CERMES UWI Celebrating 30 Years

Connections

June 2016

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

Hike around Little Bay with CERMES2016@30

By Adrian Cashman

Barbados' own sea arch with its wave cut platform

They do things differently in St Lucy; a car wash becomes a cow wash, as we found out. It seems that the cattle tethered in the fields near Pie Corner see cars as large salt licks. So what was the attraction for cows and some 30 adults and children gathered by an old windmill? The occasion was the second of CERMES' environment-themed hikes. This hike around Little Bay was to observe the processes that are shaping Barbados' coastline and was led by Dr. Leonard Nurse Senior Lecturer in Integrated Coastal Area Management and assisted by Dr. Steve Corder Lecturer in Geology and Earth Sciences. In their capable hands we learnt about the emergence of Barbados from the Caribbean Sea some one million years ago and how, unusually, the oldest rocks are found at the top of the island and not, as is normal, at the bottom. Looking west, they pointed out where the shoreline had once been; the sea cliffs, caves and the stranded wave eroded boulders, much like those we see today at the Soup Bowl in Bathsheba.

Inside this issue

Gazing over the cliffs on the way to Little Bay, Dr. Nurse described how wave cut platforms were formed and how they also provided to the coast. This led to a detailed discussion of the various ways in which erosion - the wearing down of the land - takes place. We also observed the return of a more recent phenomenon, Sargassum, floating in the baylets. A sign of how human activities are impacting on the environment was the extent to which the floating Sargassum weed had trapped garbage. Professor Hazel Oxenford spoke about the threat this posed to marine life.

The arch at Little Bay, framed by a rainbow, provided a spectacular backdrop to the end of the hike. In closing Dr. Nurse reminded everyone that there would be another two themed hikes led by CERMES in the coming months as part of its 30th year celebrations.

Hiking along the coast to Little Bay

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1st meeting of the Scientific and Technical Sub-commission of the Caribbean Sea Commission

By Robin Mahon

The Association of Caribbean States (ACS) held the first Meeting of the Scientific and Technical Sub-Commission of the Caribbean Sea Commission (CSC) on 6 May in Port of Spain Trinidad. This meeting brought together high level nationally nominated scientific experts from Mexico, Costa Rica, Cuba, Barbados and Guatemala to discuss the sustainable development of the Caribbean Sea. The work of the CSC in the upcoming year was discussed. This will focus on the data and information sharing mechanisms needed to integrate information on critical issues with a view to advising policy-makers. Sargassum and coastal erosion were considered as two potential topics of significant concern to Caribbean countries. The deliberations of this meeting will inform the future activities of the CSC and the upcoming plan of action for the 7th Summit of Heads of State and/or Government themed,"Together for a Sustainable Caribbean", in Havana Cuba.

Left to right: José Luis Juanes, Instituto de Oceanologia, Cuba; Jenny Asch Corrales, SINAC, Costa Rica; Robin Mahon, CERMES, Barbados; Ambasador Alfonso Múnera Cavadía, Secretary General, ACS; Ambassador José Serulle Ramia, CSC Chair, Dominican Republic; Alexander Girvan, CSC Coordinator, ACS; Margarita Caso Chávez, Instituto Nacional de Ecología y Cambio Climático, Mexico; Mario Díaz, Ministerio de Ambiente and Recursos Naturales,Guatemala.

GEF International Waters Conference

By Patrick McConney

CERMES participated in the Global Environment Facility (GEF) International Waters Conference (IWC8) from 9-13 May 2016 in Negombo, Sri Lanka. A presentation was made on the "Lessons learned from National Inter-sectoral Consultative Mechanisms (NICs) in LME projects". The CLME+ Project Coordination Unit sponsored CERMES attendance. Getting national inter-sectoral consultative mechanisms or inter-ministerial committees to work well and sustainably is a challenge in most LMEs. The global analysis delivered by CERMES was well received and commented on by several participants.

