Mapping Aruba's Policy on Beach Care

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Reflection on the UA-UCU project 2015

I have experienced the UA-UCU project as being an interesting multi-dimensional project with its focus on different aspects of the Aruban environment, culture and community.
Usually for gathering data or information for a legal essay, we primarily analyze the law, jurisprudence and books or articles on laws, and if necessary we approach lawyers or judges. For gathering data and information for the UA-UCU project, I had to do more fieldwork. I visited different agencies and interviewed different people. To really understand the problem of beach pollution, I assisted Tobia di Scisciolo with his research on beach pollution. To collect data on the pollution of the beaches, we manually cleaned several beaches several times. This has been an interesting though wearisome experience.

I have also attended a testing of the bathing water quality by the D.N.M. at different beaches of Aruba.

Working together with a group consisting of different disciplines, I have learned to analyze and address issues from a different perspective than the one I've learned in the last four years of law school.

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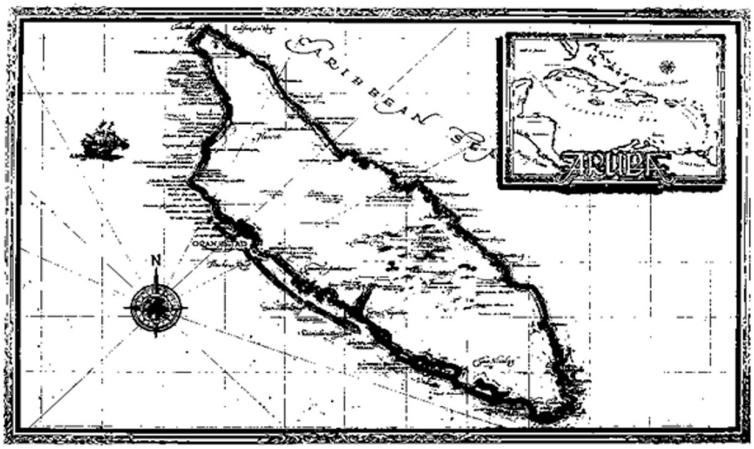

1. Introduction

Aruba's economy is highly dependent on its white beaches, clear sea and beautiful natural landscape. People all over the world visit Aruba to enjoy this scenery. But there is a downside to this tourism-based economy. While tourism has been a successful sector of the Aruban economy, it also has a negative impact on the environment.[1] If not controlled properly, the result is overuse, abuse and quality degradation of the environmental resources.[2] Ocean and beach trash is a serious pollution problem that affects the health of people, wildlife and local economies. Trash in the water and on the beaches can be harmful for beachgoers and marine animals. It is also an ugly sight to have trash on the beaches and this can have a negative influence on the tourism of Aruba.

Adequately resolving this problem is important to the tourist industry as well as for maintaining the original quality of the environment.

1.1 Not just beaches, but the Aruban beaches

Beaches can be defined as long, thin belts of sediments that cover the continents and islands at their shorelines. In tropical areas with good reef development, the beach sand may be composed primarily of calcite from pulverized coral and seashells.[3] Coral reefs cover only 1% of the ocean floor, which means that these kinds of beaches are relatively very rare.[4] Luckily, Aruba's coast is lined with wide sandy beaches, consisting of carbonate sand that is made up of seashells and calcite; giving it it's beautiful white color. Aruba has nice beaches and it's not uncommon that they are highly praised. If you use the Internet to search for information about the beaches of Aruba, you will probably get the following description:

1 J. W. T. Koopmans, E. L. Sjak-Shie, G. A. E. Thodé, *Milieu en ruimtelijke ordening in Aruba,* Oranjestad: VAD 1994.
2 L. Dwyer & R. Spurr, Tourism Economics Summary, Australia: STRC Centre for Economics and Policy, Gold Coast Campus University 2011.
3 A. E. Gates & R. P. Blauvelt, Encyclopedia of Pollution, New York: Facts on file Inc. An infobased learning Company 2011.
4 F. Borrero et al., Earth Science, Geology, the Environment, and the Universe, Ohio: National Geographic, McGraw-Hill 2008.

"The beaches of Aruba are widely considered to be among the cleanest, widest and most spectacular in the Caribbean region".[5] It's primarily for the use of these spectacular beaches that tourists come to Aruba to enjoy their vacation.

