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The policy brief is a publication of the Department of Government, Sociology, Social Work and Psychology of the University of the West Indies, Cave Hill Campus. The views expressed in the publication, however, are those of the respective authors and do not necessarily reflect the official position of the Department or the University on any of the issues dealt with by the contributing authors.

About us

Established in 1976, the then Department of Government and Sociology delivered teaching in Political Science, Sociology and Psychology. Today the Department offers programmes at both the undergraduate and graduate levels in International Relations, Labour and Employment Relations, Political Science, Public Policy, Sociology, Social Work and Psychology.

Research Aim

The aim of the Department of Government, Sociology, Social Work and Psychology is to produce innovative research that addresses the topical issues facing the Caribbean and world today. The Department carries out research in the areas of democracy and electoral politics, survey design and analysis, social policy, gender, and youth development, inter alia.

The Department's academic staff possess an extensive list of publications in the form of books, peer-reviewed book chapters and journal articles, newspaper articles and other non-fiction texts. In addition to its theoretical output, the researchers collaborate with organisations and agencies at the global, regional and international levels.

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Introduction

Kristina Hinds, PhD

It is my pleasure as the Head of Department of Government, Sociology, Social Work and Psychology to introduce this sixth volume of our Policy Brief. This edition covers a range of timely policy areas that reflect the Department's multi-disciplinary structure and emphasis.

The brief begins with Alicia Nicolls' probing treatment of one of the potential outcomes of climate change: that of forced migration that may result from climate emergencies. This issue is one for us to consider in the Caribbean, as a region quite exposed to the global climate crisis. Linked to this consideration is that of food security and mitigating food scarcity, discussed in this brief by David O. Yawson.

The second and final pieces in this brief address critical issues emerging from the COVID 19 pandemic. On the one hand, Wasim Worrell appraises the challenges and benefits of recruiting men as nurses to address some of the region's nursing shortages and public health challenges. Meanwhile, Kerrie Ellis-Worrell addresses the efficacy of using of proctoring software in the Caribbean context, as a response to assessment and testing in the virtual teaching environment that the COVID 19 pandemic has forced.

This policy brief contains another topical issue connected to Barbados becoming the region and the world's most recent republic. In this connection, Kristina Hinds puts governance in focus in this new environment.

The Department welcomes your feedback on any of the pieces contained in this brief.

Recognising And Protecting the Rights Of 'Climate or Environmental Refugees' Under International Law

Alicia D. Nicholls
Junior Research Fellow (Trade)

Each year millions of persons globally are displaced by climate-related disasters, making human displacement one of the most pernicious impacts of the global climate crisis. According to the Internal Displacement Monitoring Centre (IDMC) (2021), 98 per cent of all disaster displacement recorded in 2020 was caused by weather-related events. Moreover, in 2018, the World Bank estimated that in three regions of the world (Sub-Saharan Africa, South Asia and Latin America), just over 143 million people – or 2.8 percent of these regions' populations – could be internally displaced due to the effects of climate change by 2050 (World Bank 2018). To date, much of this disaster or environment-induced displacement has been internal. Internal displacement is the term used to describe the displacement of persons within their own country. The World Bank (2016) noted that based on data available at that time, climate change and weather shocks were only having a 'relatively small' impact on international migration. However, the Bank warned that current patterns indicated that environmental changes were 'likely' to increase internal migration and to a lesser extent international migration. This was particularly so for small island developing States (SIDS) which are on the front lines of climate change's most adverse impacts, including rising sea levels and more severe weather-related events.

(Photograph courtesy of Unknown)

Recent natural disasters, such as Hurricanes Irma and Maria (2017) and Hurricane Dorian in 2019, reiterate that the disaster-induced forceable displacement of populations is no longer hypothetical, but a growing reality that many Caribbean SIDS may confront as the climate crisis worsens. In the 1980s and 1990s, the concept of 'environmental refugee' began to take root in development discourse (El-Hinnawi 1985; Tolba 1989; Myers 1993). Using several countries as case studies, Myers (1993), advocated for the global community to adopt policy measures to lessen global warming and warned of what could become a 'prominent international phenomenon of 'environmental refugees'. However, to date, the concept of an environmental or climate refugee is not recognized in international law.

This Brief argues that in light of the worsening impacts of climate change, there is the need for the international community to formally recognize the concept of 'climate or environmental refugees' in international law or at a minimum provides greater guaranteed protections for this growing class of displaced person in domestic legislation.

What is the issue?

While the term 'climate refugee' or 'environmental refugee' is used to describe natural persons who are displaced from their homelands by the adverse impacts of climate change, it is not a recognized term in international law. Moreover, though used interchangeably in common parlance, 'migrant' and 'refugee' are two different concepts. There is no internationally agreed definition of 'migrant', but a migrant is generally understood to be "a person who moves away from his or her place of usual residence, whether within a country or across an international border, temporarily or permanently, and for a variety of reasons" (IOM n.d.). A 'refugee', however, has a specific definition under international law. Consequentially, while all refugees are migrants, not all migrants are refugees.

The Convention Relating to the Status of Refugees of 1951 (Geneva Convention on Refugees), ratified by over 140 countries worldwide, only recognizes as a 'refugee' a person who is outside his or her country of nationality or habitual residence and who is unable or unwilling to return because of a "well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion". Therefore, only persons falling under this definition are regarded under international law as 'refugees' and are entitled to the rights and protections under the Convention. In some contexts, the definition extends to persons fleeing "events seriously disturbing public order" (1969 OAU Convention; 1984 Cartagena Declaration). However, environmental or climatic factors are not one of the grounds on which a person could be considered a refugee.

(Photograph courtesy of Unknown)

There are 250 million international migrants around the globe, of whom 21.3 million are classified as refugees (World Bank 2016). Refugees have several rights and protections under the Geneva Convention on Refugees and other international conventions. These include the right of non-refoulment (not to be returned to the place where his/her life or freedom would be threatened due to any of the reasons listed in the Convention), right to education, employment, housing, freedom of movement, freedom of religion, inter alia. Persons who flee their homelands on account of natural disasters are at the mercy of the legal system of the country in which they are seeking to be settled.

The notion of a 'climate refugee' was tested under international law for the first time when in September 2020, the United Nations Human Rights Committee (UNHRC) considered the application by a Kiribati national, Ioane Teitiota, who claimed his human rights, under Article 6(1) of the Convention, were infringed by New Zealand's decision to reject his asylum application and to deport him back to Kiribati in September 2015. The basis for his argument was that New Zealand's decision violated his right to life under the Convention due to the growing scarcity of habitable space because of

sea-level rise which has led to 'violent land disputes that endanger the author's life' and environmental degradation. The Committee, however, for several reasons found that his rights were not violated by New Zealand and that the New Zealand courts had provided Mr. Teitiota with an individualized assessment of his need for protection and had noted all the elements provided when evaluating the risk he faced when he was deported back to Kiribati in 2015.

The dissenting opinion by Committee member Duncan Laki Muhumuza is instructive. Arguing that "the case revealed a violation and should be admissible", he opined that the author "faces a real, personal and reasonably foreseeable risk of a threat to his right to life as a result of the conditions in Kiribati". He further posited that "the action taken by New Zealand is more like forcing a drowning person back into a sinking vessel".

While this landmark case did not lead to the conclusion one would have hoped for, the committee made some observations that open the door for future recognition of climate refugees. First, it agreed with the view that the risk of an entire country becoming submerged under water may make conditions of life incompatible with the right to life with dignity before the risk is realised. Second, the Committee noted that its decision was being made "without prejudice to the continuing responsibility of the State party to take into account in future deportation cases the situation at the time in Kiribati and new and updated data on the effects of climate change and rising sea levels thereupon".

The concept of compulsion is one of the distinguishing factors between a migrant and a 'refugee' (Bates 2002). Climate change compels internal displacement and migration in several ways. First, rising sea levels cause coastal erosion, reducing the availability of fertile or habitable land. Kiribati, a Pacific SIDS consisting of thirty low-lying atolls, is one of the countries most severely impacted by climate change. A study by Oakes, Milan and Campbell (2016) found that some 94% of Kiribati households surveyed had been impacted by environmental hazards over the preceding ten years. It found that while migration was rare, the desire to migrate was high but lack of money accounted for 75% of unrealized migration ambitions (Oakes, Milan and Campbell 2016). The study further found that not only were finances a major barrier to migration, but also concerns about having the proper documentation in order to migrate.

