

GLOBAL INFORMATION SOCIETY WATCH 2010

Focus on ICTs and environmental sustainability



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC)
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Introduction

In the Caribbean, climate change is posing new and worrying environmental and social challenges. Unusual weather patterns, altered hurricane frequency and intensity, rising sea levels transforming beach fronts and residential shorelines: these are just some of the visible indications of climate change in the region.

Even as questions arise about the anthropogenic basis of these changes, the documented position of the Intergovernmental Panel on Climate Change (IPCC) cannot be ignored. The IPCC noted in 2007 that “most of the observed increase in global average temperatures since the mid-20th century is likely due to the observed increase in anthropogenic greenhouse gas concentrations.”¹

Within the specialised academic field of information and communications technology (ICT) policy analysis, as well as in practical public policy spheres globally, there are ongoing efforts to devise ICT best practices and applications for combating or adapting to climate change. This report addresses the existence or adequacy of ICT programmes and policies to combat climate change and manage electronic waste (e-waste) in one of the Caribbean’s larger island economies: Jamaica.

Policy and legislative context

The Clean Air Act (1964) and the Ozone Act (2008) are the two main pieces of legislation that could be broadly considered as mitigating aspects of climate change in Jamaica. The Clean Air Act speaks to four main substances: smoke, fumes, gases and dust. However, this piece of legislation seems more directed towards protecting the public’s health under historical conditions, with little reference to new concerns relating to climate change. In 2002, the Air Quality Regulations managed by Jamaica’s Natural Resources Conservation Authority came into effect through the constitutional powers of the minister given under the Natural Resources Conservation Authority Act. The Air Quality Regulations were instituted on account of concerns about the impact of climate change on public health. They improved on the 1964 Act by listing among the harmful air pollutants, the greenhouse gases carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. The Ozone Act also speaks broadly to conditions on the importation of refrigerant equipment with

dangerous chlorofluorocarbons. There is not a sufficient link, however, between these two pieces of legislation and initiatives to promote the development of ICTs and the new cyber economy in the country.

In terms of policy, Jamaica’s most recent ICT policy (2009) identifies the link between ICT and the environment in two particular ways. The first concerns the proper disposal of ICT waste, and the second relates to the threat of electromagnetic radiation. Under the section dealing with ICT waste disposal, the policy document notes the imperative of establishing standards especially in relation to the importation of ICT equipment. It also includes a discussion of the need for recycling and/or reusing ICT equipment.

The National Energy Policy 2009-2030, which speaks directly to the link between energy usage and climate change, was recently developed by the Ministry of Energy and Mining. The energy policy acknowledges that Jamaica contributes little to global carbon emissions, but stands to face disproportionate costs because of its location and status as a small island developing state. The energy policy sets out three strategies to be employed for climate change mitigation and adaptation. The first is a carbon trade/auction, the second a carbon trading policy, and the third a process of systematic energy conservation and usage efficiency. The latter was to be attained through the transfer of energy-efficient technologies including ICTs and the promotion of renewable energy sources. Other supplementary policies were also identified by Jamaican policy makers that together help to play a role in the country’s adaptation and mitigation strategies. These include the Forest Policy and the National Forest Management and Conservation Plan, the National Land Policy, the Watersheds Policy, the National Biodiversity Strategy and Action Plan, and the National Hazard Mitigation Policy.

These diverse provisions are clearly important and reflect the existence in the country of a strong and growing environmental lobby and a willingness of legislators and the public to take action towards the protection of the environment. However, this needs to be further translated into closer linkage to the nascent ICT sector. A significant gap remains, for example, in relation to the managing and disposing of ICT waste. It is of note that the National Solid Waste Management Act which established the National Solid Waste Management Authority (NSWMA) does make provisions for the disposal of hazardous waste, under which ICT waste could be classified. There also appears to be some uncertainty as to the existence of a national e-waste policy. A draft Policy and Policy Framework for Hazardous Waste Management was developed for Jamaica in 2003, which explicitly articulated the appropriate policy

1 IPCC (2007) Summary for Policymakers, in Solomon, S. et al. (eds.) *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf

approach to e-waste disposal.² However, in 2008, there was a National Policy and Strategy for the Management of Hazardous Wastes in Jamaica, which does not make any specific provision on e-waste.³ Such discontinuities make unclear which policy document, if any, is currently guiding ICT waste disposal in Jamaica.

ICTs, climate change and environmental sustainability

As a small island developing state, Jamaica bears disproportionate costs associated with climate change, compared with her mainland developed country counterparts. Persistent sea level rises associated with global warming are already creating coastal inundation, with huge implications for the flagship tourism industry as well as for critical infrastructures that are located on the coastlines. Aberrant rainfall patterns such as those experienced in the 2009 to 2010 droughts have had significant negative effects on the country's agricultural, domestic and other interrelated sectors. The absence of any significant rainfall levels in this period when there were also few significant hurricanes affecting the region contrasts with the preceding 2008 period which saw an active hurricane season and significant rainfall. During the drought, severe water shortages disrupted schools, communities and businesses. The management of trucked water supplies could have been aided by better use of ICTs, including mobile phone and media advisories of trucking schedules. National policies should address ways in which ICTs can similarly assist in monitoring and managing scarce essential supplies, not just for Jamaica, but also for the entire Caribbean.