In 2013 almost 97% of all the tourists that came to Aruba, visited its beaches.[6] Approximately 72% of these tourists strongly agreed with the statement that Aruba has nice beaches, while 28% agreed with that statement.[7] Although these statistics don't elaborate on how clean the beaches are, they convincingly show that the tourists like Aruba's beaches.

Such optimistic numbers have not been found when asking the tourists if they agreed or disagreed with the statement that Aruba is clean. Merely about 16% of the tourists strongly agreed with the statement that Aruba is clean, while 80% agreed and 4% fit in the categories of neither agreed or disagreed, disagreed, strongly disagreed, or don't know.[8] Unfortunately these numbers show the opinion of tourists on the cleanliness of Aruba in general, and it's not specified if the beaches fall within the range of this statement.

Actual data on the allocation of trash in different areas on Aruba, or data classifying the beaches in different cleanliness levels, I have not found. However, while assisting a research on beach pollution and several cleanup events, I have noticed that the beaches on the south coast of Aruba, especially those beaches nearby the hotels, are much cleaner than the more inland areas.

As a major source of income is derived from tourism and is based on the Aruban scenery, beaches and hospitality, the beaches are one of the most significant assets in the Aruban economy.[9] It is therefore that in this article Aruba's policy on beach care will be mapped, analyzed and interpreted, while focusing on different aspects of maintaining and/or improving the quality and safety of Aruba's beaches.

2. Definition of the problem

It is in the interest of Aruba that the beaches are being taken care of. From a legal perspective, the word "care" can be defined as "serious attention; under the law of negligence or obligations, the conduct demanded of a person in a given situation".[10] According to Article 21 of the Constitution of the Kingdom of the Netherlands, the State shall care for the habitability of the country and the protection amelioration of the environment.[11] Furthermore, the State is presumed to be the owner of the beaches.[12] So it's the government's obligation to take care of the beaches (and the territorial seas).

But to what extent and how this care is being carried out by the government is not clear. There islittle information on an overall overview on how and which governmental agencies and/or non-governmental agencies are caring for the protection and the improvement of the beach quality. There are different laws that play an important role in the beach care. To obtain an overall overview combined with the laws applicable on the beach, mapping of the policy on beach care is necessary.

3. Method

Several topics can fall within the scope of beach care, but for the purposes of this article, the emphasis will be mainly on beach cleaning and on the quality of the bathing water.

5 www.visitaruba.com/things-to-do/aruba-beaches.
6 L. Christiaans-Yarzagaray et al., Tourism Profile - Year Report 2013, Oranjestad: Central Bureau of Statistics 2014.
7 L. Christiaans-Yarzagaray et al., Tourism Profile - Year Report 2013, Oranjestad: Central Bureau of Statistics 2014.
8 L. Christiaans-Yarzagaray et al., Tourism Profile - Year Report 2013, Oranjestad: Central Bureau of Statistics 2014.
9 R. Derix, Opportunities and Challenges for Environmental Statistics in Aruba, Oranjestad: Central Bureau of Statistics 2014.
10 B. A. Garner, Black's Law Dictionary, Ninth Edition, Minnesota: Thompson Reuters 2009.
11 G. Betlem, Civil Liability for Transfrontier Pollution. Dutch Environmental Tort in International Cases in the light of Community Law, Londen: Graham & Trotman/Martinus Nijhoff 1993.
12 Article 5:26 Civil Code of Aruba.

To have insight into Aruba's policy and the role of law on beach care, and to capture it with detailed information, primarily a (analytic) legal research type is used combining the investigation, collection and examination of different policies, legal provisions, concepts and principles. At a minor scale, social science techniques of data collection (such as interviews) are used as well.

The legislation discussed in this article is translated from the original legislation in Dutch, so it cannot provide at all times the accuracy of the original text.

The main research questions in mapping Aruba's policy on beach care are:

- Which regulations are relevant on the subject of beach care?
- What are the policies of governmental agencies on beach care?
- What are the policies of non-governmental agencies on beach care?

4. Mapping laws and policies on beach care

Legislation plays an important role in addressing the increasing problem of beach pollution and in promoting beach safety. Environmental laws can be enshrined in specific laws like the Nuisance Act and in more general laws like the Aruban General Police Ordinance and the main tort Article of the Aruban Civil Code, Article 6:162.[13]

This section will begin with an outline of the Aruban regulations and policies on beach care.

