatial development plan for Bonaire[8] dates from 2010 and serves as the guideline for spatial development on the entirety of the island. It was developed through extensive stakeholder consultations and incorporates a range of interests in the final zoning plans and building regulations. It details where construction can occur on the island and under what conditions, identifying zone designations ranging from natural areas to industrial zones. The foundation for the spatial zoning plan is the Wet Ruimtelijke ontwikkelingsplanning BES, that is locally laid out in the '**Eilandsverordening ruimtelijke ontwikkelingsplanning Bonaire**' (**A.B. 1994, no. 2**)[9]. This ordinance describes the rules and regulations that govern the spatial development plan and prescribes the need for regular revisions on the plan. It also prescribes that any proposed revisions of the zoning plan need to be made public and available for public review. A revision of the spatial development plan is currently in the works and expected to be finalized during the course of 2023. It is awaiting the finalization of a Spatial Planning Program to be developed by the ministry of BZK for the BES that will form the framework for island specific spatial plans.

[8] https://www.bonaire-ro.nl/bestemmingsplannen/ruimtelijk-ontwikkelingsplan-bonaire/
[9] EILANDSVERORDENING van 18 augustus 1994, no. 2, ter uitvoering van de Landsverordening grondslagen ruimtelijke ontwikkelingsplanning (P.B. 1976, no. 195) en tot wijziging van de Bouw- en woningverordening Bonaire (A.B.1961, no. 17) (Eilandsverordening ruimtelijke ontwikkelingsplanning Bonaire) (overheid.nl)

There are also several other island ordinances and associated island decrees pertaining to nature and the environment that affect what is and is not allowed regarding spatial development on the island by prohibiting certain activities entirely or without a proper permit. Island ordinances are accorded by the Island Council ('Eilandsraad'), while island decrees are accorded by the Executive Council ('Bestuurscollege') and can provide more specific conditions associated with island ordinances. In addition to the island ordinances and decrees, the 'Wet Maritiem Beheer BES' describes rules on the management of the Exclusive Economic Zone (EEZ), including also the Territorial Sea and Contiguous Zone, surrounding the islands. The list below describes the most important legislation relevant to spatial planning in the coastal zone and other areas on Bonaire:

- **Maritime Management Law BES**: Prescribes rules and regulations surrounding management of the EEZ surrounding the BES islands. Articles 20 and 21 describe permitting procedures for construction activities in the EEZ, with this permit also being applicable to activities that change the level or condition of the sea floor. For these activities, a permit is needed that requires a study into the effects for the environment and nature amongst others. Ultimate responsibility for these permits is vested in the national government, with Rijkswaterstaat being the responsible agency.
- **Island Ordinance Nature Management Bonaire (AB 2008 no. 1):** Provides regulations for the protection and management of nature on the island which amongst others establishes the Nature Committee Bonaire (NCB) that can advise the Executive Council on nature related decisions. In addition, establishes the Bonaire National Marine Park (BNMP). Article 16 describes the need for a permit from the Executive council for activities that can have negative consequences for nature, based on an Environmental Impact Assessment to be undertaken. Permits can be granted by the Executive Council after consultation of the NCB.
- **Island Decree Nature Management Bonaire (A.B. 2010, no. 3):** Prohibits, amongst others, undertaking a number of harmful activities within natural parks and potentially buffer zones that can be designated through island decrees by the Executive Council. Natural Parks and buffer zones around these parks can be designated by the Executive Council who must seek advice from the NCB. It also prescribes the conditions under which an Environmental Impact Assessment as prescribed under AB 2008 no. 1 is required and details the requirements of such an assessment.
- **Island Decree Underwater Park Bonaire (A.B. 2010 no. 10**): Prescribes rules surrounding activities that affect the BNMP and which for example prohibits the development of artificial beaches bordering the park without a permit by the Executive Council.
- **Nuisance Ordinance Bonaire (A.B. 1995, no. 4)**: Establishes the need to acquire a permit for any environmentally harmful activities. Will be replaced by the 'Establishment and Activity Decree BES' (Inrichtingen- en Activiteitenbesluit BES)[10] in the near future, which prescribes general rules for all three islands regarding environmentally harmful activities.
- **Island Wastewater Ordinance Bonaire (A.B. 2012, no. 5):** Prescribes regulations surrounding the treatment and release of wastewater on the island.

The Nature and Environment Policy Plan Caribbean Netherlands describes the need to re-evaluate the spatial zoning plan, calling for a buffer zone with building restrictions in vulnerable areas close to the shoreline that takes local characteristics into account. At present, the spatial zoning plan only prescribes a general buffer zone[11] along the coast that prohibits any construction of buildings and other constructions within fifteen meters of the high-water mark.

[10] https://www.internetconsultatie.nl/inrichtingen_en_activiteitenbesluit_bes
[11] 'Article 4.66.3 Bouwen langs de kust' on page 48 of the spatial zoning plan Bonaire, available at: https://www.bonaire-ro.nl/bestemmingsplannen/ruimtelijk-ontwikkelingsplan-bonaire/

It lacks a clear decision making tool or set of criteria for decision making on whether developments do or do not interfere undesirably with the aquatic environment.

## 2.3 Permitting procedures on Bonaire

In the context of spatial development there are potentially five distinct permits that need to be acquired, namely:

- **Construction permit:** This is the standard permit that is necessary to commence the construction of any building. It can be granted by the Department of Spatial Development. To acquire a construction-permit the applicant has to provide documentation providing details on the placement and parameters of their planned construction. Information provided is then cross-referenced with a number of conditions by the Department of Spatial Development. These conditions include, for example, the prescriptions for the designation of the zone in which the construction is to occur.
- '**Aanlegvergunning**'. Under certain conditions and for certain zoning designations the spatial development plan necessitates an additional permit, the 'aanlegvergunning'. Examples of activities for which such a permit is required for zones designated for recreational accommodations include:
    - Raising or lowering the ground
    - The application of surface hardening
    - Conducting construction activities that can lead to erosion

  The Executive Council can grant these permits in cases where there is no effect on the 'values' of the zonal designation as a result of the activity occurring.
- **Nature permit:** When a proposed construction activity can have significant negative consequences for nature or natural values the Island Ordinance Nature Management and the associated Island Decrees prescribe that it cannot occur without an official permit from the executive council. Based on the ordinance a request for a nature permit needs to be accompanied with an environmental impact assessment (EIA) when activities threaten to have severe negative consequences for nature and natural values or threaten to severely disfigure the landscape. In addition to this EIA the Executive Council is also required to hear the non-binding advice of the NCB on the activity described in the permit application. Furthermore, the nature permit application should also be made available for public review for a time period of 14 days during which objections to the plan can be made. Afterwards, the Executive Council has the final say on the permit application. If objections remain then the objectors can proceed to fight the permit grant in court.
- **Environmental permit:** The Nuisance Ordinance Bonaire prescribes the need for a permit for environmentally harmful activities. The relevance of this ordinance for spatial development is primarily related to waste management, in particular **Island Decree on General Measures (A.B. 2008, no. 1)** prescribes the need for an environmental permit if more than five cubic meters of commercial (or residential) waste is to be worked, processed, destroyed, or stored. In addition, a permit is needed for temporarily storing waste in or on the ground. As mentioned in the previous section this permit will soon be based in the 'Establishment and Activity Decree BES' instead of the Nuisance Ordinance.
- **Marine construction permit:** Under the Maritime Management Law BES Article 20, a permit is required for activities that, amongst others, can affect the elevation or condition of the sea floor. The authority for granting this permit lies with the national government, with Rijkswaterstaat being the executing agency. Permits can be denied if one or more of a list of public interests are irreparably affected, with these public interests including nature and the marine environment.

