

A Note on Marine Administration in Small Island Developing States (SIDS)

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Abstract

Small Island Developing States (SIDS) claim special circumstances that complicate their adoption of formal marine administrative systems. The special circumstances include their size, their vulnerability to natural hazards, their dependence on marine resources and their technical and administrative resource limitations. In the context of the Eastern Caribbean Islands, these factors seem to manifest in present marine administrative weakness. This paper presents a brief discussion on these issues.

1. INTRODUCTION

There is no widely accepted definition of a Small Island Developing State (SIDS). The SIDS network however includes more than fifty countries around the world whose primary physical geography are considered to be that of ‘small islands.’ Associated with these small island states, is a varied and well-defined relationship with the sea and the resources within it. Indeed, when applied to the SIDS, the United Nations Convention on Law of the Sea provides for claims of relatively vast marine area spaces adjacent to these small islands. Such potentially large extensions of sovereignty for a small state can not only enrich that state but also burden it with the responsibility of the administration of vast areas. Spatially, SIDS occur in all parts of the world but many are located within the tropics with 20° North and 20° South. The largest SIDS is the State of Papau, New Guinea (426840 km²) in Australasia and the smallest is Nauru (21km²) in the Pacific Ocean. Table I below lists SIDS, their sizes and their coastline lengths.

The convening of the SIDS conference in Barbados in 1999 (United Nations 1994) served to recognize and document the special status of SIDS in development sectors. The conference identified many of those features of SIDS that were unique or significant factors affecting development and development activity within the attending member States. Coastal resources, all aspects of land and the role of land administration structures were among the associated development activities identified. This paper considers one area of land administration: marine administration, and the special circumstances that challenge the adoption of marine administration systems in SIDS.

Table 1: List of SIDS, their sizes and coastline lengths
 (Compiled from data published by the United Nations Department of Social Affairs,
 Division for sustainable Development)

STATE	AREA (KM2)	COASTAL LENGTH (KM)
American Samoa	199	116
Anguilla	102	61
Antigua and Barbuda	442.6	153
Aruba	193	68.5
Bahamas	13940	3542
Bahrain	665	161
Barbados	431	97
Belize	22966	386
British Virgin Islands	153	80
Cape Verde	4033	965
Comoros	2170	340
Cook Islands	240	120
Cuba	110860	3735
Cyprus	9250	648
Dominica	754	148
Dominican Republic	48730	1288
Federated States of Micronesia	702	6112
Fiji	18270	1129
French Polynesia	4167	2525
Grenada	344	121
Guam	541.3	125.5
Guyana	214970	459
Haiti	27750	1771
Jamaica	10991	1022
Kiribati	811	1143
Maldives	300	644
Malta	316	196.8
Marshall Islands	11854.3	370.4
Mauritius	2040	177
Montserrat	102	40
Nauru	21	30
Netherland Antilles	960	364
New Caledonia	19060	2254
Niue	260	64
Northern Marianas	477	1482
Palau	458	1519
Papa New Guinea	462840	5152
Puerto Rico	13790	501
Samoa	2944	403
Seychelles	455	491
Soa Tome and Principe	1001	209
Solomon Islands	28450	5313
St. Lucia	616	158
St.Kitts and Nevis	261	135
St.Vincent and the Grenadines	389	84
Suriname	163270	386
Timor Leste	15007	706
Tonga	748	24
Trinidad and Tobago	5128	362
Tuvalu	26	24
U.S. Virgin Islands	1910	188
Vanuatu	12200	2528

The paper continues with a review of some of the special circumstances identified in the literature and are associated with marine administration in SIDS. The circumstances are illustrated in one geographic grouping of SIDS: the islands of the Eastern Caribbean.

