CERMES Connections

February 2021

A bi-monthly electronic bulletin about interdisciplinary research, teaching and outreach at the Centre for Resource Management and Environmental Studies (CERMES)
Editors: Maria Pena and Dr. Patrick McConney

Come study with us to strengthen resilience through land surface science

By David Yawson

Are you interested in contributing to resilient development through sustainable management of land resources? Do you wish to understand how current and future land use configurations affect biodiversity and ecosystem services, agriculture and food security, water resources, energy demand and supply, urban environment and human health, climate change, ridge-to-reef pollution, livelihoods, and overall vulnerability to disaster risks? Would you like to acquire advanced knowledge and skills in the applications of Geographic Information Systems (GIS), Remote Sensing, Simulation and Modelling, Causal Loop Analysis (CLD), Life Cycle Analysis (LCA), Food-Energy-Water Nexus Analysis, among others, to support management and policy decisions on food systems, natural resources, climate change, the environment, and disasters? Are you interested in terrestrial ecosystem restoration, or landscape approaches to environmental resilience? Then, we invite you to apply to the Land Management and Environmental Resilience (LMER) program at CERMES. Together, we will use land surface science as an integrating framework to help advance resilient development in the Caribbean.

The LMER program is a new, multidisciplinary specialisation in the Natural Resource and Environmental Management program at CERMES. It is open to applicants with diverse backgrounds and interests and provides diverse career pathways in public and private sectors, development agencies and civil society organisations from local to global scales.

Inside this issue

Erosion in Carriacou, Grenada. Source: FAO

In the face of the threats of climate change and increased disaster events, the future and resilience of Caribbean countries and the region depend largely, and foremost, on how we use and manage our land resources. The LMER program addresses four knowledge domains: (i) land surface processes and interactions of component natural resources and ecosystems linked by these processes to produce ecosystem services; (ii) risks and opportunities arising from land resource-human interactions; (iii) planning processes and management frameworks that mitigate risks and optimise benefits; and (iv) analytical tools to

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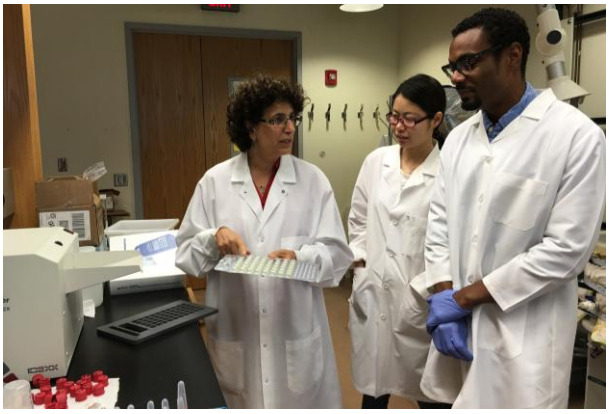
support decisions and policies. These are built into the didactic aspects of the LMER courses and practicalised with hands-on activities, field visits, case studies, discussions, and guest lectures.

Focal areas include:

- Soil and sustainable land management
- Biodiversity conservation and ecosystem management
- Land use and environmental resilience
- Advanced tools applicable to land surface processes relevant to agriculture and the environment

Drones over agricultural land. Source: FAO

New lecturer in Water Resources Management



Karl (far right) with colleagues

Dr. Karl Payne joined CERMES as a Lecturer in Water Resources Management in December 2020. Dr. Payne's research activities are focused on sustainable water resources management under a changing climate as well as understanding hydrometeorological risks using computer models. Dr. Payne is passionate about the use of technology in solving complex environmental problems and uses cutting edge tools and techniques in cloud computing, artificial intelligence, and hydrological modelling. Karl is currently incorporating data analytics and machine learning into the courses he teaches including surface and groundwater hydrology as well as hydrometeorological risks and water management. Dr. Payne's research group aims to complement the models being developed with data from field work and low-cost environmental sensor networks to validate the models under development.

Prior to joining CERMES, Dr. Payne has worked in research and development projects in academia and industry. Karl consulted on a World Bank funded project for the Caribbean region where he performed statistical hydrological modeling to determine the feasibility of parametric rainfall insurance products. He also pioneered efforts leveraging artificial intelligence for infilling missing rainfall data for data scarce SIDS. Dr. Payne's R&D work in the USA created innovative technologies and software that effectively treats and predicts the removal of nitrogen from household domestic wastewater on a US Environmental Protection Agency grant. Karl's background in data analytics and physics-based simulation has also been leveraged for developing novel energy technologies and new sensors for some of the most well-known technology companies. Dr. Payne looks forward to teaching students at CERMES how to best use the tools of innovation to solve problems at the climate-water-energy nexus and building a diverse research group that is excited to solve the most intractable water resources problems in the Caribbean region.