It has been over a decade since Jamaica acceded to and ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 6 January 1995. In keeping with the conditions of the accession, Jamaica developed its first National Communications Policy on climate change, which was submitted to the UNFCCC in 2000, and its second draft National Communications Policy was completed in 2009. Despite these significant policy initiatives, little has been achieved by way of appropriate legislative changes towards public education for the country. This inactivity in public education and communication policy planning is perhaps indicative of a lack of awareness among key political actors of the imperative of fostering public sensitivity to climate change in Jamaica, possibly using ICTs.

This operational gap persists despite the provision in the National Communications Plan of 2000 that "there should first be promoted a greater awareness and understanding among the relevant agencies and institutions of the importance of the issue, and of the need to mainstream vulnerability, mitigation and adaptation strategies in the

broader national sustainable development plan."⁴ This kind of sensitisation about climate change should be a major issue in Jamaica as the country currently grapples with so many simultaneous development challenges. There is a risk that in the face of contending demands, climate change will not receive the policy attention it needs, both at the level of government ministries and also at the community level. It is in this respect that a public policy champion is required to lead in popularising adaptation and mitigation strategies for climate change using ICTs.⁵

A national policy champion on the impact and use of ICTs in climate change would also see to the foregrounding of the subject in the implementation of the country's national development plan, called Vision 2030. The plan articulates two national policy objectives: (i) the development of measures to adapt to climate change and (ii) contributing to the effort to reduce the global rate of climate change. A total of ten government ministries and agencies have been identified with responsibilities to achieve these objectives, but none is given an explicit role for leading and coordinating the initiative. One candidate for this role is the National Meteorological Service, Jamaica, since it already acts as the focal point for all national communications with the UNFCCC and on all other climate change matters. This could be achieved by broadening or extending the parameters of the climate branch within the National Meteorological Service, a unit not unaccustomed to the delivery of daily public information outputs on prevailing climatic conditions.

This branch currently has responsibility for:

[M]aintaining a current database of the climate of Jamaica and for the utilization of this data in informing productive sectors of the country. It consists of a Data Acquisition Section that sets up and maintains an island wide network of rainfall and climatological stations; a Data Processing Section that gathers, archives and analyses the climatological data with a view to monitoring and assessing the climate of the island; and an Applied Meteorology Section that processes the needs of clients, which include crop water requirements, design criteria for hydrologists and engineers, and climatological information for resolving weather related legal and insurance issues.⁶

Under this framework, significant institutional cooperation and collaboration would be needed between the meteorological service in Jamaica and the Central Information Technology Office (CITO), to examine and develop ICT applications for environmental sustainability and climate change adaptation.

2 Government of Jamaica (2003) *Policy and Policy Framework for Hazardous Waste Management in Jamaica*.

3 Government of Jamaica (2008) *National Policy and Strategy for the Management of Hazardous Wastes in Jamaica*.

4 National Meteorological Service Jamaica (2000) *Initial National Communication of Jamaica*. www.metservice.gov.jm/Climate%20Change/Initial%20National%20Communication%20of%20Jamaica.pdf

5 Torres, C. and Tirol, M. S. (2010) *Advancing Adaptation through Communication for Development*, Food and Agriculture Organization of the United Nations, Rome.

6 www.metservice.gov.jm/aboutus.asp

There is also the need for organised implementation of mitigating strategies for e-waste as discussed earlier. With the total number of mobile subscribers outstripping the population, and with the average per-person time span for mobile phone change being 18 to 24 months, it is clear that a huge stock of disused mobile phones is accumulating annually in Jamaica.⁷ From correspondence with the National Solid Waste Management Agency (NSWMA), the agency responsible for implementing policy on waste disposal, the following conclusions were reached on e-waste disposal:

- The use of landfills and other existing disposal sites operated in Jamaica are not the appropriate waste management solutions for ICT waste. Disassembling and diversion of the various fractions for appropriate recycling, recovery or treatment options is ideally required. However, those industries and resources are not local and so the exporting of these waste materials may well be the best option for a small island developing state such as Jamaica.
- The NSWMA had stored e-waste in the past. That was however an interim arrangement which proved unsustainable, as the agency was not able to accommodate all the e-waste being generated, resulting in a request to provider companies to retain stocks in their possession.
- Jamaica is a Basel Convention signatory and as such is entitled to participate in initiatives such as the Mobile Phone Partnership Initiative (MPPI) and the Partnership for Action on Computing Equipment (PACE). These initiatives have the potential for application of the extended producer responsibility (EPR) framework for ICTs and the subsequent development and implementation of environmentally sound management of ICTs locally.
- Jamaica presently has transboundary regulations that implement the Basel Convention and that will allow for the export of materials containing hazardous components to other Basel signatory countries for environmentally sound management.
- There are economic opportunities to be gleaned from the environmentally sound management of ICT waste, but most significantly, failure to manage the waste appropriately while the use of ICTs continues to grow exponentially has the potential for significant negative impact on environmental sustainability and health.