2. SIDS SPECIAL CIRCUMSTANCES

There are both an emerging and a growing literature on SIDS. These include national reporting from numerous United Nations Conferences since the initial SIDS conference in 1998, case study research as published in academic journals and presentations at professional forums including those supported by both Governmental and Non-Governmental Organisations. From this literature it is possible to identify many of the special aspects of SIDS that are important to the administration of marine spaces. This brief paper, while acknowledging there may be many other important aspects, will concentrate on perhaps the most four (4) significant features of SIDS:

- their size,
- their vulnerability to natural hazards,
- their dependence on marine resources and
- their technical and administrative resource limitations

2.1 Size

Island state size is one of the primary parameters in defining a SIDS, the other is its status as a developing country. As defined, a SIDS is small. Here the term ‘small’ is used to characterize many aspects of SIDS. One way to theorize this term is in a physical geographic sense where ‘small’ is a description of the relative relationship between the physical size of a state and its ability to affect the larger environment around it. For example, a small low relief island within the tropics tends to have relative little singular effect on larger physical oceanographic and meteorological forcing. In many instances, the flow of large-scale ocean currents or weather systems is little affected by the presence of small islands.

The Eastern Caribbean chain of islands comprise of more than thirty inhabited islands. Some are little more than raised reef terraces (for example, Barbados) or isolated rocks. Some like Trinidad are associated with the larger geological features of the South American land mass. Several are of volcanic origin and have presence of volcanoes in various life stages (for example, St. Kitts, Montserrat, St Vincent, Grenada, Martinique and Guadeloupe). For most islands there is often simplicity to their shape and relief which tends to restrict human settlement and physical development activity to a narrow coastal strip. From an oceanographic standpoint the Eastern Caribbean island chain defines the eastern limit of the Caribbean Sea and the Western limit of parts of the North Atlantic Ocean. The marine areas in-between the islands are typified by deep passages that allow the exchange of water across the larger water bodies. Research of large scale circulation patterns suggests that the region supports significant bio-physical activity and flow characteristics, for example currents, large scale circulation eddies and annual variations in salinity that are driven almost exclusively by river forcing for the larger river discharges from the South American Continent. In general the presence of the islands themselves offers little to the larger dynamics to these bio-physical and flow characteristics.

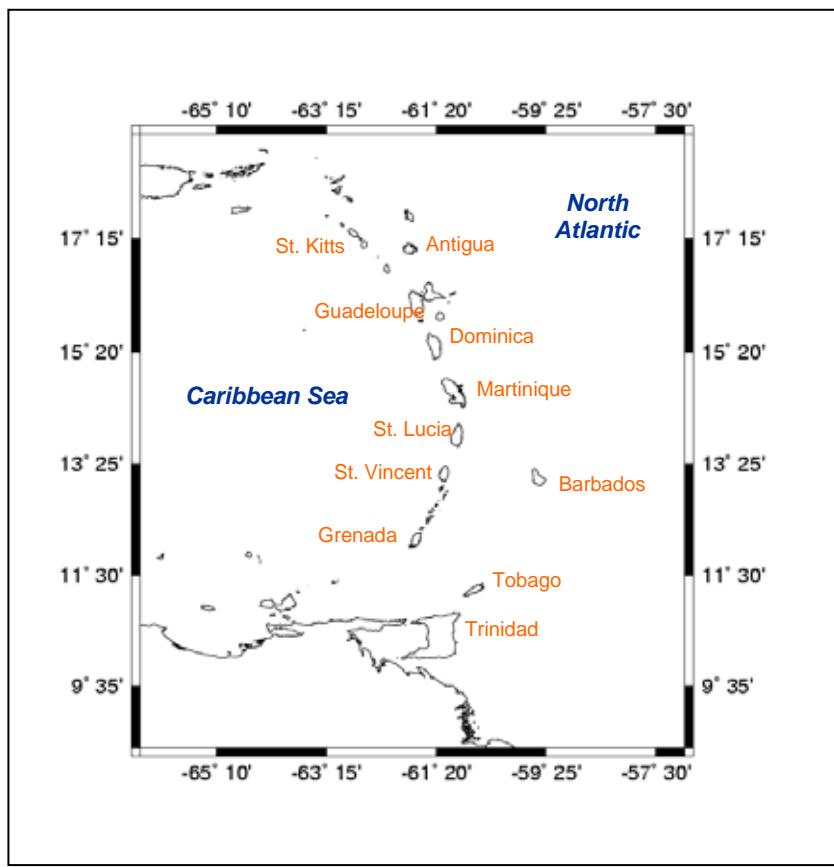


Figure 1: The Eastern Caribbean Islands

In a macro economic sense, size is easily reflected in the overall extent and reach of the national economy of a SIDS. Often the GDP in SIDS is often associated with economic structures that are heavily skewed towards only a single or a few economic sectors.

