

Annex B

A hierarchy of institutional pre-conditions for participatory natural resource management

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Paper presented at Environmental Resources and Sustainable Development Study
Group of the Development Studies Association (DSA):
Multi-Disciplinary Conference on
'Environmental Resources: Conflict, Co-operation and Governance'.

May 17-18, 2000

University of Bradford, Bradford, U.K.

Abstract

This paper considers the pre-conditions for collective or participatory natural resource management. Drawing on the economic theory of social institutions and aspects of organisational theory, a framework for understanding the structural and behavioural pre-requisites within social institutions for participatory resource management is developed. This framework is applied to a case study of the institutional opportunities and constraints to participatory resource management in Trinidad and Tobago. The major stakeholders engaged in participatory resource management in Trinidad and Tobago are identified and key informants in each institution interviewed to identify the opportunities and constraints to participatory resource management, using both unstructured and semi-structured interviews. The findings are analysed through an exploration of constitutional order, institutional arrangement, and behavioural norms. The prescriptive relevance of this approach is in demonstrating the nature of change required in the necessary institutions to facilitate participatory resource management.

Keywords: social institutions, natural resources, collective action, participatory management, Tobago.

1. Introduction

There is often uncritical acceptance that participation of all stakeholders is the key to sustainable management of natural resources. This tenet is presently being questioned from a variety of perspectives and disciplines which point out, for example, the heterogeneity of ‘communities’ involved in resource management. The key distinction overlooked in much of this debate is whether it is ‘outcome’ or ‘process’ which defines ‘success’. The research reported here contributes to these debates by seeking to clarify, in an empirical setting, the pre-requisites for ‘successful’ participation in natural resource management, where success focuses on whether the process of participation is facilitated. This is applied by examining a case study of participatory management of a marine protected area, Buccoo Reef Marine Park, in Tobago, West Indies. We have been assessing management and development options for the Buccoo Reef Marine Park, in south west Tobago over a number of years (see Adger et al., 2000b; Brown et al., 2000).

Much of this framework is developed with reference to institutional and economic research on collective action which has emerged in the past decade in response to the realisation that collectively managed resources can, under certain circumstances, produce sustainable utilisation of resources (Ostrom, 1990; Bromley, 1992 and others). This research has led to the more widespread recognition that institutions may be more socially beneficial mechanisms for enabling resolution of social dilemmas of common property resource allocation (Firmin-Sellers, 1995). Part of the common property research agenda has focussed on developing analytical frameworks to study the outcomes of common property resource management through an understanding of its component parts (Steins and Edwards, 1999). Other research has looked at the design principles, which underlie ‘successful’¹ collective action. This study focuses on the latter area of research, and explores the pre-conditions necessary for common-property resource management through collective action or participatory natural resource management.

This paper explores the nature of the institutions involved in the management of state-owned or collectively managed renewable resources in Trinidad and Tobago including forests, coastal areas, and aquatic and marine fisheries and other resources. Resource management institutions in Trinidad and Tobago are examined in terms of their constitutional order (the written and unwritten rules), and their institutional arrangements (which are devised by the actions of members). Consideration is given to the cultural endowments (the normative societal codes of behaviour) of Trinidad and Tobago, in terms of the perceptions of participatory resource management approaches (Feeney, 1993).

The role of institutions is considered from both a structural and a rules perspective. Organisations are considered by some to have ‘organisational cultures’ and identities (Silverweig and Allen, 1976; Hassard and Sharifi, 1989). These intangible ‘identities’ direct and motivate private institutions in the quest to achieve their goals. Does an

¹ As Steins and Edwards (1999) note, the definition of ‘successful’ outcomes in common property management is largely biased by the definer, and it frequently varies among stakeholders for the same initiative.

organisational culture exist for public or social institutions that could facilitate public or common-property natural resource management? Can such ‘consciousnesses’ exist in social institutions, and do they facilitate the implementation of the social institutions’ goals? This develops the work on institutions from a behavioural perspective, undertaken by Uphoff (1986).

The objective of the paper is to describe a novel approach to identifying the institutional pre-conditions for effective common property resource management, and to consider how such an approach can be used to examine the institutional opportunities and constraints to common-property resource management in Trinidad and Tobago. The second section of this paper briefly describes the theoretical background to the paper by reviewing literature on economic theory, social institutions, and collective action. The third section describes the case study site in Trinidad and Tobago and reviews the approach taken to collect and analyse the data. Section four asks what conditions are considered to be necessary ‘pre-requisites’ for successful participatory management of natural resources, and assesses the level of readiness of Trinidad and Tobago in these terms. The data collected are described in terms of the structural, regulatory and behavioural gaps that exist in institutions. These gaps that prevent the implementation of participatory approaches in Trinidad and Tobago are considered. Section five discusses the potential for the identification of pre-requisites for participatory natural resource management and asks what new institutional mechanisms might be necessary to implement participatory approaches.

2. Social institutions and collective action for coastal resources

Coastal zones and coral reef ecosystems are, in economic terms, impure public goods. Those functions of the coastal zone that are non-exclusive can suffer from the problem of free riding users, who can over-consume rival coastal resources and possibly endanger survival of the resource. Coastal resources have traditionally been managed by allocating property rights, and creating exclusive areas for those activities that take place in the coastal zone that are excludable². Such top-down management strategies have been criticised for ignoring alternative institutional arrangements that could be created to facilitate management (Berkes et al., 1989). In addition, Moe (1990:213) argues that such policies make institutions ‘weapons of coercion and redistribution’, and result in political losers absorbing the costs of conservation (cited in Firmin-Sellers, 1995).

