

Climate Change and its impact on the livelihood of the Aruban people

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Aruba is a small island (approx. 180 km²) located in the Southern Caribbean. The island is an autonomous member of the Kingdom of the Netherlands. With a population of about 103,484 people (in 2006)², the population density is about 575 people/km² and is among the highest in the region.^{3,4} The island has a tropical marine climate; with an average annual rainfall around 409 mm/yr.⁵ The landscape is arid with limited vegetation in the form of cacti and local savannah trees and no to limited agricultural activities.



Figure 1. Mid-Caribbean Map⁶

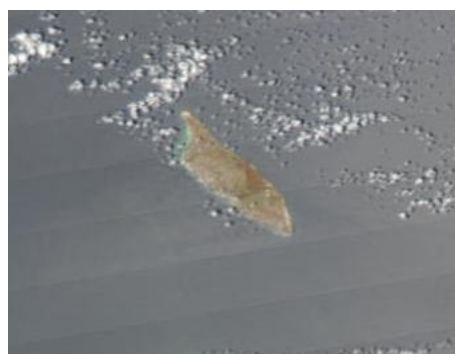


Figure 2. Satellite Photo of Aruba⁷

Aruba has a relative short economic development history. In 1910 oil was discovered in the Lake of Maracaibo, Venezuela. Shortly after, in 1928, Lago Oil & Transport Ltd. established and started its operations on the island, due to Aruba's strategic location near the Lake of Maracaibo.⁸ The oil company made large investments in infrastructure and telecommunications, setting up health and education systems and providing jobs for a large fraction of the local population. This resulted in attractive conditions for business and attracted foreign investments that lead to all types of service businesses being developed. In 1984 this oil company decided to stop its operations due to increases of the well head oil prices, and due to this sudden crisis for income, this triggered the Aruban government to facilitate investment in a newly identified economic sector, tourism. Due to Aruba's beautiful, originally pristine coastal environment and pleasant climate, and its friendly people, tourism resulted to be a success. The GDP increased from US\$ 457 million in 1986 to about US\$ 2,286 million in 2006 mainly driven by

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² Central Bureau of Statistics Aruba, Statistical Orientation Aruba 2006, website: www.arubaeconomicaffairs.aw/Statistical_Orientation_2006.pdf (visited October 2007).

³ Earth Trends Country Profiles, Population, Health, and Human Well-Being Aruba, 2003, website: <http://earthtrends.wri.org> (visited October 2007).

⁴ Overpopulation website: <http://www.overpopulation.com/faq/population-density/population-density-latin-america/> (visited October 2007).

⁵ Meteorological Service of the Netherlands Antilles and Aruba, Climatological Summary of Aruba, 1971-2000, website: <http://www.weather.an/climate/aru.climsum.htm> (visited October 2007).

⁶ Caribbean Maps website: <http://www.caribbeanmag.com/maps/MidCaribbeanMap.jpg>

⁷ Satellite Image Aruba, March 22, 2003, NASA

⁸ Lopez, J.L., *The Lago Colony Legend*, Vig Wig Productions, Conroe, TX, USA, November 2003

investments in hotels, infrastructure and other tourism related activities.⁹ Two decades of rapid increase in economic activities and trade resulted in Aruba's population expanding also rapidly from 63,000 to about 100,000 people (1.5% annual average growth rate) in the period 1986 to 2006. Fortunately the economy grew sufficient leading to a GDP per capita of about US\$22,860 (2006).

Due to this success story and based on the above mentioned conventional macro-economic indicators one may conclude that Aruba could be considered a developed island. This may lead to the question why it is necessary to care about the development of an island as Aruba, as there are many other poorer countries in greater need.

A key problem is that there is the general believe on Aruba that continued expansion of the tourism sector is the sole manner to further develop the island. One has to realize that a continuous expansion of the tourist sector leads to larger space usage for hotels, an increasing annual amount of visiting tourists, an increasing need for imported labor, a continued accelerated growth in the population, therefore more space is required for housing, infrastructure, industry or commerce, recreation, increased water and energy demand, increased waste production and risk for pollution, all causing elevated pressure to the environment and the carrying capacity of Aruba that impacts the quality of life of the Aruban people.¹⁰ When you look closely to the island, the space limitation is seriously becoming a key concern, in 2005, 33% of the land surface was in use, with high concentration in the southern coastal region of the island, leaving only about 119 km² arid and marginal land available for future land uses for the coming generations.¹¹ Global Climate Change¹² also contributes to the increased pressure on the environment and carrying capacity of the island. Its impacts influence the long term economic competitiveness and resilience of the island that ultimately impacts the quality of life and to some extent even possibly resulting to violation of international human rights as explained more detailed in the following points.

