

GLOBAL INFORMATION SOCIETY WATCH 2020

*Technology, the environment and
a sustainable world: Responses from
the global South*



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC)
AND SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (SIDA)

Global Information Society Watch 2020

Technology, the environment and a sustainable world: Responses from the global South

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Janick Bru (with The Ocean Project Seychelles, Seaweed Seychelles and Sustainability for Seychelles)

Introduction

The management of waste for a rapidly developing country is often problematic, and the Seychelles is no exception. Development and changes in people's consumption patterns as well as increased economic activity, especially from tourism on land and on sea, mean that finding ways to dispose of waste in a sustainable way is a growing challenge.

Shortly after becoming independent in 1976, Seychelles began to advocate for the special needs of small island states and to highlight their physical vulnerability.¹ Initially, issues relating to the environment were part of overall national planning, but this changed with the preparation of the country's first separate environmental plan for 1990-2000. A report of the United Nations Development Programme (UNDP) subsequently stated:

The Government invested over US\$200 million of its own funds to implement the 1990-2000 Environment Management Plan of Seychelles (EMPS I). A major portion was utilized to implement field conservation programmes, as well as infrastructure development projects, including wastewater treatment on the east coast of Mahé and the construction of a fully engineered landfill. This also facilitated the creation of a separate Ministry of Environment and Transport (MET).²

The latest environmental plan, the Seychelles Sustainable Development Strategy (SDS) 2012-2020, incorporates the concept of sustainable development with that of environmental development. It is described as "a new national instrument to ensure that we meet the needs of present and future generations." It states that its "ultimate objective is to improve sustainable development management in Seychelles" and that this will be done "in line with

Agenda 21."³ The strategy includes guiding principles for managing water, sanitation and waste. As of July 2017, the importation and use of styrofoam takeaway boxes and plastic items such as carrier bags, plates, cups and cutlery in the country have been banned,⁴ followed by a complete ban on the manufacture, importation and use of plastic straws in 2019, in an effort to advance environmental protection.⁵

This country report has the waste management hierarchy principle in mind as it "sets the relative priority of methods for managing waste, the top priority being waste reduction, followed by reuse, recycling, and energy recovery with the least desirable option being disposal."⁶

The Ocean Project: Marine litter tracking

A representative of The Ocean Project (TOP) Seychelles,⁷ which was set up in 2016, reports that their main objective is to tackle marine pollution, climate change and unsustainable fisheries through education, action and research.

Plastic litter has a significant environmental and economic impact on marine systems and TOP believes that monitoring is crucial in assessing the effectiveness of measures to reduce plastic litter in Seychelles' large exclusive economic zone. In June 2019, TOP started a three-year marine litter monitoring programme to investigate the abundance and composition of macro-litter (greater than 25 millimetres) and meso-litter (5-25 millimetres), as well as their main sources. In the case of macro-litter, the project attempts to identify the likely origin of the litter and the threat posed by potentially

3 <http://www.meec.gov.sc/wp-content/uploads/2017/04/Seychelles-Sustainable-Development-Strategy-Volume-1.pdf>

4 Ernesta, S. (2017, 4 July). Beginning of a cleaner Seychelles? Ban on plastic bags, plates, cups now in effect in Seychelles. *Seychelles News Agency*. <http://www.seychellesnewsagency.com/articles/7517/Beginning+of+a+cleaner+Seychelles+Ban+on+plastic+bags%2C+plates%2C+cups+now+in+effect+in+Seychelles>

5 Ernesta, S. (2019, 1 June). No more plastic straws: Ban comes into full force in Seychelles. *Seychelles News Agency*. <http://www.seychellesnewsagency.com/articles/11071/No+more+plastic+straws+Ban+comes+into+full+force+in+Seychelles>

6 <http://www.meec.gov.sc/wp-content/uploads/2017/04/Seychelles-Sustainable-Development-Strategy-Volume-2.pdf>

7 <http://theoceanprojectseychelles.com>

1 Seychelles Nation. (1977, 3 March). The cost of smallness. *Seychelles Nation*.

2 UNDP. (2010). *Assessment of Development Results: Seychelles*. <https://www.oecd.org/countries/seychelles/46820415.pdf>

invasive species, mostly invertebrates, attached to floating litter. These usually settle on plastic debris which can float great distances.

The programme is part of a regional Western Indian Ocean Marine Science Association (WIOMSA)⁸ project which includes Mauritius, Madagascar, Mozambique, South Africa, Tanzania and Kenya. The comparison of results between sites and over time should eventually make it possible to look at the effectiveness of litter reduction methods nationally and regionally in order to improve policies.