4.1 Public law foundation.

Regarding the public law foundation, the legal basis of the environmental law can be found in Article 21 of the Constitution of the Kingdom of the Netherlands: "The State shall care for the habitability of the country and the protection and amelioration of the environment".[14]

4.2 Legal regulations on preventing pollution of the beaches

In order to ensure the safety and the adequate use of the public waterways under supervision of the State and that from the connecting beaches, shores, earth- and waterworks, by means of asserting penalties, provisions will be laid down by National Decree containing general measures, regarding: (...) c. the use of the beaches, shores, banks, and bays under supervision of the State; (...) d. the throwing or placing of solids in the waters referred to in section a, and on or by the works and areas referred to in section b and c.[15] In this Article, the National Ordinance Public Waterways an Beaches (AB 1987 no. 123) stipulates the requirement of (another) legal regulation that lays down the provisions to ensure the safety and the adequate use of the public waterways and the beaches. This is done by the National Decree Public Waterways and Beaches (AB 1987 no. 124). For the purpose of preventing the dumping of trash, it is forbidden to throw or leave behind bottles, packaging materials and other solids, in the public waterways or on the public beaches and shores, apart from the locations meant for this purpose.[16]

About the same is stated in Article 55 of the General Police Ordinance (AB 1995 no. GT 8): "It is forbidden to place, to dump, to throw, to pour, to flow, to drop or to keep waste, any object or any substance, elsewhere than: (...) d. the trash cans or similar objects placed and meant for this purpose". And although not specified for the beaches,

13 J. W. T. Koopmans, E. L. Sjak-Shie, G. A. E. Thodé, *Milieu en ruimtelijke ordening in Aruba,* Oranjestad: VAD 1994.

14 G. Betlem, *Civil Liability for Transfrontier Pollution. Dutch Environmental Tort in International Cases in the light of Community Law,* Londen: Graham & Trotman/Martinus Nijhoff 1993.

15 Article 2 of the National Ordinance of 1987 concerning regulations regarding public waterways and beaches (AB 1987 no. 123).

16 Article 30 of the National Decree Public Waterways and Beaches (AB 1987 no. 124).

form Article 16 in conjunction with Article 1 of this same Ordinance follows that it is forbidden to pollute the public road, and herewith the waterways, in any way.

From Article 6:162 (2) Civil Code of Aruba follows: "Except where there is a ground of justification, the following acts are deemed to be unlawful: the violation of a right, an act or omission violating a statutory duty or a rule of unwritten law pertaining to proper social conduct".[17] Acting contrary to the environmental regulations will result in breaching of the statutory duties under Article 6:162 Civil Code of Aruba.[18]

Violation on one of the prohibitions and failure to uphold one of the obligations is punishable.[19]

One of the activities at the beach that the Aruban people often enjoy doing is camping. Camping on the beaches of Aruba is not possible without a permit.[20] In a camping permit there are several provisions to ensure that the permit holder is not polluting the beach. From the Camping Permit follows that: "it is forbidden to build a bonfire on the beaches; it is forbidden to have a barbecue on the beaches within 5 meter of the white sands; it is forbidden to bury the remaining charcoal in the sand after using a barbecue pit; it is forbidden to pollute the beach or sea in any way".[21]

These are the main national legal regulations for preventing people and other actors on polluting the beaches.

17 G. Betlem, *Civil Liability for Transfrontier Pollution. Dutch Environmental Tort in International Cases in the light of Community Law*, Londen: Graham & Trotman/Martinus Nijhoff 1993.
18 G. Betlem, *Civil Liability for Transfrontier Pollution. Dutch Environmental Tort in International Cases in the light of Community Law*, Londen: Graham & Trotman/Martinus Nijhoff 1993.
19 Article 43 of the National Decree Public Waterways and Beaches (AB 1987 no. 124); Article 175 of the General Police Ordinance (AB 1995 no. GT 8); Article 6:162 in conjunction with Article 3:296 Civil Code of Aruba.
20 Article 24 of the National Decree Public Waterways and Beaches (AB 1987 no. 124) in conjunction with Article 15 of the General Police Ordinance (AB 1995 no. GT 8).
21 Provisions 13, 14 and 15 of the Camping Permit stipulated by the Minister of Integration, Infrastructure and Environment.

4.3 Legal regulations and policies on the cleaning of the beaches

In spite of these legal regulations, the beaches still are being polluted.