(Photograph courtesy of Unknown)

Second, hurricane damage can displace entire populations. The island of Barbuda, part of the island nation of Antigua & Barbuda, had to be temporarily evacuated following Hurricane Irma in 2017 (World Bank, GFDRR, UN, and EU 2017). Some 130,000 Puerto Ricans (4% of the population) left that US island territory in the aftermath of Hurricane Maria (Sutter 2018). In September 2019, the island of Abaco in the Bahamas was rendered virtually uninhabitable due to category-five Hurricane Dorian which lingered above the island for hours unleashing torrential rain and storm surges. Thousands of Abaco residents had to be evacuated to Nassau, the capital of the Bahamas. The Trump Administration refused to grant temporary protection to Bahamians fleeing the post-

Hurricane Dorian devastation in their homeland (Reuters Staff 2019).

Third, changes in weather patterns can make some places uninhabitable due to drought, declining water supply and falling crop yields which force residents to move to more habitable and productive places. Sea level rise can also lead to saltwater infusion into natural aquifers, rendering the water undrinkable.

The World Bank (2018) noted that global action now could reduce the number of people forced to move due to climate change by as much as 80 percent. Although displacement due to climate change can affect any country, the problem is exacerbated in SIDS like those in the Caribbean, the Asia-Pacific and the Indian Ocean, some of which are either low-lying and/or have small land areas. Even in some SIDS with larger land areas and/or more mountainous land topographies, the population and major infrastructure tend to be concentrated primarily along coastal areas putting them at risk to storm surges during storms and sea-level rise.

The UN Global Compact for Safe, Orderly and Regular Migration, signed by over 160 countries in 2018, was the international community's first step towards recognising the concept of 'climate migrants' for the first time and takes into account target 10.7 of United Nations Sustainable Development Goal 10 committing to cooperate internationally to facilitate safe, orderly and regular migration. In light of the growing numbers of displaced persons due to armed conflicts, political crises and natural disasters, this international agreement sought to create a global response for better managing migration. However, not only is the agreement non-binding, but several major countries have opted not to ratify it due to immigration concerns. The agreement is non-binding and is also limited to migrants and does not explicitly recognise 'climate refugees'.

According to the Nansen Initiative (2015), there are "fifty countries that in recent decades have received or refrained from returning people in the aftermath of disasters, in particular, those caused by tropical storms, flooding, drought, tsunamis, and earthquakes". Nonetheless, countries' asylum laws, which ratify the 1951 Convention, do not currently recognize or protect 'climate or environmental refugees'. It is, therefore, of interest to see that during the 2020 US election campaign one candidate in the Democratic Party's primary, Julian Castro, had committed to expanding US immigration law to provide recognition and protection for 'climate refugees' (Beitsch 2019). In a briefing report prepared for the European Parliament, the European Parliamentary Research Service (2021) noted that "while the EU has so far not recognised climate refugees formally, it has expressed growing concern and has taken action to support and develop resilience in the countries potentially affected by climate-related stress". This shows that while countries do not yet appear politically willing to recognize the concept, there is an understanding that this is an area that will require attention as the climate crisis worsens.

What should be done?

Migration itself is a politically sensitive topic for many countries. Climate-caused displacement is coinciding with a global migration crisis and a groundswell of nationalism, xenophobia and a trend towards more restrictive immigration policies across the world, particularly in the Global North. However, three main arguments could be made as to why an urgent multilateral approach is needed to provide protection under international law for 'climate or environmental refugees'. First, the global climate crisis is accelerating at a faster rate than was previously anticipated. The latest Intergovernmental Panel on Climate Change (IPCC) report (2021)

warned that "global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO2) and other greenhouse gas emissions occur in the coming decades". The commitments under parties' nationally determined contributions pursuant to the Paris Agreement are not enough to achieve the required amount of reductions to halt this scenario. The World Meteorological Organization (WMO) reports that "over the last 50 years, 50% of all recorded disasters, 45% of related deaths and 74% of related economic losses were due to weather, climate and water hazards" (WMO 2021). As such, increased displacement, including international migration in the longer term, resulting from increased adverse effects is likely.

The second is that the countries most responsible for anthropogenic (manmade) climate change, in the 'Global North' have a moral obligation to assist those poorer countries which are the most affected and least culpable for climate change, not only in terms of facilitating mitigation and adaptation but assisting displaced persons. The third is that countries see large influxes of uncontrolled migrants as a national security risk and therefore, should see it in their national interest to agree to a minimum standard of protection of disaster-displaced persons or at the very least to enhance their climate ambition to prevent greater disaster displacement. In his speech at the 71st session of the United Nations General Assembly, Turkey's President Recep Tayyip Erdogan made one of the most articulate cases for the need for greater climate action to stem the "impending threat" of increased disaster-induced migration (Erdogan 2021). A managed and systematic approach to handling climate-displaced persons, particularly through establishing a system of a minimum standard of protections for these persons, is preferable to the status quo.

Scissa (2021) outlined various suggestions that have been made on ways to provide for this recognition to be achieved multilaterally. The first is extending the definition of a refugee under the 1951 Convention to people who are forced to flee their homelands due to climatic and environmental disasters (El-Hinnawi 1985). Another suggestion offered by Biermann and Boas 2010 is to add a climate refugee convention as a protocol to the United Nations Framework Convention on Climate Change (UNFCCC). A third suggestion would be the negotiation of a new multilateral instrument

A multilateral agreement would be the ideal approach and Caribbean countries and other SIDS should advocate for a multilateral approach guaranteeing protections for disaster-displaced persons. It is recognized, however, that a multilateral agreement would take several years of negotiations and political will by countries to enshrine protections for these persons in international law and to subsequently ratify those protections in their domestic legislation. Failing a multilateral agreement, it would be left to countries individually to unilaterally provide for recognition of climatic or disaster-induced displacement as a ground for seeking asylum. The reality is that unless urgent action is taken to reduce global greenhouse gas emissions to limit climate change, we all may become climate refugees one day. It is important firstly for the international community to tackle the root cause of climate-caused displacement – climate change. It is further incumbent on SIDS to continue to hold the international community to account, to not just aim for limiting global average temperature increases to no greater than 2 degrees Celsius above pre-industrial levels, but the more ambitious goal of 1.5 degrees.

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Let Us Do More to Help Caribbean Men to Become Nurses.

Wasim Worrell, M.Sc.

Background

Almost two decades ago Barriteau (2003) observed the permutation of globalization at the national level noting that it ushered in the rapid disappearance of occupations defined as men's work in the traditionally male-dominated areas like agriculture and manufacturing. She also noted that opportunities that were open to men to leave the Caribbean to work in the USA, Canada and the UK, have been reduced. Fields like construction—had been hit hard over the years, especially since the 2008 recession (Wingfield, 2017). This has had a profound effect on how men construct their gender identity. Other commentators like Crichlow, DeShong and Lewis (2014) argue that men's ideological investment in the provider role, may in part explain how unemployment functions as a form of emasculation.

Similarly, Lewis (2007), contends that global, political, and economic forces effect the way of life of Caribbean men and require them to make adjustments and rethink their understanding of what is expected of them. As men tend to define their gender in part through work.

That withstanding, enduring societal attitudes towards gender roles are shifting, making it easier for more men to explore different careers. While mothers are still disproportionately responsible for the time spent on childcare and housework, there is some evidence that fathers are also dedicating significant amounts of their time to family responsibilities (Alison et al. 2020). Nowadays, men are more involved in the rearing of children, cooking and doing housework, while some women lead corporations and are the main breadwinners in families. Barriers are crashing down on both sides, male and female roles are merging, men who join the profession are proving every day that nursing can be just as fulfilling for women or men (Welder 2018).

What is the issue?

At present, there is an effort to recruit more men into the nursing profession, but this is mainly in developed countries. There have been numerous explanations set forth to justify why men should pursue a nursing career, from a severe shortage of nurses working in the health service, to establishing a more diverse nursing workforce which mirrors the patient population that nurses take care of (Clifton, Crooks, and Higman 2020).

