

Healthy Dutch Caribbean Islands - Nature conservation, business improvement and a resilient community by an integral approach

Final Summarizing Report

Sjef Staps & Nico Polman



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Healthy Duch Caribbean Islands – Nature conservation, business improvement and a resilient community by an integral approach.

Final Summarizing Report

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Summary

This report summarises the findings of the PPS project "Healthy Dutch Caribbean Islands – Nature conservation, business improvement and a resilient community by an integral approach," which was conducted on St. Eustatius between 2021 and 2025. The project's objective was to develop resilient and sustainable business models strongly linked to nature conservation, with a view to addressing the island's ecological challenges and fostering a nature-inclusive economy.

The ecosystem of Sint Eustatius is under threat from a number of factors, including declining coral reefs, overgrazing, unsustainable fisheries, the climate crisis and waste management issues. These environmental challenges have a negative impact on the economy, particularly tourism, which faces a significant decline in the coming decades. The central question guiding the project was: "Which socially acceptable and economically feasible solutions for a nature-inclusive St. Eustatius can be implemented?" This question was broken down into sub-questions addressing nature inclusiveness, social acceptance, and economic feasibility.

The project utilised an applied research approach, with a focus on the development of novel sustainable business models. The Bolk model for Positive Health and Living Environment, in conjunction with the Wageningen Economic Research approach and a "canvas" approach for business model design, was employed to identify local needs, desires, and the positive qualities of all involved actors (nature, people, organisations). For this purpose, workshops were conducted with stakeholders to gather input, with each business case including a leader, stakeholders, a subject, and a financially positive perspective.

The project faced several challenges, including the COVID-19 pandemic, cultural differences, limited local entrepreneur participation in workshops, the reorganization and closure of CNSI (a consortium member), and the departure of a key government contact.

The project progressed through four phases, aligning with the work packages. Key results included stakeholder mapping, ecological and economic assessments, social assessments, workshops using the Bolk model, in-depth solution assessments, business model canvas development, and pilot implementation. Two practical business cases were developed: sustainable livestock farming (fodder production) and a Nature Awareness Festival. Two additional explorative cases were also pursued: a tourist tax for environment, agriculture, and fishery, and a marine systems case.

The fodder production case addresses overgrazing by promoting the production of high-quality fodder, reducing the need for roaming livestock, and allowing for natural vegetation recovery. The pilot involved planting different fodder types and selling the harvest to livestock owners. Nature Awareness Festival: (Details to be added)

While the project aimed for four practical business cases, it successfully developed two, along with two explorative cases.

The Bolk model proved valuable for its structured approach and stakeholder inclusion. Combining it with the Business Model Canvas strengthened the process. The fodder production pilot shows promise for collaboration between livestock owners and farmers and offers a potential alternative to imported feed. The project generated numerous ideas, but not all translated into viable business models.

The Bolk method, in combination with the canvas model, is ready for implementation on other islands. Scaling up requires attention to policy organization, a clear vision for nature-inclusive models, stakeholder participation, resource availability, careful planning, and learning from this project's examples. The report also highlights the CANVAS approach, its results, and conclusions. Specific recommendations for each work package task, including dissemination, roadmap creation, and policy advice are included in separate deliverables.

1 Introduction

Nature is crucial for the Dutch Caribbean society, offering a liveable environment to those living on the different islands (e.g. preventing erosion and water provision) and attracting tourists from across the globe. Sustainable nature conservation including for example erosion prevention and water provision is necessary to ensure that nature and the economy will be healthy in the future.

St Eustatius' ecosystem is affected by various developments. Clearly, the decline in coral reefs on the Caribbean islands, including St Eustatius is a threat to tourism and coastal protection. Another main nature conservation problem is overgrazing of land by roaming life stock. Other issues include fisheries, unsustainable land use, waste dumping and practices that allow large scale vegetation removal, all of which contribute to erosion and sedimentation. The project linked to the strategic goals of the Nature and Environmental Policy Plan for the Caribbean Netherlands (2020-2030) on overgrazing with cultural and economic business actors on the island: husbandry, travel- and air industry, recreation and tourism (including scuba diving), hotel and catering industry, agriculture, waste management and project developers.

Nature-inclusivity is a form of sustainability that aims to benefit nature (beyond merely protecting it) and design business models accordingly. It results in nature-based solutions that are inspired by the processes and functioning of nature and that achieve social, environmental and economic benefits.

