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Artificial intelligence:
Human rights, social justice and development

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SEYCHELLES

WHAT PEOPLE THINK OF ARTIFICIAL INTELLIGENCE IN A SMALL AND REMOTE ARCHIPELAGO
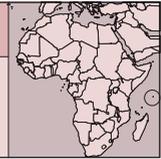
Janick Bru
janickbru@hotmail.com

Introduction

The Seychelles is increasingly finding more innovative ways to sustain its development – for example, building on the potential of the "Blue Economy" by launching the world's first sovereign blue bond, described by the World Bank as "a pioneering financial instrument designed to support sustainable marine and fisheries projects."[1] Yet another example is the Fishguard project,[2] which is meant to be integrated into the fisheries patrol routines of the Seychelles air force and the Seychelles coast guard. The project, piloted in October 2018, monitors large marine areas using a combination of short- and long-range drones equipped with artificial intelligence (AI). It was said that the drones "are programmed to be self-reliant and capable of making independent decisions based on data collected."[3] The aim of the project is to reduce the effects of "illegal, unreported and unregulated fishing on Seychelles' marine resources."

The Seychelles exclusive economic zone (EEZ), which was 1,374,000 km² (about six times the size of the UK), was extended by 14,840 km² in September 2018. In addition, the country jointly manages a marine space of 397,000 km² with Mauritius as part of the Extended Continental Shelf[4] – this being the first such collaboration at global level. Considering that the country only has a total population of 96,762 people, there are, as a result, many areas where AI could be used to boost its capacity, support development and protect its resources.

During a visit to the Seychelles in early July 2019,[5] the African head for the World Economic Forum (WEF) referred to the country's role in the Blue Economy as being "not just theory". She said Seychelles is a "working model" and that "everyone needs to wake up and realize that the ocean is the beating heart of the world, as people we are not acting with the sense of urgency that it requires." She also mentioned the so-called Fourth Industrial Revolution and its impact on the world, saying, "It is important to hold discussions on this issue as emerging technologies, artificial intelligence, blockchain are fast transforming how we live and work." The WEF website elaborates in the following words:

> These advances are merging the physical, digital and biological worlds in ways that create both huge promise and potential peril. The speed, breadth and depth of this revolution is forcing us to rethink how countries develop. […] The Fourth Industrial Revolution is about more than just technology-driven change; it is an opportunity to help everyone, including leaders, policy-makers and people from all income groups and nations, to harness converging technologies in order to create an inclusive, human-centred future.[6]

But before any of this can happen in the Seychelles, the people of the country need to have a basic understanding of AI. This report will look at general perceptions that exist regarding AI in the Seychelles and whether or not the average person understands what AI is and what it does.

Perceptions of AI in Seychelles

To test how familiar people in the Seychelles are with the concept of AI, a small number of individuals (14) were asked about it. Three categories of people were targeted: young people, working/

1   World Bank. (2018, 29 October). Seychelles launches World's First Sovereign Blue Bond. www.worldbank.org/en/news/press-release/2018/10/29/seychelles-launches-worlds-first-sovereign-blue-bond

2   Bonnelame, B. (2018, 18 September). Project FishGuard: Seychelles to monitor illegal fishing with unmanned drones. *Seychelles News Agency*. www.seychellesnewsagency.com/articles/9754/Project+FishGuard+Seychelles+to+monitor+illegal+fishing+with+unmanned+drones

3   Ibid.

4   www.seyccat.org/about-us/seychelles

5   Laurence, D. (2019, 5 July). Technology, Blue Economy on Seychelles' agenda at World Economic Forum meeting in South Africa in September. *Seychelles News Agency*. www.seychellesnewsagency.com/articles/11277/Technology%2C+Blue+Economy+on+Seychelles%27+agenda+at+World+Economic+Forum+meeting+in+-South+Africa+in+September

6   www.weforum.org/focus/fourth-industrial-revolution

retired members of the general public, and some individuals from formal institutions.