In the example of the Chogogo, a nature permit was granted for the development of an artificial beach for a resort after the beach had already been constructed. In this case it appears that a negative advice by the NCB on the granting (after the fact) of the nature permit was not taken into account[12]. Consequently, even though there are permitting procedures that in principle should allow for the prevention or minimization of damage to nature through the advisory capacity of the NCB, in practice this is not a guarantee that harmful activities do not occur. In addition, it appears that no EIA was undertaken in the case of this specific resort. Furthermore, the fact that there are potentially five different permits that could be required for a development in the coastal zone constitutes a complex system that can make it hard for developers to grasp the totality of the requirements and can put an excessive burden on agencies tasked with permitting procedures. This can be exacerbated by the that there might be multiple permitting agencies and points of contact that a developer would need to visit in order to acquire all the necessary permits.

## 2.4 Enforcement of compliance to permits and legislation on Bonaire

Surveillance and enforcement of compliance with permits and legislation on Bonaire is the responsibility of the Department Supervision & Enforcement (Directie Toezicht & Handhaving (DTH)) of the public entity of Bonaire. In addition to the DTH, the Executive Council can assign individuals to become ‘buitengewoon agent van politie BES’ (bavpol) to undertake enforcement activities concerning specific legislation. In 2019, the BC designated 'bavpols' amongst STINAPA personnel to support with the enforcement of the ‘Eilandsverordening natuurbeheer Bonaire’ as well as decrees associated with this ordinance.

Enforcement on Bonaire of permits for construction activities in the coastal zone that affect nature was inadequate in the case of the Chogogo resort given that activities occurred without proper permits being in place[13]. In this case construction activities for which a permit is required, based on the building regulations laid out in the spatial development for the recreational accommodation designation, occurred in the absence of the required permits. It thus appears that enforcement of spatial planning legislation did not function at a pace that was sufficient to stop the potentially harmful activities from occurring. An extensive evaluation report on the decision-making process surrounding the Chogogo resort was requested by the Executive Council and published in August 2022. The evaluation report describes a number of issues that hindered effective surveillance and enforcement in this specific case. One important aspect that is mentioned by the report is the lack of coordination between the various responsible agencies and between the executive and legislative branches on the island. When combined with an increasing amount of spatial planning decisions to be made on Bonaire the report identifies a risk of inadequate enforcement of unsanctioned spatial developments.

[12] https://antilliaansdagblad.com/bonaire/25060-d66-wil-strand-chogogo-op-bonaire-verwijderen
[13] Evalutieonderzoek besluitvormingstraject vergunningverlening Chogogo Dive & Beach Resort, availabale at: Samen naar Beter | Rapport | Rijksoverheid.nl

# 3 Saba

## 3.1 Conflicts between spatial planning and nature policy goals on Saba

Saba is a small island located in the Eastern Caribbean, part of the Leeward Caribbean Islands. With a surface area of only 13 $km^2$ it is one of the smallest islands in the Caribbean and home to no more than 2,000 people. The island is part of an active volcano, Mount Scenery, of which the island forms the peak. This volcano rises 887 meters above sea level giving the island a steep topography. There are four villages on the island, Zions Hill located on the northeastern part of the island next to the airport, Windwardside on the eastern side of the island, Sint Johns in the south, and the largest settlement The Bottom in the southwestern part of the island. Tropical cloud forest can be found above 825 meters altitude on the island and a number of endemic plant and animal species inhabit the island. In addition, the coastal zone of the island has been designated an Important Bird Area by Birdlife International[14] as it forms a home for a number of regional bird species. Since 2018, nearly 25% of the island falls under the Mount Scenery National Park that covers most of the northwestern part of the island. In addition, the coastal waters surrounding the island are part of the Saba National Marine Park.

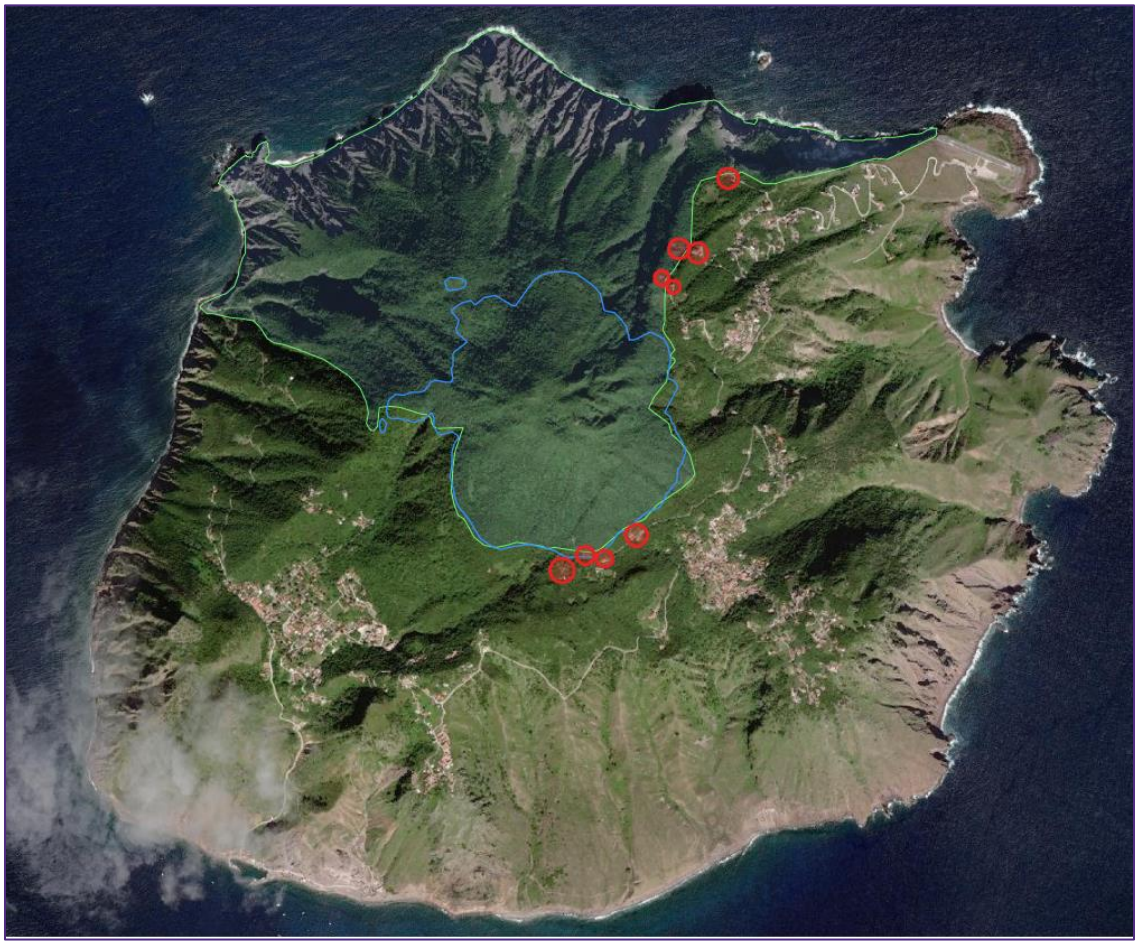

*Figure 3 Satellite view of Saba in 2022. The green line is the border of Mount Scenery National Park. The blue line indicates the 550 meters altitude line. The red circles indicate buildings and developments that border or even cross the boundary of the National Park.*

[14] http://datazone.birdlife.org/site/factsheet/saba-iba-bonaire-sint-eustatius-and-saba-(to-netherlands)

Saba's nature is unique within the Kingdom of the Netherlands and even though large parts of the island are designated protected areas, there are still threats to nature within and outside of these protected areas. Spatial development on the island can be a cause for disturbances and degradation of nature on the island. Along the borders of the Mount Scenery National Park construction of residential and recreational accommodations encroach upon and in some case appear to be present within Mt. Scenery National Park (Figure 3). An example of this, based on information by the Saba Conservation Foundation, is the construction of a building on a trail entry in Mt. Scenery National Park that was built on a unique wetland area. These types of developments stand in direct conflict with the goals set out in the Nature and Environmental Policy Plan Caribbean Netherlands[15], such as strategic goal 2.1 to conserve and restore crucial natural habitats. In addition, unregulated building on steep slopes might also form a potential public safety hazard as it might lead to landslides.

