New Zealand Agricultural and Resource Economics Society (Inc.)

A Description of Voluntary Policy Methods for Natural Resource Management

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Paper presented at the 2010 NZARES Conference

Tahuna Conference Centre – Nelson, New Zealand. August 26-27, 2010.

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Summary

The voluntary policies being used by local authorities to deliver Resource Management Act outcomes are considered nonstatutory policy methods under the Act, which does not define them or describe how they might be selected and implemented. One economist has been able to list over 50 different economic methods. A similar list has not been available for policy agents interested in drawing upon the rich and extensive experience of people in other disciplines such as agricultural extension and social marketing. Applied literature in a number of social science disciplines has been used in this paper to put such a list together. The author describes possible voluntary policy methods including those associated with adult learning, communication, networking and engineering. A typology of voluntary policy methods is combined with a knowledge of market segmentation and learning styles to design voluntary policy strategies that can be used to supplement or replace regulatory or market based methods.

It is apparent that the standard of voluntary policy design can be improved through a greater awareness of the attributes of the different voluntary policy methods and how they can be combined effectively. Through greater strategic use of voluntary policy methods, and a process of monitoring and continual improvement, the outcomes desired in Resource Management Act legislation could be achieved more effectively without any increase in the number of rules required.

Introduction

The Resource Management Act (RMA; 1991) requires regional councils to include objectives for natural resource management in their regional plans, as well as a description of the policies for achieving the objectives and the rules needed to implement the policies. It is optional as to whether or not they include in their plans a description of any methods other than rules, that they might intend using for implementing their policies. It is also optional for councils to include their principle reasons for adopting the policies and methods that they have selected (Part 5, section 67). The objectives and methods contained in regional plans are expected to fulfil the purposes of the RMA (described in Part 2 of the Act) in the most effective and efficient manner (Part 4, section 32, paragraph 3).

To achieve predictable results, any policy interventions need to be based upon a knowledge of causality from empirically verified theory (Bobrow and Dryzek 1987, p125). The range of policy interventions available utilise methods that are voluntary, economic or regulatory (Howlett and Ramesh 2003). Although both regulations and economic methods require varying degrees of voluntary compliance to ensure their cost effective delivery, the voluntary methods in this paper reinforce the decision making autonomy of the intended participants in a way that the others don't (Howlett and Ramesh 2003, p105 and p113). A number of resources are available to assist policy makers with both regulatory policy methods (eg Fisher, 2010), and economic policy methods (Kircshen 1964; Sterner 2003). The range and use of economic policy methods in particular has become so well developed that for some people,

policy analysis and economic analysis have been practically synonymous (Bobrow and Dryzek 1987, p. 30). By contrast, persuasion or voluntary policy methods have not been brought together in an integrated and comprehensive fashion. This is despite some resources published by sub-disciplines within persuasion practices (for example social marketing in Donovan and Henley 2003).

In the rest of this paper the author lists and describes the range of voluntary policy methods available and some of their underlying principles. The author then goes on to describe some of the more theoretical frameworks that can be used to assist in the operationalisation of voluntary principles and lastly describes some of their strengths and weaknesses.

The Range of Voluntary Policy Methods Available to Policy Makers

The following list of voluntary policy methods was originally developed during a research project studying policy strategies for behaviour change (Parminter 2009[a]). The list began with those methods already identified by Coutts and Roberts (2003),and was developed further through the life of the research project as new methods were identified that could not be placed in the original list of categories. The list only contains those methods empirically examined by the researcher and identified as being useful for natural resource policy in New Zealand.

The list includes methods based upon principles of learning and communication, networking, and structural design.

Learning and Communication

Group Learning Methods

The ***group empowerment and facilitation method*** is a facilitative framework for groups seeking to address their learning needs based upon their own situation and personal requirements. The agency implementing this method provides learning, research and facilitation resources in such a way that people are encouraged to define their own problems and opportunities and seek their own avenues towards addressing them. This method of group learning is commonly described as "bottom-up".

The ***group technological development*** and ***problem solving method*** uses a range of facilitated processes to tackle specific practices or resource-management needs. It is about working with individuals and groups to develop specific technologies, management practices or decision support systems and through the group, making these available to the rest of the industry or community. Where this method differs from the group empowerment and facilitation method (even though both involve groups and facilitation) is that here a specific management practice or technical problem is identified by the policy agency prior to the group being formed and this is made central to the group's activities. Because of that, it may be described as "top-down".

