

# **Using Participatory and Learning-Based Approaches for Environmental Management to Help Achieve Constructive Behaviour Change**

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## Summary

### Project and Client

This report on ways to influence people's behaviour to improve environmental management was prepared for the Ministry for the Environment (MfE) by Landcare Research, Lincoln, in May 2002. The Ministry is looking for new approaches that work with multi-stakeholder groups and teams, in particular those which improve motivation, information flows, and collaborative learning.

### Objectives

- To review contemporary approaches to environmental policy making.
- To review frameworks for supporting behaviour change.
- To outline the key concepts for managing participation in practice.
- To describe techniques for building group capacity for environmental change.

### Method

- This report is based on literature reviews and the results of Landcare Research experience in the area of participatory learning.

### Main Findings

- Need to foster shared understanding of individual viewpoints and group participation.  
Over the past decades social science understanding of what motivates changes in human behaviour recognises that people are active sense-makers, who are continually assessing their environment and acting according to their interpretations of the situation. Because each individual or group experiences the world slightly differently, they may react differently to what may to be the same situation. This highlights the importance of getting people together to establish a shared understanding of any problem situation and the potential pathways for action. When people feel that they have had the opportunity to participate in planning future change, they are likely to buy into the changes that may be required of them.

- Complementary approaches are required to promote action, based on educational initiatives.

This recognition has led researchers and policy makers to rethink environmental policies and the role of regulation. Regulation is not a linear process where policy makers enforce a particular policy with a distinctive and well-defined effect. Policy success depends on many factors and particularly on the cooperation of different groups of society. International environmental policy trends are recognising the need to creatively utilise the multiple mechanisms available (regulatory, incentive, voluntary, and property right) in designing approaches to promote action on environmental issues. Each has specific strengths and weaknesses. However, the effectiveness of all depends on a supporting framework of education, awareness raising, understanding and ownership.

- Change is a developmental process that takes time and different expectations. Thus, the idea of stakeholder participation is a key operational principle of contemporary sustainable-development policies, programmes, and projects. However, gaining the involvement of different groups in participatory initiatives is a complex process. There are no single approaches or methods that one can use. Participation is not a one-off event like consultation; it is an ongoing process. It takes time, resources, understanding and perseverance, but the end result should be a development process that involves people from different groups – and their ideas, skills and knowledge. Participation in this way can contribute heavily to sustainability, make environmental activities more effective, and simultaneously contribute to building the capacity of those groups involved to continue and grow the initiative. However, promoting participation implies a different way of working, the use of different approaches and methods, and different expectations. Key concepts central to achieving this include ‘social capital’, ‘levels of participation’, ‘participation as process’, ‘stakeholder identification and analysis’, and ‘participatory monitoring and evaluation’.

- Participation needs to be effective at all levels of involvement. It is also important that participation be practised simultaneously at different levels of decision making. It is most useful to think of three levels of participation: national, institutional and programme, and projects on the ground. Because environmental programmes are designed to be responsive to changing community needs, one of the most pressing challenges is to develop participatory and systems-based monitoring and evaluative processes that allow for ongoing learning, correction, and adjustment by all parties concerned.

- It is important to give attention to both task and process. Effective collaborative initiatives are those that pay attention to both task and process, and so meet the needs of the different participants in both these areas. In this regard the *task* can be defined as what those involved have to do (e.g. reduce waste) whereas the *process* is concerned with how people and groups/teams work together, maintain relationships, and achieve agreed outcomes. Because task and process are linked in this way, it is important to measure and evaluate the progress of both.

- Transformational change requires group cultural change that spreads to others. In the end, participatory initiatives on the ground involve people working in groups and teams. Accordingly, an understanding of how to initiate and foster these social units is essential for delivering participation. However, to foster a more collective approach to environmental management that is capable of transformational change, we have to do more than just work together on specific projects. Transformational change requires individuals and groups to develop the capacity to move beyond the completion of task-bounded activities. They must catalyse change within their immediate membership first, and spread that culture to others in their communities over the longer term. Supporting groups in this way requires an understanding of group processes and stages of development, attention to factors such as group abilities and skills, and the use of appropriate participatory monitoring and evaluation processes.

## 1. Introduction

This report on ways to influence people's behaviour to improve environmental management was prepared for the Ministry for the Environment (MfE) by Landcare Research, Lincoln, in May 2002. The Ministry is looking for new approaches that work with multi-stakeholder groups and teams, in particular those that improve motivation, information flows, and collaborative learning.

The report is based on literature reviews and the results of Landcare Research experience in the area of participatory learning. Social science frameworks of behaviour change are summarised, and confirmed with corresponding experiences from policy and project practice. The main concepts and mechanisms that underpin the use of participatory approaches are summarised. More-detailed mechanisms for working with groups as part of operationalising participatory approaches are described.

## 2. Objectives

- **To review contemporary approaches to environmental policy making.**

Section 3 reviews the changing context of environmental problems, and how policy approaches have evolved in response. Information, integration and participation are identified as key building blocks to help achieve coordinated approaches to environmental management.

- **To review frameworks for supporting behaviour change.**

Section 4 reviews the major theoretical frameworks used for designing behaviour change interventions to deal with environmental problems. It emphasises the use of participatory incentives that encourage motivation, information sharing, and collaborative learning.

- **To outline the key concepts for managing participation in practice.**

Section 5 outlines the key concepts and processes that underpin the use of these participatory frameworks at national (policy implications), programme, and project levels. This outline includes monitoring and evaluation techniques for improving the effectiveness of these participatory environmental initiatives over time.

- **To describe techniques for building group capacity for environmental change.**

Section 6 describes practical techniques for working with groups and teams as part of applying participatory approaches in practice.

### 3. Contemporary Approaches to Environmental Policy Making

#### 3.1 Introduction

The need for new approaches to environmental policy and natural resource management has emerged in line with the evolving concept of 'sustainable development'. Over the past three decades, 'development theorizing has progressed beyond economic parameters based on gross domestic product (GDP) per capita growth, and even the conventional social indicators of literacy, life expectancy and caloric intake ... interventionist frameworks now regularly include such dimensions as sustainable environmental practices, gender equity, respect for human rights and participatory governance' (Beemans 1996). Similarly, while conventional approaches to support industry have in the past tended to employ narrow economic or productivity criteria to measure their success, today the questions have been broadened to simultaneously evaluate the health of relevant systems in terms of ecology, ethics and equity (e.g. Dahlberg 1991).

These major changes in the way the issues of economic growth, human development and environmental protection are approached can be highlighted through the outcomes of two major United Nations conferences. The Conference on the Human Environment, held in Stockholm in 1972, provided the first major discussion of environmental issues at international level. The subsequent increase in public awareness and understanding of the fragility of the environment was one of the most successful outcomes from Stockholm. However, while it succeeded in placing environmental concerns on the international political agenda, the environment still remained a marginal issue. In particular, little was done to give practical effect to the integration of environment and development in economic policy and decision-making, and the health of the planet continued to deteriorate at an unprecedented rate (Wynberg 1993 p.1).

The second major discussion of environmental issues at international level occurred at the United Nations Conference on Environment and Development (UNCED), held at Rio de Janeiro in 1992. Where Stockholm adopted an issue-oriented approach to pollution and non-renewable resource depletion, Rio emphasised integrated strategies to promote human development through economic growth based on sustainable management of the natural resource base (Report of the Secretary-General, United Nations 1997). It is true that given its ambitious agenda UNCED may not have achieved all that was hoped for. But among its successes must be counted the recognition of the mutual dependencies between North and South, as well as the clear acknowledgement that the causes of environmental decay are more significant than the effects (Wynberg 1993 p. 4). New pathways were opened for public participation in intergovernmental communications, allowing for increased communication and cooperation between governmental and non-governmental organisations. Indeed, Rio provided a clear role and responsibility for all sections of society, with the recurring message that 'real change is most likely to come with the involvement of ordinary people' (Wynberg 1993 p. 1).

*Agenda 21*, the action plan that emerged from the UNCED process, represents a statement of willingness to strive for a form of development that recognises the linkages between economic growth, social equity and protection of the environment. This agenda clearly



identifies 'information', 'integration', and 'participation' as key building blocks to help countries achieve development that recognises these interacting factors. It emphasises that in sustainable development everyone is a user and provider of information. It stresses the need to change from old sector-centred ways of doing business to new approaches that involve cross-sectoral coordination and the integration of environmental concerns into all development processes. Furthermore, *Agenda 21* emphasises that broad public participation in decision making is a fundamental prerequisite for achieving sustainable development.

### **Information and learning**

Information, and its strategic dissemination, is a central component of environmental policy making for behaviour change. Where there are competing factors and multiple social perspectives, such as in agriculture, ecosystem and catchment management, good decision-making depends on the availability of sound supporting information. However, an information system cannot be regarded only in terms of its transfer component (often a field day, workshop, paper, or a computer-based model/DSS). Rather, such a system is better viewed as a 'social system' within which people interact to create new knowledge, and broaden their perspective of the world.

Recent theoretical development challenges traditional approaches to education and extension that treat learning as a passive process with an emphasis on 'teaching,' that is, transferring the information in the most efficient and effective way for end-users to take on board and then apply. From a constructivist perspective (see Section 4), people interpret new information through their existing cognitive maps (belief structures or world views), which are influenced, in turn, by the organisation or community grouping to which these people belong (Huber 1991; Michael 1995). Thus, if we wish to change people's behaviour (e.g. to improve the effectiveness of current pest management activities) then we face the challenge of helping them see the world in a different light (Bawden 1991). The difficulty of this task rests with the inbuilt, and largely unconscious, defensive measures people have to ensure the resilience of their world view (e.g. Argyris et al. 1985; Michael 1995). This explains why linear technology or information transfer workshops and media messages are, by themselves, insufficient mechanisms to promote change.

In contrast, emerging education and extension approaches<sup>1</sup> based on collaborative learning (see Section 4) emphasise a more active, participatory approach to information management and decision making and a more collaborative approach between researchers, extension agents, and users. Increased user involvement not only helps keep research and information transfer relevant, and encourages stakeholders to take ownership of outcomes, it also provides key people in the wider community who have to work together (agencies, science, land managers, etc.) with new ideas and perspectives, which they will share with others thus paving the way for improved user thinking and change.

A further tenet of collaborative learning is the idea that a significant component of learning arises from our interactions or the dialogue we have with others, and therefore that the thinking of a community of learners is distributed through networks of conversations. Thus learning can be seen as socially constructed and occurring through interactions between individuals, between individuals and groups, and between different groups. Learners function

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<sup>1</sup> For more on information and information systems in sustainable development extension refer to part II of Allen et al. 2002. Sustainable development extension. MAF Technical paper No. 2002/03.  
<http://www.maf.govt.nz/mafnet/publications/sustainable-development-extension/>

in a community by developing a shared language and acquiring the community's viewpoint. This emphasises the need for embedding learning in real-world situations, where each learner functions as part of a community of practitioners helping to solve real-world problems.

### 3.2 Integration and participation

Changing perceptions of the environment, shifting societal goals, and the emergence of the concept of sustainability mean that today's 'environmental problem' is a hydra of multiple dimensions and perspectives. There are few simple problems and even fewer simple solutions. Natural resource management in the age of sustainability is not characterised so much by problems for which an answer must be found, but rather issues that need to be resolved, and will inevitably require one or more of the parties to change their views (Bawden et al. 1984). This requires an approach that can deal with 'soft systems', 'in which objectives are hard to define, decision-taking is uncertain, measures of performance are at best qualitative and human behaviour is irrational' (Checkland 1981).

As mentioned above the response to this is an increased interest in the application of 'collaborative' or multi-stakeholder processes that facilitate the wide involvement of individuals, groups and organisations in problem solving and decision making with respect to issues and plans that involve or affect them. These processes also provide an acknowledgement that decisions related to sound land use will be dependent on the coordinated actions of many land managers and agencies, who in turn must act within the confines of a wider regulatory framework imposed by the community at large. The key to their success is that the probability of commitment to, and adoption of, changed practices is likely to be higher because all stakeholders have designed the solutions, and understand how to make them work.

Furthermore, experience has revealed the limitations of single-strand policy responses, and greater understanding of human behaviour processes reveals the importance of contextual-based learning. Ölander & Thøgersen (1995) outline two fundamental flaws with the 'simple' approach of expert goal setting in environmental policy and the use of regulation and incentives to achieve these goals. First, goals predetermined by authorities about specific, well-defined acts (such as waste sorting) are likely to strike *efficiency* problems where communities feel that they interfere or offer too limited a range of option for action. To this, they add some *ethical concerns*. Chiefly these relate to the risk of 'blaming the victim', where education or even regulatory campaigns are aimed at changing behaviours of individuals affected by the problem, rather than addressing the root cause of the issue. For example, waste management has been addressed mainly by working with the broader public to change their behaviours through education. This strategy is more appealing, but perhaps less effective, than addressing the responsibilities of commerce and industry for minimising waste generation (Ölander & Thøgersen 1995).

As the report of the UK-based Global Environmental Change Programme indicates, greening producers and consumers is a huge challenge that invites policy makers to be innovative and forward-looking. This study, supported by the Economic and Social Research Council (ESRC), highlights a large gap between the broadening scope of environmental policy and its past effectiveness.

*Studies of environmental regulation reveal that there are often big differences between the expected and actual effects of regulation. In reality,*

*the process of implementation is not as straightforward as is often presented. Policies failed in the past if they did not anticipate how they would be put into effect (ESRC 2000, p.10).*

This finding has led researchers and policy makers to rethink environmental policies and the role of regulation. Regulation is not a linear process where policy makers enforce a particular policy with a distinctive and well-defined effect. Policy success depends on many factors and particularly on the cooperation of different groups of society. International environmental policy trends are recognising the need to creatively utilise the multiple mechanisms available (regulatory, incentive, voluntary, and property right) in designing approaches to promote action on environmental issues. Each has specific strengths and weaknesses. However, Young et al. (1996) observed that the effectiveness of all is dependent on a supporting framework of education, awareness raising, understanding and ownership (see Fig. 1).