2.2 Vulnerability to Natural Resources

The vulnerability of small islands to natural disasters is best understood in terms of the record of post event disaster loss. The Eastern Caribbean islands are prone to extreme events including hurricanes and storms, flooding, earthquakes and volcanic eruptions. The estimates of return time for storms and hurricanes vary and the eruptions of earthquakes remain unpredictable but the need for investments of time, resources and standards in disaster preparedness is an important aspect of national planning.

The devastation caused by the passage of hurricanes, storms, heavy rainfall and the attendant flooding is often significant. Storm records indicate that in recent times more than fifteen named storms per year have crossed the region. A recent example is that of the passage of Hurricane Ivan over the island of Grenada in 2004. The storm was a Category 3 with sustained winds of 165 kph. Reports indicate that 80% of the island was severely affected, that 89% of the housing stock was destroyed and twenty-eight persons lost their lives. The scale of destruction is however not limited to infrastructure but also to still unquantified loss and or damage of coastal habitats including reefs, beaches and wetlands. Another example is that of the impact on the continuing volcanic eruptions on the island of

Montserrat. So severe are these eruptions that a significant part of that island, including the former capital is now delimited as an exclusion zone into which entry is strictly controlled.

Records suggest that over the past two decades, natural disaster events in the eastern Caribbean include Hurricane Gilbert in 1988, Hurricane Hugo in 1989, Hurricanes Luis and Marilyn in 1995, Hurricanes Mitch and Georges in 1998 and Hurricane Lenny in 1999, all resulting in major losses. The impact of these hurricanes was also in the loss of agricultural output. Dominica, for example, saw banana production fall by 22.8% in 1995 because of an almost total destruction of the crop due to tropical storm Iris and Hurricanes Luis and Marilyn. Economic growth slowed that year to 1.6%, down from 2.2% the previous year.

Vulnerability to natural disasters also generates great concerns for the location of infrastructure including the location of ports and harbors and the attendant marine infrastructure as well as general marine and coastal access issues.

2.3 Dependence on marine resources

For centuries, island residents have exploited the marine resources around their islands, perhaps initially for fish, then later as access to markets and more recently for hydrocarbons and as tourism infrastructure. Recently, in the maritime boundary dispute between Trinidad and Tobago and Barbados (Award of Arbitral Tribunal 2006), the dependency of the local Barbados economy on access to pelagic fish, in particular the Flying Fish, was highlighted as part of a maritime claim. Also in Barbados, the economy's reliance on coastal tourism is evidenced by the large number of coastal hotels, beach and water sport facilities. Arguably sea and sand are critical parts of the Barbados tourism trust. The sustained quality of that resource is therefore of paramount importance to the national economy.

The twin island State of Trinidad and Tobago features a hydrocarbon led economy where significant aspects of its oil and gas reserves are located in the offshore marine environment. The presence of numerous offshore oil and gas installations on the eastern coast of Trinidad provides evidence for related issues of marine traffic and environmental pollution issues.

If anything this island dependence on coastal resources seems to warrant investment of marine administrations systems but remains unattended mainly because of the lack of political will.

2.4 Administrative constraints

In many cases the administrative structures within SIDS are inherited from a long colonial history. Some have argued that the form for those structures were often associated with single-minded short-term exploitation rather than long term sustainable development. Patterns of governance, the form of institutions and the shape of law and regulations were therefore primarily based on priorities driven by the hard economics of the day with little input from environmental or sustainability concerns. Often without update, such colonial or post-colonial forms have often proved weak or silent in tackling modern sustainability

problems. Administration without adequate regulation and law can be significant constraints to resource management.