The project focuses on the island of St Eustatius. **The project goal** is to develop resilient and sustainable business models, with a strong connection to nature conservation.

The project schedule is presented in the figure below.

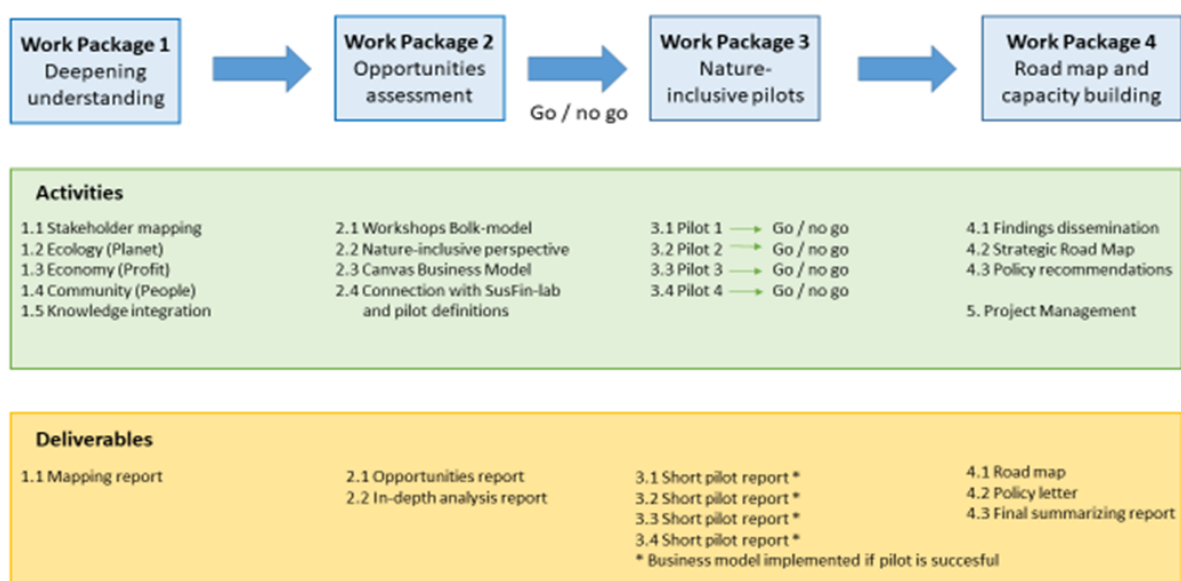


Figure: Project Work Packages, activities (A) and deliverables (D).

The public-private partnership (PPP-project) 'Healthy Dutch Caribbean Islands – Nature conservation, business improvement and a resilient community by an integral approach' is carried out within the framework of the '*Topsectors Agri & Food, Water and Maritiem and Tuinbouw en Uitgangsmaterialen*'. The project was planned for the period of 2021 through 2024 and received an extension until April 2025.

- The present report is deliverable D4.3: the Final summarizing report. The project has been carried out by a consortium consisting of the following organizations:
- STENAPA (proposal submitter)
- Wageningen Research
- Louis Bolk Institute
- Van Oord Dredging
- CNSI
- DCNA
- Van Hall Larenstein.

The primary project focus is on applied research.

The following chapters include the research question and -goal, the methodology applied, results, conclusions and recommendations.

2 Research question and goal

The main research question guiding the project was: which socially acceptable and economically feasible solutions for a nature-inclusive St Eustatius can be implemented?

This consists of various sub-questions in different domains.

- From a nature inclusiveness perspective, the questions are:
 - What are the main ecological problems that threaten the economy?
 - Who are the stakeholders and how do they experience and describe the current situation, problems and opportunities?
 - What are possible nature-inclusive solutions to these problems?
 - What are the expected benefits of these solutions for the local stakeholders?

- From a social perspective, the project needs to answer the following questions:
 - Who are the relevant stakeholders to implement nature-inclusive solutions?
 - What solutions are acceptable for the stakeholders?
 - How can local stakeholders be trained and involved in the implementation of such solutions?

- From an economic perspective, relevant questions are:
 - What is the economic feasibility of the solutions identified?
 - How can additional funding for the solutions be leveraged?
 - What is the potential involvement of local entrepreneurs?

The consortium shared goal was:

- 1) to develop a business cases for nature inclusive solutions,
- 2) to implement it and
- 3) to secure it for long term through training of local entrepreneurs (scaling-up of results).

