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Assessing social network structure of stakeholder organisations in the Grenadine Islands

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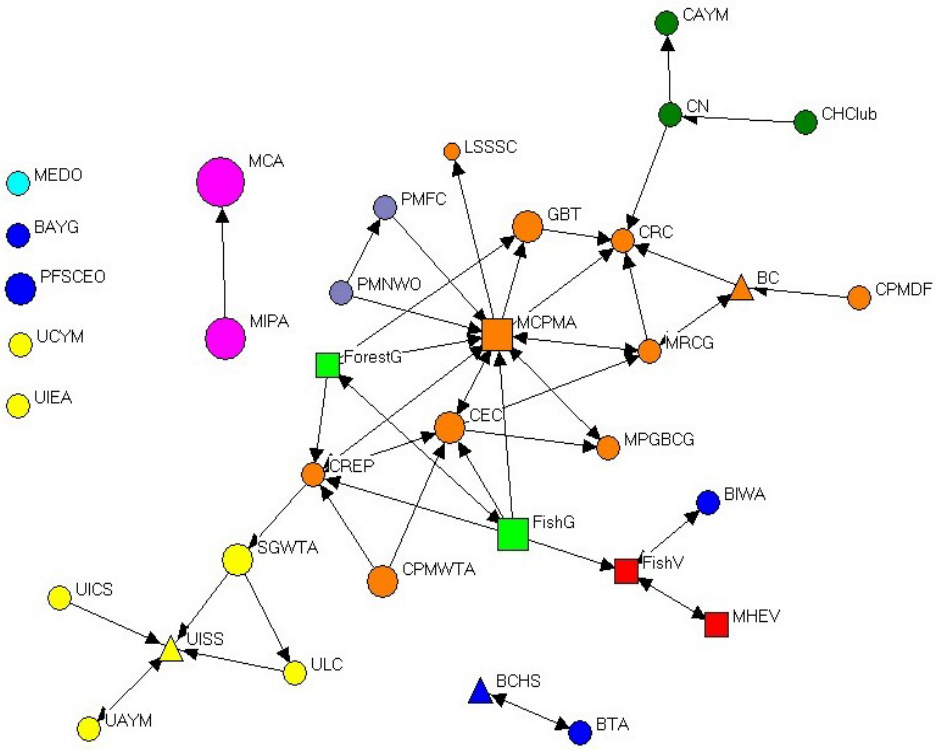

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ABSTRACT

Assessing social network structure of stakeholder organisations in the Grenadine Islands

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The diverse coastal and marine resources and habitats in the Grenadines are important to the livelihoods of the people living there. These resources are often utilized in an unsustainable manner with overexploitation of fisheries and unplanned development taking place due to the socio-economic importance of tourism and fisheries in this transboundary region. The lack of stakeholder participation throughout the islands further perpetuates the problem, particularly as most NGOs lack the capacity to be involved in management at the decision-making level or to take action themselves.

The Sustainable Grenadines Project aims to address this problem through building capacity of Grenadines NGOs to play a significant role in sustainable development. In order to better understand the stakeholder environment as a precursor to undertaking efforts at enhancing social capital, relationships among stakeholder organisations were examined using social network analysis (SNA). SNA is useful for mapping and understanding relationships among stakeholder organisations. Understanding the extent or nature of those relationships can facilitate planning for capacity building for these organisations. In this paper, SNA was used at the beginning of the Sustainable Grenadines Project to analyse the relationships among stakeholder organisations such as the government agencies, non-governmental organisations, schools and businesses within St. Vincent, Grenada and the seven inhabited Grenadine islands (Bequia, Mustique, Canouan, Mayreau, Union Island, Petit Martinique and Carriacou).

The study found that the overall interaction network between stakeholder organisations is sparsely integrated (density = 9.8%) with minimal control of information flow (network centralization = 6.8%). Inter-island interaction is also a concern due to a paucity of linkages. The network overall also has a low degree centrality indicating that communication is not being focused on one or few organisations. Although one, the Ministry of Carriacou and Petit Martinique Affairs does appear to occupy a central position on the Grenada side.

Some recommendations have been proposed to encourage productive collaboration between the organisations through implementing schemes to strengthen linkages among Grenadines NGOs and between them and critical partners.

Keywords: Social networking, partnership, stakeholders, capacity, social capital, Grenadines

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1 INTRODUCTION

The Grenada Bank lies across the boundary between the countries of St. Vincent and the Grenadines and Grenada. The Grenadine Islands area (Figure 1.1) includes nine inhabited islands on an extensive shallow bank with extensive coastal and marine habitats: fringing, patch and barrier reefs, seagrass beds, salt ponds and mangrove forests. These are of prime importance, as marine-based activities are the mainstay of the Grenadines' economy. Tourism and fishing are the two major sources of employment. Development in the first of these two areas is proceeding rapidly and for the most part unplanned (Mahon et al., 2004). Fishery resources have long been recognised as fully to overexploited and there is also evidence of degradation of coastal and marine habitats. In an effort to reverse the trend of overexploitation there is the need to reorient resource users towards sustainable use of resources, both aquatic and terrestrial. The sustainability of resources cannot be successful without good governance that recognises the interests of all stakeholders - government, civil society, private sector, commercial firms and businesses and includes them in both planning and implementation.