Climate Change impact on Aruba

To understand how Climate Change impacts the quality of life on an island such as Aruba one has to start by looking at the global and regional climatological and environmental processes in play. The Intergovernmental Panel on Climate Change (IPCC) as part of the United Nations Framework Convention on Climate Change (UNFCCC) has estimated that the global mean surface temperature increased since the industrial revolution by $0.6 \pm 0.2^\circ\text{C}$ over 20th century.¹³ In the Caribbean region, a Climate Change study performed by the University of Puerto Rico¹⁴, simulated that the Sea Surface Temperature (SST) in the Caribbean Basin will significantly increase due to continued global warming over the coming decades, see results of simulation in figure 3

⁹ National Commission on Public Finance, Sound Public Finance and Public Accountability in Aruba, Ministry of Finance and Economic Affairs of Aruba, February 2007.

¹⁰ United Nations Department of Public Information, From Barbados to Mauritius: The Program of Action for Small Islands, Ten Years Later, International Meeting to Review the Implementation of the Program of Action for the Sustainable Development of Small Island Developing States (SIDS), Mauritius, 2005.

¹¹ Government of Aruba, Ruimtelijk Ontwikkelingsplan 2015, Directie Infrastructuur en Planning, Mei 2006, only available in the Dutch language.

¹² In simple words, Climate Change is the process of changes in the atmosphere that influence temperature, precipitation, storms and sea level beyond the natural variability due to increased Green House Gas (GHGs) emissions caused by human activities, among the GHGs are Carbon Dioxide (CO₂), Methane (CH₄) and Nitrous Oxide (N₂O).

¹³ Intergovernmental Panel on Climate Change (IPCC), Climate Change 2001: Synthesis Report, Summary for Policymakers, 2001, website: http://www.grida.no/climate/ipcc_tar/index.htm (visited October 2007).

¹⁴ Angeles et al., An Assessment of Future Caribbean Climate Changes using the BAU Scenario by Coupling a Global Circulation Model with a Regional Model, University of Puerto Rico, Mechanical Engineering Department.

below. Recent measurements by the Dutch Antilles and Aruban Meteorological Centre confirmed the increase in SST levels in the Southern Caribbean, with temperatures above normal mean.¹⁵

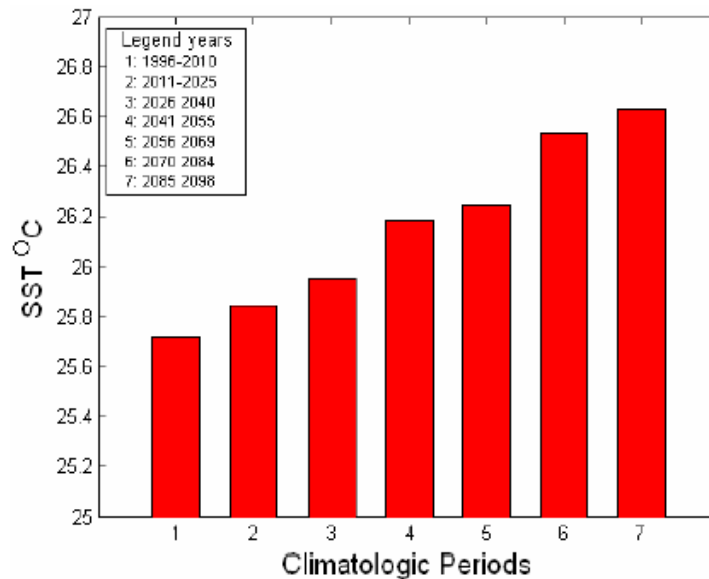


Figure 3. Climate Change Impact on the Sea Surface Temperature in the Caribbean Basin over the period 1996-2098¹⁶

This increase in sea surface temperature can lead to higher frequency in Hurricane formation and intensity¹⁷, change in the ambient temperature, expressing itself in intensified heat waves, changing rainfall patterns, or even impact the health of people.¹⁸