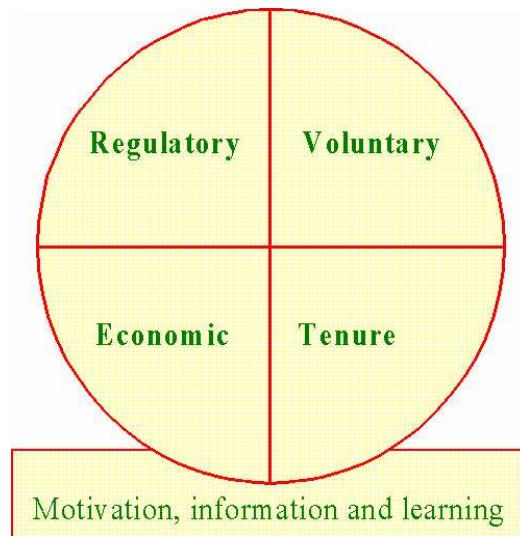
The effectiveness of regulations, for instance, is compromised both politically and financially when there is not general agreement on the need for particular forms of change. Without public support, politicians in a representative democracy risk being voted out of power. Even where individuals are positive in their attitudes towards the environment, they may react negatively to having regulations imposed on them since those regulations impinge on their freedom and sense of control (Brehm & Brehm 1981). Reaction aimed at restoring the freedom that has been lost may then impact badly on the outcomes of that regulation. Furthermore, it is not feasible under normal circumstances to police unpopular regulations. Regulation, therefore, is not a way to *introduce* new behaviours. Its best use may be in ensuring that the public as a whole adopt particular behaviours, once the majority are already complying. This way the target community understands the costs and benefits that accrue to them. Consequently such regulations are likely to be easier to implement.

Incentives too require understanding and acceptance by their target community. The psychology of incentives is often more complex than implied by the ways in which they are used. It is not uncommon, for example, for financial incentives to replace the intrinsic motivation that an individual might have for behaving in environmentally friendly ways (Ölander & Thøgersen 1995) and application of such a mechanism, without understanding this, can undermine the intended policy goal.

Tenure change and property rights mechanisms (such as tradable water rights) are highly dependent on informed participation, and facilitated transaction processes. Even voluntary approaches (widely preferred by resource users over direct regulation because of their flexibility, freedom for individuals, and opportunity to experiment with lesser known approaches to solve problems) can only work if individuals (and the wider community in which they operate) fully appreciate the nature of the problem involved, and their own self-interest in the matter (even in cases where public and private interests substantially coincide) (Young et al. 1996).

As illustrated in Fig.1, motivation, information, and education are located at the base of the policy mix because of the major contribution they can make in reinforcing and making more effective each of the other mechanisms. If people are persuaded that waste reduction is worthwhile, they are more likely to respond positively to a range of instruments: voluntary, regulatory, and economic. As Young et al. (1996) point out, prospects for changing behaviour will always be greater 'if direct regulatory approaches are overlain with a web of mechanisms that create a financially attractive and voluntary atmosphere that encourages cooperation and the sharing of information'.

Whatever mechanisms are ultimately preferred, their selection, modification, and application are increasingly likely to be a process thoroughly negotiated with the concerned communities. Consequently, environmental policy itself has come to be seen as a learning process where the interaction between policy makers and stakeholders is as important as the rules themselves (ESRC 2000).



**Fig. 1** Mechanisms to support behaviour change (adapted from Young et al. 1996)

Therefore, environmental policy making has come to be seen over the last decade as a learning process where the interaction between policy makers and stakeholders is as important as the rules themselves. The process helps to develop a common understanding of environmental problems and is an adaptive process in which technologies and behaviours are changed (ESRC 2000). Consequently, environmental policy making can be seen as a negotiated learning process. This is another way of saying that the best way to change human behaviour is to work alongside people. Cooperative approaches that make participation a rewarding experience are achieving better results than more coercive approaches. Participatory and learning-based approaches to policy making and management help develop a common understanding of environmental problems and are an adaptive process in which technologies and behaviours are continually reviewed and fine-tuned.

These ideas are being used increasingly around the world. For example, the UNEP Geo 2000 Report Summary (UNEP 2000) suggests that good environmental management requires 'integrated multisectoral policies at national level, involving all stakeholders from the start'. Similarly, the Ontario Executive Resource Group report on managing the environment advocates a more strategic approach to managing the environment, which requires more integration between departments, a philosophy of continuous improvement, and an approach based on working, and sharing responsibility, with multiple stakeholder groups (Executive Resource Group 2001). These processes also acknowledge that decisions related to sound land use depend on the coordinated actions of many land managers and agencies, who in turn must act within the confines of a wider policy framework imposed by the community at large.

### 3.3 Learning-based models for business and governance

While we have used examples from the sustainable and agricultural/ environmental development sector to trace the move towards learning-based models of engaging people to achieve desired outcomes, we could equally have drawn on parallel developments in health, community-based conservation, or rural development initiatives. Similar learning-based approaches are well established within the field of organisational management, and are increasingly underpinning current moves to more participatory democracy.

#### **Organisational learning**

Within business, the linked processes of monitoring and adaptive management (i.e. total quality management) are accepted as an integral component of decision making, and represent a conscious attempt on the part of organisations and agricultural enterprises to improve productivity, effectiveness, and innovativeness in uncertain economic and technological market conditions (Senge et al. 1994).

Organisational learning is the process of gaining knowledge and developing skills that empower people to understand, and thus to act effectively within, social institutions such as businesses, government departments, schools, or charities. It is a view that stresses that organising is a social activity and that organisations exist through collaboration. By working together people can accomplish things that they cannot do individually.

A learning organisation builds collaborative relationships in order to draw strength from the diverse knowledge, capabilities, and ways of doing things that people and communities have and use. The greater the uncertainties, the greater the need for learning as this enables quicker and more effective responses to a complex and dynamic environment. In turn, effective learning is associated with increased information sharing, communication, and understanding. For these reasons, the concept of ‘learning’ is probably more pronounced in business than any other area.

#### **New views of governance**

A direct translation of the ‘learning organisation’ concept to the field of environmental management implies that good and effective environmental policy making requires at its basis a ‘learning society’. This in turn involves a new view of governance, one in which the government is only one part of a national governance system and where the key feature is self-governance through interdependent individuals, groups, organisations and institutions that operate at different levels of collectivity. A core of shared values is necessary for trust and reliable interdependence, for effective autonomy and collective action, for learning, resilience and adaptability at all levels. This capacity for governance is seen to be at the heart of sustainable human development and a prerequisite for effective responses to not only environmental, but also economic and social concerns.

This new view of governance embraces the notion and significance of social capital, and brings an understanding of how this is created. It recognises the need for mutual redefinition of roles and responsibilities, of behavioural expectations, values, vision and goals. It also acknowledges that sustainable environmental and economic development implies societal development, and that this implies a deepening of the organisational structures of society, both state and civic, changing the processes by which their elements relate and interact.

### **Empowering people**

The concept and goal of empowerment is also an important one for self-governance. Empowerment, in this context, differs from common usage of the term. It does not mean power-balancing or redistribution, but rather increasing the skills of individuals, groups and communities to make better decisions for themselves; and involves redesigning processes in which public, private and civil society agencies become partners – in effect, capacity building.

## **4. Frameworks for Supporting Behaviour Change**

Behaviour change is a complex field, particularly where there are many different perspectives on the problem, as is the case with environmental issues. Implicit in the concept of behaviour change is the concept of learning. Learning changes you, and equally, change requires learning. Clearly having the knowledge of what you want to do involves learning. If a person is changing their behaviour it is because of new learning that requires them to adapt. That this new learning will stem from changes in the wider environment indicates that both psychological and social influences impact on behaviour. Human behaviour is complex and depends on a wide range of factors.

### **4.1 Learning and behaviour change**

Behaviour change and learning have much in common, but they are not quite the same thing. Nonetheless, learning is vital if people are to change their behaviour. As Kilvington & Allen (2001) suggest:

**Behaviour change = Knowing what to do + Enabling environment + Imperative**

Learning is important in all three parts of this behaviour change equation. Working out what to do requires people to learn about the situation. Learning is important for understanding how the social and physical environment can support behaviour change, and learning may be important for developing the motivation (imperative) for making the change. Understanding environmental issues may provide some motivation (imperative) for acting differently with respect to waste management or energy use, for example.

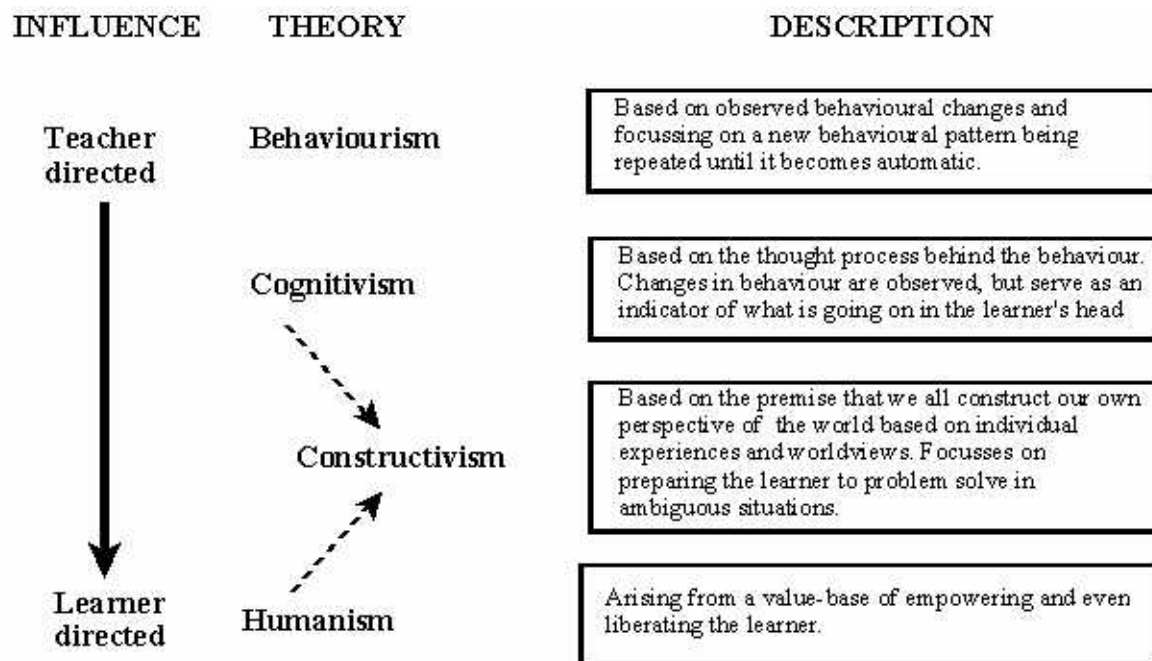
Learning means different things to different people. Studies done on how learners understand learning show that as people learn, they come to understand it differently. Early on, learners think of learning as a way to ‘know a lot’. Hence the teacher has the information and the learner has to acquire and memorise it. After a while, learners start to understand learning as being about acquiring new skills and methods. Here the learner is trying to learn new ways of thinking and doing. Knowing ‘facts’ is secondary. Advanced, reflective learners come to see learning as about understanding the world through reinterpreting and integrating knowledge (Belenky et al. 1986). These observations indicate that learners at different levels of understanding have different needs. Learners in the early stages of learning need more leadership than learners in the later phases.

These different stages of learning reflect the different theories of learning. The following section outlines three relevant and dominant frameworks that underlie how we understand

human learning and behaviour change. After outlining these major theoretical perspectives a few learning models are discussed.

## 4.2 Theoretical perspectives

Considerable research across a range of disciplines has contributed to ideas about how people change their own behaviour. This research, as well as the interpretation and use of it, is based on the theories outlined in the next few sections. Figure 2 shows the relationship of these different theoretical perspectives.



**Fig. 2** Psychology theories underpinning models of learning.

### Behaviourism

In behaviourism, learning is seen as the conditioning of human behaviour through habit formation. Behaviourists see people as ‘black boxes’ who act as rational self-maximisers (Earl 1986) and can be conditioned to behave in particular ways with the right use of rewards and/or punishments (Skinner 1972). Behaviourism implies the dominance of the teacher, with learners characterised as essentially passive. Knowledge and social reality are seen as external, value-free and objective.

Much of the work of behaviourists was done on animals, such as the well-known example of Pavlov who trained dogs to salivate when a bell rang. He did this by ringing a bell every time he fed them so that the dogs connected the bell with the arrival of food. Similarly, behaviourists trained rats and pigeons by manipulating rewards (usually food) and punishment (often some form of electric shock (Atkinson et al. 1993)). These kinds of manipulations are useful for changing the behaviour of individuals. They are frequent and important parts of parenting, when adults train children to behave in particular ways through

the consistent use of either punishment or reward. They also underlie policy mechanisms such as fines and incentives.

### **Cognitive approaches**

Cognitive psychologists, in contrast to behaviourists, are more concerned with the processes and structures inside people's brains. They deal with perception, seeing the brain as continuously categorising inputs from experience and, in turn, interpreting experience in terms of the categories that are developing. This process is an ongoing one in which the patterns in our brains are constantly affecting what we perceive, and what we perceive is constantly affecting the patterns in our brains (Atkinson et al. 1993). In contrast to the behavioural perspective, the cognitive school focuses more on the learner as an active participant in the teaching–learning process. Cognitive-based teachers instruct students by using teaching strategies that help the learner acquire knowledge more effectively. In the main, however, knowledge is still seen as external, value-free, and objective.

An important influence in cognitivism was the work of Jean Piaget who observed that children go through stages that appear to be linked to the maturity and development of the brain. A related concept is the idea of styles of learning, in which individuals are seen to have different learning styles and to be at different stages in a learning continuum (Atherton 2001).

### **Constructivism**

Constructivism is an approach that has emerged within the cognitive school of thinking and it underlies much work currently undertaken in the field of education and social psychology. Constructivism (Kelly 1955) adds the notion of 'context' and process to understanding behaviour change. The essence of constructivism is that people are active sense-makers who are continually assessing their environment and acting according to the ways in which they interpret the situation (Ross & Nisbett 1991; Allen et al. 2001). This perspective highlights the fact that people may react to the same information in very different ways. Importantly, constructivism sees learning as an internal process of interpretation, rather than a process of knowledge transmission.

