Facilitating community-based conservation initiatives

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ABSTRACT

Community-based conservation initiatives are bottom-up (or grass-root) activities. They have as their axiom two broad concepts. The first is that people who participate in decision-making will be more inclined to implement any resulting solution. The second is that the participants if provided with sufficient information and support are capable of determining for themselves what the most appropriate solution should be.

There are no set procedures for establishing community-based conservation initiatives. While all need to take place within the overall context of ecosystem management, each will be unique in its needs. Experience has brought to light practices that assist or deter successful implementation. These are discussed in this paper. Lake Horowhenua (Waipunahau) is used as a case study.

Keywords: conservation projects, community initiatives, ecosystem management, Lake Horowhenua (Waipunahau).

1. Introduction

Community-based conservation initiatives (CBCIs) are bottom-up (or grass-root) activities that bring individuals and organisations together to work towards achieving desired environmental goals. These initiatives are fueled by a community force that is exerting pressure on government agencies in many parts of the world. Commonly referred to as localisation or subsidiarity this force reflects peoples' desire for a greater say in issues that affect them. While government agencies may set strategies and prepare plans and policies, their ultimate success depends on the support of a wide spectrum of society, so this desire for involvement needs to be acknowledged and acted upon. Collaborative governance (defined as collaboration between spheres of government, stakeholders in society, and working in closer cooperation with citizens, not simply representing them) is argued to be the appropriate mode of governance as we enter the new millennium (Clark & Reddy 1999).

People are usually proactive in protecting things of value to them, and it is in this context that biodiversity conservation initiatives have to be understood.

Community-based conservation seems compelling because it starts from the most fundamental principle: individuals will take care of those things in which they have a long-run, sustained interest (Bromley 1994, p. 428).

Resource management decisions that affect biodiversity are constantly being made by land managers, resource users, iwi and hapu, government agencies and individuals. It is changes in these everyday practices of New Zealanders, as proposed in New Zealand's Biodiversity Strategy (DOC & MfE 2000, p. 11), that will determine our record in biodiversity management.

The rationale behind CBCIs is that, by working together, people are able to achieve more than individuals or organisations working on their own, and involving those affected is likely to result in a better and more acceptable long-term solution.

These desired outcomes have led to increased acknowledgement of parti-cipatory activities as a means of achieving environmental and sustainability goals. While these concepts are not new, their application has increased dramatically in the last 10 years.

For conservation purposes a community can be defined as a number of people who have a goal and decide to work together to do something about it. While groups can contain mutual, overlapping and divergent interests and perspectives, the goal binds people together, giving them a common identity despite individual differences. The minimal trappings of community according to Daly & Cobb (1994, p. 175) are:

- allowing all citizens to participate,
- accepting citizens' responsibility,
- respecting the diversity of citizens.

CBCIs, by definition, operate at a local or community level. They tend to be voluntary, people-centred and participatory, with community members making

management decisions (Murphree 1994, p. 419). Expertise may be provided by outside agencies but management responsibility remains with the community group.

Community-based conservation reverses top-down, centre-driven conservation by focusing on the people who bear the costs of conservation. In the broadest sense, then, community-based conservation includes natural resource or biodiversity protection by, for, and with local communities (Western & Wright 1994, p. 7)

2. Key concepts, theory and principles supporting public involvement

2.1 PARTICIPATORY THEORY

Participation theory promotes citizens' involvement in decision-making as a means of encouraging community members to consider issues of common interest. There are many potential benefits. Foremost these include the ability to build local skills, interests and capacities that are on-going. Others include the ability to improve outcomes by extending the range of values and inputs into the decision-making process, and, the increased probability of acceptance and successful implementation when decisions are seen by those involved as responsible and appropriate. Involvement, it is argued, enhances co-operation, as co-operation is strongly influenced by the possibility of individuals having to deal with each other repeatedly (Berry et al. 1993; Putnam 1993, p. 172). In addition, identification with a group, association, or cause, elevates common interests (Lakoff 1996, p. 191), even if individuals' motives for membership are self-serving.

Participation encourages communities or groups to work together to achieve goals that are broader than those that can be achieved by individuals. Where citizens are jointly involved with elected representatives and managers this necessitates agreements for sharing responsibility and decision-making authority. Increasingly the concept of partnership is promoted, where organisations, agencies and citizens work together as equals (despite differences in power and resources) to achieve agreed objectives.

One reason for this development is that the power of the traditional 'command and control' hierarchical government is being eroded by information and communications advancements (Clark & Reddy 1999; Fukuyama 1995, p. 24; Thomas 1995, p. 6). Organisations and citizens have the ability to access much of the information that governments use, and increasingly governmental decisions are being questioned. This has resulted in the emergence of a more diverse and assertive political culture lobbying for greater participation and empowerment. A decline in general public confidence in government (Perry &

Webster 1999, p. 47) combined with greater demands on government resources has resulted in a shift in the modus operandi of government towards a more community-based form of governance. Government now regularly solicits the input of citizens.

To fully engage in the kind of creative experimentation needed to make the new structures and practices more responsive to citizens, governments have accepted that they cannot and should not do everything; and what they do, need not – often should not be done by them alone (KPMG 1999, p. 8).

2.2 ADVANTAGES OF INVOLVING COMMUNITIES IN CONSERVATION ACTIVITIES

Enforcing regulations becomes less costly

Self-regulation is usually preferable and often more effective than government agency control. Self-regulation can be achieved through peer pressure and good example particularly when people work together in community groups.

Benefits of local knowledge

Community participation enables local knowledge, skills and resources to be mobilised and fully employed. Local people may better understand the dynamics of their environment and its problems. Local contributions can also increase the flexibility and responsiveness of a community initiative to local conditions.

Assisting sustainability

People who initiate a project and participate in its establishment are more likely to remain motivated because they have invested their own hopes and resources in it. There is often greater stability in well-established communities than in government agencies with high staff turnover. Effective local participation between communities and government agencies provides a unique possibility for achieving long-term sustainability (Grumbine 1994, p. 298).

Building capacity

Government agencies can profit from people's participation. When people take part in addressing environmental problems and opportunities, they acquire information and new skills. Local self-reliance, and community building or group identity can result (Borini-Feyeraband 1996). A bottom-up approach can unite communities and provide the impetus for them to solve their own problems (Osterman et al. 1989).

Sharing responsibility

A benefit of involving different groups with a range of demands is that some of the responsibility for resolving conflict is shared with them (Thomas 1995, p. 59). Such involvement increases citizens' understanding of how government operates and this has the potential to reduce criticism of government agencies

and to improve the support for bureaucrats and elected government representatives (Thomas 1995, p. 180).

> *People sit down together. They are compelled to listen, interact, and address problems. Cross fertilisation occurs. The barriers become more porous as a result of interactions* (MacKenzie in Grumbine 1994, p. 299).

Accelerating change

Public awareness and appreciation of conservation issues is generally purported to be growing. However, increased awareness and appreciation of environmental problems does not necessarily lead to improved environmental practice. The wisdom inherent in Landcare Australia's motto of 'Tell me and I'll forget; show me and I may remember; involve me and I'll understand!' is instrumental in bringing about positive change. CBCI tend to be practical in nature and involve a number of individuals and groups which can hasten value change:

> *Attitudes are usually slow to change. Group dynamics provide for acceler-ated development of new approaches and systems across a community* (Campbell 1994a, p. 53).

Working together

Improved communication, information exchange, problem solving and an enhanced ability of local communities to carry out tasks are obvious benefits from group activities (Campbell 1994b; Osterman et al. 1989). Local people and outsiders can share their awareness of problems, resources, knowledge and skills. Collaboration with the business community can bring about changes in environmental attitudes which can in turn influence the attitudes and understanding of the wider community.

The community and private sector have vital roles to play in achieving New Zealand's biodiversity goals. Effective partnerships within central and local government, communities and private resource managers need to be forged and strengthened to enable the guidance, sharing of expertise, access to information and support necessary to achieve effective local action (New Zealand Biodiversity Strategy (DOC & MfE 2000), p. 125).

Building trust

Community scepticism about science and expert knowledge is prompting agencies to work alongside people in order to build the necessary trust for conservation gains. This requires both an institutional change in attitude and a willingness to work with people and organisations rather than telling them what to do.

Economies of scale

Collaborating with others can be advantageous in terms of economies of scale. For example, benefits from commissioning data and research can be maximised if the data collected are made available to a number of end-users.

It should be noted, however, that research has shown that participation is not a guarantee of conservation success. Although it is important, no amount of local

stakeholder involvement can save a poorly designed and implemented project from failure. Community-based organisations are only one arrangement for implementing resource management decisions but they are not appropriate to all situations. While promoting local participation and conservation are both worthy goals, there are situations in which it may be difficult or impossible to design project interventions to achieve both of them (Margoluis & Salafsky 1998, p. 24).

2.3 A MANAGEMENT FRAMEWORK FOR CBCIs

Integrated ecosystem management recognises the need to work across legal boundaries, coordinate between different natural resource management agencies, and gain the support and commitment of local communities and individuals across entire ecosystems.

The complex nature of the modified landscape and its ecological features pose major challenges for natural resource land managers. If community-based biodiversity protection and restoration concerns are to be considered, new and innovative approaches need to be developed that are:

- based at the spatial level of ecosystems (i.e. ecosystem management);

- integrate the legislative requirements and policy responses of a range of natural resource management agencies (i.e. integrated management);

- encourage collaboration between community groups, iwi and, where appropriate, government agencies (i.e. collaborative management);

- be adaptive to change and responsive to wider social, economic and cultural issues about conservation management (i.e. adaptive management).

2.3.1 Ecosystem management

Ecosystem management is an emerging ecological philosophy and approach that requires conventional scientific natural resource management to develop more holistic management approaches (for example, see Park 2000). The ecosystem management concept is a response to a significant shift in social values, scientific understanding and land management interests from that of the past (Szaro et al. in di Castri &Younes 1996).

Szaro's definition of ecosystem management is:

Ecosystem management is a goal-driven approach to restoring and sustaining healthy ecosystems and their functions and values. It is based on a collaboratively developed vision of desired future ecosystem conditions that integrates ecological, economic, and social factors affecting a management unit defined by ecological, not political boundaries. Its goal is to restore and maintain the health, sustainability, and biodiversity of ecosystems while supporting communities and their economic base.

The IUCN (1997) has developed a list of ecosystem management principles, some of which include:

1. *Maintaining ecosystem management in policy development*

Incorporate ecosystem management in the development of strategies for sustainable development and become a recognised part of the development of sectoral policies and programmes

2. *Maintaining ecosystem functions and integrity*

The central premise of ecosystem management is that ecosystem integrity must be maintained in order that the full range of ecological functions provided by the ecosystem are sustained.

3. *Maintaining biodiversity*

One of the indicators of ecosystem integrity is the biodiversity it can sustain. If the biodiversity in the area changes, resulting in altered character, this often means a loss of productivity and possibly a loss of the functions of that ecosystem.

4. *Ecosystem boundaries and transboundary resources*

The management of natural resources in a specific area necessarily implies the definition of its boundaries. The application of ecological principles would argue against the choice of a boundary which cuts across the major linkages of the ecosystem.

5. *People as integral parts of the ecosystem*

Recognition of people's place within an ecosystem strengthens local incentives for management and individual and collective responsibility for appropriate activities within ecosystems

6. *Ecosystem management has to accept that change is inevitable*

Ecosystem management also means that it may be possible to mitigate against change, to encourage it or adapt to it. This depends upon social choice.

7. *The need for knowledge-based adaptive management*

The needs of management must be used to set the priorities for scientific and socio-cultural information to be gathered, and management actions should be adapted according to scientific and socio-cultural advice.

8. *Multi-sector and multi-actor collaboration*

Ecosystem management is holistic and therefore requires the input of many different disciplines, sectors and interest groups to build up and analyse all the information available and to make decisions. Ecosystem managers must ensure the appropriate collaboration of these different sectors and actors.

To apply these principles in practice, it is useful to highlight four basic operating tenets that provide an 'umbrella' for an ecosystem management approach. These tenets are as follows:

- **Ecological approach** - This means in the simplest terms looking at many factors, across a broad landscape, using several scales, addressing linkages between landscape elements and ecological processes. The science of ecology is

applied to multiple-use management recognising that people are part of the ecosystems we manage. Ecosystems should be used as the basic unit for planning and managing natural resources to meet specific objectives - both desired future ecological conditions and desired economic and social goals while reconciling conflicts between competing uses and values.

- **Partnerships** - Sharing responsibility for land management is fundamental for successful ecosystem management. Ecosystems cross boundaries, making the need for co-operation, co-ordination, and partnerships essential for managing ecosystems.

- **Participation** - Allowing people to be involved in all aspects of natural resource decision-making so that managers and political decision-makers will know their needs and views. People want more direct involvement in the process of making decisions about natural resources. Participation in natural resource management planning should be complemented by mechanisms which empower community and iwi to share the responsibility of managing the ecosystems of which they are a part.

- **Scientific and other forms of knowledge** - Sound information and a better understanding of ecological processes highlight the role of biodiversity as a factor in sustaining the health and productivity of ecosystems. This also highlights the need for ecological information at a range of spatial and temporal scales to improve management. When presented with difficult conservation management decisions, the best information is combined with the most appropriate action. Traditional and local ecological knowledge and observations held by iwi and individuals in the community are vital to understanding ecosystem functions, and the related spiritual and cultural values. All these elements should be utilised to improve natural resource management.

2.3.1   Integrated management

Integrated management is considered to be the most appropriate means of achieving sustainable management of natural and physical resources (McRae & Woods 1996) and has been incorporated in New Zealand natural resource management legislation. Under the Conservation Act 1987, integrated management is the purpose of Conservation Management Strategies (CMS) and, under the Resource Management Act 1991, it is a key function of regional councils and territorial authorities (Sections 30, 31).

Integrated management requires government agencies whose natural resource management responsibilities overlap, to cooperate and coordinate their efforts, both in policy development and implementation. Policy consistency is a major component of the Resource Management Act, which sets up a hierarchical 'umbrella' approach to ensure 'top-down' consistency of policy documents produced under the RMA. Councils are also required to have regard to conservation management strategies prepared by the Department of Conservation and any relevant planning document recognised by an iwi authority.

The Department of Conservation can be a key player in this process. While the legal mandate of DOC is the management of the conservation estate, it also has the more general duty to be an advocate for conservation. In this latter role the department can be active in coordinating conservation efforts with other

government agencies who have legislative management responsibilities over natural resources. DOC can also encourage and support landowners, iwi and the wider community's involvement in conservation management activities.

2.3.2 Collaborative management

Collaborative management is a process that involves partnerships in which government agencies, local communities and resource users, non-governmental organisations, and other interest groups negotiate the collective authority and responsibility for the shared management of a specific area or set of resources (IUCN 1997). It has also been described as an inclusionary, consensus-based approach to resource use and development. Collaborative management involves agreements that outline detailed provisions for rights, obligations and rules for decision makers and resource users, as well as a structure to co-ordinate decision-making (Osherenko 1988, cited in Gardner & Roseland 1989). It usually focuses on developing local initiatives to deal with local environmental problems.

The concept of collaborative management is broad, spanning a variety of management arrangements that involve various degrees of power-sharing. Hence, there is no widely accepted definition. To narrowly define the approach is difficult because it has at its foundation a set of principles and processes for good practice, rather than a specific formula.

Borrini-Feyerabend (1996) describes collaborative management as:

> *a situation in which some or all of the relevant stakeholders in a protected area are involved in a substantial way in management activities. Specifically in a collaborative management process, the agency with the jurisdiction over the protected area (usually a state agency) develops a partnership with other relevant stakeholders (primarily including local residents and resource users) which specifies and guarantees their respective functions, rights and responsibilities with regard to the protected area.*

Figure 1 illustrates how government agencies can encourage public involvement at a number of different levels. Community empowerment increases as you progress up the levels. At the bottom levels citizens are informed about issues and allowed to express their opinions but have not influence on the outcomes. As the arrow indicates the degree of citizen influence increases as you move towards 'Partnerships and Community Control'. Collaborative initiatives such as CBCIs are positioned at this level.