As mentioned before, in many cases these Climate Change impacts are not instantly observable and can only be explained via indirect inter-related events that are long term, multi-dimensional and cross-frontier in nature. It is therefore understandable that the impacts of Climate Change on the Human Rights are beyond the attainable comprehension of the population. In the following sections an attempt is made to simplify and clarify the causal relationship between Climate Change and the livelihood and human rights of the Aruban people.

a) **Natural Disasters**

In the last decade an increased amount of storms and hurricanes are observed. Among these, in 2004, Ivan caused several flood damages on Aruba and greater damages to other islands in the region. Grenada severely suffered by hurricane Ivan leading to \$889 million worth in damages that represented more than twice the countries GDP value in 2003.¹⁹ Recently, in the year 2007, Aruba experienced the impacts of two hurricanes,

¹⁵ Dutch Antilles and Aruban Meteorological Centre, Climate Summary 2006, website: <http://www.weather.an/misc/dc.asp> (visited October 2007).

¹⁶ Angeles et al., An Assessment of Future Caribbean Climate Changes using the BAU Scenario by Coupling a Global Circulation Model with a Regional Model, University of Puerto Rico, Mechanical Engineering Department, page 4.

¹⁷ Geophysics Fluid Dynamics Laboratory (GFDL), Global Warming and Hurricanes, Princeton University, website: http://www.gfdl.noaa.gov/~tk/glob_warm_hurr.html (visited October 2007).

¹⁸ Fracas, J. and Martz, T., The Impact of Climate Change on Water, Sanitation and Diarrhea Diseases in Latin America and the Caribbean, Population Reference Bureau website: <http://www.prb.org/Articles/2007/ClimateChangeinLatinAmerica.aspx> (visited October 2007).

¹⁹ World Bank, Grenada, Hurricane Ivan, Preliminary Assessment of Damages, September 2004.

Dean and Felix, of which the latter one passed very near to Aruba. This time Aruba was lucky and Felix ended up causing mainly flood and/or water damage and fortunately there were no human casualties.



Figure 4. Flooding at Baby Beach, San Nicolaas, Aruba caused by Ivan (2004)²¹



Figure 5. Flooding in Oranjestad (capital of Aruba) caused by Felix (2007)²⁰

This is a clear warning sign that a possible hit by a hurricane should not be neglected and considered as an exception on the rule. One has to realize that historical data is not sufficient anymore to use as proof of whether Aruba is confronting risk or not from future hurricanes. The reality is that Climate Change is impacting several simultaneous environmental and ecological processes at the global level and is influencing the hurricane pathways that increase Aruba's risk to suffer of a weather related natural disaster. See figure 7 below showing how close the eye of hurricane Felix passed near Aruba last September of this year.

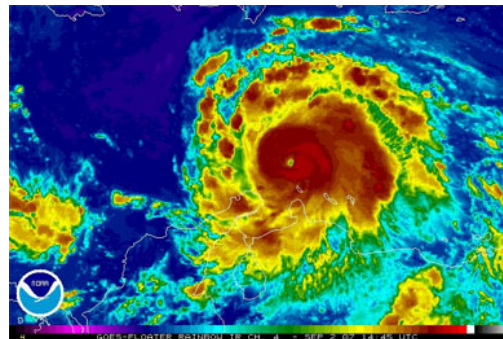


Figure 6. Hurricane Felix monitoring in the Caribbean (September 2007)²²

External environmental related disasters, caused by the climate change process, can cause great physical property damages, involves risks in human safety and can lead to disruption of energy services that has large consequences to the local economy. Misbalance in trade activities by natural disasters leads to increases in import costs from

²⁰ NDTV website: <http://www.ndtv.com/convergence/ndtv/story.aspx?id=NEWEN20070024804> (visited October 2007)

²¹ MSNBC website: http://msnbc.weatherbug.com/YourPhotos/MSNBC/YourPhotos.aspx?category_id=354&lid=YPFCL&no_cookie_stat=&no_cookie_world_stat=&no_cookie_zip=&zcode=z4719 (visited October 2007)

²² National Oceanic and Atmospheric Administration (NOAA), United States Department of Commerce, 2007, website: <http://www.noaa.gov/> (visited October 2007).

a wide spectrum of products as fuels to food products that affect the local quality of life and Aruba's economic competitiveness in the region.

b) Tourism

Aruba is a Small Island State with clear physical limitations, scarce or no natural resources, and a small economic market that is mainly dependant on tourism. This sector is currently the main source of income, and it is therefore ever more important to protect the environment. People tend to forget that the main reason why tourists visit an island as Aruba is because of its hospitable people, beaches, clean turquoise waters and the great weather. These are the natural and cultural assets that Aruba possesses and that define its comparative advantage to other states elsewhere in other regions in the world. Besides it is not the only Caribbean island that is mainly dependant on tourism. The competition is or can be very tough and requires innovative and efficient practices to remain at the fore front as a popular destination. Being dependant on tourism and in particular on the U.S. market, Aruba is very vulnerable to external shocks.