These calls for nurses come amidst a crisis in nursing and have prompted a need for greater urgency and emphasis in recruiting men to join the profession. This crisis has also been triggered by a rise in the demand for health services within the population and the result of a shrinking workforce Both-Nwabuwe, (2018). As a result of dipping staffing levels, the United Kingdom launched their "We Are The NHS" campaign in 2019 which highlighted the vast range of opportunities available in the NHS for new recruits and put the spotlight on nursing; prioritising key areas including mental health, learning disability and community and general practice nurses, all helping to deliver the long-term plan for the NHS.

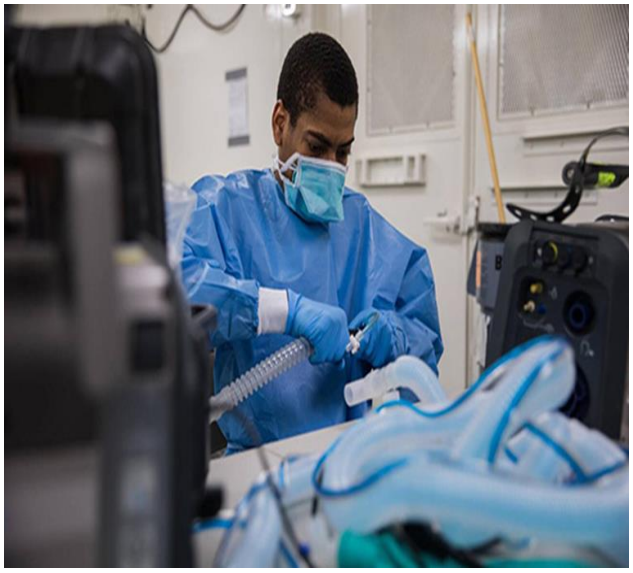
Although there are undoubtedly numerous issues related to the shortage of nurses in the Caribbean, having more men enrolled in the training programme, could be a major factor in tackling the wider shortage of nurses in the profession (Clifton, Crooks, and Higman 2020). According to the Royal College of Nursing's 2021 report, "fears over health and safety, stress levels and patient complexity have all increased since the start of the COVID-19 pandemic, while staffing levels and the inability to take breaks have worsened". Action needs to be taken now to safeguard the health

and wellbeing of nursing staff as well as to establish a workforce suitable for the future. Recruiting men may be one way of tackling the disparity in nursing and could be instrumental in reducing the burden of care provided by women in society.

According to Jayapal and Arulappan (2020), Francophone Africa has more male than female nurses and in some parts of Europe, over 20% of nurses are males. Although countries vary in the percentage of men in nursing, male nurses' numbers normally hover around 10% or less of the total population of nurses in the majority of countries (Connor 2015). In Ireland, men make up 7.8% of the overall number of nurses (An Bord Altranais 2014), in the United Kingdom that figure is 10.7% (Nursing and Midwifery Council 2020).

A report by the U.S. Bureau of Labour Statistics 2020 (BLS) indicated that 12% of registered nurses are now men, up from 2.7% male RNs in 1970. This signifies that occupational segregation in health is not static and over time or across countries changes can occur if the necessary policy measures are put in place (WHO 2020).

Researchers who have shone a spotlight on the disparity in nursing note that we have seen a boost in women's representation in male-dominated jobs and positions, but men's stark underrepresentation in traditionally female-dominated occupations and roles has been stable (Croft, Schmader, & Block, 2015). However, research has revealed that nursing is expanding considerably faster when compared to most occupations. Registered nurse jobs are projected to increase by 15% between now and 2026. Nurse anaesthetists, midwives, and nurse practitioners are likely to see a 31% surge in jobs for the same duration. Moreover, innovations in medicine are enabling people to live longer. So, with a rapidly ageing population, the demand for nurses to fill positions in the elderly care field is also increasing. In a nutshell, the COVID-19 pandemic has underlined and compounded the difficulties confronting nursing staff, whether they are in hospitals, nursing homes, or in the community.



(Photograph courtesy of Unknown)

So why are Caribbean men so underrepresented in the nursing profession? Why is it that scholars, policy makers, and the public appear much less concerned about efforts to foster greater gender balance in nursing, despite the vital role public health plays in the overall wellbeing of society?

Why is it important?

The responsiveness of a healthcare system is indistinguishably related to how robust the nursing profession is (Catton and Iro 2021). The second report of the Independent Panel for Pandemic Preparedness and Response said, "The world was not prepared, and must do better," contending that "the COVID-19 pandemic must be a catalyst for fundamental and systemic change in preparedness for future such events, from the local community right through to the highest international levels." According to the WHO, (2020) weaknesses in healthcare systems, laid bare by the COVID-19

pandemic, highlight the necessity for investment in nursing to create the necessary change.

The State of the World's Nursing 2020 also presented data from 191countries. In 2018 there were approximately 28 million employed as nurses; 19 million were categorised as "professional nurses." Nine out of 10 nurses worldwide are female, and one in six countries have fewer young nurses than nurses projected to retire by the end of the next decade according to WHO, (2020). Put in perspective 28 million nurses only equate to a worldwide nurse density of 36.9 per 10 000 population. This number still conceals considerable inequalities that exist worldwide in the allocation of nurses. For instance, there are 10 times more nurses per 10 000 population in the Americas than in the African region (83.4 v 8.7/10 000). This means some of the poorest countries in the world have the smallest number of nurses. The report stressed an existing shortfall of six million nursing jobs. Additionally, the International Council of Nurses (ICN) points out that an additional 4.7 million nurses will be required to take the place of those estimated to retire over the next 10 years a disparity that demands serious action. Further studies by the WHO have discovered a "COVID-19 effect," linked to the mass traumatisation of the world's nursing workforce, effectively causing 10% of nurses (2-3 million) to leave their jobs once the pandemic period is over. The Covid -19 pandemic has caused up to 255 million people to lose their jobs, (11.5 million Latin in America and the Caribbean) as noted in the International Labour Organization (ILO) report 2020. Some commentators like Kearns and Mahon (2021) seem hopeful that this has created a pool of possible applicants to become the new nurses we need. While the ICN has also lobbied governments to free up supplementary "health education and retraining opportunity funding" to help colleges and universities to boost their capacity so that persons who have become employed can be assisted to train and ultimately join the healthcare workforce.

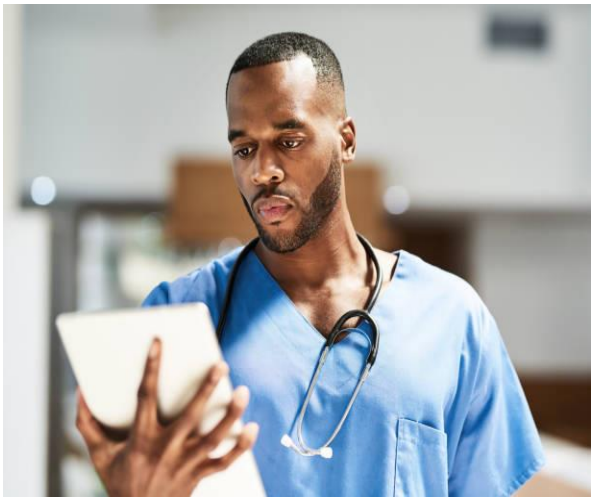
Consequently, appeals are being made, as they have in the past, to explore approaches that promote nursing as a viable profession for men. Calls are also being made for initiatives that would further break down the barriers that prevent men from joining the profession and will go some way towards creating equal opportunities (Arif and Khokhar 2017). Other researchers Kim and Sun-Hee (2021) have argued that the low number of male nurses could have a negative effect on the quality of patient care. The argument advanced by these researchers is that a man in need of personal care may prefer to have a male nurse tending to him, just as women may prefer to have a female nurse providing her care. Denying patients that choice may be denying them comfort and even optimal care.

Yet, in some quarters there is still the prevailing belief that nursing is distinctively feminine with traits such as nurturance, tenderness, thoughtfulness, compassion, warmth, and generosity. This ignores the fact that nursing is an innately human experience: it is done for humans, by humans, and as humans, and in human experience, no one gender can assert supremacy (Cheung et., al. 2020). Men have had, and continue to have, a significant role to play in nursing, not merely because they are male but because they are human.

What should be done?

The male populace of the Caribbean is a valuable source of diverse individuals, several of whom could be of incredible benefit to the profession and who would make excellent caregivers. However, we seem to have left this valuable resource untapped. There is a need to aggressively recruit men into all sections of the profession -- including clinical practice, academia, research, and nursing theory development -- to tap into the energy, strength

and ideas that both males and females can bring to nursing.