There is a growing impetus in New Zealand to address collaborative management initiatives. Increasing numbers of Waitangi Tribunal reports are recommending its application. The Ngai Tahu settlement also provides for a number of shared resource management applications. At a community level, the implementation of new initiatives indicates that people are willing to play a more active role in protecting their local environment (see, for example, the Sustainable Land Management Directory (Ministry for the Environment 1997a)). Overall indications are that collaborative management can be a workable concept for central and local government agencies in New Zealand. A comprehensive review of its potential application for iwi and DOC management partnerships is set out in Sunde et al. (1999).
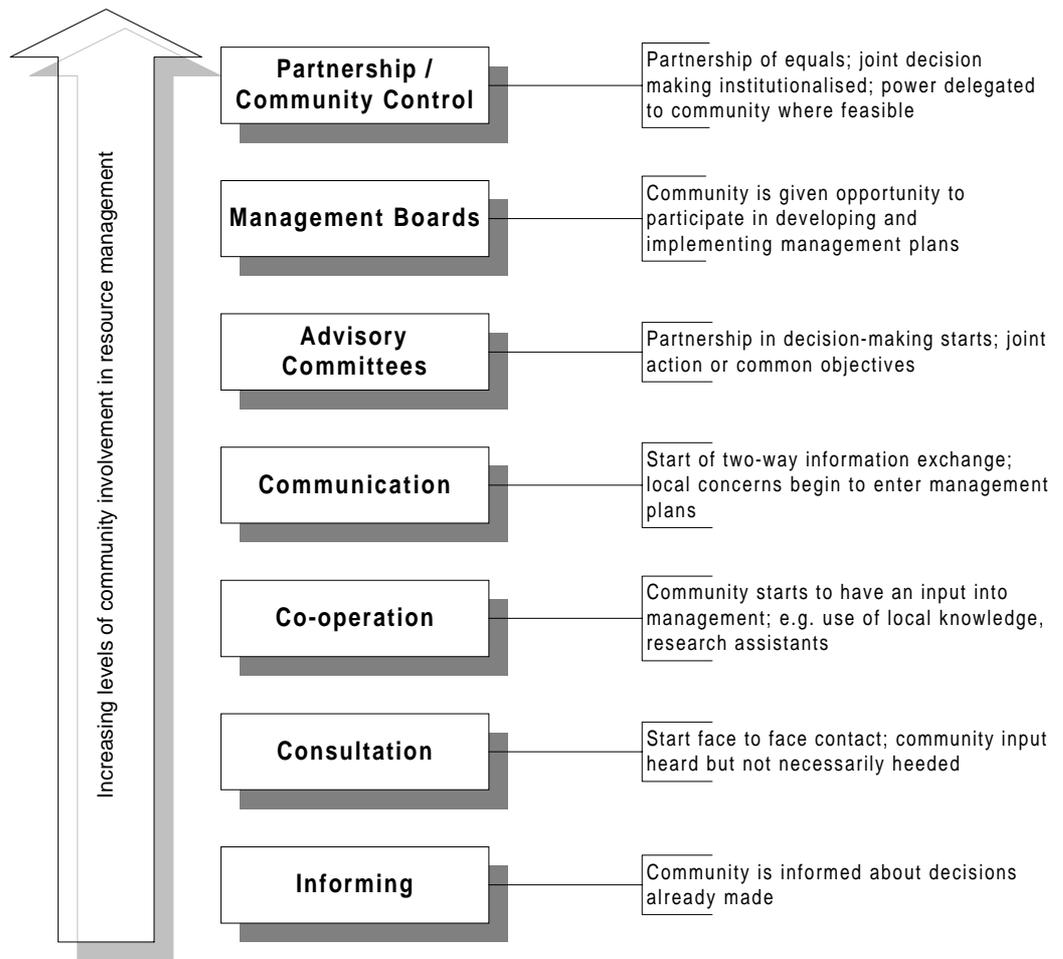
Figure 1. Progressive levels of community involvement in managing and protecting their local environment. (Adapted from Berkes et al. (1991).)

2.3.3 Adaptive management

An overview of adaptive management is provided by Johnson (1999). Adaptive management is learning by doing. As a resource management technique it was first introduced in the 1970s and can be broadly described as a method that tries to incorporate the views and knowledge of all interested parties. It accepts the need for management even if information is incomplete, and there is uncertainty about what the effects of management might be. Management is viewed not only as a way to achieve objectives, but also as a process for probing to learn more about the resource or system being managed. Thus, as more is learnt, policies can be adapted to improve management success and be more responsive to future conditions.

Adaptive management is currently being applied to small replicated systems where collective problems exist. Examples are wetland restoration, the use of riparian buffer strips, habitat fragmentation in agricultural or forested landscapes, and new farming practices introduced to reduce the loss of nutrients, sediments, and pesticides from agriculture.

An adaptive management approach for ecosystems does not focus on separate problems at specific sites, but rather on a general class of problems that require similar types of decisions in different situations and locations. Thus, the

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approach begins from the holistic view of addressing a general problem that occurs within a collection of similar systems, rather than a reductionist view of site-specific problems to be addressed individually. From this holistic view, managers can develop general principles and guidelines that can be applied broadly to their general type of problem, but with modifications to account for site-specific characteristics.

This approach requires more stakeholders' involvement to develop management objectives and gain support for management experiments. Management objectives will probably be broadened to address concerns such as diversity of species and habitats, transfer of nutrients or pollutants between land and water systems, maintaining economic benefits, and balancing consumptive and non-consumptive uses.

2.4 COLLABORATIVE APPROACHES WITHIN NATURAL RESOURCE MANAGEMENT

Many other participatory techniques have been developed and documented in the literature. A comprehensive collection is included in the online resource guide for collaborative and learning based approaches to natural resource management, http://nrm.massey.ac.nz/changelinks. This site is hosted by the Natural Resource Management Programme, Massey University, New Zealand.

2.5 CONCLUSION

Participatory theory supports community involvement in all types of activities previously regarded as the realm and responsibility of government. This interaction can take place on a number of different levels. The complexity and connectivity of ecosystems makes it critical that communities who live within their boundaries have a broad understanding of how their actions impact on the biodiversity around them. This understanding is best achieved through collaborative involvement in activities rather than through information transfer from government. CBCI can achieve this objective positioned as they are at the level where community groups and government can work together.

3. DOC strategies to support community involvement

The Department of Conservation (DOC) was established in 1987 to administer Crown lands in the conservation estate. Additionally, the Department has an advocacy and education role for conservation generally. Section 6 of the Conservation Act outlines these functions and provides the mandate for DOC to work with, and in, communities to promote conservation and protect the natural and historic environment for present and future generations.

Atawhai Ruamano/Conservation 2000 (DOC 1997a), the Department's strategic overview, established the Department's vision and direction for the year 2000, and extends beyond:

> By the year 2000, New Zealand's natural ecosystems, species, landscapes and historic and cultural places have been protected; people enjoy them and are involved in their conservation.

Detailed strategies prepared by DOC set out how this vision can be implemented. They include the Public Awareness Strategy (DOC 1994a), the People Plan (DOC 1994b), the Historic Heritage Strategy (DOC 1995), the Visitor Services Strategy (DOC 1996), the Kaupapa Atawhai Strategy mentioned above (DOC 1997a), and the New Zealand Biodiversity Strategy (NZBS) (DOC & MfE 2000). A Strategic Business Plan for the Department for 1998–2002 entitled *Restoring the Dawn Chorus* (DOC 1998) has also been released. It establishes three goals: specific conservation results; more effective community involvement; and improved departmental capacity. To achieve more effective community involvement, three more explicit goals were set (DOC 1998, p. 32):

> *Community Goal: 4.1 Community Support* – Communities understand and support conservation of their natural and cultural heritage.

> *Community Goal: 4.2 Active Involvement* – Individuals, groups and organisations are actively involved in managing conservation.

> *Community Goal: 4.3 Working relationships with iwi Maori* – The Department and Maori have an effective working relationship for the achievement of conservation goals in ways which recognise the principles of the Treaty of Waitangi.

Public awareness, advocacy and community relations all have the potential for improving conservation practices and are therefore key responsibilities of the Department. How this is carried out is important both on and off the conservation estate. Conservation activities outside the conservation estate depend predominantly on the motivation and co-operation of private landowners. Within the conservation estate, pressure from Maori and other community groups for greater management involvement also requires building long-term endurable working relationships.

The importance of public involvement in conservation issues has been recognised in DOC's organisational structures. In 1997, conservancy restructuring established a more community-related focus. Community Relations

Units, each with a Community Relations Manager, were created to improve communications and public relations. In addition, to facilitate relations with Maori, the positions of Kaupapa Atawhai Manager have been established in each conservancy with a senior management position, Tumaki Kaupapa Atawhai, reporting directly to the Director General. Priority actions include: continuing the programme to raise public awareness of biodiversity, examining the role of Maori in conservation, and continuing to negotiate relationship agreements and protocols with key associates.

The Department recognises that it is part of a network of individuals, groups and organisations all working towards the common goal of protecting New Zealand's natural and historic heritage (DOC 1997b, p. 62).

DOC's broad responsibilities of caring for the conservation estate, conservation advocacy, and its commitment to work with the community, require it to deal with a diverse cross-section of individuals, groups and organisations. Table 1 shows the extent of this role.

TABLE 1.   COMMUNITY GROUPS AND DOC RESPONSIBILITIES.

	DOC PROTECTED AREAS (CONSERVATION ESTATE/ NATIONAL PARKS/RESERVES)	FRESHWATER – RIVERS, WETLANDS	PRIVATE LANDS
DOC focus:	Collaborative management	Advocacy role	Advocacy role
DOC working with:	Iwi, park users, conservation groups	Iwi, private landowners, regional councils, territorial authorities	Iwi, regional councils, territorial authorities, private landowners, NGOs, CBCI and Landcare groups
DOC responsibilities:	Wildlife habitats Pests – Biosecurity Act (public conservation land)	DOC management role for indigenous fish Riparian management Wetland management Fish & Game (introduced fish)	Habitat protection (PNAs, RAPs under RMA s.6(c), negotiating protection mechanisms, conserv. covenants, QEII, etc.) Policy submissions RMA resource consents Conserv. Management Strategies Ecological advice Forest Amdt Act advice to Ministry of Forests

Advancing conservation objectives by working with community organisations and developing new initiatives are important functions for DOC. Both participatory democracy and ecosystem management theory emphasise that working with the community should be based on networking and partnerships rather than traditional hierarchical structures.

4. Government commitment to CBCIs in New Zealand

The realisation that achieving environmental objectives depends on community support has led to terms such as 'co-operation', 'partnership' and 'participation' being freely used in relation to both central and local governments' dealings with the community. Biodiversity is ultimately lost or conserved at the local level so government policies to promote conservation gains must be supported by local action and effective partnerships involving local government, business and community groups. Assistance will, however, often be required from a centralised pool of resources to direct, coordinate, network, monitor, and empower community action.

Both central and local government recognise the importance of CBCIs and have confirmed their commitment in a number of recent strategies and reports. Evidence of government support and commitment is found in the following:

4.1 THE NEW ZEALAND BIODIVERSITY STRATEGY

New Zealand's Biodiversity Strategy (NZBS) prepared by the Department of Conservation and the Ministry for the Environment (DOC & MfE 2000) sets out options for protecting New Zealand's unique biodiversity. Individual and community action and responsibility is highlighted and placed in an ecosystem context. The four goals of NZBS (p. 17–18) are:

- Enhance community and individual understanding about biodiversity, and inform, motivate and support widespread and coordinated community action to conserve and sustainably use biodiversity; and

  Enable communities and individuals to equitably share responsibility for, and benefits from, conserving and sustainably using New Zealand's biodiversity, including benefits from the use of indigenous genetic resources.

- Actively protect iwi and hapu interests in indigenous biodiversity, and build and strengthen partnerships between government agencies and iwi and hapu in conserving and sustainably using indigenous biodiversity.

- Maintain and restore a full range of remaining natural habitats and ecosystems to a healthy functioning state, enhance critically scarce habitats, and sustain the more modified ecosystems in production and urban environments; and do what else is necessary to

  Maintain and restore viable populations of all indigenous species and subspecies across their natural range and maintain their genetic diversity.

- Maintain the genetic resources of introduced species that are important for economic, biological and cultural reasons by conserving their genetic diversity.

Participation and partnerships are important objectives of the NZBS. Communities are encouraged to share responsibility for, and benefits from,

indigenous genetic resources. With appropriate guidance, information, expertise and resources, local communities and individuals are seen as best placed to conserve indigenous biodiversity in their own area (DOC & MfE 2000, p. 19).

No set rules are put in place for carrying out activities. Instead a stakeholder approach is envisaged with community (consisting of iwi and hapu, local communities, primary producers, industry, as well as central and local government agencies) consulting and working together to achieve their objectives. Central government's role is regarded as a statutory, policy development and reporting role rather than an operational one (DOC & MfE 2000, p. 30).

Protecting New Zealand's biodiversity will require a substantial investment (estimated at $800 million over the next 20 years in the Draft NZBS (DOC & MfE 1998, p. 13), but this in itself will not achieve the desired goals without community support. The NZBS acknowledges that while the strategy is government-led it cannot be achieved by government alone (DOC & MfE 2000, p. 11).

Each of the ten themes for protecting New Zealand's biodiversity has an action plan associated with it and, for each action plan, the key players needed to work together are identified. Coordinated setting of priorities across agencies is emphasised.

4.2 RESOURCE MANAGEMENT ACT

The Resource Management Act 1991 (RMA) provides the overall guiding legislation for protecting and managing New Zealand's environment. Under the RMA Part II (the purposes and principles section) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna is recognised as a matter of national importance (s.6(c)) which needs to be recognised and provided for in all resource management instruments and decisions. In addition, government agencies are required to work together in a cohesive and integrated way with the public to achieve sustainable management and protect the natural and physical environment.

To assist this process a RMA national policy statement that would promote and support biodiversity protection and community involvement is currently being developed (DOC & MfE 2000, p. 91). Such a policy statement would have more weight than guidelines and best practice advice and would provide a more consistent approach to promoting the management of indigenous biodiversity. It would also assist coordination of locally appropriate action at the regional and local level.

4.3   BIO-WHAT?

The document *Bio-What?* prepared by the Ministerial Advisory Committee [on Biodiversity] (2000) looks at the issues involved with sustaining biodiversity on private land. The group looked at (p. 54) the need for and scope of a national policy statement for biodiversity under the Resource Management Act and ways to assist landowners protect biodiversity. Recommended actions reinforce those promoted by the NZBS:

• a national goal;

• a national information system to identify areas important for meeting the national goal;

• the need for an agreement between parties with different interests to act to sustain biodiversity (national and local accords);

• clearer allocation of local authority roles and responsibilities;

• changes to legislation with implications for biodiversity;

• incentives to assist landowners to manage biodiversity better.

4.4   CONCLUSION

While much is made of the gaps in understanding and lack of hard data and information, people in the community are quite capable of 'seeing' degradation, weeds, pests and other environment concerns. They are also prepared to take action. The need for community involvement is well identified in recent strategies and reports produced by government. The challenge is to structure government agencies in a way that overcomes bureaucratic management systems and creates an environment that empowers, welcomes and supports community initiatives.

Establishing partnerships and working with the community is essential to achieve the scale of change required to halt environmental degradation in the biodiversity area. Greater participation is seen as the key to progress because it can improve awareness and communication, enable local knowledge and specialised expertise to contribute to the local solutions, and provide an outcome that is acceptable to agencies and communities alike. The typical main assets of community-based groups include: local knowledge, skills and resources; built-in flexibility; direct responsiveness to local interests and conditions; socio-cultural cohesiveness with local communities; confidence and the trust of local people (Feyerabend & Brown undated). Combining these with the expertise and commitment of DOC staff will place New Zealand in a more effective position to achieve its environmental and biodiversity goals.

5. Current approaches to facilitating CBCIs

Public involvement is often used as a means of easing administrative problems and facilitating open decision-making (Selznick 1966). If people feel they have an input, they are more likely to accept final decisions, legitimate the decision-making process and assist with project implementation. Public involvement also enables governments to ascertain citizen attitudes, opinions and needs so that service delivery can be more in line with the needs of the users. It can also be used to promote information exchange and educate people about issues.

CBCIs promote a more active form of participation where citizens influence outcomes. Citizens are actively involved in suggesting options and sharing decision-making with other stakeholder groups. Power is decentralised, and community groups make decisions that affect their immediate environment. Community initiatives can be placed along a continuum from highly specialised activities that require the dedicated skills of specialists, to activities requiring no specific skills, just the willingness of individual members of the public to co-ordinate and be involved in projects. Table 2, based on Wilcox (1994), illustrates this progression.

TABLE 2. CITIZEN INVOLVEMENT IN CONSERVATION DECISION-MAKING.

| | Low ⟶ | | | | High |
	Full control by the agency in charge				Full control by stakeholders
Process	Information sharing	Consultation	Deciding together	Acting together	Supporting independent community initiatives
	Awareness building Telling people what is planned	Identifying problems, offering solutions and getting feedback. Increasing the knowledge base from which decisions are made	Encouraging interested stakeholders to contribute ideas and options and together decide the best way forward.	Different interests decide together what is best and formalise an organisational structure to carry it out	Groups are helped to do what they want within a framework of grants, advice and support provided by the resource holder.
Outcome	Understanding	Legitimation	Participation	Participation	Determination
Tools (to achieve desired outcome)	Public relations Education material Informal feedback	Submission making Voluntary projects Conservation Corps Focus groups	Working groups Action planning * Citizen juries	CBCIs, e.g. - Landcare groups - Trusts - Partnerships	Independent CBCIs

* Action Planning is a process where experts, agencies and community members work together in intensive sessions to look at issues in an holistic way. Using a visual approach with drawings or scaled models people consider and communicate visions for their community's future (see Wates 1996).

Four features are critical to facilitating active public involvement in conservation: environmental education; the fostering of working partnerships; delegating monitoring responsibilities; and the provision of adequate funding.

5.1 ENVIRONMENTAL EDUCATION

A continual theme in the literature outlining the advantages of CBCIs is the educational component.

Communication and education are powerful processes for involving people … and should have equal standing with economic and legal instruments. The gap between policy and local initiatives is widely recognised. Strategic use of communication and education throughout the policy cycle is essential to bridge this gap. Communication plays an important role in bringing the voice of the people into the policy process and mobilizing society for action (Global Biodiversity Forum (GBF10) hosted by IUCN, Oct 1999).

Many community-based projects have the potential to develop greater local awareness and concern (Borrini-Feyerabend 1997, p. 28). Environmental education is seen as the key to providing people with the knowledge, awareness, attitudes and values to implement sustainable outcomes. However, education needs to be more broadly based than just providing information. Education is concerted promotion of information within a context of learning by those on the receiving end and usually has to be combined with relevant action. This involves a programme commitment to focus at a local level, where the action takes place (American Institute of Biological Sciences 1970, p. 24).