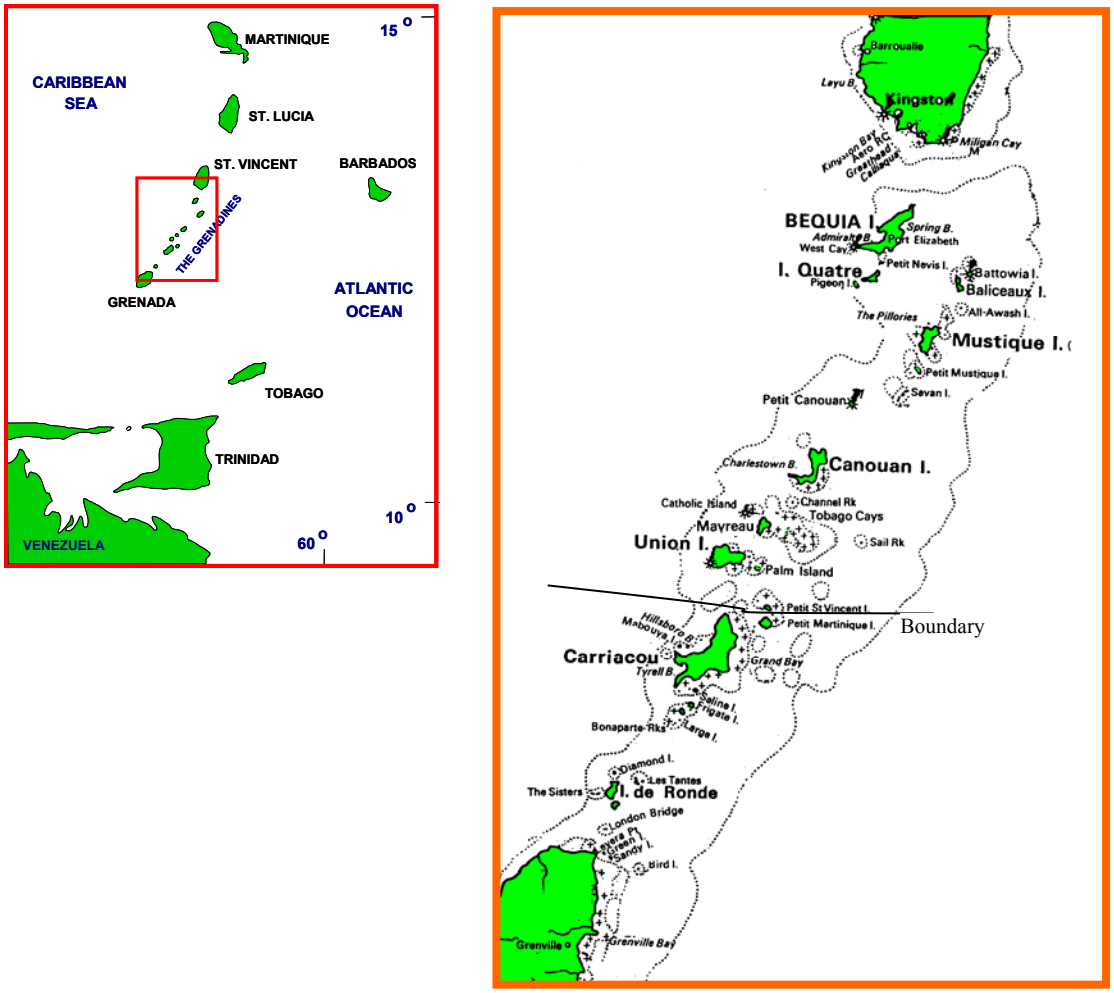

Figure 1.1: The location and islands of the Grenadines

In the Grenadine Islands an initial assessment indicated that civil society does not have the capacity to be fully involved in governance as equal partners with government and the private sector (Mahon *et al*., 2002). Therefore for there to be full participation of coastal and marine stakeholders there is the need to first strengthen their capacity. In this context, capacity is viewed as multifaceted ranging form the perspective that civil society has on its role in sustainable development to skills required for project development and NGO management capacity (Krishnaryan *et al*., 2003). These are the issues the Sustainable Grenadines Project (SusGren) seeks to address (Mahon *et al*., 2004 and SusGren, 2007).

One of the focal areas/objectives of the SusGren Project is to facilitate networking and the formation of partnerships among key groups within the Grenadines. The promotion of interactions is emerging as a key component of approaches aimed at enhancing resilience and adaptive capacity of social-ecological systems (SESs), especially in situations of low capacity and high complexity. This line of thinking emerges in several perspectives on civil society engagement in sustainable development (Pretty, 2003; Thompson and Adger, 2004; IMM, 2008 and Mahon *et al*., 2008), Theoretical approaches such as the Interactive Governance Approach and others have placed a great deal of emphasis on interactions (Kooiman *et al*., 2005 and Bavinck *et al*., 2005) and building social capital among stakeholder groups (Pretty, 2003). This is the approach upon which much of the SusGren Project has been based (Mahon *et al*., 2004; Cooke *et al*., 2007 and Lizama and Mahon, 2007).

One approach to assessing the interactions among stakeholders or their organisations is to view them and their interactions as a network and to analyse them using Social Network Analysis (SNA). This was expected to provide insights into where interventions could be expected to have greatest effect and also to provide a baseline against which progress could be measured.

SNA seeks to describe, understand and explain social relationships among members of a group of individuals or organisations by examining the interactions within the network (Brandes and Wagner, 2004). SNA can be used to assess communications, cooperation and other inter-organisational environments of the network (Jorgensen, 2004) but, until recently, has not been prominent in discussions of adaptive governance and resilience (Carlsson and Sandström, 2008).

The overall objective of this study is to determine the nature and extent of communication among key Grenadines' stakeholder organisations with particular emphasis on NGOs, using SNA. The specific objectives are to determine the types of communication, their importance; their frequency, the degree of inter-island communication; to identify the key entities and their roles in the network regarding communication, and to identify opportunities for interventions that will improve and facilitate network connectivity leading to greater engagement of NGOs in coastal and marine governance and greater adaptive capacity.

2 METHODS

SNA is a methodology that can be used to determine the extent and nature of the ties among network nodes. In this case the ties are relationships and interactions, and the nodes are government and civil society stakeholder organisations within St. Vincent, Grenada and the seven inhabited Grenadine Islands. The degree of inter-island and transboundary interaction and communication are of particular interest. In order to assess this, a SNA survey was designed and administered to 35 organisations: 6 government departments, 3 public schools and 26 NGOs (Appendix 1). The questionnaire can be found in Mahon *et al*., (2009). These 35 nodes comprised the whole network for the purpose of this study.

All NGOs that were thought to be active were selected from the pool of 40 NGOs identified by Mahon *et al*., (2002). All 19 schools were approached, but only three were available for the survey. These were all major secondary schools and can probably be considered to be representative of this category of organisation. The government departments selected were all those with key responsibility for natural resource management and environment in the Grenadines (Finlay *et al*., 2003). The initial list comprised 40 organisations. However, this was reduced to 35 because five NGOs were either inactive or representatives could not be located. Given the focus on civil society and their large number, businesses in the Grenadines were not included in the survey. However, in addition to the organisations on the whole network list, the respondents were asked to identify external entities, including businesses ones, with which they interacted.

The survey was administered in June and July 2005 to individual respondents who, as prominent members/employees of the selected organisations/departments, were capable of answering on behalf of these entities. Each respondent was provided with the list of the whole network organisations and asked to indicate: those with which they communicated; the quality of communication; the importance of communication with regards to their organisation's efforts; and the frequency of communication with regards to these named organisations. The survey elicited information from which a matrix of inter-organisational relations was constructed. Data were analysed using UCINET 6.0 software (Borgatti *et al*., 2002).

The analysis used two network measures which relate to the nature of and limitations to interaction in the network. Density is the proportion of potential ties that actually occur among the nodes in the network, and measures the richness of connections among the nodes (Mohrman *et al*., 2004); that is, the more actors that have ties to one another, the denser is the network (Scott, 1991). Centrality (which has several sub-types: degree, closeness, and betweenness) measures the extent to which a node occupies a critical location between others in the network and hence may potentially control, in this study, the flow of information. In the context used here, network centrality varies between highly centralized, where ties are concentrated on a few nodes, to highly decentralized, where ties are more evenly distributed among nodes (Mohrman *et al*., 2004). This measure assists with identifying the key players (more central nodes) within the network. Although density and centrality can be used to study power, investigating this social concept lay beyond the scope of this exploratory research.

The network diagrams or sociograms that are used to visualise (graphically represent) the network were created with NetDraw, a component of UCINET 6.0. In this network analysis, the

attributes used to describe the nodes were: type of organisation, size of the organisation and island on which it is located.

In SNA one can focus first on the relationships between a focal organisation and a known group of organisations of which the focal one is a member. This is referred to as the 'ego group'. Organisations in the ego group may be connected to other agencies not in the group which nonetheless impact on the network. These can be explored later, separately. In this study this was done by asking the members of the ego group to list other organisations with which they interacted on a regular basis. Thus the whole network structure emerges from examining a series of interconnected ego networks.

A limitation of the study is that the results are based on the respondent's recollection of organisational communication. Although respondents were usually in formal managerial positions, they may not have been involved in the informal networks which can have different communication systems. This may be less of a problem for small organisations with fewer than five persons since small group leaders in often major communicators.

3 RESULTS AND DISCUSSION

3.1 Overview of surveyed organisations

Of the 35 organisations surveyed for the SNA, 31% are located in Carriacou, 14% in Bequia, 20% in Union Island, 9% in Canouan, and 6% in each of St. Vincent, Mustique, Petite Martinique and Grenada. Only one organisation in Mayreau was included in the analysis (Figure 3.1). These organisations and the codes used to identify them in the diagrams are listed in Table 3.1.

The respondents included heads of organisations, past presidents, deputy heads, secretaries, officers, representatives, teachers, a permanent secretary and a Project Officer. Of the foregoing 63% are males while 37% are females.

A significant fraction of these organisations were established over the past 21 years while only a few (9%) existed before the mid 1900's. The majority of these organisations (>60%) consist of 5-25 members while only 6% consist of more than 90 persons, these being government departments (Figure 3.2).

