

Environmental standards for resorts and hotels in the Netherlands Antilles

A survey of ten hotels and resorts on Curaçao



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Foreword

This report is the result of my internship for the Ministry of Public Health and Social Development of the Netherlands Antilles, at the Department of Environment and Nature. As part of the research during my three-month internship I did interviews with key people at some of the hotels on Curaçao and other stakeholders in tourism. In this report I have formulated an advice on the implementation of environmental standards for hotels and resorts on Curaçao.

I could not have written this report without the help of several people. I would therefore like to take this opportunity to thank Bart van Geleuken, Tim van den Brink, all members of the “Bedrijven Platform Milieu”, Mark Wieggers, and all people in Curaçao as well as the Netherlands that took the time to let me visit and interview them.

Summary

To diminish the environmental impacts of tourism on the environment of the Netherlands Antilles, environmental standards for tourism are needed. These standards can be legal or voluntary, like those in eco-certificates. Eco-certificates set voluntary standards that hotels and resorts have to reach, in order to be certified. These voluntary standards can also be used as a basis for legal standards. In this study the possibilities for using standards from eco-certificates for legislation for hotels and resorts on Curaçao as well as ways how these standards could be implemented are explored. The main subjects that were studied are energy, water, wastewater and waste. Three levels of ambition in environmental standards were distinguished for these four subjects: a high, normal and low level. To find out what the current performance of the hotels and resorts on Curaçao on these subjects is at the moment, interviews were done at ten of the major hotels and resorts on Curaçao. The people that were interviewed were asked what implementations and practices the hotels had for the four main subjects and what they thought was needed to increase and expand these environmental implementations and practices. From the interviews became clear that many different environmental implementations and practices exist on the island, but that not all hotels have an equal share in them, and that they are poorly communicated. Some hotels have environmental implementations on all subjects and have standards (almost) at the level that eco-certificates demand. Some hotels only have taken measures on one or two of the four main subjects, and some hotels are clearly falling behind on environmental management. Because of the lack of communication between hotels, knowledge on environmental implementations and success stories are often not shared. The lack of knowledge of the hotels on their energy and water consumption also contributes to poor environmental management: leakages but also (possibilities for) savings are missed, because monitoring is often poor. Furthermore it became clear from the interviews that the goal of environmental friendly tourism on the island cannot be met by voluntary measures alone, although many implementations are cost effective and have payback times of less than 2 years, or even less than 6 months. Legal measures are also required. For legal standards many chances lie in the instances that new hotel or a new part of an existing hotel are built. Water saving and energy saving measures that are implemented at this stage will save the hotel money later on, and are good for the environment. In the report examples of some of the most cost-effective and environmental beneficial implementations are given. For existing hotels legal standards should come into force after a longer time span of about ten years for example. In the meantime the government has the task to inform the hotels on the standards and rules that are coming, to enforce the legislation that is already in place, and to provide infrastructure and subsidies to make sure the standards that are set are not impossible to reach. Organizations like CHATA can provide platforms for the hotels to exchange knowledge. The 'normal' level of ambition should be possible to reach for tourism on Curaçao: hotels that want to go further can do so by taking the voluntary path and apply for an eco-certificate to distinguish themselves.

Samenvatting

Om de negatieve effecten van toerisme op het milieu op de eilanden van de Nederlandse Antillen te verminderen zijn milieu standaarden voor toerisme nodig. Deze standaarden kunnen verplicht worden gesteld of op vrijwillige basis worden ingevoerd, zoals dat bijvoorbeeld bij eco-keurmerken het geval is. Eco-keurmerken stellen vrijwillige standaarden op die hotels en resorts moeten behalen. Deze vrijwillige standaarden kunnen gebruikt worden als basis voor wettelijke standaarden. In dit onderzoek worden de mogelijkheden om standaarden uit eco-keurmerken te gebruiken voor milieuwetgeving voor hotels op Curaçao onderzocht en de manieren waarop die standaarden in praktijk gebracht kunnen worden. De hoofdonderwerpen waarnaar gekeken is, zijn energie, water afvalwater en afval. Voor deze vier onderwerpen zijn drie ambitieniveaus onderscheiden: een hoog, normaal en een laag niveau. Om er achter te komen hoe goed de prestaties van hotels op dit moment op Curaçao zijn met betrekking tot deze onderwerpen, zijn interviews gehouden bij tien grote hotels. De mensen die zijn geïnterviewd is gevraagd naar de maatregelen van de hotels op het gebied van de vier hoofdonderwerpen en wat zij vonden dat nodig is om deze maatregelen op milieugebied verder uit te breiden. Uit de interviews werd duidelijk dat er vele verschillende maatregelen op milieugebied bestaan op het eiland, maar dat niet alle hotels er even ver mee zijn gevorderd en dat de communicatie onderling erover slecht is. Sommige hotels hebben maatregelen getroffen voor alle vier onderwerpen en standaarden die (bijna) zo hoog zijn als die eco-keurmerken vereisen. Andere hebben juist alleen maatregelen op het gebied van één of twee onderwerpen, of lopen duidelijk achter op het gebied van milieumanagement. Omdat er zo weinig communicatie is tussen de hotels, worden kennis en succesverhalen van milieu maatregelen weinig gedeeld. Het gebrek aan kennis op het gebied van water en energiegebruik draagt ook bij aan het matige milieumanagement: lekkages en mogelijkheden voor besparingen worden niet opgemerkt door gebrek aan monitoring. Verder werd uit de interviews duidelijk dat het doel van milieuvriendelijk toerisme op het eiland niet kan worden gehaald door alleen maar vrijwillige maatregelen, ook al zijn veel maatregelen kosteffectief voor de hotels en hebben ze terugverdientijden van minder dan 2 jaar, sommige zelfs minder dan een half jaar. Wettelijke maatregelen zijn ook nodig. Voor wettelijke standaarden zijn de meeste kansen te behalen wanneer er een nieuw hotel of een nieuw deel van een hotel wordt gebouwd. Maatregelen die water en energie besparen en die geïmplementeerd worden in deze fase, besparen het hotel later geld, en zijn ook nog eens goed voor het milieu. In dit rapport worden aan aantal voorbeelden van de meest kosteneffectieve en milieuvriendelijke maatregelen gegeven. Voor bestaande hotels zouden wettelijke standaarden pas op langere termijn verplicht worden gesteld om haalbaar te zijn.

In de tussentijd heeft de overheid de verantwoordelijkheid om nieuw beleid goed te communiceren naar de hotels, de bestaande wetgeving te handhaven, te zorgen voor infrastructuur en subsidies te verlenen zodat de standaarden ook echt haalbaar zijn voor de hotels. Organisaties als CHATA kunnen een platform bieden om kennis uit te wisselen. Het ‘normale’ ambitie niveau is haalbaar voor het toerisme op Curaçao: hotels die verder willen gaan kunnen dat doen op vrijwillige basis door een eco-keurmerk aan te vragen.

1 Introduction

To protect our environment, and therefore our quality of life, regulation of human activities is essential. Without it, it is often impossible to prevent that long-term benefits are forsaken for short-term profits and the personal gain of a few leads to losses of many. Setting environmental standards is one way to regulate human activities. Environmental standards can be very versatile; from minimum demands for water and air quality in general, to legal claims on the discharge of a specific substance for one specific company. Industries (for example the oil industry) often have their own set of environmental standards. The tourism industry, like any other industry, also needs environmental standards to regulate human activities. In this introduction the backgrounds and aims of this study will be explained: first on the project environmental standards in the Netherlands Antilles, and after that we will zoom in on the specific subject that was researched for this report; environmental standards for hotels and resorts on Curaçao.

1.1 Environmental standards in the Netherlands Antilles: Issues and backgrounds

The project ‘Environmental standards and criteria for the Netherlands Antilles’ was started in 2005. The project’s goal is to set legal environmental standards for the Netherlands Antilles, which are basically the (minimal) requirements for the quality of the environment. These standards are used as guidelines to create an effective environmental policy for the Netherlands Antilles. The protection of human beings is a first priority in this; the protection of the environment itself is a second priority. For both of these goals, but especially for the former, there is a need for clear guidelines on environmental hygiene issues like water quality, air quality, and waste (water). According to the study of Dinica (2006: see literature list) on the challenges surrounding the implementation of the 1997 policy for promoting sustainable tourism on the Netherlands Antilles, a problem with the implementation of sustainable tourism measures was that politicians favored a legislative vacuum, because their perception was that legislation would have a negative impact on the regional competitiveness for tourism of the islands. However, research done by Anne Pronk, who interviewed 25 businesses on Curaçao and Bonaire and asked them about their standpoint on environmental standards and legislation, provided a different picture. Her research showed that people’s knowledge on existing environmental policies is minimal. The importance of more and especially of clear environmental standards however was acknowledged in general by the businesses that were interviewed. People preferred to know what they can and cannot do. This stood true for different types of companies on the islands (mostly hotels and garages).