Allocating property rights has not always led to successful management of common-property resources, Berkes et al. (1989). Other institutional arrangements such as co-management or collective action may lead to more supported management. Examples abound where private property rights have been allocated, but management has not been supported because local stakeholders interests have not been considered (see Baland and Platteau, 1996; Tacconi, 1997; K. Brown, 1998; Agrawal and Gibson,

² Marine protected areas in many parts of the globe have been created as exclusive areas, although these are frequently protected in name only as the reality of enforcement is politically unpopular (e.g. Ticco, 1995).

1999. Many empirical studies note that the top-down allocation of property rights alone is not adequate to prevent resource degradation of common property resources.

The economic theory of social institutions offers a strong complement to public and welfare economics. The theory explores the types of institutional arrangements that could be created to generate Pareto optimal resource allocations in the absence of prices or markets of exchange without creating hypothetical alternatives. If the neo-classical assumption about markets being the only institution that can transmit price information is relaxed, then the opportunities to understand market failures, by exploring alternative institutional arrangements, becomes possible (Clague, 1997).

Olson (1965) described collective action as the co-ordination of efforts among groups of individuals to achieve a common goal, when individual self-interest would be inadequate to achieve the desired outcome. Sandler (1992) derives three general pre-conditions for successful collective action based on the principles outlined by Mancur Olson. First, group size can influence collective action success (smaller groups tend to be more successful). Second, groups with an unequal distribution of endowments among members can lead to collective action failure. Third, failures of collective action can be overcome by the introduction of selective benefits, and alternative institutional design.

More recently, Steins and Edwards (1999) consider the design principles for collective action as developed in common-property theory through reviewing evidence from past studies. In each of the studies noted in Steins and Edwards (Wade, 1988; Ostrom, 1990; Hanna et al., 1995; and Pinkerton and Weinstein, 1995) reference is made to a variety of design principles. These principles include the boundaries of the physical resources, the location of the resource, demand for the resource, the scope and size of the user group, and relations between users. Further evidence on these design principles for coastal resources is found in Adger et al. (2000a) who demonstrate that higher levels of inequality in the distribution of benefits from collective resources, undermines successful management through creating conflictual relationships between users.

It is now well recognised that understanding the institutional arrangements surrounding the utilisation of common property resources by stakeholders is critical to designing better management of regulated common property resources (Berkes and Folke, 1998; Gezon, 1997; and Imperial, 1999). The debate over what constitutes an institution, and how to analyse successes and failures of those institutions is, as yet, unresolved. To date, analysis of social institutions has been more directed towards rules and contractual arrangements; consideration of norms of behaviour has received less academic interest from common-property researchers (Nabli and Nugent, 1989). There are exceptions, such as Uphoff, who has considered behavioural aspects of institutions. Uphoff (1986) focuses on behavioural issues in defining the nature of institutions. He notes that institutions are 'complexes of norms of behaviour that persist over time by serving collectively valued purposes' (Uphoff, 1986: 9).

Extensive work has been undertaken to assess the impact of individual and collective behaviour on the 'success' of private sector organisations (Hampden-Turner, 1990). A. Brown (1998) suggests that at an individual level, cognitive limitations, such as

selective perceptions are important barriers to organisational learning and change (for a review of organisational culture management, see Hassard and Sharifi, 1989). At the collective level, he suggests that political and cultural influences can have the most profound retarding effects on organisational change. Therefore, understanding how individual and collective behaviour is influenced and can influence management is central to developing relevant and useful participatory approaches.

This paper develops a framework of pre-requisites for successful participatory management based on the typologies implied by economic and political science research on pre-requisites for successful collective action in the common property context. Participatory management in this context does not specify that all property rights are in common for the resource, but relates to the more general situation where some rights and the institutions of management are widely representative of the major stakeholders. This framework permits the development of unique lists of 'success' pre-conditions according to the specific structural and behavioural characteristics of different resource management dilemmas. It is suggested that the satisfaction of those needs does not create exclusive pre-conditions for community based resource management, but indicates the motivation for the institutions to engage in such institutional arrangements.

Information was collected for the research through a series of semi-structured interviews in Trinidad and Tobago in October and November 1999 and a workshop with diverse stakeholders in resource management in Trinidad and Tobago in November 1999. The objective of the interviews was to identify the opportunities and constraints to the institutionalisation of participatory approaches to natural resource management. Resource management professionals engaged in land-water interface management issues were targeted specifically. Interviews involved an open discussion of a number of issues, namely:

1. Identifying which projects the individual was currently working on that engaged stakeholders, or that was located at the land-water interface.
2. The regulatory and legal framework in which the individual works.
3. The individuals perception of public participation as a tool.
4. The ability of the organisation in which the individual worked to implement participatory approaches.
5. Success of participatory and inclusive approaches implemented by the organisation.
6. Availability of resources (human and financial) to implement participatory approaches in their area.
7. The level of experience and training of those working on participatory approaches, in their office or Department.
8. Specific constraints to implementation of participatory resource management.
9. How do institutions determine best practice for participation, when it is applied.
10. The potential to move away from consultation towards participation

These issues were taken forward during a one-day workshop on the potential role of trade-off analysis in natural resource management in Trinidad and Tobago by focussing on the experience of institutions in Tobago in enhancing community participation in marine protected areas over the previous three years (see Brown et al, 2000). Participants at the workshop included private, public and non-governmental

institutions. They discussed opportunities and constraints as they related to constitutional and legal frameworks, institutional arrangements, and cultural and community endowments.