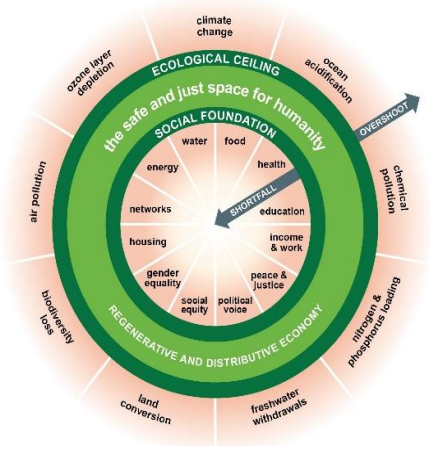
Doughnut Economics for Barbados

By Robin Mahon

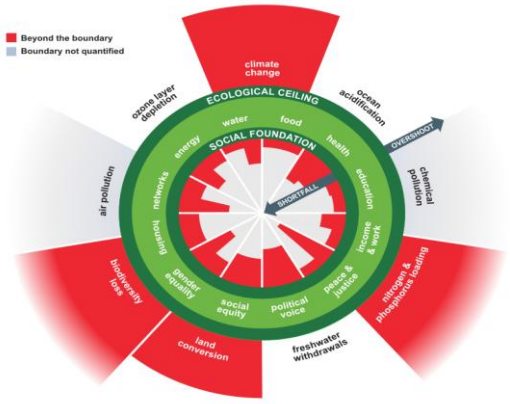
CERMES hosted the launch of the Barbados Doughnut initiative with an online session 'Introducing Doughnut Economics for Barbados' on Tuesday 2nd February. The session, moderated by Dr. Peggy Antrobus, was anchored by Kate Raworth's TED Talk, 'A healthy economy should be designed to thrive, not grow'. Speakers included Senator Crystal Drakes also from SALISES, UWI, Cave Hill, Dr Andrew Fanning from the Doughnut Economics Action Lab (DEAL), Dr Eduard Muller from the University for International

Cooperation, Costa Rica and Prof Robin Mahon, CERMES. The entire session can be viewed on YouTube here. Kate Raworth's talk introduced Doughnut Economics, based on the idea of creating a 'safe and just space for humanity' within the Doughnut.

The Doughnut centre, inside the social foundation, is where we are falling short regarding social justice and the basic needs for human life. Beyond the doughnut is where we are exceeding the ecological ceiling in a way that is simply not sustainable. Globally, many are living below the social foundation while many countries exceed their ecological ceiling, often to an alarming extent.



The Doughnut economics model

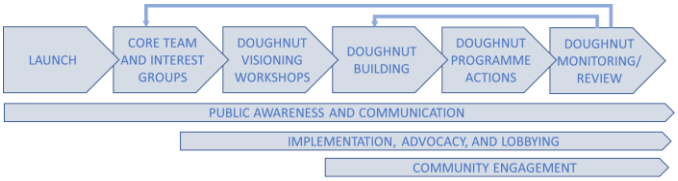


The global Doughnut

Crystal opened with the rationale for why we need to pay attention to Doughnut Economics in Barbados right now, especially as we think about rebuilding post-COVID. She argued that the global and national focus on economic growth has resulted in extensive environmental degradation and widespread inequalities in wealth and power. Furthermore, she noted that we are at a point in human history where 'business as usual' is no longer an option. Andrew explained the work of DEAL and how Doughnut Economics, which started as a global concept is being downscaled to cities and small countries. Eduard showed how Doughnut Economics was being pursued in Costa Rica, which is a world leader in Doughnut Economics. He outlined progress with the Regenerate Costa Rica movement emphasizing the urgency of the situation and that we will be held accountable by generations to come if we do not act now. Robin outlined the proposed way ahead for Doughnut economics in Barbados.

The session attracted 70 participants mostly from Barbados but from as far afield as Europe and even India. Feedback was sought in polls with most indicating that the Doughnut approach was much needed in Barbados. There was also the predominant view that it should be NGO led; while several participants thought in could be led by government or private sector, underscoring the need to have all types of stakeholders engaged.

The aim of the Barbados Doughnut Economics programme is to provide a platform where the many individuals and groups in Barbados who are actively involved in sustainability and social justice issues, whether government, private sector or NGOs, can interact, explore synergies and effect change. The initiative is led by a core team and hosted by CERMES. The phases of the proposed programme are as shown below. If you are interested please follow the Barbados Doughnut on Facebook or email Robin Mahon prof.mahon@gmail.com.



Complexities of communicating about Sargassum seaweed

By Patrick McConney

The Journal of Caribbean Environmental Sciences and Renewable Energy (CESaRE) is an open access publication of the UWI. In its December 2020 issue

there is an article by Patrick McConney and Hazel Oxenford on the topic of *Caribbean Sargassum Phenomenon: Complexities of Communicating*. In the article they state that communication has been a key element in the struggle to respond and adapt to sargassum. Exchanging information among a broad range of government, civil society, private sector, academic and other stakeholders has been an ongoing challenge. Mobilising knowledge is still critically important, and science communication remains a cross-cutting and very transdisciplinary process. They examine some of the lessons learned from the communication associated with sargassum influxes since 2011, noting that there is no clear science-policy interface for Caribbean decision-making on sargassum. Uncertainties surrounding sargassum ecology, oceanography, biochemistry, economics, medical and social science all test the status and communication of science among Caribbean stakeholders. The drivers of information sharing, the credibility of both popular and scientific sources, their reach to diverse audiences through networks, and several other factors combine to determine information flows.