## 3.2 Spatial planning policy to protect nature on Saba

There is no spatial development plan on Saba that governs planning decisions on the island. This also means that no sensitivity analysis with regards to nature values and safety hazard has been conducted on a detailed level for Saba to identify which areas are suitable for distinct types of development. An island ordinance **(Island Ordinance Spatial Development Saba 2010)**[16] is in place that calls for the development of a spatial development plan for the island. In addition, there is an island ordinance with building regulations (**Building and Housing Ordinance, 1999**)[17]. This ordinance contains a provision that prohibits construction within the 'Protected Area' though it is not stipulated which area this concerns. However, the ordinance allows for building in the protected area with a building permit issued by the Government and for the execution of work in the protected area with an executing permit. In the near future, the 'Establishment and Activity Decree BES' (Inrichtingen- en Activiteitenbesluit BES), which prescribes general rules for environmentally harmful activities on all three islands regarding environmentally harmful activities, is expected to become operable on Saba. This will lead to a need for an environmental permit for certain environmentally harmful activities.

As indicated by SCF, the lack of adequate building regulations leads to nature destruction and safety risks along the slopes of the mountain. In the regulation and legislation of Saba there is no mechanism that prevent the construction of property on unstable nature rich slopes. Construction activities that remove natural vegetation will lead to erosion that in turn amplifies the risk for landslides on Mount Scenery[18] which are known to occur on Saba (Rijkers & Hack, 2000). This is particularly relevant in the context of an increase in the severity of hurricanes and an increase in extreme precipitation events because of climate change.

The terrestrial area that is protected on Saba, is the Mount Scenery Nature Park. The entire terrestrial part of Saba above 550 meters is part of this national park as well as most of the northwestern part of the island. This entire area was designated as a national park by the island council in September 2018[19]. In addition, there are several island ordinances that relate to nature. Of these, the only one having a direct link to spatial planning is the Saba Marine Environment Ordinance of 1987. This ordinance contains an article that prescribes the need for an independent environmental impact assessment before modifications or developments along the coastline are made.

[15] Nature and environment policy plan Caribbean Netherlands 2020-2030 | Leaflet | Rijksdienst Caribisch Nederland (rijksdienstcn.com)
[16] https://lokaleregelgeving.overheid.nl/CVDR41902
[17] Saba Building and Housing Ordinance 1999. Available at: https://lokaleregelgeving.overheid.nl/CVDR30413
[18] https://www.ad.nl/buitenland/grote-kans-op-aardverschuivingen-op-het-eiland-saba-br~a6c45cbf/
[19] Island Ordinance for the establishment of the National Park and protection of animal, plant species and artefacts" on September 18, 2018. Unable to locate the ordinance on the internet, based on article at: New national park protects Saba's nature and artefacts | THE DAILY HERALD | SXM Talks (sxm-talks.com)

## 3.3 Permitting procedures on Saba

The Building and Housing Ordinance 1999 for Saba prescribes the need for a **building permit** to undertake a variety of construction related activities. In addition, it also prescribes the need for an **executing permit** for works in 'Protected Areas'. The final decision on the granting of building permits lies with the Executive Council of the island. In practice it appears that permitting procedures on the island are lacking according to SCF. The ordinance does not provide any specific conditions pertaining to nature for acquiring a permit. Furthermore, there are no distinct designated areas for development on the island. Apart from the 'Protected Area' as described in the Building and Housing Ordinance 1999 there appear to be no procedures for assessing the impact of developments on the natural environment. The Island Ordinance Spatial Development Saba 2010 does prescribe the need for **civil works permits** to be granted by the island council for activities that go against zoning regulations, but these zoning regulations have not been developed yet. As such, the building permitting procedure as it stands does little to contribute to the attainment of the strategic goal to restore and conserve the unique habitats on Saba. Considering the above, there is no guarantee that future developments will not infringe upon the Mount Scenery National Park.

## 3.4 Enforcement of compliance to permits and legislation on Saba

Enforcement of spatial development regulations on Saba falls in the portfolio of one of the island commissioners that are members of the Executive Council of the Island Government. According to SCF, the island commissioner has a wide variety of subjects within his portfolio, potentially leading to a lack of capacity and knowledge on nature-related subject matter in relation to spatial development[20]. It was also commented by SCF that nature is typically not a priority within the Executive Council when it comes to the construction of buildings on the island. As already mentioned before, a concrete example of this would be the construction of a touristic accommodation in what used to be a natural wetland area[21]. Based on impressions by the SCF it appears that economic incentives have a higher priority than nature interests, and SCF feels that the political will to incorporate nature considerations into spatial planning is limited. This could be exacerbated by the fact that attempts to halt construction activities on the island for nature purposes can lead to potential conflicts between people with an interest to halt construction vs those who have a (in)direct interest in construction for residential and/or commercial purposes.

[20] https://www.sabagov.com/_files/ugd/98f703_b3272b963aae40f29ae4cf6c798b4d42.pdf
[21] Based on information provided by SCF

# 4 St. Eustatius

## 4.1 Conflicts between spatial planning and nature policy goals on St. Eustatius

St. Eustatius is located close to Saba in the eastern part of the Caribbean. It is home to some three thousand inhabitants and a number of national parks. Development on the island is concentrated in the settlement of Oranjestad on the western part of the island. In addition, the island has a large oil terminal that is located to the northwest of Oranjestad. The eastern part of the island is less developed and consists of a rocky coastline. St Eustatius's coastal zone generally is a mixture of rocky beaches along the lower central part of the island and cliffs and steeply sloping coast to the north and south. Coral reefs are also found around St. Eustatius and are home to high biodiversity. Terrestrial nature on the island can primarily be found in the Quill/Boven National Park on the northern and southern part of the island.

One the largest recent developments on the island was the development of a new resort as well as villas on the island's eastern coast within a zone that was designated a mixed nature zone in St. Eustatius's spatial development plan of 2011[22]. The Guyeau property is a plot of land of about 179.000 $m^2$ located next to the shoreline on the northern slope of The Quill. To access the sea from the resort, roads have been constructed in a designated natural zone. Natural values seem to have been affected and development in the coastal zone appears to be in conflict with nature objectives.

## 4.2 Spatial planning policy to protect nature on St. Eustatius

The Spatial Development plan for Sint Eustatius, designates most of the coastal zone as (mixed) natural zones, with various levels of protection. Exception to this is the coastline of Oranjestad itself that is reserved primarily for residential areas and the coastline to the northwest of Oranjestad that is reserved for the oil terminal and docking facilities. The Spatial Development Plan is currently under revision[23] and a new plan is expected in 2023. A draft version was available for public viewing in August of 2022. Very recently, a document describing revisions to the old plan was published[24]. With regards to nature, it emphasizes the need to prevent erosion in new developments, through maintaining natural vegetation as much as possible and to design roads and drains in a way that prevents them from becoming a highway for water down to the sea. It also prescribes a 20-meter buffer zone from coastal cliffs for which rules will be included in the new spatial development plan. At present the document did not appear to be available online and as such could not be studied. Combined with the preliminary impressions of STENAPA the new spatial development plan appears to form a good basis for protecting natural values in line with the NEPP-CN.