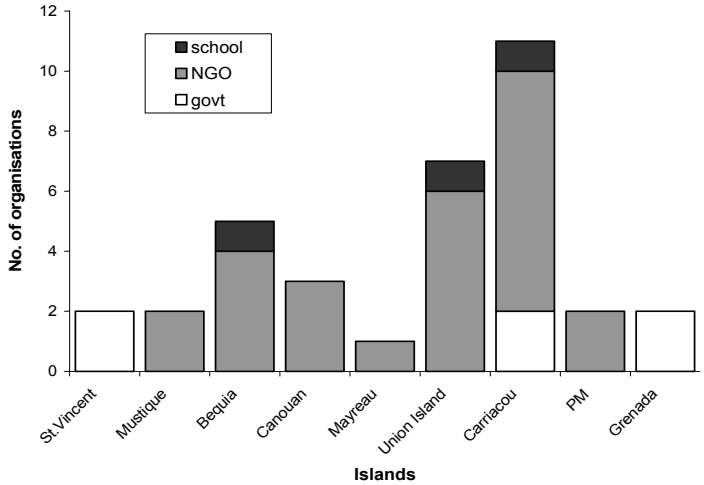

Figure 3.2: The number of organisations interviewed per island

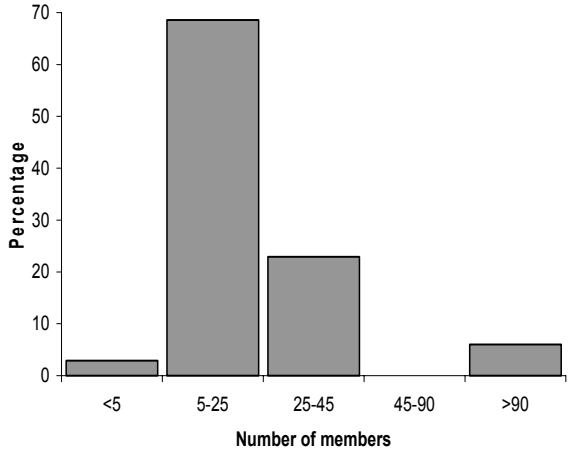

Figure 3.1: The distribution of size of the organisations surveyed indicated by number of persons

Table 3.1: Organisations selected to conduct the social network analysis

Island	Category	Organisation	Code
St. Vincent	Govt	Fisheries Division	FishV
		Ministry of Health and Environment	MHEV
Mustique	NGO	Mustique Christian Assembly	MCA
		Mustique Indigenous Peoples Association	MIPA
Bequia	Edu	Bequia Community High School	BCHS
	NGO	Anglican Youth Group	BAYG
		Bequia Tourism Association	BTA
		Bequia Indigenous Whalers Association	BIWA
		Interact Club*	
		Rotaract Club*	
		Rotary Club*	
		Paget Farm Sports, Cultural and Environmental Organisation	PFSCEO
Canouan	NGO	Anglican Youth Movement	CAYM
		Canouan 4H Club	CHClub
		Club Nuevo	CN
Mayreau	NGO	Mayreau Environmental Development Organisation	MEDO
		Mayreau Regatta Committee*	
Union Island	Edu	Union Island Secondary School	UISS
	NGO	Anglican Youth Movement	UAYM
		Catholic Youth Movement	UCYM
		Lions Club	ULC
		Southern Grenadines Water Taxi Association	SGWTA
		Union Island Environmental Attackers	UIEA
		Union Island Community Services	UICS
Carriacou	Edu	Bishop's College	BC
	Govt	Grenada Board of Tourism	GBT
		Ministry of Carriacou and Petite Martinique Affairs	MCPMA
	NGO	Carriacou and Petite Martinique Development Foundation	CPMDF
		Carriacou and Petite Martinique Water Taxi Association	CPMWTA
		Carriacou Environmental Committee	CEC
		Carriacou Regatta Committee	CRC
		CREP Carriacou	CREP
		Kido Project*	
		L'Esterre South Striders Social Club	LSSSC
		Mt. Royal Community Group	MRCG
		Mt. Pleasant and Grand Bay Community Development Organisation	MPGBCG
Petite Martinique	NGO	Petite Martinique Fisherman's Cooperative	PMFC
		Petite Martinique New Woman's Organisation	PMNWO
Grenada	Govt	Fisheries Division	FishG
		Forestry Division	ForestG

3.2 Stakeholder network structure

The network diagram (sociogram) in Figure 3.3 shows the relationships between the various organisations interviewed. The attributes of the nodes in the diagram are indicated by colour for location, shape for type of organisations and size for size of organisation. The diagram consists of 35 nodes with 50 ties. Most of these ties were identified as existing by only one organisation in the dyad. However, there are 10 instances where ties were identified by both organisations occur i.e. information is exchanged between the organisations. For the purposes of this study we will consider any identified tie between two organisations to be indicative of interaction between them.

The sociogram in Figure 3.3 is made up of eight components: the main network, two small clusters and five isolates. The main component of the network consists primarily of Carriacou, Union Island and Petit Martinique which are geographically close to each other. The five isolates (Mayreau Environmental Development Organisation, the Union Island Catholic Youth Movement, Paget Farm Social Cultural and Environmental Organisation, Union Island Environmental Attackers and Bequia Anglican Youth Group) have no communication with other organisations within the pool of stakeholders. The two small clusters have no ties with the large inter-connected web of organisations. They represent the communication between Mustique groups and between Bequia Community High School and Bequia Tourism Authority. Also Ministry of Carriacou and Petit Martinique Affairs appears to be central or the hub of the network.

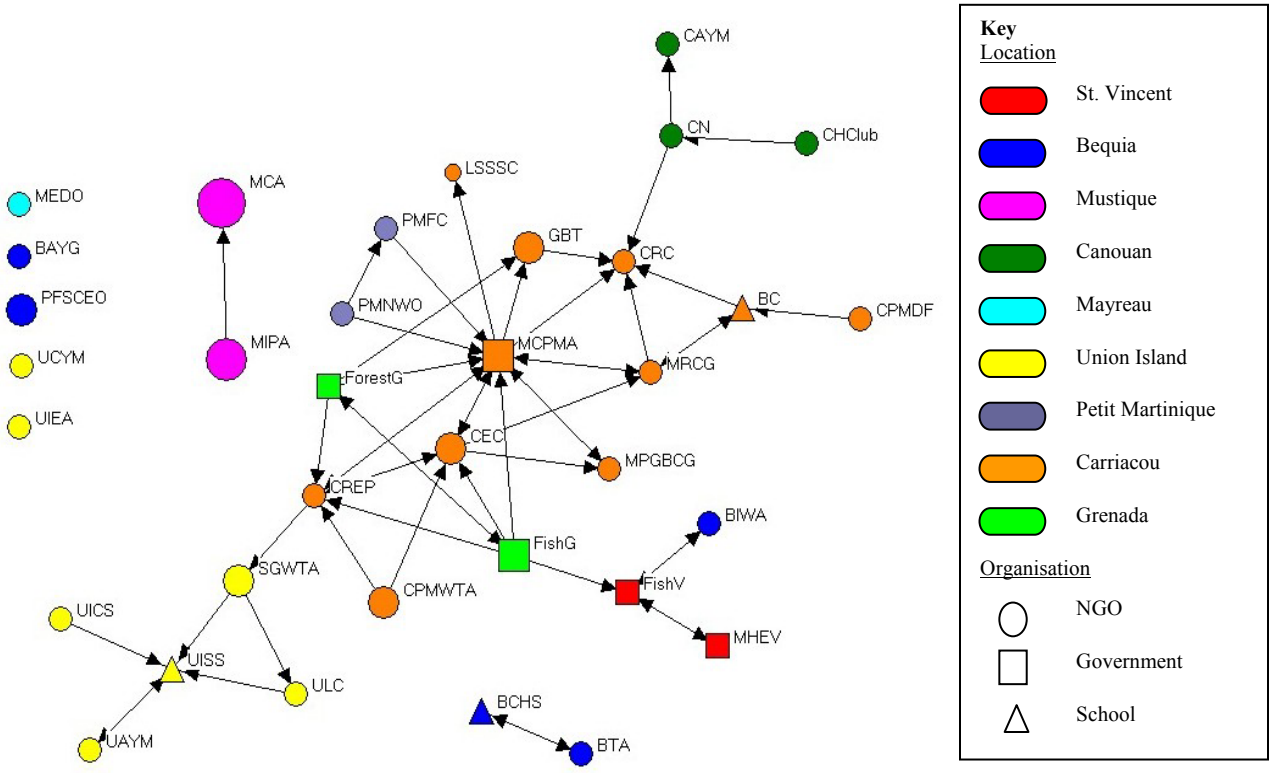

Figure 3.3: Network diagram showing linkages between the 35 stakeholder organisations in the Grenadines (See Table 3.1 for organisation codes)

Inspection of this diagram indicates a number of features that may affect the way that the network functions and ways that it may be improved. In some instances groups with very similar origin and interest are unconnected or connected through long chains involving several ties and nodes. The Anglican youth groups CAYM (top right), UAYM (bottom left) and BAYG (an isolate) are one such case. Likewise, the water taxi associations, SGWTA and CPMWTA (lower left) are two groups that one would think should be in direct contact but are only connected through another organisation. To achieve greater functional connectedness (and also network density) efforts can be made to establish direct links among groups with common interests. Efforts can also be made to link the isolates and two separate clusters to the main cluster ideally through groups with similar interests. Some parts of the main cluster are connected to it by only one tie, such as the three Canouan organisations to the top right and the five Union Island organisations to the bottom left. These are vulnerable to being isolated should the tie to the connecting node with high betweeness centrality be broken. Additional linkages with main cluster nodes can be promoted to strengthen their connection to the network.