For that to happen, this project was carried out in close collaboration with local staff: both OLE (Openbaar Lichaam St Eustatius) and STENAPA (and potentially business partners as well) need additional local capacity to factually take actions on the ground. This was carried out in close collaboration with local authorities and the broader community (capacity building).

3 Methodology

The project focuses on St Eustatius. If successful, there is a potential to roll out the developed innovative approach to socially acceptable and economically feasible solutions for a nature-inclusive society across the other Dutch Caribbean islands. Within the framework of this project, new sustainable business models were explored and developed based on robust natural systems through the identification of current nature conservation bottle-necks and opportunities to connect local people to private and public organizations and funding abroad. The Bolk-model for Positive Health and Living Environment (Van Wietmarschen et al., 2022) has been applied to identify in an integral way both the local needs and desires, as well as the positive qualities of all actors involved (nature, people, private and public organizations and NGO's) (Staps et al., 2025A). For this project, the 'healthy island of St Eustatius', regarded as the balance between People (community), Planet (nature) and Profit (economy), was the heart of the matter. The model was supplemented with the Wageningen Economic Research approach for exploring and developing financial and business models that are aimed at creating self-sustaining systems (see e.g. Polman and Dijkshoorn, 2019). This was done in an interactive way with stakeholders, connecting to the Louis Bolk model by using a 'Canvas' approach whereby innovative business models were designed (Staps et al., 2025B). The Canvas business model was developed in 2010 by Alexander Osterwalder and Yves Pigneur.

Based on the combined approaches, any business case formulated should include the following criteria:

- A leader, taking responsibility for the starting phase
- A group of stakeholders
- A subject
- A perspective for a financially positive business case.

The opportunities assessment for business cases started with the translation of the Bolk model for Positive Health and Living Environment (Van Wietmarschen et al., 2022). It was used in the workshops that were aligned with the project's goals and that were attended by representatives of Statia's inhabitants and organizations.

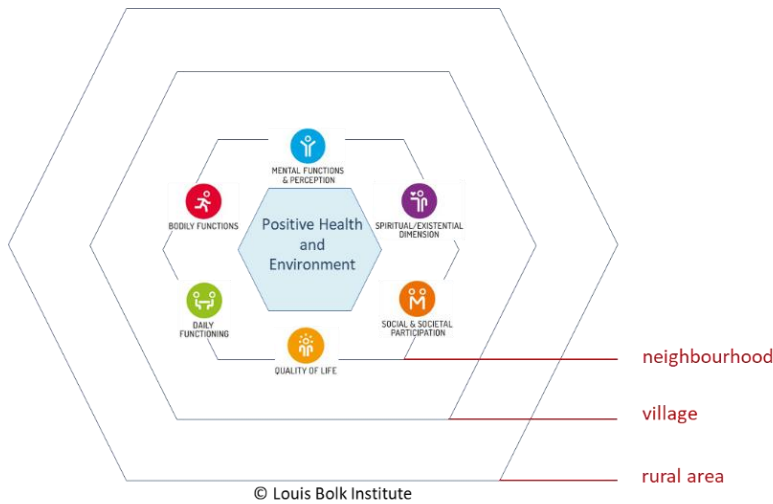


Figure: Bolk model for Positive Health and Living Environment

The Bolk model is an expansion of the Positive Health spider web, which is a conversation tool, toward a collective and more holistic approach for health in relation with the living environment, for example a neighborhood, or Statia's community.

The Bolk model acted as a framework, enabling the workshop attendants to give input for bottle necks, qualities and improvements in an integral and structured way. At Statia, the basis for the ideas for improvements was the questions which personal dreams the attendants had, related to possible improvements.

The Canvas business model was used to map and test different business ideas for valuing a product or service. This was done by representing all activities in a clear and visual way. The model provided insight into the key white spots in the realization of an idea and helped to think about testing assumptions. The canvas was used as a tool to develop, test and ultimately realize opportunities for nature-inclusive business models.