An individual's behaviour emerges from the sense that they have made of what is happening, their ideas about what should happen, and what might happen if they change their behaviour (Ross & Nisbett 1991). Individuals use a wide range of information to develop their understanding of a situation. However, for them to engage with the information in the first place it must be both credible and relevant (Reynolds & Busby 1996). Credibility is not always to do with the scientific quality of the information. It is often more to do with the qualities and credentials of the person from whom it comes. Thus, farmers are more likely to listen to other farmers, or to people that they know well and whom they trust. For people to regard each other as mutually credible, they have to feel some level of understanding of the other person.

### **Humanism**

This perspective is driven largely by liberal values. It tends to prescribe what should happen rather than describing what does happen during the learning process. Humanists assert that everyone has a natural desire to learn and that learners need to be empowered and to have control over the learning process. This means that in an ideal world the teacher relinquishes a great deal of authority and becomes more of a facilitator (Atherton 2001). Humanists are



especially concerned with creating an educational environment in which learners can reach their full potential.

### **A synthesis of learning theories**

In behavioural theories knowledge is viewed as nothing more than passive, largely automatic responses to external factors in the environment. In cognitive theories knowledge is viewed as abstract symbolic representations in the head of individuals. In the constructivistic theories knowledge is viewed as a constructed entity made by each and every learner through a learning process. Knowledge can thus not be transmitted from one person to another; it will have to be reconstructed by each person. This means that this view of knowledge differs from the 'knowledge as given and absolute' views of behaviourism and cognitivism. Thus the cognitive-constructivistic perspective is beginning to underpin contemporary efforts to help people learn about, and change their behaviour towards, the environment.

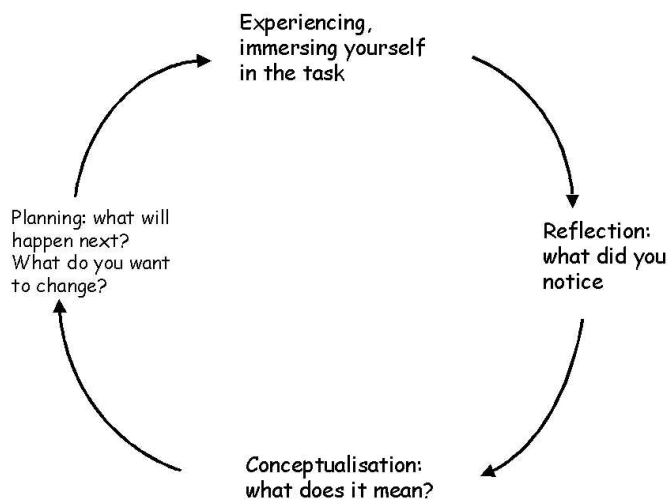
Teaching therefore is the process that supports this construction and reconstruction of new knowledge, rather than being the communication of knowledge. This research suggests that approaches to facilitate behaviour change are most effective when used to enhance constructivistic or learner-centred instructional strategies because they emphasise interactivity, and learner control and engagement.

### **4.3 Models of learning and change**

Though there are a number of theories that come under the label constructivism they all have a similar view of learners as being actively engaged in a process of integrating new experiences and information with existing concepts. They suggest that learners' pre-existing knowledge, skills, beliefs and concepts influence what they notice about the world they live in and how they organise and interpret it. As a consequence, rather than simply absorbing ideas communicated to them by others, learners take those ideas and assimilate them with their pre-existing notions and experience to modify their knowledge and understanding in a more complex, complete and refined way. The next two models illustrate a number of stages of change that people go through as part of such a learning process.

#### **Kolb learning cycle**

Kolb (1984) was interested in experiential learning and his learning cycle is one used in a wide range of learning or behaviour change contexts. Kolb thought of learning as an ongoing process – a continuous series of cycles. Each cycle contains four stages (see Fig. 3).



**Fig. 3** The learning cycle (adapted from Kolb 1984).

This learning cycle is the basis of the ‘action research model of learning’, where individuals, groups or organisations follow a series of cycles in which they plan–act–reflect; in this case stages 2 and 3 of Kolb’s learning cycle are amalgamated, so that analysis comes as part of the process of reflecting and part of the process of planning.

### **Stages of change model**

The ‘stages of change model’ came out of researchers studying the effects of behaviour change programmes in the health sector. This model (outlined in Table 1) indicates that there are stages of change that all individuals go through in any change process. Models such as this are used to understand what processes are necessary to support behaviour change and they seem to be particularly popular in the health field.

It is important to remember that this model is not suggesting that behaviour is a linear process. People can be expected to revert to an earlier stage in the process when initial change attempts cannot be maintained and a new attempt at change must be made. This means that behaviour change processes might be seen as several loops in a behaviour change spiral. An individual may go through one behaviour change process before reverting to the contemplation or determination stages and beginning the process again from that stage. This process of change and reversion may have to occur several times before a change can be maintained.

This model also highlights the importance of learning at all stages of the process. Seen as a series of spirals, oscillating between contemplation and maintenance, it highlights the similarities between this stage-theory of behaviour change and the learning cycle outlined above. In the case of behaviour change it appears there might be more of an end point when maintenance is achieved over the long term.

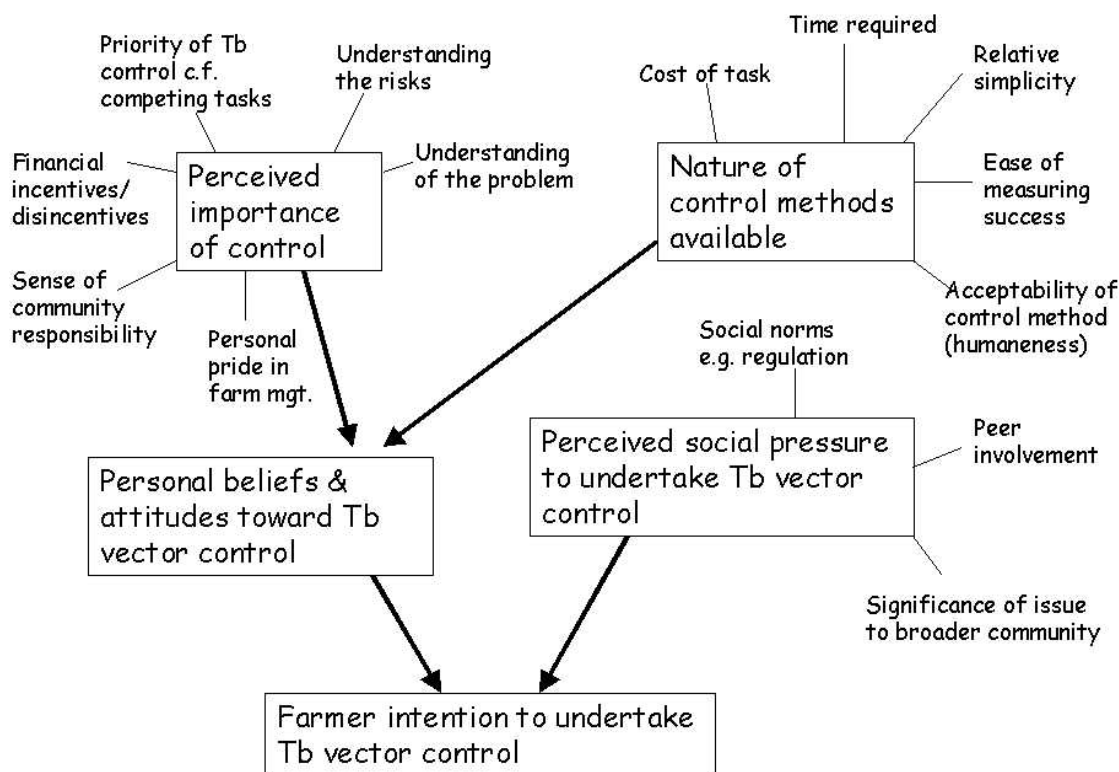
Table 1 The stages of change model of learning (adapted from Velicer et al. 1998; Parnell & Benton 1999; Atherton 2001)

Concept	Definition	Important processes (Parnell & Benton 1999)
PRE-CONTEMPLATION	Unaware of the problem, hasn't thought about change	Becoming aware Emotional response Environmental analysis Thinking through the issues
CONTEMPLATION	Thinking about change, in the near future	
DECISION/ DETERMINATION	Making a plan to change plans, setting gradual goals	Seeing other options Self-efficacy Social support Helping relationships
ACTION	Implementation of specific action plans	
MAINTENANCE	Continuation of desirable actions, or repeating, periodic, recommended step(s)	

### Theory of reasoned action

While the models outlined above focus on individual change, sense-making, learning and therefore behaviour change processes are not just individual-level activities. They are also social processes. This observation is important because it means that any change initiative has to be seen as more than just convincing individuals and focusing on their behaviour. To highlight the multiplicity of factors involved in behaviour change, Kilvington et al. (1999) used the theory of reasoned action proposed by Ajzen & Fishbein (1980) as a framework for describing the range of factors that can influence the intention of farmers to undertake Tb vector control. These factors include both individual and social aspects.

The motivation of individuals to change their behaviour is affected by numerous factors, not all of which are immediately evident. Only some are subject to direct and deliberate influence. Ajzen & Fishbein (1980) suggest that intention to undertake some action is a good indicator of likely behaviour (leaving aside interference from unpredictable events, such as severe weather or physical accident). Intentions are, in turn, influenced by two principal factors: (1) subjective norms, or what the individual thinks are the social pressures promoting a behaviour, and (2) personal attitudes towards that behaviour. The balance between the two streams of influence will depend on the individual concerned and the action. Figure 4 shows the factors contributing to a landowner's intention to participate in Tb vector control.



**Fig. 4** Factors affecting Tb vector control motivation (Kilvington et al. 1999)

Personal attitudes towards Tb vector control are influenced by how important landowners consider that control to be and the methods of control available to them. The subjective norm, or level of social pressure, is also important in deciding whether to undertake Tb vector control.

How much importance a landowner places on vector control is influenced by:

- financial incentives/disincentives (such as bounties, or the cost of having stock on movement control)
- understanding of the problem
- perception of the risk to them
- sense of community responsibility
- personal pride in farm management
- relative priority of Tb control against competing tasks.

Qualities of the control methods likely to be important to landowners are:

- cost
- time involvement
- relative simplicity
- ease of measuring success
- acceptability of the method in terms of humane killing.

A landowner's intention to undertake some form of Tb vector control will be influenced by:

- what they perceive to be the extent of peer involvement (groups can enhance this) and the attitudes of those close to them (family and friends);
- the support of social norms (i.e. good practice standards or regulation);
- the extent to which any landowner perceives this issue is significant to the broader community (often reflected, and influenced, by current policy).

Information management and learning play a crucial role in helping to motivate people to undertake Tb vector control, through triggering these social pressure factors. Education can expand awareness of the social significance of the Tb issue, and promote understanding of regulatory policy mechanisms and consequently increase the likelihood of their being adhered to. Importantly, this work highlights the importance of groups as a possible vehicle for education initiatives as well as a mechanism for increasing the perceived pressure to collaborate with neighbours and friends (for more on working with groups see Section 6).

#### **4.4 Towards a supportive environment**

As the work by Kilvington et al. (1999) highlights it is important not only to look at theories and models of behaviour change that focus on individuals, it is also important to look at models that focus on the social context in which behaviour change takes place. The different theories are neither comprehensive nor exclusive. Rather they are often complementary and many different theories can be used within aspects of any single environmental change initiative.

Social Network Theory (Verity 2002) is a framework that looks at social behaviour through relationships, rather than as an individual phenomenon. This framework acknowledges that in order to facilitate long-term behaviour change, it is necessary to develop a supportive, or enabling, environment. One major aspect of developing a supportive environment is about creating links between people, which allow information and learning to occur across social networks. The creation of these links is referred to in development literature as 'social capital'.

Spellerberg (2001 pp. 9–10) defines social capital as

*relationships among actors (individual, groups and/or organisations) that create a capacity to act for mutual benefit or a common purpose. Social capital is the social resource that is embodied in the relations between people. It resides in and stems from the contact, communication, sharing, cooperation and trust that are inherent in ongoing relationships.*

An important part of managing learning and behaviour change initiatives is therefore about managing networks, so that they can be used to develop solutions and provide support for individuals within them.

#### **Learning and behaviour change challenges**

Engaging with people in this way is not easy, for institutions or individuals. Accepting new information that challenges the way we think and the things we do is difficult and can be very uncomfortable (Michael 1995). People may feel that entering a learning or change process, and admitting that something is not right, will decrease their personal effectiveness, self-esteem, and maybe even their identity. Adapting poorly or failing to realise creative potential

may be more desirable than risking failure and loss of esteem during the learning process (Allen & Kilvington 1999).

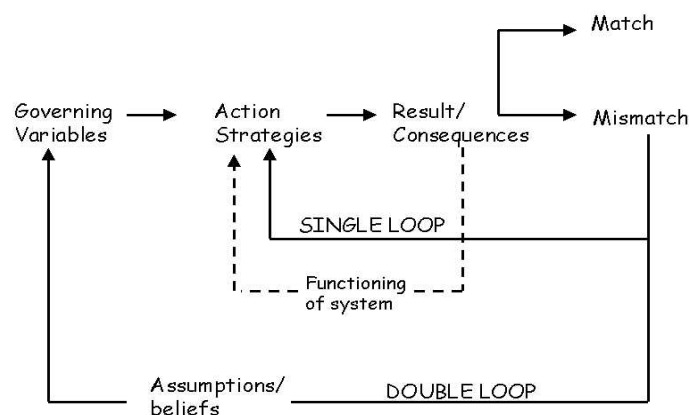
Individuals and organisations have a number of defensive reactions that resist change – or learning (Argyris et al. 1985; Michael 1995). These defences include making some subjects ‘undiscussable’. Also there is a lack of awareness that the values on which people believe they base their behaviour are different to the values implied by their behaviour. The first likely response to any inquiry into this is to search for another strategy that will satisfy the belief systems that the individual or organisation is trying to maintain (Argyris et al. 1985 pp. 82–87).