Although it is a well known fact that environmental problems are critical, this does not motivate the majority of people to change their behaviour patterns. Experience has shown that biodiversity projects have greater success when they:

- integrate local knowledge and the cultural context in communications and education processes;
- direct communication and education actions to those activities that enhance people's economic, environmental and social health;
- tailor the communication and education approach to the local way of learning, and the learner's context, values, attitude, knowledge and beliefs.

The importance of environmental education is recognised internationally and was the subject of a chapter in Agenda 21 at the 1992, UNCED Conference at Rio de Janeiro.

In New Zealand, the Environment 2010 Strategy identified the need for a national environmental strategy to co-ordinate the multitude of agencies involved in environmental education (Ministry for the Environment 1994). In June 1998, the Ministry for the Environment also released a National Strategy for Environmental Education that was endorsed by both the Minister for the Environment and the Minister of Education (Ministry for the Environment 1998a). This strategy was released in response to the Environment 2010 Strategy, which had advocated (p. 57):

Sustainable management of our environment will be advanced only through all New Zealanders understanding and accepting responsibility for the quality of our environment and our impact on it.

It aims to build on existing environmental education work to achieve greater coordination and consistency in education programmes nationwide. In addition the MfE has appointed an Environmental Education Officer, and similarly, many Regional Councils have recently appointed Environmental Education Officers and are in the process of formulating local environmental education strategies. The New Zealand Association for Environmental Education is also active in providing a network for the various professional organisations (teachers, DOC, MfE, territorial and regional councils, universities, businesses, concerned individuals) involved in environmental education both nationally and internationally. This type of partnership approach between all sectors with a role in the provision of environmental education will lead to better utilisation of resources, better coordination, and greater appreciation of the role of each of the players in promoting environmental education (Ministry for the Environment 1998a).

The Parliamentary Commissioner for the Environment also views environmental education as the key to sustainable management (Parliamentary Commissioner for the Environment 1997, p. 31).

5.1.1 Environmental education and biodiversity protection

Our Chance to Change the Tide, New Zealand's Biodiversity Strategy (DOC & MfE 2000), focuses on the importance of education in achieving biodiversity goals. Because the diversity, distinctiveness and vulnerability of New Zealand's terrestrial habitats, ecosystems and species are not generally appreciated, public support for conservation action is not widespread. Theme Eight (Community Participation and Awareness) highlights the importance of community education for biodiversity, while Theme Nine emphasises the information, knowledge and capacity issues.

Problems in the environmental education area highlighted include (DOC & MfE 2000, p. 101)

- There is poor awareness of existing information.
- Actions to conserve biodiversity are limited by lack of information.
- Many organisations are involved in environmental education, but activities are not coordinated and integrated in a way to ensure greatest effectiveness.
- An environmental education curriculum with resources materials and teacher training programmes is needed to 'mainstream' biodiversity concepts.
- Matauranga Maori and cultural practices and values need to be recognised in environmental education.

A recurring theme in the Biodiversity Strategy is the need for better understanding of ecosystem management and biodiversity before significant gains can be made.

5.1.2 Non-statutory approaches to environmental management

Environmental education, public awareness raising, advocacy, and training are examples of 'non-statutory' approaches to achieving an alignment and voluntary compliance with government agencies' policies and goals. Such approaches describe means for working alongside and within local groups/communities.

Regional policy statements and annual plans all include statements about the need for environmental education. The RMA (section 32) states that the desired environmental outcomes must be achieved in the most cost effective way. Environmental education is a cost effective method as it enables sustainable management principles to be understood, and encourages users to take greater responsibility for their actions. This reduces the outlay associated with enforcing regulations.

Many of the environmental issues we now wish to address are difficult to tackle using a regulatory approach. Rules can send inadequate or inappropriate signals in relation to sustainable resource and environmental management goals, particularly in regard to conservation activities. Furthermore, rules tend to apply to specific circumstances and their relevance is not extended to all sectors of the community. For example, the level of contaminants in waterways may seem the responsibility of land managers and resource users whose activities affect water quality. Consumers, however, also have a responsibility as purchasers of the goods of production. Rules are increasingly seen as necessary 'safety nets' or 'bottom lines' which are 'last resorts' rather than optimal measures for achieving environmental goals (Ministerial Advisory Committee [on Biodiversity] 2000; DOC & MfE 2000). They are expensive to administer and enforce, especially in a context of integrated planning and management. In addition statutory approaches are often unable to address the root causes of environmental problems.

5.1.3 Common threads in the literature on environmental education

There is vast quantity of literature available on the topic of environmental education. When evaluating the effectiveness of efforts the following points are consistently made:

A need for a multi-disciplinary approach
Designing an environmental education programme requires bringing together multi-disciplinary teams, who are familiar with education, information media, ecology and the relationship of people as producers, consumers, and citizens. Environmental education needs to be fed into the 'curriculum' of all subjects and activities both within the formal education sector and society in general so that it becomes a life long learning process.

Environmental education requires commitment
Those providing education and formal and informal opportunities for learning need to be both knowledgeable and have a personal commitment to the subject:

Until instructors feel the interrelationships of all living things, until they feel the necessity of changing attitudes, curriculum materials and pro-grammes will be just so many words (Hamilton, B. quoted by Brademas 1970 p. 7).

Environmental education is not just about presenting ecological facts. It is also about communicating values and, as such, is too critical to be left entirely to those educators whose interests are not focused on environmental concerns (Brademas 1970 p. 7, 11).

Those working to promote environmental education need to be able to pass on values and motivate others. They therefore need adequate skills and a positive attitude towards the work they are doing.

Experiential learning

All commentators agree that environmental education programmes must include experiences in the field. The purpose of such education is to go beyond the provision of 'reference material' to encouraging analytical thinking by all individuals during their activities. It seeks to get people questioning their actions and asking themselves, 'Do I have to do it this way or can I do it better?' or, 'Are there alternatives that will not produce these undesirable environmental outcomes' or, 'What do I need to do to implement these alternatives'. The objectives of experiential learning are; to raise understanding and awareness of the need to consider the multiplicity of possible outcomes; to encourage people to take into account all the effects of their activities, and most significantly, change their behaviour.

Communication is important but the required environmental change takes place through actions:

The words of communicators are themselves of zero value; the only value comes out of the action of those who are receiving the communication (Workshop 9, Department for the Environment, UK 1994, p. 84).

Group activity is good for learning

Group activity and collaboration is a good forum for education and practical initiatives. Collectively, people can be more insightful and more intelligent when they act individually. This is the essence of synergy – where the collective wisdom and experience of the group is greater than the sum of the parts (Fraser, T. in Centre for Resource Management 1996, p. 44). Groups can build on one another's failures and successes and guide themselves accordingly. An expanded network with other initiatives can be a powerful learning tool.

Effective environmental education is about changing values

To achieve better environmental outcomes, the problem is not just one of knowledge but also of willingness to act. Changing values can be achieved through environmental education as well as effective communication, incentives, good practice, and informed debate. It is peoples' values that motivate and enthuse them to change, to be active, and to participate – and to do so voluntarily. Citizens' values can also influence political will through the ballot box. The representation of the Green Party in New Zealand government is an illustration of this.

Environmental education should be targeted

The target of environmental education should not be 'the public' in its broadest and amorphous sense, but people in recognisable assemblies. Effective programmes are described as having been purpose-built to match particular audiences or recipients, whether they be officers or councillors in local government, staff in government agencies, community groups, industry and producer sector groups, students in formal education, etc. General campaigns may encourage people to believe someone else will act, and because they are not the intended target, they are not challenged by the campaign's objectives. In trying to reach everyone, general campaigns run the danger of affecting no-one personally. Informing people that water quality is a concern is not as effective as telling people their local harbour or river has been closed for swimming and shellfish collection because of specific identifiable discharges.

Biodiversity is a concern for the whole population, both urban and rural. However, the promotion of biodiversity issues in the urban communities where 85% of New Zealanders live requires a different approach from that in the rural population. There is a need to gain greater urban support by linking urban activities to biodiversity and removing the concept of conservation being 'beyond the city'. In urban areas the ethic of good citizenship needs to be fostered by promoting recycling, energy and water conservation, planting gardens to attract indigenous biodiversity, and beautifying neighbourhoods. Rural initiatives, in comparison, need to be guided by rural concerns.

Promoting the unique nature of New Zealand's biodiversity

Influencing attitudes to participation requires focusing on attributes that people have a deep heartfelt commitment to, so that the environmental message is communicated in a meaningful way. Partnerships between government agencies, NGOs, and those in the community can help to pin-point issues of local importance that can inspire and make education or awareness campaigns more effective, as the environmental messages must be relevant to the local community.

Resources

The appropriate provision of resource materials also affects the quality of environmental education. Various sector groups (e.g. forestry, agriculture and the minerals industry) have produced resource kits on environmental issues and distributed these to schools. Such initiatives need to be coordinated with the curriculum and checked for substance, as they may be sector-orientated and contribute little to students' understanding of issues such as sustainable management. Teachers may not be experienced enough to recognise industry public relations pamphlets lauded as education material. Out-of-date material also presents a problem, as important questions or relevant issues are not addressed. For example, chemical residues in food, and the effects on ecosystems of herbicides, pesticides, fertilisers as 'side-effects' of the farming system can often be overlooked.

The concept of 'enviro-schools' has been launched to educate young New Zealanders to become more environmentally aware. Guidelines on recycling, energy conservation, tree planting and using environmentally friendly products

were issued to assist schools to include relevant policies in their charters (Ministry of Education, New Zealand 1999).

The internet is being continually upgraded and updated and is an excellent source of information about existing environmental initiatives and other research in the conservation area.

Priority target groups for environmental education programmes

While there is agreement that training the 'educators' is a prerequisite for effective environmental education, there are different views on which sector of the population environmental education should target. It is evident that different programmes are needed for different sectors of society.

A rationale for targeting the formal education sector

Formal educational institutions can help develop society's values by:

- including issues which are concerned with the natural and built environment in teaching programmes;
- setting an example of enlightened environmental management in its own institutions;
- providing a hub and resources for local communities and other organisations in the field.

In New Zealand the national curriculum is the focus for teaching and learning. Currently the syllabus covers some environmental education, starting with nature studies in primary school, and advancing to topics in: the use of renewable and non-renewable resources, and natural hazards in 5th form geography; natural landscapes, urban studies, and development studies in 6th form geography; and (environmental) decision-making processes and natural processes in 7th form geography. Some environmental issues are presented in the social studies (3rd and 4th forms) curriculum as the basis for further study in geography. However, geography, where environmental education is predominantly taught, is an elective subject that only a minority of students choose. Some formal environmental education is also delivered within the science syllabus, but this subject is compulsory only to the end of the 4th form. Another problem is that few teachers have specialised in environment studies so the majority of them are not well qualified to teach the subject.

Given these restrictions, if funding is limited, environmental education may be better focused at the primary school level. Primary education connects with most children, and developing a 'feeling'—an 'ecological conscience' and 'awareness'—at a young age has long-term benefits. Environmental information is also more likely to be shared with families at this stage, so there can be a flow-on effect.

A rationale for supporting informal environmental education

Those currently outside the formal channels of education will continue to be significant resource users for the next 15–20 years and make many critical environmental decisions. For this group, the media is regarded as the most effective mechanism for increasing biodiversity awareness.

For many people the most powerful cultural influences today are the press, radio and television. There is evidence that most people rate television as their main source of environmental information, with the press second, and remaining sources insignificant. The superb natural history programmes which have done much to give meaning to biodiversity for the general public are not the only influence. The way people behave on television can also constitute very influential models … However, TV in particular tends to simplify issues, often focusing on a single species or impending disaster (UK Government 1994, p. 118, 119).

Business-based environmental programmes, such as the Warehouse 'Zero-waste initiative' can also be effective in terms of increasing general public awareness..

5.1.4 Areas where DOC can assist education

DOC's purpose in any education or public awareness programme is to instil an ethic or attitude in people that will lead to accepting responsibility for ensuring their activities are sustainable and do not harm the well-being of the environment. DOC can play a role by:

- encouraging environmental education as a cross-curriculum theme in all subjects not just contained within specific topics;
- assisting in the preparation of teacher training of these subjects;
- providing inservice training to update and upskill teachers;
- providing suitable and locally relevant resource material for use by teachers;
- assisting with teaching and research programmes;
- exemplary environmental practice;
- extending good practice in environmental policy-making and implementation;
- conducting institutional audits throughout its sector;
- providing a focal point for community activities and resources.

5.1.5 Raising public awareness

Effective education can raise public awareness. A number of approaches can assist this aim:

1. Publishing the data gathered by CBCIs and ensuring it is of a sufficiently high quality to be used by government and other organisations and sector groups. The benefits are that group members can see the application of their work and gain a feeling of accomplishment which is conducive to motivating other CBCIs.

2. Providing biodiversity information on the internet, for example setting up a website for interested individuals to find out about CBCIs and other environmental activities in their local areas. An education page that changes monthly could also be provided as a resource for schools and a means of getting people to look at the site.

3. Providing for the community to be involved in environmental issues. Such a venue can provide an opportunity for building more effective working relationships between sectors of the community. Meetings can be used to disseminate information on the state of the environment, discuss the impact of human

activities, etc. A site visit and 'walk through' of environmental issues with those involved is also an effective means of raising awareness.

4. Establishing awards or incentive schemes (financial or otherwise) for environmental excellence for local industries and landowners. The community can be involved in developing the criteria for these awards. A platform for the local business sector to identify best environmental practice can be established.

5. Land users can be encouraged to undertake an environmental review to examine their own practices and impacts. Practical alternatives or initiatives to improve outcomes (energy reduction, input reduction, recycling, etc.) can be developed. The economics of adopting best environmental practice, e.g. how much fertiliser is enough and what is excess and waste, can be demonstrated.

6. Workshops can be held during Conservation Week to develop 'pledges' and 'policies for our place on the planet' which stress personal actions that people can take. Guidelines on how these pledges can be kept can then be published.

7. Awards can be implemented for a 'friend of the environment' for locals involved in conservation work. The NZBS recommends developing and using national and regional 'biodiversity awards' to reward notable efforts or achievements by individuals, businesses and community groups to conserve and sustainably use indigenous biodiversity (DOC & MfE 2000, p. 103).

8. Twin parks or reserves programmes - like twin or sister cities – can be established to raise profiles by publicising the activities taking place in each area.

9. Collections and displays for permanent or roaming exhibitions can be provided. Museums staff have considerable expertise in methods of presentation, and in understanding the interface between science and public understanding. Along with art galleries they are in a position to convey inspirational messages through their ways of displaying material.

10. Lectures, displays and activity programmes can be offered to schools and the community for specific venues, e.g. library, museums.

5.2 PARTNERSHIPS AND NETWORKING

A partnership is an agreement between two or more individuals or groups to work together to achieve common aims. It requires agreement about both means and ends, and entails sharing power, resources (including information), and responsibilities. With the shift in government focus from process (how things are done) to outcomes (the results that happen), sharing decision-making is becoming more common, especially if it leads to more effective, efficient or responsive programmes. Getting desired results is the guiding principle when building, managing and evaluating partnerships (KPMG 1999, p. 5). Ecosystem management also stresses the importance of partnerships and networking to achieve environmental outcomes. The following factors are important to successful partnerships (Wilcox 1998):

• agreement that a partnership is necessary;

• respect and trust between different interests;

• leadership by a respected individual or individuals;

• commitment of key interests developed through a clear and open process;

- development of compatible ways of working and flexible approaches;
- good communication, perhaps aided by a facilitator;
- collaborative decision-making, with a commitment to achieving consensus;
- effective organisational management.

CBCIs are a form of partnership. The attribute that distinguishes them most from conventional partnerships is that they have strong grass-roots involvement and support. They also have the following attributes which may not be common in conventional partnerships (http://www.local.detr.gov.uk/research/particip.htm):

- they address the stated priorities of those concerned (with an emphasis on practical rather than abstract issues);
- they mobilise and work through local leaders (informal as well as formal); and
- they exploit the potential for inviting or actively recruiting participants, rather than waiting for them to come forward.

DOC can play a leading role in promoting partnerships between various key players. Sector partnerships provide a means of introducing conservation concepts and linking groups in the community requiring assistance. There are a multitude of potential partners in the environmental arena. Key players that have significant roles are businesses, NGOs, and research institutions.

5.2.1 Partnerships with business

The Environment 2010 Strategy (Ministry for the Environment 1994) outlines New Zealand's vision for the environment over the next 15 years. A more responsible approach to environmental management by business is a key goal:

> *Increasingly, industry is acknowledging its responsibility as a good corporate citizen to care for the environment, and has an increasing role in developing and implementing environmental policy. Environmental quality is now seen as central to business decision making and an essential component of quality management. Environmental quality is recognised as a competitive advantage in the market, rather than just a cost to the 'bottomline'* (p. 51).

Partnership arrangements can be distinguished from the formalised corporate agreements entered into by DOC and businesses (e.g. Project Crimson, BNZ Kiwi Recovery Plan). These are contractual arrangements that clearly specify the benefits to each party. Partnerships require an ongoing exchange of information and involvement in the decision-making process. The cooperation and involvement of the business community is important to achieve environmental goals, as they have a significant role as the economic drivers of society.