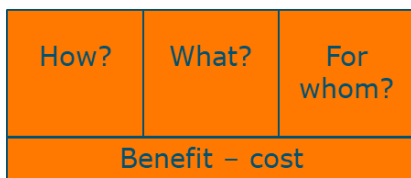


Figure Canvas business model (adapted from Osterwalder and Pigneur, 2010)

The model consists of the building blocks (see figure) that cover all facets of describing a business or business idea. At the heart is the value proposition (what?): what can the business offer the customer? This is followed by answering the questions to the right of the centre (for Whom?): who is the product for (customer segments), how is value delivered and how are customer relationships managed? Then comes the question of how the company creates value (with which partners,

what (auxiliary) resources are needed, and what activities are costly - what are the benefits, how and to whom? Finally, the balance of costs and benefits can be established (bottom row in figure). By fleshing out these building blocks, a farm business is able to describe any business idea clearly and thoughtfully. In their approach to the business model canvas, De Lauwere et al. (2024) incorporate elements pertaining to sustainability impact. This encompasses the positive and negative social, environmental, and financial consequences of business models. A business model functions within a social and physical context, thereby encompassing the social and physical barriers and drivers with which entrepreneurs are confronted. These barriers and drivers were addressed during the PPP at different moments.

The project consisted of four main work packages, each with different objectives, activities and outputs (see figure above). A detailed breakdown into tasks, detailed GANTT chart and timeline with milestones and deliverables is included in Annex 2.

- Work Package 1: to expand the knowledge based on nature-inclusive economy in St Eustatius.
- Work Package 2: to identify solutions to increase nature -inclusivity on St Eustatius, through the application of the Louis Bolk model for Positive Health and Living Environment, including an evaluation of the business potential of selected solutions. Using the CANVAS business model approach, this work package also assesses the potential for new nature-inclusive economic businesses pilots.
- Work Package 3: conducting four nature-inclusive pilots, in cooperation with local stakeholders, to collect evidence on the benefits of nature inclusivity for St Eustatius.
- Work Package 4: to conclude the project, outlining a future roadmap aimed at implementation beyond the four most promising solutions identified through the concerted action of policy-makers, research institutes, entrepreneurs and local stakeholders.

4 Results

4.1 Introduction

The project has been carried out in four phases (see Figure 4.1). The project started in 2021 and finalized in 2025.

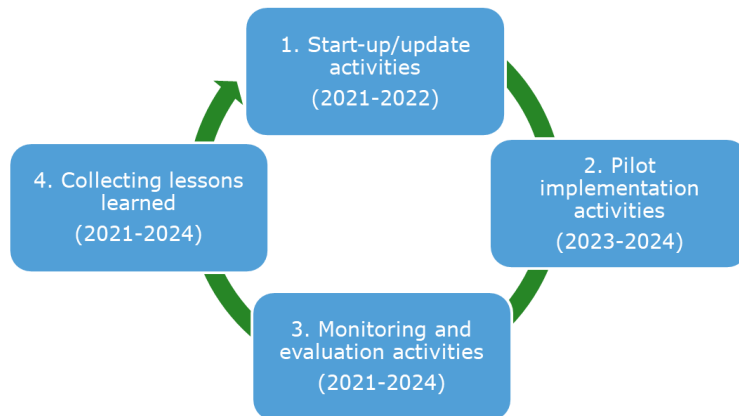


Figure 4.1: Phases in project.

In Section 4.2 we will discuss the results of the project following the 4 work packages as described in Chapter 3. In Chapter 4.3 we will elaborate on experiences throughout the project which had a significant impact on the project.

4.2 Main project results

The four work packages tasks have led to the following results:

- Phase 1: deepening understanding of the relation between society, ecology and economy.

Work Package 1:

- Task 1.1: Stakeholder mapping.
An overview of stakeholders: organizations, contact persons and interests.
- Task 1.2: Assessment of the ecological status and main ecological problems.
The project was linked to the related Dutch Nature and Environment Policy Plan and earlier work carried out by student of (among others) Van hall Larenstein.
- Task 1.3: Assessment of the economic structure St Eustatius, focusing on the main economic challenges and opportunities.
The economic structure, strengths and opportunities for St Eustatius were identified. The results were used for identifying opportunities for economically feasible nature inclusive innovations, in depth assessments and in the business case development.
- Task 1.4: Assessment of the community status, connection with the project and main challenges.
The social aspects related to the community at St Eustatius were identified,

resulting in preconditions for successful inclusion of the local community in the project process.

- Task 1.5: Integration of knowledge to benefit Phase 2.

The results from the environmental, economic and social assessments were combined in an analyses of challenges and opportunities for nature inclusivity at St Eustatius.