For example, if a land manager views his/her enterprise solely in terms of sheep production and notes that the vegetation condition of the land is deteriorating, the action strategy will likely be to try a different grazing regime. Such a case where new strategies are used to support the same governing variable (i.e. the land as a sheep production system) is called single-loop learning (Fig. 5). Another possibility is to change the governing variables themselves. For example, rather than try a new grazing strategy, the land manager may choose to look at how the enterprise could function as a tourism or forestry system, for example. These cases are called double-loop learning (Fig. 5), and involve more fundamental shifts in people’s belief systems and values.

Double-loop learning is about exploring the underlying patterns of your learning behaviour. All of us have been learning for years and in that time we have developed certain patterns of learning behaviour. If we are to understand and improve how we learn, we must be helped to reflect and consider new ways of seeing our world (Argyris et al. 1985).

Mezirow (1991, quoted in Bunning 1995) notes three important elements to address through a reflective process:

- content or the substantive issues involved
- process, or how such issues were raised and addressed
- premises, which are the values, assumptions, and paradigms of individual and collective mindsets that influence what people attend to.



**Fig. 5** Single- and double-loop learning (adapted from Argyris et al. 1985).

Developing double-loop problem-solving approaches is thus a critical part of changing people's actions in respect to the environment. However, it also requires those initiating such approaches to deal with the defences of individuals and organisations – which is no small undertaking! In many cases this will mean having to deal with situations in which participants may feel embarrassed or threatened. However, unless policy, research, and education programmes build specific processes for confronting people about unworkable theories and organisational defences, the use of stakeholder knowledge and interpretations of events cannot be a sound foundation for participation, collaborative learning, and positive change. The implication of this is that institutions and others seeking to develop change must not only provide information, but also ensure supporting social processes to promote a shared understanding, bounded conflict, and a safe, supportive social environment.

Social capital plays an important role in influencing change, and sustaining a social and institutional environment that is ready to adapt. It explains why change is more difficult to achieve in some situations than in others. In many cases, stakeholders and agency staff alike lack the culture and skills to participate in multi-stakeholder processes; so building capacity should be seen as a first step in many participation processes. It is not safe to assume it will just be there.

#### **4.5 Measuring success in collaborative ventures**

In many cases it is obvious that the immediate focus of environmental policy and programmes will be on the achievement and subsequent performance monitoring of particular projects and activities. However, as the previous discussion has shown, in the bigger scheme of achieving change and sustainable development, there is another equally important issue. This is improving the capacity of individuals, groups and organisations involved in sustainable development to develop their own culture of self-assessment and to establish their own approach to thinking strategically about how to work collaboratively and bring about the full range of desired changes that they seek.

The tension between these two perspectives (often termed 'task' and 'process' goals) runs through many current efforts at supporting change. Programmes commonly oscillate from one perspective to the other, first emphasising task achievement and the production of project benefits (i.e. getting the job done) and then swinging back to a process effort (i.e. improving the capacity of the programme to achieve the goals). Getting the right balance between achieving task benefits and developing effective and sustainable capacity to make the process ongoing is crucial, and effective monitoring and evaluation of both is necessary.

More than any other activity and by its very nature, building the capacity for change depends for its effectiveness on participant ownership and commitment. Its success will rely on the use of participatory and formative evaluation exercises that strengthen the ability of participants (agencies and communities alike) for ongoing self-assessment and correction. The monitoring-and-evaluation component of environmental policy and management, then, needs to be equally about building capacity, diagnosing constraints and opportunities, and trying to make programmes grow and expand, as it is about measuring and describing on-the-ground progress against preset targets.

## 4.6 Conclusions

Common to behaviour change literature is the idea that no single method works to facilitate behaviour change that addresses all issues in all settings. In each setting there are different potential effects on individuals, families and communities, all influenced by varying social, cultural, economic and developmental life circumstances (Parnell & Benton 1999).

Studies into behaviour change have highlighted the following aspects:

- Behaviour change is different for every person, and does not occur in one step. People move through stages of change in their own ways and in their own time.
- The enabling environment influences these stages of change.
- People adapt and improve the enabling environment through individual and collective capacity development.
- The crucial goal for any programme, then, is to enhance people's capacity to modify their environment so that it enables movement through stages of change.

In contrast to programmes that focus on delivery of information (campaigns) and promotion of predetermined options for change, a behaviour change programme that targets the capacity for change addresses: (1) increasing knowledge and awareness, **and** reflection (understanding how a person contributes to the problem situation and how this relates to their lives); (2) changing the enabling environment; (3) enabling people to develop consensus on the different options available to them. (Adapted from Parnell & Benton 1999).

## 5. Key Concepts for Managing Participation in Practice

### 5.1 Introduction

As the preceding section shows, the idea of 'people's participation' forms an underlying operational principle of contemporary sustainable-development policies, programmes and projects. However, undertaking participation is a complex process, and there are no single approaches or methodologies that one can use to enact it. Participation is not a one-off event; it is an ongoing process. It takes time, resources, understanding and perseverance, but the end result should be a development process that involves people and groups from the different stakeholder groups – and their ideas, skills and knowledge.

Participation in this way can contribute heavily to sustainability, it can make environmental activities more effective – and simultaneously contribute to building the capacity of the groups involved to continue and grow the initiative. However, promoting participation implies a different way of working, the use of different approaches and methods, and different expectations – and agency staff and other key leaders need to be aware of these.

Successful environmental change requires us to do more than just undertake one-off projects. It is dependent on the coordinated actions of many stakeholder groups, communities and agencies, who in turn must act within the confines of a wider policy framework imposed by the community at large. Within this broader and integrated view of environmental



management, participation needs to be practised simultaneously at different levels of decision making. It is most useful to think of three levels:

- National – creating an enabling environment; national policy being developed in a participatory way. Opportunity to coordinate lessons from regional and programme level.
- Programme and agency (e.g. regional and territorial authority) – creating appropriate policy mix for separate areas taking into account their specific needs and characteristics.
- Project – working with specific groups and communities, with bounded goals for environmental management.

In this section we will review specific mechanisms that collectively support an overall framework designed to facilitate behaviour change for environmental management. These are: (1) social capital; (2) empowering people and communities; (3) levels of participation; (4) managing a participatory process; (5) stakeholder analysis; and (6) participatory monitoring and evaluation. The first two of these are related to policy setting and capacity building and are of specific relevance to national- and regional-level agency and stakeholder groups. The remaining concepts are applicable at all levels of participation from policy to projects.

## 5.2 Social capital<sup>2</sup>

The notion of social capital has been around for decades, but it is with the work of Jane Jacobs (1961), Pierre Bourdieu (1983), James Coleman (1988) and Robert Putnam (1993; 2000) that it has come into prominence. This is how Putnam (2000 p.19) introduces the idea:

*Whereas physical capital refers to physical objects and human capital refers to the properties of individuals, social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them. In that sense social capital is closely related to what some have called ‘civic virtue’. The difference is that ‘social capital’ calls attention to the fact that civic virtue is most powerful when embedded in a sense network of reciprocal social relations. A society of many virtuous but isolated individuals is not necessarily rich in social capital.*

In other words, interaction enables people to build communities, to commit themselves to each other, and to knit the social fabric. A sense of belonging and the concrete experience of social networks (and the relationships of trust and tolerance that can be involved) benefit people greatly. The premise for much of what is written in this report is that working together through collaborative partnerships is a powerful way to improve our communities and environment. These are alliances that can be used to improve the health of a community in the widest sense of the term (environmental, educational, economic, social, etc.). They encourage people, hopefully operating at a range of scales and levels, to work together and make a difference. For example, an initiative to improve water quality by riparian planting might involve a Landcare group, local school, community environmental group and agencies (regional councils, Department of Conservation etc.). Because these partnerships bring people together from different parts of the wider community, their efforts often have the weight to be successful.

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<sup>2</sup> This section is adapted from Landcare Research notes on this topic hosted at [http://social.landcare.cri.nz/social\\_capital.html](http://social.landcare.cri.nz/social_capital.html)

The social whole is more than the sum of its individual components. Social systems provide a range of functions that are not met through market transactions. Households, communities of interest, and neighbourhoods create networks of mutual obligation, care, concern, interest and even conflict (access to other points of view). In the development and organisational learning literature these networks, norms, exchanges, and trust that facilitate cooperation for mutual benefit are referred to as 'social capital'.

Social capital also has an important 'downside' (Portes & Landholt 1996): communities, groups or networks that are isolated, parochial, or working at cross-purposes to society's collective interests can actually hinder economic and social development.

### **Vertical and horizontal associations**

A broader understanding of social capital accounts for both the positive and negative aspects by including vertical as well as horizontal associations between people, and behaviour within and among organisations, such as firms and institutions. This view recognises that 'bonding' ties are needed to give communities a sense of identity and common purpose, but also stresses that without 'bridging' ties that transcend various social divides (e.g. religion, industry sectors, ethnicity, socio-economic status), bonding ties can become a basis for the pursuit of narrow interests, and can actively preclude access to information and material resources that would otherwise be of great assistance to the community. Bridging is essentially a horizontal metaphor, but implying connections between people who share demographic characteristics. Social capital also has a vertical dimension, which can be called 'linkages'. The capacity to leverage resources, ideas and information from formal institutions beyond the community is a key function of linking social capital. A multidimensional approach highlights that different combinations of bonding, bridging, and linking social capital produce the range of outcomes observed in the literature.

Social capital supports learning through interaction, and requires the formation of networking paths that are both horizontal (across agencies and sectors) and vertical (agencies to communities to individuals). This, in turn, implies that relationships within which learning interactions take place influence the learning outcomes in collaborative approaches. Social capital plays an important role in fostering the social networks and information exchange needed to achieve collective action – and sustaining a social and institutional environment that is ready to adapt and change.

Some agencies recognise the value of social capital, but are not cognisant of the various types of interconnections necessary. For example, a territorial authority may integrate different sectors and/or departments, but fail to encourage two-way vertical connections with local groups. Another may form local associations without building their linkages upwards to other external agencies. In general, two-way relationships are better than one-way, and linkages subject to regular quality checks are generally better than historically embedded ones.

### **Māori social capital**

According to Spellerberg (2001), Māori social capital centres around the whanau or extended family group and the values associated with that grouping of individuals. The values specifically mentioned in this concept are trust, integrity, truth, nurturing, supporting and uplift. Family groups extend across different places, and the associations are largely informal in character.

This Māori concept of social capital reflects the tribal nature of Māori social groups and appears to be mostly about a bonding form of social capital. This idea is supported by the comments of Spellerberg (2001) that it is important for Māori to find ways to move beyond the bounded or iwi-based social capital and to bridge the divide between themselves and other groups (both other iwi and other, non-Māori groups). Māori may have difficulty developing this bridging social capital because of the different features of different cultures. It appears that the close bonding within iwi may contribute by forming in-group – out-group patterns, so there are few bridges across iwi groups.

### **Measuring social capital**

Social capital has been measured in a number of innovative ways, though for a number of reasons obtaining a single ‘true’ measure is probably not possible, or perhaps even desirable. First, the most comprehensive definitions of social capital are multidimensional, incorporating different levels and units of analysis. Second, any attempt to measure the properties of inherently ambiguous concepts such as ‘community’, ‘network’ and ‘organisation’ is correspondingly problematic. Third, few long-standing surveys were designed to measure ‘social capital’, leaving contemporary researchers to compile indexes from a range of approximate items, such as measures of trust in government, voting trends, memberships in civic organisations, or hours spent volunteering. New survey methods currently being tested will hopefully produce more direct and accurate indicators. Measuring social capital may be difficult, but it is not impossible, and several excellent studies have identified useful proxies for social capital, using different types and combinations of qualitative, comparative, and quantitative research methodologies.

### **5.3 Empowering people and communities<sup>3</sup>**

The more inclusive approach to policy making outlined in this report recognises that environmental management is at least as much about managing human activities as it is about managing lands and waters. As Christensen et al. (1996) point out, ecosystem and environmental management is inextricably linked with current trends related to population growth, poverty and human perceptions about energy and natural resources. ‘Concerns such as the rights of private property owners and local loss of jobs is unlikely to diminish, and environmental management must include strategies that deal positively with those concerns’ (Christensen et al. 1996). There is now a recognition that constructive change can only happen and be sustained if the people involved are included and empowered to make decisions. People’s participation, the integration of the efforts of institutions and improved flows of information are indispensable to the building of real and lasting capacity for sustainable human development (Capacity 21 Programme; UNDP 1996).

Empowerment in this sense differs from common usage of the term. It does not mean power-balancing or redistribution, but rather, increasing the skills of individuals, groups and communities to make better decisions for themselves. This idea of empowerment means ‘the restoration to individuals of a sense of their own value and strength and their own capacity to handle life’s problems’ (Bush & Folger 1994 p. 2 quoted in Burgess & Burgess 1997). This capacity is relevant to environmental decision making, as these authors further explain in a subsequent publication: that through empowerment groups gain ‘greater clarity about their

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<sup>3</sup> This section is adapted from Allen, W.J. 2001: Working together for environmental management: the role of information sharing and collaborative management. PhD thesis, Massey University, [http://nrm.massey.ac.nz/changelinks/thesis\\_contents.html](http://nrm.massey.ac.nz/changelinks/thesis_contents.html)

goals, resources, options and preferences' and that they use this information to make their own 'clear and deliberate decisions' (Folger & Bush 1996 p. 264 quoted in Burgess & Burgess 1997).

In a similar vein, Page & Czuba (1999) suggest that:

*... empowerment is a multi-dimensional social process that helps people gain control over their own lives. It is a process that fosters power (that is, the capacity to implement) in people, for use in their own lives, their communities, and in their society, by acting on issues that they define as important.*

One crucial implication of this definition of empowerment for those concerned with bringing about change in the way we manage our natural resources is that it acknowledges that the individual and the community are fundamentally connected.

*This does not mean that we can point the finger at those with less access to power, telling them that they must change to become more like 'us' in order to be powerful/successful. Rather individual change becomes a bridge to community connectedness and social change (Wilson 1996). To create change we must change individually to enable us to become partners in solving the complex issues facing us. In collaborations based on mutual respect, diverse perspectives, and a developing vision, people work towards creative and realistic solutions. This synthesis of individual and collective change is our understanding of an empowerment process (Page & Czuba 1999).*

Important questions as we seek to ensure empowerment are: how are decisions made and implemented? Who plays what role in these processes? What values and principles do they reflect? What are the constraints faced by each party in fully taking up their new roles and in having their voice heard? What needs to be done to relieve these constraints?