3. Social Institutions for coastal zone management in Trinidad and Tobago

North (1981) delineates institutions, into three categories, comprising constitutional rules, operating rules and normative behavioural codes. Similarly Firmin-Sellers (1995) notes that institutions operate at three levels: constitutional, institutional arrangement, and operational. These levels sometimes overlap, but clearly distinguish between the basic rules for societal organisation, and rules created within that framework (Feeny, 1993). To understand the structure and behaviour of coastal zone management institutions in Trinidad and Tobago, institutions were considered in this paper in terms of these three categories. In essence we examine:

1. the policy, legal and regulatory setting, and external factors (constitutional order);
2. the institutional and structural factors (institutional arrangements);
3. community level issues (cultural endowments).

Table 1 Major issues affecting the development of a participatory approach to natural resource management in Trinidad and Tobago perceived by government and other stakeholders.

Area	Issues
Legal/regulatory	Existing legislation. External policy influences. Unclear roles of Government Departments and Ministries. Legal liability of resource managers. Level of law enforcement. Legal support for managers. Lack of co-management legislation. Unclear property rights. Legal protection for volunteers.
Structural	Level of staff skill. Number of trained staff. Lack of previous successful examples. Credibility of the implementing agency. Hidden political agendas. Possible power loss by government agencies. Empowered staff. Local vs central Govt. Information hoarding. Project time tabling. Project cycle.
Community	Representativeness. Level of communication. Potential downsides to participation. Resource intensive process. Stakeholder engagement guidelines. Intra-community relations.

Source: Interviews with government, non-government and other stakeholders, Trinidad and Tobago, October-November 1999.

Information generated from the series of interviews and the workshop held in Tobago describes the specific influences in Trinidad and Tobago that are affecting coastal

zone management. Table 1 reports the main issues identified by participants as affecting the development of a participatory approach to natural resource management in Trinidad and Tobago.

Constitutional order

In Trinidad and Tobago, external factors, national legislation, and local legislation determine the constitutional order. External factors are those influences originating from outside Trinidad and Tobago, such as treaties that The Government of Trinidad and Tobago has signed, or conditions that may be attached to loan agreements from external sources. Increasingly, external agencies, such as the World Bank, are applying conditionality to both loans and grants, requiring host countries to pass certain environmental legislation, prior to drawing down loan funds.

Tying loans to environmental or development conditions was perceived both positively and negatively. Positive feedback suggested that this would push the government towards more participatory approaches, and not permit the government to abandon the process. Negative comments suggested that the government may not be able to afford to implement, or cannot completely implement a participatory approach and may be penalised for it by the lending agency.

Table 2 Areas of concern not being tackled by new legislation perceived by government and other stakeholders.

Area of concern	Agency voicing concern
New laws which demand public input into the development of new laws	National Parks Office, GOTT
Clarification of property rights	Department of Marine Resources & Fisheries, THA
Means of offering legal protection for managers of natural resources.	Environmental NGO
Means of improving enforcement of existing laws.	workshop group discussion outcome
Means of legally protecting volunteer wardens, who could be activated through a co-management arrangement.	Environmental NGO

Source: Interviews and stakeholder workshop, October and November 1999.

Note: GOTT = Government of Trinidad and Tobago, THA = Tobago House of Assembly.

The legal system in Trinidad and Tobago is based on the British colonial system. Many of the laws currently in place have not been updated since their creation and do not require public participation in decision-making for resource use or management³,

³ An example of old legislation is the Town and Country Planning Act (1947).

although there are a few exceptions. Despite some of the new legislation enabling stakeholder participation in resource management, there is still no legislation which mandates stakeholder participation in decision-making about the environment, or in developing new laws for the environment. There are some serious gaps in the areas being tackled by new legislation (Table 2).

Legislation poorly defines roles and responsibilities for managers of natural resources. In many cases different ministries have responsibility for the same resource. Three formal Government agencies are currently responsible for the coastal resources in Tobago⁴:

1. the Department of Fisheries and Marine Resources, Tobago House of Assembly (empowered by the Minister responsible for Tobago Affairs, through the Tobago House of Assembly Act, 1996);
2. the Department of Fisheries, in the Ministry of Agriculture, Lands and Marine Resources, Government of Trinidad and Tobago (through the Marine Areas (Preservation and Enhancement Act, 1970)
3. Town and Country Planning, Ministry of Planning and Development, Trinidad (responsible for coastal development on the landward side of the coastal zone through the Town and Country Planning Act, 1947)

The confusion over management responsibility means that it is difficult to allocate resources to the responsible agency, and it is difficult to assign management, monitoring or enforcement responsibility to one agency. As a result, in several areas there is no final responsible agency for certain natural resources in Trinidad and Tobago, and there is frequent duplication of work⁵. There is also inadequate legal protection for managers of natural resources, inadequate enforcement of existing laws, and a lack of legal support for the agency enforcing the legislation or regulations. There is a lack of clear property rights for natural resources, especially coastal resources. Not only is there overlapping legislation which allocates property rights to different owners, but legislation intended to demarcate protected areas, has in some cases, been wrongly drawn, with boundaries placed in inaccurate locations⁶. The outcome of the inaccurate definition is that the boundaries of the park are disputed and property rights are unclear.