Barbados Sargassum Adaptive Management Strategy

By Patrick McConney

A planning grant from the Global Environment Facility (GEF) Small Grants Programme (SGP) of UNDP in Barbados recently supported CERMES and the Ministry of Maritime Affairs and Blue Economy (MMABE) co-developing a two-volume draft Sargassum Adaptive Management Strategy (SAMS) for Barbados. The first volume contains the core adaptive strategy while the second contains action appendices to assist in putting the strategy into practice under changing circumstances.

Although thwarted from being as interactive as planned, due to COVID-19 constraints, the planning project's inception and validation workshops were well received by a cross-section of sargassum management stakeholders. This included some regional entities such as the Caribbean Regional Fisheries Mechanism (CRFM) and Caribbean Natural Resources Institute (CANARI). A regional perspective is necessary as almost the entire Caribbean is impacted by sargassum. Even now, still early in 2021, several countries including Barbados are reporting sightings and strandings of sargassum. The FAO-funded project on Climate Change Adaptation in the Eastern Caribbean Fisheries Sector (CC4FISH) is one that involves all the above-mentioned partners and UWI. It will support CERMES co-developing SAMS with the stakeholders in several other countries over the next few months.

In the validation workshop the GEF-SGP National Coordinator in UNDP, David Bynoe, was keen on quick follow-up to the draft Barbados SAMS to have it approved and implemented and in order learn from the experience. He pledged continued support from the small grants programme within its mandate. Wider sharing of scientific and technical information to support young men and women becoming sargassum innovators and entrepreneurs, and getting them better access to appropriately responsive funding mechanisms, were flagged in the workshop as crucial next steps. Acting Permanent Secretary of MMABE, Sonia Foster, strongly supported having new partnerships with the private sector, civil society and academia to address sargassum collectively in building a resilient Barbados blue economy.

UWI-CERMES will continue to work nationally and regionally with partners to tackle sargassum as both a hazard and an opportunity. Its applied research continues in several regional sargassum science projects that are featured on the CERMES sargassum web pages that we invite readers to visit to keep up to date.

StewardFish project activities updates

By Shelly-Ann Cox

CERMES StewardFish project activities are progressing steadily with good outcomes. Last month, three face-to face Ecosystem Approach to Fisheries (EAF) training workshops were held in Belize (21-22 January 2021), Antigua (26-27 January 2021) and Saint Lucia (27-28 January 2021). In-person participation was limited to the numbers imposed by government restrictions in light of the pandemic. Workshop sessions featured presentations on the concept of EAF and its principles, EAF innovation, Code of Conduct for Responsible Fisheries, National Intersectoral Coordinating Mechanisms (NICs), and gender mainstreaming.

Participants also took part in interactive exercises including EAF management timeline activity and developing an action plan for the development of a national code of conduct. Attendees commented that the workshops were productive, informative, engaging and time well spent. We wish to express our gratitude to the fisheries management authorities and national fisherfolk organisations in each country for their support in making these workshops a reality given the current circumstances. Special thanks to in-country coordinators Ramon Carcamo (Belize), Hilroy Simon (Antigua), Rita Straughn and Petronila Polius (Saint Lucia) for their efforts in ensuring that these workshops were a success.

Online EAF training workshops in Guyana, Jamaica and Saint Vincent and the Grenadines are scheduled in March.

Belize EAF workshop participants.
Photo credit: Nadine Nembhard

The BIOPAMA Yammer community is moving

By Jay Belmar

The BIOPAMA group in Yammer will be closed at the end of February and will no longer be available. Over the years, the Yammer community has built up a strong community of people who have an interest in conservation, biodiversity and protected area management and are driven to help protect nature in the African, Caribbean and Pacific regions. Although the group is moving, the community stays alive. It will be hosted on a new platform: Microsoft Teams.

What will change? Not much, apart from the platform and a few new features. Sharing and accessing documents will be easier. Collaborations, chats, online meetings can all be done in the Teams app. There still will be a conversation channel for each region and main topic. The goal remains to allow users to engage with others interested in protected areas, conservation, biodiversity and development.

Unfortunately, current users in Yammer cannot be automatically transferred to MS Teams, so everyone who wishes to remain a part of this community needs to contact us at communicationsofficer@caribbeanprotectedareasgateway.com. Kindly note that TEAMS is part of Microsoft 365, so you'll need a Microsoft account to join. You can create one using your current email address. For useful information on joining Teams, watch this video. The Caribbean Protected Areas Gateway looks forward to welcoming you to our new home!

CERMES Alumni group now on Google groups

Due to the shutdown of Yahoo Groups, the CERMES Alumni Group has been relocated to Google Groups. Keep in touch through this new medium. Should you have any questions, please contact us at cermes.it@cavehill.uwi.edu