- Phase 2: Positive Health and living Environment model; workshops Economy, Ecology and Community

Work Package 2:

- Task 2.1: Positive Health and Living Environment model; workshops economy, ecology, community: opportunity identifications.

The Bolk Model for Positive Health and Living Environment was used in workshops, with the 'healthy' island of St Eustatius as a system with a sustainable balance between People (community), Planet (nature) and Profit (business)(PPP/ Triple P).

- Task 2.2: In-depth assessment of solutions for increased nature-inclusivity from Triple-P perspective.

Each innovation was evaluated from three angles: People, Prosperity and Planet.

- Task 2.3: Business model Canvas.

The Canvas tool was used for testing different business ideas, building on the Bolk model.

- Task 2.4: Connection with the Sustainable Finance lab.

The sustainable Finance Lab did not include the development of business models. The current project gives a follow up to the lab project.

- D3: In-depth analysis options nature inclusive economy

- Phase 3: Pilots Nature Inclusivity

Work Package 3:

- Task 3.1: Implementation and evaluation of pilot 1
- Task 3.2: Implementation and evaluation of pilot 2
- Task 3.3: Implementation and evaluation of pilot 3
- Task 3.4: Implementation and evaluation of pilot 4

- Phase 4: Roadmap and capacity building

Work Package 4:

- Task 4.1: Dissemination of findings to a broader stakeholder community
- Task 4.2: Strategic roadmap for nature inclusive Statia
- Task 4.3: Recommendations for policy-makers

Summarizing explanation of the deliverables:

- D1: short mapping explanation: exploring studies;
 - an overview of the (background of) environmental problems at Statia (pressures and effects, divided in terrestrial, aquatic and general themes.

- an overview of Statia's economical system; the economic challenges for small islands like Statia are:
 - the small size of the domestic market
 - the limited domestic resource base
 - the narrow structure of domestic output, import and export markets (trade)
 - effect of remoteness and isolation on transport costs
 - brain drain from the island (emigration of highly skilled and educated individuals from the island)
- specific challenges for Statia:
 - the vulnerability of the undifferentiated economy
 - sustainable land and water use
 - although compared to other islands in the region, tourism is less important, ensuring tourism growth in a sustainable way.
- D2: results of the workshops on Positive Health and Living Environment.

The table below gives an overview of stakeholders, relevant themes and selected workshop themes. Based on the experiences of the earlier project phases, relevant themes were described (see first row in table above). In the table, crosses indicate which themes are relevant for the different stakeholders.

Table: Stakeholders, themes and selected workshop themes (stakeholders in first column, themes in first row, the last four themes are the selected workshop themes)

	Nature fees / taxes	Reforestation	High food prices	Carbon Credits	Composting / biogas	Erosion prevention	Local market	Healthy food	Sustainable animal husbandry	Coral monitoring, protection, production	Water supply	Water management / nutrient runoff	Waste management / plastic ban	Mental health and well-being	Poverty and well-being	Nature and agriculture	Coral monitoring, protection, production	Waste management / plastic ban	Social and health
STENAPA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Government	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Made in Statia			X	X	X														
Hazel, Farmer			X	X	X	X	X												
Ms Brooks, Farmer			X	X	X	X	X												
Farmers cooperative																			
Fishermen repr.						X		X	X										
Chamber of commerce						X													
Van Oord				X	X			X	X										
LNV	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CNSI						(X)			X	X	X								
Futruue Coral Reefs								X											
Veterinary						X	X	X								X			
Schools													X	X	X				X
Oil Terminal Harbor																			
Statia /business ass.																			
DCNA	X	X			X	X	X	X	X										
Children / future generations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tourist industry*	X	X			X		X	X											
Waste management plant												X							

* department, dive shops, hotels, new resort

Legenda:

Nature and agriculture
Marine and water
Waste
Social and health

The table was also the base for the selection of stakeholders for the different workshops.

Finally, four themes were selected as overall-themes for the different workshops:

1. Nature and agriculture
2. Marine and water
3. Waste management
4. Social issues and health.

From the workshops, a first group of six preliminary business case ideas were derived:

1. Food security and Care Farm (Zorgboerderij)
2. Tourist tax for environment, agriculture and fishery
3. Nature Awareness festival
4. Bird watching tours
5. Community dialogue
6. Sustainable livestock farming (fodder production).