There are three primary islands ordinances that deal with management of nature on and surrounding the island. The **Sint Eustatius Marine Environment Ordinance** (**A.B. 1996, No. 03**)[25] prescribes regulations about what can and cannot be done in the Marine Park surrounding the island but contains no provisions relevant to spatial planning on land. The **Flora and Fauna Ordinance (AB1997, No. 06**)[26] provides rules on the treatment of flora and fauna on the island and prohibits the destruction of a selection species without having an official exemption by the Executive Council. It was expanded upon by the **Island Decree on Flora and Fauna (AB2010, No. 18)**[27] that provides a list of specific protected species and

[22] Spatial Development Plan St. Eustatius, adopted by the island council. 4th of March 2011.
[23] https://www.statiagovernment.com/documents/decrees-orders-and-decisions/2020/06/08/verordening-ruimtelijke-ontwikkelingsplanning-openbaar-lichaam-sint-eustatius-2020
[24] Approved final draft of Spatial Development Plan Dutch Version | Decree, order, or decision | St. Eustatius (statiagovernment.com)
[25] https://decentrale.regelgeving.overheid.nl/cvdr/XHTMLoutput/Historie/Sint%20Eustatius/44403/44403_1.html
[26] https://lokaleregelgeving.overheid.nl/CVDR46464/2
[27] https://lokaleregelgeving.overheid.nl/CVDR20788/2

sets out rules on the way in which an exemption as described above can be obtained. The **St Eustatius Hindrance Ordinance (AB1993, No. 09)**[28] prescribes regulations surrounding environmentally harmful activities. As will occur for Bonaire, the Hindrance Ordinance will be replaced by the 'Establishment and Activity Decree BES' (Inrichtingen- en Activiteitenbesluit BES) in the near future, which prescribes general rules for environmentally harmful activities on all three islands regarding environmentally harmful activities. The spatial development plan provides a variety of different developmental zones on the island that come with associated legislation on the types of developments that can occur in these zones. In the Spatial Development Plan of 2011, the Guyeau property was composed of three different designated zones (**Figure 5**-A). These included the natural area designation, as well as two natural mixed areas. Within these three types of designations there is no option for the construction of recreational overnight amenities. The Executive Council can however amend the designation of a certain area, in order to allow for the construction of recreational amenities. The condition for such an amendment is: 'The amendment is only allowed if research proves that the present landscape, natural and ecological values are not harmed disproportionally the initiative concerned is financially and economically viable and storage and drainage of rain is managed properly'. In addition, there are some associated limitations to the number of buildings and their specifications.

For the Guyeau property a change in zone designation was needed in order to allow for the development of recreational overnight amenities and an extensive study was commissioned by the Island Council to assess whether the criteria to allow for an amendment to the designation were met. This report was made publicly available[29] as is required by the spatial development plan. It includes a study into the natural values of the area and describes the likely effects of the development on these values. The study concludes that although there some biodiversity related impacts could be expected as well as a potential increase in erosion resulting from construction activities and vegetation loss, these could be counteracted to an extent through a number of measures. These measures notably included the retainment of as much of the residing vegetation as possible. Lastly, it is also noted that the coastal zone provides potential nesting grounds for red-billed tropicbird of which individuals were observed in the coastal zone. The study addresses all the required aspects as described in the spatial development plan. As a consequence, designations on the property were amended by the Executive Council to allow for the development of recreational overnight amenities (**Figure 5**-C).

## 4.3 Permitting procedures on St. Eustatius

On Sint Eustatius there are a number of permits that are relevant to construction activities in and around nature. First of all, a **building permit** is required under the 'Bouw- en Woningverordening 1984' and the 'Wet volkshuisvesting, ruimtelijke ordening en milieubeheer BES'. This building permit can be granted by the Executive Council. The St Eustatius Hindrance Ordinance prescribes the need for an **exemption permit** from the Executive Council for any environmentally harmful activities. As mentioned in the previous section this Ordinance will be replaced by the Establishment and Activity Decree BES which includes the need for an environmental permit for designated activities. Lastly, the spatial development plan prescribes activities that may not be executed without **permission** of the Executive Council and that can be specific to designated zones. One of the activities for zones designated as natural areas mentioned in the spatial development plan is the construction of roads and paths. As can be seen in Figure 5-B and Figure 5 in this case a pathway was constructed in a designated natural area along the coastal zone of the Guyeau property for the resort. The pathway in the coastal zone is not explicitly mentioned in the

[28] https://dcnanature.org/wp-content/uploads/2020/12/C2-Statia-HindranceOrdinance-AB1993-09-1.doc
[29] Estate Guyeau St. Eustatius - Review of the Spatial Development Plan St. Eustatius | Report | St. Eustatius (statiagovernment.com)

revision study for spatial zoning on the Guyeau property and no permit has been granted for the construction of the pathway.

## 4.4 Enforcement of compliance to permits and legislation on St. Eustatius

Enforcement of island ordinances and rules set out in the spatial development on Sint Eustatius appears to have been lacking to a certain extent in the case of the Guyeau property. After the designation of a large part of the property as recreational, construction activities were allowed and started around 2020. As can be seen in the before and after pictures (Figure 4) the property underwent a notable change due to the construction that occurred in the area. In the 'Rapid Terrestrial Ecological Assessment Guyeau' that is part of the amendment study that was undertaken a number of concrete recommendations are made regarding the prevention of erosion in the area. This is particularly relevant as the property is located on a slope that leads down to the edge of the Marine Park. The Marine Park harbors important coral reefs that are vulnerable to the effects of sediment washing into the sea. Damage to the coral reefs is in direct conflict with strategic goal 1 of the NEPP-CN The assessment recommends 'to retain as much vegetation as possible and integrate native vegetation into the development of the property, not only to minimize habitat loss but also to mitigate impacts such as soil run-off.'[30]. From visual observation of the satellite images in Figure 4, it appears quite clear that a lot of native vegetation was removed and the 2022 image reveals large tracts of what seem like barren soil. Such soil could be expected to be highly vulnerable to erosion and possibly ending up in the Marine Park.

*Figure 4 The Guyeau property in 2019 before construction occurred and in 2022 after significant construction activities had occurred.*

[30] Page 91 of Estate Guyeau St. Eustatius - Review of the Spatial Development Plan St. Eustatius | Report | St. Eustatius (statiagovernment.com)