5.2.2 Partnerships with non-government organisations

Non-government organisations (NGOs) are non-profit groups acting in society on the basis of common concerns and specific capacities. 'These organisations are a key part of what we have come to call civil society. Membership of them is what roots us, as citizens, to the societies and communities in which we live.' (Clarke & Reddy 1999, p. 18.) Their typical main assets include: professional

expertise in a specific subject; demonstrated effectiveness in pursuing common concerns; capacity to communicate and establish links at various levels; responsiveness and flexibility; and social standing and autonomy (Feyerabend & Brown undated). A strength reported by one such NGO, the Royal Forest & Bird Protection Society (Forest & Bird), is that they are able to accommodate any interested participants:

> *We provide opportunities for people of all ages, whatever involvement they seek - children, student activists, families, businesses, retired folk, schools, city or rural dwellers* (Royal Forest & Bird Protection Society undated pamphlet).

NGOs also tend to be have strong branch networks that have considerable autonomy in organising local activities and are well grounded at the local level. Where national organisations exist, branches collaborate and co-ordinate through a national framework (usually a council and executive) that meets regularly to oversee the organisation's work. Frequent contact enables flexibility and rapid response to both national and community-based concerns and issues.

NGOs are useful partners as they offer:

- established (and at times extensive) communication networks which are strong at both the national and local level;
- capacity to communicate and establish links at various levels;
- a variety of means to accommodate any interested participants;
- professional expertise on specific subjects;
- effectiveness in pursuing members' common concerns;
- a means for identification of areas of common concern or interest;
- considerable expertise in both informing and eliciting support from the general public (and within communities);
- experience in fund-raising, in addition to harnessing other resources for local projects;
- an ongoing membership which in itself promotes learning about the environment;
- responsiveness and flexibility;
- social standing;
- autonomy.

The principle that an informed and supportive public is necessary for the full achievement of good environmental management has been adopted by environmental NGOs for some time. As these groups rely on their members and the public for funding and other resources, they have considerable expertise in both informing and eliciting support from the general public. Such groups, by their nature necessarily see public awareness and commitment to their objectives as an asset.

> *The first duty of voluntary organisations is generally to be a source of inspiration, information and structured experience to their own membership. In this way they raise the level of personal commitment to environmental stewardship. Some organisations promote this by extensive use of volun-*

teers. The strength of voluntary movements and their expertise in land management, conservation, community involvement and education, are considerable. A continuing increase in membership of voluntary organisations would in itself promote learning about biodiversity (Feyerabend & Brown undated).

Within their charters, mission statements and policies, environmental NGOs frequently make references and commitments to, 'informing and including the public'. For example, Forest & Bird, which has a national membership of over 40 000, aims 'to inform people about the need for environmental protection', and states, 'We work cooperatively with landowners, Maori communities, business and other groups to promote conservation, and we are an open, democratic, membership-driven organisation.' (undated pamphlet)

Some large NGOs maintain their own reserves which provide opportunities for outreach and education programmes. Forest & Bird owns and manages more than 20 nature reserves throughout New Zealand, while the QEII National Trust has collaborated with landowners to covenant over a 1000 protected areas throughout the country. In addition they may employ their own professional campaign and education staff (e.g.Greenpeace, New Zealand Landcare Trust, Forest & Bird, World Wildlife Fund) and run their own education programmes (for example, Forest & Bird organises meetings, seminars, workshops, field trips, and practical conservation projects). It is also likely that NGOs will have their own publications, audio-visual resources, action packs, and other back-up materials that may be useful to initiators of a CBCI.

Many environmental and recreational organisations operate sections for young people. For example, Forest & Bird has approximately 6000 junior members in its Kiwi Conservation Club, while Fish & Game also has a large junior membership. There are other community groups organised specifically for young people that currently include some environmental education element (e.g. Scouts and Girl Guides). Other NGOs operate programmes that could accommodate an environmental education or conservation component, for example Federated Farmers' 'Young Farmer of the Year Award' is a programme that could accommodate a conservation action component into its criteria for allocating awards.

Potential NGO partners in a community-based conservation network include: professional societies (e.g. New Zealand Planning Institute), sector groups (e.g. Pipfruit Growers Association, Federated Farmers), and voluntary community-based 'interest' groups (e.g. Forest & Bird, churches, Rotarians, Lions, sports clubs, Tecorians).

5.2.3 Partnerships with researchers/scientists

The literature provides numerous examples of a need for applied research that can support resource and environmental management, and conservation programmes. For example, the NZBS (DOC & MfE 2000, p. 107) states, 'Gaps in the scientific knowledge of New Zealand's biodiversity constrain its effective management.'

The long-standing reason for forging partnerships with researchers and scientists is their ability to develop new improved tools, technologies and

methods for improving environmental performance. There are mutual benefits, as the scientific and academic community is dependent on links with outside organisations to ensure their research is well targeted. Community members are not only the implementers (who will decide whether to reject or to employ any practical results or outputs) but also a source of information for researchers, scientists and academics about the local environment. Innovative ideas can and do arise out the combination of local and academic know-how. Achieving sustainable management requires an improved two-way exchange of information from scientists to relevant communities.

The Parliamentary Commissioner for the Environment (1997) has identified as a strategic focus a number of 'management systems' including: 'The provision of scientific information for environmental management.' The Public Good Science Fund (PGSF) is the government's major investment in strategic science and technology. Long-term priorities for the PGSF have been developed in terms of the contribution of research to environmental, economic and social goals.

The scientific community has recognised a need for partnerships, and is working towards developing approaches that are collaborative, multi-disciplinary and inclusive of the anticipated beneficiaries (or on-the-ground implementers) in respect of the findings of the research.

5.2.4   Partnership failures

Wilcox (1998) warns that partnerships with the following characteristics are likely to have problems:

- a history of conflict among key interests,
- one partner manipulates or dominates,
- lack of clear purpose,
- unrealistic goals,
- differences in philosophy and ways of working,
- lack of communication,
- unequal and unacceptable balance of power and control,
- key interests missing from the partnership,
- hidden agendas,
- financial and time commitments outweigh the potential benefits.

5.3   MONITORING

Community monitoring is a form of action research that combines a powerful educational component with direct involvement. It can be a multi-directional exercise in shared learning between members of the community, local authorities and specialists.

Monitoring is an essential component of adaptive management and enables land managers and policy-makers to become directly involved as 'researchers' (Bosch et al. 1996).

The National Institute for Water and Atmospheric Research (NIWA), in conjunction with Federated Farmers, has developed an aquatic monitoring system for use by land managers, farmers and community groups. In developing the Stream Health Monitoring and Assessment Kit (SHMAK), NIWA considered the need for easy-to-use equipment as well as how a nationwide community monitoring programme could be facilitated. For details see http://www.niwa.cri.nz/news.html#SHMAK.

Providing monitoring tools and kits to community groups enables data to be collected in a standardised way. It is, however, crucial to provide interpretative tools, so the meaning and significance of data gathered are apparent to those undertaking the monitoring programme.

A large knowledge base already exists for most of the issues managers deal with. Years of experience have provided land managers and policy makers with a wealth of knowledge of their local systems. Unfortunately this information is rarely documented, nor is it available to decision makers on a collective basis. Similarly, much of the valuable knowledge that scientists have accumulated is fragmented, held in different databases, and consequently not always readily available (Bosch et al. 1996, p. 14, 15) . Better methods for sharing data need to be devised.

The NZBS and *Bio-What?* both call for improved means of monitoring biodiversity that provide useful information about key issues and threats. 'There is also a lack of monitoring … In many ways lack of information reflects most New Zealanders' low level of awareness of our indigenous biodiversity and ecology. This gap is serious.' (Ministerial Advisory Committee [on Biodiversity] 2000, p. 20).

CBCIs can provide for practical, 'on the ground', skill bases to be developed and maintained in every region. Web-based technology can make this information readily accessible to others. However, capacity takes time to develop, and strategic planning is needed to anticipate needs for knowledge, information and techniques.

5.3.1 Environmental performance indicators programme

Environmental performance indicators (EPI) are being developed to provide the information to assess the trends in the state of New Zealand's environment. The first national report, *The State of New Zealand's Environment* (Ministry for the Environment 1997), provides a benchmark for future environment reporting. This reporting will be based on indicators for air, freshwater, land, ozone and climate change that are being developed under the EPI Programme by the Ministry for the Environment, regional councils and other government agencies. When there is broad agreement for the proposed indicators, recommendations on the preferred systems, methodologies, protocols and priorities for their implementation are still being established.

To ensure EPI are not just another stand-alone data gathering exercise, it is proposed that there will be a role for community monitoring (Ministry for the Environment 1998b, p. 5).

5.3.2   Community monitoring

The National Agenda for Sustainable Water Management Workshop participants (Pyle 1997, p. 27) identified the following requirements to make community monitoring viable:

- The programme must be wanted by the community, though external initiation may be necessary.
- It needs to be tailored to meet the particular needs of the community concerned (for example, the needs of Maori, kayakers, Fish & Game are different from those of farmers, loggers, etc.).
- Tools, training and education about monitoring need to precede any initiative.
- Funding and commitment are needed.

An impediment to setting up community monitoring is the lack of resources, including kits and training.

Doubts have been expressed in New Zealand about the quality of data gathered by lay members of the community and schoolchildren, but elsewhere doubts have proved unfounded. An Australian study that looked at the quality of catchment data gathered by schoolchildren found it not just adequate but superior, as they tested tributaries not known to professional researchers (Campbell 1994). Groups in the USA (e.g. Global Rivers Environ. Network), Australia (e.g. Streamwatch, Saltwatch, Frogwatch, etc.) and South Africa (Schools Water Project) all have experience with community monitoring programmes. The participation of the public in environmental monitoring is a cheap, untapped source of labour.

Initiatives currently under way in New Zealand include the forestry sector developing monitoring protocols that logging operators can use, and the Auckland Regional Council developing a community monitoring programme with Watercare Services (Auckland). Other examples include Environment Waikato's Habitat Enhancement and Landcare Project (HELP) and the Adopt a Stream (Christchurch City Council) programme, both school-based waterways projects.

With the greater emphasis being placed by the government on science education, technology advances and links through the internet, there is potential for data collected to be held on a centralised databank so it can be used by industry, government and schools. Using standardised kits for national consistency will enable data to be exchanged or pooled for comparative analysis.

Good overseas examples include the Landscape Conservation Unit, part of the Australian Nature Conservation Agency, which keeps details of projects that the public can be involved in and provides a contact number for more information. Some examples of these are the Watch projects that operate across Australia (Greening Australia Ltd 1995, p. 23):

Reservewatch: A residents' action group that protects local parks against vandalism and graffiti.

Koalawatch: Residents phone a hotline or fill in forms to report sightings and locations of koalas.

Drainwatch: Irrigators and their families are issued with bottles and asked to sample water from irrigation drains for testing.

Frogwatch: Kits are provided to interested members of the Victorian community to learn to identify frogs, their calls and their habitats.

5.4 FUNDING

Central government currently supports a number of programmes relevant to community-based conservation initiatives, including providing funding for the Natural Heritage Trust, the Forest Heritage Fund, the Historic Places Trust, the New Zealand Conservation Authority, Nga Whenua Rahui, the Fish and Game Council, the QEII National Trust, and the New Zealand Lottery Grants Board. Such programmes endeavour to encourage environmental and conservation action at the local level. The MfE also provides funding assistance (through the Sustainable Management Fund) for nationally relevant initiatives. For funding sources for community groups, the FUNDVIEW database is available. It has information on funding available from various agencies and trusts, including government discretionary funding and local government funding (http//www.fis.org.nz). While CBCIs are ideally self-funding (through the use of membership subscription fees, fund-raising activities, direct cost sharing, etc.) many community projects will not get off the ground without government funding or other forms of resourcing and support.

Local businesses, sector groups, and local authorities may be willing to provide support for CBCIs, particularly if they benefit from their sponsorship (for example, through promotions, publicity and goodwill for the business, industry, or organisation). In approaching potential sponsors, it is important to have an idea of what benefits there might be for the sponsor (e.g. show how their logo might be included in publicity about the project). Informal approaches to targeted organisations must provide sufficient information for the potential sponsor to make an informed decision about their involvement in the initiative. Rather than donating funds for projects, contributions of materials, equipment, administration services, or advertising may be sought from local individuals and businesses. Such contributions provide valuable resources for CBCIs, and enable others in the community to be included in a project. It is important to keep a record of all such 'in kind' contributions, including the voluntary labour of participants, as these can be costed and counted towards the organisation's 'share' of a project, particularly if external contributors have ceilings on the proportion of funds they will make towards a project (e.g. 50% of the total cost). Regional councils and Work and Income New Zealand (WINZ) have information about set rates for in-kind contributions.

Project organisers (whether a citizen group or a government agency) can tap into several related funding programmes at the national level, and at the regional and local levels. All funding programmes, regardless of whether they are provided by central or local government agencies or from other sources, require local involvement to be translated into on-the-ground results. The onus is therefore on members of the community to come up with local initiatives, to apply for funds as appropriate, and to employ these funds to their best advantage. However, communities will not do this if they are unaware of the

opportunities available. Donor agencies can thus take a proactive role in raising public awareness that funds exist for specific projects.

Initiators of CBCIs need to be aware that sourcing funding opportunities is a necessary task throughout the life of a project. As costs associated with developing and establishing an initiative vary according to the scale, the time frame, the approach taken, and the stage the project is at, it is appropriate to design an implementation schedule taking into account the needs of the project and also the eligibility for funds from different sources. Part of the strategic plan of a CBCI should cover making applications to potential donor agencies, and the appropriate sequence of funding avenues. For example, some aspects of a programme may attract funding if an individual and not a group applies for assistance, or vice versa depending on the donor agencies' criteria.

Some donors will grant funds only to charitable trusts or non-profit groups, while this restriction is irrelevant to other donors. Some will grant funds for research (e.g. analysis of community projects so that initiatives can be translated into principles and approaches able to applied nationally) while others focus on 'seeding-costs'. Some will provide equipment (e.g. fencing), while others may provide wages (e.g. for an archaeologist), labour (e.g. Conservation Corp), or expertise (e.g. council advisors for developing 'Farm Plans') for particular undertakings. Some focus on specific issues (e.g. educational opportunities), others on specific types of environment (e.g. habitat for game birds). Consequently, it is inappropriate to stipulate an 'ideal' form or structure for a community-based initiative to attract funding, as there is such a diverse range of opportunities. It is more appropriate to provide all the relevant information to initiators and their collaborators so they are able to design an approach to match the local needs of their initiative.

Having stated that, some general rules of thumb do appear to apply. One is that small informal groups may have a limited capacity to attract external funding. Therefore, the more people in the community who can be attracted to join and commit to the initiative, the more likely it will be that the initiative will receive financial and other support. However, community initiatives must find their own optimal size and the appropriate relationships between participants according to the needs and objectives of the initiative. Considerations of the requirements of donor agencies, therefore, should only be seen as a guide to the CBCI and not as determinants in the approach the initiative should take.

5.4.1 Dangers of external funding for community-based initiatives

The are dangers associated with external funding for community-based initiatives including the possibility that reliance on an institution for funding can dilute the advocacy role of an organisation because of its inability to speak out against that organisation.

External funding agencies may also want to prescribe the agenda or objectives, or the ways in which the particular concern is to be addressed by the community (for example, in setting criteria for beneficiaries, in promoting technical rather than behavioural solutions). Any 'binding' to the donor can undermine the concept of a community initiative, as CBCIs are grounded in the

need to retain decision-making control at the grass-roots level. Communities need to take care that the objectives of the funding organisation are consistent with their own objectives. Any external objectives not shared by the community may not be met in the long term.

Monetary incentives to entice the local population into behavioural change are not, by definition, participatory community-based initiatives (Little 1994, p. 354). There is a danger of temporary 'conversion' while the project is funded, and reversion to old practices when funding ceases. True participation implies personal commitment, not a purchased action. Successful donor partnerships therefore facilitate communities to carry out actions that they would choose to do themselves, if they could afford to.

Care needs to be taken with the initiation of capital-intensive projects to ensure they can be completed after 'start-up' funds have been exhausted. Such projects require communities to develop strategies for completing and maintaining the programme; otherwise the external agency may be compelled to provide ongoing funds to protect their initial injection of funds.

Funding should not result in the introduction of power differentials within the CBCI, with those who win external funding attempting to dictate to others. This can cause division and discourage ownership of the initiative by community members on whom the initiative's success may depend.

Accountability and transparency are important aspects considered by funding agencies. The New Zealand Lottery Grants Board is an example of a donor agency that is concerned about the ability of its recipients to achieve the intended goals for which they have been allocated funds. It makes efforts to audit the communities' projects and programmes and to hold recipients accountable for delivering the expected results. There have been non-compliance cases where recipients have been made to return funds that have not been used as intended by the New Zealand Lottery Grants Board. The inference is that those making funds available, those applying for funds, and all those participating in a CBCI must establish a clear understanding of their respective roles, rights and responsibilities in the project or programme. It is therefore appropriate to develop guidelines for the relationship between the benefactors of a CBCI and the community recipients and implementors of the project.

5.4.2 Forming a legal entity to manage a CBCI

Being a legal entity has the advantage of providing a key eligibility criterion for access to certain community project funding programmes. Another advantage is that it may make it easier to link with other formal programmes, such as employment schemes run by WINZ (the Conservation Corp, Taskforce Green, and the Community Taskforce programmes). Becoming a legal entity may also help to maintain the programme for a longer term and allow the group to expand its activities into complementary community-based programmes. For example, by taking on the task of a community-based training provider, a legal entity may get access to additional funds to run its own training courses.