Most of the members of the general public who were adults and employed, or who were retired, tended not to know what "artificial intelligence" was, despite the fact that one of them was a front-desk worker for a telecommunications company and another had recently been working for a popular internet café. Those who said that they knew what it was, referred to robots generally as examples of AI, although one person referred specifically to a "Honda robot prototype that feeds disabled people." All of the people in this group said that they used Google regularly, while a couple also used Facebook. Only two of them said that they were aware that Google and/or Facebook used AI to control content and to learn about users, with one of them stating that both companies "are very tricky and subtle" in how they operate. When prompted, a third individual who had said he was "not sure" about big technology companies using AI added, "When I think about it, I always get adverts about things connected to cars and car parts, because this is what I usually look for online, I never get to see adverts about gluten-free foods."

A 15-year-old student at a state school did not know what AI was and was unable to provide an example. When asked about whether she used Google or Facebook, she said that she did but admitted that she had no idea that these companies used AI to control content or to learn about users. Nonetheless, she did feel that there was a need to regulate social media because "a lot of people do things on there that don't make sense." Another student, also from a state school, said that she knew what AI was and suggested that an example would be a robot. She said that she was not aware that Google and Facebook used AI but believed that there was a need for regulations because "the advanced technology used in AI could be used for the wrong reasons."

A third student, from a private international school, confidently stated that he knew what AI was and gave the following three examples: Google Assistant,[7] Siri[8] and Alexa.[9] He said that he used Google but not Facebook, and that he was very aware of how big technology companies control content and harvest information about users. He believed that there needed to be regulations and that technology companies should have the

equivalent of internal audit departments to do this. He felt that such regulations should be applied only when necessary, for example, "if AI starts doing things it should not do," but that otherwise it would be better not to tamper with it. He added, "In case one day AI gains control of itself, it will be necessary for humans to find ways to keep overall control, just in case learning machines go rogue and act against human interests."

Representatives of institutions who agreed to respond to emailed questions were from the media, the public sector, a semi-autonomous agency and an educational institution. All of the individuals from this group knew what AI was. They used sentences such as "when computers think for themselves" or "machines/gadgets that are engineered to automate and 'think' like humans" or "machine intelligence – AI platforms having capacity to solve complex problems". Four of them thought that AI was relevant for the Seychelles, in that the world was developing "in that direction" and that technology was everywhere and constantly advancing. Only one person did not think that AI was relevant for the Seychelles, since the country has a small population and it also has some unemployment. She felt that people would be displaced by AI and that "having a computer think for you, makes you lazy!"

This group also felt unanimously that there should be regulations to control the use of AI. One thought that regulations should apply to national security and military issues, while another felt that there should be forms of control to ensure that "we reap the benefit of such technologies in an *ethical* and *legal*[10] manner (since) we need to ensure that this lucrative industry does not grow unregulated." Another point of view was that most people in the Seychelles tended to be very accepting of what is on the internet and that the only way to protect the country in this area was through "more awareness and much education" because AI needed to be well understood by the general public. One person commented that the Seychelles seemed to be quite vulnerable to cybercrime at both personal and institutional levels. This group strongly felt that AI had to be regulated and all of them thought this should be done by the government through appropriate agencies, with one person adding that the people involved in regulating AI needed to be well trained and thoroughly knowledgeable in this area.

Regarding the type of control and regulations that should exist, the following ideas were put forward: regulations which ensure that legal norms

7 https://assistant.google.com
8 https://www.apple.com/siri
9 https://en.wikipedia.org/wiki/Amazon_Alexa

10 Words emphasised by respondent.

and ethical standards prevail, while keeping a balance between encouraging innovations and stifling growth, restrictions on where and when AI can be used, and protocols that are designed "to prevent anything getting out of control." One person thought that as long as it was possible to regulate and control the physical and real effects of technology, then the virtual world itself could remain free and unregulated.

The Seychelles Institute of Technology (SIT), which provides technical and vocational education and training after secondary school in the engineering, built environment and ICT fields, was recently recognised by UNESCO-UNEVOC as one of the world's 10 innovative technical and vocational education and training (TVET) institutions.[11] Among other things, it trains future technicians in the installation of photovoltaic panels and solar water heaters, and trains students to retrofit containers as energy-efficient premises that can be used as offices. Additionally, SIT students were trained to build the first gabion rock barrage that provided sufficient water supply for a farming community in the south of the main island of Mahe that had suffered from water shortages for years – this was done through a project that emphasises an approach to advanced engineering that works with and for nature. A brief conversation with a representative of the institute indicated that it had not yet incorporated aspects of robotics or AI in its curriculum but that it was hoped the SIT would be able to do this eventually.