As discussed above, the Climate Change leads to an increase in the Sea Surface Temperature. This warmer seawater has effect on the coral reefs located along the coastline of Aruba that attract divers and is an important tourist activity. These reefs are very sensitive to temperature change; warmer sea water along side other environmental and anthropogenic factors as pollution and physical damage caused by divers, leads to coral bleaching (dying of coral reefs).²³ The change in water temperature along other environmental factors, create conditions for the creation or expansion of coral diseases that hamper the growth of corals.²⁴ Coral reefs are shelters for many fish and submarine species and represent habitats with high levels of biodiversity.²⁵

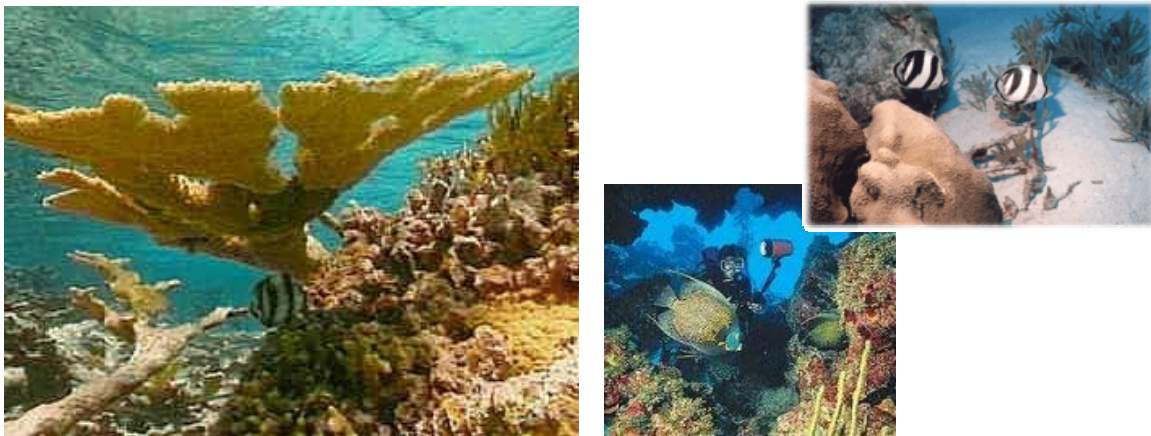


Figure 7. Coral Reefs along Aruba's Shoreline ^{26,27,28}

²³Khamzi, R., Marine Ecology Progress Series, vol. 321, page 1, 2006, website: <http://www.newscientist.com/channel/life/dn10068-most-corals-unable-to-adapt-to-warming-oceans.html> (visited October 2007).

²⁴ National Assessment Synthesis Team, The Potential Consequences of Climate Variability and Change, Climate Change Impacts on the United States, U.S. Global Change Research Program, 2000, website: <http://www.usgcrp.gov/usgcrp/Library/nationalassessment/overviewcoastal.htm#Shoreline%20Erosion%20and%20Human%20Communities> (visited October 2007)

²⁵ King, R., Greenpeace International, October 2006, website: <http://www.greenpeace.org/international/news/climate-change-in-the-pacific>

²⁶ <http://scuba-diving-shipwreck.aruba-travel-info.com/>

²⁷ <http://www.aruba-travelguide.com/activities/scubadiving.html>

²⁸ <http://www.enjoyaruba.com/diving/index.htm>

In other cases Climate Change can also influence wind patterns that lead to changes of sea wave formations, currents and velocity.²⁹ In the case of Aruba, the combination of change in currents (partly also due to construction of piers) and increased frequency and intensity of storms lead to coast line beach erosion, whereby beautiful white beaches are changing (moving away) and decreasing slowly over time.^{30,31} See below figures 9a and 9b showing the difference in beach quality at Palm Beach, Aruba, over a period of 50 years.