#### **5.4 Levels of participation**

In its contemporary form, participation goes far beyond the current level of consultation that agencies commonly use to engage with people. Attempts to define participation have identified different types of involvement of people in development processes. An early example was the eight levels of citizen control over initiatives or 'ladder of participation' described by Arnstein (1969) in the United States.

More recently, Pretty (1995) has built on Arnstein's ladder of participation to suggest a continuum ranging from manipulation to mobilisation, as summarised in Table 2. Pretty based his analysis of community participation on a review of both successful and unsuccessful projects conducted over more than 15 years. Underlying these definitions is the principle of balance of control between outsiders and the community, particularly in relation to decision making, and information and resources.

Moving from 'manipulative participation' to 'self-mobilisation' in Table 2, people's participation becomes less passive and more active. Pretty concluded that development benefits in agriculture were more likely to be sustainable when stakeholder participation reached interactive participation (co-learning) and mobilisation (collective action and

empowerment). This is particularly important in environmental projects where the aim is for different stakeholders to reach agreement. This can only happen when each becomes informed about the position of the others. This is most likely to occur in face-to-face meetings within a supportive and consensual climate. People have a better chance of understanding an opposing point of view when they are able to listen to it, face-to-face. It also requires both a climate and process that reduce the need for people to defend their own views.

**Table 2** Participation continuum (from Pretty 1995)

Types of engagement	Description
1- Manipulative participation (Cooption)	Community participation is simply a pretence, with people's representatives on official boards who are unelected and have no power.
2- Passive participation (Compliance)	Communities participate by being told what has been decided or already happened. Involves unilateral announcements by an administration or project management without listening to people's responses. The information belongs only to external professionals.
3- Participation by consultation	Communities participate by being consulted or by answering questions. External agents define problems and information-gathering processes, and so control analysis. Such a consultative process does not concede any share in decision making, and professionals are under no obligation to take on board people's views.
4- Participation for material incentives	Communities participate by contributing resources such as labour, in return for material incentives (e.g. food, cash). It is very common to see this called participation, yet people have no stake in prolonging practices when the incentives end.
5- Functional participation (Cooperation)	Community participation is seen by external agencies as a means to achieve project goals. People participate by forming groups to meet predetermined project objectives; they may be involved in decision making, but only after major decisions have already been made by external agents.
6- Interactive participation (Co-learning)	People participate in joint analysis, development of action plans and formation or strengthening of local institutions. Participation is seen as a right, not just the means to achieve project goals. The process involves interdisciplinary methodologies that seek multiple perspectives and make use of systemic and structured learning processes. As groups take control over local decisions and determine how available resources are used, so they have a stake in maintaining structures or practices.
7- Self-mobilisation (Collective action and empowerment)	People participate by taking initiatives independently of external institutions to change systems. They develop contacts with external institutions for resources and technical advice they need, but retain control over how resources are used. Self-mobilisation can spread if governments and NGOs provide an enabling framework of support. Such self-initiated mobilisation may or may not challenge existing distributions of wealth and power

So where is local government in New Zealand currently in the hierarchy of participation noted here? The terms 'consultation' and 'participation' are still predominantly confused. Resource Management Act case law has clearly defined consultation and dictated participants with whom, and the situations where, consultation should take place. Participation, however, is based on notions of participatory democracy that have only recently gained acceptance, so

there are few examples of attempts at participation and even fewer of successful attempts. Local authorities that have tried to adopt more-participatory forms of decision making often struggle to move beyond a process that ultimately amounts to what Arnstein termed 'placation'. What frequently hampers agencies in improving their participatory processes is the lack of an internal process and an agenda to plan for these processes. Table 3 provides an example of an outline agenda for participation.

**Table 3** An outline agenda for participation

Who is going to champion the process?  
 Who pays? Who administers? Who convenes?  
 What are you trying to achieve through participation?  
 Who are the key interests in the community?  
 Who are the key interests within any organisation promoting participation, and what are their attitudes?  
 What level of participation is likely to be appropriate and acceptable?  
 How will you know when you have succeeded?

(Source: Wilcox 1994)

An organisation also has to deal with internal issues to improve participation. As Wilcox (1994) points out:

*In my experience the toughest problems in participation processes do not stem from apathy, ignorance or lack of skills among residents or other community interests. Given time and effort these can be worked through. The most intractable problems arise because organisations promoting participation aren't clear about what they want to achieve, are fearful of sharing control and seldom speak with one voice.*

Some of the key factors regarding participatory processes (as shown by Wilcox 1994; UNDP 1997; Allen 2001) are:

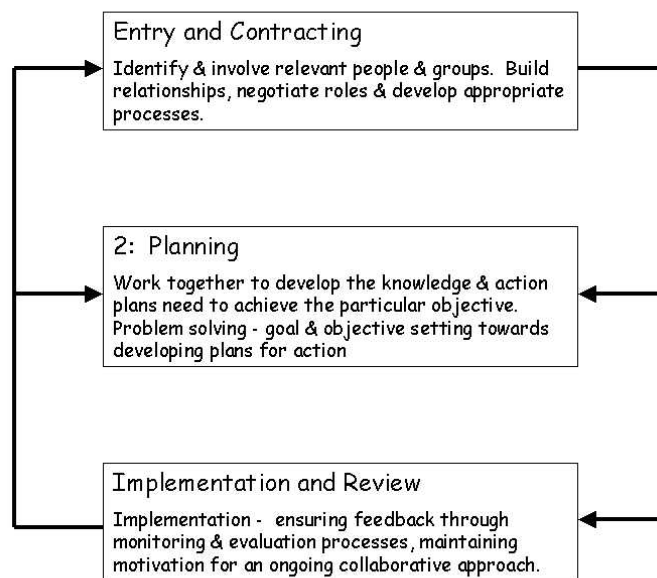
- It is critical that efforts to promote participatory development understand and examine the political and cultural context in which participation is to occur. Participation does not take place in a vacuum, but its development and progress will be influenced by a variety of factors inherent in the context. Time should be made available at the beginning of any participatory project to identify and analyse what could influence the process. In this respect a stakeholder analysis is a useful first step.
- In the preparation and design stages of a project, participatory processes do not necessarily follow structural, predetermined, and linear directions. Participation is not merely an input, but underpins all activities. Participation is intrinsic to a project's development and not simply an activity used from time to time to provoke beneficiaries' interest.
- 'Participation in development' is not the same as 'participatory development'. Projects must seek to promote a real and authentic involvement of people in the development process. Participation implies radical change in project operations rather than small adjustment of the project planning cycle.
- Key in promoting participatory forms of development is training staff in the methods and techniques so that they can be effective in promoting and guiding

participation. Recently, participation has revolutionised project practice and yet many staff have yet to move beyond the level of a general understanding.

To understand its progress and judge its contribution to the outcome of a project, it will be critical to monitor participation within the project and, subsequently, to evaluate its effect. To date, this has proved to be difficult in participatory projects and many development agencies are struggling to devise appropriate systems.

### 5.5 Managing an active participatory process

Often participation is treated as a limited set of events – a workshop, a seminar, or just one or two meetings. However, if participation is to be more than consultation it must be treated as a process that takes some time, and it is often the beginning of a continuing engagement. Participation is not a new idea, and there are many examples in which different stakeholders have worked collaboratively in a number of fields. While successful approaches generally have been individually tailored to encourage stakeholders' involvement in each situation, there are some common elements that make these participatory approaches work. Establishing and implementing a participatory initiative can be viewed as a three-phase process consisting of overlapping phases (Fig. 6).



**Fig. 6** Phases in establishing and maintaining a participatory process (Allen & Kilvington 1999).

In the first phase, the initiating party sets out to identify the stakeholders and build up a good working relationship with them. In the planning phase people get together and use appropriate processes for determining what needs to be done. Finally, change occurs as these plans are implemented and adjusted in the light of regular monitoring and evaluation.

### **Entry and contracting**

The starting point for any participatory initiative is identifying stakeholders. A stakeholder analysis can help those initiating projects both to assess their project environment and to determine future steps.

With stakeholders identified, the foundation of any successful collaborative or partnership approach is the development of relationships that make it easy for people to talk about their needs, share information, and work together. Establishing this trust is one of the main reasons why successful participation processes take time. However, in any given local situation it is fairly obvious relationships are not developed separately for each proposed working relationship. Just as with personal relationships, one of the most important influences on community attitudes towards participation is previous experience. For this reason it is important to work on the process so that people feel that they did achieve some desired outcomes. If they have a bad experience, they are likely to be reluctant to enter into another participatory process.

During this initial phase ground rules must be established. These minimise unnecessary 'process' conflict caused by misunderstandings and lack of agreement on how the rules of dialogue and decision making are set. Conflict is an inevitable and important part of participating effectively and intervention in conflict can be introduced at any time, but clearly it is more likely to be effective when introduced early on in the process.

### **Planning**

The strength of involving people in participatory processes lies in the creative approach to problem solving that involving different groups can bring. Face-to-face negotiations allow the different parties to more fully explore the issues and collectively come up with solutions that work. Constructive discussion and planning take time. Time is needed for people to learn about each other, overcome their differences, and begin to 'speak the same language' to resolve problems and disagreements.

### **Implementation and review**

Clearly the participatory or multi-stakeholder perspective challenges the common perception of what a 'programme' is, recognising that each group of participants has its own viewpoint on the issue and its own reasons for becoming involved in the project. As Schwedersky & Karkoschka (1994) point out, it is traditional for agencies to observe programmes within an operational cycle, from planning via implementation through to evaluation. However, the various perspectives and interests of the participants, and the fact that they are likely to have their own timelines, means it may be necessary to look beyond this cycle. 'The programme' can be regarded as a number of sub-projects, each of which is 'steered' by a different group of participants in accordance with their values and aspirations.

As people start implementing a plan, they need opportunities and resources to evaluate progress on an ongoing basis (Allen & Kilvington 1999). Constant re-evaluation is particularly important in long-term projects not only to ensure that the project stays on track, but also to support continued involvement. Tracking successes can be combined with a number of other initiatives to maintain motivation among the different partners.

Collaborative management approaches should not be seen as the development and strict application of a plan or set of rules. Rather they represent a process that requires ongoing



review and improvement. The most important result is not a management plan, but a working partnership, capable of responding effectively to changing needs.

## 5.6 Stakeholder analysis<sup>4</sup>

Stakeholder analysis involves identifying a project's key stakeholders, assessing their interests, and the ways in which these interests affect project riskiness and viability. It contributes to project design by identifying different groups' goals and the roles they play, and by helping to identify appropriate forms of stakeholder participation.

Stakeholders are persons, groups or institutions with interests in a policy, programme or project. Primary stakeholders are immediate communities of interest. For example, in the case of biodiversity protection they are local residents and landowners. Secondary stakeholders are the intermediaries in the process, and may include government agencies and other institutional bodies. Often these groups do not think of themselves as stakeholders, because they feel they own the process. A rule of thumb for ensuring that key stakeholders have been included in the process is to question whose support or lack of it might significantly influence the success of the project. This is a particularly good test for expert and activist groups, both of which commonly claim to speak for a wider representation than may be the case, and whose capacity to articulate their concerns might easily cause other groups to be overlooked.

In the analysis we look at the stakeholder, and the relationship – different types of relationship need different kinds of processes, and some need more input to maintain. Stakeholders similarly can be quite specific, such as individuals or geographically identifiable groups of people – others are more 'amorphous' and we have to think more laterally about how we are going to establish and maintain a relationship with them.

### Why a stakeholder analysis?

Stakeholder analysis seeks to provide a crucial link in the formulation of policy and the actual mobilising of support for policy, namely assessing the impact of positions on engaging, utilising, and sustaining support while minimising or neutralising political opposition. Policy is just as much about effectively defining problems as it is about posing workable solutions, and devising strategies that speak the language of important constituencies. Therefore, policy is, in part, dependent upon good management, sensitive to changing political needs, players, and environments to help determine the feasibility of a policy position.

A stakeholder analysis is just one (albeit usually the first) step in building the relationships needed for the success of a project or policy. These relationships are becoming increasingly important.

The starting point for any participatory initiative is establishing who to work with. In this regard a stakeholder analysis helps project initiators both to assess their project environment and to determine future steps. In particular a stakeholder analysis can be used to:

- identify and define the characteristics of key stakeholders

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<sup>4</sup> This section is adapted from Landcare Research notes on this topic hosted at <http://social.landcare.cri.nz/stakeholder.html>

- draw out the interests of stakeholders in relation to the problems that the project is seeking to address (at the identification stage) or the purpose of the project (once it has started)
- identify conflicts of interests between stakeholders, to help manage such relationships during the course of the project
- help to identify relationships between stakeholders that may enable 'coalitions' of project sponsorship, ownership and cooperation
- assess the capacity of different stakeholders, and stakeholder groups, to participate
- help to assess the appropriate type of participation by different stakeholders, at successive stages of the project cycle, e.g. inform, consult, partnership. All of these have different possible models.

### **Conducting a stakeholder analysis**

*Step One: Identifying major stakeholder groups:* Identify and list stakeholders. Often it is better to do this with the help of a small group of people. Stakeholders can be individuals, groups, communities, organisations, etc. Also breaking stakeholder groups into smaller units (e.g. men and women, ethnic groups, locality, organisational departments) will often assist in identifying important groups who may otherwise be overlooked.

Stakeholder analysis is aimed at enhancing stakeholder involvement in participatory processes, prior to their actual involvement in decision-making activities. Thus stakeholders do not usually participate in this process. However, since stakeholder identification has consequences, analyses are likely to reflect the interests and agenda of the agency directing the exercise. This can be addressed later in the process by allowing the inclusion of more stakeholders as their interest comes to light.

*Step Two: Determining interests, importance and influence:* Draw out key interests for each stakeholder group in the initial list. Key questions could include:

- What are the likely expectations of the project by the stakeholder?
- What benefits are there likely to be for stakeholders?
- What resources are the stakeholders likely to commit (or avoid committing) to the project?
- What other interests does the stakeholder have that may conflict with the project?
- How does the stakeholder regard others on the list?