3.2.1 Network density

Overall density for the entire network was found to be only 4% of all possible connections (Table 3.2). This appears to be low although there are no absolute criteria for a level of density that is necessary for effective network function.

Table 3.2: Percentage ratings for each method of communication

Island	Asymmetric density	Symmetric density
Bequia	0.10	0.1
Canouan	0.33	0.67
Carriacou	0.21	0.31
Petit Martinique	0.50	1.00
Union Island	0.14	0.24
Mustique	0.50	1.00
St. Vincent	1.00	1.00
Grenada	1.00	1.00
Mayreau	0.00	0.00
Overall	**0.42**	**0.66**

Density also varies among the islands. Clearly, there is potential to enrich the network by creating links. As discussed above, the diagram gives some indications as to where to focus attention in developing additional links.

Communication is challenging for small island communities that are separated from each other and from their main islands. They often lack the capacity required to communicate effectively. We have examined the effects of this separateness on linkage density and found it to be considerable. As would be expected intra-island density is higher than inter-island density which is in turn higher than inter-country linkage density (Table 3.3). This pattern emerges strongly notwithstanding the differences in density that would likely result from the inverse relationship between network density and size in most networks. The extent of these scale related differences is different for the two countries. Intra-island density in the Grenada Grenadines is

Table 3.3: Percentage ratings for each method of communicationn

Scale	Density
Average intra-island - Grenada islands	0.66
Average intra-island – SVG islands	0.13
Inter-island - Grenada islands	0.26
Inter-island - St. Vincent and the Grenadines Islands	0.6
Inter-country	1

66% while in the St. Vincent Grenadines it is only 13% (Table 3.3). Inter-island density exhibits a similar difference.

3.2.2 Country level networks

Examining the networks at the national level can help with understanding differences between the countries and may indicate ways of improving networking between them. Results have shown that intra-country communication is greater than inter-country communication (Table 3.3). Figure 3.4 illustrates the sub network structure that exists within each country separately. From the perspective of communication within-country, Grenada has more linkages with its dependent islands through its Ministry of Carriacou and Petit Martinique Affairs which has a specific mandate for implementing government programmes in these islands and liaising with the headquarters of other Ministries on the main island of Grenada (Figure 3.4a). In contrast there appears to be a great deal of fragmentation within St. Vincent and the Grenadines with the government departments surveyed having few linkages to NGOs on its Grenadine Islands - Bequia, Mustique, Canouan, Mayreau and Union Island (Figure 3.4b)

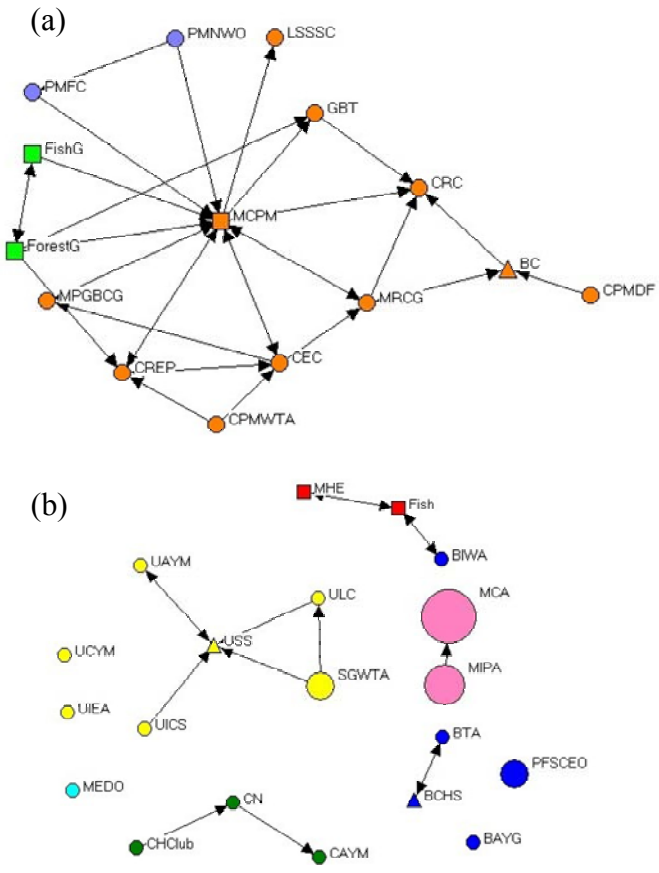

Figure 3.4: Stakeholder networks for the two countries of (a) Grenada and (b) St. Vincent and the Grenadines (see figure 3.3 for key)

In the case of Grenada one might consider whether the role of the MCPMA is too central and direct linkages among NGOs too few for effective engagement of NGOs in sustainable development. If so one aim could be to decentralise the Grenada network by increasing links

among NGOs, while maintaining their current links with the MCPMA. On the other hand in St. Vincent, the connections are sparse particularly between the island communities and the mainland. Here there is the need to build linkages both among NGOs in the islands and between them and main island entities. Strengthened networking of government entities with responsibility for the Grenadines, such as the revenue offices in Bequia and Union Island may be an option.

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3.2.3 Centrality

In conventional, government-led governance, networks may exhibit a high degree of centrality with a few key government agencies having a large number of linkages. In this network there are 12 organisations with only one link, again indicating that they may be vulnerable to becoming isolated from the network.

Table 3.4: Percentage ratings for each method of communication

Number of linkages	Number of organisations
0	5
1	12
2	5
3	5
4	3
5	2
6	2
11	1

There are only five organisations that have five or more links (Table 3.4) the Ministry of Carriacou and Petit Martinique Affairs (having 11 links) appears to be the organisation with the most degree centrality (see also Figure 3.4). This governmental department has a broad focus on all aspects of coastal and marine resource management from policy making to project implementation. This maximises the organisation's ability to link to a diversity of stakeholder organisations. It can be assumed that it has an influential role as it has the highest degree of in-degree centrality and out-degree centrality whereby it receives and sends out most of the information in the network.

Other significant players in the network based on centrality include Grenada's Fisheries Division (FishG), Carriacou Environmental Committee (CEC), Grenada's Forestry Division (Forest G) and Caribbean Regional Environmental Programme (CREP). Here, two more governmental and two NGOs are key nodes. While the networking that emerges among government and NGOs suggests that there are initial steps towards engagement of NGOs many are only weakly linked, if at all, indicating that there is scope for much improvement in interactions for coastal and marine governance.

Examination of the network of connections among NGOs alone indicates that linkages among them are sparse as might be expected given the central role of the government MCPMA in Grenada (Figure 3.5). Noteworthy are: the 11 organisations that are working in virtual isolation

Table 3.5: Percentage ratings for each method of communication

from other NGOs, and the elongated chain like structure of the main cluster indicating that interactions must pass through 6 nodes to reach from one end of the cluster to another .