Figure 8a. Palm Beach, 1957 ³²



Figure 8b. Palm Beach, 2007 ³³

The natural landscape of Aruba is experiencing an intensified desertification process; arid landscapes are expanding over the island.³⁴ Species migrations are occurring to great extent, turtles and bird types, that use Aruba as breeding spot are shifting to other parts of the region.³⁵ As mentioned before, especially beaches and coral reefs are among the essential natural assets that Aruba possesses to compete in the tourism industry. Unfortunately several beaches around the Aruban coastline are being influenced by similar erosion processes as shown above.³⁶

²⁹ Intergovernmental Panel on Climate Change (IPCC), Climate Change 2007: The Physical Science Basis, Summary for Policy Makers, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, February 2007, website: www.ipcc.ch/SPM2feb07.pdf

³⁰ Walsh, K., Climate Change and Coastal Response, A theme report from the Coast to Coast 2002 National Conference, Gold Coast, November 2002

³¹ Raubenheimer, B., Shaping the Beach, One Wave at a Time, Applied Ocean Physics and Engineering Department, Published in Oceanus Magazine, October 2004, website: <http://www.whoi.edu/page.do?pid=11914&tid=282&cid=2470> (visited October 2007).

³² This picture is available at the website: <http://www.lago-colony.com/> (visited October 2007).

³³ This picture is taken by Bob Lloyd (2007), available at website: <http://www.lago-colony.com/> (visited October 2007). Note: This picture is not taken at the exact same spot, but clearly highlights the beach erosion process that has taken place over the last decades.

³⁴ United Nations Framework Convention on Climate Change (UNFCCC) website: http://unfccc.int/essential_background/feeling_the_heat/items/2904.php (visited October 2007).

³⁵ Barmes et al., Sea Turtle Recovery Action Plan, CEP Technical Report No. 25. UNEP Caribbean Environmental Program, Kingston, Jamaica, 1993, website: <http://images.google.com/imgres?imgurl=http://www.cep.unep.org/pubs/Techreports/tr25en/fig5.gif&imgrefurl=http://www.cep.unep.org/pubs/Techreports/tr25en/content.html&h=1021&w=840&sz=50&hl=en&start=17&um=1&tbnid=IWn0qX4psTIt0M:&tbnh=150&tbnw=123&prev=/images%3Fq%3DSpecies%2BMigration%2BAruba%26svnum%3D10%26um%3D1%26hl%3Den>

³⁶ New South Wales Government, NSW Coastline Management Manual, Australian Government Department of the Environment and Water Resources, September 1990, website: <http://www.environment.gov.au/coasts/publications/nswmanual/appendixc9.html> (visited October 2007).

c) Health and Food

On Aruba there are indications that in recent years the dengue fever may have risen again after short outbreaks in the early 90s.^{37,38} Climate Change can also via the rise of temperature and changes in rainfall impact the general public health by increasing the risk of emergence of new or revival of past vector borne diseases. Increased temperature also leads to increasing morbidity and mortality rates.^{39,40,41} High ambient temperature can cause direct loss of life, especially in the Caribbean region; the temperatures can, during summer time increase to dangerous levels. The possession of an air conditioning has become a necessity in these areas. People suffering of high pressure or cardiovascular diseases have a higher risk for complications or to suffer of heat strokes in warm climatic temperatures. In Aruba there is no recent data on the mortality rates. The latest health situation analysis dates back for the period 1995-1999 indicating that the highest cause of mortality was heart and cerebrovascular diseases.⁴² No specific study has been performed to assess the link between Climate Change and the causes of death on Aruba, but the recent published IPCC 4th Assessment Report clearly states and confirms the relation between increased death causes by heart or cardiovascular disease due to intensified heat waves.⁴³

Being an island, there are considerable food resources in the surrounding waters of Aruba. Fisheries in Aruba, although not as developed as in other countries, may become an increasingly important resource for the food supply of Aruba. Currently the island is almost entirely dependant on imported food. The local diet reflects high levels of meat and poultry consumption and results in high levels of cost for food import. The increased price in imported consumables (due to e.g. increased petroleum prices that affect the food processing industry) is adding pressure to the economy and the disposable income of the population.