A formal structure can also be useful when a group aims to run a large project that will handle a lot of money, as sound financial management practice,

accountability mechanisms and more rigorous processes and rules for management are more likely to be applied. There is, however, no reason why smaller informal groups would mismanage funds or not establish sound management processes and rules. Informal groups can file the appropriate forms with Inland Revenue to be exempt from paying tax (including withholding tax), and most banks will also waive their fees for non-profit groups.

Formal structures available in New Zealand are to form an incorporated society, or a charitable or public trust.

Formal structures do bring certain disadvantages. These are associated with having to comply with IRD tax and insurance requirements. They also relate to the dynamics of the group. Legal entities necessitate some form of bureaucracy (for accountability mechanisms) and therefore have the potential for a decision-making hierarchy to develop within the group. The group officials may then be relied on to undertake all organisational tasks.

Information on legal structures and other aspects of community development can be accessed through the Department of Internal Affairs' Community Development Advisory and Information Centre (http://www.community. dia.govt.nz).

5.5   CONCLUSION

Any project aimed at involving the community in conservation enhancement needs to address at the outset how it is going to increase public awareness and move beyond passive acknowledgement that problems exist to implementing positive action.

Education and involving people in monitoring are practical ways of achieving this transition. So is the formation of partnerships and CBCIs. Adequate funding is also a prerequisite for community involvement. As environmental degradation is generally the result of activities undertaken for economic gain, it is unrealistic to expect individuals or organisations to work towards restoration if it imposes a significant economic burden.

6. Ways to support the establishment of CBCIs

It is now widely acknowledged that the extent and complexity of environmental problems requires the synergy of partnerships if conservation gains are to be achieved (DOC & MfE 2000). Pressure for collaboration is also the result of increased citizen expectations with regards to participation in decisions that affect them—a consequence of higher educational standards, more open government processes, and technology changes (Fukuyama 1995).

Lawrence (1994, p. 15) believes that one of the reasons the environmental movement has grown rapidly is its commitment to forging allegiances and building a common vision across sectors. These processes are time-consuming and exhaustive in terms of human resources (Grant 1997) but the anticipated long-term pay-off—a community that takes greater responsibility for protecting its environment—makes the effort worthwhile.

While CBCIs by their very nature are grass-roots and bottom-up organisations, there are a number of ways in which DOC or any other government agency seeking community involvement can advance their establishment.

6.1 GUIDING PRINCIPLES FOR CBCIs

- The economy, environment and people are equally important and their health is interlinked. A healthy environment is required for a healthy economy. We need healthy water, soils and air to maintain our agricultural, tourism and fishing industries. We need these industries for employment and income.

- Natural capital is an asset—natural capital includes plants, animals, ecosystems, scenery and landscapes. Biodiversity needs to be maintained, as our quality of life and good health is derived from these natural assets.

- People have to take responsibility for what they do and use. Each person needs to minimise his or her impact on the environment.

- Localised and community solutions should be a first approach rather than a back-up measure.

- Different communities and circumstances require different responses and support. Professional advice, administrative assistance and expertise are needed to complement local knowledge. However, support should not encourage dependency.

- It is important to work with existing and incipient groups and not displace them. Past community experience, and existing knowledge and capacity need to be strengthened and worked from.

- Community ownership of initiatives is essential. Genuine grass-roots development cannot be imposed from above.

- CBCIs are more effective if they include all stakeholders. For example, any rural initiative needs to include families and community members, not just landowners—the broader the base of community representation, the better.

- Initiatives need to be issue-driven, with specific goals.

- The organisational structure should not precede the local expression of interest, and the organisational models should not be imposed from outside.

- An integrated and collaborative approach across all agencies is needed.

6.2 PRACTICAL ASSISTANCE

Collaborative planning models (see Table 3 for examples) all identify three key phases in establishing community-based initiatives: problem-setting, direction-setting and implementation. For effective ecosystem management it is also desirable to add the step of providing for adaptive management.

TABLE 3. COMPARISON OF COLLABORATIVE PLANNING MODELS.

Source: Margerum 1999, p. 182.

	Susskind & Cruikshank (1987)	Gray (1989)	Julian (1995)	Selin & Chavez (1995)
Planning phase: Problem-setting	1. Get process started 2. Identify and select representatives 3. Draft protocols 4. Set agenda 5. Conduct joint fact finding	1. Develop common definition of problem 2. Commit to collaboration 3. Identify stakeholders 4. Establish legitimacy of stakeholders 5. Establish a convener 6. Identify resources	1. Identify focal organisation 2. Identify collaborative planning group 3. Secure financial resources 4. Appoint a facilitator 5. Specify problem/issue 6. Assess capacity and identify stakeholders	1. Recognise interdependence 2. Identify stakeholders 3. Reach consensus on legitimate stakeholders 4. Identify common problems 5. Identify perceived benefits and salience to stakeholders
Planning phase: Direction-setting	1. Invent options for mutual gain 2. Package agreements 3. Produce a written agreement 4. Bind parties to their commitments 5. Ratify agreement	1. Establish ground rules 2. Set agenda 3. Organise subgroups 4. Conduct joint information search 5. Explore options 6. Reach agreement and close the deal	1. Establish neighbourhood collaboration process 2. Define system goals 3. Document process 4. Specify outcomes 5. Define intervention model	1. Establish goals 2. Set ground rules 3. Conduct joint information search 4. Explore options 5. Organise subgroups
Implementation phase	1. Link informal agreements to formal decision making 2. Monitor 3. Create context for re-negotiation	1. Deal with constituencies 2. Build external support 3. Structure implementation 4. Implement 5. Monitor the agreement and ensure compliance	1. Specify organisational agreements 2. Implement activities /programmes 3. Measure outcomes	1. Formalise relationships 2. Assign roles 3. Elaborate tasks 4. Design monitoring and control systems

6.2.1 Problem-setting

The problem-setting phase involves the initial working group identifying issues, goals, the communities of interest and the context and history of previous efforts to involve the community. The ecosystem management approach

emphasises the need for both the environment and the interaction of people and cultures to be taken into account. Important steps at this stage are:

Determining benefits for the local community

A clear perception of effective and concrete benefits is essential to generate interest. While information and education activities give people reasons to implement permanent conservation practices, economic incentives and technical gains often stimulate decision-makers to adopt these practices (Osterman et al. 1989). Goals need to be realistic and not too large so the community can see what they will get out of a project (Pyle 1997). Goals also need to be established at the outset, but may change as the project progresses.

Providing clear rationales for improved environmental performance and incentives for participation are co-requisites for most successful CBCI programmes.

Agencies combining to present benefits as a comprehensive package to the community is often a more attractive way of generating interest than expecting groups to negotiate incentive programmes from several different agencies (Feldman 1994, p. 401).

Identifying values

Any initiative needs to be suited to the concerns of the community, its underlying values and the local economic conditions. Thinking strategically about what can and should be done by government agencies, non-government agencies and individuals within the constraints of these confines, will affect the success of the project.

If a government agency is facilitating an initiative it is especially important to carry out 'values research' to determine what people value. This can be done using focus groups or other techniques, such as meetings. This helps identify the priorities of the local community and issues of concern to be worked through, such as environmental protection, better governance, and environmental education.

Encouraging stakeholder involvement

All directly affected people, including those likely to provide the necessary resources and assistance, as well as those likely to provide resistance, need to be identified and involved at the outset.

Stakeholders come from a range of areas such as local community members, business, NGOs, rural organisations, educational, science and research, and government agencies. Specialists have an important role providing comprehensible information to assist the wider community understand issues, and the associated scientific and technical data. All stakeholders need to participate in generating options and determining the way forward.

Providing a catalyst/initiator

Bottom-up action usually requires a catalyst or initiator with far-sighted leadership ability. This is necessary 'to create the facilitation framework to enable the grass-roots stuff to work' (Campbell 1994a, p. 52). Resource management agencies with good networks within the community can play a

role in identifying potential individuals or groups. Bringing people together in workshops (Comrie & Cheyne 1999) and providing assistance in this respect can be a critical step in the formation of CBCIs.

6.2.2 Direction-setting

Any new CBCI usually requires guidance at the outset in areas such as developing procedures for the duration of the project and building up resources. The direction-setting phase involves detailed planning and information gathering as well as setting up the initial framework for working together:

Media promotion

Early promotion to ensure the public is aware of what is going on is important. Such exposure promotes the commitment of the initial partners to the project and sets in motion some immediate actions. It also serves to provide opportunities for any additional interested person or stakeholder to come on board. Each step in implementing the project can be publicised: e.g. the launch of the project, the announcement of a project coordinator, progress reports, and significant events. According to Greening Australia Ltd (1995, p. 120), few things engender support like a taste of success, or successful bids for funding, or donations of resources, or a high turnout of volunteers to an event.

Establishing a knowledge database

Building up the required database of scientific, iwi, and local knowledge is an important initial step in establishing a CBCI. National resource management agencies, such as DOC are well positioned to be a source of information on innovative approaches and best practices already in place. Such a service can assist decision-making by providing easy access to objective technical information and successful projects.

Ensuring property rights are understood

For individuals to make management decisions, either by themselves or as members of decision-making groups, there needs to be a clear understanding of how resource management regimes (RMA, Conservation Act, etc.) and other legal requirements impact on property rights.

Providing linkages to government agencies

Establishing linkages that bind relevant government agencies into community-based relationships of mutual responsibility and benefit, are important. However, when external agencies agree to be stakeholders in CBCIs, they should be 'on tap, not on top' (Carew-Reid et al. 1994).

Long-range vision or direction

A strategy for achieving objectives is critical to the success of any CBCI, and assistance with articulating it is usually essential. This, like the goal setting stage, needs to be agreed on and communicated to all stakeholders. Though the strategy is not set in concrete—and will probably need to be adapted over time—it provides a way of determining if the project is on target and a means of measuring success or failure.

Strategies need to be long term but should include projects with well defined short-term outcomes (Pyle 1997). They should:

- Set achievable objectives and targets in terms of anticipated outcomes.
- Identify any impediments to achieving these objectives.
- Design a plan of action (a sequential 'achievement path', identifying steps in progress) to manage the programme and to overcome impediments.
- Monitor progress towards achieving the objectives, and where necessary adjust the programme's time-scale or provide more effort to overcome obstacles.

The choice of strategy objectives should be tactical—few enough to be achievable, encompassing enough to ensure the support of participants and prevent the strategy being fragmented and losing coherence, and clearly defined and measurable enough to assess progress.

> *Partnerships—at whatever level—must have a **long-term view** as well as short-term objectives. Sustainable development [and biodiversity conservation] is an unending process* (Holdgate 1993, in Department for Environment, UK 1994, p. 6).

Resource management agencies can provide the expertise often lacking in the community to put in place a strategy to guide the work of a CBCI.

Establishing good communication

A communication strategy (two-way, as opposed to promotion) is also a vital factor in successful CBCIs. The aim is to ensure that decision-making processes remain open, that all parties are kept informed, and that broad community support is actively pursued. Care must be taken to accommodate the distinct needs of different sectors and to ensure that local resource management agencies are responsive to local preferences. Targets for the communications strategy will include other relevant agencies, community groups who have supported the process, and the wider public. Communications can be achieved with newsletters, progress reports on radio or television, regular columns or major articles in local newspapers, etc. Reporting community initiatives to the wider public is important, as it publicises efforts and success, assists in the recruitment of new members, and can expand the efforts of the group.

Government agencies can assist with networking and establishing good communication channels by having a specific contact person assigned to a community project.

> *Communication is the lifeblood of a strategy—communication is a means by which participants exchange information with each other about values, perceptions, interests, ecosystems, resources, the economy and society; participants reach agreement with each other on actions; values are changed or strengthened and knowledge is imparted; and participants inform others about the strategy* (Carew-Reid et al. 1994).

Ensuring transparency

The initial direction-setting stage is a good time to ensure that the rationale for stakeholder involvement in community projects is transparent.

> *Partnerships need **transparency**. The intentions and actions of each partner should be clear to the others at each stage. The largest single cause of*

*failure is real or perceived breach of trust. And such transparency can help ensure **accountability** by making each partner's responsibilities to all the others evident. Sometimes that accountability can be reinforced by **formal agreement** between different sectors including pressure groups, companies and governments* (Holdgate 1993, in Department for Environment, UK 1994, p. 5).

To succeed, partnerships need openness and trust and the ability to work together to establish common goals.

Determining resource contribution

Partnerships require contributions from each partner in terms of resources, expertise and ideas. Legitimate stakeholders should not be excluded because of lack of resources. Genuine attempts to ensure that all those involved benefit and contribute in some way creates the climate for the partnership to grow and not be exploitative.

Processes for conflict resolution

Establishing agreed processes for conflict resolution at the outset can assist groups to work through difficulties as they arise. Where there are complex cultural and historical issues it is important that points of agreement and disagreement be accommodated and used in a constructive and positive way. Assistance with mediation is best provided by an outside party whose identity is agreed on before the need arises.

Securing a facilitator

Decision-making in the context of CBCIs should ideally be a win/win situation for everyone involved. The provision of a neutral third party facilitator with good listening and process skills can be instrumental in getting CBCIs established, especially where the community lacks cohesion (Pyle 1997, p. 90–91; Fitzgerald 1999).

6.2.3   Implementation

The implementation stage involves formalising the establishment of a CBCIs and getting action under way.

Formalising CBCI status

A legal trust or structure may be required to qualify for funding. Most CBCIs therefore need to formalise their existence, and resource management agencies can provide assistance with this process.

Contracts

To carry out the aims of a CBCI, formal written specifications of expected outputs, monitoring responsibilities and recompense may need to be drawn up in a professional manner. Again, resource management agency expertise can contribute.

Practical projects

One of most pressing needs of CBCIs is the requirement to successfully carry out projects and achieve something concrete (Ritchie 1997).

Setting up first step projects that link in with the overall objectives and give participants the sense of achievement are important in the set up phase to maintain enthusiasm and commitment.

Providing a broad overall framework

While CBCIs work at the grass-roots level and implement solutions specific to the local situation, government agencies can keep groups in touch with what others are doing and how their work fits into a 'bigger picture'. This role requires a commitment of staff time so that linkages are ongoing. A combined initiative with other government organisations (e.g. DOC, regional councils, district councils) may assist staff in this role.

Encouraging community involvement and interaction is a long term process and not a single high-profile exercise (Comrie & Cheyne 1999, p. 5). Resource management agencies need to continually build links with the community so that community initiatives can develop from the goodwill of previous interactions.

Providing educational opportunities

Promoting and assisting educational opportunities can contribute to both the long-term objectives of resource management agencies and the immediate needs of the CBCI. Education may focus on areas such as incentives to join an initiative, changing land use practices, demonstration projects, and monitoring programmes. One effective form of education is to provide support and training to participants by providing links and visits to similar programmes elsewhere.

Effective monitoring

Effective monitoring needs appropriate indicators that incorporate both qualitative and quantitative data as well as systems for analysis and generating progress reports. Resource management agencies have the expertise to work with the community to select or develop relevant ecosystem health indicators and determine the best way of communicating these. Reporting the results of monitoring allows the community to be involved in evaluating the success or failure of a project and contribute to the continuing process of discussion and adjustment.

An assessment of changes to the environmental conditions is by no means an easy, or an exact science. It is important to have 'snapshots' at particular stages of implementation. Resources will therefore be needed to make periodic 'time-slices', which can be used as benchmarks for assessing change. From the broader perspectives, the best environmental indicators will be those that are consistent with the requirements of the relevant state of the environment reporting systems. Appropriate community-based project indicators are important, as often an agency that contributes funds may require some measure of progress in order to make additional funds available.

> *The key is to select indicators which are most easily understood, measured and recorded, which give the clearest picture of what is being achieved or lost, and which thus indicate the effectiveness of planning and management* (Greening Australia Ltd 1995, p. 119) .

A series of photographs to record the development of a project can be regularly carried out by resource management agencies. A 'before and after' series of pictures provides impressive documentation for displays and presentations (Greening Australia Ltd 1995, p. 119). Resource management agencies also have the expertise to provide visual data representation that is easy to comprehend using GIS (spatial data), graphs and tables (statistical data), or diagrams (process data).

6.2.4 Adaptive management

Evaluating outcomes and setting in place adaptive management practices is an important aspect of maintaining a CBCI. There is a need to be innovative and flexible. If one approach fails, others can be tried. This allows for continual improvement as knowledge increases. Many initiatives tend to be on-going programmes because they evolve, expand their objectives and set new goals, targets and projects.

Adaptive management practices for CBCIs

Once an initiative is underway, the focus shifts to maintaining momentum and keeping the community involved. Greening Australia Ltd (1995, p. 118) believes progress reports are important to maintain momentum. Providing a clearing-house mechanism for such reports can act to affirm the CBCIs work and provide a means of discerning ideas, disseminating lessons learned, and making the necessary changes. Positive feedback and assistance from statutory agencies helps maintain the enthusiasm of the participants.

All projects require adaptive management over time. Changes to policy and plans will present both opportunities and hurdles. Updating and streamlining a project's action plan will often be necessary. The results of monitoring activities will need to be analysed and the programme adjusted in response to findings. Opportunities for influencing the actions of other agencies will be available and groups will need a strategy for responding to all these changes.