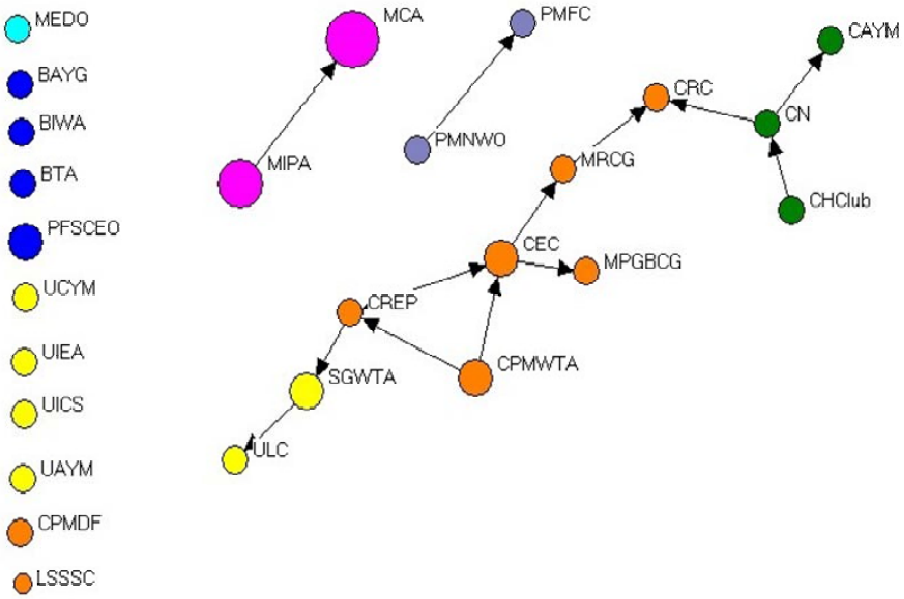

Figure 3.5: Linkages among NGOs only (see figure 3.3 for key)

3.3 Characteristics of linkages

3.3.1 Methods of Communication

Of the 18 specific means of communication identified 7 of them are classified as written methods, 7 as verbal and 3 as visual. All three categories are utilised by organisations. One other technique, websites, is considered to be a hybrid of the written and visual modes (Table 3.5). Phone calls, letters and emails received the highest ratings and consequently are considered to be very important. This is consistent with improvements being made within the local telecommunications sector. For example, in 1998 St Vincent had 20,500 telephones (St. Vincent and the Grenadines, 2005). However, by 2002 the number of telephones had increased to approximately 27,300. Today the telephone system comprises a radiotelephone from Saint Vincent to the other islands, is fully automatic and has access to the world's largest commercial satellite communications service provider, Intelsat (The Best Links 2004).

In contrast, methods such as websites, TV and newspaper advertisements, booklets and posters receive very low ratings (Table 3.5). A possible reason for this could be related to the lack of financial and technical resources necessary for their creation/development. Nevertheless, the mention of methods such as websites is an indication that new communication technologies are being integrated into Grenadines' communication.

Method of communication	Not used	Unimportant	Important	Very Important
Verbal communication				
Formal person to person meetings	66	0	6	29
Formal group meetings	46	0	11	43
Informal person to person meetings	63	0	3	34
Informal group meetings	80	3	3	14
Radio ads	94	0	0	6
Phone calls	11	0	9	80
Loudspeakers	97	0	0	3
Written communication				
Letters	23	0	14	63
Newsletters	77	0	3	20
Email	37	0	11	51
Faxes	83	0	6	11
Brochures	91	0	0	9
Flyers	89	0	0	11
Newspaper ads	97	0	0	3
Visual communication				
Booklets	97	0	0	3
TV ads	97	0	0	3
Posters	97	0	0	3
Websites	97	0	0	3

3.3.2 Types of communication

The stakeholder organisations communicate with each other for varying reasons (Table 3.6). The majority of communication ties (48.1%) are regular contacts to talk about issues and pass on information. Forty percent represent stronger contacts mainly for project collaboration or formal arrangements, while 13.5% of the contacts were made only on special occasions.

Table 3.6: Tie breakdown for types of communication

Types of communication	Number of links	% of total links
Low - Only on special occasions e.g. at workshops, social events;	7.0	13.5
Medium - To talk about issues and pass on information;	25.0	48.1
High - To develop common approaches work together on projects	20.0	38.4

The sociogram of the types of communication is illustrated below (Figure 3.6). The type of the communication links between organisations corresponds with the colour of the lines. Organisations such as MCPMA, CEC, CREP, Fisheries Division (St. Vincent) and the Forestry Division in Grenada mainly communicate with organisations regarding projects and receiving feedback whilst other organisations simply pass information to each other.

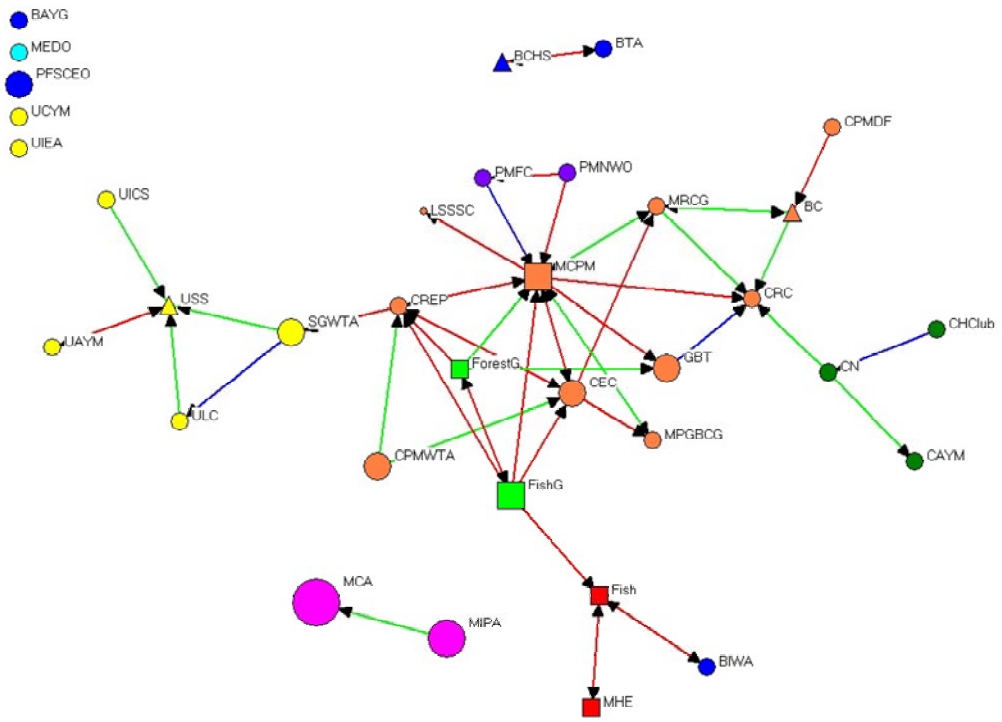

Figure 3.6: Types of communication links among the 35 organisations surveyed (Red lines represent communications for developing common approaches, blue lines represent communication on special occasions and green lines represent communication to talk about issues and pass on information. Node size is proportional to size of organisation) (see figure 3.3 for key)

3.3.3 Importance of communication

The importance of communication can influence the level of collaboration between organisations. The sociogram below illustrates the strength of the ties in the network regarding how important communication was perceived to be by the organisation (Figure 3.7). Of the 52 ties, 55.8% were considered to be very important communication links with regards to the execution of organisational mandates. For those who indicated that communication was important accounted for 36.5% while only 7.7% were considered to be unimportant (Table 3.7).