(Photograph courtesy of Unknown)

A marketing strategy is needed.

Certainly, given the exposure given to the profession throughout the COVID-19 pandemic, now is a perfect opportunity to shake off the wistful perception of nursing (June, Jackson, and Hutchinson 2016) and take advantage of a modern-day concept of competence, capability, and caring in clinical areas from community to critical care. In essence, the entire world has watched male nurses also caring for ventilated patients, using tablets and computers so that family members could say farewell to loved ones, leading COVID-19 testing centres, and also spearheading innovations in practice. We have heard stories of male nurses' being equally adaptable, using strength, resolve, solidarity, and calmness. We have seen them hold patients' hands while also fighting on the frontline with their female colleagues for appropriate personal protective equipment. This has granted the public a keener awareness of the art and science of caring in contemporary healthcare, which we can develop to appeal to more men, to join the profession (Kearns and Mahon 2021).

Better recruitment

Recruitment approaches that reject the falsehoods about male nurses but encourage the preservation of the core standards of nursing care are needed (Twomey and Meadus 2016). For men, the possibility of becoming nurses immediately after leaving school, or at the mid-career stage, or by graduate entry matriculation should be options—not only with regards to entrance into the programme but also with financial assistance to enable candidates to successfully enrol. Attention should also be given to the provision of allotted placements for male candidates to communicate nationally that men are both absent and desired in nursing (Cottingham, 2019).

Several avenues must be followed to achieve the goal of making nursing a truly genderless profession (Bartfay and Davis 2001). Career counsellors must enthusiastically advocate for nursing as a worthwhile and exciting career for men and must therefore have ample knowledge and awareness of men's participation in nursing. Recruitment literature formulated by the school of nursing and the professional nursing association should make more effort to highlight the presence of other male nurses.

Other commentators like Bartfay and Davis (2001) highlight that it is essential to make sure that the rich history of males in nursing is not forgotten or overlooked in the nursing curriculum; in any case, nursing did not begin with Florence Nightingale. An awareness of the role that men have played in our history may also inspire transformation within the profession.

For example, De Barros (2004) explains that enslaved Africans and Afro-creoles worked in plantation hospitals ('hot houses') in the West Indies. They were doctors and doctresses, sick nurses, midwives, and nurses. The roles of 'nurses' (or 'assistants') and 'sick nurses', each had a separate set of duties. The sick nurses also

seemed to manage the affairs of the hospital. They oversaw the 'book' in which the estate manager listed all the patients. This book also included the prescriptions needed to treat enslaved workers and a brief description of their illness. De Barros (2004) notes that according to the 1819 Berbice slave register, of the 38 sick nurses listed, 26 were male and seemed to have more responsibilities.

The absence of male nurses depicted in the mass media could also add to the paucity of men in the nursing profession. Positive portrayals of men in ads, and television programmes featuring men may help to educate the public about the role of the male nurse in the provision of care (Bartfay 1996).

Challenging enduring stereotypes

Stereotypical beliefs must be confronted at school and societal level in careers guidance, mainstream and social media, and popular culture so that boys realize that nursing is an acceptable career choice (Kalemba 2019). This was underscored by the (WHO 2020) document entitled State of the world's nursing, which advocated for more intersectoral and cross-government collaboration at primary and secondary school. We must also forcefully express our opposition to any antiquated overtures that subjugate the profession and target individual nurses. We need to also advocate for professional recognition and challenges stereotypes and notions within the profession itself—such as those linked to male nurses' sexuality, ability to care, or motives for joining the profession. Men have reported a range of reasons for choosing to train as nurses, which are similar to their female counterparts. Many cite an altruistic desire to undertake work of a caring nature (Buchan and Catton 2020). In many cases, however, it is not explicitly expressed as "caring;" instead, it is described as a meaningful way to achieve professional fulfilment (Arif and Khokhar 2017).

The impact of the absence of male nurses should be evaluated within the context of the consequence this has on male nurses who are currently practising, the profession, and the patients that nurses serve. Boosting the number of males in nursing is vital. It is time that we draw attention to the contribution made by male nurses in the past and showcase how men can be part of a rewarding profession (Kearns and Mahon 2020). We must continue to campaign so that the government move beyond mere cliches to delivering real opportunities to make nursing an attractive profession for men.

We must widen the talent pool if we are to staff the health service with high-quality graduate nurses. Men could be the virtually untapped resource nursing needs.

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Using Virtual Resource Flows to Balance Resource Scarcity and Food Security Challenges in the Caribbean

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What is the issue?

Food security hinges on food availability or supply, which is a balance between domestic production and trade. Food production depends on the availability of key resources such as land and water. The resources used to produce a given unit of food commodity that is traded are indirectly transferred from the source country to the destination country. This indirect transfer or flow of resources via food commodity trade has been rationalized in the virtual resource concept. Two main resources of interest in the virtual resource concept (and are relevant to the Caribbean) are land and water due to their cruciality and scarcity in food production (Yawson, 2020a). Virtual water (Allan, 2003) or land use (Yawson, 2020b) refers to the volume of water or area of land, respectively, used to produce a given quantity of food commodity that is traded. For any given food commodity, the quantity of virtual resources gained or lost via food commodity trade is a product of the virtual resource content (m) and the total quantity traded (q) (Hoekstra and Hung, 2005). The virtual resource content is the amount of the target resource consumed in the production of a unit quantity of the food commodity. The virtual resource concept makes explicit the flows of productive resources between two nations or regions via food commodity trade. The promise of the virtual resource concept is that it can be strategically used as a policy tool or component of policy decisions in the mega nexus of land-water-energy-food security. The purpose will be to use the virtual resource concept to inform a trade strategy that addresses issues of resource scarcity and food insecurity.

The Caribbean is currently a net food importer, with imports accounting for about 80% of total food consumption. While this has enabled the Caribbean to maintain a decent level of food security, the soaring import bill and related impacts on human health have created deep political and economic concerns. Regionally, there is a shared view that domestic or regional food production must be increased significantly to boost food security and mitigate against the high import bills and obesity in the Caribbean. Food trade, however, will continue to play significant roles in Caribbean food security as productive resources dwindle, food demand increases, and climate change advances. Though a net food importer, the Caribbean has not given due consideration to the strategic value of the virtual resource concept in its policy mix in the nexus of resource-food security. This brief seeks to draw attention to the need for the Caribbean to strategically use the virtual resource concept to inform trade decisions or policies that balance the conservation of scarce resources and sustainable food security.

Why is it important?

Food is a basic necessity of life. It satisfies a physiological need and provides the fuel for productive work and healthy life. The right to food is a fundamental human right because,

(Photograph courtesy of Unknown)

according to the United Nations, food is "among the most fundamental conditions for survival" (UN, 1948). Governments have obligations to take all necessary measures to secure food supplies for their citizens. Food commodity trade plays crucial roles in diversifying and enriching global food supplies and consumption despite domestic production constraints (Aguiar et al. 2020; Fader et al. 2013). The Caribbean imports large quantities of food to support its food security. Excessive food import and soaring import bills have become topical issues in the Caribbean. Currently, the Caribbean Community (CARICOM) aims to reduce its food import bill, estimated at US$ 5 billion, by 25% in the next five years by boosting domestic production (CARICOM Today, 2021). Land and water are critical resources that underpin food production. Agriculture accounts for the largest share of both land (Ritchie and Roser, 2013) and water (FAO 2020) use globally. While crops differ in their water and land productivities, cereals, for example, are both water- and land-intensive. In cereals, water availability in the soil is known to be the primary regulator of yield formation (Rajala et al., 2011). Among other roles, water is required for photosynthesis, nutrient dissolution and transport, and transport of products of photosynthesis. Together with yield, the area of land harvested determines the total quantity of a given food commodity produced. As a result, relative availabilities of water and land are critical determinants of food production. However, these resources are becoming increasingly scarce (FAO, 2020) both globally and in the Caribbean. Climate change will have both direct and indirect adverse impacts on food production and thereby put additional strain on food security. Directly, climate change can cause significant yield penalties through physiological changes in crops and animals. Indirectly, climate change will likely worsen the scarcity of key resources, such as land and water, that underpin food production. At the same, demographic changes will alter the quantity, quality, and diversity or composition of food demand. As food demand increases, climate change advances, and productive resources become more scarce, Caribbean food security can be seriously challenged. While the desire for significant increases in domestic food production to reduce the food import bill is apt, it should be critically examined in the context of constraints on productive resources and cascading socio-economic impacts.