In the case of Aruba, large fractions of untreated waste water are discharged on the coastal sea water that leads to high levels of pollution. The local fishermen continue to fish in the traditional manner and there is an absence of a large scale fish industry. If considering the fish industry as a potential future source for the diversification of Aruba's economy and a food supply source, one has to identify and recognize the effects Climate Change has on the sustainability of such fishing activities.

The Climate Change adds additional pressure on top of other environmental factors and human activities that impact the stock of fish and other marine species. The rise in sea temperature and increased variability of seasons in addition to anthropogenic factors as sea pollution can impact fish populations (e.g. decrease in fish species) and change the geographic migration dynamics and seasonality of fish stocks (due to shifts in currents and temperature, plankton quantity and distribution change and therefore also the

³⁷ Algemeen Dagblad, *Dengue Epidemie treft Aruba*, Saturday 04 March, 2006, only available in the Dutch language, website: <http://www.ad.nl/binnenland/article190240.ece> (visited October 2007).

³⁸ Het Arubahuis, *Dengue in Aruba*, website: http://www.arubahuis.nl/index.php?option=com_content&task=view&id=115&Itemid=1 (visited October 2007).

³⁹ The Climate Institute website: <http://www.climate.org/topics/health/index.shtml> (visited October 2007).

⁴⁰ World Health Organization (WHO), *Climate Change and Human Health*, website: <http://www.who.int/globalchange/climate/en/index.html> (visited October 2007).

⁴¹ Nurse, L.A. and Sem, G., *Small Island States* (Chapter 17), website: www.grida.no/climate/ipcc_tar/wg2/pdf/wg2TARchap17.pdf (visited October 2007).

⁴² Pan-American Health Organization (PAHO), *Health Situation Analysis and Trends Summary*, website: http://www.paho.org/English/DD/AIS/cp_533.htm (visited October 2007).

⁴³ Working Group II Contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report, *Climate Change 2007: Climate Change Impacts, Adaptation and Vulnerability, Summary for Policymakers*, April 2007.

location and density of fish stocks).⁴⁴ All this may lead to the point that fish migration may take place to the point that limited fish stock remain within Aruba's fishing or maritime economical territory and debilitating the fishery industry.

d) Energy

Increased weather related disasters that occur elsewhere in the region impact the quality and cost of services in the area of trade, tourism and import of energy. Due to increased frequency and intensity of hurricanes in the Caribbean and the Gulf of Mexico, oil companies apply a higher insurance fee to their oil exploration and exploitation activities.⁴⁵ This increase in exploitation and delivery costs due to Climate Change along with delays in bringing online of new oil fields, geo-political events and the continuous accelerated global demand by emerging economies as China is reflected in the increases of the cost per barrel for petroleum products; note that per 18 October 2007 the international crude oil price has reached the US\$90 per barrel level.⁴⁶ During decades this was considered as impossible; unfortunately this is the reality we currently live in and need to adapt to.

WEB Aruba N.V. is the single utility company that is for 100% dependant on imported petroleum products for the generation of energy, distribution and desalination of seawater for potable water production (note, these are two basic needs of any human being).⁴⁷

When analyzing the electricity rate, the current average household electricity rate on Aruba, including fuel surcharge, is about 0.22 US\$/kWh (based on a household consumption of 750 kWh/month).⁴⁸ This rate is among the highest in the Western Hemisphere. The gasoline prices have increased from US\$3.94 per gallon (September 2006) to US\$4.28 per gallon (September 2007).⁴⁹ These increases in fuel and utility prices all contribute to the increase in the cost of living and services provided by the several sectors in the economy.

Climate Change and Human Rights

All the factors above may worsen the conditions of life of the Aruban population, and may even lead to violation of some basic human rights. Recently the consumer price index increased by 5.4% (July 2007) compared to corresponding month in 2006. Also an accelerated annual average inflation rate of 4.1% in 2007 compared to 3.6% in 2006 and 3.4% in 2005 was observed due to increased international fossil fuel prices leading to increased inflation rate differential with the U.S. (Aruba's largest trade market) that worsens Aruba's competitiveness.^{50,51}

⁴⁴ Brander, K., *Assessment of Possible Impacts of Climate Change on Fisheries*, Externe Expertise für das WBGU-Sondergutachten, Die Zukunft der Meere – zu warm, zu hoch, zu sauer, Berlin, 2006.

⁴⁵ Agasse, A., Climate Change Could Play Havoc With Oil Prices, February 2007, Energy Daily website: http://www.energy-daily.com/reports/Climate_Change_Could_Play_Havoc_With_Oil_Prices_999.html (visited October 2007).