Different functions of the coastal zone have different levels of excludability and rivalry. Both of these factors influence the *de facto* and *de jure* allocation of property rights for each function. Buck (1989) noted that a variety of property rights can exist for the same natural resource, hence she devised a typology for trans-boundary resources. Buck's typology requires consideration of the scale of the user pool, the nature of the property right (whether transferable or excludable), and the nature of the

⁴ Prior to a Cabinet re-shuffle in the local Government organisation, the Tobago House of Assembly (THA) in 1998, there were four agencies involved.

⁵ In 1999, both the THA, and the Ministry of Agriculture, Lands and Marine Resources in Trinidad individually hired separate consultants to develop separate management plans for the same Speyside Marine Area.

⁶ The Marine Areas (Restricted Area) Order 1973, which designates the Buccoo Reef complex, incorrectly refers to the boundaries of the Buccoo Reef Marine Park. The Restricted Area, as described in this Order, extends from an inland residential area on a hill, out past the reef site into the open ocean.

resource (Buck, 1989). An application of Buck's typology to the coastal resources within the south-west of Tobago is shown in Table 3.

Table 3 Classification of property rights for sub-components of the coastal zone in south-west Tobago

Type of resource	Nature of resource	Legal Property right	De facto property rights
beach/mangrove below high tide	Stationary	State	open access/private
beach/mangrove above high tide	Stationary	Private	open access/private
Mangrove animals	Fugitive	open access	open access/private
Seagrass beds	stationary	State, transferable	open access
coastal/lagoon waters	stationary	State	open access
coral reefs	stationary	State, transferable	common property
marine animals	fugitive	common property /state	common property/state

It is clear that most of the elements in the coastal zone are renewable, although the resources themselves are partly stationary (mangroves, seagrasses and reefs) and partly fugitive (fish and other marine animals). Access to the coastal zone is mostly open, except in areas where land based developments e.g. hotels, have blocked landward access to the coast - in those cases certain user groups are excluded.

Within the coastal zone, there is a protected marine area. The marine and coastal area for that site, including the reefs, the fish and other benthic life forms, is the property of the state. Access permits are granted to fishermen to pass through it, although not to extract within the marine park. Reef tour operators and other boat tour or jet ski operators also require licences to operate within the marine park. The lagoon area is subject to the same conditions. The diversity of functions, and the range of property rights, within the coastal zone in south-west Tobago highlight the complexity of coastal zone management. In Trinidad and Tobago this complexity is exacerbated by the array of formal institutions engaged in managing coastal resources.

The necessary legal changes for successful participatory management of natural resources in Trinidad and Tobago (perceived by many government agencies – see Table 2) are substantial, and may require more than just additional Regulations being drafted. For example, as one individual noted, the problem of poor enforcement of laws, is not just a problem for environmental management, but is a social problem that affects all areas of Government in Trinidad and Tobago. Resolving this problem may require a Government restructuring, which could use more resources than are available to Trinidad and Tobago.

Institutional arrangements and structural factors

Structurally, governments of small island states often suffer from lack of specialist staff skills to implement participatory approaches. Government staff inexperienced in developing participatory approaches to projects may be unwilling to include unfamiliar participatory techniques in project design. Insufficient full time public

outreach staff, or community workers to engage stakeholders can be a major constraint. Government employees may hide behind old legislation to avoid working with stakeholders, as they are not trained in the newer more inclusionary methods. This lack of training and field experience may both deter and disempower staff. There is limited information available to Government staff on how to engage stakeholders, and there are few examples within Government detailing successful inclusion of stakeholders. The cumulative effect of these structural issues is that project management staff may not consider the inclusion of stakeholders as practical for resource management.

The problems that can arise from poor Government structure are well known in Trinidad and Tobago. During a prioritisation of major issues facing the tourism sector for the National Tourism Stakeholder Consultation⁷, the institutional framework was singled out as the biggest problem facing the tourism sector in Tobago. Specifically, the issues of confusion over the roles of the different Government agencies, lack of communication between institutions, lack of harmonisation of laws, lack of clear guidelines for management, and no authority or responsibility assigned were highlighted as the most important issues.

Table 4 Perceived government structural problems affecting the development of participatory approaches to natural resource management, and the economy in general

Areas	Specific perceived problems in implementing participatory approaches for natural resource management
Operational	Inadequate staff trained in participatory approaches Inadequate full-time outreach staff Few examples of participatory approaches in T&T Over-use of consultants
Structural	Information hoarding Inadequate public access to information - need 'open Government' laws Corruption in Government Project-driven Government - problem of project cycle and time-tabling Government workers slow to adapt methods used by external groups and communities.

Source: Interviews and stakeholder workshop, October and November 1999.