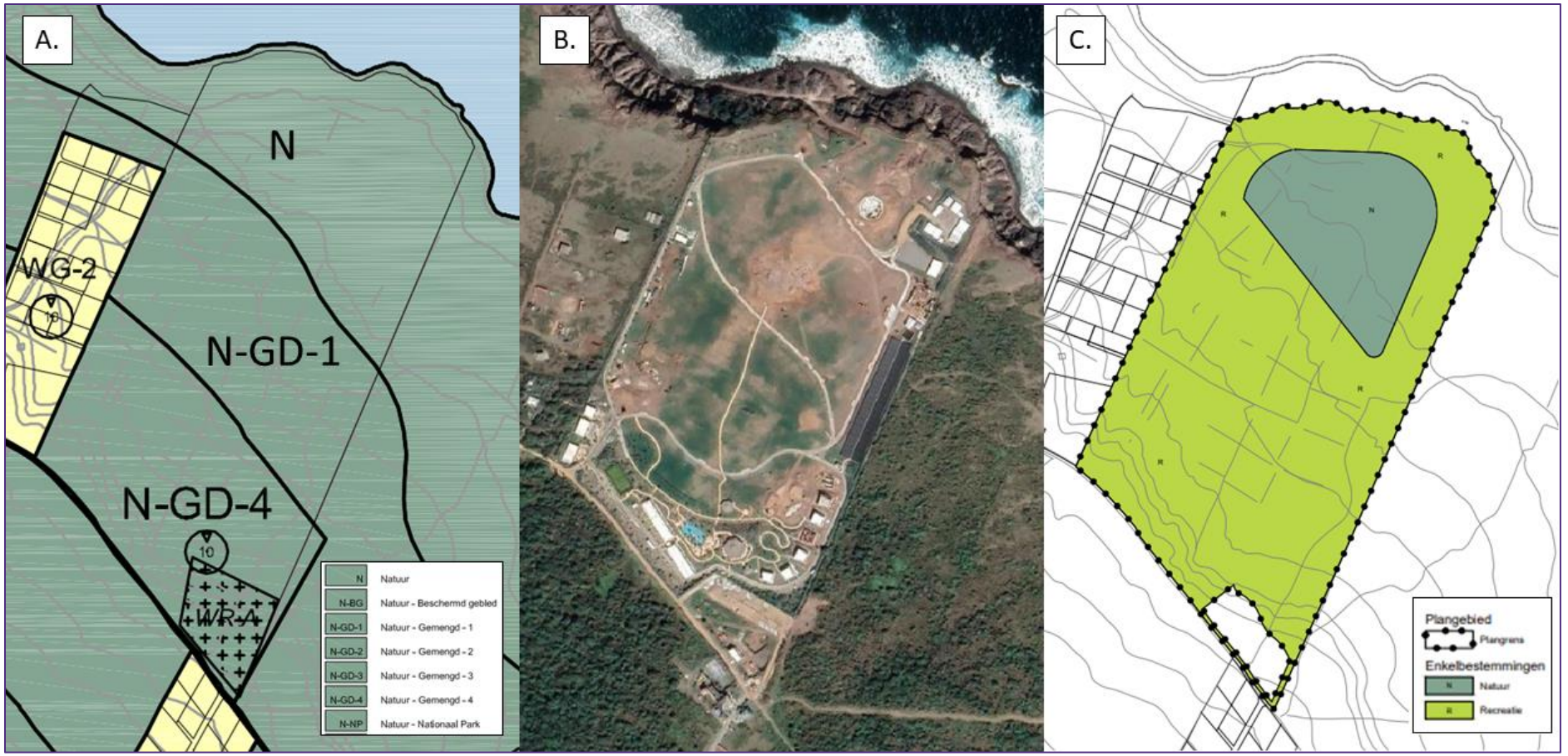


*Figure 5 The Guyeau property on St. Eustatius, where the Golden Rock Resort was constructed and is being expanded. A.) Zoning plan from the Sint Eustatius Spatial Development Plan from the 4th of March 2011; B) Satellite Imagery of the property in 2022 ©CNES; C) Revised zoning plan from 2018 for the Guyeau property.*

Furthermore, there also appears to have been a deviation from the zoning plan on the property. In the revised zoning plan for the property, the designation as natural area for the coastal strip of land (**Figure 5**-A) was not amended (Figure 5-C). However, it appears that there have been significant construction activities in this zone with the development of a roadway leading down to the water's edge (Figure 6). In the ecological assessment the coastal area was specifically mentioned as an area in which development was undesirable as it harbored potential nesting places for red-billed tropicbirds. The construction of the road most likely has led to significant disturbances for these birds and potentially the abandonment of the area. This development thus seems to be in direct conflict with the sub-goal 2.2 set out in the NEPP-CN to protect keystone and flagship species, with the red-billed tropicbird being specifically mentioned in the implementation agenda for the NEPP-CN for Sint Eustatius. As far as we can tell no permit was granted for the construction of this road and the development of a road in the coastal zone is also not mentioned in the study for the revision of the spatial zoning of the property. However, it appears that there have been no checks by authorized governmental personnel or that at least there was no action taken to interfere with and stop the harmful activities of vegetation removal and the potentially illegal pathway construction.

*Figure 6 Roadway that was constructed in the designated natural area along the coastal zone of the Guyeau property.*

# 5 Conclusions

By combining the insights from the case studies, we could draw some general conclusions regarding spatial planning on the islands. The following sections provide summaries regarding the three aspects of the spatial planning governance chain as set out in the introduction. For each of the islands we provide a summary conclusion on the three levels of spatial planning policy: 1) the design of spatial plans and legislation, 2) permitting procedures, and 3) enforcement.

## 5.1 Design of spatial planning policy to protect nature

| Bonaire | Saba | Sint Eustatius |
|---|---|---|
| Bonaire has an extensive framework of legislation pertaining to spatial development and nature and a comprehensive spatial development plan. In principle this framework provides a solid foundation for spatial planning in balance with nature. In practice, the lack of political support for the official framework, extensive nature of the legislation seems to hinder proper execution, particularly given the limited capacity for execution of permits and enforcement on the island. And lack of one focal point for documents and permits required. In addition, it is suggested that the combination of laws and regulation with different origin (former Antillean Netherlands, island level and the Netherlands) has created a legal framework that is not always consistent and may leave room for interpretation in spatial planning decisions. | On Saba there is no spatial development plan in place nor in development. There are some building regulations in place, but these are not developed to protect nature. On Saba there is consequently no strong local legislative basis for conserving natural values on the island outside the confines of the Mt. Scenery National Park. | The combination of the island ordinances on Sint Eustatius combined with the spatial development plan provides a solid foundation to prevent negative effects of spatial development on nature on Sint Eustatius. The spatial development plan provides clear guidelines for evaluating the impact of spatial planning decisions on nature and the environment. |

## 5.2 Permitting procedures

| Bonaire | Saba | Sint Eustatius |
|---|---|---|
| On Bonaire, in some cases 5 permits (6 procedures when including EIA) can be required for spatial development in the coastal zone. In the context of limited enforcement capacity, the high number of potential permits can be counterproductive. This can lead to missing permits and lack of enforcement then leads to unsanctioned activities occurring. | There are a number of permits that can be required depending on the activities. In the decision to issue a permit, there seems to be no procedures or checklist in place to prevent damage to nature and natural values. Furthermore, permitting procedures appear to suffer from a lack of clarity and ease of access for both applicants as well as relevant authorities. | While the spatial development plan provides guidelines for assessing the impact of spatial planning decisions on nature and the environment, it is not always clear if these guidelines are sufficient to prevent the majority of negative effects on nature. While the revision of the spatial zoning plan that was reviewed suggests ways in which negative impacts could be addressed, no concrete requirements are described. |

## 5.3 Surveillance and enforcement

| Bonaire | Saba | Sint Eustatius |
|---|---|---|
| Supervision and enforcement on the island do not function at an adequate level when dealing with larger projects. This causes unsanctioned developments to occur on the island. Suggested reasons for this inadequacy include the lack of coordination between responsible authorities and the lack of clear enforcement targets and objectives on Bonaire. In addition, the convoluted system of permits and legislation and the abstract nature of criteria on what is and is not allowed, is expected to increase the likelihood of errors. | Based on observations by the nature management organization on Saba, there is little to no surveillance and enforcement on infringements on the national park on Saba. A lack of capacity and interest to enforce appears to be an explanation for this. | Surveillance and enforcement on Sint Eustatius seem to be inadequate to an extent. In the case that was studied, it appears that ecological and environmental conditions set out in the revision of the spatial zoning plan were not fully met and that construction of an unsanctioned pathway on the coastline was conducted without intervention. |

## 5.4 Overall conclusion

The case studies identify several cases where natural values came under threat or are still under threat as a result of spatial development. The underlying causes are not identical for the islands but there are some common patterns that can be identified. On both Bonaire and Sint Eustatius there are spatial development plans and island ordinances in place that provide a good basis for nature sensitive spatial planning. In practice it appears however that the rules and regulations set out in legislation are not always adequately followed, resulting primarily from inadequate surveillance and enforcement. On Bonaire, the complexity of the permit system also appears to be counterproductive. On Saba, the lack of a spatial development plan means that there is no clear legislation on preventing negative effects of spatial planning in relation to the nature policy goals apart from. In general, surveillance and enforcement seem to be the areas where the greatest improvements could be made out of the three elements of spatial planning that we described in order to improve spatial planning The next chapter contains a literature review of best practices to improve spatial planning on the islands to better align with nature policy goals.