Illustration by unknown artist

Already, the Caribbean faces extreme land and water scarcity. As Small Island States, Caribbean countries tend to have small landmasses which underpin limited water resources. The Caribbean hosts some of the top water-scarce countries in the world. In Barbados, for example, per capita water supply is estimated at 280 m^3 per annum; yet agriculture consumes about 60-70% of water withdrawal and the area of arable land is declining, with about 70-80% already committed (Figure 1). The climate of the Caribbean requires annual crops to be irrigated to achieve higher and stable yields. The question is whether the Caribbean has sufficient land and water available for producing sufficient food to meet its domestic demand. Even if the resources are available, could the Caribbean safely do so without sacrificing the production of other food commodities? Is there a need for consideration of resource constraints to underpin the selection of what and quantities to produce and/or import? The value of food commodity trade should not be viewed only from a monetary perspective, but also from the perspective of savings in productive resources (virtual resource flows) and contributions to food security (enrichment of supply and

mitigation of the effects of shortfalls in domestic production).

Obviously, the Caribbean faces a wicked problem in the nexus of land, water, and food security. There is a need, therefore, to strike a fine, strategic balance between food production and trade to reduce the import bill without compromising resource and food security.

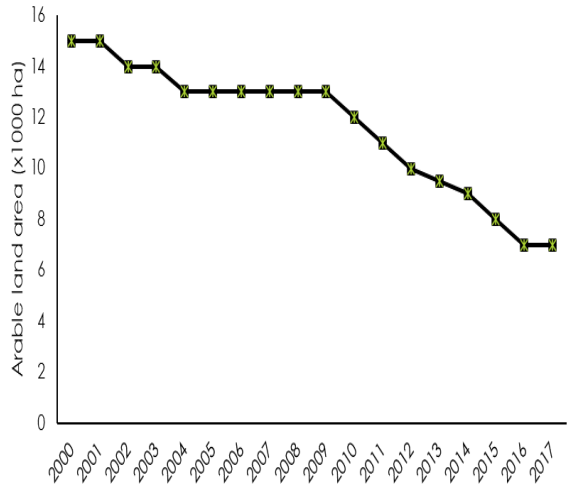

Figure 1: Arable land area of Barbados from the year 2000 to 2017.

What should be done?

Food trade provides a vital bridge between regions of surplus and deficits and therefore help overcome food insecurity in the latter. Trade will be a critical part of global and Caribbean food security in the future. The virtual water concept makes explicit the productive resource circulation via food commodity trade. The promise or value of the virtual resource concept is that countries faced with resource scarcity could import resource-intensive food commodities and produce commodities that are less resource-intensive. The virtual resource concept can therefore be used as a support tool for policies or decisions to balance food production and trade in the face of resource scarcity. Therefore, the Caribbean should strategically use the virtual resource concept to strike a balance between domestic food production imperatives and trade to address resource scarcity and food security challenges concurrently. To this end, a simplified agri-compatibility framework is introduced to support policy/decision-makers. The agri-compatibility framework narrows the virtual resource concept to identifying gaps in food security created by constraints from resource scarcity (Figure 2). This gap in food security is then filled with commensurable food imports (agri-compatible imports).

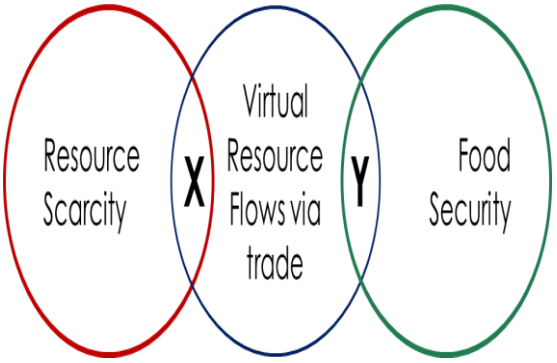

Figure 2: A simplified agri-compatible virtual resource flow framework. X and Y, which are the main connective elements, denote agri-compatible resource scarcity and food import, respectively. Source: Adapted from Yawson et al. (2013).

Agri-compatibility is the condition under which a given quantity of food commodity is imported to fill actual or potential supply gap created by resource scarcity or deficiency to produce the desired quantity of that food commodity in the destination country of analysis (Yawson et al. 2013). The fundamental idea of agri-compatible virtual resource flow is illustrated in Figure 2, which indicates a tight coupling of resource scarcity and food security in a singular analytical or policy frame. Figure 2 can be used to identify gaps in the supply of key food

commodities, created by resource scarcity, and which needs to be filled by imports. The agri-compatibility framework, therefore, focuses on the supply of key food security commodities that, in relation to resource scarcity, ought to be balanced by domestic production and import. To reinforce the selection of key food security commodities and a balance between production and import, a decision matrix is provided (Figure 3).

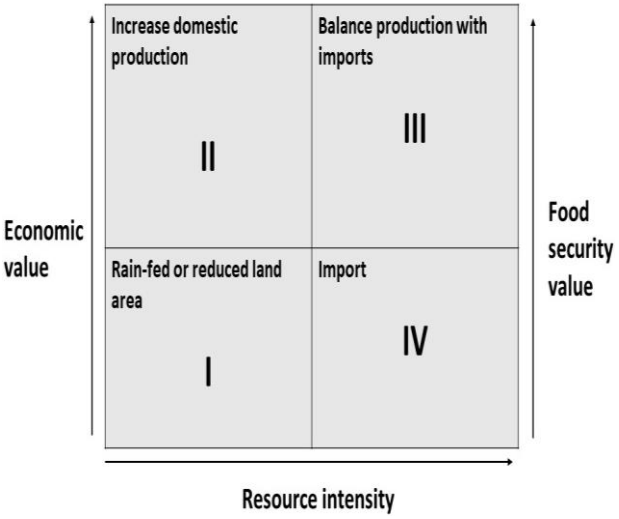

Figure 3: Decision support matrix for balancing production and virtual resource flows.

In Figure 3, the balance between domestic production and trade is informed by the three axes: resource intensity, economic value, and food security value. Thus, analysis of a food commodity along these three axes helps locate that commodity in one of the quadrants to inform decision or action. For example, a food commodity that has low economic value, resource intensity, and food security value can be kept in quadrant I (i.e., produce under rain-fed and/or reduced land area). Quadrant IV food commodities can be entirely imported as they fulfil the agri-compatible resource scarcity and import conditions. The use of the agri-compatible virtual resource concept and framework provided can help the Caribbean balance domestic production and imports to conserve scarce resources while maintaining food security. It will help focus food trade decisions on relevant food security commodities and reductions in the food import bill. Measures, in addition to balancing production and trade based on the virtual resource concept, include improvement in the productivity of key food commodities, reduction in food waste, protection of critical resources such as land and water for agriculture, embedding local production in tourism and supermarkets chains, encouraging home gardening and urban farming, and promotion of behavioural changes among consumers (e.g., changes in diets and quantity of food consumed).

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Revamping Governance as a Republic

Kristina Hinds, PhD

On November 30, 2021, Barbados became a parliamentary republic. This step is a significant one for the country's political development. In discussing republicanism, McIntosh noted that "…republicanism is a normative principle that speaks to a form of political rule in which the sovereign power of the state is said to be located in the people as a whole…"(McIntosh 2002, 123). Indeed, Barbados' President, Dame Sandra Mason, represents the people of Barbados in her capacity as Head of State. However, McIntosh also noted that a republic is not truly democratic as, although power derives from the people, it is exercised by their representatives so that people are "excluded" from quotidian involvement in governance(McIntosh 2002, 123). In this paper, I offer suggestions about the extent to which people should be "excluded" from governance processes as the country seizes a fresh opening to refashion governance arrangements. My assessment is that governance in Barbados should become more participatory or collaborative as part of the process of building a new 21st-century republic.