Eventually, it turned out that it was possible to develop two of these business case ideas to practical business cases:

1. Sustainable livestock farming (fodder production)
2. Nature Awareness festival.

Besides, two more explorative cases were carried out:

1. Tourist tax for environment, agriculture and fishery
2. Marine systems case.

The marine systems case was not a direct result of the workshops. However, from the project proposal, the ambition was to have two terrestrial and two marine businesses cases. Since no marine cases came out of the workshops and the number of practical business cases was limited, it was decided to add a marine case.

Business Case 1:Fodder Production

The overgrazing of roaming livestock on Statia has not only led to the decline in natural vegetation, but also to soil capping, reduced water infiltration, increased water run-off and soil erosion. The primary solution proposed to solve this problem is often to reduce the number of roaming livestock or even to stop grazing in natural areas by removing these animals. However, this not only negatively influences the livelihood of the livestock keepers/owners but also can have a negative impact on the natural environment

The idea of this business case is to identify specific areas that can be used for fodder production. Fodder with a high yield and nutritional value should be planted in these locations. The fodder that is harvested will be fed to the animals that are kept in an intensive or semi-intensive animal

husbandry system. With adequate feeding, animals will be kept by owners in holding pens and supplied with fodder, preventing them from roaming freely and destroying Statia's nature. This will increase natural recovery of the island's forested areas that have been damaged by the roaming animals. Additionally, setting aside land for constant fodder production will improve soil structure, reduce soil temperature due to constant shading and increase soil biodiversity in these areas. For this pilot, a designated area was used strictly for cut and carry fodder production. The pilot project basically focused on three types of fodder. These are barley, sweet potato vines, guinea grass/ Mombasa grass and a mulato II grass.

The fodder produced via cut and carry will be sold to livestock owners.

Expected results of reduced grazing by roaming livestock include:

- Provide high quality fodder for livestock
- Increase of:
 - water infiltration
 - vegetation production
 - soil organic matter
 - livelihood
 - Increase in livestock quality
- Reduction of:
 - soil capping
 - water run-off
 - soil erosion
 - livestock grazing pressure on natural environment
 - feed import and therefore also cost reduction.

The pilot is carried out at the farm of one of the island's arable farmers. The project management of the pilot is carried out by the Government.

The plot of land has been prepared in the beginning of 2024, after which the planting and maintenance of the fodder crops has been executed. In December 2024 the crop was harvested for monitoring purposes, in order to get insight in the quantity and quality of the crop. Samples were sent to the US for analysis.

The results of the feed analysis are given in the table below. The dry matter percentages of all three species seem to be relatively high. This might be caused by a suboptimal harvesting moment due to logistics. Between the three species there is variation in dry matter, crude protein and fibre content (ADF, NDF). This is reflected in the 'in vitro true dry matter digestibility (IVTDMD), TDN, NE-values and Relative Feed Value and Quality. Looking at the nutritional value, Mulatto 2 scores the highest, followed by Mombassa and Bermuda. Although Mombassa and Bermuda have

comparable crude protein contents compared to Mulatto 2, the higher fibre content and lower digestibility result in a considerable lower nutritive value.

Table 1: Feed value of three fodder species, first cut (early 2025)

Feed Analysis	unit	Mulatto 2		Mombassa		Bermuda grass	
		Avg	StD	Avg	StD	Avg	StD
Dry Matter	%	32	3	31	2	39	4
Crude Protein	%	9,1	3,7	11,0	4,5	8,8	2,1
ADF	%	30,9	3,1	42,7	4,0	44,4	1,7
NDF	%	56,7	3,9	65,1	6,5	66,4	1,2
NDFD	%	59,8	3,3	59,2	6,6	57,4	0,5
IVTDMD	%	77,8	3,4	73,0	7,5	70,1	0,8
TDN	%	56	2,6	50	3,1	47	1,6
NEL	Mcal/lb	0,5696	0,0290	0,5018	0,0344	0,4675	0,0179
NEM	Mcal/lb	0,5334	0,0402	0,4377	0,0494	0,3882	0,0261
NEG	Mcal/lb	0,2782	0,0370	0,1899	0,0456	0,1431	0,0246
Rel. Feed Value		107	11,6	81	11,9	76	2,5
Rel. Feed Quality		106	16,6	80	19,7	71	8,0

It would be interesting to follow the production of the grasses in the next 3 cuts. Logistics should take into account the optimal harvest moment for feeding value.



Pictures: impressions of the field pilot and water reservoir facilities.