Despite these policy prescriptions, there is still no implementation plan for e-waste disposal. The country's leading environmental authority, the National Environment Protection Agency (NEPA), recently indicated that a policy paper is being developed and would soon be ready for industry consultation before submission for parliamentary approval.

The Bureau of Standards, as the primary standards body in Jamaica, is a participating member of the ISO TC 207/SC 7,⁸ which signals the Bureau's awareness of the significance of carbon emissions standards and management for ICT and other sectors in Jamaica.

New trends

An important new trend currently being financed by the United Nations Development Programme (UNDP)-Global Environment Facility (GEF) and the Jamaican government is a community-based approach to adaptation to climate change. Jamaica is among ten countries selected globally to participate in this project, which is expected to be mainstreamed in other countries. The project is designed to be closely aligned to the sustainable development priorities or objectives of selected communities across the island. However, it is significant and worrying that no explicit ICT components have been included in the Jamaican project.

Regional supra-national cooperation on climate change is another important trend. Given the unique context of Jamaica and the wider Caribbean, these islands have seen it fit to pool their resources toward leveraging their collective wealth in pursuit of climate change mitigation and adaptation strategies through the establishment of a Caribbean Community Climate Change Centre (CCCC). The Centre represents a high-level advisory body to CARICOM (the Caribbean Community), of which Jamaica is a part, as well as being the repository for climate change data. Although the Centre was established only five years ago, it has now come to the fore, particularly in the context of the recent Copenhagen summit that intensified analysis of climate change and the imperative of its abatement. The CCCCC therefore forms an important regional resource that could help to stimulate harmonised national policy making on climate change and ICT policies.

Digital switchover

The impending International Telecommunication Union (ITU)-mandated switchover from analogue equipment to a policy of using digital technologies in the global broadcasting environment is likely to generate a large volume of discarded ICT hardware. While some countries have already embarked on analogue switch-off, their manufacturers are still making radio and television sets employing the older technologies. Important challenges for Jamaica and the Caribbean include how to handle the increased disposal of hardware over the next decade and how to avoid being subjected to the danger of dumping by more advanced countries or unscrupulous equipment manufacturers. The existence of an Anti-Dumping Commission and the requisite legislation will hopefully help to reduce the likelihood of this imposition. Already, the agency leading the switchover, the Broadcasting

7 Dunn, H. (2009) Reducing the Carbon Footprint and Other Negative Environmental Consequences of the Global Telecommunications and ICT Sector, paper presented at the Caribbean Conference on Information and Communications Technology (CCICT), University of the West Indies, Kingston, Jamaica, 16-17 March.

8 ISO TC 207/SC 7 is the International Organization for Standardization Technical Committee on Greenhouse Gas Management and Related Activities. This committee is charged with the responsibility of devising standards on carbon emissions and their management for a wide variety of products.

Commission of Jamaica, has alerted retailers and the general public about the need to purchase digital television equipment, thereby avoiding new challenges in the disposal of ICT waste.

Action steps

In the context of this report, there are certain key action steps that the Jamaican authorities may wish to consider:

- The emphasis of climate change and its implications as a higher priority by government, the business community and civil society.
- The identification of an existing agency to serve as the climate change policy champion that could coordinate the country's climate change strategy and promote it among political and business leaders, as well as to civil society more broadly.
- The need for updated policy guidelines that identify explicit means by which ICTs can be deployed in climate change adaptation and/or mitigation at all levels of society.
- The need for legislation on the safe disposal of e-waste such as disused mobile phones, computer hardware, broadcasting industry detritus and old consumer products.
- Development of a coherent national climate change policy in place of the splintered and uncoordinated current provisions. ■

GLOBAL INFORMATION SOCIETY WATCH 2010 investigates the impact that information and communications technologies (ICTs) have on the environment – both good and bad.

Written from a civil society perspective, **GISWatch 2010** covers some 50 countries and six regions, with the key issues of ICTs and environmental sustainability, including climate change response and electronic waste (e-waste), explored in seven expert thematic reports. It also contains an institutional overview and a consideration of green indicators, as well as a mapping section offering a comparative analysis of “green” media spheres on the web.

While supporting the positive role that technology can play in sustaining the environment, many of these reports challenge the perception that ICTs will automatically be a panacea for critical issues such as climate change – and argue that for technology to really benefit everyone, consumption and production patterns have to change. In order to build a sustainable future, it cannot be “business as usual”.

GISWatch 2010 is a rallying cry to electronics producers and consumers, policy makers and development organisations to pay urgent attention to the sustainability of the environment. It spells out the impact that the production, consumption and disposal of computers, mobile phones and other technology are having on the earth’s natural resources, on political conflict and social rights, and the massive global carbon footprint produced.

GISWatch 2010 is the fourth in a series of yearly reports critically covering the state of the information society from the perspectives of civil society organisations across the world.

GISWatch is a joint initiative of the Association for Progressive Communications (APC) and the Humanist Institute for Cooperation with Developing Countries (Hivos).

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