Table 3.7: Importance of communication

Types of communication	% of total lies
Not important	7.7
Important	36.5
Very Important	55.8

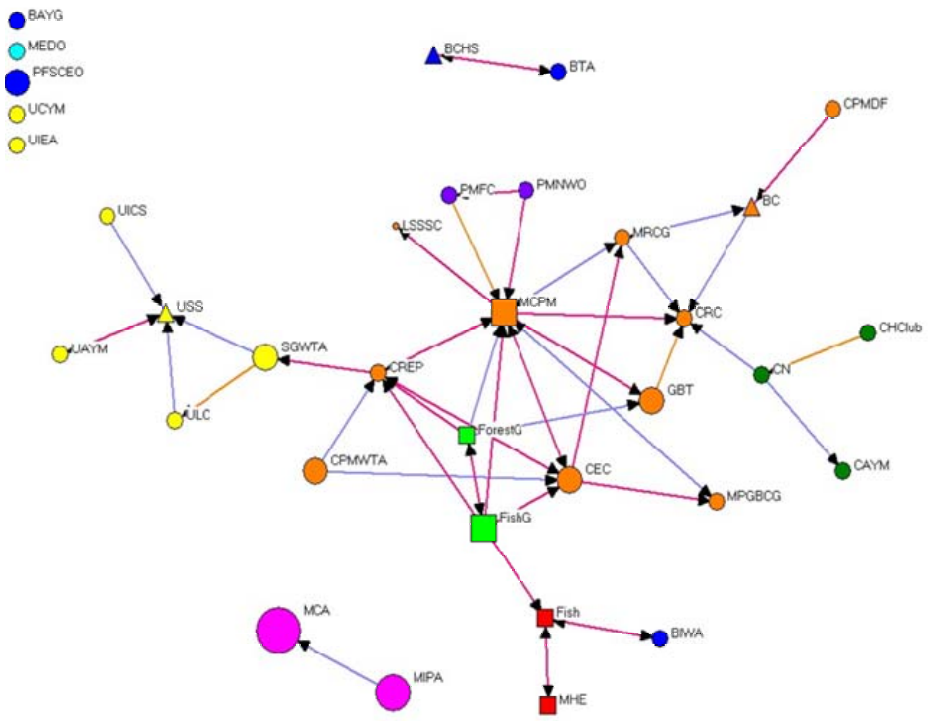

Figure 3.7: Importance of communication among the 35 organisations (Orange lines indicate not important; purple lines indicate important and pink lines indicate very important) (see figure 3.3 for key)

3.3.4 Frequency of communication

The frequency of communication can illustrate and also determine the type of collaboration occurring between organisations. Table 3.8 illustrates the frequency of communication between stakeholder organisations. Overall communication occurs monthly in 59.6% of network ties, occurs infrequently (yearly) in 13.5%, while twice that percentage communicates on a weekly basis (see Figure 3.8).

Table 3.8: Frequency of communication

Types of communication	% of total links
Weekly	26.9
Monthly	59.6
Yearly	13.5

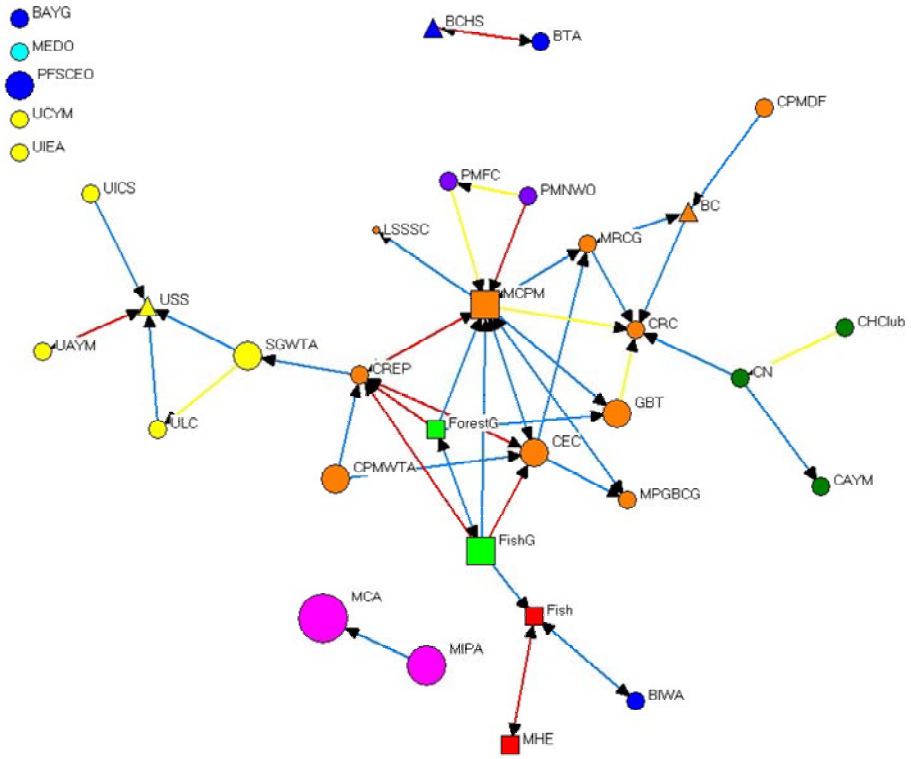

Figure 3.8: Frequency of communication among the 35 stakeholder organisations (Yellow lines represent yearly basis, blue lines represent monthly basis and red lines represent weekly basis) (see figure 3.3 for key)

3.3.5 Barriers to Communication

Of all the organisations, 9.1% indicated there were no communication barriers. The other organisations identified a diversity of communication barriers of which slow and inefficient systems of communicating is the foremost for NGOs, followed by financial difficulty (Table 3.9).

Table 3.9: Barriers to communication

Barriers	Frequency	Percentage (%)
Slow and inefficient system of communicating	8	24
Financial difficulty	5	15
Unwillingness to cooperate	4	12
Different goals/commitments	4	12
Lack of updated contact information	3	9
Resistance to change	3	9
No barriers	3	9
Political restrictions	2	6
Other	1	3

3.4 Possible communication strategies

The major strategy suggested by the 35 stakeholder organisations to encourage communication is through increasing the sphere of communication (Table 3.10). This includes working together on

projects, promoting the organisations and use of incentives. Two more importantly suggested strategies include better organisational structure/operation and better communication ethics.

Organisational structure and operation can be improved by designating a key person such as a communication officer/ public relations officer to assist with knowledge transfer. Also there needs to be an improvement pertaining to the communication tools used by the agency. Improved communication ethics can be achieved though training in organisation dynamics and conflict management. These strategies must be further explored to determine their feasibility to enhance communication between these organisations.

Considering that this is a preliminary study, future research in the field of network analysis should focus on a smaller scale, i.e. specific natural resources such as coral reefs or fisheries or a specific issue. For example, SNA can be used to examine the degree of relationships between the coral reef stakeholders and make improvements where necessary. This will contribute to the overall of communication of stakeholders of coastal and marine resources in the Grenadines.

Table 3.10: Communication strategies to encourage communication between stakeholder organisations

Communication strategies	Frequency	Percentage (%)
Develop common goals	1	4
Increase collaborations/sphere of communication	10	40
Ease of access to information	1	4
Better communication ethics/training	3	12
Better organisational structure & operation	8	32
Less political restriction	1	4
Remove incentives from united projects	1	4

3.5 The alter-ego network

Whereas the primary survey indicated how the selected stakeholder organisations interact with each other the additional information gathered indicates that they communicated with numerous other stakeholder bodies (Table 3.11. Twenty-two of the surveyed organisations are connected to three or fewer alter organisations (Figure 3.9) and only one organisation Ministry of Health and Environment (St. Vincent) is connected to over 12 alter organisations (Table 3.12). Figure 3.10 also indicates that most of the alter organisations are within the same island.