# 6 Best practices

In order to be able to understand how spatial planning processes on the islands can be improved to be more aligned with nature policy goals for the Caribbean Netherlands it is beneficial to study such processes on other islands. To gain this insight a literature review was conducted in the context of the present study. For this review we analyzed a selection of scientific articles that concern spatial planning and nature on islands. The aim of this review is to identify common challenges for spatial planning in relation to nature in an island context and to study ways to deal with these challenges. In addition, we analyze how spatial development affects protected areas. Answers to these questions will shed light on potential recommendations for the Caribbean Netherlands. Literature on the topic of best practices in spatial planning in island contexts is scarce and the findings presented in this chapter are based primarily on the comprehensive review on the distinctive nature of spatial development on small islands undertaken by Fernandes and Pinho (2017) and Mahadeo (2022), as well as the report developed by Debrot et al. (2018) detailing the state of nature in the Caribbean Netherlands.

## 6.1 Spatial development challenges on small islands

In the review of Fernandes and Pinho (2017), they list a couple of challenges that seem to be quite common surrounding spatial development on (small) islands. First, they mention the fact that in general small islands have a distinct set of challenges due to the difficulties associated with achieving a sustainable distribution of economic, environmental, and social interests. As such, one or more of these interests can often lead to trade-offs with other interests.

One of the specific challenges that they describe lies in the unique natural context of islands. Islands often harbor endemic species that are only found there (Dommen, 1980; Robertson, 2007) and they can have crucial ecosystem types that offer essential services to communities on the island. For the Caribbean Netherlands, the key ecosystems that are particularly important are the coral reefs. Dolman (1990) ascribes the importance of these ecosystems to their capacity to negate wave energy and thus to protect several crucial coastal functions on islands. For example, on Saba an ecosystem that is of particular importance is the cloud forest, which helps reduce erosion and mitigates the risk of landslide on the slopes of Mount Scenery. At the same time, these ecosystems often get pressured by development on islands where space is limited.

Another challenge that is often prevalent on small islands is the lack of capacity for public services, particularly when compared to the mainland (Fernandes & Pinho, 2017). This is mainly attributed to the small population size on islands. Minimum population numbers for having adequate local public services have been estimated at 4000 minimum (Planistat, 2003). If we take this minimum, then Saba and Sint Eustatius are already below the limit that would be theoretically required to have adequate public services. In the context of spatial planning this can be the case. Adequacy in this context refers to capacity in terms of the number of people as well as the diversity of skill sets required. This lack of capacity was also noted in the context of Marine Spatial Planning in Eastern Caribbean States (Mahadeo, 2022), island states that are in many ways similar to the Caribbean Netherlands.

## 6.2 Improving the interface between spatial development and nature on small islands

Solutions dealing with the challenges described in the previous sections are context specific. If we look at the Caribbean context, there appear to be a number of potential solutions, particularly aimed at addressing the lack of capacity and expertise that is required for proper spatial planning. Mahadeo (2022) provides a number of suggestions that, although

developed in the context of Marine Spatial Planning, can potentially also be used to address issues in terrestrial spatial planning. She mentions the development of long-term plans for developing local capacity for different skill sets needed for spatial planning processes. This should then also be combined with talent retention, to prevent capacity that is built up from subsequently leaving the island.

Long-term strategic planning and vision by both national and local government plays a critical role in balancing natural and socio-economic values in spatial development. Governments are responsible for shaping the physical, social, and economic fabric of communities through policies and investments that impact land use, transportation, housing, and other key aspects of the built environment. By establishing a clear and integrated vision for spatial development, governments can ensure that their policies and investments support both economic growth and sustainable communities. In the context of small islands with limited resources this also includes prioritizing areas for specific purposes and sometimes making trade-offs between different values. In the Caribbean Netherland where space is limited, developing a hierarchy in importance of natural areas, prioritizing areas with the highest biodiversity, could be a way to alleviate pressure on high importance areas by opening up room for development in areas of lower biodiversity value.

Other potential improvements in spatial planning are described by Mycoo (2016), who studied spatial planning in the anglophone Caribbean. She mentions the importance of public and non-governmental organization (NGO) involvement in participatory planning processes. In doing so, political interference in planning can be decreased due to the informal control exercised by public participation. Another interesting recommendation that she makes is to increase the use of modern technologies and tools. Some cost-effective methods that she mentions include the use of digital forms where individuals or organizations can report breaches of spatial planning regulation or the use of satellite imagery and drones for surveillance.

## 6.3 Enforcement of spatial planning in the European Netherlands

In 2021 an advisory committee for the Dutch Ministry of Infrastructure and Water Works (I&W) published a report on the system of permitting, surveillance, and enforcement (VTH) on spatial development in the European Netherlands[31]. Starting in 2013 a new system of VTH was developed in the European Netherlands, which led to the establishment of 'Omgevingsdiensten' (OD) as executive agencies charged with VTH responsibilities. These OD generally operate on a level above municipalities but below the provinces, corresponding to 'police regions' covering a number of municipalities. These OD were developed to ensure regional uniformity in VTH while at the same time ensuring a measure of independence of VTH from the legislative bodies. OD are mandated by the executive councils of municipalities to perform their tasks. In addition, they were envisioned as an extension of local governments and to ensure that VTH tasks could be executed in sufficient quality and quantity.

Similar to what is occurring in the Caribbean Netherlands as described through the case studies, the VTH system in the Netherlands also does not operate to the desired effect. The committee mentions four distinct trade-offs at work in the system that manifest in the European Netherlands, three of which are also particularly relevant in the context of spatial planning in the Caribbean Netherlands. These are as follows:

1. **Nearness versus independence**: The extent to which OD or similar executive VTH agencies takes local concerns into account while remaining independent from unwarranted influence from the executive bodies of the local government.

[31] Om de leefomgeving Omgevingsdiensten als gangmaker voor het bestuur | Rapport | Rijksoverheid.nl

2. **Smallness versus robustness**: Executive agencies that focus on a small region are desirable for taking into account the local context but can be limited in terms of capacity and knowledge.
3. **Horizontal intergovernmental supervision versus vertical oversight:** The extent to which there is horizontal supervision by the executive bodies of the local government on the executive agency responsible for VTH versus the possibility for vertical supervision by provinces on municipalities or by national government on provinces (and in some cases on municipalities).