Business case 2: Nature Awareness festival

In practice, developing a festival will be a process from awareness, to appreciation to valorisation (see Brouwer et al., 2018). Festivals have become key elements of event tourism (e.g. employment, business growth, impact on trade, investments). Further, there are opportunities to learn from experiences in other parts of the world which include the “Coral festival 2023” (Maldives; Maldives Coral Institute, 2025) and the “Scallop Festival” (Philippines; Fernandez-Abila et al. 2024). In general, there is need to overcome potential negative impacts (e.g. (mass) tourism on marine life (see Fernandez-Abila et al., 2024). A Nature Awareness festival may considered a long-term investment for making people aware of nature on Sint Eustatius. At this scale and as a pilot, it would not have been possible without support of the government and Stenapa. The pilot has shown the potential of nature festivals and will give valuable insight for repeating a Nature Awareness festival in the future.

Communication and venues

The festival was announced in advance in various ways, including the distribution of a poster (see figure for illustrative purposes).



Figure: Poster announcing Nature Awareness Festival

The festival was held at the Johan Cruyff Court. Food stalls were located nearby, but not on the pitch itself. The venue offered shade, and a pleasant breeze kept temperatures comfortable. Around 20 from the government and STENAPA ran children's games. Students from Van Hall

Larenstein assisted in the festival's preparation, and one student was present on the day for a internship.

The festival showcased many local organizations involved in nature, culture, and heritage, including the Farmers' Union and Made in Statia. Local entrepreneurs displayed their products to the people, such as indoor plants and a stand with local products. The participation of these local NGOs and entrepreneurs demonstrated community support. In that sense, you could say it stimulated the local economy.

During daytime, kids could play different games related to nature. For each game they played, the children got a stamp and a gift after completing all the games. The games and small prizes were stimulating and focused on a learning experience. Staff from STENAPA coordinated the games, including the escape room experience. There was a competition on who provided the best dish, a singing competition and dishes in the evening. Fish was served on one day and goat on the other.

Participation and impression

During the day, there were 50-100 children, often accompanied by parents. STENAPA showed and communicated a food web. The afternoon programme lasted until around 6 o'clock. The adults/parents also walked around during daytime. Children were enthusiastic and engaged and participated for more than an hour. They walked around in groups and there was a lot of social participation.

In the evening, there was a food competition in which adults participated. The competition was instrumental in getting people involved. About 5 competitors participated and visitors tasted dishes and voted. The festival was attended by about 40-50 persons in the evening. It is difficult to estimate the exact numbers. The programme lasted till 8.30 pm. The overall impression was that the festival was appreciated and everyone was enthusiastic.

A key issue that emerged during the course of the project was the significant investment of time required for its organisation. The provision of prizes and t-shirts was funded by the project, thereby incentivising the children's participation. The initiative received support from students, the government, and Stenapa.

The financial revenues generated were limited, precluding the feasibility of organising a similar festival in the future. The pilot did not yield a sustainable revenue model. For the future, participation fees and sponsoring may be considered. Attracting more visitors could also contribute to the viability of a Nature awareness festival.

4.3 Challenges encountered in the project

Throughout the execution of the project we encountered a number of challenges which had a significant impact on the execution of the project. Specific challenges that the project had to deal with:

- Covid, during the start and the first the project years. This lead to a delay in the start of the field work on Sint Eustatius.
- Cultural differences between the Caribbean and the European Netherlands and the historical background of the two (Oostindie en Veenendaal, 2022). We tried to collaborate as much as possible with local stakeholders to overcome this challenge.
- There is still room for growth in the number of entrepreneurs on Statia. Due to the limited number of entrepreneurs (see also Polman et al., 2017) at the island and the attendance of many governmental employees at the workshops, they were dominated by the latter. It would be beneficial to ensure a more balanced attendance at the workshops (government employees/others).
- During the project duration, the Dutch Government reorganized CNSI, one of the consortium members. It's facilities at Statia were closed. With that, CNSI as a base of operations fell away. This had a negative effect to the project, including the fact that housing and meeting facilities were no longer available. Besides, its employees were no longer available for project assistance, which had a negative effect on the contacts and the connection with the local people.
- During the project duration the project's contact person of the local Government, who had a strong motivation for and connection with the fodder production business case, changed jobs and left the government, and thus was no longer available for both the project and the business case.