Next, assess the influence and importance of each stakeholder on the project. Influence refers to how powerful a stakeholder is; importance refers to those stakeholders whose problems, needs and interests coincide with the aims of the project. If these 'important' stakeholders are not involved or assisted, then the project cannot be called a success.

*Step Three: Establishing strategies for involvement:* Plan strategies for approaching and involving each person or group. How to do this will usually depend on the results of the previous analysis. How involved each stakeholder is will depend on the appropriate type and level of participation. There is no need to involve reluctant stakeholders, and stakeholders may change their level of involvement as the process continues, thus partnerships should be flexible and designed to grow. Where the stakeholder is a group rather than an individual, you may need to decide whether all in the group participate or only representatives of the group.

## 5.7 Participatory monitoring and evaluation

Participatory approaches pose new challenges for decision makers and evaluators. They require change at the policy level to respond to local demand, and to empower communities to act (Narayan 1993). At the programme level, detailed outlines for action can no longer be drawn up at the outset, since problem solving is based on partnerships and cooperation, and not the quest to achieve some externally identified goal. Inevitably, whatever aims are finally chosen, implementing the solutions to reach them will involve a long process of difficult dealings with a great variety of individuals, groups, and institutions who can make them fail or succeed (Mermet 1991).

### Problems with conventional evaluations

Conventionally, evaluation involves measuring performance against preset indicators, often with the help of outside experts at the end of the project cycle. Monitoring and evaluation of participatory processes requires an approach that moves beyond these models of project evaluation, and recognises participation's quantitative and qualitative dimensions. Participation is not merely a one-off input or action in relation to a project; it is an ongoing process underlying the project's progress. As such, it cannot be understood using a simple snapshot approach. Traditional forms of monitoring and evaluation can result in:

- an overconcern with effort, effect and efficiency, and the tangible and material performance of the project
- a bias towards favourable quantitative outcomes and failure to capture unforeseen consequences
- a bias towards external conception and implementation, taking little note of the experiences of local people
- time-consuming major evaluation exercises that absorb the energy of project staff
- monitoring being feared rather than embraced by project members.

Monitoring and evaluating in this way does not help improve ongoing projects, nor can participants learn from 'surprises'. Both are required in the learning-based approaches being adopted by organisations in regard to resource-use-efficiency initiatives (Vickers & Cordey-Hayes 1999).

### Participatory monitoring and evaluation

Participatory monitoring and evaluation represents a different philosophy of monitoring, and the questions that it should shed light on. In particular, participatory monitoring and evaluation recognises that it is important for all stakeholders to have ways to evaluate the participatory process in which they are involved. For instance, funders need evidence that their investments are paying off and need intermediate indicators of success (e.g. within the time frame of funding cycles) for process-oriented initiatives such as capacity building. Equally, other stakeholders giving their time to help the particular effort (e.g. land managers providing information, agency staff facilitating projects) need evidence that their input is having an effect, at the least, to maintain their motivation for continued involvement. Because these programmes are designed to be responsive to changing community needs, one of the most pressing requirements is to develop appropriate evaluative processes to foster ongoing learning, correction, and adjustment by all stakeholders.

This involves clear objectives and indicators of success that promote accountability, and which can be monitored and evaluated by the relevant participants and decision makers at all

levels. Evaluation is no different to any other monitoring programme. It will pay off only to the extent that it reflects on the results of past actions, and enables people to think more clearly about their future actions (Bosch et al. 1996).

Beyond the individual programme level, collaborative initiatives can be seen as experiments providing opportunities for practitioners and action researchers to learn about fundamental, cross-cutting questions concerning the best way to model programmes. They are also an opportunity to examine the role that social capital and capacity building can play in helping achieve more environmentally sound management. Hence, information from evaluation of these initiatives can be fed back to shape future policy and research agendas.

### **Participatory monitoring and evaluation in practice**

Monitoring and evaluation of participation should involve both qualitative and quantitative elements. In any programme there will be tangible outcomes that can be quantified so that the extent of change can be judged. There will also be aspects that can only be described and ultimately interpreted to understand the change that has taken place. Participatory monitoring and evaluation covers a number of approaches including auto- or self-evaluation, beneficiary assessment, participatory impact monitoring, participatory assessment monitoring, and evaluation. All these approaches have in common the active and meaningful involvement of one or more 'stakeholders' in the design, implementation, analysis, and critical review of monitoring and evaluation activities. This moves beyond roles traditionally assigned to researchers or to 'external' evaluators contracted by funders to look at project or programme achievements. Participatory monitoring and evaluation builds upon the approaches and tools used in participatory (action) research, but also borrows from traditional social science approaches and conventional monitoring and evaluation theory and practice. Participatory monitoring and evaluation has a special interest in looking at participation itself, seen both as a means to an end (the process of participation) and as an end in itself (enhanced participation in terms of number of people and/or quality of involvement).

More than any other activity and by its very nature, building the capacity for groups to mature depends for its effectiveness on participant ownership and commitment. Its success will rely on the use of participatory and formative evaluation exercises that strengthen the ability of groups and group-members for ongoing self-assessment and correction. By engaging in such exercises groups will be able to progress from dependency to interdependency (Pretty & Frank 2000). The monitoring and evaluation component of environmental research and development programmes, then, needs to be equally about building capacity, diagnosing constraints and opportunities, and trying to make programmes grow and expand, as it is about measuring and describing progress on the ground against preset targets.

The participatory nature of these evaluations encourages the use of evaluation as a learning tool and allows the perspectives of different team members to be articulated. It also provides information to feed into programme design, enabling the programme managers, in partnership with team members, to rethink and adapt goals and methods during the programme according to emerging issues.

It is often useful to have a third party help with evaluation. Ideally, they should specialise in: helping the different parties frame realistic goals, measuring progress towards operationalising them, recognising when a change of strategy may be required, and extracting insights from their hard labours. As Ashton (1998) points out evaluators are not expected to have answers, but they are expected to raise important questions for participants to answer.

Finally, it is important to plan strategies for approaching and involving each person or group at the beginning of the evaluation exercise. How to do this will usually depend on the results of an initial stakeholder analysis (see 5.6). How involved each stakeholder is will depend on the appropriate type and level of participation. There is no need to involve reluctant stakeholders and stakeholders may change their level of involvement as the process continues, thus partnerships should be flexible and designed to grow. Where the stakeholder is a group rather than an individual, you may need to decide whether all in the group participate or only representatives of the group.

## **6. Building Group Capacity for Environmental Change**

### **6.1 Introduction**

Increasingly the role of groups and teams as a catalyst for change in environmental management is becoming well accepted. Of course, the idea of working through groups to achieve these aims is not new. Most of us, if we wish to learn a new skill or broaden our perspectives on an issue, will seek out a collaborative learning environment such as a club or training programme. Similarly, talking an issue through is a natural process for many people. We gain new insights as we express our own views, and subsequently modify our views as other people provide us with new ways of looking at the issue at hand. Groups can also foster a collective sense of responsibility; we generally try to fit in with groups we are involved in.

Groups may be formally constituted and ongoing (e.g. a landcare group, or agency team for resource use efficiency), or they may come together to undertake a one-off task. Such groups are formed for a range of reasons, but in an environmental context they often focus on an immediate problem or issue such as developing best-practice guidelines or establishing a community monitoring scheme.

However, to foster a more collective approach to environmental management that is capable of transformational change, we have to do more than just work together on specific projects. Transformational change requires individuals and groups to develop the capacity to move beyond the completion of task-bounded activities. They must catalyse change within their immediate membership first, and spread that culture to others in their communities over the longer term.

‘Capacity’ in this sense is the ability to make a difference over time and across different issues. For example, if people become aware of an environmental problem, like water quality or the imminent loss of an iconic stand of trees, they might work together to plant riparian strips, or fence off the trees. Similarly, an organisation may establish a team to work on reducing their resource use. Capacity building is, therefore, a process in which people see working on common issues and shaping an improved future as part of their normal lives. This capacity is related to a number of factors. These include task-related factors such as group abilities and skills, and process-related factors such as support, networking and trust.

To take our example further, a landcare group that has successfully collaborated to manage pests might decide later to work to improve local water quality. Their experience of working

as a group, accessing and using information, and working with agencies will help them improve their water quality.

The transformational shift we are talking about here is that individuals in those groups will be:

- motivated to understand and protect their environment
- thinking as much about shaping an improved future as about immediate problem solving
- open to other points of view, reflective, and concerned with managing relationships and building trust
- keen to work with other institutions and groups to achieve environmental goals.

Thus, one of the main issues for people or agencies seeking to catalyse participatory processes is getting the right interrelationship between achieving concrete outcomes, and developing effective, sustainable capacity to make the process ongoing. The following material provides an introduction to a number of processes that are important to successful groups. This material draws heavily on the work and reviews documented in the following Landcare Research reports: Kilvington et al. (1999), Allen & Kilvington (2001), and Kilvington & Allen (2001).

## 6.2 Successful groups

Groups that are functioning well share a number of characteristics. Four significant features of effective group functioning are:

- a sense of cooperation
- good communication
- having an equal emphasis on understand their own process as a group as on achieving their tasks
- having good linkages to other groups and institutions.

With a strong sense of cooperation, group members agree on the importance of the group vision and on the necessity to work with others to achieve their desired objectives. This desire for cooperation prompts members to play their part and build the trust and confidence that will ensure the collaboration of others.

Good communication is a pillar for building this sense of cooperation. It may range from something as simple as ensuring that participants are aware of, and present at, meetings, to promoting the successful exchange of valuable technical information. Good communication also ensures participants can express views and concerns, and are less likely to withdraw from the group from a sense of not being able to contribute or influence the direction of the work.

Well-functioning groups place equal emphasis on process as well as on task. Many groups measure their team performance by focusing only on their overall task (e.g. increasing local biodiversity), but this emphasis obscures the smaller-scale task achievements of the group. More importantly, it also obscures the group development process, which can represent a large part of the work the group has to do. Figure 7 illustrates one way of thinking about group processes. Teams or groups at later stages (towards the right of the diagram) are more resilient and capable of contributing to the innovations desired for social and institutional

culture change, such as improved environmental understanding and management. All stages relate measures of group or individual status to performance or outcomes.

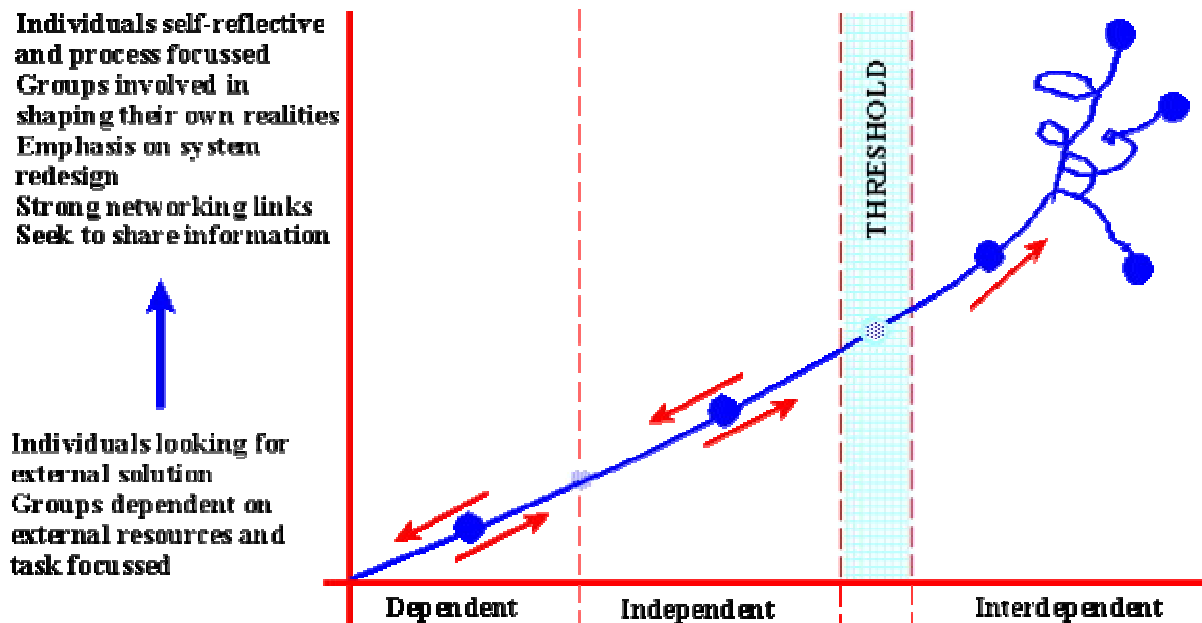


Fig. 7 Stages in group maturity (adapted from Pretty & Frank 2000).

In this model one group stage can lead to another, but progression is not inevitable. Outcomes at any point can lead to the group moving on, going back to a previous phase, or staying in one place. Each group stage has a number of identifying characteristics.

The dependent phase usually begins when individuals agree to form a group in response to a crisis or prompting (from management or an external agency). They can see benefits in working as a group, but are likely to spend much of their time looking back at what has happened, rather than forward. Individuals are still likely to be looking for external solutions (albeit new ones) so dependency remains high, particularly on external consultants and resources. They are task focused, measuring success by getting the job done.

The second phase sees growing independence, combined with a realisation of new emerging capabilities. Members are increasingly willing to invest their time in the group itself as trust grows, although the focus is still on task rather than process. At this stage groups are likely to develop links with internal and outside groups. This is a stronger and more resilient group stage, but is still likely to break down once members feel they have achieved their original aims.

The final phase illustrates a turning point for groups or teams, where they become aware of the value of the group itself and its ability to problem-solve. Individual members expect change, are more dynamic, and are capable of developing responses to help shape a desired future. Individuals in groups at this stage look at and address problems differently. The shaded threshold area in Fig. 7 represents this change. Groups in this phase focus on task issues but place an equal emphasis on process. Members continually look for ways to improve their teamwork, and critically evaluate their own abilities. Groups in this phase

promote appropriate technologies and ideas to other groups, and can initiate new groups themselves. They are increasingly linked to a range of external alliances.