In the former English colonies of the Eastern Caribbean the general model for land administration was centered on several Government Departments, including a traditional ‘Lands and Surveys Department’, and a regulatory framework designed for land spaces only. Of primary concern were the administration of tenure arrangements and the collection of taxes. The inherent weakness meant poor description of coastal matters such vertical datum, the high water mark as a jurisdictional limit and loose and overlapping jurisdictions amongst various Government agencies.

In the years that followed Independence, relatively little was done to change the basic form of land administration. The emergence of new technology such as GPS, Satellite Imagery and Geographic Information Systems greatly improved access to data collection but has had little impact on general land administration because of the inability of administrative structures within state agencies to use the increased resource information in the decision making processes.

Other less obvious administrative constraints became evident as the term land administration was stretched to include the administration of marine spaces – an area that in colonial times was generally the sole purvey of the Colonial Harbor Master. The primary concern of that functionary was the navigational safety and control of Customs rather than any larger resource management role. Traditionally, nearly all rights in marine spaces were owned by the State (previously the Crown), hence prior to the idea of a lease for marine resource exploitation, the documentation of rights in marine spaces were non-issues. This scenario is still reflected today in the general lack of training or other resources for measurement and indeed the administration of marine space in the region. Of the English speaking States of the Eastern Caribbean, today only Trinidad and Tobago and Barbados have some Government in-house hydrographic survey or marine area management capability.

3. MARINE ADMINISTRATION

The literature on marine administration identifies benefits to structured and well-managed marine administration that in the face of the close association of SIDS to the sea would recommend it. That notwithstanding, efforts at the adoption of marine administration with many SIDS are slow in coming. The States struggle with the lack of political will and constraints of size and lack of resources in pursuing implementation. Akin to the challenges of implementing environmental management, for many SIDS scarce resources must be prioritized on a long list of other social, economic and infrastructural demands. Only when economic or social pressure becomes unbearable, are better resource management structures considered.

As in many SIDS, the idea of adopting marine administration systems is still not a priority and still not recognized as a management tool. In the Eastern Caribbean, the following features can be identified.

- In general, land administration is still relatively weak and complicated by the lack of political willingness to engineer change. Significant updating of the laws governing physical planning and land development are required.
- There is now increased effort to incorporate the use of satellite imagery, GIS and other modern data gathering and data analysis systems (particularly in response to disaster management) but little co-ordination amongst stakeholder groups at data sharing and data management.
- Research efforts remain limited and poorly funded.
- Many fundamental coastal issues remain unattended, for example coastline monitoring, marine habitat and resource mapping and the implementation of management methods for coastal development.
- There is little effort on the standardization of marine data reporting and exchange formats. Such exchange of data is an integral part of marine administration systems since they eliminate duplication and improve cooperation.
- Nautical charting efforts are generally restricted to surveys of ports and harbors or other areas of commercial importance.
- The idea of the adoption of a marine cadastre has not yet been fully considered.
- Attempts at capacity building in the area of marine administration are scattered, slow and without focus.

Perhaps one notable exception to the above is the efforts on the Government of Barbados in funding research and the implementation of coastal management at a national level through statutory planning and the introduction of legislation to support that planning. Barbados has established a well-defined coastal zone and the necessary administrative resources to monitor and manage its coastal resources. It is possible that with time the current marine administration systems in Barbados will evolve to include larger marine administration issues.

Several developments with the Eastern threaten to hasten interest in marine administration; these include continued efforts at regional integration at economic level, attempts at improving disaster preparedness and the emergence of new technologies that support marine resource exploitation. The growing fear is that as the land based resources become more and more restricted, development and interest in the marine resource will grow.

4. CONCLUSION

The future of formal marine administration systems into SIDS is heavily dependent on the ability of the SIDS themselves to lobby for its adoption. The special circumstances of SIDS present challenges but ones that if resolved can bring rich reward. While still some time away, SIDS will eventually be compelled to pursue management and administration of its marine area if success at sustainable development is to be achieved.

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