1.2 Environmental standards and sustainable tourism in the Netherlands Antilles

One of the most important businesses on the Netherlands Antilles is tourism. The number of hotels on the Netherlands Antilles, and the number of tourists that will visit the islands, is only expected to increase in the future. Tourism is gradually becoming one of the most important business sectors on the Netherlands Antilles. According to the Curaçao Tourism Bureau, the share of tourism in the GDP of the Netherlands Antilles has increased spectacularly over the last years and will only increase more in the future.

The tourism industry is very interesting if we consider environmental standards, because for its continued existence tourism depends directly on the (environmental) quality of its

surroundings. If tourism is not sustainable, it can have major negative impacts on the environment at the destination. Tourists often visit places partly because of their natural beauty; if that is gone, so are the tourists. Consequently, environmental quality and therefore environmental standards and tourism, are closely connected.

1.3 Environmental standards and hotels on Curaçao

The tourism industry as a whole comprises many different businesses, e.g. hotels, restaurants, souvenir shops, and dive schools. However, this is such a broad and diverse group of businesses that for this project it was decided to focus only on hotels and resorts. At present, environmental standards for the Netherlands Antilles would be standards for Curaçao, Bonaire, and the three Leeward Islands St. Maarten, St. Eustatius, and Saba. However, in the near future the country of the Netherlands Antilles as such will probably cease to exist. In that case, the environmental standards that were originally meant for the country as a whole can also be used for the individual islands. This would probably not lead to many legal changes or difficulties, since environmental policy and tourism are already constitutionally mainly an area of island competence. Because of the above, and because of the limited time available for this research, interviews were limited to hotels and resorts, which will both be referred to under the denominator 'hotels', on the island of Curaçao.

1.4 Stakeholders in tourism on Curaçao

Before putting together a set of environmental standards for the hotels on Curaçao, it is important to discover what the most important environmental issues are, and where the opportunities for improvement lie. To do this, the stakeholders (other than the hotels themselves) in tourism on Curaçao had to be identified. There are different types of stakeholders: for example governmental bodies, but also NGO's and certain businesses. Some of the most important of these stakeholders were interviewed at the beginning of this project. This was done to pinpoint the most important environmental issues in tourism, to get an overview of the situation (for example past, present, and future projects), and to be able to make a list of questions for the hotels. Stakeholders that were identified and interviewed were for example: the energy and water company Aqualectra, the garbage service Selikor, The NGO Uniek Curaçao, The environmental consultancy company Ecovision, the Curaçao Tourism Development Board CTDB, the Curaçao Hotel And Tourism Association CHATA, and the Environmental service (the 'Milieudienst') of Curaçao. International travel agencies, e.g. OAD and TUI, are also stakeholders in tourism that were interviewed.

1.5 Principal environmental themes in hotels: water, energy, waste and wastewater

The environmental standards of the project environmental standards for the Netherlands Antilles are on air quality and noise, water quality, waste, and wastewater. For the tourism sector, most of these environmental issues are also important. However, from interviews of the different stakeholders it became clear that four environmental issues are of special importance for the tourism industry on the Netherlands Antilles. These are: energy use, water use, waste and wastewater.

Environmental measurements can be costly. However, measurements that increase efficiency can save money in the longer run. Energy and (fresh) water on the Netherlands

Antilles are expensive; the cost of energy for private clients is approximately 0.5 NAF/kWh (approximately 0.28 USD/kWh), the costs of water for private clients are approximately 15 NAF/m³ (approximately 8.38 USD/kWh). Because of this, implementations to save energy and water can have a short payback time.

Since according to multiple stakeholders the largest environmental problems originating from tourism on the Netherlands Antilles are waste and wastewater, but hotels are expected to be more positive towards energy and water (efficiency) measures, it was decided to focus on these four issues waste, wastewater, energy, and water

2 Existing standards

Some legislation and environmental (hygiene) standards already exist on the Netherlands Antilles. On Curaçao and the other islands, these are formulated in the so called ‘nuisance licenses’ (Hindervergunningen). Businesses need to have a nuisance license for their activities, which is based on these nuisance ordinances. In a standard nuisance license for hotels and pensions, regulations can be found on waste water (it is forbidden to discharge dirty wastewater in sea), on pipelines, swimming pools (which have to be filled with tap water), and tanks for gas oil storage, for example. Most of these regulations are about safety, only very few regulations, like the one for wastewater, deal with environmental issues. There are some regulations that forbid pollution of the soil, and some that deal with waste disposal, but that is all. On many environmental issues there are no regulations in these nuisance licenses.

From the research of Anne Pronk it became clear that hotels actually regret this lack of clear regulations on environmental issues: their opinion was that the existing regulations are not always clear and not well known and that there are also too few regulations. Without this, without clear environmental regulations and standards to comply with, hotels often do not know what they can and cannot do to consider the environment.

In this second chapter we will start by introducing possible additional environmental standards which could possibly be used in regulations for hotels on Curaçao as well, namely the existing environmental standards that are used by eco-certification programs. We will start by explaining a little more about these programs and about so called ‘levels of ambition’, and we will end by giving an overview of standards (for energy, water, waste and wastewater) divided into different levels of ambition, from several different certification programs.

2.1 Voluntary environmental standards: the example of eco-certificates

Environmental standards for tourism are not necessarily and exclusively legislation obliged by governments. National and international eco-certification programs that promote sustainable tourism, like Green Globe and Green Key, give a voluntary alternative to legal standards. These programs do this by imposing their own environmental standards on tourism businesses that apply for membership. These can be standards on the management of the hotel, the appliances a hotel uses, the way waste and wastewater is handled, and the energy and water use of the hotel, for example. They then grant eco-certificates to businesses that (voluntarily) comply with these standards. The benefits from these eco-certificates for the hotels, apart from the financial gains from a more efficient use of resources, lie in that they can be used as a promotional tool; to show potential guests that the hotel is working on sustainability cares for the environment. The eco-certificate programs help the hotels achieve their goals by showing best practice examples and helping them to make the right choices. They are also an encouragement to keep up the good work because they use audits, in which the hotels are visited and thoroughly investigated, to see if it still lives up to the eco-certificate’s standards.

Eco-certificates are described by the United Nations Environment Program (UNEP, 2006) as: “voluntary instruments to improve the environmental, social and economic performance of tourism companies”. Of course, it would be useless to ‘discover the wheel’

all over again for legal environmental standards. On the contrary: voluntary standards from eco-certificates could also be used as examples to create legal standards. This option is explored in this research.

2.1.1 Different eco-labels, different standards

A problem with eco-certificates is that there are so many of them. Not every certificate is suitable for the Netherlands Antilles. Also, every certifying program has different criteria to achieve certification e.g. limitations on energy and water use, location choice, type of building materials, construction and upkeep of gardens, mobility, and waste (prevention) policies. To determine which eco-certificates can contribute to a (more) sustainable tourist industry on the islands of the Netherlands Antilles, it is necessary to start with inventorying which certificates are suitable for the Netherlands Antilles, which environmental standards these certificates aim for, and what the conditions to obtain these certificates are. Certificates that were analyzed in this project were: Green Seal, Environmental Barometer, Green Key, Green Globe, and the European Ecolabel/Environmental Seal European Union (Milieukeur Europese Unie). In *Textbox 1* a little more is explained about eco-certificates.

2.1.2 Levels of ambition

Change does not happen overnight, and businesses will need time to start their implementations. Therefore, it is useful to distinguish different 'levels of ambition'. A standard with a low level of ambition is relatively easy to achieve, a standard with a high level of ambition really ensures that the environment is better protected, but it is a lot stricter and harder to achieve. Eco-certificates sometimes also utilize different levels of ambition: the green key (the successor of the Dutch 'environmental barometer' or 'milieu barometer') for example has a bronze, silver and a gold level. A high ambition level may not be feasible for the Netherlands Antilles in the short term, but a lower level of ambition is probably more reasonable. There could also be a distinction between the level of ambition of the required environmental standards for existing buildings and hotels, and new ones, or expansion of existing hotels.