The institutional structure in Trinidad and Tobago affects all aspects of Government, not least the natural resource management sector. The introduction of participatory approaches brings with it a host of additional problems, although many of them when studied carefully are just part of the broader problems which affect all areas of Government. Table 4 shows that none of the problems associated with introducing participatory approaches to natural resource management are unique to the area of

⁷ This was undertaken by the Division of Tourism, THA, in December 1998, as an input into the development of the Draft Tourism Development Act.

resource management. This suggests that Government structural problems could be the bottleneck to the development of more participatory approaches.

Considering the issues listed in Table 4, it can be seen that there may not be any means of tackling some entrenched problems. Nearly all the Departments interviewed noted that they were under-staffed and under-funded. In terms of training, even though there has been some training of some staff in participatory approaches, there was universal agreement, that not enough staff knew about the participatory approaches to resource management, and more training was needed across the board. Staff training may not be possible for all staff in a small island setting, unless a trainer visits the island, as funds may not be available to send away all staff. Alternative approaches may be called for which highlight on-the-job training rather than full-time training. The same could be done to sensitise government employees to the newer more inclusionary methods.

Recruiting additional staff as full time public outreach staff, or community workers can be conditional on obtaining funding. Given the central budgeting system, the only way to ensure additional funds are directed to this area is for the use of out-reach staff to be mandatory in certain circumstances, or to direct external funds toward it - although this would not be a long-term solution. Government staff might be unwilling to engage in any activity that reduced their power or authority. Individual government employees might fear job losses, or income losses if decision-making power were divested to others. Government employees may use subtle methods to prevent power loss, such as information hoarding, and refusal to allow other groups access to information.

At the political level, the power struggle between the Government of Trinidad and Tobago and the Tobago House of Assembly creates policy blocks. Both legislatures have policy agendas relating to the devolution of power from central Government to the THA. Like most other countries in the world, the central and local Governments in Trinidad and Tobago were not without some degree of corruption, whereby stakeholders voices may be sought, but the wealthier stakeholders may get their voices heard above the others. On the other hand, politicians with their own policy agendas may chose to ignore stakeholders for other reasons, these could be egalitarian, or environmentally based.

Government stakeholders may be worried that if they engaged in participatory approaches, or co-management approaches to resource management, they appear less able to manage. New government agencies may especially need to develop public credibility to achieve 'success'. Consequently, they may avoid untested methods or approaches. The problem of perceived power loss by government may diminish as more government departments start to see the potential benefits from engaging communities in making decisions about, and managing, natural resources.

Many governments, including Government of Trinidad and Tobago, use the project approach to allocate resources. As a result government work is often dominated by 'project proposal' preparation, assessment and appraisal. Projects are assessed on the basis of achievement of objectives in given time frames, it is on this basis that projects are compared and prioritised. If funding is allocated the project is expected

to be run on schedule, and to achieve its objectives. This process, known as the project cycle is fully entrenched in the government system, yet, this project-centred approach might be one of the reasons for the slow uptake of participatory approaches in T&T. Project timetables are fixed in the project proposal, and funders generally require project managers to deliver outputs according to project timetables, and funding is continued on successful completion of intermediate targets. If inadequate time is initially allocated to inclusionary processes, this might be a stumbling block to the achievement of project deadlines as inclusionary processes can be time-consuming and tend not to be predictable. Therefore it is difficult to assess at the outset of a project how much time should be allowed for participation. Even if a period of time is allocated to engage stakeholders it may not be adequate, and if a project leader is determined to meet project deadlines, it might not be possible to engage stakeholders fully.

The issues relating to the project cycle, including the use of consultants, is essentially a problem with parliamentary democracy. To allocate scarce resources, a systematic programme needs to be used, unfortunately the project cycle approach together with the logical framework do not permit the freedom of time and resources that participatory techniques require. It was recognised that local stakeholders may feel marginalised and excluded from the development process, either by being consulted and then ignored, or by being consulted after decisions have been made, or, by finding developments proceeding in their area of which they were neither aware nor informed. Supposition extended to suggest that government might be inaccessible to the less well educated, and the less well-off in society, as decisions were sometimes made on the basis of successful lobbying, or financial inducement.

Community or cultural endowment

One of the major identified constraints imposed on communities is the high cost of participating in ‘participatory’ approaches. The nature of participatory approaches is that they are iterative and time-consuming, and the stakeholders involved often are asked to commit a substantial amount of their time, and sometimes their finances to supporting aspects of resource management. This can create the potential problem of non-representativeness, through a self-selection process, whereby those people who have the time or resources to attend community meetings and offer input may not reflect the opinions and attitudes of others in the community.

Equally important is the issue of skill development especially in leadership qualities and relationship management, both within and among communities. Poor communication within groups, or poor communication between stakeholder groups and government is a constraint to participation in resource management. In those stakeholder groups that are poorly organised, the inability to develop a coherent message and deliver it to the appropriate agency is akin to exclusion. There might be historical reasons why some groups do not work well together although they felt that the reasons for this are not known.

For common-property resources there are invariably conflicts among the stakeholder groups. Knowing that a situation may be conflictual may deter some communities, or some stakeholder groups from engaging in a participatory approach, particularly the

disenfranchised, and disempowered. In addition, community levels stakeholders often feel that there is no means for them to formally engage with decision-makers, and that their opinion, once elicited, may be ignored.