Participatory/Collaborative Governance

In my 2019 book, I note that "Participation can allow for the selection of more appropriate choices by considering diverse views and concerns and can also allow for entities other than state bodies to undertake implementation tasks after decisions have been made."(Hinds 2019, 60). The current administration, under the leadership of Prime Minister Mia Mottley, has worked ardently to offer public information in the way of many press conferences on a range of issues, with COVID-19 updates featuring prominently among these. The government has also hosted town hall meetings on matters such as local government, COVID-19 concerns and on the Charter of Barbados. The Mottley led administration has hosted specialist meetings to receive input from those with expert knowledge or specific interests on certain topics, such as population planning in Barbados. Further, the government continues to use the Social Partnership that draws labour and private sector interests into decision-making fora. The previous administration also employed such strategies on a range of issues including drafting a National Youth Policy and a National Qualifications Framework(Hinds 2019, 117-118). However, the current government has excelled in the use of internet-based technologies, including social media, to make its outreach efforts more widely visible. The COVID-19 pandemic has forced the innovative use of internet-based technologies and social media platforms to expand the reach of state-society information sharing and consultation. These points aside, governance in Barbados fails to be deeply participatory. Collaborative governance is participatory as it involves people and groups in processes of public decision making throughout the decision/policy-making cycle. This collaboration occurs at all levels of government from the local level all the way to the national level (See: Ansell & Gash, 2008; Emerson, Nabatchi, & Balogh, 2012; Wampler, 2012).

What exists in Barbados are efforts to provide information on pre-formed policies, documents and initiatives. These attempts at sharing are laudable but are not very collaborative. Further, initiatives such

as town hall meetings and opportunities to provide written submissions tend to function at the level of consultation which, though beneficial, remains a shallower level of inclusion. Judged by the level of inclusiveness and depth of participation, Barbados hovers between employing low to moderate levels of inclusiveness in its approach to governance, with participation see-sawing between informing and consulting the public. The table below, visually depicts this with the green shading indicating the depth of participation and inclusiveness for Barbados:

Table 1: Stage of Participation and Level of Inclusiveness for Barbados (Adapted from Hinds 2019, 73)

Stage of Participation	Level of Inclusiveness
Informing	Low
Consulting	
Involving	Moderate
Empowering	High

For collaborative governance, the emphasis would need to be on seeking ideas and inputs from the public and civil society organisations rather than simply informing and consulting, which usually occurs towards the end stages of processes in any case. Collaborative governance entails costs, risks and additional work, but offers the ability to further democratize by encouraging civic engagement. Such collaboration will likely attract those with an interest in specific policy areas or the most civic minded. Therefore, there need not be the fear that policy making will become overwhelming or unwieldy. Operationalizing collaboration in a systematic way would require significant planning and a shift in mindset about when and how the public should be brought into policy and other governance processes.

Freedom of Information, Open Government Data & Open Government

Making participation meaningful would also require access to information. Here I speak not just of the information that those holding power or operating in the public service wish to release, but access to public information by right and on-demand. Freedom of information (FOI) legislation is required in Barbados as such would give the public the right to request public information from public sector entities and to receive requested information within specified time frames.

Allowing access to information as a right, rather than a favour, privilege or on ad hoc terms can move collaborative governance beyond formalized and systematized processes. Such can allow people who are minded to be actively involved in shaping policy, offering ideas and recommendations, to do so outside of government-initiated frameworks. This type of proactive civic activity and engagement is to be encouraged and is healthy both for democracy and for the country's development. What is more, self-initiated engagement allows citizens to hold governments to account. To reiterate, citizens and residents require access to public information by right rather than on "need-to-know" bases as an enabling condition for active civic engagement and self-driven participation in governance.

The press can and should also play important roles in making information necessary for public engagement accessible to the public. Yet, in the absence of FOI legislation, the press is hamstrung in playing its critical role in informing the public about important occurrences.

There is an alternative to FOI legislation in the form of the technological fix of Open Government Data (OGD). OGD can be defined as "non-privacy restricted and non-confidential data, produced with public money and made available without any restrictions on their usage or distribution"(Ruijer et al. 2020, 260). OGD assists in data sharing across the public sector and would encourage greater accuracy and consistency in data collection. Thus, OGD can improve internal public sector operations drawing on what Gonzalez-Zapata and Heeks term the bureaucratic and technological perspectives on OGD. Moreover, transitioning public information to open data, which would be widely accessible online via databases, can offer improved transparency and can act as a facilitating condition for civic engagement on a wide array of public issues. Gonzalez-Zapata and Heeks refer to this as the political perspective on OGD(Gonzalez-Zapata and Heeks 2015). The political perspective overlaps with a shift towards "open government" which focuses on collaborative governance by building transparency and information sharing processes into government systems, relying on technology use, data availability and the meaningful implementation of platforms and strategies to facilitate transformations in governance(Gonzalez-Zapata and Heeks 2015; Ramírez-Alujas and Dassen 2014).

Although OGD may be seen as an alternative to FOI legislation, maintaining access to OGD would require adequate legislation to ensure that access to government information via OGD will not be arbitrarily revoked. What is more, the necessary data protection and electronic security provisions must be in place. One might add too that FOI legislation and OGD would be complimentary. Since countries tend to face difficulties in living up to their obligations under FOI acts because of the format by which they have historically collected and stored information, OGD could relieve some of the burdens on public agencies to live up to their responsibilities under FOI legislation(Livingstone 2015, 4-5). OGD could limit the public's FOI requests for documents and could assist the government in assuring the public of its commitment to the hassle-free provision of public information. All the same, one must acknowledge that data are not the same as information. Data require context, analysis and interpretation. Consequently, in the absence of appropriate context or supporting documentation that FOI legislation would make publicly accessible, OGD may be insufficient for providing the public with adequate fodder for engaging on public matters.

Conclusion

In the year during which Barbados began its transition to becoming a republic, there was a visible deficit in either information sharing or public consultation on the matter, despite the government generally resorting to such on many matters. It is true that parliament is empowered by the electorate to make key decisions, yet significant matters require wide engagement as a step in the direction of deepening democratic practices. The Prime Minister's promise that deeper engagement

will occur during 2022 in relation to constitutional reform is laudable. However, this paper's proposal that public participation in governance forms a critical part of the approach to political development remains pertinent, that is, if this and future governments intend to further democratize Barbados.

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Assessing the Importance of Exam Proctoring Software by Higher Education Institutions in the Caribbean During The COVID-19 Pandemic

Kerrie Ellis-Worrell, M.Ed.

(Photograph courtesy of Unknown)

Introduction

Recently, there has been public concern about whether online examinations offered by some higher education institutions in the Caribbean have maintained their academic integrity during the COVID -19 pandemic (Trinidad and Tobago Newsday 2021).

A perception of increased online examination "cheating" became acute when many of these institutions were forced, during the COVID -19 pandemic, to quickly move from conventional (face-to-face) to virtual modalities in the delivery of courses and their assessment of students (Montenegro-Rueda et al. 2021, Joshi et al. 2021). Martinez (2019) corroborates that there may be a perception that cheating can occur more easily in an online setting. There are also multiple online resources available to students, offering a highly effective avenue for cheating to occur (Muzaffar et al., 2021).

As a result, to ensure academic integrity, proctoring is often used by educational institutions (Lee-Post and Hapke 2017; Feinman, 2018; Martinez 2019).

Proctoring entails having a proctor or exam invigilator that can take the form of a person (who monitors students based on given directions) or a machine (called an online proctor) to supervise exams (Martinez 2019).

Studies have highlighted that there is a lack of research in the area of assessment in higher education (Montenegro-Rueda et al. 2021, Muzaffar et al., 2021). Moreover, throughout the pandemic, research on this topic has mainly been pursued by European and Asian countries and global adoption elements regarding online exams is also not easily found in current literature.

Therefore, within the Caribbean, we still know little about how effective online proctoring is and how it can be utilised.

This brief, therefore:

a) Examines how widespread the use of online proctoring is in educational intuitions (especially since the COVID-19 pandemic).

b) Assesses the effectiveness of proctoring within the online environment.

c) Makes recommendations for Caribbean Higher Education institutions regarding online proctoring.

The Current Context of the University of the West Indies

The University of the West Indies was founded in 1948 as the University College of the West Indies. Since its establishment,

The UWI has evolved to have a quota of approximately 50,000 students with 5 campuses located throughout the Caribbean (Times Higher Education 2019). The use of online proctoring can therefore have far-reaching consequences for students, faculty and the University.