5 Conclusions

Regarding the original research goal, it turned out that it was possible to develop two business cases instead of four: the fodder production and the Nature Awareness festival. The process of developing, implementing and testing nature-inclusive business models is challenging, but it provides a framework for Healthy Dutch Caribbean Islands.

The holistic and participative Bolk-model approach was evaluated to be successful, especially regarding:

- The structural phasing of successively bottle-necks, qualities and dreams
- The inclusion of a broad group of stakeholders.

The combination of the Bolk-model with the Business Model Canvas adds value and combines an integrated sociological / health approach with an integrated economic approach.

The pilot project on fodder production demonstrates a promising potential for collaboration between livestock owners and arable farmers. Potentially it can lead to a viable alternative for expensive cattle feed imports. More research is needed to work out the real potential within the boundary conditions of St Eustatius. This was no longer possible within the scope and timeframe of this PPP.

Despite increased awareness fostered by the Nature Awareness Festival pilot, this endeavor constitutes a long-term investment. It is anticipated that the initiative will result in more nature-inclusive decision-making; however, a process of appreciation and valorization for the festival itself is an ongoing process, which complicates the development of a sustaining nature-inclusive business model in the context of a 4 year PPP. At this scale, the undertaking cannot be accomplished without government support. The commercial viability of the initiative is yet to be ascertained. The prospect of repeating a Nature Awareness Festival in the future will be given due consideration.

Other conclusions are:

- Our approach proved to be useful in generating many ideas for developing business cases for nature-inclusive solutions.
- Our inventory resulted in many good ideas for business models to be considered for implementation. Two cases were implemented: fodder production and Nature Awareness Festival.
- The ideas did not yet result in long-term sustainable of business models. The involvement of local entrepreneurs allowed learning and training opportunities.

6 Recommendations

The Bolk-method is ready for implementation on other islands. Its adaptability extends to integration with the canvas model, offering a flexible framework for diverse contexts to develop innovative nature inclusive business models.

Scaling up this successful methodology requires careful consideration of several key elements, as highlighted by Dijkshoorn et al. (2024). These considerations are crucial for successful transfer and adaptation of the Bolk-method in combination with a Canvas Business Model approach to other islands. For upscaling to other islands, the following subjects are relevant (adapted from Dijkshoorn et al. (2024)):

- Policy organization: understanding the regulatory framework and active involvement of policy makers can guide in finding legislation to support transforming the system
- A clear vision and agenda on nature-inclusive business models provides the basis for effective strategies and guiding actions that promote nature inclusive business models.
- Stakeholders: many stakeholders with different interests and needs are involved in nature inclusive business models. The challenge is to ensure active participation. The Bolk model can support the interaction among stakeholders to develop new business models.
- Resources: short- and long-term financial support, qualified and enthusiastic people and available time. Some resources will be available on an island and others might need to be sourced from elsewhere. The Canvas business model gives a framework to get insight in resources and activities.
- Activities: careful planning, visioning, implementation and monitoring. This ensures that a process of developing nature business models are aligned with the goals of the island.
- Learning: support by the examples from this project. Islands can learn a lot from other islands, contexts and organizational structures to improve their business model.

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Appendix A: Deliverables

D1: Alphen, M., S. van den Burg, O. van Hal, S. Staps, and N. Polman (2025) Healthy Dutch Caribbean Islands; Economic and ecological assessments to support identification of solutions for nature inclusivity at Sintt Eustatius. Wageningen Economic Research. Wageningen, 2025

D2:

Staps, S., H. van Wietmarschen and M. Kershaw. Identification of opportunities for nature-inclusive business cases. Results of the workshops on Positieve Health and Living Environment (project Healthy Dutch Caribbean Islands). 2025.

D3:

Staps, S., S. van den Burg, N. Polman, M. Bogers, K. Kitson-Walters, E. Boman, M. Kershaw, S. Assink. Healthy Dutch Caribbean Islands - In-depth analysis report of options for nature inclusive economy. 2025.

D4: Wageningen Social and Economic Research/Louis Bolk Institute. Short pilot reports, 2025.

D5/D6: Polman, N. and S. Staps. Healthy Dutch Caribbean Islands: road map for nature inclusive business cases. Road Map and policy letter, 2025

D7:

Staps, S. & Nico Polman. Healthy Dutch Caribbean Islands - Nature conservation, business improvement and a resilient community by an integral approach. Final Summarizing Report. 2025.