At the workshop, two panellists noted that while there had not been many successful examples to date in getting stakeholders on board, many lessons had been learned from work already carried out in Trinidad and Tobago. Some of the lessons were:

1. stakeholders may need to be motivated to participate, the implementing agency may need to go door-to-door to explain the underlying issues, and so encourage people to turn up for meetings;
2. stakeholder need to be kept informed from the outset and during the process. There needs to be feedback;
3. Different methods of stakeholder engagement should be used for different groups.
4. Incentives may have to be offered to people, such as free lunches, or refreshments to get them initially involved.
5. Stakeholders need to know their voices are being heard by decision-makers, so decision-makers must be willing to engage directly with the public.

Trinidad and Tobago are not unique in the problems they face in managing the coastal zone. Reviews of the successes and failures of marine protected areas around the globe (Ticco, 1995, and Alder, 1996) identified several key causes of failure:

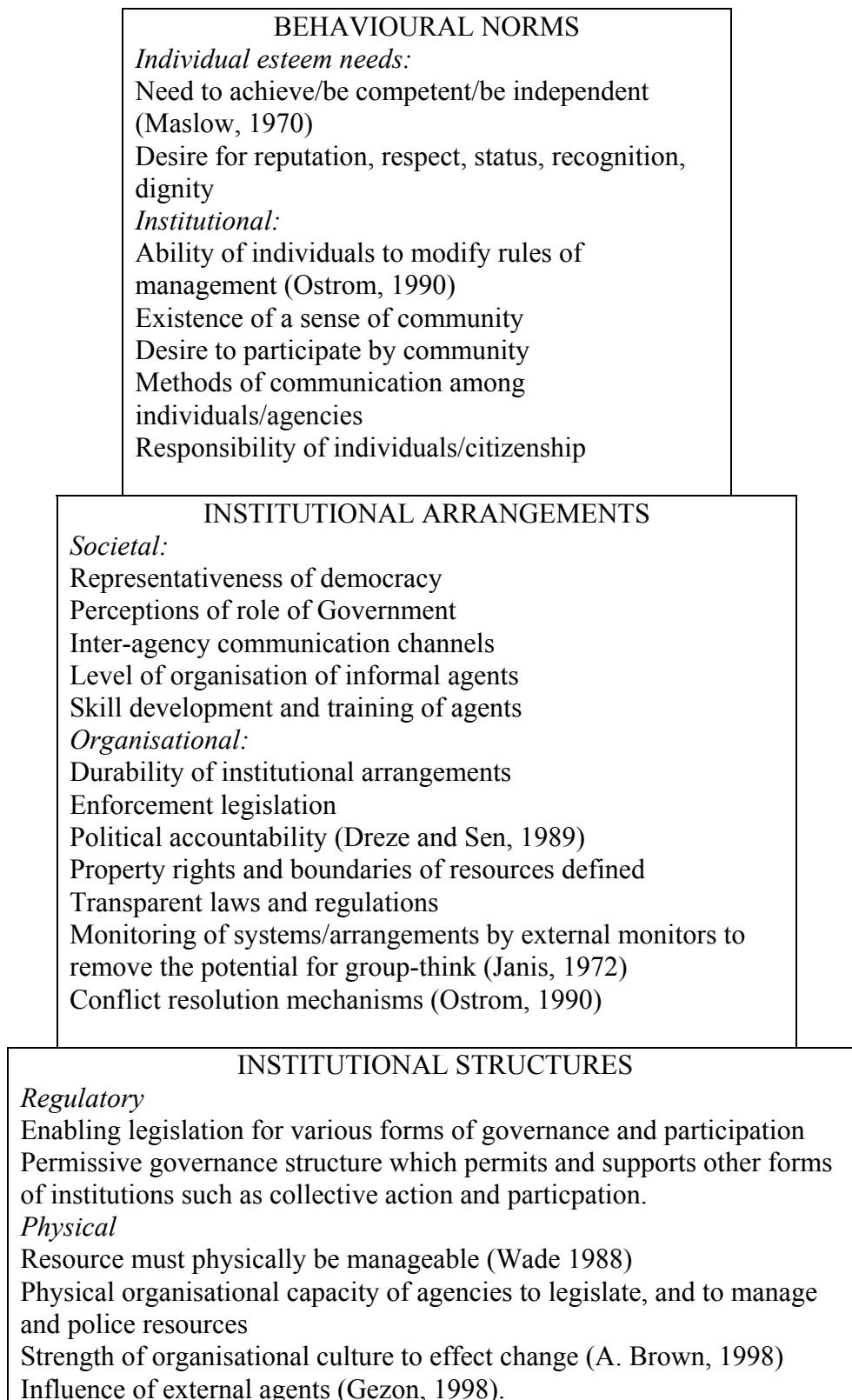
1. A lack of political commitment to develop or implement legislation;
2. Inadequate legislation;
3. A lack of public or stakeholder participation or involvement in decision-making;
4. Inadequate education for users and visitors, to ensure appropriate use.

Previous coastal zone management studies of the coastal zone in Tobago identified that these four issues were also possible causes of coastal zone management failure in south-west Tobago.