The IWC8 also focused on the positive relationship between GEF-funded projects and the Sustainable Development Goals (SDG). Small-scale fisheries were well represented by participants and projects. It was an excellent opportunity for networking and discussing governance. Many participants had fond memories of IWC7 that was held in Barbados in 2013.

Shrimp with a side of SocMon anyone?

By Patrick McConney

As an organisational partner, CERMES participated in the FAO Sustainable management of bycatch in Latin America and Caribbean trawl fishing project (REBYC-II LAC) Regional Workshop on Data Collection and Analysis. It was held in Governador Celso Ramos, Brazil, from 8-10 June 2016. Participants from six countries had productive discussion on natural and social science data collection and indicators while also delving into the

practical aspects of participatory fishing gear design and implementation.

The main local organiser of the worksop, Rodrigo Medeiros, who also leads the Brazil SocMon network, provided impressive evidence of how socio-economic monitoring was being used in participatory processes with an increasingly engaged fishing industry. Participants judged success for themselves on a field trip to fishing communities and discussion with an innovative net-maker who is incorporating trawl by catch reduction devices and designs. As the Caribbean coordination node for SocMon, we were pleased to see the swift and successful development of the Brazilian network that is fully backed by government agencies. Demand for SocMon may increase in Central America due to this FAO project

WECAFC crafts a brave new world for the future

By Patrick McConney

Hazel Oxenford and Patrick McConney represented UWI-CERMES at the Sixteenth Session of the Western Central Atlantic Fishery Commission (WECAFC), held in Le Gosier, Guadeloupe, from 20 - 24 June 2016. This may be seen as a critical meeting and a turning point for WECAFC to become a regional fisheries management organisation (RFMO) rather than remain an advisory body. Discussions were intense, but participants still found time for lighter exchanges during the boating field trip.

The prospect of WECAFC evolving into an RFMO over several years is of considerable interest to CERMES in the context of our governance research with the CLME partner organisations. Both the process and the product of WECAFC evolution will provide many lessons for the region and globally. FAO, and the WECAFC Secretariat in particular, is to be congratulated for helping member states and others to examine the options and trade-offs, but there is still much work to be done.

Adaption response urgent!

By Anuradha Maharaj

Adaptation Futures 2016 held in Rotterdam, The Netherlands from 10-13 May; the biggest climate change adaptation conference ever held; saw over 1700 participants from 95 countries sharing the unique challenges they all face with regards to climate change. The urgency of measures that have to be emplaced to cope with the escalating climate situation were echoed throughout the proceedings. Melanie Schultz van Haegen, Minister of Infrastructure and Environment for the Netherlands, in her opening address stressed the importance of not just responding to the anticipated changes but to "stay a step ahead of the future," especially since "…for every $1 we spend on prevention we save $7 of disaster relief". The lesson being clear that prevention results in the creation of more resilient countries, economies and peoples. Her Majesty Queen Máxima of the Netherlands shared similar sentiments, highlighting the disparity in the affected; noting that the poorest are the hardest hit. The core of her speech called for better access to financial services for the affected as an effective 'bounce-back' adaptation response post-disasters.

Anuradha delivering her presentation

The inherent, unique vulnerability of the Caribbean SIDS and the need for immediate adaptation measures within the water sector in the Caribbean Region were highlighted by CERMES Water_aCCSIS representative, Anuradha Maharaj. She presented on-going work for two of four Water_aCCSIS research sites: Speightstown, Barbados and Carriacou, Grenada. Her discussions

surrounded the projected precipitation decreases for these areas and the cascading impact on available water. Downscaled climate data provided by the Climate Studies Group Mona (CSGM), UWI Jamaica and Dr. John Charlery, UWI Cave Hill Campus, was added to the water allocation model: WEAP. The model shows the remaining water after sectoral distribution. The initial outputs suggest a troubling trend of decreasing headroom with decreases in precipitation. Given the near term (2035-2045) and long term (2065-2075) forecasted precipitation decreases simulated, these areas are projected to be at high risk for severe, nearing perpetual droughts in the future. As such this work allows for future water availability estimates to be made as a strategic and informative step toward climate change adaptation and resilience building.