⁴⁶ U.S. Energy Information Administration (EIA) website: <http://www.eia.doe.gov/emeu/international/prices.html#Crude> (visited October 2007).

⁴⁷ Earth Trends Country Profiles, Climate and Atmosphere Aruba, 2003, website: <http://earthtrends.wri.org> (visited October 2007).

⁴⁸ Department of Economic Affairs, Commerce & Industry of Aruba, Utilities, Aruba Economic Affairs website: http://www.arubaeconomicaffairs.aw/index.php?option=com_content&task=view&id=29&Itemid=42 (visited October 2007).

⁴⁹ Gasoline Prices in Aruba, Arubalife website: <http://www.arubalife.net/gasoline/> (visited October 2007).

⁵⁰ Central Bank of Aruba, Press Release: 2006 Annual Report, July 2007, website: <http://www.cbaruba.org/cba/home.do> (visited October 2007).

⁵¹ Central Bank of Aruba, Summary of the monthly bulletin of the Centrale Bank van Aruba for August 2007, October 12, 2007, website: <http://www.cbaruba.org/cba/home.do> (visited October 2007).

Thus, as a result of loss of natural assets to maintain the resilience of Aruba's tourism sector, increased prices of energy, increased risks for natural disasters and/or epidemics, the populations purchase power may be altered, especially for the poorest and most disadvantaged part of the population, violating the right to "equal access to public service in his country or the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control".⁵²

Further, there are plenty global and regional indications and international consensus whereby Climate Change is contributing to changes in the natural environment in such ways that it impacts the access to clean water and affordable services as health, education, energy and goods as food that every human is entitled to.⁵³ Aruba as a small island state in a continuous globalizing world is not isolated from Climate Change and its impacts, and it is therefore imperative that the local government and its people start to make the right decisions and take action.

What to do?

The impacts of increased air pollution, due to increased traffic jams, the petrochemical industry, waste dump, continued expansion of unsustainable mass tourism, that leads to high population growth and need for space and basic infrastructure needs and increased water and energy demand and environmental problems, all may not be noticeable now, but sometime in future, when Aruba's beaches are eroded, there is no space for any type of land uses, the economy is saturated, and the quality of life of the Aruban people is altered, there will come a point that we might regret not having taken action on time to face the effects of local pollution and Climate Change.



Figure 9. Greenhouse Gas Emissions from activities on Aruba⁵⁴

⁵² United Nations Office of the High Commissioner for Human Rights, Universal Declaration of Human Rights, United Nations Department of Public Information, U.N. Website: <http://www.unhcr.ch/udhr/lang/eng.htm> (visited October 2007).

⁵³ Millennium Development Goals Indicators, U.N. Stats, website: <http://unstats.un.org/unsd/mdg/Data.aspx?cr=533> (visited October 2007).

⁵⁴ On the left you can see emission coming from the Valero Oil Refinery located in the southern city of San Nicolaas, source: Amigoe paper. On the right you can see an open-air fire at the centralized dump site at Parkietenbos in the city of Oranjestad, source: Diario Aruba. The government has mandated a zero open-air burning policy over the last years due to air quality problems and complaints by neighboring residents, but unfortunately due to lack of monitoring and control fires as this take place on occasions.

As starting point to prepare for and mitigate the effects of Climate Change, it is key to acknowledge these above mentioned problems. It is important to stress the fact that Climate Change is not only a local phenomenon and if not dealt with at all levels of society and at regional and international level, it impacts my, your and your neighbors lifestyle to such an extent that it may even lead to violation of your and your children's basic human rights. A balanced social and economic development while maintaining or protecting the environment is the key starting point to mitigate the risks and impacts of Climate Change.

Therefore by implementing the sustainable development paradigm as the guiding principle, Aruba may develop a competitive and resilient socio-economic system to improve the quality of life of current and future Aruban population while protecting Aruba's natural assets.

Finally, I would like to highlight that further research is needed to evaluate the specific link between Climate Change and the above mentioned impacts on the livelihood and human rights of the local population.

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U.S. Department of State, Country Report on Human Rights Practices, 2006, the Bureau of Democracy, Human Rights, and Labor, March 06, 2007, see website: <http://www.state.gov/g/drl/rls/hrrpt/2006/78830.htm>.