4 Deriving a hierarchy of pre-conditions for participation

Once the opportunities and constraints to public resource management within institutions are understood, the gaps in structures, rules or behaviour to develop 'better' institutional arrangements need to be considered. These gaps might reveal the need for an improved institutional design, such that new institutions are needed or existing ones need adapting. As Firmin-Sellers (1995) notes: 'The question of institutional design is of profound importance. Institutional design determines whether institutions function to promote socially productive ends, benefiting all members of society; or whether they function to promote re-distributive ends; benefiting a narrow segment of society, often at the expense of all others.' (Firmin-Sellers, 1995: 204). The rules, structures and behavioural norms found in institutions in Trinidad and Tobago have been incorporated into a hierarchical framework that describes the pre-requisites for participatory natural resource management. The framework is a ladder of conditions in ascending order of importance, and of abstraction (Figure 1).

Figure 1 Hierarchy of institutional pre-conditions for participatory natural resource management for Trinidad and Tobago



The framework is based loosely on the Theory of Motivation (Maslow, 1970), and normative systems models for organisational change (Silverweig and Allen, 1976).

The Theory of Motivation focuses on the motivating forces that drive individual behaviour, whereby basic subsistence needs must be satisfied before an individual is motivated to achieve other goals, such as developing a sense of belongingness or self-esteem. It provides a framework for understanding individual behaviour by viewing individuals as agents who need to satisfy a hierarchy of needs in ascending order. The ascendancy of needs satisfaction is central to the theory.

Normative systems models for organisational change require consideration of some of the wider cultural issues involved in implementing new management programmes or approaches (Silverweig and Allen, 1976). The importance of viewing institutions holistically i.e. taking into account the structural, regulatory and behavioural aspects, is important in understanding the pre-conditions for management change.

General principles from these two approaches have been adopted within the framework, most importantly, the holistic interpretation of the linkages between state, civil society and community, and individuals' ability to satisfy their personal needs. The framework has been supplemented by information generated during the interviews undertaken in Trinidad and Tobago, reflecting individuals' perceptions of institutional rigidities and opportunities.

The framework developed can be read from the base of the ladder upwards. At the base of the ladder are the foundations for alternative participatory resource management approaches. These are the necessary physical and structural pre-conditions for management change. Further up the ladder conditions pertain to institutional arrangements and behavioural norms, such as organisational arrangements, societal arrangements, institutional behavioural norms and individual esteem needs. Although, it may not necessarily be the case that the bottom level conditions are easier to fulfil than the higher level, more esoteric conditions.

The bottom of the hierarchy is the set of physical pre-conditions. Most importantly, there needs to be a governance structure that permits both public participation in decision-making for natural resource management, and the creation and support of non-market based institutions (such as co-operatives or collectives) for management of natural resources. Physical structures and capacity in terms of human, financial, technical and other resources are necessary to support alternative forms of governance. Other fundamental conditions are the existence of enabling legislation, and a functioning legal system or framework to define the role of the state, property rights, and user and regulator rights and responsibilities, and to create alternative institutions for resource management. Organisational structures that can manage the legal system and impose penalties for non-compliance are also needed. These structural requirements are the basic conditions that create the first step on the hierarchical ladder of institutional needs.

The next set of issues pertains to the adequacy, durability and stability of institutional arrangements. For the purposes of this paper formal and informal institutional arrangements are defined as the multitude of means for holding society together, for

giving it a sense of purpose and for enabling it to adapt (O’Riordan and Jordan, 1999: 81). Institutional arrangements encompass issues pertaining to the stability of Government and the legal system, the security of tenure of property right holders, and the security of property rights, the clarity of the rules developed, and the transparency of those rules.

Laws are needed which clearly and adequately define the boundaries of the resource, property rights, which demarcate management’s, user’s and owner’s roles and responsibilities, and which permit enforcement of regulations and rules for failure to abide by rules and regulations. At the community level, there needs to be engagement of affected communities in resource management. Within institutions there needs to be systems monitoring, ideally by external monitors to prevent the development of ‘groupthink’, a term coined by Irving Janis (Janis 1972). ‘Groupthink’ describes the phenomenon whereby groups of individuals begin to think alike and act alike in stressful situations where individual member’s self-esteem is threatened. Janis suggests that groupthink is more likely to occur where small groups of individuals work closely together, and within organisations that require conformity.

Institutional arrangements also refer to societal arrangements. These include the representativeness of the democracy, inter-agency channels of communication, the level of organisation of informal and formal agents and agencies, and the level of skill development and training of staff.

The apex of the hierarchy pyramid is the set of institutional pre-conditions and behavioural issues, which relate to the actions of humans within the institutional system, and the institutional culture. Without an environment of trust and respect, and without the possibility of building personal esteem, those required to implement the rules and regulations, and enforce the property rights, and abide by the laws that have been developed may not be inclined to follow the rules. The citizens who are affected by resource management changes need to feel that their views have been respected. This could be achieved through their being given the ability to modify the rules for management (Ostrom, 1990), or through active and direct lines of communication within and among individuals and agencies. There also needs to be respect for those who develop and implement the laws and regulations. This could be furthered by allowing those individuals making management changes or those affected by the management changes to engage in the process to build their own self-esteem.