These contradictions are at the basis of some of the issues that are at work in VTH in the European Netherlands. The most important conclusions by the committee were that independence of executive agencies has often been made subordinate to nearness, there is a lack of robustness in executive agencies due to a lack in scale amongst others, the lack of oversight on VTH agencies, and lastly, the lack of direction by the national government. In their report the committee provides a list of ten measures that should be taken to reach a more effective, capable, and future-proof VTH system. These measures are divided into three primary vectors for change:

- **Increasing effectiveness and capability:** For executive agencies to operate effectively they require amongst others a minimum scale, capacity, and knowledge relevant to executing their tasks and uniformity in tasks between executive agencies in different regions.
- **Strengthening independence**: Ensure that the executive agency has the mandate to execute its oversight and enforcement responsibilities independently from the local government. The committee suggests making the granting of the mandate by the local government mandatory. There should still be a possibility for the local government to direct the executive agency to adapt their enforcement in cases of particular local concern, but this should be done through a proper procedure.
- **An adapted framework of roles, tasks, and responsibilities:** Lastly, the committee emphasizes the need for governmental proactive governance oversight. This oversight should, in the case of environmental regulations, be conducted by the 'Inspectie Leefomgeving & Transport'.

While OD have a primary focus on VTH pertaining to environmental legislation and not always on nature legislation, the recommendations for VTH made by the advisory committee align with some of the most important observations made in the case studies for the Caribbean Netherlands. The contradictions mentioned in the previous sections are also found in spatial planning enforcement on the BES islands and as such the recommendations also form a basis for improving VTH on the islands where it concerns spatial planning. In particular, the need for proactive oversight from the national government seems pertinent. Though this type of oversight would conflict with the principle of nearness in enforcement of spatial planning, the committee notes that in other fields there have already been exceptions made to this principle. They stress that there are sufficient pressing reasons for making such an exception in the case of VTH of environmental legislation by executive agencies.

## 6.4 Protecting natural values in protected areas through spatial planning

The effects of spatial development in surrounding areas on natural values in protected areas is well established and leads to negative impacts on these values (Leroux & Kerr, 2013, D'Angelo & Wiedenmann, 2014). Roberts et al. (2017) highlighted the role of ground cover by vegetation on Bonaire in improving coral reef health. Debrot et al. (2018) also clearly describe the negative effects of coastal development on coral reefs. They mention the need for dealing with disturbed natural water systems that originate from removal of local vegetation for development purposes, and which can lead to the washing out of sediment

onto the reefs. Cloud- and rainforests in the Caribbean Netherlands are also analyzed in their report, indicating that this unique habitat that is only found in limited areas on Saba and Sint Eustatius is also under pressure. One important aspect in the protection of this habitat that Debrot et al. (2018) mention is the need for legal protection. Since the publishing of the report the Mount Scenery National Park was expanded to cover over 350 hectares. However, as is discussed in the case study, stronger enforcement of legal protection still appears to be required to ensure that the forest is not damaged by the encroachment of spatial development.

# 7 Recommendations

The goal of this study is to provide recommendations for improving spatial planning to contribute to nature policy ambitions in the Caribbean Netherlands and the strategic goals described in the NEPP-CN. These recommendations should allow WWF-NL to provide input into the spatial development policy for the Caribbean Netherlands that is currently being developed. Based on the expert opinions in the selected case studies and the literature review, potential recommendations are developed that should be practical in terms of the ease of implementation and that should be feasible.

The case studies that are described in this report highlight some of the issues and conflicts between spatial planning and nature policy goals on the islands of Bonaire, Saba, and Sint Eustatius. From these examples it is obvious that shortcomings in spatial planning can be identified on all three islands. Based on the literature review it becomes apparent that some of these issues are typical of small islands, such as buffer zones around natural areas that can conflict with other spatial interests due to a lack of available space on islands and as a result can be smaller than would be desirable for conserving natural values. Earlier studies and investigative reports have suggested a number of potential solutions to the issues identified in this report. When combined with input from stakeholders on the islands they are distilled into the following set of recommendations.

## 1. Improve the spatial planning governance framework

As could be gleaned from the case studies, particularly on Bonaire, governance and enforcement of nature legislation related to spatial planning and the spatial development plan itself does not always function as desired. Enforcement should function rapidly and effectively to prevent spatial development activities from occurring instead of having to deal with the results after the fact. To facilitate better governance of spatial planning on the island the following recommendations are made:

- Enforcement strategies for nature related legislation and regulations in spatial development plans.
  Develop an island-based enforcement strategy for nature-related regulation and spatial development plans with all parties (both local, regional, and national) that have a responsibility in this field. This strategy should create clarity on responsibilities and authorizations of all entities involved in the enforcement chain and could increase ownership over nature inclusive spatial planning. In addition, the strategy should also describe how accountability will be guaranteed, indicating which national organization monitors performance and can intervene in cases where enforcement is found lacking.
- Implement enforcement platforms on the islands, with representatives from organizations with enforcement responsibilities.
  Development of an enforcement platform where agencies and organizations tasked with enforcement tasks, identified in the enforcement strategy, hold regular meetings to define mutual priorities, coordinate enforcement activities, share information and increase transparency on enforcement decisions. On Bonaire such a platform is already in place, on Saba and Sint Eustatius such a platform should be developed. These platforms should include local executive agencies, the nature organizations, other organizations with bavpols and the relevant national agencies such as the ‘Inspectie Leefomgeving en Transport’.

- Develop a central facility for the Caribbean Netherlands that can provide expertise and advice on spatial planning related issues, particularly related to nature.
  This facility should be able to provide authoritative advice on Environmental Impact Assessment and studies for revisions of zoning plans. A body on the regional level seems desirable to lessen capacity needs on the islands themselves and to ensure uniformity in evaluations across the islands. This could for example be vested in the 'Commissie voor Natuurbeheer en – Bescherming voor Caribisch Nederland' (CNBCN) for which there is a legal basis but that has not been formed yet by the national government. This regional committee could build on the experience of the NCB that is already in operation on Bonaire. In addition, a relationship between the CNBCN with the Dutch Commission for Environmental Impact Assessment ('Commissie voor de milieueffectrapportage') based in Utrecht could be established to build capacity and for quality assurance.

## 2. Conservation of natural values through strategic spatial planning

In order to protect natural values on the island and to strive toward the strategic goals set out in the NEPP-CN it is important that natural value considerations are incorporated directly into spatial planning development plans. The recommendations below provide concrete suggestions to do so:

- Improve long term strategies for island development.

  Identify an appropriate and realistic balance between natural, social, and economic values in spatial planning on the island by developing a joint strategy for the island combining various viewpoints and existing strategy documents. In such a strategy a prioritization of areas for development versus conservation should be made. This strategy should then be at the basis of the zonal designations in the spatial development plan. Of paramount importance in a n inclusive stakeholder process and public awareness campaign to ensure that inhabitants are aware of and understand the strategic vision for the island.

- Establish larger and more appropriate buffer zones surrounding National Marine Parks.
  Currently, a buffer zone is only prescribed in the spatial development plan for the coastal zone of Bonaire. However, even this buffer zone is based on a 'horizontal' 15-meter buffer zone from the highwater mark that does not necessarily provide adequate protection of natural values. In order to better protect coral reefs in the coastal zone, buffer zones specific for each island should be determined. Aspects to be considered in the development of a suitable buffer zone include amongst others:

  - Given that sea-levels are rising and the non-uniform height gradient along the coastline, one aspect to take into account for a buffer zone is the 'vertical' limit of the buffer zone. At present only a 15-meter 'horizontal' limit exists on Bonaire, but this could be improved by also adding a vertical dimension. This vertical limit is particularly relevant in the context of watersheds, as such areas can form 'conveyor belts' for sedimentation that are not addressed by a 15-meter horizontal buffer.
  - As described in Chapter 5, the removal of native vegetation is one of the primary local drivers for increased sedimentation in coastal waters and thus a leading cause for declining coral reef health. Given this fact relevant authorities could consider developing a separate and more

extensive buffer zone where the removal of native ground cover vegetation is not allowed in principle or appropriate mitigation measures are applied.

