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Roundtable 2

Ecology

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ROUNDTABLE REPORT

Roundtable Two: Environmental Research Agenda

Topic: Ecology

INSTRUCTIONS

Persons should have selected this topic because they have an interest or expertise in the specific area.

This is a regional issue, therefore do not focus exclusively on the Barbadian situation, but think about the regional experience and brainstorm regional, international as well as local actions that might be required.

Each group must **select a rapporteur** who will be responsible for summarising and recording the main points made for each question.

Over the next **2 hours** have been allocated for this discussion. The Moderator will announce time checks every 20 minutes. Groups should try to use their time to ensure that they **address all 5 questions**.

At the end of the session this booklet must be handed to one of the administrative staff.

The information will be compiled and emailed to all of the Symposium participants.

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1. What is being done and lessons learnt?

Dominica – Fisheries Division:

- Speaking with the National Association of Fisher Folk
- Pass on Information
- Developed a questionnaire to be administered to Fisher Folk – Barbados Fisheries Division has already administered a survey, so it may be beneficial to share info so as to get a regional view of key variables at least.
- Observations of Shifts in turtle beach preference

Sea Turtle:

- Impact of Sargassum on nesting beaches – Learned it may be less than anticipated since turtles can deal fairly well with Sargassum on beaches and near shore except in deepest areas.
- Impact of clean up on nesting, hatching success – Impact mainly from heavy machinery. Learned to minimise use and that equipment guidelines and policy are needed. Needed entrepreneurship and innovation to reduce ecological risk.
- Monitoring the season this year – On-going
- Concerned about the beach cleaning & piling up of the Sargassum on the beach – Back beach storage of Sargassum may be more harmful than accumulations in the beach as this is where nests are.
- GIS can be used to produce a Sargassum Socio-Economic Map/Tracking System. There is a need for collaboration – Learned we should add Sargassum layers to existing suitable coastal and marine base maps to show ecological and socio-economic information.
- Learned that there is an urgent need to develop qualitative and quantitative model or models that help to connect the dots and document relationships in the sargassum social-ecological system. If we do not do this soon we may miss or misunderstand important aspects of the problems and the solutions - Such a model would be dynamic and be updated with new information.
- Dead sponges increased in frequency along Atlantic Shores; Sea cucumbers as well. Learned that the positive and negative ecological impacts of Sargassum are not well documented or understood - Very important for research at several scales.

- Less people on the beach – Could be beneficial for reducing some negative anthropogenic impacts – Not learning about the public health impacts, if any, and little info for those people still wanting to have sea baths.

- Green turtles no longer in shallows at Oistins (were fed from the pier) - The reasons for turtles moving or for the redistribution of other organisms from Sargassum areas are poorly known – Impacts of degradation chemicals, of water colour change, or smothering, of reduced light penetration, etc.????

- Sea Egg Poaching

- Drug Activity on the beach may be reduced since boat movement and coastal transportation are more challenging. So the ecological impact may be to change patterns of illegal activity; Also impacts the sale of drugs on beaches to tourists.

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2. What are the issues to be investigated?

- The impact on fisheries and the livelihood of fishers – Several in the presentation by CFO Willoughby; Need to separate impacts at sea (offshore) from those when the seaweed is ashore; Also need to consider the entire value chain, not just fishers and boat owners (need to disaggregate the actors).

- The impact on sea turtle nest survival/success.

- Community interactions - Getting the community involved.

- Levels of Hydrogen Sulphide – Is it toxic to sea life? How have oxygen levels been affected? Referring to dissolved oxygen in the sea water.

- EPD – Considered the legal mandate of EPD in Barbados and the technical capacity to undertake monitoring once the priority parameters have been determined.

- No current research in the area – Refers to the physical and chemical research by the government agencies.

- Human health impacts of decaying Sargassum.

- What is in the chemical soup? Talked of assessing this over time as the Sargassum decays; Also includes the physical properties.

- Is the green water “less green” now that there is a macra algae? Refers to the impact of the Sargassum bloom on the nutrient levels in the sea and also in the release of compounds during decay; Moving areas of productivity.

- Is the observed drop in flying fish due to a change in effort, or a change in abundance?

- Are flying fish being predated in the Sargassum, and are they being moved elsewhere in the Caribbean by the moving mats? Changes in spawning, distribution, and migration. Spoke of the need to include Sargassum in fisheries dynamic models and stock assessment (maybe the USM/CERMES research will do this).

- Bioassay – Concerns determining what critters are sensitive to various negative impacts of Sargassum and can be monitored may be much easier than the chemical directly – Came out of observations in shoreline rock pools.

- Capture of juveniles of economically important species, e.g., dolphin fish. Questions of if the addition of fishing mortality to natural mortality at the juvenile stages may or may not have an impact on the populations – It is precautionary to assume harm, but this is a serious impact on

fisheries if regulations are put in place to restrict catching juveniles; Big issue, as it is in the public eye.

- Food security and the role that Sargassum plays:
  - Fertilizer
  - Edible Products
  - Influences poaching of sea eggs, etc.

  It was said that the links between the CARICOM Common Fisheries Policy and the CARICOM policy on food security need to be better developed.

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3. **Who are the stakeholders to be involved?**

- Fishermen/Fisher folk
- Barbados Sea Turtle Project
- CERMES
- CZMU
- All those involved in coastal tourism – Dive Operators
- Fisheries Divisions across the region
- Tourists
- Local Government
- Village Councils
- Restaurant/Hotel Owners on the Coast.

It was reiterated that this is where the social-ecological model would be very appropriate and useful for multiple purposes – The relationships between the actors need to be documented and managed to create opportunities, as well as to solve problems.

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4. What resources are required?

- Temperature monitoring over time to track the impacts to track the impacts of Sargassum.

- Mapping of the stages of Sargassum landfall. Where? When? What are the impacts when fresh vs. when decomposing?

- Develop a matrix to compare? This was about matching resources to needs and prioritizing what is possible over various time scales.

- Human resources to monitor indicator species.

- Fisher folk reporting mats and landfall to help ground-truth SEAS data.

- Something like the Fisheries App - Talked about drawing upon ICT to offer innovative means to gather and to share information using smartphones – An affordable approach for small islands and currently being done by CIRP at UWI – St. Augustine.

- Reporting/Citizen Science App. - ios/Android.

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5. What are potential sources of funding?

- GEF Small Grants
- International Waters
- Biodiversity
- Climate Change (World Bank) – Pilot programmes
- IADB
- SOL (Private Sector) – Direct pick-up, Export to Guyana
- Regional Governments
- Japan International Cooperation Agency

SARGASSUM ROUNDTABLE REPORT

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Thank You for Your Participation

At the end of the session please hand this booklet to one of the administrative staff.