Post-presentation discussions focused on the peculiarities of hydrological modelling, narrowing a bit on data scarcity issues and methods that can be employed to circumvent barriers to the production of effective evidence based research for policy development.

The Caribbean Gateway and the Caribbean Open Institute

By Julian Walcott

The Caribbean Ocean Institute (COI) is a regional coalition of individuals and organisations that promotes open development approaches to inclusion, participation and innovation within the Caribbean, using open data as a catalyst. This initiative seeks to leverage and augment the Caribbean Gateway initiative by identifying additional datasets (emphasis on livelihoods and governance data), relevant to marine and terrestrial protected areas or environs, which are not currently in the Gateway databases.

Dionne Carbon, CERMES graduate of the Climate Change stream, holds the position of Geography lecturer at the Dominica State College (DSC) where she engages in sustainable development education activities for student organizations operating at the DSC and also within communities. Dionne has been contracted by the Caribbean Gateway to engage with key stakeholders and dataset owners to identify appropriate open access licensing mechanisms that will facilitate incorporation of the acquired datasets into the Gateway. A 5-country case study is currently being undertaken with the overall aim of demonstrating the value of bringing diverse datasets together to enhance innovation in planning, management and communications. Hopefully, it will also show whether there is an overall social benefit (i.e. both inside and outside) from having protected areas (Pas), who benefits and how the benefits change as decisions are made.

Through the use of open access Application Programming Interfaces (APIs), each of the participating countries will collaboratively assist with the development of a communication strategy, case study or mobile App to promote or demonstrate the use of open data and so illustrate the potential of the Gateway to link data to better decisions.

Drones for conservation

By Kimberly Baldwin

Over the last decade advances in remote sensing technology have seen the development and application of small Unmanned Aircraft Systems (UAS) or 'drones' and the imagery they capture, as a valuable tool for environmental management. To address a growing demand for spatial data on the state of the environment, the science of remote sensing, including the availability of UAS airframes, payload sensors and mapping software has rapidly progressed to provide detailed 3D representations of the Earth's surface, features and topography. Core functionality is derived from the georeferenced, high resolution color images and elevation models that can be generated and brought into a GIS for visualisation and further analysis. UAS systems are therefore filling an important niche for researchers as they are particularly well-suited for mapping at an intermediate spatial scale (1-10 km^2) at a fraction of the cost, training, and time required to both conduct and process traditional aerial survey data.

As part of her Post-Doctoral research with CERMES, Kimberly Baldwin is undertaking a drone data collection, 3D mapping and data management exercise with the Department of Environment of Antigua and Barbuda implemented by The Nature Conservancy (TNC). This research seeks to demonstrate how drone technology

can be used to support conservation efforts in Antigua and across the region. Potential applications include: terrestrial and marine habitat mapping, vegetation health assessment, high resolution elevation data for modelling watersheds, post disaster (hurricane/flood) recovery efforts, monitoring and inspection in remote areas, sea turtle, seabird and other wildlife monitoring, as well as various surveillance, enforcement and evidence gathering applications. Additionally the 'Drones for Conservation' project will support national sensitisation of drone applications for conservation in which collaboration with stakeholders is applied to develop socially-acceptable UAS policy recommendations, flight and mapping methods, and a national GIS data management protocol for the Environmental Information Management and Advisory System (EIMAS).

Kim (right foreground) leads a drone survey exercise in Cades Bay Marine Reserve to evaluate the role UAS imagery can play in quantifying the extent and health of mangrove communities and potential threats

Grenada field trip

By Leanna Kalicharan

Grenada, the land of mountainous green, and for most of us, it was the first visit to the 'spice isle'. The trip was refreshing following almost ten months of *in situ* learning. We are grateful to CERMES to have planned our field trip to Grenada, as it served as an opportunity to reinforce what we have learnt in the programme, while exploring.