    - Ensure that spatial planning in watersheds and wetland areas functions to prevent sediment from washing out into sea. By preventing sedimentation upstream through spatial planning, sedimentation on the reef will also decrease.

- Establish buffer zones around National terrestrial Nature Parks.

  As can be seen in the case study on Saba, buffer zones around terrestrial parks are currently not developed for the islands. To ensure better protection of these areas and to prevent encroachment of development on their borders, it could be beneficial to develop buffer zones where development is prohibited or limited. The minimum extent of terrestrial buffer zones is context dependent and depends on the purpose of the buffer. For example, if a nature park lies downhill of an area where development occurs then the buffer zone should be sufficiently big to prevent pollution and sediment from washing into the nature areas. In practice, spatial planning practice should include the need to identify the need and purpose of the buffer zone, and the extent and characteristics of the buffer zone need to be determined for each of the terrestrial nature parks.

## 3. Capacity-building and national support

Crucial to all aspects of effective spatial planning to protect nature is the need for local island capacity within the responsible entities. This means both in terms of FTEs and in terms of expertise. This issue was identified both by stakeholders on the island as well as in the literature review. In addition, as can be learned from the case studies, nature values often appear to not be the primary concern of decision makers. Notwithstanding the vital importance of the development of local economies, natural values need to be considered in spatial planning decisions. There is thus a need for a measure of independence in oversight and enforcement activities to ensure that these occur even if interest from the local government to do so is lacking. Concrete steps that could be taken include:

- Evaluate the need for an ‘Omgevingsdienst Caribisch Nederland’.
  In the European Netherlands the ODs form a vital cornerstone of oversight and enforcement for environmental and in some cases spatial legislation. While the ODs have their own issues in the European Netherlands, they nonetheless offer vital capabilities for oversight and enforcement. The need for an OD or similar agency that can act above the island level should be considered for the Caribbean Netherlands.

- Develop traineeships with targeted incentives for local talent to be employed in local agencies involved in this field.
  Ideally the additional capacity discussed in the previous recommendation should come from the islands themselves as talent from the islands is more aware of local conditions and structures. By developing traineeships for local talent with targeted incentives (e.g. good salary) for them to remain on the island, capacity in local agencies could be increased. Traineeships could form a way of developing local talent to meet the needs for spatial planning on the islands while at the same time expanding the potential pool of local talent to draw from.

- Incentivize and support the utilization of tools and technologies that can help alleviate capacity and resource limitations on the island.

This could for example entail the use of spatial development monitoring through drone and/or frequent remote sensing surveys that can help lessen the need for on the ground surveillance work. Drones in particular could be of added value, as they could be independently operated by authorities on the island, where remote sensing depends on satellites that are outside the direct control of the islands. They would allow for up-to-date aerial imagery of the island, that could be used to check whether permit conditions and zonal designations are being adhered to. Another potential technology that could help alleviate capacity limitations is the use of Artificial Intelligence (AI). Although still in its infancy, AI might be able to take over more routine operations, for example by performing checks on permit applications.

- Proactive oversight and involvement by the national government agencies in spatial planning on the islands.
  Capacity for spatial planning cannot solely rest on island agencies due to their capacity issues. Active support and involvement from ministries and others either solicited or unsolicited in cases where clear issues arise are needed to help alleviate the burden on overstretched island agencies, but is sometimes lacking. While autonomy of the islands is rightly considered as important, it is apparent that more proactive oversight by the national government is inevitable if the quality of permitting procedures and enforcement is to be guaranteed.

- Ensure that spatial development plans are made and updated on a regular basis for all three islands.
  According to the legislation, spatial development plans should be made on the island level. However, the national government can stimulate their creation though active support and official directions (‘aanwijzingen’) that the national government can send to the Executive Councils under the ’Wet GRO BES’[32]. These directions can help to compel the public entities on the islands to develop or update spatial development plans in case national interests (‘rijksbelangen’) dictate the need for changes in spatial development planning.

- Provide specialized training for personnel involved in monitoring and enforcement activities

  Education for supervisors (toezichthouders) and extraordinary agents of police (BavPol) around each discipline is necessary for them to operate more effectively together with traditional enforcement agencies.

## 4. Improve clarity on spatial planning processes and permits

An important aspect is the need for more clarity for the private sector on permitting procedures and the conditions that they need to fulfill for acquiring permits for construction activities. This recognizes the fact that damage to nature resulting from spatial development might not be related to negligence or disregard but could indicate an information gap. There is also a need for more clarity for the public on spatial planning processes and requirements. During the research for this document this became apparent as finding all the relevant legislation was not an easy task. In general, a need for transparency and a greater ease of access to information pertaining to spatial planning is required for the Caribbean Netherlands. Developing

[32] wetten.nl - Regeling - Wet grondslagen ruimtelijke ontwikkelingsplanning BES - BWBR0028218 (overheid.nl)

standardized and digital avenues for acquiring information can also alleviate some of the capacity limitations on the islands. Some suggested solutions include:

- Investigate the potential to reduce legislative complexity.

  As can be seen on Bonaire, there is a large number of spatial planning related legislation and associated permits that lead to an excessive burden on the executive agencies of local government. There is a need for an evaluation of this legal framework in an effort to simplify the system. An example of movement in the direction of reducing complexity is the 'Inrichtingen en Activiteitenbesluit BES' that is set to replace the Island Nuisance Ordinances in the near future, and which should provide a more unified framework.

- Evaluate whether permitting criteria are well-defined and limit room for interpretation to the greatest extent possible.

  Criteria for permitting and changes in zonal designations in development plans should be as well-defined as possible to leave out as much room for interpretation as possible. This helps in ensuring a level-playing field for permits, while also potentially helping to lessen the burden on local executive agencies by facilitating more straightforward checklists.

- There is a need for an online portal and information counter where businesses as well as the public can find all information and legislation related to spatial planning requirements, particularly pertaining to nature.
  There is a need for greater ease of access to information for businesses and the public. To ensure that the community adheres to spatial legislation it is of course vital that they can find all the requirements that they should meet for distinct types of developments. In cases where online information is insufficient there should be information on reaching the relevant institutions.

- Provide user-friendly and standardized complaint procedures related to spatial planning.
  An avenue for doing so could be the creation of a digital form for lodging complaints by individuals or entities related to spatial regulation violations. Such a system could also benefit from an entity at the level of the Caribbean Netherlands, to ensure uniformity and transparency in the handling of complaints. In the European Netherlands in the context of the new 'Omgevingswet' an online portal and services are under development[33] to facilitate a national system of registering permit applications and complaints pertaining to spatial planning. A centralized system for the Caribbean Netherlands could potentially benefit from the work that has already been done on the mainland, where an online platform is being developed under the ultimate responsibility of the Ministry of Interior Affairs and Kingdom Relations.

- Hold regular information sessions, e.g., once a year on the relevant ordinances and permitting procedures.
  Through these sessions stakeholders that have a need for information on spatial planning requirements will have easier access to information, a platform where they can ask their questions and to get to know relevant entities and persons within the local government. In addition, it will help the relevant authorities to identify potential developments on the island in an early stage.

[33] https://aandeslagmetdeomgevingswet.nl/ontwikkelaarsportaal/dso/processen/vergunningaanvragen/

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