The level of access of the general population to the internet and other forms of telecommunication is high: figures indicate that in December 2018 there were 97,783 internet subscriptions as well as 178,946 mobile phone subscriptions (many having access to the internet) in the country.[12] In mid-2018 there was the launch of digital TV by the Seychelles Broadcasting Corporation, which offers free access to eight television channels (three local channels and five international news channels). To encourage use of this facility, every household in the country was offered a free decoder. Moreover, there are other telecommunications service providers that offer paying alternatives, which are also very popular.

However, while there is clearly a general understanding of AI within institutions, it is also obvious that overall knowledge and understanding of AI in the Seychelles is currently very limited. Despite occasional programmes on television about AI or competitions organised by the National Institute for Science, Technology and Innovation encouraging groups of students to create basic robots,[13] AI is not a topic that appears much in the local news nor is it one that is a subject of discussion professionally or socially, despite the considerable attention it is currently attracting in other parts of the world.

One of the students who answered questions summed up the situation by saying, "People use things but they are not told what it is they are using." On the other hand, the country has been at the forefront of numerous innovative schemes and ventures for sustainable development on land and in the marine environment. It is reasonable to believe that forms of AI, if used appropriately, could enhance the impact of these projects, broaden their reach and make it possible for relatively small teams to effectively manage the large areas of the Seychelles marine territory. A first step would be to educate people in the Seychelles about AI, so that they learn about the potential benefits of this form of technology, but also understand how such advances can be used in ways that may negatively affect them and their way of life.

Action steps

The following steps are needed in the Seychelles:

- Initiate a national conversation around AI that is inclusive.
- Include classes in state schools that prepare students from a relatively early age to understand what new technologies are, how they function and what they do, and progressively move to more advanced forms of the new technologies in secondary schools.
- Increase investment in training in new technology development (including AI) in relevant professional centres, in particular the SIT.
- Develop a practical and conceptual understanding of AI and its potential positive and negative impacts within both the National Institute for Science, Technology and Innovation and the national Department of ICT.

11 Seychelles News Agency. (2019, 22 July). Seychelles Institute of Technology recognized as one of the world's 10 innovative TVET centers. *SBC*. https://sbc.sc/news/seychelles-institute-of-technology-recognized-as-one-of-the-worlds-10-innovative-tvet-centers

12 www.ict.gov.sc/ReportsStatistics/Reports.aspx

13 In July 2017, "Team Seychelles, which was the youngest team and came from the smallest country, came 105th out of 163 countries overall in the FIRST Global Challenge held from 16 to 18 July in Washington. Seychelles was ranked 25th out of 40 countries from Africa." Laurence, D. (2017, 28 July). Science organisation in Seychelles wins support award at int'l robotics competition. *Seychelles News Agency*. www.seychellesnewsagency.com/articles/7658/Science+organisation+in+Seychelles+wins+support+award+at+int%27l+robotics+competition

Artificial intelligence:
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Artificial intelligence (AI) is now receiving unprecedented global attention as it finds widespread practical application in multiple spheres of activity. But what are the human rights, social justice and development implications of AI when used in areas such as health, education and social services, or in building "smart cities"? How does algorithmic decision making impact on marginalised people and the poor?

This edition of Global Information Society Watch (GISWatch) provides a perspective from the global South on the application of AI to our everyday lives. It includes 40 country reports from countries as diverse as Benin, Argentina, India, Russia and Ukraine, as well as three regional reports. These are framed by eight thematic reports dealing with topics such as data governance, food sovereignty, AI in the workplace, and so-called "killer robots".

While pointing to the positive use of AI to enable rights in ways that were not easily possible before, this edition of GISWatch highlights the real threats that we need to pay attention to if we are going to build an AI-embedded future that enables human dignity.

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