Other models of group development outline stages that groups go through. For example, one model suggests that groups progress through four stages: storming, norming, performing and dorming. These models are less useful than that in Fig. 7 because they do not explain how groups differ in their development, how variations in group processes relate to outcomes, and how external influences such as community/agency relationships enhance or constrain group development. While Pretty & Frank (2000) do not directly answer these questions, they highlight what to look at more closely in trying to manage group processes.

Also, many groups depend upon the good work, energy, and commitment of one or more individuals and/or on the presence of dedicated projects. If those individual(s) stop contributing, or if the project ceases to function, the process may fail. The process should be institutionalised as much as possible, making it as independent of individuals and outside inputs.

### 6.3 Group supporting roles

Supporting groups involves a number of roles. Key among these is leadership that ensures the group achieves its goals, remains cohesive, and enables every participant to contribute to the best of their ability. Providing resource back-up such as expert advice and general secretarial and/or administration support is another key role.

#### Leadership

The purpose of group leadership is building and maintaining the group, and achieving its objectives. Leadership in groups can be a fluid concept. At various times in group development, different styles of leadership and types of leadership roles may be more appropriate than others and therefore all members of a group may have a leadership role at some time. However leadership is defined, there are characteristics common to effective leaders, as shown in Table 4.

**Table 4** Important aspects of leadership

<ul style="list-style-type: none"> <li>• A sense of responsibility for the group in all its facets (human, financial, task accomplishment)</li> <li>• Being a risk taker and accepting the risks to maintain strong direction within the group</li> <li>• Being able to communicate clearly the goals and objectives</li> <li>• Using a leadership style appropriate to the situation, and which encourages support and cooperation from the members</li> <li>• Performing to a high personal standard as an example to promote high standards within the group.</li> </ul>
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Good leadership leads to a good group dynamic, where members demonstrate a strong sense of purpose, and tasks are carried out enthusiastically. There is a high rate of attendance at meetings, and members are willing to take on increasing levels of responsibility and more-complex tasks.



## Leadership roles

*Chairing meetings:* is a common leadership role within groups. The chair generally:

- lays out the rules and procedures of the meeting (which, incidentally, should have been developed at the outset in discussion with all the members)
- ensures that people speak in turn
- keeps order during the meetings
- strikes subcommittees and ensures administrative duties are completed
- casts deciding votes if they are required.

A good chair pays close attention to detail, and ensures that items on the agenda are realistic and meaningful to the group as a whole (Donaldson & Kilvington 1996).

*Facilitation:* is an important aspect of leadership, which may be performed by a professional outside the group or a group member. Facilitation is about helping the group manage its processes well. Important roles for a facilitator include:

- keeping the group on their agenda and time lines;
- ensuring that everyone participates to the best of their ability;
- ensuring that individuals get equal opportunity to speak;
- being aware of, and be willing to rectify, potential conflict areas, personality issues, or process breakdown;
- understanding group processes and being able to move the group through difficult stages;
- seeking consensus and recognising closure when it is reached; and
- producing a summary of proceedings.

This role requires excellent people skills, an intuitive feel for potential conflict whether personality or issue driven, sensitivity to the concerns of others, and the ability to help with these without appearing biased and judgmental (Donaldson & Kilvington 1996).

*Resourcing groups:* Groups dealing with issues with a technical or expert component require information that may be provided by a resource leader, internal or external to the group (such as government scientists or private sector consultants). This person/s will generally provide advice and information when asked and clarify specific questions relevant to the work at that time. When technical advice is not available within the group, another component of leadership is networking with external experts and advisors to bring in needed skills and information. This is part of the administration component of leadership, which may also include contacting group members, coordinating newsletters, and organising events.

*Distinguishing roles:* It is often tempting to combine the above roles in a single person but it is better to do this only after considering possible conflict and the complex mix of skills required. For instance, it is not always possible for a group member to be sufficiently withdrawn from the core of the group to act as an effective facilitator, particularly in stages of conflict or uncertainty over group direction. Similarly, the time demands of a resource person, or the differing skill requirements of that person (such as the necessity for them to bring expert technical knowledge to the group) may preclude them having the energy or ability to act well as a chair or facilitator.

*Division of labour:* Groups must determine whether they will allot tasks voluntarily or by discussion. The team must also be alert to whether critical tasks (including team or process maintenance tasks) are being fulfilled (Table 5).

**Table 5** Skills for effective groups

All members (whether they are ‘leaders’ or not) must take responsibility for the overall group effectiveness and for dealing with the problems that are inevitable.	
(Surviving the group project: A note on working in teams www.cba.neu.edu/~ewertheim/teams/ovrvw2.htm.)	
The following skills are useful to groups whether they are held by one or many members of the team.	
<b>Facilitation</b>	Dealing with conflict, managing constructive debates, moving discussion through to conclusion, reminding the team of the vision and goals, enabling all team members to have an opportunity to participate.
<b>Managing meetings</b>	Setting and agreeing agendas, managing time and arrangements, ensuring progression through the tasks of the meeting.
<b>Documenting progress</b>	Enabling the team to refer back to earlier decisions and track progress, either through minute taking or some other form.
<b>Innovation</b>	Introducing creative ideas, thinking laterally.
<b>Data &amp; information gathering</b>	Sourcing and interpreting relevant information.
<b>Presentation</b>	Summarising findings, presenting material and eliciting feedback
<b>Motivation</b>	Bringing ‘enjoyment’ into the group process and offering encouragement
<b>Task performing</b>	Reliably undertaking tasks necessary to achieve the team’s goals.
<b>Networking</b>	Bringing relevant comment, feedback and information to the team and back out to the wider organisational environment

## 6.4 Becoming informed

Action research literature says that a useful way of achieving buy-in and empowerment in a team is if one or more members of the team initiate their own literature review. This also helps bring in knowledge that enables the group to look at the situation from a broader perspective than their habitual frame of reference. Because we live in a world created by our own perceptions, we are generally not aware of what we do not know and it is easy to look at problem situations with the same set of assumptions, values and theories that caused the problem to arise in the first place. This also means that the group is not entirely ignorant of what others have been thinking and doing in this area before they design their particular activities.

## 6.5 Understanding group processes

Despite an obvious difference between many groups (a consequence of the variation in participants and the dynamics between them) there are several stages of group development that appear to be common to all. These stages are consistently described by a number of writers in this field, albeit using a variety of terminology (e.g. Hunter et al. 1992; Donaldson

& Kilvington 1996). They are the developmental stages of ‘getting started’ and ‘getting to work’ through to ‘maturity’ and ‘ending’, where the group has reached a point of fulfilment and completion of its objectives. This development process is often referred to as forming, storming, norming/performing and dorming.

Active facilitation is often necessary throughout these developmental stages. This is to draw a clear purpose from the group, to support the group in identifying actionable first steps, and to maintain motivation in continued effort. Without effective facilitation and support it is not uncommon for groups to flounder midway, losing the initial enthusiasm that prompted the group to form. Complacency or loss of purpose can then prevent members from getting on with tasks at hand or assessing the effectiveness of what has already been undertaken. Table 6 illustrates the main ways of identifying groups in each of these stages and the corresponding facilitation needs.

## **6.6 Evaluation and adaptation**

As noted earlier, evaluation is a means to reflect on how the group is doing both in its tasks and its process. Working in groups is seldom easy all the time. Even the groups that seem most likely to succeed can strike major problems. Participatory monitoring and evaluation (PM&E) techniques represent key tools for helping a group to learn from their problems by providing a framework for reflecting on past actions and processes and considering ways that they might improve in the future. Ongoing evaluation underlies learning, correction, and adaptation and can help a group move forward constructively to achieve their goals. Evaluation has already been discussed at some length earlier in this report.

**Table 6** Stages of group development

<b>Forming stage</b> <ul style="list-style-type: none"> <li>• Lots of questioning about the purpose of the group and what tasks are to be performed</li> <li>• Looking for leadership.</li> </ul> <p><i>Note</i> If this stage is not done thoroughly it is likely to have to be revisited as the group loses sense of direction.</p>	<b>Facilitating forming</b> <ul style="list-style-type: none"> <li>• Patient explanation of the purpose of the group</li> <li>• Identifying and agreeing group goals, and objectives</li> <li>• Setting up the process, e.g. how decisions will be made and who will make them</li> <li>• Establishing leadership in the group.</li> </ul>
<b>Storming stage</b> <ul style="list-style-type: none"> <li>• Disagreement over goals or objectives.</li> <li>• Conflict between group members.</li> <li>• Absence and withdrawal by group members.</li> <li>• Frustration over lack of achievement of goals etc.</li> </ul> <p><i>Note:</i> This stage is a common sticking point for many groups.</p>	<b>Facilitating storming</b> <ul style="list-style-type: none"> <li>• Reiterating the purpose – reminding members of the goals.</li> <li>• Checking on achievements so far – celebrating them, however small.</li> <li>• Checking on tasks – reassigning them if necessary and reviewing resource needs to carry them out.</li> <li>• Carrying out conflict resolution – using professional facilitation.</li> <li>• Possibly rotating the leadership to encourage involvement by other group members.</li> </ul>
<b>Norming/performing stage</b> <ul style="list-style-type: none"> <li>• Group attendance is high and enthusiastic.</li> <li>• Tasks are being performed regularly.</li> <li>• Optimism about achievements.</li> </ul>	<b>Facilitating norming/performing</b> Maintaining momentum by: <ul style="list-style-type: none"> <li>• ensuring resource needs are met</li> <li>• noting achievements</li> <li>• learning from failures.</li> </ul>
<p>The group can then go in one of two directions:</p> <p><b>A. Dorming or ending stage</b></p> <ul style="list-style-type: none"> <li>• The group purpose has been achieved, or</li> <li>• circumstances have changed and the group no longer continues.</li> </ul>	<b>Facilitating ending</b> <ul style="list-style-type: none"> <li>• May require a redefinition of goals if the group wants to continue together, or</li> <li>• acknowledgement of achievements in order to leave participants with a positive experience of group work.</li> </ul>
<b>Independence-interdependence</b> <ul style="list-style-type: none"> <li>• The group has a clear vision of the future and a real sense of purpose.</li> <li>• The group is empowered to deal appropriately with issues, conflicts, resource needs and other changes as they emerge.</li> <li>• The group is innovative and moves from solving one problem to creating a desired future by identifying and tackling related issues.</li> <li>• The group has strong partnerships and networks with relevant agencies and other groups.</li> <li>• Individuals in the group confidently reflect on and appraise their actions.</li> </ul>	<b>Facilitating independence &amp; interdependence</b> <ul style="list-style-type: none"> <li>• The facilitation role of an external agency is diminished and the group does most of the day-to-day facilitation itself. However, an external facilitator may still: <ul style="list-style-type: none"> <li>• assist the group to establish good networks with their community and beyond, for support, information and learning from the experience of others;</li> <li>• help the group undertake good evaluation of its process, outcomes and networks so they can learn from experience;</li> <li>• maintain a supportive environment for the group to try out ideas and take risks.</li> </ul> </li> </ul>

## 7. Discussion and Conclusions

Over the past decades social science has built up an understanding of human behaviour change that recognises that people are active sense-makers who are continually assessing their environment and acting according to the ways in which they interpret the situation. Because each individual or group experiences the world slightly differently, each may react differently to what appears, to an outsider, to be the same situation. In addition, behaviour change is not the simple linear process that the structure of many behaviour change programmes implies.

Parnell & Benton (1999) note that:

- Behaviour change might have to happen many times before an individual can maintain the change in the face of many different influences.
- People may have to adapt the desired behaviour, so that they can maintain it in their particular situation.
- Most behaviour change programmes aim to change people without recourse to how those people might want to change their own behaviour.
- The focus of attention is often on either the programme, or on the people to be changed, with little attention on the interactions and processes going on between the two.
- Most behaviour change programmes assume that everyone is the same and ought to respond the same way to the same interventions. In fact, as we have already seen, this is not the case.

Overall, these aspects of behaviour change indicate that, to make successful changes, the change has to be important to the individual and the suggested change has to be incorporated into the life of each individual. Each individual will have a different set of needs and circumstances that must be addressed if they are to make and maintain changes. Often these needs include networks of other people, and require some thought about how a new behaviour fits into a particular context.

This highlights the importance of getting people together to establish a shared understanding of any problem situation and potential pathways for action. When people feel that they have had the opportunity to participate in planning future change, they are likely to buy into the changes that may be required of them.

The idea of stakeholder participation is a key operational principle of contemporary sustainable development policies, programmes and projects. However, gaining the involvement of different groups in participatory initiatives is a complex process, and there are no single approaches or methodologies that one can use to enact this. Participation is not a one-off event like consultation – it is an ongoing process. It takes time, resources, understanding and perseverance, but the end result should be a development process that involves people and groups – with their ideas, skills and knowledge – in learning and subsequent change.

Social capital is suggested as the framework that supports the process of learning through interaction. A key requirement for social capital to be present is the formation of networking

paths that are both horizontal (across agencies and sectors) and vertical (agencies to communities to individuals). The quality of the social processes and relationships that social capital supplies – and within which learning interactions take place – is especially influential on the quality of the learning outcomes in collaborative approaches.

Participation can contribute heavily to sustainability, it can make environmental activities more effective – and simultaneously contribute to building the capacity of the groups involved to continue and grow the initiative. However, promoting participation implies a different way of working, the use of different approaches and methods, and different expectations.

Some of the key factors regarding participatory processes are:

- It is critical that those promoting participatory development understand and examine the political and cultural context in which participation is to occur. Participation does not take place in a vacuum, but its development and progress will be influenced by a variety of factors inherent in the context. Time should be made available at the beginning of any participatory project to identify and analyse what could influence the process. In this respect a stakeholder analysis is a useful first step.
- In the preparation and design stages of a project, participatory processes do not necessarily follow structural, predetermined and linear directions. Participation is not merely an input, but underpins all activities. Participation is intrinsic to a project's development and not simply an activity used from time to time to provoke beneficiaries' interest.
- 'Participation in development' is not the same as 'participatory development'. Projects must seek to promote an authentic involvement of people in the development process. Participation implies radical change in project operations rather than small adjustment of the project planning cycle.
- Key to promoting participatory forms of development is training staff in the methods and techniques so that they can be effective in promoting and guiding these. Recently participation has revolutionised project practice, yet many staff have yet to move beyond the level of a general understanding.