Table 3.11: Summary of agencies that communicate with the 35 surveyed organisations

Island	NGOs	Government	Schools	Businesses	Total
St. Vincent	10	14	0	2	26
Bequia	6	3	1	0	10
Mustique	2	0	0	0	2
Canouan	5	0	0	0	5
Mayreau	0	0	0	0	0
Tobago Cays	2	0	0	0	2
Union Island	3	3	2	2	11
Carriacou	17	2	4	6	29
Petit Martinique	1	0	1	0	2
Grenada	7	9	1	0	17
Total	53	31	9	10	103

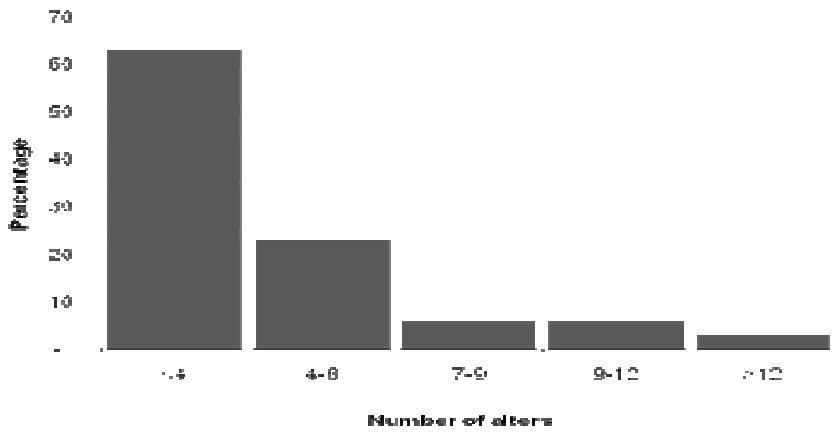

Figure 3.9: Frequency of the number of alters connected to egos of the stakeholder organisation network

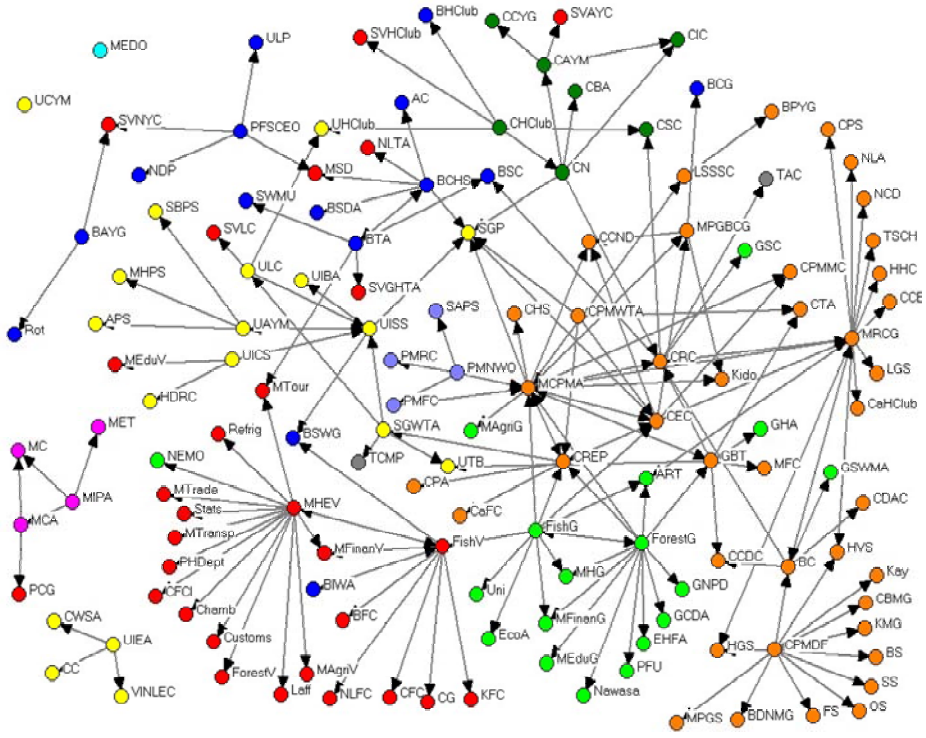

Figure 3.10: The alter-ego network showing organisations with which those surveyed interact. (see Appendix 2 for codes and Figure 3.3 for key).

Table 3.12: Number of alters connected to the egos of the stakeholder organisation network

Number of alters connected to egos	Egos
<4	MCA, MIPA, BAYG, BIWA, CAYM, CN, MEDO, UISS, UAYM, UCYM,ULC, SGWTA, UIEA, UICS, BC,
4-6	GBT, MCPMA, BCHS, BTA, PFSCEO, CHClub, CRC, FishG
7-9	FishV, ForestG
10-12	CDMDF,MRCG
>12	MHEV

3.6 Conclusions and Recommendations

Effective marine governance in the Grenadines is likely to be enhanced by, if not dependent on, effective stakeholder engagement. However, most NGOs probably lack the capacity to engage effectively. Interaction among the NGOs is one aspect of capacity as it is likely to be linked to the ability to share experiences and learn from each other (Tompkins and Adger 2004 and Bavinck *et al*., 2005). This study has explored the use of SNA as a means of assessing the patterns of interaction among NGOs in the Grenadines and of these NGOs with government agencies. It identified the key players of the network and the strength of the ties in the network as a whole. It has also assisted in identifying gaps in the network to improve governance. Attempts to strengthen the network should note the findings of Newman and Dale (2005) and Lauber *et al*., (2008) indicating that there is the need to tailor network strengthening to the specific needs of the entities that comprise it.

The Grenadines network exhibits what appears to be a scarcity of linkages, especially among NGOs. Indeed many groups are isolated and this marginalised at local, national and transboundary levels. This indicates that the NGOs of they Grenadines are not connected in such a way as to benefit from opportunities for exchange of information, experience and collaboration that would be available in a denser network. The low number of linkages also indicates that the network is vulnerable to fragmentation, leading to disruption of information flows, especially where individual organisations or groups of organisations are connected to the network by a single link. The existence of a few organisations with relatively high numbers of links indicates that power is not decentralized in the network. This is especially the case in Grenada where the key agency in the network is a government agency, the MCPMA. However, while this may mean that NGOs are not interacting independently of government, it does appear to facilitate stakeholder connections and built partnerships.

The study also indicates that the current communication systems and tools used are not adequate for effective connectivity within and between the islands. Therefore other strategies must be explored to determine the best communication approaches for the islands. As the Sustainable Grenadines Project seeks to involve government agencies, private sectors and civil society in sustainable use of local resources, it faces the challenge of creating means and ways for communication and building of solid partnerships throughout the Grenadines. The optimal network for coastal and marine management is still yet to be determined. The Grenadines network analysis has identified some areas in which intervention could lead to improved effectiveness of the stakeholder network (Table 3.13).

Table 3.13: Recommended actions to ensure stakeholder organisations collaborate productively

Recommended actions	Reasons/Methods
Improve organisational structure/operation	Need to improve the organisation's internal network or structure to allow efficient communication with other organisations
Determine network dynamics	Conduct tripartite working sessions/focus groups to gain insight into the general working ethics/issues; address the main issues/barriers to information flow
Obtain financial support	Seek funding opportunities to assist with communication strategies/tools and help shape formation of network linkages
Establish a government agency	Form an efficient agency/Ministry that will be responsible for all the affairs in the St. Vincent Grenadines. The office could be located on any of the Grenadine islands. Divisions/departments could be placed on each island to provide feedback to the main office. This office can collaborate with MCPMA becoming a boundary spanner to disseminate knowledge.
Disseminate knowledge and encourage sharing	Designate a liaison or communication officer to obtain and disseminate information through various media: newsletters, website, exhibitions and campaigns. This is important for enhancing inter-island communication linkages.
Increase participation	Participate with organisations having similar interests/initiatives; facilitate partnerships
	Build/improve partnership with other organisations (i.e. the 103 organisations which the stakeholders communicate with)

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5 APPENDICES

5.1 Appendix 1: Organisational Networking Analysis Questionnaire

Location: Questionnaire #:

Date: Interviewer:

Basic Information about the organisation/department and the interviewee:

1. Name of organisation and/or department:
2. Year of establishment of organisation/department:
3. Mission/mandate of organisation/department:
4. Number of employees:
5. Interviewee's job title:
6. Number of years interviewee has worked with the organisation/department:
7. Gender: ☐ male ☐ female

Inter-organisational collaboration/communication:

8. Name organisations (NGOs, Government Ministries, Educational Institutions and Private Sector Organisation etc.) you communicate with. Also highlight the quality of communication, the importance of communication with regards to your organisation's efforts and the frequency of communication with regards to the named organisations. NB. The key for this question is located on the last page.