Textbox 1

Eco-certificate programs are regional, national, or international programs from organizations that grant eco-certificates to businesses, in this case to hotels and resorts. If a hotel wants to receive such an eco-certificate, it has to prove that it lives up to the (environmental) standards that are required by the eco-certificate program.

An example of an international well known and recognized eco-certificate is the Green Globe. This program is based on the ISO system. The certification process has two steps: the first step is called benchmarking. The output of the hotel on different subjects, like water use and energy use, is compared with other similar hotels. If the hotel scores as high as, or better than a certain baseline (the 'benchmark') it can become green globe benchmarked, and use the accompanying logo. To become certified is step two, and more difficult; the hotels has to improve its outputs, as well as its environmental management.

Another example of an eco-certificate is Green Key, formerly the Environmental Barometer. The Environmental Barometer was mainly a Dutch certificate, but Green Key is an international eco-certificate. In contrast with the Green Globe certificate, Green Key does not focus on environmental management, but it's requirements for certification are basically a list of standards that a hotel has to reach. There are three levels in the Green Key certification program: bronze, silver, and gold. For a gold level the list of standards that have to be reached is longer, and the standards are stricter than for the silver or bronze level.

Green Seal is an eco-label from the United States, which has standards and certifications for many different businesses including the 'lodging industry'; hotels and motels. The standards of the Green Seal consist of a checklist of requirements that hotels have to reach, similar to the working method of the Green Key.

The European Eco label/Environmental Seal European Union is a European eco label that has standards for different subjects, from cleaning products to domestic appliances to tourism. It also consists a checklist of requirements that hotels have to reach.

Another environmental certificate is the ISO 15001. This certificate is a little different from the others, because it only focuses on the processes in the businesses, on the management. Improvements are the goal, and there are no standards on quantitative data. The ISO 15001 is meant for all kinds of businesses, not just tourism.

2.2 Standards from Eco-certificates for water, energy, waste and wastewater

On the whole, there are two different kinds of environmental standards in eco-certificates. On the one hand: the guidelines on behavioral aspects or implementations. These standards we will call the management-focused standards. On the other hand eco-certificates can also have standard on the type of equipments a hotel should have, and how much water or energy a hotels should use per 'guest night' (which is per guest in a room per night; two people staying in one room for one night consequently amounts to 2 guest nights). These standards we will call the quantity-focused standards.

In the following section both management-focused standards and the quantity-focused standards from eco-certificates on the four main subjects energy, water, waste and

wastewater will be dealt with.

2.2.1 Standards on energy

The following standards and requirements for energy use are taken from eco-certificates (Green seal, Green key/environmental barometer, European Eco label/ Environmental Seal European Union, Green Globe) and articles (by Trung, Warnken et al.) on energy use in hotels in other parts of the world (Australia and Vietnam). First, the standards that are aimed at quantitative performances, like water use per guest-night are presented, and second the requirements for other aspects of environmental management are presented in order of importance and relevance.

For the first type of standards three levels of ambition are distinguished: high, normal and low. High ambition levels are the strictest standards found in the eco-certificates and in literature, low ambition levels are the least strict, and normal ambition levels are the levels that were most common in eco-certificates, and somewhere between the high and low level of ambition. In some cases there was not enough information to formulate all three levels of ambition, so for example only the normal level of ambition is shown.

Quantitative performance standards

Level of ambition	Lighting (within 1-5 years)	Air-conditioning	Boiler
high	80% class A		
normal	60% class A	Class B	efficiency 90%
low	20% class A		

Table 1: levels of ambition for lighting, air-co and boiler.

For the explanation of 'class A, B etc': See <http://www.energielabel.nl/>

Level of ambition	Washing machine	Dish washer	Tumble dryer
high	Energy label A	Energy label A	Energy label A
normal	Energy label B	Energy label B	Energy label B
low			

Table 2: levels of ambition for washing machine, dishwasher and tumble dryer.

For the explanation of 'Energy labels A, B etc': See <http://www.energielabel.nl/>

Level of ambition	Refrigerator	Freezer	Mini bar
high	Energy label A	Energy label A	Energy label A <1 kWh/day
normal	Energy label B	Energy label B	Energy label B
low			

Table 3: levels of ambition for refrigerator, freezer and mini bar.

For the explanation of 'Energy labels A, B etc': See <http://www.energielabel.nl/>

Level of ambition	Isolation	Warm water	Room temperature
high	Heat exchange coefficient max. 4,2 W/m ²		
normal	Energy efficient windows	Max. 50 degrees C	If not rented: above 25 degrees C
low			

Table 4: levels of ambition for isolation, warm water and room temp.

Level of ambition	Total energy use (kWh/guest/night)
high	< 37.3
normal	37.3 - 53.3
low	50.3-100

Table 5: levels of ambition for total energy use

Other standards

- Programmable on/off timers and/or sensors for lighting in low traffic and low occupancy areas
- 22% of energy from renewable sources
- Inspection efficiency level boiler at least once a year

2.2.2 Standards on water (use)

The way the standards and requirements for water are presented is similar to the energy standards. Again a high, normal and low level of ambition is distinguished. First the quantitative performance standards are dealt with, and second the requirements for other aspects of environmental management are presented in order of importance and relevance.

Quantitative performance standards

Level of ambition	Faucets (litre/min)	Toilets (litre/flush)	Showers (litre/min)	Washing machines	Dish washer (litre/basket)
high	6	6	8	12 litre/wash	3.5
normal	8	6	9	12 litre/kg	9.8
low	12	80% 6	12	12 litre/kg	

Table 6: levels of ambition for faucet, toilet, shower, washing machine and dish washer

Level of ambition	Total water use (litre/guest/night)
high	<650
normal	650-1000
low	1000 -6000

Table 7: levels of ambition for total water use

Other standards

- For exterior plantings, property shall use plants and trees tolerant of climate, soils and natural water availability
- Landscape shall be watered where necessary in the early morning or at night to minimize evaporation
- Towel and/or linen reuse option to multiple night guests
- Instructions displaying recommendations for saving water

2.2.3 Standards on waste

The way the standards and requirements for waste are presented is similar to the energy standards. Again a high, normal and low level of ambition is distinguished. First the quantitative performance standards are dealt with, and second the requirements for other aspects of environmental management are presented in order of importance and relevance.

Quantitative performance standards

Level of ambition	Paper	Toilet paper	Facial tissues	Paper towels
high				
normal	30% recycled	20% recycled	10 % recycled	40% recycled
low	10% recycled (coated paper)			

Table 8: levels of ambition for paper, toilet paper, facial tissues, paper towels

Level of ambition	Total waste production
high	2.8 l/ guest/night 0.5-1.5 kg/ guest/night
normal	4 l/guest/night 5.7-18.7 kg/ guest/night
low	

Table 9: levels of ambition for total waste production

Other standards

Categories recycling	
High level of ambition	Aluminium, Plastic, Cardboard, Steel, Glass, Paper, Batteries, Ink cartridges, Fluorescent lamps, Garden waste
Normal level of ambition	Glass, Paper, Garden waste

Table 10: categories for recycling of waste

- Use highly concentrated cleaning products dispensed through portion control equipment
- Do not use single portion packages for food.
- Donate leftover food to a local shelter or food bank.
- It is the responsibility of the hotel that garbage ends up in the appropriate place, when the authorities fail in collecting it.
- Used amenities are collected for donation to charity or recycling.

2.2.4 Standards on wastewater

The way the standards and requirements for waste water are presented is similar to the energy standards. Again a high, normal and low level of ambition is distinguished. First the quantitative performance standards are dealt with, and second the requirements for other aspects of environmental management are presented in order of importance and relevance.

Quantitative performance standards

Level of ambition	Total waste water (m3/guest/night)
high	<0.26
normal	0.26-2.3
low	2.3-12

Table 11: levels of ambition for total waste water production

Other standards

- Property shall demonstrate that chlorinated chemicals are used only where there is no less toxic alternative, and only in minimal amounts
- Property shall use automatic dishwashing detergent that is biodegradable, does not contain NTA (nitrilotriacetic acid), and does not contain chlorine bleach.
- Property shall use non-phosphate, nontoxic, biodegradable, concentrated liquid or powder laundry detergents and cleaning products
- Property shall seek out and explore the use of organic insecticides, fertilizers and biocides and/or integrated pest management (IPM) techniques.