Providing continuity

'Burn-out' is a characteristic of all voluntary projects, so new people may need to be recruited into projects while others may need to stand down for periods of time. Resource management agencies can actively promote the need for involvement and if required assist any transition period where membership is lacking.

Ensuring resource management agencies are adaptive

Adaptive management is also required of government agencies. Government agencies may need to move from a predominantly regulatory mode, to an extension mode, or from a first phase initiatory mode to a more analytical and advisory role. They may also choose to withdraw completely if the programme can run independently (Murphree 1994, p. 426).

6.3 BARRIERS TO SUCCESS

A number of potential problems, barriers and hurdles that can cause CBCIs to fail, are identified in the literature. These exist at national, regional and local levels. Though the points raised may repeat some of those in earlier sections, they have been incorporated for easy reference.

6.3.1 Institutional factors

Resistance to integrated management

A critical tension revolves around the question of meshing narrow agency mandates with the broad aims of community-based ecosystem management and overcoming problems with bureaucracy. Campbell (1994a, p. 52) cites inflexible institutional cultures in resource management agencies as one of the biggest constraints in Australia.

Government agencies tend to protect their traditional domains of influence and authority, and are also reluctant to take responsibility for implementing those parts of conservation action plans that are not within their usual field of endeavour. An influential sponsor or catalyst may need to be found who can work to change the status quo within the relevant government institutions. That catalyst will need to motivate each relevant government agency to adopt an operational approach that can accommodate and facilitate CBCIs.

Lack of response to grass-root signals

It is frequently asserted that CBCIs cannot be imposed on a community. There must be signals emanating from members of the community that the 'time is right' for a community-based programme; otherwise any initiative may be short-lived. Knowing when the 'time is right' is often seen as a hurdle to initiating a programme. Signals can be many and varied, ranging from criticism and complaints about current environmental conditions or environmental management practices, to suggestions from the community for specific projects and programmes. Whatever the early signals, it is necessary for relevant government agencies to be able to pick them up and expand the circle of interest to include a wide representation of the community, to determine if a partnership can be formed.

Preference for 'hands-off' methods

King (1996) found that 'hands-off' methods such as education, research and participatory action were preferred by both farmers and professional staff in government agencies. These approaches may, however, need to be reinforced with more direct incentives and disincentives to stimulate the focus needed for community action to bring about change.

Participation not valued

There is a need to change the approach to conservation by government agencies and to view 'grass-roots'/'bottom-up' initiatives, 'empowerment', 'community participation', and 'community consultation' as positive attributes that can be built on and actively promoted. Support must be provided for staff at local levels to form partnerships and participate in multi-stakeholder groups.

Participation is a means of long-term capacity building to promote conservation gains. Most case studies treat participation as a means to an end rather than as a primary objective, despite a continually reiterated need to instil a conservation and sustainable management ethic into the community.

6.3.2 Social components

Personal inertia and a reluctance to change

The literature describes how 'personal inertia' can be anticipated from many people, both within the community and in government institutions, and that overcoming this presents a challenge (Nagel 1987; James 1990). The reasons for a 'reluctance to change' are varied, necessitating a diverse range of incentives to secure the involvement of important sectors and groups.

Obstacles to participation

There are numerous obstacles to participation—both individual and institutional. Just as a visible environmental threat provides the impetus for the development of a CBCI, the converse is true. Conservation activity is difficult if the local population does not perceive a crisis or threat (Little 1994, p. 353).

The Parliamentary Commissioner for the Environment (1997) describes the ability of community groups to participate in environmental management as limited by factors such as:

- the amount of time people have to devote to involvement;
- the ability to access information;
- the ability to fund expert assistance.

Government agencies are in a position to assist groups to overcome these barriers by committing their staff and resources to appropriate projects.

Lack of capacity

Communities often do not have the capacity to establish and develop initiatives on their own. In addition, there may be conflicts within a community or economic considerations that override conservation concerns. Communities therefore need allies and assistance. Support can come from outside agencies provided that responsibilities are clearly defined and reviewed periodically so any potential to subvert community control is recognised.

> *To counter this potential for subversion, clear priorities should be specified for all linkages and their components. Communal interests, responsibilities, and authority should be paramount. Specific regulatory authority retained by the state should be clearly defined, both in scope and mode, and exercised in a sensitive and supportive manner... The reciprocal rights and responsibilities specified in these linkages also need to be reviewed and revised periodically. Finally, external actors should recognize the potential danger of linkages subverting rather than facilitating community-based conservation... Regular dialogue between communities and external agencies should help to monitor the situation* (Murphree 1994 p. 417).

Unrealistic understanding of local social dynamics

A good understanding of community social dynamics is required to appraise the people who are driving any initiative. CBCIs should be self perpetuating, and not reliant on just a few key individuals who may move out of the area or wish to withdraw or stand down. This necessitates making initiatives useful, meaningful, and interesting to those involved in a project, so there is a sufficient level of involvement to ensure long term viability. CBCIs should not be too big, or have boundaries that do not reflect social groupings.

Inequality between potential collaborators

Inequality between actual or potential partners in terms of access to resources, or considering some people's views less important than others, can generate a lack of trust or complete exclusion from a group (Holdgate 1996).

> *Care must be taken to address the loss of identity by any of the partners due to inappropriate power relationships and domination by more powerful partners. It is also advisable to avoid staffing partnership organisations with people who are only accountable to one of the partners* (Workshop 7, Department for Environment, UK 1994, p. 80).

Long histories of conflict between interest groups may preclude some localities as candidates for CBCIs (Little 1994, p. 358). Similarly, bitter memories of broken promises made by government and other external organisations can call into question the validity of CBCIs as an option.

Group dynamics

Unless groups at the outset establish some mutually acceptable ground rules and an understanding of the different values among stakeholders, poor group dynamics will inhibit successful partnerships.

It is possible for some to feel undervalued if one group captures the limelight in any publicity, or takes credit when many have contributed, or becomes overbearing in making decisions (Pyle 1997). Not involving particular people or groups in a project can cause conflict in the community. Successful CBCIs are not 'clubbish', in that membership is perceived to be by invitation only, or confined to a particular group within the community—e.g. men only, or established farmers only (Campbell 1994a; Fitzgerald 1999).

Little (1994, p. 358) describes how excluding women from CBCIs in many countries, because of cultural norms, has caused initiatives to fail, as the activities of women were crucial in determining land management practices. If a group's support is needed or women are expected to contribute labour and other resources, then they need to be included early in the design of the project. For example, the inclusion of rural women has been a motivating force in the success of Landcare programmes in Australia. They tend to read material and look to the long-term while their partners deal with more immediate issues.

Economic barriers to changing current practices

Land management practices improve more for economic reasons than environmental considerations, and the most commonly identified barriers to more sustainable practices are economic in nature (King 1996; Bennett et al. 1999). An important policy implication is whether the preferred methods for

implementing sustainable agriculture such as education and further research, can actually overcome the perceived economic barriers to achieving sustainable agriculture (King 1996, p. i-ii). Financial support or other incentives (such as facilitation, access to expertise, practical information, material contributions, voluntary labour and encouragement) may need to be provided to progress issues that have no visible benefit to the landowner but involve costs or effort to change production practices.

Barriers to tangata whenua involvement

Voluntary participation is commonly cited as a crucial feature of effective participatory processes. Many iwi have collaborative initiatives in place or in the pipeline (for examples see Sunde et al. (1999, p. 129,131), but, for others, the capacity to become involved is limited. Inclusive approaches that do not cause alienation between Maori and government agencies are necessary to improve the management of some Maori ancestral lands and resources. CBCIs have the potential to build capacity within iwi and hapu, if they are structured in an appropriate way. Processes for participation should be designed with the needs and abilities of participants in mind.

For effective CBCIs involving Maori, the following issues identified by the Parliamentary Commissioner for the Environment (1997) need to be addressed:

- Recognition of kaitiakitanga, tikanga Maori, and traditional expertise and knowledge, and the contributions that iwi and hapu can make. Cultural and local knowledge is frequently undervalued.

- Limited resourcing for tangata whenua. Training in government processes and systems is often required.

- Limited acknowledgement and use of the policies already prepared by some iwi for management of natural resources and other taonga in their areas.

- A lack of commitment by some public authorities to actively involving tangata whenua.

Other barriers to Maori participation include: the ecosystem approach, where boundaries may not correspond to tribal or rohe boundaries; ignorance of cultural values; perceived takeover by government agencies; and designing proposals that are not geared to the local context.

Maori are important partners for many CBCIs, and participation needs to be encouraged. Raising community awareness of the environmental concerns and issues relevant to local Maori can be progressed through CBCI processes. Increased understanding of the shared, mutual and complementary interests of Maori and the wider community will lead to alliances and partnerships at the local community level.

Poor awareness of biodiversity/environmental issues

For successful CBCIs, a willingness to participate and change must come from within the community itself. Strong catalysts and sponsors for CBCIs must reside within the community. If these potential sponsors and leaders appear to be 'dormant', government agencies may need to provide the impetus to activate or mobilise them.

One way of doing this is to raise public awareness about environmental and conservation issues. This can motivate people to identify similar issues in their immediate surroundings, to act as leaders or participate in CBCIs. Environmental education is the most frequently cited means of motivating people to participate in conservation activities.

Environmental education initiatives are under way at various stages around New Zealand, but the many programmes and activities are not well coordinated, integrated or effective, particularly in respect to sharing information, integrating educational activities with practical projects, and building partnerships.

Unrealistic objectives and expectations

It also needs to be accepted that CBCIs have limitations and are not the panacea for all local environmental problems (Little 1994, p. 369). Excessive expectations about the merits of participation and community-based conservation initiatives can result in failure to achieve targets and loss of confidence which can effect future initiatives. Imposing systems from outside is also a risk as it is important that CBCIs determine their own solutions.

> Solutions need to be appropriate to the context; bitter experience has shown that ideas and methods imposed from outside will not win confidence and be taken forward (Holdgate 1993, in Department for Environment, UK 1994, p. 4).

Sustaining voluntary effort long-term

The question of how to sustain voluntary effort without suffering 'burnout' among key individuals at a community level is crucial to long-term effectiveness. If groups have been formed for the wrong reasons, long-term viability is unlikely to result. Likewise if groups are inactive or poorly run, enthusiasm will wane (Campbell 1994, p. 38). There is also a danger that structures designed to assist long-term viability may become bureaucratic and thus erode the ability of the CBCI to be innovative and participatory.

Sourcing resources for initiatives/projects

Finding sufficient resources to allow an initiative to get off the ground can be a major stumbling block to any community-based project. Creative and transparent ways of providing the resources to support initiatives are needed. Where there are overlaps in responsibility, some means of sharing these costs between relevant agencies is required. Any community guide for obtaining funds needs to be accessible and not overly complex. An inadequate number of participants may also be a resource constraint – the ability of the group will be stretched and progress slow, despite the enthusiasm of members.

Lack of long-term commitment of resources

Short-term financial inducements that can be withdrawn at any time are not likely to generate the commitment required for CBCIs. Temporary solutions and a lack of institutional commitment are likely to be mistrusted (Blackford et al. 1993) and do not build the long-term relationships needed to achieve conservation gains. The efforts of the various agencies and individuals involved

need to be sustainable over the long term. Funding commitments need to be based on the achievements of the project, not short-term departmental budgets.

The continuity of people working on a community project and ongoing funding is a significant issue that influences a project's success. Often the commitment of authorities is required to ensure the continuity of projects. It is the early stages of setting up an initiative that is the critical stage for getting people and organisations involved in projects, and thus ensuring project continuity (Pyle 1997, p. 90).

The level of involvement of government agencies and their commitment to funding needs to be clearly established at the outset. Conservation measures will always be influenced by the availability of resources. Often the greatest need is at the establishment stage. However, areas of education and training require long-term commitment of financial and human resources (Mavaneke in Department for Environment, UK 1994, p. 31). Ideally, CBCIs should be self-funding as soon as possible to avoid funding vulnerability.

6.3.3 Data requirements

Inappropriate information and technology transfer

Information from government agencies and Crown Research Institutes (CRIs) is not always in a form CBCIs can use. Simplified versions of environmental management techniques may be more accessible and useful to the community. For example, National Agenda for Soil and Water Management (NASWM) participants noted that a user-friendly version of DOC/NIWA riparian management guidelines with a visual assessment component for land managers and community groups is needed (Pyle 1997, p. 41).

Inadequate provision of information and expertise to support CBCIs can limit their effectiveness. Current riparian guidelines, for example, apply to streams only, not lakes, wetlands, and estuaries (Pyle 1997, p. 41), and this prevents an ecosystem approach being taken.

Lack of effective monitoring

A lack of means to measure success and monitor results can give projects a sense of going nowhere and achieving little—especially when the problem is large scale. Data need to be relevant to the project's objectives, with accurate indicators showing clearly what is happening to the environment. Intermediate goals provide a means of measuring and recognising achievements along the way and can be an incentive for ongoing activities (Margoluis & Salafsky 1998, p. 103).

Ownership of data

The collection of data is a sensitive issue, particularly if the data are used by a CBCI to change land management practices of a landowner involved. Maori knowledge concerns also need to be addressed. Organisations that want to maintain exclusive control of data present a barrier to CBCIs (Pinkerton 1999, p. 8). Arrangements and agreements as to how data are used are needed and commercial and intellectual property rights and information 'ownership' issues need to be clearly established at the outset. Corporate sponsorship should not limit the ability of a CBCI's monitoring programme to use findings to suggest

environmental improvements. A possible solution is to release only aggregated information that does not identify individual corporate performance.

Quality of data

NASWM participants identified quality assurance of data collected by members of the community as a key issue. If the accuracy of data cannot be trusted, organisations are reluctant to use it or contribute funding or equipment for its collection. However, experience in other countries and in New Zealand with meteorological data has shown community monitoring can be a reliable and accurate source of information. Steps such as using a neutral credible third party to ensure transparency in data collection and analysis may be required. Also, quality control programmes with guidelines, may be needed for government agencies to use the data. Other issues such as whether monitoring data collected by schools or groups can be used in management decisions and legal cases need to be clarified at an early stage.

6.4 DOC MANAGEMENT STRUCTURES AND CBCIs

A key management objective expressed by DOC is to move from reactive 'issues management' to proactive 'relationship management'(de Bres 1999). Solutions to complex issues in the environmental arena depends on changing peoples' attitudes, behaviour and lifestyle—processes that require active engagement. Recognition of this need has led to a move away from government institutions making decisions for people, to the realm of collaborative governance, where communities come together to decide on values, goals and strategies for themselves. This process involves a whole range of actors—the formal institutions of government, NGOs, the private sector, community groups and citizens:

> *This governance is people centred both because ordinary people are involved and because the process exists to solve problems **for** people* (Clarke & Reddy 1999, p. 15).

CBCIs require collaborative decision-making. According to Gray (1989) government agencies involved in collaborative agreements need to be able to:

- identify interdependent and important decisions that need to be made jointly and allow groups to get on with the remainder

- withstand higher transaction costs—decisions requiring consultation need more time and may require more personnel and resources

- give up some of their autonomy and share decision-making powers.

Working with community-based organisations is an effective way of building good two-way relationships with the public (de Bres 1999). Public attitudes to DOC are important because peoples' perceptions of the Department play a significant role in whether or not conservation outcomes are achieved (Wilkie 1999). CBCIs can be viewed by DOC either as costly indulgences or an investment in building public trust and social and environmental responsibility. According to Healey (1997, p. 7) mobilising change is best achieved by collective efforts in transforming ways of thinking. How successful DOC will be at encouraging CBCIs is ultimately dependent on establishing an organisational

culture that supports community involvement and a willingness to commit resources over time.

6.4.1 Departmental processes

DOC can be constrained in its community activities by formal legislative responsibilities and specific national policy priorities. It has broader conservation interests than those held by most stakeholder groups. However, there is still discretion in day-to-day management decisions which can be supportive of CBCIs. These include how to allocate resources and staff, where to conduct projects, how to interpret policies, and how to carry out plans. Adjustments in these discretionary areas can be critical to achieving collaborative goals (Margerum 1999, p. 186).

Costly, unresponsive, rule-bound systems prevent consultation and collaboration. Studies have indicated that where participants have a local decision-making role they devise regulations that are more flexible, adaptable, and appropriate to specific situations as well as having fewer economic drawbacks than generic ones drafted by central agencies (Pinkerton 1999, p. 3). Placing more emphasis on results than procedures encourages individuals and organisations to work together (KPMG 1999, p. 8).

There is a clear distinction between top-down management where government agencies assume responsibility, take a leadership role and instruct those involved, and a community-based approach where the government agency provides input as one of the stakeholders. Community-based procedures will not necessarily dovetail with bureaucratic procedures, and flexible approaches need to be allowed for. Ecosystem management and community-based management are accepted means of achieving conservation and stewardship goals, but barriers in terms of a lack of trust, support and capacity are evident when communities try to launch conservation initiatives (Pinkerton 1999, p. 2). Mutually agreed upon outcomes that a project can work towards (e.g. ecosystem restoration) can assist, as can a range of complementary management options, where some are community-based, and others institution-based.