According to Coeckelbergh (2020), "digital and digitalization seems more important than ever" and more so in times of COVID-19. The view of this author is that many people held an erroneous perception that they had time to implement digitalization in their "organization, practices, and country" but they were wrong. Coeckelbergh (2020), concluded that during the time of COVID-19 you either digitized or died. This sentiment rang true for the Caribbean. But *how* did the move to quickly offer online examinations affect the integrity and administration of exams?

Exam Formats and Online Administration at the UWI Campuses

The importance of going digital was evident from anecdotal information provided by one of the campuses of the UWI, where many final high stake exams formats were changed to 100% online coursework submissions with 2 courses using online proctoring technology, namely PSI Bridge. Before the COVID-19 pandemic, some exams took a face-to-face pencil and paper proctored format, while some courses had 100% course work with no final pencil and paper timed exams (as some included authentic assessments or traditional assignments).

For another campus, all final high stakes exams had to be held online as a result of the pandemic and it was noted that exams would have otherwise continued to use the established face-to-face proctoring approach. This 2nd campus employed the use of Respondus proctoring technology for the administration of some of the courses in one of its faculties. Respondus uses a LockDown Browser to prevent cheating (Goffredo, et. al 2020).

Proctoring Technologies

Both PSI Bridge and Respondus are technologies that can be employed to facilitate online proctoring and help to maintain exam integrity. These, along with other similar technologies can be placed into the following 4 categories:

1. Live online: This allows a third-party proctor to actively observe the student in real-time through a webcam (e.g. Proctor U).
2. Record and review: records the student via webcam during the examination, then the video is later reviewed by a faculty or staff proctor for any abnormalities.
3. Artificial intelligence (AI): automatically monitors the recorded video and audio during the examination and flags any suspicious behaviours, such as persistent off-screen eye gaze or additional people in the room and
4. Web-conferencing platforms: are used when there is a small number of students and faculty; or staff that can proctor students through the web conferencing software while students use a secure online testing platform (Sando, Medina, and Whalen 2021).

Proctoring Exams in Higher Education Settings

The design and implementation of online exams can be the most challenging elements of online learning (Muzaffar et al.,

2021). According to Lorenzetti (2006), one of the thorniest problems is how to manage the delivery of examinations, especially regarding proctoring.

Proctoring is often used by educational institutions during high stakes exams and can be conducted in either face-to-face or online environments (Lee-Post and Hapke 2017; Feinman, 2018; Martinez 2019).

While there are many different types of proctoring available for use within education (Cheryl, 2019), proctoring methods fall within two categories called prevention or enforcement approaches (Lee-Post and Hapke 2017).

- Prevention approaches will seek to stop exam misconduct from being initiated by students. For example, coursework authentication statements and well understood and supported honour codes are examples of such approaches. On their own, however, these approaches will not adequately inhibit students from colluding or being impersonated during exams (Fienman, 2018).

- The more direct enforcement approaches can identify academic integrity breaches that may occur within the online testing environment, using different authentication techniques and defensive strategies (such as the use of browser lock-down software) (see Figure 1.1) (Lee-Post and Hapke 2017).

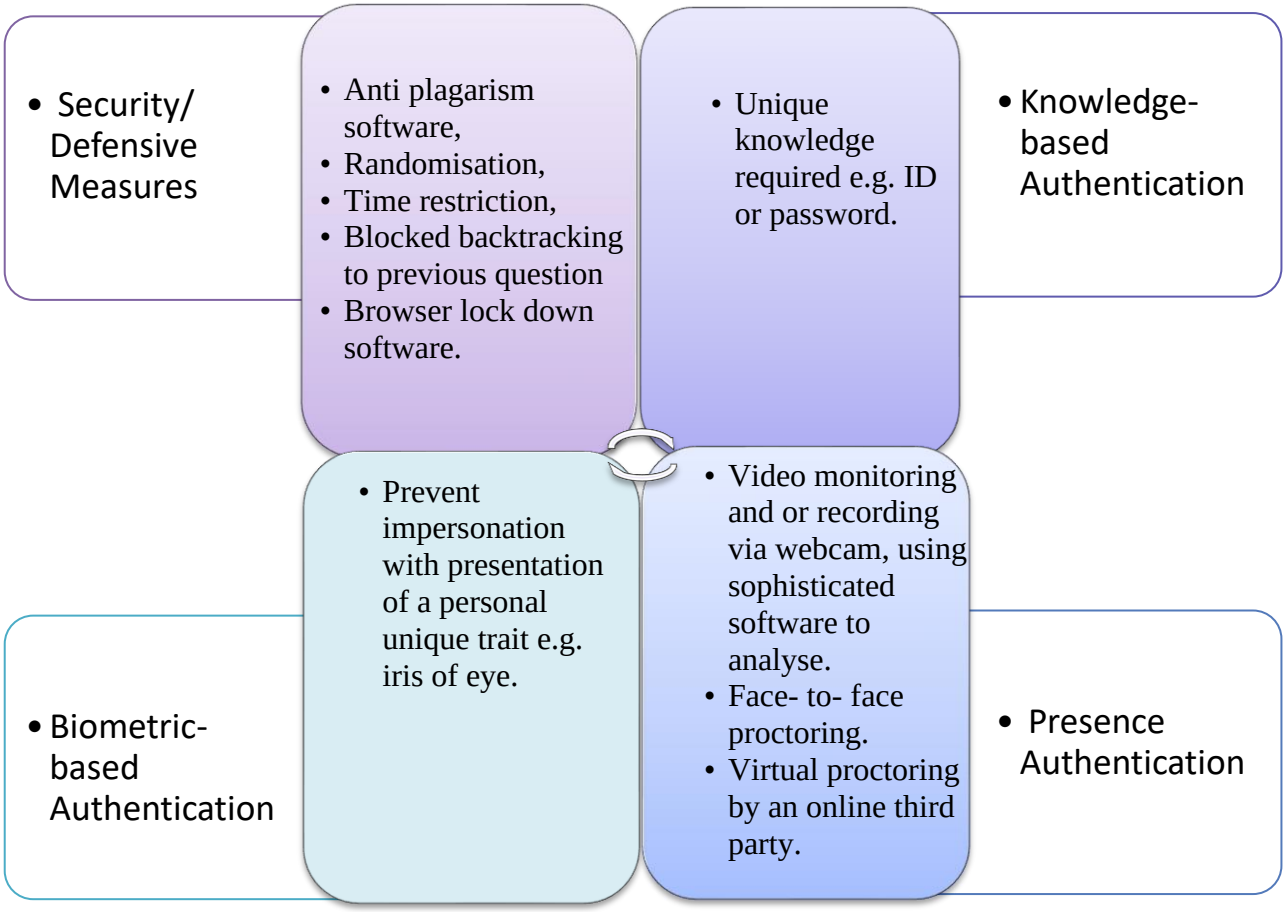

Figure 1.1: *Above*, defensive strategies and authentication methods (Source: Lee-Post and Hapke 2017)

These enforcement approaches are used to carry out the verification and abnormal behaviour detection of persons taking exams which are important features of online exams (Muzaffar et al. 2021). Apart from verification, abnormal behaviour detection is used to prevent cheating and is, therefore, an equally important exam feature.

Enforcement approaches also allow for static verification (where the examinee is verified once at the start of the online exam) and continuous verification (where verification is performed continuously at certain times during an online exam).

On their own, the defensive, knowledge-based and biometric-based authentication enforcement approaches cannot avert impersonation and collusion beyond login. As a result, more costly presence authentication techniques would be a more viable exam solution (Lee-Post and Hapke 2017).

Assessment in Higher Education and the Application of Proctoring

Achieving quality assessment has been a concern over the years (Griffith 2017, Saad and Busteed 2013), so what does this term mean?

The terms assessment, measurement, and evaluation are often used synonymously (Williams, Howell, and Hricko 2006, p. 2). However, most writers understand assessment (which uses a measurement process) to be an important component of the evaluation process, where evaluation seeks to compare “what is and what should be". Therefore, assessment becomes a tool that aids in evaluating a programme or course outcomes.