3 Interviews with hotels on Curaçao

Before this survey, it was not clear what the current environmental practices of hotels were. Some hotels could already be very environmentally aware, and have a lot of environmental implementations, while others could be falling far behind on things like environmental management. Before any legislation can be made, it is necessary to know what level of ambition is feasible for hotels on Curaçao. It is possible for example that an ambition level that would be feasible in the Netherlands is not (yet) possible for the Netherlands Antilles. From interviews with other stakeholders it became clear that, apart from being clear, standards and legislation also have to be feasible to work.

“If standards set by the government are not realistic, people will ignore them and just go on doing what they were doing before”

The only way to find out which practices are used and useful ‘in the field’, is to ask the hotels themselves what has been done so far, and what they think could be done. Therefore, hotels on Curaçao were visited and interviewed to see which environmental implementations and policies the hotels of Curaçao have at this moment.

3.1 Methods

For the interviews appointments were made with employees of the hotels. The only restriction for the person that was to be interviewed was that he or she should know something about the environmental policies and practices of the hotel. A total of ten hotels were visited (for a list of the hotels, the questions and the accounts of the interviews: see Appendix A). In the following table (Table 12) the division of the posts at the hotels of the participants of the interviews is shown.

Position participants interviews	number (out of ten)
Owner/ shareholder	3
General manager	1
Assistant general manager	1
Maintenance manager	1
Facility manager	2
Financial manager	1
Resort manager	1

Table 12 Division of the positions in the hotels of people that were interviewed

The composition of the questions of the interviews was such that first some general questions were asked about the environmental policy of the hotel and the personal opinion on environmental standards, possibilities interventions by the government, and legislation of the participants. Thereafter followed some questions on the four main subjects of this research; energy, water, waste, and wastewater. At the end some questions on eco-certificates were asked. The concept of the elaboration of the interview was sent back to the person that was interviewed, so corrections could be made by that person, and the elaboration of the interview could be adjusted.

3.2 Present environmental consciousness of hotels

As was mentioned above, at the beginning and the end of the interviews the participants were asked some questions to find out what the general opinion of ‘hotels’ is on eco-certificates and environmental policies. Participants were asked whether the hotel had an environmental policy or not and whether there were any plans to apply for an eco-certificate (or whether they already did). The following table summarizes the responses of the ten hotels.

	yes	no	Partial/plans
Environmental policy	1	7	2
Eco-certificate	1 (Green Key)	5	4

Table 13 Division of the positions in the hotels of people that were interviewed

As becomes clear from this simple summary only one hotel out of the ten interviewed on Curaçao has an eco-certificate and most hotels do not have an environmental policy. However, this doesn’t mean that nothing is done on environmental managing: some hotels do have plans to strive for an eco-certificate in the future, or adopt an environmental policy. Some of the others found that eco-certificates and policies were too much paperwork, and strove for environmental improvements and awareness on an ‘unofficial’ basis. The hotels had different motivations for having or not having or planning on achieving an eco-certificate. These motivations are summarized in table 14

	Too much (paper)work	Too expensive	No perceived benefits	Competitive value	Expertise
Why (plans)				2	3
Why not	2	2	4		

Table 14 Motivations of hotels in favor of and against eco-certificates

From the questions about the four main environmental issues that were distinguished in this study, it became clear that at least some environmental practices are already adopted by the hotels on Curaçao. The next paragraph will deal with these environmental practices by the hotels.

3.3 Present environmental implementations of hotels

In this paragraph the overview of the outcome of the questions for each of the four main subjects is presented as follows: some quantitative performance data on the subjects are presented, then some implementations and practices and the number of hotels that have them are presented in a table, and after that some additional information on these current implementations and practices is provided.

3.3.1 Implementations and practices on energy use

- Quantitative performance data:

In most hotels the energy use is not closely monitored. Hotels basically look at the monthly bill from Aqualectra to see whether there are no striking peculiarities. Hard data are sometimes collected, monthly, weekly, or even daily, but often not much is done with it, and data were almost never available during the interviews. Although most respondents thought that the energy use of the hotel was ‘high’, almost none knew whether the use was going up or down. For the resort that did have some hard data available, the energy use was 200.000 kWh/month (approximately 36 kWh/room/day). The amounts hotels pay for their energy varies a lot: some small ones pay 45.000 NAF/month for both water and electricity combined; other large ones pay 300.000 NAF/month for electricity alone.

- Implementations and practices:

The following table (Table 15) summarizes some of the most common implementations and practices to save energy, and the number of hotels that have them.

	yes	no	Partially/plans
Energy saving light bulbs	5	2	3
Air-conditioning sensors	7	1	2
Central thermostat	2	6	2
Solar water heaters	3	6	1
Timers on lights	5	5	
Energy meters	5	5	
Pool filter on timer	5	5	
Signs: Air-conditioning off	1	4	5
Energy labels/efficiency	2	5	3

Table 15 energy saving implementations and practices of hotels

In general, most hotels on Curaçao have some energy saving implementations and practices.

As becomes clear from Table 15, that energy saving light bulbs are used everywhere in about half of the hotels. Other hotels have only replaced some of their light bulbs by energy saving light bulbs. Energy saving bulbs especially replace the traditional light bulbs in common areas, like gardens and lobby’s. One problem that was mentioned by some of the respondents, however, is that the electrical current on Curaçao often fluctuates. This is not good for energy-saving light bulbs: they break a lot sooner than their supposed life-expectancy.

One hotel had a ‘master switch’ in every room, to simultaneously turn off all lights, and the television. The air-conditioning wasn’t connected to this switch.

Almost all hotels indicated that the air-conditioning uses the most energy. However, only about half of the hotels have a system in place that causes the air-conditioning to turn off if guests are leaving. Half of the hotels had timers on lights in the gardens or public

spaces, like hallways. Only a couple of the hotels have solar boilers. They are often used in combination with electrical boilers. It is remarkable that the hotels that have them claim they were a good investment, but the hotels that do not have them are often not convinced that they are worth the investment and the trouble of installing them.

According to some resorts, guests (especially from Europe) don't mind as much as most hotels think if the air-conditioning turns off when they leave. In some resorts only the bedrooms have air-conditioning. Another hotel had a centralized air-conditioning system. This system was coupled to the reservation system, which enabled the hotel to switch the air-conditioning system to de-humidifying only when the rooms are unoccupied (if the rooms are not de-humidified, mildew develops very rapidly).

Another hotel had central thermostat, set on about 20 degrees; this prevents temperature differences between rooms, which otherwise leads to water-condensation, and associated problems

Isolation (to keep the heat out and the cold in) is not a common used (or mentioned) option to save energy; only one hotel mentioned drought strips under their doors to the bathroom as well as the outside doors, and one had double windows.

Most hotels did not look for energy efficiency labels when purchasing new appliances. Sometimes the respondents indicated that they did want to buy energy efficient appliances, but were overruled by others, or that they did not have right of say on the subject.

“Energy labels? I don't even know what they are”

The continuity of supply of appliances and know-how on appliances (like e.g. appliances for sustainable energy), was mentioned as being important and a determining factor in purchasing appliances.

Some hotels had timers on their pool filter pumps, so they would shut down during the night. This was not feasible for all hotels, since the quality of the water had to be guaranteed.

3.3.2 Implementations and practices for saving water

- Quantitative performance data:

Water use is often monitored only to see whether no large leakages occur, and whether the monthly bill from Aqualiectra is approximately right. The only hard data that were available on water use from three hotels diverge from 180 l/room/day to 260 l/room/day up to 880 l/room/day.

- Implementations and practices:

The following table (Table 16) summarizes some of the most common implementations and practices to save water, and number of hotels that have them.

	yes	no	Partially/plans
Grey water recycling	5	3	2
Water saving faucets	4	5	1
Water saving showerheads	4	5	1
Water saving toilets	4	5	1
Water meters	8	2	
Watering time gardens	5	5	
Drought resistant plants	4	5	1
Drip system gardens	5	5	
Washing system towels	8	1	1
Washing system sheets	5	5	
Environmental cleaning products	4	6	

Table 16 water saving implementations and practices of hotels

Almost all hotels have water saving measures in place. The most popular practice to save water (and energy and extra work) is the towel-washing system. This mainly includes the system in which towels on the floor are cleaned and towels on a peg are not. Not all hotels have the same system; one resort lets their guest take their own new towels and bring their old ones. This also encourages guests to bear longer with their towels. Some of the hotels also have policies for the cleaning of the sheets. Some different systems are in place: a note on the bed, top-down cleaning, and a cleaning schedule linked to check-in system. Water saving showerheads, faucets, and water saving toilets are used by less than half of the hotels. Since in most hotels the showers and baths in the rooms use the most water, this is not a very high percentage.