It is also important that participation be practised simultaneously at different levels of decision making. It is most useful to think of three levels: (1) national; (2) institutional and programme; and (3) projects on the ground. Because these programmes are designed to be responsive to changing community needs, one of the most pressing challenges is to develop participatory and systems-based monitoring and evaluative processes to allow for ongoing learning, correction, and adjustment by all parties concerned.

Effective collaborative initiatives are the ones that pay attention to both the task and the process, and so meet the needs the different participants have in both areas. In this regard the task can be defined as what those involved have to do (e.g. reduce waste). The process is concerned with how people and groups/teams work together and maintain relationships. Because task and process are linked in this way, it is important to measure and evaluate the progress of both.

In the end, participatory initiatives in local projects involve people working in groups and teams. Accordingly, an understanding of how to initiate and foster these social units is

essential for delivering participation. However, to foster a more collective approach to environmental management that is capable of transformational change, we have to do more than just work together on specific projects. Transformational change requires individuals and groups to develop the capacity to move beyond the completion of task-bounded activities. They must catalyse change within their immediate membership first, and spread that culture to others in their communities over the longer term. Supporting groups in this way requires an understanding of group processes and stages of development, attention to factors such as group abilities and skills, and the use of appropriate participatory monitoring and evaluation processes.

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## 9. References

*Many of the following references are obtainable only on the Internet. While every care has been taken to ensure that the web links are currently available, these links may not remain so in the future. Hard copies are held by the first author.*

- Ajzen, I.; Fishbein, M. 1980; *Understanding attitudes and predicting behavior*. Englewood Cliffs, NJ, Prentice-Hall.
- Allen, W.J. 2001: Working together for environmental management: the role of information sharing and collaborative management. PhD thesis, Massey University, Palmerston North, New Zealand. Available from: [http://nrm.massey.ac.nz/changelinks/thesis\\_contents.html](http://nrm.massey.ac.nz/changelinks/thesis_contents.html)
- Allen, W.; Kilvington, M. 1999: Why involving people is important: the forgotten part of environmental information system management. Paper presented to: 2nd International Conference on Multiple Objective Decision Support Systems for Land, Water and Environmental Management (MODSS '99) Brisbane, Australia, 1–6 August 1999. Available from <http://www.landcareresearch.co.nz/research/social/envinfo.html> (Accessed 16 January 2002).
- Allen, W.; Kilvington, M. 2001: Building effective teams for resource use efficiency. Landcare Research Contract Report LC0001/060, Lincoln, New Zealand. Available from: [http://www.landcareresearch.co.nz/research/social/teams\\_tz1.html](http://www.landcareresearch.co.nz/research/social/teams_tz1.html) (Accessed 16 January 2002).

- Allen, W.J.; Bosch, O.J.H.; Kilvington, M.J.; Oliver, J. 2001: Benefits of collaborative learning for environmental management: Applying the Integrated Systems for Knowledge Management approach to support animal pest control. *Environmental Management* 27: 215–223.
- Allen, W.; Kilvington, M.; Nixon, C.; Yeabsley, J. 2002: Sustainable development extension. MAF Technical paper No. 2002/03. Available from: <http://www.maf.govt.nz/mafnet/publications/sustainable-development-extension/> (Accessed 9 May 2002)
- Argyris, C.; Putnam, R.; Smith, D.M. 1985: Action science. San Francisco, Jossey-Bass.
- Arnstein, S. 1969: A ladder of citizen participation. *American Institute of Planners Journal* July: 216–224.
- Ashton, C. 1998: Strategic considerations in facilitative evaluation approaches. Online conference September 1998, The Action Evaluation Research Institute. Available from: <http://www.aepro.org/inprint/conference/ashton.html> (Accessed 16 January 2002).
- Atherton J. S. 2001: Learning and teaching. Available from: <http://www.dmu.ac.uk/~jamesa/learning/> (Accessed: 29 April 2002)
- Atkinson, R.L.; Atkinson, R.C.; Smith, E.E.; Bem, D.J. 1993: Introduction to psychology (11th edition). Fort Worth, Texas, Harcourt Brace Jovanovich.
- Bawden, R.J. 1991: Towards action researching systems. In: Zuber-Skerritt, O. ed. Action research for change and development. Brisbane, Australia, Centre for the Advancement of Learning and Teaching, Griffith University. Pp. 21–51.
- Bawden, R.J.; Macadam, R.D.; Packham, R.J.; Valentine, I. 1984: Systems thinking and practices in the education of agriculturalists. *Agricultural Systems* 13: 205–225.
- Beemans, P. 1996: Culture, spirituality and economic development. Foreword in Ryan, W.F., Culture, spirituality, and economic development: Opening a dialogue. Ottawa, Canada, International Development Research Centre. Available from: <http://www.idrc.ca/books/focus/782/782fore.html> (Accessed 4 October 2000).
- Belenky, M.F.; Clinchy, B.M.; Goldberger, N.R.; Tarule, J.M. 1986: Women's ways of knowing: The development of self, voice and mind. New York, BasicBooks.
- Bosch, O.J.H.; Allen, W.J.; Gibson, R.S. 1996: Monitoring as an integral part of management and policy making. In: Proceedings of symposium "Resource management: Issues, visions, practice" Lincoln University, New Zealand, 5–8 July 1996. Pp. 12–21. Available from: <http://www.landcareresearch.co.nz/research/social/monpaper.html> (Accessed 16 January 2002).
- Bourdieu, P. 1983: Forms of capital. In: Richards J. C. ed. Handbook of theory and research for the sociology of education. New York, Greenwood Press.
- Brehm, S.S.; Brehm, J.W. 1981: Psychological reactance: a theory of freedom and control. New York, Academic Press.
- Bunning, C. 1995: Professional development using action research. Action Learning, Action Research and Process Management Internet Conference, Bradford, England, MCB University Press. Available from: <http://www.mcb.co.uk/services/conferen/nov95/ifal/paper1.htm> (Accessed 12 February 1998).



- Burgess, G.; Burgess, H. 1997: Transformative mediation. Available from: <http://www.colorado.edu/conflict/transform/tmall.htm> (Accessed 13 September 2000).
- Checkland, P.B. 1981: Systems thinking, systems practice. Chichester, UK, Wiley.
- Christensen, N.L.; Bartuska, A.M.; Brown, J.H.; Carpenter, S.; D'Antonio, C.; Francis, R.; Franklin, J.F.; MacMahon, J.A.; Noss, R.F.; Parsons, D.J.; Peterson, C.H.; Turner, M.G.; Woodmansee, R.G. 1996: The report of the Ecological Society of America on the scientific basis for ecosystem management. Washington DC, The Ecological Society of America. Obtained from: <http://www.esa.sdsc.edu/ecmtext.htm> (Accessed 27 October 1998).
- Coleman, J. C. 1988: Social capital in the creation of human capital. *American Journal of Sociology* 94: S95–S120.
- Dahlberg, K.A. 1991: Sustainable agriculture - fad or harbinger? *BioScience* 41: 337–340.
- Donaldson, C.; Kilvington, M. 1996: Working with communities. Unpublished handbook. Available from Landcare Research, Lincoln, New Zealand.
- Earl, P. 1986: Lifestyle economics: consumer behaviour in a turbulent world. Sussex, UK, Wheatsheaf Books.
- ESRC (Economic & Social Research Council) 2000: Global Environmental Change Programme: Producing greener, consuming smarter. Brighton, University of Sussex. Available from: <http://www.gecko.ac.uk> (Accessed 16 January 2002).
- Executive Resource Group 2001: Managing the environment: A review of best practices. Available from: <http://www.ene.gov.on.ca/envision/ergreport> (Accessed 24 April 2002).
- Folger, J.P.; Bush, R.A.B. 1996: Transformative mediation and third-party intervention: Ten hallmarks of a transformative approach to practice. *Mediation Quarterly* 13: 263–278.
- Huber, G.P. 1991 Organizational learning: The contributing processes and the literatures. *Organization Science* 2(1): 88–115.
- Hunter, D.; Bailey, A.; Taylor, B. 1992: The Zen of groups: a handbook for people meeting with a purpose. Auckland, New Zealand, Tandem Press.
- Jacobs, J. 1961: The death and life of great American cities, New York, Random.
- Kelly, G.A. 1955: The psychology of personal constructs. Vols I and II. New York, W.W.Norton.
- Kilvington, M.; Allen, W. 2001: A participatory evaluation process to strengthen the effectiveness of industry teams in achieving resource use efficiency: the Target Zero programme of Christchurch City Council. Landcare Research Contract Report LC0001/062, Lincoln, New Zealand. Available from: [http://www.landcareresearch.co.nz/research/social/teams\\_tz2.html](http://www.landcareresearch.co.nz/research/social/teams_tz2.html) (Accessed 16 January 2002).
- Kilvington, M.; Allen, W.; Kravchenko, C. 1999: Improving farmer motivation within Tb vector control. Landcare Research Contract Report LC9899/110, Lincoln, New Zealand. Available from: [http://www.landcareresearch.co.nz/research/social/groups\\_pests.html](http://www.landcareresearch.co.nz/research/social/groups_pests.html) (Accessed 16 January 2002).

- Kolb, D.A. 1984: *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, New Jersey, Prentice Hall.
- Mermet, L. 1991: Participation, strategies and ethics: roles of people in wetland management. *Landscape and Urban Planning* 20: 231–237.
- Michael, D.N. 1995: Barriers and bridges to learning in a turbulent human ecology. *In*: Gunderson, L.H.; Holling, C.S.; Light, S.S. *ed.* Barriers and bridges to the renewal of ecosystems and institutions. New York, Columbia University Press. Pp. 461–485.
- Narayan, D. 1993: Participatory evaluation: tools for managing change in water and sanitation. World Bank Technical Paper Number 207.
- Ölander, F.; Thøgersen, J. 1995: Understanding consumer behaviour as a prerequisite for environmental protection. *Journal of Consumer Policy* 18: 345–385.
- Page, N.; Czuba, C.E. 1999: Empowerment: What is it? *Journal of Extension*. Internet journal available from: <http://www.joe.org/joe/1999october/comm1.html> (Accessed 10 October 2000).
- Parnell, B.; Benton K. 1999: Facilitating sustainable behaviour change: a guide book for designing HIV programs. Australia: UNDP Asia and Pacific Regional Programme on HIV and development.
- Portes, A.; Landolt, P. 1996: Unsolved mysteries: The Tocqueville Files II. *The American Prospect online* 7(26). Available from: <http://www.prospect.org/print/V7/26/26-cnt2.html> (Accessed 16 January 2002).
- Pretty, J.N. 1995: Participatory learning for sustainable agriculture. *World Development* 23: 1247–1263.
- Pretty, J.; Frank, B.R. 2000: Participation and social capital formation in natural resource management: Achievements and lessons. *In*: Proceedings, International Landcare 2000, Melbourne, Australia, 2–5 March 2000. Pp.178–187.
- Putnam, R. D. 1993: *Making democracy work. Civic traditions in modern Italy*. Princeton NJ, Princeton University Press.
- Putnam, R. D. 2000: *Bowling alone. The collapse and revival of American community*. New York, Simon and Schuster.
- Report of the Secretary General 1997: Global change and sustainable development: critical trends. United Nations Department for Policy Coordination and Sustainable Development. Available from: <http://www.rrojasdatabank.org/trends.htm> (Accessed 16 January 2002).
- Reynolds, J.; Busby, J. 1996: *Guide to information management in the context of the convention on biological diversity*. Nairobi, UNEP.
- Ross, L.; Nisbett, R.E. 1991: *The person and the situation: perspectives of social psychology*. Philadelphia, Temple University Press.
- Schwedersky, T.; Karkoschka, O. 1994: *Process monitoring (ProM): work document for project staff*. Eschborn, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH.
- Senge, P.M.; Kleiner, A.; Roberts, C.; Poss, R.B.; Smith, B. 1994: *The fifth discipline fieldbook: strategies and tools for building a learning organisation*. London, Nicholas Brealey.

- Skinner, B.F. 1972: Beyond freedom and dignity. London, Jonathon Cape.
- Spellerberg, A. 2001: Framework for the measurement of social capital in New Zealand. Research and Analytical Report 2001#14, Statistics New Zealand, Wellington.
- UNDP (United Nations Development Programme) 1996: Capacity development for governance for sustainable human development. Available from: <http://magnet.undp.org/cdrb/LENJOY1.htm> (Accessed 16 January 2002).
- UNDP (1997) UNDP guidebook on participation: Empowering people – a guide to participation. Available from: <http://www.undp.org/csopp/paguide.htm> (Accessed 16 January 2002).
- UNEP 2000: GEO-2000: Outlook and recommendations. Available from: <http://www.unep.org/geo2000/english/0243.htm> (Accessed 7 February 2002).
- Velicer, W.F.; Prochaska, J.O.; Fava, J.L.; Norman, G.J.; Redding, C.A. 1998: Smoking cessation and stress management: Applications of the Transtheoretical Model of behavior change. *Homeostasis* 38: 216–233.
- Verity. 2002. Social networks. In: Tech Buzz. Available from: <http://www.verity.com/techbuzz/social.html> (Accessed 20 January 2002).
- Vickers, I.; Cordey-Hayes, M. 1999: Cleaner production and organisational learning. *Technology Analysis and Strategic Management* 11: 75–94.
- Wilcox, D. 1994: The guide to effective participation. Partnerships online, available from: <http://www.partnerships.org.uk/guide/index.htm> (Accessed 16 January 2002).
- Wilson, P. 1996: Empowerment: Community economic development from the inside out. *Urban Studies* 33: 617–630.
- Wynberg, R. 1993. Exploring the Earth Summit. Findings of the Rio United Nations Conference on Environment and Development: Implications for South Africa. Johannesburg, Penrose Press.
- Young, M.D.; Gunningham, N.; Elix, J.; Lambert, J.; Howard, B.; Grabosky, P.; McCrone, E. 1996: Reimbursing the future: an evaluation of motivational, voluntary, price-based, property-right, and regulatory incentives for the conservation of biodiversity. CSIRO Division of Wildlife and Ecology, the Australian Centre for Environmental Law, and Community Solutions.