6.4.2 Agency culture

Despite the numerous DOC policies that emphasise the importance of community involvement, New Zealand is not renowned for innovative citizen involvement in conservation activities. Strong leadership is thus needed at conservancy, regional and head office levels to actively promote and value community involvement if the organisational culture is to fully embrace a shared responsibility for conservation management. Past attempts at working with community groups have not always been successful and there are naturally reservations within DOC about directing resources into an area where performance measurement is difficult. Conservancies may find it preferable and less risky to allocate resources to an area such as local pest control where results and accountability are easier to gauge. Another reason for reluctance, according to Little (1994, p. 351) is the slow implementation rates for community-based approaches. A CBCI, like all participatory processes, is a time-consuming process. However, the necessary initial time commitments need to

be balanced against factors such as costs and loss of credibility when projects fail because the required groundwork is not put in place and not tailored to local requirements.

Government agencies need to present an open, consistent and positive approach to expressions of interest from community groups. All resource management agencies staff therefore need to be convinced of the value and contribution of CBCIs to environmental goals, and be prepared to be proactive.

6.4.3 Empowering staff

Assigning a person in a government agency with the appropriate skills to build community relationships can be a major investment in building strong community networks. DOC as an organisation needs to be supportive of staff who can establish a good rapport with local people and guide them towards appropriate action. Often it is the enthusiasm and personal commitment of DOC staff that can get the conservation message through to the public. DOC as an organisation needs to be seen as supportive of developing real relationships with people, and encourage willing staff to spend less time in the office and more in the wider community (de Bres 1999).

Giving appropriate staff responsibility for developing community projects together with a budget with some flexibility (so that there is some discretionary expenditure) is an effective way of empowering staff and encouraging innovative approaches to deal with conservation issues. Social learning practitioners indicate that most transformational learning occurs with small and medium scale initiatives (Pinkerton 1999, p. 3).

6.4.4 Integrating DOC expertise

DOC is well positioned with its favourable public profile to work with communities. The Department is respected for its ability in practical habitat restoration and protection, and its specialist knowledge. Monthly surveys show that approximately 70% of people have a favourable perception of DOC and the work the Department does. However, DOC's ability to work in an integrated way with other government agencies and community organisations is not viewed so positively by those on the Target 20 list, which consists of organisations that DOC regards as strategically important to work with (de Bres 1999).

6.4.5 Practical assistance

A collaborative approach and the provision of expertise can pave the way to make things happen. Getting started and successfully completing initial projects can provide learning experiences critical to the survival of fledgling CBCIs. Ritchie's research on Landcare groups operating in the Waikato identified the following learning needs for group members (1997):

- Native tree propagation and planting skills.
- Seed collection and treatment.
- Writing project funding applications—providing guidance and assistance.
- Setting up a legal entity for a group.
- Identifying funding sources.

- Providing incentives to assist landowners if a site of significant value is located on their property.
- Funding to develop constructive partnerships with willing land managers.

Agencies such as DOC can assist with these practical learning needs by:

- providing expert advice on understanding the impacts of land management and riparian zones on water quality;
- providing specific data on the condition of conservation values in the local environment;
- increasing awareness of unique local biodiversity features.

6.4.6 Building conservation networks

DOC has an informative website (http://www.doc.govt.nz/) which covers issues such as conservation activities, awards, education materials for teachers, opportunities for volunteers to work with DOC, sponsorship information for businesses, etc. Supporting the inclusion of information on CBCIs into this database either directly or by reference to link sites (which may be located at regional or district council level) would enable interested individuals or groups to find out about projects they could be involved in. Names and contact numbers for CBCIs, dates and locations for activities could be listed. Reports on a project's progress, successes and problems could also be included, as that would assist others interested in setting up similar projects.

6.5 CONCLUSION

As the concept of involving stakeholders in decision-making has gained wider acceptance there is greater understanding of the steps that are necessary to establish successful CBCIs, as well as an awareness of potential problems. Past experiences with community-based projects have not always been successful. However, a range of guiding principles and processes have now been articulated and can be used to ensure that community initiatives are more robust, focused and effective. This theoretical and practical background can be used by government agencies, such as DOC, to assist the formation and implementation of successful community-based conservation projects.

7. Proposal for accelerating the formation of CBCIs

Recent reports such as the New Zealand Biodiversity Strategy, *Bio-What?*, and DOCs own publications emphasise the need for greater community involvement and collaboration. Despite this and the integrated management requirements of the RMA, combined biodiversity protection efforts involving different levels of government, other statutory agencies and groups are limited. Although regional councils, DOC, environmental NGOs, and the QEII Trust

consider biodiversity an important issue for New Zealand, most district councils and unitary authorities consider that sustaining biodiversity is a relevant, but not very important issue (Tonkin & Taylor 1999, p. 22, 23). Local authority efforts to address biodiversity in their plans and policies to comply with s6(c) of the RMA as well as s5, s6(a), s6(b) and s7 vary considerably in quality and weight (Froude 1996). This is heavily influenced by understanding of biodiversity issues within their communities:

> *It seems that the scope of the mandate that councils take from the legislation, and the level of resources that they devote to implementing that mandate, is significantly influenced by their particular community. It also seems that the interest, or disinterest of councillors and staff has a significant influence in some cases* (Tonkin & Taylor 1999, p. vi).

7.1 ACCORDS

Protecting New Zealand's biodiversity is dependent on building a shared understanding of the consequences of not reacting to current risks and degradation. However, as is pointed out in *Bio-What?*

> *There is no suitable forum that allows [a broad range of stakeholders] to actively engage one another and develop a shared understanding. This results in an inability to agree on the legitimacy of one another's interests and concerns. It also limits the development of a shared 'big picture'* (Ministerial Advisory Committee [on Biodiversity] 2000, p. 46).

Accords are proposed (Ministerial Advisory Committee [on Biodiversity] 2000, p. 46) as a means of bringing together stakeholder groups responsible for co-ordinating environmental management in their local ecosystems and wider ecological domains. This proposal is consistent with the formation CBCIs for biodiversity protection purposes.

7.2 BIODIVERSITY POLICY FRAMEWORK

The NZBS sets out a comprehensive and integrated policy framework (DOC & MfE 2000, p. 13). A key issue remains: What resourcing and funding capabilities need to be established to assist the formation of CBCIs and Accords? It is abundantly clear that the current funding and resourcing regimes are not enabling community groups to initiate or effectively implement biodiversity conservation projects. For this reason, the following proposal is made:

> *A 'Contestable National Biodiversity Protection Fund' should be established to assist communities and management agencies to promote, establish and implement biodiversity projects.*

CBCIs needs to be informed by the policy context in which they operate. They cannot, however, achieve effective outcomes without adequate funding and

resourcing. For these reasons we suggest expanding the existing 'Policy context for the New Zealand Biodiversity Strategy' (DOC & MfE 2000, p. 13) to incorporate a funding component.

7.3 BIODIVERSITY PROTECTION CONTESTABLE NATIONAL FUND

While voluntary efforts are important, the protection of New Zealand's biodiversity will require many projects to be publicly funded. Currently councils fund environmental protection from local rates. Local funding provisions are included in the draft annual plan each year and compete for funding with other services. Political decision-making is affected by both a lack of funding and a lack of understanding of biodiversity concerns among much of the community. Many councils, especially those with a small ratepayer base that cover large rural areas, struggle to provide the level of expertise necessary to develop plans and identify areas under threat of environmental degradation.

Establishing a contestable national fund for environmental purposes (financed from taxation and other sources, e.g. New Zealand Lottery Grants Board) could provide a means of assisting community groups, government agencies, and councils to work together. An independent source of funding allows more creative thinking among participants and less inclination to unquestionably accept the financiers' proposals (Baum 1999, p. 197). Funding could be provided along the lines of the Lottery Environment and Heritage Community Funding Model. This fund, which could be called the Biodiversity Protection Contestable National Fund (BPCNF), would be available for projects at national, regional, and local levels (Figure 2). The main prerequisite for applying for funding would be the identification of the 'community of interest' and an agreement from stakeholders to work together on a proposal that has biodiversity protection as its main focus. Proposals for funding would be prepared with the assistance of the BPCNF staff, who would be in a position to assist identifying all potential stakeholders. They could also provide general input, strategic advice, and information on projects of a similar nature. If the proposed project meets initial funding criteria, a small grant would be made to the community of interest to come together to prepare a CBCI proposal. This would ideally be a practical project with clearly defined processes, outcomes and monitoring procedures. This proposal would then be put forward to the BPCNF Funding Committee.

A number of practical difficulties that inhibit biodiversity protection in New Zealand have been identified by Jay (1998). Local government is the most important player when it comes to protecting biodiversity because it administers the legislation that affects landowners and is accountable to the people for the environmental conditions in which they live. Councils, however, are limited in their responses because of:

- other responsibilities and duties which are regarded as more important or relevant;
- boundary conflicts between government agencies and levels of government;

- lack of community support and internal conflicts in the three-year election cycle;
- conflicts between different levels of government in relation to their functional responsibilities;
- limited levels of knowledge, commitment and skill among staff;
- 'institutional drag' that relies on the established methods for doing things.

Other key constraints include lack of money and uncertainty about how to address issues concerning Maori land and cultural relationships.

A number of these obstacles could be effectively countered by the proposed fund. Adequate funding would also assist and promote the successful aspects (as determined by Jay 1998) of current biodiversity protection:

- personal commitment by one or two key mid-level and/or senior staff;
- a willingness to engage in consultation with stakeholders, particularly land-owners;
- linkages between members of the community and council (good interaction and trust between council staff and the public);
- incentives (e.g. rate relief or grants).

One of the key issues identified in both the NZBS and *Bio-What?* is the need for inventories of existing ecosystem information—boundaries, attributes, threats, etc. This information is required before any significant progress can be made to protect New Zealand's biodiversity. The proposed BPCNF could address this issue by providing targeted assistance for community groups and government agencies to compile such information. The BPCNF agency could also act as an information databaseto allow information collected to be more widely utilised.

7.4 ACCOUNTABILITY

A central source of funding such as the BPCNF will require accountability and transparency if it is to function effectively. Criteria will therefore be needed to assess funding applications which would balance the perceived ecological status of biodiversity values with the importance of stimulating public awareness, effective participation, and achieving conservation gains. Projects that meet the guiding principles for CBCIs (see Section 4.1) and the following environmental criteria informed by the NZBS Policy Context (DOC & MfE 2000, p. 13) would be priorities:

- Practical projects aimed at biodiversity protection that result in specified ac-tion or outcomes.
- Guided by ecosystem management principles.
- Located in areas where interest in environmental issues is high.
- High public profile to promote the community's understanding of biodiversity.
- Located in ecosystems where biodiversity threats are high.
- Located in ecosystems where biodiversity qualities are high.

One of the reasons given for the lack of institutional integration in respect of biodiversity protection is that accountability processes require government agencies like DOC to measure their outputs. DOC's financial management structure is guided by annual business plans and budget allocations for each output. This can limit the availability of resources and personnel for community projects that are more long-term and intangible in nature. A fund which allowed expertise to be purchased as required for community-based projects would enable agencies to retain their own accountability systems while working on longer-term capacity-building programmes, whose benefits are difficult to quantify.

The emphasis for funding to be provided for CBCIs that concentrate on practical projects is a counter to the tendency identified in recent research that many participatory programmes achieve few practical results—resources tend to get swallowed up in reports and meetings. As a result, enthusiasm, especially from those at the grass-root unpaid level, can evaporate. Setting outcome objectives (including immediate goals that can be readily accomplished), providing facilitation to spur compromise (requiring consensus can result in no output), and not letting community involvement de-emphasise the importance of substantive planning expertise, have been recommended as ways to overcome project inertia (Helling 1998). In addition, Helling recommends consideration of seven fundamental questions before committing resources to projects:

1. What are the purpose and goals?
2. What is the timetable for action and immediate goals to determine if progress is satisfactory?
3. How will achievement be measured; what actions are legitimate to take credit for?
4. What will the monitoring standards be?
5. Will the process be representative of all stakeholder groups?
6. What are the project opportunity costs in terms of not being able to carry out other responsibilities? How can these be minimised?
7. What will the project add to planning for biodiversity protection in terms of local, regional or national policies?

7.5 TRANSPARENCY

Transparency of decision-making by the BPCNF Committee should be one of the main objectives of the funding process. Transparency can be accomplished by making a web-based project database accessible to the public. The web site would maintain descriptions of the projects qualifying for funding and the amount of funding received (the Sustainable Land Management Fund currently operates such a system). Project monitoring processes and updated results would also be available. This will serve as an information base for other projects looking for funding, and identify successes and failures of existing projects. Most importantly it would provide a link for groups throughout New Zealand to identify possible partners from different sectors and organisations.
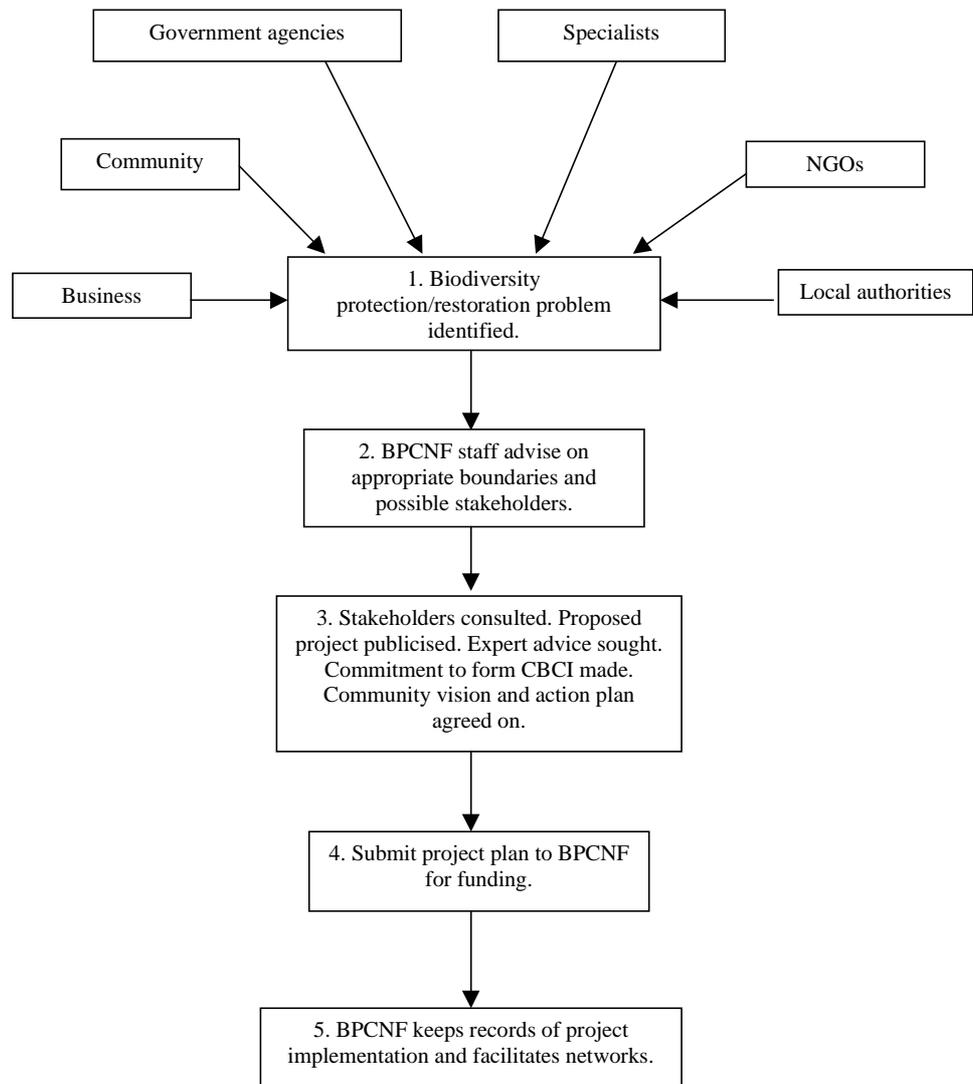
Figure 2. Procedures for the proposed Biodiversity Protection Contestable National Fund.

7.6   A POSSIBLE PROCESS

1. A biodiversity protection or restoration problem is identified by any individual or organisation in the community as an issue that requires action (see Fig. 2).

2. BPCNF advisory staff are consulted for guidelines on the appropriate boundaries to work within and the likely stakeholders to involve. If needed, a small seeding grant may be made to cover the costs of consulting on theproposed project so that any group or individual trying to facilitate action at a grass-roots level is not handicapped by lack of finance.

3. Stakeholders are consulted. The proposed project is publicised in the media, and interested parties are encouraged to participate in workshops to determine the extent of the problem and possible action. Expert advice is sought if necessary. If sufficient agreement is reached, the group is formalised (CBCI, Accord, Partnership, Society, Trust, etc.) and a community vision is agreed on. A draft project plan is drawn up.

4. The formal group then submits the project plan to the BPCNF Funding Committee for approval and finance. Achievable targets to reach as milestones along the way are established.

5. The BPCNF keeps records of the project's implementation and facilitates networks to other similar projects. Information is also made available to enable other government agencies and local government to incorporate the project into their own strategies if required.

7.7 CONCLUSION

This proposal for a contestable fund complements existing planning frameworks and environmental management structures. It avoids establishing a new policy framework for biodiversity protection and instead builds on the significant work that is already taking place by DOC, and resource management agencies. It can be linked into a wide range of initiatives (RMA, DOC, Fish & Game, QEII National Trust, environmental groups) without duplicating organisational and internal financial systems. It supports on-the-ground projects by injecting resources into current initiatives as well as new ones. It also provides a means by which under-resourced councils can purchase expert advice if the proposed project meets the funding criteria.