Especially the resorts and hotels with large gardens have grey-water systems. For them this is profitable, because the water price is high. Hotels that have their own water-plant and make their own water think they have less to gain from re-using and saving water, and are therefore less inclined to use grey water systems. Personnel are often, but not always, trained to look for leakages. Some hotels/resorts (resorts especially) use local plant life in their landscaping, that doesn't require a lot of water. Some use drip systems for watering their gardens, but not all. Not all hotels water their plants at night, which causes less evaporation. One hotel especially makes ice cubes, so as to give them to the plants; because ice cubes evaporate less than liquid water. Hotels with septic-tank and a grey water system water their gardens at night, (also) because of the smell. Something remarkable is that some air-conditioning systems also use a lot of water, which is evaporated to cool the air. A hotel indicated that their old chiller system evaporated 36 cubic meters of (tap) water a day.

3.3.3 Implementations and practices for waste

Quantitative performance data:

There are two different systems for garbage collection and payment: part of the hotels pays a certain sum per month, which depends on the number of times a week and how many trucks come to pick up the container(s) with the garbage. Other hotels have a pressing-container and pay per ton garbage (see Table 17). Most hotels did not have any hard data at hand on how much waste was produced. One hotel had a container of about 20 cubic meters, which was picked up twice a week; another hotel had an estimate of 3 ton of garbage per week.

	Number of hotels
Pay per ton	3
Pay per month	5

Table 17 type of payment for waste

Implementations and practices:

The following table (Table 18) summarizes which different categories of waste are distinguished by hotels, and by how many hotels these categories are distinguished.

	Number of hotels
No categories	3
Leftover food separate	5
Paper separate	1
Large garden waste	6
Glass separate	3
Batteries separate	0
Grease and oil separate	4

Table 18 waste categories of hotels

Some hotels with septic tanks use special dissolvable toilet paper. Most hotels use single-package soap, (and food, but many restaurants have their own management, separate of that of the hotel). Only 3 hotels had soap dispensers, which save in single portion packaging, and only one hotel used recycled paper. One hotel lets the employees at the dumping ground sign for their garbage: to make sure it end up there and doesn't end up in nature.

3.3.4 Implementations and practices for wastewater

Quantitative data:

Almost no data were available on the amounts of wastewater the hotels produce. The septic tank of one resort could hold 300 cubic meters.

Implementations and practices:

There are three different means of waste water disposal; the sewer, septic tanks or by discharging it into the groundwater or the sea. The following table (Table 19) summarizes the type of wastewater processing and/or discharging the interviewed hotels used.

	Number of hotels
Septic tank	5
Septic tank and sewer	1
Sewer	3
Discharge into sea	1

Table 19 Means of waste water processing of hotels

A septic tank is the most popular way of processing wastewater. Especially resorts often, but not always, use their septic tanks for grey water supply for their grounds and gardens. Collected rainwater is scarcely used for watering (only one hotel had gutters on the roofs that were connected to the septic tank system). One hotel had just implemented a system of so called ‘bio balls’: these nurture a lot of bacteria in the tank, which supposedly makes the water cleaner and decreases the odor.

Wastewater from hotels can be cleaned by Kleinhofje, and hotels can buy back this water. However, the price is often higher than the water they buy from Aqualectra, and a lot higher than the price of the water if they have their own (reverse osmosis) water plant. Hotels with such a plant are less inclined to save water, by implementing a grey water-septic tank system for the gardens, for example, than other hotels. This is mainly because in their opinion water does not cost them so much. Instead of recycled water, tap water is used to water the gardens.

Even though only one hotel did not have either a connection to the sewage system or a septic tank, more hotels discharge waste water into the environment one way or another; very salt water, remains of the sea water used to make drinking water in a water plant, is for example discharged back into the sea. Other hotels discharge the trans-shipment (‘overslag’) water of their (chlorinated) pools into the sea. From the interviews it became clear that some hotels use a lot of chlorine.

An alternative found in two resorts, is an ‘ozonator’ for the swimming pool. Pools with ozonators need almost no extra chlorine to stay clean, and use ozone as a disinfectant. Some hotels, but few, use environmentally friendly cleaning products.

“We use as little as possible chlorine in our water and no environmentally unfriendly cleaning agents, because these would end up in own septic tank and grey water irrigation system, and therefore in our own backyard.”

3.4 Summary of main conclusions from the interviews

All in all, there are many differences between the hotels. Some already have a lot of environmental implementations and practices in place, others are just starting to value the environment and still have a long way to go.

Implementations and practices to save energy and water are the most popular. Wastewater recycling systems like septic tanks are often used, especially at resorts, because they save a lot of water. Only a few hotels take measures that do not directly bring in money, like environmentally responsible cleaning products and waste-separation schemes.

On the other side, most hotels do have plans for the future to use environmental implementations and practices in newly build hotel sections, or after renovations of older sections, because it could save them energy and water (and therefore money) in the future. Only very few of the hotels really have a clear overview of their water and electricity use, and most hotels know even less about their waste production, and wastewater production. Finally, there is almost no significant mutual consultation between hotels on what they are doing with regard to environmental implementations and practices.

4 Comparison between existing standards and present situation

In the previous paragraphs we described what kinds of standards eco-certificates have set for hotels on the subjects of energy, water, waste, and wastewater. In addition to that we described what implementations and practices the hotels on Curaçao have on these four subjects.

The structure of this chapter is as such, that first a comparison between the standards from eco-certificates, and the actual implementations and practices of hotels on Curaçao is made. After that follows an overview of the opinions of the different stakeholders in tourism on what should be done and what should not. After that policy instruments are explored (legal measures versus voluntary measures).

Finally, we give some restrictions of the research that is done in the paragraph 'discussion'.

4.1 Comparison between existing standards, and present situation in hotels on Curaçao

In general, the largest mismatch between standards from eco-certificates and the present situation in hotels on Curaçao is that the hotels have very few hard data available. Eco-certificates often set standards at certain 'levels', sometimes called 'benchmarks'. These are levels in for example energy or water use that a hotel must reach to be given an eco-certificate. Most hotels on Curaçao however, do not keep clear records on how much water or energy they use. They often do have water and energy saving implementations and practices, but since usage is not closely monitored, the costs and benefits of these implementations and practices are often unknown. In the following sections the comparison between eco-certificates standards and the hotels on Curaçao is summarized for each of the main subjects of this study.

Energy

Only a very small minority of the hotels has any notion of their energy consumption. The one hotel (with mainly European guests and relatively 'green') that did have hard data available on their consumption of kWh per guest per night (approximately 36 kWh) is already on the 'high' ambition level of eco-certificate standards. The 'normal' ambition level (around 53 kWh/ guest/night) could therefore probably also be feasible for similar hotels on the islands.

Timers for lighting outside of the rooms are used by only half of the hotels. The percentage of energy-saving light bulbs in hotels is hard to estimate: only half of the hotels have energy-saving light bulbs 'almost everywhere', and a couple of the remaining hotels have some energy-saving light bulbs. Consequently, at least half of the hotels that were interviewed therefore did not reach the 'normal' ambition level for hotels from eco-certificates, which is that 60% of all bulbs have to be energy saving bulbs. Energy from renewable sources is only very sparsely used, in the form of solar water heaters. Energy labels are not used or taken into account by most hotels and some were even unfamiliar with the whole concept. Only the most environmentally aware hotels, including the one certified resort, look at efficiency labels when new appliances are bought.

All in all, there is quite a large difference between the hotels concerning how well they measure up against eco-certificate standards. But for almost every hotel some progress has to be made on all aspects of energy use, to live up to the 'normal' ambition level standards from eco-certificates. Only a couple of hotels already have the implementations and practices that the 'normal' ambition level requires. However, there are also energy saving implementations and practices that we came across at hotels that are not mentioned directly in eco-certificate standards, such as timers on the swimming pool filters, different types of air-conditioning sensors, and 'master switches' to turn off the lights. Some hotels are apparently even a little ahead of eco-certificates concerning some implementations to save energy. These hotels are a minority of the hotels that were interviewed, but they could provide a good example for the others.