The field trip truly conveyed what being a "Natural Resources and Environmental Manager" entails in actuality. The major high-point of the field trip was the practical knowledge gained from conversing with the various stakeholders, each with distinctive capacities and designations. Even though we have been taught that stakeholder involvement is prime at every level of decision-making in management, the meetings cemented that for us.

Field trip crew

The engagements also strengthened for us, that partnership between the community and decision-makers can be fruitful and beneficial to all stakeholders. Importantly, the trip highlighted that as prospective managers, we must be cognizant of the fact that administrative decisions must be pronounced on the management of societal actions and its relationships with the environment, as these have implications for natural resources. Moreover, in discussions amongst ourselves after our daily activities, we were pleased to learn of cases where the co-management of resources has been applied and is successful. That was certainly motivating given the numerous futile case studies we were presented over the study year.

Out and about with Crafton Isaac (Fisheries Officer) at the Grenville fish market

In closing, the field trip to Grenada was an encompassing one and reiterated the materials we would have learnt in class. More so, it presented to us realities we would likely encounter while serving in our various potential designations. Therefore, as the Coastal and Marine Stream of 2015, we strongly recommend the continuance of such field expeditions.

GIFT sum up from Pam

By Pamela Burke

Pam guiding a lady involved in the post-harvest sector in the development of a seasonal calendar

Pamela Burke has recently finished her three month internship with CERMES and the Gender In Fisheries Team (GIFT). The GIFT team was formed to facilitate and support implementation of the Small Scale Fisheries Guidelines in the CRFM member states. During her time with CERMES and GIFT, Pam worked with team members to begin a scoping study of gender roles in fisheries in Barbados, focusing on livelihoods, governance institutions and adaptive capacity. She completed one-on-one semi-structured interviews with both women and men in the post-harvest sector, as well as a few in the harvest sector. Pam and the GIFT team also facilitated a group interview in Silver Sands attended by women in the area working in the post-harvest sector. This group interview focused on the creation of a seasonal calendar, daily time use analysis and livelihoods analysis. It served as a productive meeting as well as an opportunity to meet women who Pam was able to follow up with for more detailed interviews.

In addition to interviews, Pam also consolidated sex disaggregated data for BARNUFO membership and training attendance, Fisheries Division staff, and Markets Division staff. An assessment of sex disaggregated data for boat owners and agents, as well as market workers saw interesting results. Further GIFT work in Barbados will look closer into the relationship between gender and boat owners/agents, as well as focusing on the livelihoods analysis of individuals.

Pam has returned to Newfoundland, Canada and is working as the Program and Volunteer Coordinator at the Petty Harbour Mini Aquarium for the 2016 summer season.

Following our alumni

There not much that makes us feel better than to learn that our CERMES alumni are on the paths to successful careers. We recently learned that Cashmi Groome (CERMES 2013-14 Water Resources Management Specialisation) recently joined the Socio-Economic Policy Planning Division of the Ministry of Planning and Development, Trinidad and Tobago as a Research and Policy Specialist. She will be working on the development of policies to promote national flood resilience and coastal zone management. She worked for more than six years in the water industry in Trinidad and Tobago before enrolling in CERMES. Her MSc research project investigated the feasibility of flood forecasting in Tobago that explored an approach to forecast floods with limited data and technology.

Congratulations Cashmi!

Recent publication

Former CERMES Post Doc, Abdelaziz Gohar, and our Director, Adrian Cashman, have recently published a paper in *Agricultural Systems* on a mathematical framework they have developed to assess the impact of climate variability and change on water resources, food security and economic welfare. This comprehensive tool provides policy makers and stakeholders with the means for economically efficient and sustainable reliant policy design, implementation and evaluation facing potential climate variability and change impacts.

Download it now from:
http://www.sciencedirect.com/science/article/pii/S0308521X16301299