TOP selected sites across the inner and outer islands of Seychelles that are accessible year-round to surveyors who investigate the composition, source and likely origin of marine litter and thus provide an understanding on how these change over time (the accumulation rate). For sites located far from Mahé (the largest of the Seychelles islands) – for example, Farquhar Island, which is 776 kilometres away – two research assistants fly out to the atoll to conduct beach litter surveys, but this is possible only during the calmer season outside the peak southeast monsoon. To ensure continuity, partnerships were established with the Islands Development Company (IDC) that manages most of the Seychelles outer islands, and with the Islands Conservation Society (ICS), an NGO that is present on some of the outer islands, so that surveys can be carried out when there are no available flights.

Removing litter from identified sites to conduct macro-litter accumulation surveys requires a large group of people. Prior to surveys, TOP puts out a call for volunteers, who are given training for half a day to familiarise them with the survey protocol. Participants are given incentives, including snacks and refreshments, to make sure that there are enough people to collect, sort, count and weigh the litter.

Research assistants use standard survey equipment (gloves, rubbish bags, hand pickers) to collect litter, along with GPS devices, cameras and spray paint to demarcate any large items that cannot be removed from the site and to verify marked transects. Digital 0.1g and 0.01g scales are used to respectively weigh macro- and meso-litter. This is then collected using a hand spade and processed using stackable sieves varying from 2 millimetres to 25 millimetres.

In terms of staying in contact with surveyors, the TOP representative reports that “for the surveyors based on Farquhar, we use a landline telephone to keep in touch, as internet is patchy/non-existent.” This is not done on a daily basis, as phone calls to

outer islands cost substantially more than normal calls. For more remote locations on the main island, once surveyors are confirmed, a WhatsApp group is set up where they can share questions and pass on information, as it makes it easier for everyone to know what is going on. TOP uses Instagram and Facebook to interact with its followers and posts updates of projects and activities on its website. It currently has about 3,635 followers on Instagram and 3,599 on Facebook.

TOP says that the SSDS 2012-2020 and the country’s Blue Economy Strategic Policy Framework and Roadmap 2018-2030 focus on the sustainable development of Seychelles’ blue economy, but that marine litter is neither specifically referred to nor addressed. The lack of data on marine litter also meant that marine litter monitoring did not inform the Seychelles National Waste Policy 2018-2023. It says that this is despite research recognising that “solid waste management should not be separated from any marine litter monitoring programme.”

Seaweed Seychelles: Organic fertiliser

Seaweed Seychelles⁹ is a small business based on the island of Praslin and run by Bernard Port Louis and his son Benjamin, who say that their “current main activity is the making of an organic liquid plant growth promoter and organic compost soil conditioner” from seaweed. “When I was studying in Australia,” Benjamin explains, “I wanted to do something new to help the country and the agricultural and health sectors by making an organic product and also to ease the seaweed issues we face.”

There is a time of the year when large amounts of seaweed are deposited on beaches daily. Hotels complain about the seaweed, which is seen as a pest and detrimental to the tourism industry.¹⁰ The seaweed also poses a threat to young turtles, and disposing of it is difficult.

Seaweed Seychelles does not harvest seaweed from the ocean, as the promoters believe that this destroys the ecosystem and hurts the marine creatures that live in the seaweed. Instead, they collect the seaweed once it comes to shore. The technology that they use is one of a kind and has been patented. It took years of research to develop the optimal process to extract the liquid from the seaweed yet still maintain the quality of the seaweed by-product. They say that they use

⁹ <https://www.facebook.com/seaweedseychelles>

¹⁰ It is to be remembered that Seychelles’ main economic activity (at least until the event of COVID-19) is tourism.

⁸ <https://www.wiomsa.org>

all the seaweed, and that no waste is produced. Their product also has organic certification. They describe their factory as being completely green, since they use solar facilities for the production of electricity and hot water. They note that “in order to achieve all this we did extensive research on our process and how to do it by being green.”

Seaweed Seychelles hopes to change the farming industry as well as domestic gardening in the country. They feel that the public has been very supportive of their project: “The people of Praslin have welcomed us and have supported us and even on Mahé we have a lot of support. It’s great to make something for the people of Seychelles.”

Sustainability for Seychelles (S4S): Glass recycling

In 2009, the NGO Sustainability for Seychelles (S4S)¹¹ decided to do something about waste, because the idea of using waste to make something useful was appealing and because they liked the idea of the circular economy.