Water

Most hotels do not have many quantitative data on their water use. They do use water saving showerheads for example, but do not keep track of whether these use 8 or 9 liters per minute, as is directed by standards from eco-certificates. The water use per guest per night was also not known by most of the hotels. The hotels that did have data on their water use performed fairly well. However, we have to rely on very few data (from three hotels). There are large differences between the highest (880 l/room/day) and the lowest (180 l/room/day) numbers of these three. The lowest water use level (if true) is extremely low, a lot lower even than the highest level of ambition. The hotel for which data were available with the highest water use (an all inclusive hotels with mainly guests from the US) was already on the 'normal' level of ambition. This level (around 900 liters per guest per night) is therefore probably feasible for most hotels.

The current volumes of the current in showers and faucets and the volume of the flush of the toilets were almost never known by participants. However, some hotels (less than half, though) indicated that they had water saving showerheads and faucets, and water saving toilets. Hotels had almost no data on the water use of their dishwashers or washing machines. The tactic to give guests the option to reuse their towels was used by almost every hotel. Only half of the hotels had a system for sheets (for example: top- down changing of sheets, a note on the bed to clean sheets or a cleaning system linked to the check-in system). For their grounds and gardens, only about half of the hotels have taken into account the type of plants and the watering time of the plants.

All in all it seems that water use is already quite low, and hotels can live up to the 'normal' ambition standard. However, to really be able to say this it is necessary to have more data on water use. On implementations to save water (like water saving showers) most of the hotels are still behind on eco-certificate standards. The same is true for the purchase of water saving appliances. Similar to the situation for energy, there is also a large difference between the hotels concerning how well they measure up against eco-certificate standards.

Waste

Quantitative data on how much waste is produced is unknown to almost all hotels. The only estimate one (relatively green) hotel gave was about 3.8 kg/room/day. This amounts to a little less waste than the eco-certificate standard at the normal level of ambition. Most hotels pay a fixed sum per week (depending on how many times a week a container is

collected) for their garbage, and therefore the hotels do not have an overview of the amount (kg or tons) of waste they produce. Hotels have not yet reached the low ambition level for the separation of waste into categories (glass, paper and large garden waste). The waste categories that are distinguished most are grease/oil, leftover food, and large garden waste. Half of the hotels had their leftover food collected (by a pig farmer). Recycled paper is almost never used, because it is too expensive, or the supply is not constant enough. Only a few hotels use soap dispensers, but none of the hotels had a policy to prevent single portion packages. All hotels are therefore falling behind on eco-certificate standards concerning the handling of waste. Most hotels distinguish one or two separate waste categories, but none of the hotels could live up to the eco-certificate standards of the 'normal' ambition level. The hotels do also not monitor the amount of waste that is produced, and a lot of improvements will be necessary.

Wastewater

None of the hotels had any quantitative information on how much wastewater they produced, or the levels of N, P, oils or any other substances in the wastewater. Only very few hotels used environmentally friendly insecticides, detergents and other cleaning products, although some hotels mentioned that the cleaning company they hired did have some sort of environmental policy. About half of the hotels recycled their water, via a septic tank system. Water from these septic tanks was always exclusively used for watering the gardens and grounds.

It can be concluded that there are large differences between the hotels on how well they handle their wastewater: some are not even connected to the sewer system; others have an elaborate septic tank and grey water system. Only very few hotels take into account the type of detergents and cleaning products they use. A lot has to be done on the subject of wastewater for most hotels before they can measure up against eco-certificate standards.

From these interviews an overview of the current sustainability of hotels and resorts on Curaçao can be constructed. Most hotels are already doing something about two environmental items: water and energy saving. Especially saving water is a high priority item, because the Netherlands Antilles has quite high water prices, and the water (and electricity) bill is often alarmingly high for many hotels. This does not mean, however, that every hotel that was interviewed deals with water and energy in an efficient way. Some implementations are used by about half of the hotels, but are for some reason not implemented by others. Environmentally friendly dealing with waste and wastewater on the other hand happens still very scarcely, and not structurally at all. In sum, at present most hotels still have a long way to go before they can live up to the total package of standards that eco-certificates demand.

4.2 Preconditions for implementations according to stakeholders

All the different stakeholders in tourism on Curaçao will have a role to play in changing the tourism industry of Curaçao into a sustainable one. In the interviews different stakeholders were asked where they thought bottlenecks currently occur, what is essential to achieve sustainable tourism (legislation as well as voluntary initiatives), and which one of the stakeholders in tourism (including public as well as private stakeholders) should be responsible for changing the present situation. In the next section statements and opinions

of the stakeholders that were expressed in the interviews by both the hotels and the ‘other stakeholders’ are described. These ‘other stakeholders’ included businesses and NGO’s, like ‘Uniek Curaçao’ and Ecovision, utility companies like Selikor (garbage) and Aqualectra (water and electricity), and governmental bodies like the ‘Milieudienst’ and the CTDB (Curaçao Tourism Development Board), and the travel agencies in the Netherlands TUI and OAD.

The opinions and statements are arranged in such a way that they successively deal with issues and points of interest for hotels themselves; action points and points of interest for NGO’s; action points and points of interest for utility companies (like Aqualectra and Selikor); and finally action points and points of interest for the government.

4.2.1 Issues and points of interest for hotels

According to some stakeholders in tourism, for example the CTDB, the tourism sector on Curaçao has gone through some tough times, in which mere survival was the prime goal of many of the hotels. But now the tourism industry is blossoming; there are more flights to Curaçao, higher occupancy rates of the hotel rooms, etcetera. Now the hotels can start looking at other things beyond day-by-day survival; like environmental issues. Customers from western (especially European) countries are becoming more environmentally aware, and are beginning to see environmentally aware management by hotels as a standard issue in their vacation 'package of demands'. Because of the Internet, customers can more and more handpick their own travel packages. In light of this, an assembly of different tour operators has already started to develop an Internet travel database, with information on the environmental performances of all their hotels.

From the interviews it became clear that there is also a lot to gain from better internal management in the hotels. The implementation of new environmentally friendly measures is sometimes discouraged or hindered by the lack of clarity on policies and rules and internal consultation within the hotels. The general manager for example knows things the maintenance manager doesn’t and visa versa. A consequence of this could for example be, that someone orders new toilets that are not water efficient, before internal consultation has taken place in which someone with more knowledge of environmental issues could have intervened in the decision.

Remarkably, some hotels seem quite comfortable in disregarding environmental friendly measures that would be very easy, but that in their opinion do not directly save a lot of money (even though they may underestimate the savings). In one hotel a drip system to water the gardens was in place but “water is not that expensive if you have your own water-plant”, so even though the system was ready to use and it would decrease the hotels water use, it isn’t used.

Furthermore, it is not enough if only the managers of the hotels are environmentally aware: they do not have the power to make certain key decisions, and they do not have the ‘on site’ power of the staff. All levels in the ‘chain of command’; from the hotel owners/shareholders to the managers to the personnel should be fully aware of the importance of environmental management, this includes all kinds of personnel from housekeeping to the kitchen staff. If personnel from e.g. housekeeping with experience in

one hotel later on starts to work for a new hotel, they take their knowledge with them: if managers listen to such people, their know-how is optimally used.

A problem with the current manager system in some hotels that was mentioned in interviews is that the managers stay only for an average of 3 years, after that they often move on to another hotel and/or another function. This can result in a policy in which managers don't really look for long-term gains, because they want to optimize the hotels profits in the time they are in charge, and short-term gains are therefore preferred over long-term gains. These managers may therefore forsake projects that have a longer payback time and require high initial investments, because their successor will pick the fruits of that labor.

According to several hotels the degree of how much environmental management is possible also depends largely on the origin of the customers in the hotel. Guests from the US are much less environmentally aware and willing to make environmental considerations than guests from Europe. They demand luxury and comfort above all else, and are less willing to make compromises on, for example, the temperature of the air-conditioning, and timers for the air-conditioning. Hotels with mainly European guests can 'get away' with a lot more environmentally friendly implementations before guests will complain about a loss of comfort, then hotels with mainly guests from the US, according to some of the hotels.

Something else that became clear about environmental implementations for hotels is that these implementations do not have to be costly for the hotels at all; they can even save a lot of money. There are implementations to save water and energy that pay back for their investment costs, because of the savings they produce, in less than 6 months. These are for example energy saving light bulbs, turning off the pool filter pumps at night and signs that tell guests to "turn air-co off", but also water saving faucets, water saving showers, and water saving toilets or toilet dams (which is an object that is placed in the water reservoir of the toilet, so it needs less water to fill up and uses less water per flush). Implementations like solar water heaters, air-conditioning sensors, and grey water recycling have payback times of less than 2 years.