Long-term relationships between agencies, organisations and communities can be developed through the targeted promotion and implementation of community-based projects. As the support of all stakeholders will be a prerequisite for the approval of a CBCI project, it will be necessary for them to be informed and included from the outset which will encourage the different stakeholder groups to work together in an integrated way.

8. Acknowledgements

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Appendix 1

LAKE HOROWHENUA (WAIPUNAHAU) CASE STUDY

Lake Horowhenua (Waipunahau) is a large shallow freshwater dune lake on the flat Horowhenua plains. Levin township lies to the east, and pastoral and intensive agriculture form the surrounding catchment. Much of the land immediately adjacent to the Lake is Maori-owned. A large proportion is currently leased for farming and forestry. Maori owners have title to the lake bed and a 20 m strip surrounding the lake. They are represented by the Horowhenua Lake Trustees. The lake is fed by groundwater and surface run-off from rural and urban areas, and has a single outlet, the Hokio Stream.

Pollution and rapid deterioration of the lake has been a major concern to iwi for decades. A build-up of organic matter on the lake bed from sewage and waste discharges, urban runoff, agriculture, and land development has increased plant growth and degraded water quality. The lake is now considered hypertropic.

In the early 1990s, Muaupoko iwi, and specifically the Horowhenua Lake Trustees, started a rehabilitation project with the ultimate aim of restoring the lake and its surrounds to the fully life-supporting qualities it had 150 years ago. Subsequently, Maori concerns about continued discharges to the lake and their planting activities on the lake margins prompted the Manawatu–Wanganui Regional Council (MWRC, now trading as 'horizons.mw') to support the project. A joint working party made up of representatives from Horowhenua Lake Trustees, MWRC, DOC, and the Horowhenua District Council co-ordinated the preparation of a strategy to improve water quality. The Lake Horowhenua and Hokio Catchment Management Strategy (hereafter referred to as the Strategy) sets out four objectives and associated actions required to improve and restore the water quality of the lake and stream (MWRC 1998).

This project corresponds to the key factors identified as essential for the successful establishment and operation of a CBCI:

- Grass-root support is required.
- A 'community of interest' needs to lead any initiative.
- Education is an important component.
- A practical project base is crucial.
- An integrated approach is essential.
- An ecosystem focus is necessary.
- Experts should be 'on tap' not 'on top'.
- An appropriate planning process has to be implemented.

Grass-root support is required

For a CBCI to be effective it must have grass-roots support. Its objectives and aims must focus on an issue of concern to the local community, and there must

be an identifiable group who can initiate the necessary energy and enthusiasm (or dissatisfaction) to want to bring about positive change.

The Horowhenua Lake Trustees were deeply concerned about Waipunahau's water quality and health. There had been a long history of Maori opposition to the Lake's degradation, including unsuccesful Court actions in the 1960s. As a tribal taonga it was totally unacceptable for the lake to have become polluted, particularly as the prime source of the pollution was the historical discharge of raw and treated human sewage from the Levin Township. This was contrary to Maori beliefs and had been vehemently opposed by the Muaupoko. The Trustees' views had long been ignored, and they wished to re-assert their traditional responsibility for the Lake's state. Their aim was for the water to again be drinkable, and for the return of the water birds and keruru and once-plentiful fish—tuna (eel), inanga (whitebait), freshwater koura (crayfish), patiki (flounder), kakahi (mussels). They began with fencing the full 13 km boundary. They also commissioned a planting plan for revegetation, the Waipunahau Restoration Plan. Just seven months after receipt of this plan, 12 km of harakeke (flax) was planted around the lake (over 120 000 plants, all of which had been gathered, free of charge, from local landowners). 'Revegetating the shores of Lake Horowhenua is a huge project, probably the biggest replanting project being undertaken in the country.' (Lucas 1998, p.21). It is also the biggest iwi restoration project. The Trustees also asked the MWRC to prepare a regional plan under the Resource Management Act that would address the pollution concern and enable the lake's water quality to be improved. The MWRC and the Trustees initiated a planning process that resulted in the preparation and implementation of the current Strategy as well as a riparian planting programme around the lake.

A 'community of interest' needs to lead any initiative

Community-based conservation efforts by definition require taking a collaborative approach inclusive of all likely stakeholders. Gray (1989, p. 5) defines collaboration as a process through which 'parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their limited vision of what is possible'. A collaborative approach is suited to environmental management as issues are usually complex and affect inter-relationships between a wide range of individuals and organisation. Any regulations imposed by government agencies to achieve biodiversity objectives are only likely to be effective if they have the support of landowners, and they understand and agree on the outcomes sought. Bottom lines and effective monitoring methods also need to be agreed on (Tonkin & Taylor, 1999, p. vii). Extensive co-ordination and consensus building is normally a pre-requisite to bring about change. Bringing all parties together to identify the issues and determine the solutions should lead to some of the benefits of participation given by Thomas (1995, p. 180):

- A better decision, as a wider set of values and more knowledge and information are considered in the decision-making process.
- Greater acceptance of decisions, which eases implementation.
- Increased understanding of government agencies and their roles.
- Service delivery more tailored to the needs of those concerned.

Lake Horowhenua has distinctive historical, cultural, social, ecological. and recreational values. The various communities of interest have a natural focus on the Lake. To Muaupoko iwi and the Trustees, it is a taonga over which they have rangatiratanga and kaitiaki responsibilities. They wish to restore its mauri and develop its economic potential by promoting ecotourism (which highlights the restoration project), and re-developing aquaculture. Although they own the Lake bed, they have always seen the Lake as a community asset that should benefit both the owners and the wider community. The non-Maori community sees the lake as a recreational and economic asset. DOC has a long-standing interest in restoring its ecological values and supporting iwi initiatives. The Regional Council has also adopted a positive and sympathetic approach towards the Maori owners' aspirations, and has water quality responsibilities under the RMA to remedy the past adverse effects on the lake. The Horowhenua District Council, in addition to its RMA and other statutory responsibilities, has a moral obligation to assist with restoration efforts because of the pollution caused by sewage outflows, as well as a responsibility to maximise the District's assets. Local NGOs and community groups are also keen to assist the restoration project. 'The Trustees have organised for some $500,000 worth of restoration planting and implementation. Support of various kinds comes from the Lottery Grants Board, Eastern and Central Community Trust, Labour Department Community Employment Group, the Employment Service, Horowhenua District Council, Te Puni Kokiri, Department of Corrections, Manawatu–Wanganui Regional Council, the Horowhenua Branch of Forest and Bird, the local polytechnic and schools.' (Lucas 1998, p. 21.)

Education is an important component

Changing attitudes is a necessary precursor to changing behaviour. Motivation to change has been strongly linked to education, empowerment and participation—key themes of CBCIs. To encourage participation, initial steps such as building awareness of environmental degradation, building relationships between groups with overlapping responsibilities and interests, and building the capacity within communities may first need to take place. These steps can all feed into targeted environmental education activities.

Environmental education has been a key component in the Waipunahau Restoration Project. The Trustees have used every opportunity to publicise their work through local newspapers, radio, and TV. Their efforts to actively involve the wider community have borne fruit as support for the project has continued to grow. The joint working party that has implemented the Strategy has also seen education as a high priority. All parties have been able to link their specialist knowledge into the Strategy's education priority actions. Current awareness and understanding of the lake's importance is continually being promoted by stakeholders. Regular planting days, articles on the project's progress, and school involvement have all encouraged more public participation. The Manawatu Polytechnic, UCOL, has been a strong supporter of the project, and Massey University staff have provided on-going advice.

Nga Kai Mahi O Nga Hau E Wha Ltd of Levin runs a 42-week training course for the lakeshore revegetation work, a New Zealand Qualifications Authority accredited horticulture course. Twenty school leavers, mostly Muaupoko

youths, are learning about their heritage and actively helping restore the lake (Lucas 1998, p. 21). A key focus of the Trustees has been to build and maintain iwi support for the project, and to highlight the Lake's historical significance and value to Maori.

A practical project base is crucial

Empirical research carried out by Margerum (1999, p. 181,192) on different collaborative projects in the USA (8) and Australia (15) showed stakeholders can generally reach consensus on issues and build greater social understanding but have far less success in implementing action. Margerum's research indicated that when implementation failed it was because of:

- A lack of strategic direction. Stakeholders could agree on broad goals but they did not set priorities or targets for specific actions.

- Lack of community involvement during implementation – while stakeholders formulated common goals, the new perspectives they reached were not necessarily shared by or communicated to others in the community. Joint decision-making ceased because there were no community processes for implementing the project goals.

- A lack of stakeholder commitment to implementation. The organisations most commonly cited for this inadequacy were government/state agencies and local governments (Margerum 1999, p. 186).

The Lake Horowhenua and Hokio Catchment Management Strategy is being implemented, and has overcome such concerns. It comprises a Strategic Action Plan with agreed specific goals and action to achieve them. Consultation and community outreach is an ongoing part of the implementation programme. Government agencies are committed to carrying out identifiable tasks in line with their statutory responsibilities and the availability of resources. The MWRC plays a pivitol facilitation role. The Trustees, for their part, have adopted a flexible and realistic approach that has concentrated on building up practical restoration and people management skills. They are also working towards establishing the Lake as an economic asset for the tribe. To ensure practical projects are co-ordinated and in line with the overall strategic direction, a series of responsibilities has been assigned to stakeholders. For the 2000–2001 period the following pragmatic actions have been agreed on:

- Convening a meeting with landowners along a stream tributary to discuss riparian management issues.

- Providing school groups with guided explanations of how to revegetate, and why revegetation is important.

- Giving Lake Friendly Awards for businesses with good environmental practices and providing information for businesses on stormwater care.

- Offering stormwater drain painting to Levin Intermediate Schools during conservation week.

- Allowing interested groups and individuals to join MWRC water quality monitoring runs (two places available each time).

- Convening a subgroup to discuss a community-based water quality monitoring and the Lake Care programme.

- Investigating commissioning of further planting advice for the Lake Horowhenua catchment.

The strength of the implementation programme is that specific groups in the working party and the wider community have identified tasks and responsibilities which contribute to the strategic direction of the project.

An integrated approach is essential

Government agencies and CBCIs need to work together to ensure integrated management of the locality or ecosystem in question. To achieve successful implementation, good working relationships with all relevant government agencies and other organisations and networks, such as conservation groups, community organisations and school groups, need to be established (Margerum 1999, p. 186).

Government agencies have adopted an integrated approach for the Lake Horowhenua project. The preparation of the Strategy involved the three statutory agencies (DOC, Regional Council, District Council) and the Lake's owners (the Trustees). The Strategy integrates the relevant RMA plans and legislative responsibilities in a user-friendly document. The only NGO actively involved at this stage is the Levin Branch of Forest and Bird which has undertaken to assist with weed control strategies. Local gardeners are being asked not to grow potentially invasive plants such as ivy, cotoneaster, euonymus, and privet (Lucas 1998, p. 21). As more emphasis is placed on riparian margins to reduce sediment and pollution in the streams running into the lake, there are now moves to establish a Landcare group[1]. Meetings are being convened with land managers but to be effective this type of initiative requires grass-roots support as well as commitment from the regional and district councils. A conscious effort is being made to link the work of statutory agencies with existing groups—school groups, businesses and conservation groups.

An ecosystem focus is necessary

Ecosystem processes interact over a wide range of spatial and temporal scales. Management objectives thus need to be oriented to ecological boundaries that cross administrative, political and ownership bounds (Haeuber 1996). For CBCIs to achieve optimum environmental results in terms of biodiversity protection, their endeavours must be part of the 'big ecological picture' and contribute to the overall health of the ecosystem in which they are situated. To acquire an appreciation of the ecosystem interactions taking place, it is necessary to determine the ecosystem boundaries at the outset. These will vary in geographical scale ranging from environmental domains; to ecological regions and districts; to local ecosystems. The appropriate scale will determine the identification of the parties who form the 'community of interest' and the management response that is required.

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[1] The Tonkin & Taylor survey (1999) found private landowners prefer to work with organisations such as QEII National Trust, Landcare groups, or groups such as the Taranaki Tree Trust because they are effective in terms of their particular objectives and they encourage a more localised independent approach. In some instances therefore it may be better for government agencies to work through NGOs.

For the Lake Horowhenua revegetation project the full length of the shore is classified into a series of seven different ecosystem units, and divided into 75 segments, each a possible separate project area of about one hectare in size. Because the area is exposed, a three-stage planting regime has been designed. Stage 1 provides the rapid cover of a nurse crop of harakeke to shelter less hardy species and filter runoff, and to act as a buffer against weed invasion. The tree and shrub canopy species will be established later, followed by more tender species, ferns and rimu (Lucas 1998, p. 21). The Strategy is based on the lake catchment boundary. For the purposes of the restoration of the lake's water quality, such a boundary is ecologically appropriate.

Administratively the project has been fortunate to have few boundary problems. There are no conflicting kaitiakitanga responsibilities between iwi, and delineation of responsibility between different local government councils and government agencies has not been an issue.

Experts should be 'on tap' not 'on top'

Theory and practice both stress the importance of decision-making being retained at the grass-roots level. It is not unusual, however, for communities to lack the necessary expertise and the time required for specialised tasks such as planning, education, ecology, soil conservation, establishing monitoring systems, and carrying out specific scientific research. The key to ensuring that these inadequacies do not prevent CBCIs from getting established or achieving their goals is to provide the necessary expertise in an appropriate stakeholder forum. Exchanges of information need to take place between CBCI members and the organisations the experts belong to. Research by Margerum (1999, p. 187) indicates that collaborative efforts are handicapped in situations where experts only provide a one-way flow of information in the form of technical expertise and advice. Ideally agency representatives should provide interactive exchanges of information to different levels of their own organisation and the wider stakeholder groups involved in a CBCI.

Each of the project partners (MWRC, DOC, Horowhenua District Council, and the Horowhenua Lake Trustees) has contributed expertise in their specialist field. Advice has been provided by kaumatua, and outside consultants have been employed to work with the Trustees. For example, the revegetation project was prepared by Lucas Associates, and is structured to allow for a range of planting approaches, depending on resources and preferences of the Horowhenua Lake Trustees. The owners can choose between a forest option or a shrubland option for each segment of lake shore. They have the choice as to whether they want to reflect historic patterns, including archaeological sites, or visual considerations (Lucas 1998, p. 21). Other specialist advice has also been sought on a variety of concerns. In most cases the advice has been presented to either the Trustees or the working party forum in a user-friendly and comprehensible manner. This approach has assisted the community of interest to understand a wide range of important information that has been vital for the project's implementation.

An appropriate planning process has to be implemented

If community groups want to be involved in biodiversity conservation initiatives, it is important that a clearly defined planning process is established that can link their aspirations with government agency responsibilities and the necessary information and technical requirements. For Lake Horowhenua the following strategic plan was drawn up (MWRC 1998):

The *kaupapa/vision* for Lake Horowhenua:

* The lake's water quality is improved to enhance the tangata whenua and amenity values and the life-supporting capacity of the water and its ecosystem.
* The lake's surrounds are returned to their previous heavily vegetated state.
* Streams draining the catchment have riparian margins.
* People living in the catchment are aware and focused on the protection of the lake and the stream.

Two *key issues* are identified:

* degraded surface water quality;
* information required to monitor water quality in the lake, stream and catchment is incomplete.

The *goal* for the Strategy is to restore the water quality of the Lake and stream to a level that provides a satisfactory improvement in both cultural and amenity values and the life-supporting capacity of the lake and the stream by 2018.

There are four *objectives, each with actions,* to achieve the goal which are:

Objective 1: To determine, by November 2002, the extent of water quality and life supporting capacity improvement possible in the lake and stream.

Actions: Regional Council:

* Complete investigations of artificial degradation, lake remediation, catchment management, and improvement of life supporting capacity of the lake and stream.
* Implement a water quality monitoring programme.

Objective 2: Encourage the public to take responsibility for the effects of their activities in the catchment on the water quality in the lake and stream.

Actions: Regional Council, District Council in conjunction with the Lake Trustees:

* Implement an education programme.
* Provide advice and pest control.

Objective 3: Avoid the adverse effects on water quality from discharges of contaminants to land or water in the catchment.

Actions: Regional Council:

* Regulate discharges of contaminants.

District Council:

* Eliminate seepage from sewage treatment plant by July 1999.

Department of Conservation:

* Continue to promote inclusion in Regional Council and District Council plans ways to protect and enhance freshwater ecosystems.

Objective 4: Review the Strategy to identify necessary amendments by 2003.

Actions: Regional Council:

• Organise 6 monthly meetings between all working party members.

• Prepare and present annual reports detailing research results.

• Begin a review of the Strategy by November 2002 and revise the Strategy accordingly.

Conclusion

The Waipunahau Restoration Initiative and the Strategy that developed from it is a well-designed project that is a model of its kind. There is potential for the knowledge and experience gained from the project to be extended to cover broader and more complex biodiversity and environmental concerns in other parts of New Zealand.

Because of the inter-related nature of environmental issues, it is not unusual for a community-based project to broaden and deepen from an initial protection or restoration focus to a wider ecosystem and catchment-based project. As awareness grows, the project objectives expand and move into larger ecosystem perspectives. The Strategy has the potential to develop still further to other dune lakes in the ecological district and to the ecological corridor links to the Tararua Ranges and the Lake Papaitonga Reserve. This is a potential strength of all CBCIs if they are well grounded at the grass-roots level and have the support of the appropriate government agencies. They have the scope to evolve and grow. New biodiversity initiatives can be more easily developed if they can be linked to, or extended from, a successful project.