In Trinidad and Tobago there are a range of regulatory, structural and behavioural gaps that require filling to facilitate more participatory resource management. These gaps have been highlighted by those engaged in participatory resource management in Trinidad and Tobago and suggest that satisfaction of just the lower level conditions are not adequate to ensure successful participatory resource management. Provision of enabling legislation is without doubt an important pre-requisite, but it is not sufficient.

The fieldwork in Trinidad and Tobago also highlights the importance of specific individuals in decision-making for resource management in Trinidad and Tobago. Therefore the behavioural issues cannot be ignored in an institutional investigation as

structural and regulatory change alone are not adequate. It appears from the surveys undertaken that all the components within the framework require satisfying to bring about 'successful' resource management in Trinidad and Tobago. This may not be the case for all locations, and more work needs to be carried out to determine how location specific this ladder of institutional needs is.

5 Implications for institutional design and participation

While development and conservation practitioners have embraced the notion of participatory approaches for resource management where local livelihoods are affected, in-house implementing agencies have not yet had the opportunity to see the potential of these approaches. The interviews carried out suggested that while a dialogue of participatory approaches is often heard, actual implementation was lags behind. A corporate 'vision' shift may be required in agencies managing natural resources, as familiarity with top-down management, coupled with a lack of familiarity with participatory approaches may be acting as a brake on institutional change. By ensuring that the constitutional arrangements are in place, the institutional arrangements are resolved, and behavioural patterns have been considered, such a paradigm shift may be supported.

The issue of organisational or institutional culture is central for social institutions considering engaging in changing management strategy. Organisational behaviour literature points to the fact that strong 'corporate culture' can facilitate change management, and a weak culture, or identity can hamper change. To enable social institutions to facilitate participatory natural resource management, they may need to change their governance paradigms. A major hindrance to the implementation of alternative approaches to resource management may come from problems associated with 'groupthink'. Groupthink is likely to be prevalent in social institutions where there is no external monitor, such as small locally-based NGO's, small resource-management focussed Government Department's, and the central Government which develops and initiates policy change. Groupthink was clearly apparent in two of the organisations interviewed in Trinidad and Tobago, where the reasons for not applying participatory approaches to resource management appear to be inconsistent. In one set of interviews a planning group decried participatory approaches, saying that Tobagonians needed a 'stick' not a 'carrot' to manage their resources better. In another it was suggested that while participatory approaches were supported, they would be implemented once the agency concerned had developed a reputation for effective resource management through top-down approaches. These two views had been generated from compounded individual thoughts on the subject of the benefits of public participation, and not from any detailed investigation, study or understanding of the motivating factors underlying community behaviour.

The hierarchy of pre-conditions framework may only be relevant for management issues where formal structures already exist. For example, where the social institutions for resource management are less formalised, or where no informal institutions exist, where they may have been marginalised by formal institutions (Brosius et al, 1998), other considerations may come into play not reflected in the framework developed. Other considerations may also be necessary for participatory

management of other types of resources, where they are either non-renewable, or fugitive.

Previous studies on institutions have focussed on a wide range of issues: economic theory (Schotter, 1981), property rights (Ostrom, 1990 and others), common-property resources (Berkes et al., 1989), relevance to eco-system management (Imperial, 1999), political theory (Firmin-Sellers, 1995), sociological issues (such as institutional infrastructure - Gezon, 1997). All have recognised that the behaviour of individuals within institutions is important, although the methods of understanding behavioural norms have mostly been dealt with by economic theory (Coase, 1960) or organisational psychology (Hampden-Turner, 1990). This paper brings together many of these threads, and develops the ideas of Uphoff (1986), Chance and Draper (1996), and Davos (1998). There is a need for interdisciplinary understanding in the areas of overlap between economic theory of social institutions and organisational behaviour, as such insights could all inform common-property management, and the implementation of participatory resource management approaches.

This paper offers further evidence that top down allocation of property rights does not bring about 'better' common property resource management. It also supports existing knowledge that markets often fail to resolve certain problems in managing natural resources. Critically, the paper highlights the central role of institutions in PNRM, and the inability of existing means to develop 'best practice' guidelines for institutions for participatory management.

The hierarchy of pre-requisites for participation offers an alternative framework to identify and highlight gaps in institutional capacity to undertake such activities. The framework for Trinidad and Tobago suggests that there are many areas within existing institutions that require attention, structurally, organisationally and in terms of behaviour.

Increased community participation in resource management has brought into question issues of governance, and the role and responsibilities of resource managers. It is recognised that the drive for more participatory resource management will necessitate a change in management roles, and in the existing power structures of the institutions that have traditionally been responsible for resource management. Cultural perceptions of participation may also need to change, and constitutional change may be required. The ability and desire of institutions to adjust to their new roles and to facilitate the new methods of management are critical to the success of the community-focussed initiatives. Given the range of changes necessary, it seems that there needs to be a paradigm shift within social institutions to enable them to engage in different forms of management of resources. This is especially relevant in small islands where resources are limited.

Acknowledgements

We thank informants and institutions in Trinidad and Tobago for their input and for their willingness to engage in the information collection process and their feedback, especially Kamau Akili, Nadra Gyan, Arthur Potts, David Shim, and Kathy Young. We retain full responsibility for this final version. The project reported here is funded by the Land Water Interface of the UK Department for International development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID

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