Monitoring energy and water use can also save a lot of money. According to one respondent, water leakages happen quite often, and can lead to a much higher water use than usual, which can easily be detected if water use is monitored often. If such a leak is not detected it will cost hotels a lot of money in a short time. Hotels should therefore monitor more closely how much water they use, and also for what they use it. If two similar buildings with similar rooms have a large difference in water use, something is obviously the matter. One respondent even described how the daily water use figures could tell him something about how careful housekeeping had been in turning off all dripping showers and faucets.

4.2.2 Issues and points of interest for NGO's

Dutch and other European tourists know very little about Green Globe and other eco-certificates; if eco-certificates were better known, they would be more interesting for hotels to apply for certification. NGO's in Curaçao and the Netherlands (and elsewhere) could try to raise awareness in the public that these certificates exist, and support them, for example.

Projects with youth on environmental awareness (to make them realize the value of coral reefs for example), could teach young Antilleans respect for the environment. When they become employees in for example hotels later on in life, they can take these lessons with them.

CHATA could be a good platform for information exchange, as most hotels do not officially interact with each other and consult each other, although they could learn a lot from each other.

4.2.3 Issues and points of interest for Utility companies

The garbage fractions that are distinguished according to Selikor are: glass, building materials, paper (although they temporarily do not have a client to sell it to) and batteries (and they have plans for separate collection of garden waste and fat and oils). However, the possibilities to separate these fractions of waste are often not known by the hotels. Hotels do not know which fractions they can bring in separately, where they should take them and how. A garbage delivery point for the different waste fractions will be opened in the near future, but if information about this is also not clear to the hotels, it will not work in the way it is supposed to, and hotels will often not make use of it. Informing the hotels is the key issue here.

The 'Grey water' project is a project in which hotels can buy back wastewater to use (for irrigation for example), after it is cleaned. However, the price of the cleaned water is the same or even higher as the water price hotels negotiated with Aquaelectra, so none of the interviewed hotels buy back their water. This example makes clear that projects like this one will only work if environmentally beneficial measures are also financially interesting.

4.2.4 Issues and points of interest for the government

For the government it is important to determine the priorities and priority themes, and inform the public. More public awareness is a must; the mentality of the people must change, they have to feel like they and their actions matter for the future. If the (Antillean) employees of hotels for example are not environmentally aware, and an owner comes with rules and regulations on environmental issues, this could create a field of tension. Environmental law keeping by governments should therefore also not only be directed at large companies or hotels for example, but also at the 'average citizen'. Legislation and rules on what hotels can and cannot do must be clear to everyone, and an alternative must be provided if something is not allowed. Legislation has to be realistic and applicable for the Netherlands Antilles, where there is a limited access to certain goods/products/appliances. If legislation seems too difficult to obey, it will just be ignored. The Environmental service (Milieudienst) has the task to keep environmental laws up to date, and let people know they are reinforcing the law, and that they might come and check up on the hotels. The maximum fine for offences on environmental issues at the moment is 5000 NAF (roughly 2000 Euro). In the future, higher fines and information campaigns announcing these fines may be necessary.

International large hotels chains get certain exemptions from the government, but according to some stakeholders, the small hotels are more inclined to do things for the environment. Large international hotel chains on the other hand have international environmental standards: according to hotels such as the Hilton these are higher than those on Curaçao. The intent is that bringing those hotel chains to Curaçao will also bring these

standards to Curaçao. According to some stakeholders this is what happened in Aruba, and this is why Aruba is so much ahead on environmental management (especially certification by Green Globe) in comparison to Curaçao.

Infrastructural implementations are very important: the government should for example provide glass containers, and improve and extend the sewer system. The existing sewer system is already overloaded and especially when the newly built hotels are ready this will cause problems. Also, some hotels do not have access to the sewer system yet, and are therefore 'forced' to discharge their water into the sea if they do not have septic tanks (this was the case according to one of the interviewed hotels). The government could also intervene in waste policy by putting deposits on bottles.

Something that was mentioned a couple of times, is that the government should provide protection from the price-raises of Aqualectra. Some hotels are afraid that if water use and energy use go down, Aqualectra will raise their prices, to keep their profits.

4.3 Discussion

The goal of this discussion paragraph is to see where the matches and mismatches between existing standards in eco-certificates and existing implementations and practices of the hotels are. It is important to keep in mind however, that not all hotels on the island were interviewed because of time limitations and practical obstacles: ten of the largest hotels on Curaçao were interviewed for this project.

Also, because the staff members of the hotels that were interviewed had different functions in the hotels (see paragraph 3.1, Table 12) it is possible that some implementations and practices were left out or forgotten, because each function in a hotel comes with its own responsibilities and emphases. General Managers may know different things about the hotel and have different priorities than maintenance managers for example. Since respondents give their information from their own point of view and reference, this may have an influence on the image that is constructed of the hotel. The conclusions from this study are consequently always with reservation.

5 Recommendations

The previous section dealt with the opinions of different stakeholders on *what* should be done in terms of implementations and practices. This section will also explore further *how* things could be done, which changes are necessary from the different stakeholders, which policy instruments are available, and how they could be used to enable changes.

An example of the role governments can play is that they could use the standards set by voluntary eco-certification programs as standards in legislation, like nuisance ordinances. This raises the question where legal and voluntary targets and requirements should meet. Too many legal requirements are seen as harmful to the tourist industry because of regional competition considerations, but completely voluntary projects also often fail. Furthermore, legal measures need reinforcing, which costs money, but stimulating voluntary measures e.g. by rewarding good practice also costs money. The solution will probably be a compromise between legal and voluntary measures. These measures do not exclude each other and may follow up each other in time. In this chapter, recommendations for voluntary as well as legal measures for hotels on Curaçao are made, based on literature and on the interviews that were done with the stakeholders in tourism on Curaçao.

‘Education’ in a broad sense, is always a first step; if people don’t know what the rules are and why they have to change their behaviour, the chances are great that they will ignore the rules and they won’t change their behaviour, and that they won’t realize that they can also benefit from changing their behaviour. Many of the hotels have a staff of local employees, combined with employees and managers that are often not from Curaçao, although they do live there. The owners of the hotels, which are often different persons than the managers, do not necessarily live on the island. All these groups of people have to be environmentally aware for changes to happen; the (local) staff has the ‘on site’ power to change things, which managers and owners do not have, while managers and especially owners can make key decisions on long-term policies and have the final say-so in many matters. Education of the people connected to the hospitality business should of course start at the schools, where the value of the environment for the future of the island should be made clear to children, and that they are important stakeholders in that future of ‘their’ island. But later on the hotel school (the academy hotel) where people are educated who want to work in the hospitality business, could also be a very good medium for this. The government should oblige such schools to include a course on ‘environmental management’ or something similar in their curriculum. Since the tourism business is booming right now on Curaçao according to many stakeholders, many new employees will have to be trained in the near future, so this is where chances lie for better environmental awareness. The managers and owners of the hotels are often not from the island and are possibly less interested in the environment on Curaçao as such, but in stead they could be ‘educated’ in the financial benefits of environmental management and persuaded by that.

Eco-certificates or eco-certificating organisations like Green Globe and Green Key could play a role in this ‘education’ because they can inform hotels and guide them along the

right path, voluntarily. This can be done supported by examples of best practice and benchmarks. Eco-certificating organisations also have their own sets of standards, which are often higher and more elaborate than the standards that are legally enforced. If hotels join an eco-certificate program, they have to meet these standards and are audited by the program to verify that they keep meeting the standards.

Another interesting point is that the potential benefits of consultation between hotels are very clear from this study, but it is only rarely put into practice by the hotels. Many hotels can meet a lot of environmental standards, and improve a lot in their dealing with environmental issues just by implementing measures other hotels already have. Organizations like CHATA could supply the hotels with information on how to proceed and become more sustainable, and a platform for hotels to share experiences and information. Some of the respondents described in the interview that motivating a few 'key people' on Curaçao would have the effect that most of the rest of the important people in tourism on the island will follow. Such a platform could also be a good way to bring motivated 'key people' together.