According to Article 2 of the National Ordinance for the establishment of the Servicio di Limpiesa di Aruba (AB 2005 no. 5), one of the responsibilities of the institution SERLIMAR is the maintenance of the domains owned by the State, the parks, the public roads and the beaches. Upon asking a policy officer at SERLIMAR if it is correct to assume that one of the duties of SERLIMAR is to cleanup the beaches, the answer was that for a period of time this was the case, but currently it does not fall under the responsibility of SERLIMAR. As of 2011 the department of Landscape Management has been transferred from SERLIMAR to D.O.W. (Public Works Department), by the Ministerial Regulation MinIIM/4018-2010. Nevertheless, if it comes to the attention of a controller that a beach is badly polluted, SERLIMAR will send a team for the purpose of cleaning up that beach. This is also the case in situations where there is a lot of seaweed on the beaches or if there was a special event on the beach and the beach needs to be cleaned.[22] SERLIMAR has no fixed policy for these exceptional cases. SERLIMAR is also responsible for the weekly collection of the waste in the trashcans nearby the beaches.

The duty to clean up[23] the beaches, lies with D.O.W. (Public Works Department). For achieving this D.O.W. uses six teams of private contractors consisting each of three employees with the sole purpose of cleaning up and maintaining the beaches five days a week.[24] Herein, D.O.W. appoints controllers to inspect the beaches on cleanliness and to supervise the work being done by the private contractors. The beaches that are being cleaned are: Arashi, Malmok, Hadicurari, Palm Beach, Eagle Beach,

22 Document Servicio General Mantencion Bo Bario (SERLIMAR).
23 E.g. the removal of trash or litter and seaweed.
24 P. Denters, R. Falconi, J. Lue, *Involvimento di D.O.W. pa cu mantencion di nos beachnan*, Oranjestad: D.O.W. 2015.

Mangel Halto, Santo Largo, Rodgers Beach and Baby Beach.[25] The cleaning up is being done mostly by hand and not with heavy machinery.

As regarding the cleanup of beaches on the North Coast of Aruba, D.O.W. sends its teams regularly to the following beaches: the area from Boca di Briek (ex-Natural Bridge) up to the Chapel at Alto Vista, the area of Rincon and from Zwart Mangel up to and including Boca Grandi.[26]

Besides the cleaning of the beaches, D.O.W is also responsible for the maintenance of the (quality of) beach sand, the nearby vegetation and the beach huts.

In cleaning up the beaches, the hotels also have a significant role. Usually the beaches nearby the hotels are not being cleaned by SERLIMAR or by D.O.W. because the hotels cleanup these. Their employees (beach attendants) clean up the beaches on a daily basis, often twice a day or continuously.[27] Moreover, some of the hotels use private contractors (divers) to clean up the bathing water. Besides cleaning up the beaches nearby, most of the hotels are also involved in cleanup projects at other beaches or other locations on the Island, like the Bubali Pond, the California White Sand Dunes, the Grapefield Beach, the Mangrove forests, and so on.

4.4 Beach safety policy

For the purposes of this article, beach safety shall only be elaborated on the aspect of bathing water quality.

4.4.1 Policies on monitoring and maintaining the bathing water quality.

Any physical, biological or chemical change in water quality that harmfully effects living organisms or makes water unsuitable for desired uses might be considered pollution.[28] Bacteria in the bathing water can be harmful to marine life and humans, causing sickness (i.e. diarrhea) and decease (i.e. gastroenteritis). As the quality of the bathing water degrades, the swimming-associated illness rate increases.[29]

Escherichia Coli and Enterococci are part of the normal intestinal flora in humans and animals, and are therefore, direct indicators of fecal contamination of the water and the possible presence of pathogens.[30]

Bathing water quality can be classified as 'poor', 'sufficient', 'good' and 'excellent'.

Parameter	Excellent Quality	Good Quality	Sufficient	Reference methods of analysis
Intestinal Enterococci (cfu/100ml)	100	200	185	ISO 7899-1 or ISO 7899-2
Escherichia Coli (cfu/100ml)	250	500	500	ISO 9308-3 or ISO 9308-1

Chart 1: Classification of water quality for coastal waters and transitional waters.[31](Source: Annex I, Directive 2006/7/EC).