Organisation	* Levels of communication	**Levels of importance of communication	***Frequency of communication

9. Please assess the importance of the following methods in the exchange of information between your organisation and those with which you communicate.

Methods of communication	Level of importance			
	Not used (1)	Unimportant (2)	Important (3)	Very important (4)
Formal person to person meetings				
Formal group meetings				

Informal person to person meetings				
Informal group meetings				
Email				
Phone call				
Formal letters/memos				
Newsletters				
Other mode (please state)				

10. What are some of the barriers to successful communication between your organisation and others?

11. What are some of the factors that can be put in place to encourage communication between your organisation and others?

* Levels of Communication

Very Little Contact = 1, Regular Contact = 2, Freq. contact (e.g. formal arrangements, developing common approaches) = 3

**Level of importance

Not important = 1, Important = 2, Very important = 3

***Freq. Of communication

Not very often/infrequently = 1 e.g. yearly, Often = 2 e.g. monthly, Very often = 3 e.g. weekly

5.2 Appendix 2: Other organisations with which the organisations communicated

Organisation	Code	Category	Island
Anglican Church of Bequia	AC	NGO	Bequia
Bogles Community Group	BCG	NGO	Bequia
Bequia 4H Club	BHClub	NGO	Bequia
Bequia Sailing Club	BSC	NGO	Bequia
Bequia Seventh Day Adventist Secondary School	BSDA	School	Bequia
Bequia Sand Watch Group	BSWG	NGO	Bequia
The New Democratic Party	NDP	Gov't	Bequia
Rotary Club	Rot	NGO	Bequia
Solid Waste Management Unit	SWMU	Gov't	Bequia
Unity Labour Party	ULP	Gov't	Bequia
Barrouallie Fisheries Coop	BFC	NGO	St. Vincent
CFC Imports	CFCI	Business	St. Vincent
Coast Guard	CG	Gov't	St. Vincent
Chamber of Commerce & Industry	Chamb	Gov't	St. Vincent
Customs & Excise Department	Customs	Gov't	St. Vincent
Forestry Division (St. Vincent)	ForestV	Gov't	St. Vincent
Kingston Fisheries Coop	KFC	NGO	St. Vincent
Legal Affairs	Laffairs	Gov't	St. Vincent
Ministry of Agriculture (St. Vincent)	MAgriV	Gov't	St. Vincent
Ministry of Education	MEduV	Gov't	St. Vincent
Ministry of Finance & Planning (St. Vincent)	MFinanV	Gov't	St. Vincent
Ministry of Social Development (St. Vincent)	MSD	Gov't	St. Vincent
Ministry of Tourism (St. Vincent)	MTourV	Gov't	St. Vincent
Ministry of Trade	MTradeV	Gov't	St. Vincent
Ministry of Transport and Works	MTranspV	Gov't	St. Vincent
North Leeward Fisherman's Coop	NLFC	NGO	St. Vincent
North Leeward Tourism Association	NLTA	NGO	St. Vincent
Pentecostal Churches of the Grenadines	PCG	NGO	St. Vincent
Public Health Department	PHDept	Gov't	St. Vincent
Refrigeration Technicians	Refrig	Business	St. Vincent
Statistical Office	Stats	Gov't	St. Vincent
St. Vincent Anglican Youth Council	SVAYC	NGO	St. Vincent
St. Vincent & the Grenadine Hotel Tourism Association	SVGHTA	NGO	St. Vincent
St. Vincent 4H Club	SVHClub	NGO	St. Vincent
St. Vincent Lions Club	SVLC	NGO	St. Vincent
St. Vincent National Youth Council	SVNYC	NGO	St. Vincent
Big Drums Nation Music group	BDNMG	NGO	Carriacou
Bel Air Progressive Youth Group	BPYG	NGO	Carriacou
Bullen and Sons	BS	Business	Carriacou

Organisation	Code	Category	Island
Carriacou Fisherman's Coop	CaFC	NGO	Carriacou
Carriacou 4H Club	CaHClub	NGO	Carriacou
Country Boys Music Group	CBMG	NGO	Carriacou
Carriacou Cricket Board	CCB	NGO	Carriacou
Carriacou Carnival Development Committee	CCDC	NGO	Carriacou
Concerned Citizens of the Northern District	CCND	NGO	Carriacou
Carriacou Historical Society	CHS	NGO	Carriacou
Carriacou Port Authority	CPA	Gov't	Carriacou
Carriacou & Petite Martinique Marketing Committee	CPMMC	NGO	Carriacou
Carriacou Postal Station	CPS	Gov't	Carriacou
Carriacou Tourism Association	CTA	NGO	Carriacou
The Family Store	FS	Businesss	Carriacou
Hillsborough Government School	HGS	School	Carriacou
Hillsborough Health Center	HHC	NGO	Carriacou
Harvey Vale Government School	HVS	School	Carriacou
Kayak 106.3 Radio Station	Kay	Business	Carriacou
KIDO Organisation	KIDO	NGO	Carriacou
Kapeta Music Group	KMG	NGO	Carriacou
L'Esterre Government School	LGS	School	Carriacou
Maroon Festival Committee	MFC	NGO	Carriacou
Mt. Pleasant Government School	MPGS	School	Carriacou
National Council of the Disabled	NCD	NGO	Carriacou
National Lottery Authority	NLA	Business	Carriacou
One Stop	OS	Business	Carriacou
Snags Store	SS	Business	Carriacou
Tophil Senior Citizens House	TSCH	NGO	Carriacou
Canouan Baskeball Association	CBA	NGO	Canouan
Canouan Catholic Youth Group	CCYG	NGO	Canouan
Carriacou Drug Avoidance Committee	CDAC	NGO	Canouan
Canouan Island Council	CIC	NGO	Canouan
Canouan Sailing Club	CSC	NGO	Canouan
Agency for Rural Transformation	ART	NGO	Grenada
Calliaqua Fisheries Coop	CFC	NGO	St. Vincent
Dept. of Economic Affairs	EcoA	Gov't	Grenada
Exclusive Hunting & Fishing Association	EHFA	NGO	Grenada
Grenada Community Development Agency	GCDA	NGO	Grenada
Grenada Hotel Association	GHA	NGO	Grenada
Grenada National Parks Division	GNPD	Gov't	Grenada
Grenada Sailing Club	GSC	NGO	Grenada
Grenada Solid Waste Management Authority	GSWMA	Gov't	Grenada
Ministry of Agriculture (Grenada)	MAgriG	Gov't	Grenada
Ministry of Education (Grenada)	MEduG	Gov't	Grenada

Organisation	Code	Category	Island
Ministry of Finance (Grenada)	MFinanG	Gov't	Grenada
Ministry of Health	MHG	Gov't	Grenada
NAWASA	NAWASA	Gov't	Grenada
National Emergency Management Office	NEMO	Gov't	Grenada
Productive Farmers Union	PFU	NGO	Grenada
St. George's University	Uni	School	Grenada
Mustique Company	MC	NGO	Mustique
Mustique Education Trust	MET	NGO	Mustique
Tobago Aquatic Club	TAC	NGO	Tobago Cays
Tobago Cays Marine Park	TCMP	NGO	Tobago Cays
Carib Cable	CC	Business	Union Island
Central Water Sewage Authority	CWSA	Gov't	Union Island
Hurricane Disaster Relief Committee	HDRC	Gov't	Union Island
Mary Hutchinson Primary School	MHPS	School	Union Island
Stephanie Brown Primary School	SBPS	School	Union Island
Sustainable Grenadines Project Office	SGP	NGO	Union Island
Union Island 4H Club	UHClub	NGO	Union Island
Union Island Basketball Association	UIBA	NGO	Union Island
Union Island Tourism Board	UTB	Gov't	Union Island
VINLEC (Power Company)	VINLEC	Business	Union Island
PM Regatta Committee	PMRC	NGO	Petite Martinique
St. Thomas Aquinas Primary School	SAPS	School	Petite Martinique