However, voluntary measures can only take you so far, and from the interviews with the hotels it became clear that as for now it has not been enough to convince the hotels to voluntarily implement certain measures. Not even very cost-effective ones like energy and water saving measures, as became clear from the interviews with the hotels. Legislation on water and energy saving implementations and practices is therefore very useful, while also indirectly providing profit for the hotels, because in the long term such implementations save hotels money. Legislation on these subjects could therefore be used in addition to voluntary measures. Implementations and practices on waste and wastewater on the other hand are less popular as far as voluntary measures go, because they do not directly result in financial gains. Making and enforcing legislation on these subjects may be the only way to really change things.

Legislation should especially be formulated for new hotels and new buildings. In the 'building phase' hotels can still implement systems that would be very expensive to implement afterwards. If hotels take certain implementations into account in their design phase and building phase, this could save them a lot of money too later on, and it would also be beneficial to the environmental impact of the hotel.

It would therefore be useful to make it obligatory that every new hotel makes an environmental assessment report before they start building, so they have to look for possibilities for environmentally friendly building. Measures that are both cost-effective and decrease the environmental impact of the hotel should be the first to be made obligatory for new hotel constructions. Measures that belong to this category include: isolation (double windows and draughts strips; they save a lot of energy and money later on) and ozonators (they decrease the need for chlorine in pools, which is very bad for the environment, and they save money because the pool filter can be shut off more often/during the night). Installing drip systems where possible is another way of saving money and an environmentally friendly implementation that new hotels should be obliged to install. According to the environmental consultancy agency Ecovision, air-conditioning systems which use water to cool a room are a lot more efficient than those based on cooling the air itself. For new hotels it should therefore be made obligatory to install the

energy efficient water-based air-conditioning systems. Heat recovery from air-conditioning, for example for water heating, is another energy-saving implementation that should be planned when the hotel is build. It can save a lot of energy later on. Hotels should be obliged to at least consider the option and the possibilities for this, before they start building.

Other obligatory implementations could include the use of energy efficient lighting in new rooms and buildings, and water saving faucets, showers and toilets. Solar boilers are an example of energy saving measures of which have quite high initial costs, and of which the value only comes to light once they are implemented. They are good examples of environmentally friendly and sustainable investments that pay back for themselves later on. New hotels should therefore be obliged to install at least 22% (a number also used for standards for renewable energy in several eco-certificates) of their water heating capacity as solar water heating.

For wastewater, waste water-recycling systems like septic tanks (and collection and use of rainwater), should be made obligatory. The benefits of septic tanks are twofold: firstly they save water, because of the water recycling, and secondly the hotels know that whatever comes into the tanks will end up in their own back yards, which may create more awareness on what goes 'down the drain'. The problems with nutrients and odour nuisance could be solved by excluding streams from toilets (and letting them discharge in the sewer system) or possibly by adding 'bio balls' with bacteria that break down the organic waste in the water. The hotels with grey water from septic tanks already water their gardens at night, to decrease odour nuisance for guests. The fact that this decreases evaporation in comparison to watering plants in the daytime is an added bonus.

Legislation must also come into force for existing hotels. Especially hotels that make their own water and/or electricity should be prevented from squandering their water and energy resources, just because they (think that they) are not that expensive. Other hotels should also decrease the burden they have on the environment to become sustainable. However, it should be taken into account that the implementation of these measures mentioned above couldn't be accomplished overnight. From the interviews it became clear that legislation has to be feasible, otherwise hotels will just ignore it. Therefore, these implementations should rather be made obligatory within a time span of about ten years. In the mean time, agencies (or government or utility companies) could help hotels with accomplishing the legal standards and demands which have to be met by hotels, by loaning them money for their investments, which the hotels could then pay back from their environmental savings, from saving water and energy for example. The possibilities for a construction like this are already in place.

For the subjects of waste and wastewater there are less financial incentives possible to encourage the hotels to conduct their business in an environmentally friendly manner. For these cases the 'polluter pays' principle could be helpful, and provide an initiative for hotels to start minding their waste and wastewater. The costs to bring in waste (per ton) for example could be raised for the 'rest fraction', the fraction that is not separated into categories, to encourage the hotels to recycle. On the other hand this should not lead to illegal dumping, so hotels should for example ask for a signature from the landfill, as to

make sure their waste ends up in the landfill and not in the nature. If they cannot prove by presenting such signatures that 'their' waste went to the landfill, they can be held accountable if their waste was illegally dumped somewhere else. Also, hotels should be obliged to separate certain categories of waste that are very detrimental for the environment, such as batteries for example.

Of course, the general standards on water quality, air quality, waste and wastewater for the whole of Curaçao should also be enforced for hotels. These are formulated in the project 'Environmental standards for the Netherlands Antilles' (MINA, 2007). These standards include for example standards for salinity and chlorine content of discharged wastewater. This is important for hotels because they sometimes discharge hyper saline (very salt) water (remains of the sea water used to make drinking water in their reverse osmosis water plant) and 'overslag' (trans-shipment) water of (chlorinated) swimming pools into the sea.

In addition to different implementations to save water and energy for example, the actual numbers of water or energy use per night are also very important. At the moment most hotels do not really keep track of their water and energy use and their waste production. It was therefore hard to see whether the hotels were already performing on a low or normal or even a high ambition level, as they were formulated on the base of eco-certificates. It is therefore necessary to formulate feasible and useful legal standards for water and energy use and waste production, that hotels start keeping trace of their water and energy use and waste production. Legislation that oblige hotels to monitor should be amongst the first legal measures that are put into practice.

The implementation of other, more elaborate, standards and legislation for existing hotels should have come into practice within ten years from now. Hotels should have reached normal ambition levels by then. Whether it is useful to make high ambition levels also compensatory is a little doubtful. The high ambition level could also become a legal requirement later on (and for newly build hotels), but it is also an idea that this high ambition level remains a voluntary (extra) effort, so hotels that 'go the extra mile' stand out amongst the other hotels. They can then promote themselves accordingly, for example by applying for an eco-certificate. In this way the protection of the environment is still ensured because normal ambition levels are reached, and voluntary and legal measures could go hand in hand.

In this textbox a short overview of some of the main things that the different types of stakeholders could do is given.

What can hotels do?

- Save money, and save energy and water in the meantime, with environmental implementations and practices*
- Monitor water and energy use and waste production*
- Consult each other, share experiences*

What can the government do?

- Inform hotels and the public*
- Make and enforce legislation*
- Provide subsidies for the most energy/water consuming issues in the hotels: air conditioning and solar boilers*
- Provide infrastructure for waste disposal and wastewater discharge (e.g. sewer systems)*

What could other stakeholders do?

- Give information to hotels, but also (potential) guests*
- Create a platform for hotels to share information*
- Create possibilities for financing of implementations*

Literature

- Department of Environmental & Nature Conservation (2004). Nature and Environment policy plan Netherlands Antilles, 2004-2007 (<http://mina.vomil.an>).
- Dinica, V. (2006 [-a]). Sustainable tourism in the Netherlands Antilles- the implementation challenge. Unpublished/in press, University of Twente, Netherlands
- Dinica, V. (2006 [-b]). Sustainable tourism development on Curacao- the implementation challenge. Unpublished/in press, University of Twente, Netherlands
- MINA (2007) Milieunormen Nederlandse Antillen, lucht, geluid, water afval en afvalwater. *Concept*.
- Hinderverordening Curaçao, 1994 (www.mina.vomil.an/Wetgeving/Hinderverordening-Cur.html#wettekst)
- Önut, S., Soner, S. (2006). Energy efficiency assessment for the Antalya region hotels on Turkey. *Energy and Buildings* 38, 964-971
- Pronk, A. (2006). Bedrijven en milieunormen op Curaçao en Bonaire. Een verslag van 25 interviews (<http://mina.vomil.an>).
- RMNO (2006). RMNO-Advies no. A.07 (2006).
- The Dutch guide to sustainable tourism (2003).
- Trung, D.N., Kumar, S. (2005). Resource use and waste management in Vietnam hotel industry. *Journal of Cleaner Production*, 13, 109-116
- United Nations Environmental program (2006). Tourism certification as a sustainability tool: assessment and prospects.
- Warnken, J., Bradley, M., Guilding, C. (2005). Eco-resorts vs. mainstream accommodation providers: an investigation of the viability of benchmarking environmental performance. *Tourism Management*, 26,367-379
- World and Travel Council, 2006 (www.wttc.org).

Websites

Department of environment and nature, Ministry of public health and social development;
www.mina.vomil.an

Ecolabels

Green Key; www.green-key.org
Green Globe; www.greenglobe.org
Green Seal; www.greenseal.org
European Eco label; www.ecolabel-tourism.eu