Funding was available from the European Union through the Indian Ocean Commission’s programme for regional and national conservation and alternative livelihoods, and S4S applied for and received funds to launch a glass recycling facility. A representative of S4S comments that “glass is one of those types of waste that people talk about because it’s visible and because it piles up easily, but no one felt (that) throwing it in the landfill was the right thing to do.” The government had started stockpiling glass waste at a site in Anse Royale in the southern part of Mahé, but this was cancelled because of community resistance.

Initially, S4S had spoken to stakeholders and found that there was considerable interest in the idea of crushing glass for use in local construction. When the grant was received, S4S purchased a small industrial crusher and some collection bins and partnered with the company running the main landfill to house these and do the crushing. Another main partner was the government’s Land Waste and Management Agency (LWMA), which gave S4S some office space and jointly coordinated major activities, including the collection of glass waste from hotels and restaurants. Training sessions were organised for hotel managers, for construction students from the Seychelles Institute of Technology and for people working in construction on how to use glass waste cullet in concrete products. A

documentary film was prepared and there were adverts that appeared regularly on television. A public glass waste drop-off facility outside of the main landfill was also made available.

S4S had several expectations at the start of the three-year project, but the major one was that the government would eventually take over the project, and a memorandum of agreement was signed with the government to that effect. The project was well accepted by hotels and restaurants – there was a good system for collection and about 65 organisations participated. At the end of the project, it is reported that the government did not keep its end of the agreement, as the 500 collection bins purchased for the project were used for roadside cleaners to collect litter. The crushing machine remained idle for about a year. A private contractor (Rogan Construction of Baie Lazare, a member of S4S) then took the machine to its work site and started using it to produce cullet that was used in its own construction projects. An S4S representative says that “hotels and people brought mountains of glass waste to the company to be crushed.”

This continued until about 2017, when the operation was stopped, as the amount of glass being brought had become overwhelming and the company also had other projects. In 2018, the government announced that it was going to import a larger machine, but this has not yet been done; and early in 2020, the government approached S4S about getting the S4S crusher going again.

Conclusion

Of the three projects surveyed, it is clear that information and communications technologies (ICTs) play a more central role in the marine litter tracking initiative, even though all three maintain websites which provide a considerable amount of information to anyone online who might be interested in their work. But the projects also show that ICTs are not essential to getting sustainable waste management projects off the ground – and that much of the interest and public participation in these interventions can depend on concretely showing their benefits and results. As one of the interviewees said:

Frankly, although people in Seychelles do have pretty good access to internet, this is not the way to solve problems [here]. People take a lot of stock in face-to-face interaction. Visits to the landfill, to demonstration sites that are doing something about waste – these opportunities

11 <http://www.s4seychelles.com>

for people to see for themselves and talk to one another are far more powerful than what communication technology has to offer alone. Of course it can also help, though!

However, all three organisations thought that much more needs to be done in the area of waste management in the country. One of them comments:

I think that the current working models of sustainable development need to be improved. There are many ways to encourage sustainable business, but there are no policies or options for such businesses.

Another adds:

Because recycling plants and waste management business ideas in general [...] have a high initial investment, interested local entrepreneurs should receive support from government and subsidies to put in place such projects.

Action steps

To deal with waste in the country, the focus should not be only on what/when/where/how to handle waste, but rather about instilling in people a different view of consumption, as well as the value of the circular economy. Therefore, the following action steps are recommended:

- Run low-key continuous campaigns focusing on the role of individual responsibility in managing waste. (It is here that the internet can be a valuable campaign and education tool in Seychelles).
- Add to or amend existing laws on polluting and littering in ways that produce more positive long-term effects, for example, by replacing punitive options such as fines (or prison sentences) with mandatory participation in programmes for environmental protection.
- Encourage the setting up of businesses that operate along principles of sustainable development and the circular economy, for instance, through government incentives.

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The world is facing an unprecedented climate and environmental emergency. Scientists have identified human activity as primarily responsible for the climate crisis, which together with rampant environmental pollution, and the unbridled activities of the extractive and agricultural industries, pose a direct threat to the sustainability of life on this planet.

This edition of Global Information Society Watch (GISWatch) seeks to understand the constructive role that technology can play in confronting the crises. It disrupts the normative understanding of technology being an easy panacea to the planet's environmental challenges and suggests that a nuanced and contextual use of technology is necessary for real sustainability to be achieved. A series of thematic reports frame different aspects of the relationship between digital technology and environmental sustainability from a human rights and social justice perspective, while 46 country and regional reports explore the diverse frontiers where technology meets the needs of both the environment and communities, and where technology itself becomes a challenge to a sustainable future.

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2020 Report

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