Assessment can also have a formative or summative purpose in providing learning feedback on their progress or in allowing them to compare their performance with their peers (Montenegro-Rueda et al. 2021). However, the assessment does not only play a student-centred role (Griffith 2017), as it can also be used by educational administrators to determine the usefulness or effectiveness of their programmes. The administrative decisions of academic institutions can therefore be affected by the integrity of the assessment process.

Trends in Online Assessment Tools Used in Higher Education during the COVID -19 Pandemic

So how have assessment practices in Higher Education institutions been affected by the COVID-19 pandemic?

A systematic review done by Montenegro-Rueda et al. (2021), of the existing literature on assessments administered by Higher Education institutions during the COVID-19 pandemic, revealed that the most commonly used assessment tools and strategies were:

1. The Moodle platform: was one of the main instruments used to carry out university assessments, along with free online tools that can offer different types of exam questions or discussion forums.
2. The use of video-calling software (such as ZOOM or Skype): was another main tool used in university assessments. It allowed for tutorials, oral tests or e-proctoring (remote monitoring) during online testing.
3. Non-examination: more qualitative assessment strategies such as academic assignment submissions and continuous assessment, were noted as most appropriate.

Based on the articles included in their review, proctoring (or remote monitoring using Zoom or Skype software) is cited as a technology used within 60% of the articles. Muzaffar et al. (2021) also identified 21 online exam tools that were proposed by researchers in their systemic review of 53 studies (published between January 2016 and July 2020).

These findings from the literature tend to suggest that Higher Education institutions are trying to ensure exam integrity by using online proctoring tools. So, what insights can we gain from assessing the practice of proctoring and the use of online proctoring tools in Higher Education institutions?

Assessing the Effectiveness E-Proctoring Solutions Used in Higher Education

Benefits of E-Proctoring Solutions

Feinman (2018), noted that exam proctoring is being taken up by universities because the following can be done within learning management systems:

1. Creating online tests flexibly,
2. Test takers can obtain customized feedback,
3. Exam scores can be recorded immediately and placed in grade books,
4. Test item analysis can be conducted.

However, exam integrity enforcement methods employed during online proctoring can have both benefits and drawbacks.

Drawbacks of E-Proctoring Solutions

Although a complete online examination proctoring solution would include a user authentication approach that verifies the identity, authenticity, and presence of the examinee (Lee-Post and Hapke 2017), anecdotal evidence from 1 of the UWI campuses that used proctoring technology with 2 of its courses, revealed that challenges were encountered while using the technology. This campus, which used PSI Bridge software, encountered erroneous abnormal behaviour detection by the software and the cost and inconvenience of having to train persons to review video records of exams.

The challenges noted by the campus are corroborated by the literature which shows that other issues can be encountered when using third-party technology such as privacy concerns, security concerns, lacking effectiveness, third-party involvement, extra technological requirements, high costs and extra effort (Lee-Post and Hapke 2017, Anderson and Gades, 2017). The other campus is yet to compile information from faculty and staff concerning any issues that may have been encountered with the use of the Respondus technology during the Semester 1 2021, 2022 exam period.

Assessing Cost-Effectiveness

A comprehensive review of the cost-effectiveness of some online learning integrity solutions (i.e. Biometrics, Biometrics re-authentication, video monitoring, face-to-face proctoring and virtual proctoring) noted the following:

1. Student costs – were induced for all solutions except face-to-face proctoring (which required extra effort to be physically present at an agreed time) and, along with virtual proctoring, required a cost for taking the exam as additional devices are needed (e.g. web cameras or stable internet).

2. Faculty costs – were induced for 3 integrity solutions (i.e. video monitoring, virtual proctoring and face-to-face) due to the extra work needed to analyse video footage if video monitoring is used or arranged for virtual or face-to-face proctoring.

3. Institution costs – were induced and borne by the institution for all integrity solutions. Extra work was required for biometric and video monitoring solutions in securely storing and matching user biometrics or to securely store and retrieve user video footage, respectively. Additional work and cost were needed for virtual and face-to-face monitoring, to provide and endorse trustworthy third party providers or to provide a testing centre.

Also highlighted were privacy concerns for all integrity solutions except for face-to-face proctoring. From this study, it is evident that all integrity solutions incurred additional costs either by the institution or the student.

Assessing Effectiveness against Student Performance

The study by Feinman (2018), revealed that many researchers who compared student performance during proctored and unproctored exams have obtained mixed results. These studies showed that when no or only a few defensive or security mechanisms are used students tend to perform significantly better on unproctored exams as seen in table 1

Table 1. Student Unproctored Exam Performance Results **Source:** Data from Feinman (2018)

Researchers	Exam Conditions	Unproctored Exam Performance
Sivula and Robson (2015)	No security mechanism was used.	34% better performance.
Fask, Englander, and Wang (2015)	No security mechanism was used.	Significantly better in introductory statistics.
Arnold (2016)	Randomization of multiple-choice questions and time restriction security mechanisms were used.	Performed better.
Daffin and Jones (2018)	Time restriction removed.	Higher scores than on proctored exam.
Varble (2014)	Randomization, time restriction, blocked backtracking to prevent going back to the previous question, lockdown browser to present internet or internal computer access.	Performed significantly better on unproctored web-based exams with lower-order thinking questions, than on proctored pencil-and-paper tests.
Ladyshewsky (2015)	Randomization, time restriction, blocked backtracking security mechanisms. Incorporated higher order thinking questions.	Ladyshewsky found that students performed better on the proctored pencil-and-paper exams than on unproctored web-based exams.
Beck (2014) and Stack (2015)	Randomization, time restriction, one question per page, blocked backtracking and cheating warning statement, as a security mechanism	No significant difference in scores on proctored and unproctored exams in all course delivery modes

Recommendations for Caribbean Higher Education Institutions

The study by Muzaffar et al. (2021), conclusively stated that different countries and institutions may need to implement online exam systems based on their existing E-learning infrastructure and their overall economic capabilities as proctoring can incur extra costs and effort from students, faculty and the institution depending on the format implemented. However, maintaining the integrity of unsupervised web-based exams without the use of expensive proctoring may not be considered plausible by some persons.

According to Sando, Medina, and Whalen (2021), "proctors play an important role in preserving the fairness and integrity of examinations for all examinees regardless of the method of test administration and proctoring setting". However, a group of studies reviewed by Feinman (2018), showed that when no or only a few defensive or security mechanisms are used students tend to perform significantly better on unproctored exams. Their findings also suggested that a combination of security mechanisms was just as effective against cheating. This is supported by the fact that the study by Muzaffar et al. (2021) highlighted that 50% of the selected studies did not propose the use of online proctoring tools which utilised verification and abnormal behaviour or security online exam features but, instead proposed the use of question bank generation and evaluation features.

Given the preliminary anecdotal accounts, supported by the literature, on the challenges that can be encountered with the implementation of online proctoring tools during exams, web-conferencing platforms seem to be a more cost-effective presence authentication technology. Institutions with lower budgets, such as those located in developing (Caribbean) countries (Muzaffar et al. 2021) can also benefit from using this technology if faculty or staff use the web conferencing software to proctor students while students use a secure online testing platform.

Additionally, as Khan et al. point out, "there is enough evidence to suggest that some types of assessments are harder for students to plagiarise, and then certain assessment designs may actively discourage plagiarism and other acts of misconduct through engagement and a focus on learning rather than the final grade… These types of assessments emphasize 'learning for skills application' rather than 'learning for knowledge reproduction' " (2021, 2). Assessments designed in these ways should continue to be used to bolster final high stakes exams.

The question remains, is online proctoring worth pursuing, especially by Caribbean Higher Education institutions that are still confronting the challenge of dealing with the COVID-19 pandemic? The literature shows that it takes only a few security or defensive enforcement measures to effectively provide exam security against cheating during online exams. Therefore a measure of exam security can offer benefits for the administration of online exams and help mitigate against the concerns that may persist concerning cheating in the online exam environment.

Boitshwarelo, Reedy, and Billany (2017), suggest that more research is needed to identify tools for proctoring in online environments and the impact that this can have on student performance.
Further research is needed to:
a) Identify exam integrity solutions or the features of proctoring tools that are cost-effective and
b) Identify those tools that will not negatively impact student performance.

Caribbean Higher Education institutions should further explore how they can effectively administer the integrity solutions

proposed in this paper. This paper, therefore, forms the basis of further studies in the use of online proctoring technology used by the University of the West Indies during the COVID-19 pandemic.

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