As of 2006, the Department of Nature and Environment (D.N.M), in association with the Health Authority and the State Laboratory, periodically monitors the bathing water quality also on the presence of coliform bacteria. In the following bar chart the data from tests on the

25 P. Denters, R. Falconi, J. Lue, *Involvimento di D.O.W. pa cu mantencion di nos beachnan*, Oranjestad: D.O.W. 2015.
26 P. Denters, R. Falconi, J. Lue, *Involvimento di D.O.W. pa cu mantencion di nos beachnan*, Oranjestad: D.O.W. 2015.
27 Information obtained through interview with Hotel Riu Palace Aruba, La Cabana Beach Ressort and Casino, Amsterdam Manor Beach Resort and Manchebo Beach Resort & Spa.
28 W. P. Cunningham & M. Cunningham, *Environmental Science. A Global Concern.* New York: Mac Graw-Hill 2012.
29 Office of Research and Development & Office of Water, *EPA Action Plan for Beaches and Recreational Waters. Reducing Exposures to Waterborne Pathogens.* Washington: U. S. Environmental Protection Agency: 1999.
30 Office of Research and Development & Office of Water, *EPA Action Plan for Beaches and Recreational Waters. Reducing Exposures to Waterborne Pathogens.* Washington: U. S. Environmental Protection Agency: 1999.
31 Annex I of the Directive 2006/7/EC of the European Parliament and of the Council, of 15 February 2006, concerning the management of the bathing water quality and repealing Directive 76/160/EEC.

presence of coliform bacteria is set out. It can be noticed that the colony-forming unit per 100ml for the Intestinal Enterococci as well as for the Escherichia Coli, on average, was below 100 cfu/ml. According to the Bathing Water Directive (2006/7/EC) from the European Union, the quality of the Aruban beaches on this matter could be classified as being 'excellent'. Although at the present time there is no legislation in place to ensure the quality of the bathing water, the Department of Nature and Environment (D.N.M) will alert and advice the concerning authorities to take the necessary measures if the quality of the bathing water degrades.[32]

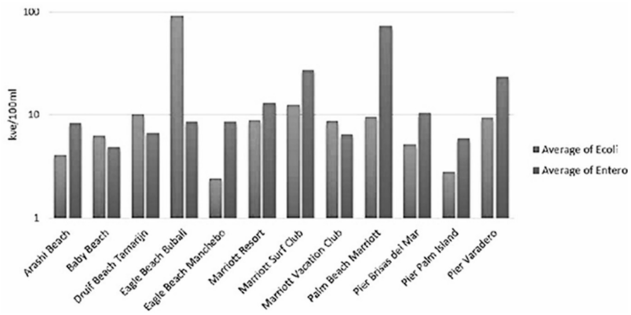

Chart 2: Average per location, during the period of 2009-2013.[33](Source: D.N.M.) (From left to right: 1st bar on the left is for Escherichia Coli, 2nd bar on the left is for Intestinal Enterococci, and so on).

5. Final Remarks, Conclusions and Recommendations

The starting point of this article has been the need to map Aruba's laws and policies regarding the care of the beaches. The regulations analyzed in this article are mostly national regulations, and it can be said that there are many regulations and policies for the purpose of achieving a proper beach care. A crucial element that was not subject to this article is the element of law enforcement. Information from the Aruban Police Force (K.P.A) on enforcing the regulations has also been gathered, but adding this would broaden this (limited) article beyond its scope.

There are many regulations that forbid the pollution of the beaches, but it is also the responsibility of the general public not to pollute the beaches.

Whilst analyzing the policies and involving the information obtained trough interviews with SERLIMAR, D.O.W. and D.N.M., I have come to understand the following. These agencies have basically the right tools and right knowhow to address the problem of beach pollution properly, but they lack the financial resources and manpower. Beach and water pollution must be addressed urgently. It is advisable for the Government to change its attitude more vigorously towards these problems.

To safeguard the bathing water quality, it is necessary to monitor the bathing sites according to criteria or provisions incorporated by law. Adopting provisions like those stipulated in the Bathing Water Directive (2006/7/EC) from the European Union would result in a more structured policy, with a legal basis for ensuring the bathing water quality of the beaches of Aruba.

6. Author's Acknowledgements

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32 Information obtained through interview with Directie Natuur en Milieu, Ministerie van Economische Zaken, Communicatie Energie en Milieu.

33 Directie Natuur en Milieu, Ministerie van Economische Zaken, Communicatie Energie en Milieu, *Grafiek 1: Het gemiddelde E. coli en Intestinale Enterococcen per zeewaterlocatie, gemiddelde per locatie 2009-2013.*