The ***programmed learning method*** is about delivering specifically designed training programs or workshops to targeted groups of landholders or community members to increase their understanding or improve their skills on specific topics. 'Programmed' refers to the fact that the learning event (seminar, workshop or course) has a set curriculum for achieving specific learning objectives in comparison to the open objectives of the group empowerment

and facilitation method. Sometimes learning methods may be described in policy documents as "community education".

Mentor method

The ***consultant or mentor method*** applies when a mentor or consultant works with individuals in an industry, sector or community, building a personal relationship to the point when they are in a position to encourage and assist people to improve their managerial, technological, social or environmental performance. As a mentor or consultant, the policy agent provides support to clients so that they can be confident that they are basing their decisions on sound information and decision processes. The participant is responsible for making their own decisions despite the involvement of the mentor. The role of the mentor is to provide a sounding board for clients and help them to develop further any innovative ideas. The mentor role generally is established upon a formal or informal contract for providing a negotiated service.

Communication Methods

The ***information access method*** is about the policy agency gathering and providing a range of generalised information that individuals and groups can access from a distance and at a time that suits them. For example, this may be provided by using a web-site or information centre. The main focus of this method has been to provide a storehouse for information so that it can be analysed, easily retrieved at the most appropriate decision making stage and provided in a form that suits individual needs. Its main elements include ease of access, ability to reach as wide an audience as is needed, the accessibility of the information through searching mechanisms, monitoring the information needs and responding to feedback with regular updates. Out of all the different communication methods this is the most passive.

The ***information presentation method*** has a recognised expert or range of experts gather generalised information together and present it to an audience as part of a conference, field day, workshop or seminar. The information provided is determined by the presenters through a prior selection process, or through audience interaction. The information presentation method allows for audience interaction with the presenter and some degree of expert influence upon their attitudes.

The ***advocacy method*** uses a range of marketing techniques to encourage and support people in selected segments through a process of change. The marketing techniques ranging from mass media to more personalised and customised approaches, are matched to the recipients' level of awareness, decision making processes and motivations for change. Advocacy is usually centrally planned and resourced and designed to encourage participants to understand their situation in a way that is consistent with that of the policy agency and then assist them to develop customised solutions to public and industry issues.

The ***soft-selling method*** engages individuals and groups to utilise known technical and practice options for addressing specific issues. Like advocacy methods the approach is centrally planned and resourced. Soft-selling is different from advocacy in that the agent starts with a specific management practice or technology predetermined by the agency. The aim of this method is to encourage people to adapt and modify their circumstances so that they can apply the practice or technology in their own situation for both personal and public benefit.

Networking by Design

A policy agency may choose to link formally with other community, civic or commercial organisations to formulate and/or implement policies. Generally the linking organisations are already part of the policy agency's network at either governance, management or implementation levels and are known to have shared goals, aligned capability and available resources. Formalising the relationship for a policy outcome can be a way of improving the effectiveness or efficiency of policy delivery.

Networking by design could involve a range of different relationship entities depending upon the political purpose for the relationship and its policy role. These include:

A ***Consultative Group*** of people from a range of stakeholder segments that may be invited to come together and inform the decision making of policy staff. Of the different ways of networking described here, a consultative group is the least directly involved in decision making.

A ***Steering Committee*** gathered from technically experienced and capable people to guide the direction of a policy, perhaps with members that can bring to the discussions knowledge from their own social networks and technical backgrounds, and with direct information about the programmes being run by their own organisations.

An ***Advisory Committee*** constituted to be included in the decision making of the policy agents, particularly where the members of the committee have specialist information and can provide additional technical capabilities, resources, experience and support from their own organisations.

An ***Accord*** may be developed between organisations that formalise their agreement to work towards the same goal or outcome with independent but complementary strategies.

Partnerships are generally formed to share decision making responsibility for addressing particular policy issues of joint importance, by combining resources and developing joint strategies.

Membership groups, clubs or associations may be formed to support the implementation of a policy strategy, where membership obligates the participants to engage in particular activities.

Steering committees can assist with direction, and advisory committees with policy content, but neither they nor consultation groups, require their members personally or for their organisations to make commitments to agreed common goals and objectives, other than to work together. Accords, partnerships and membership groups do require their members to agree to a set of common goals that they agree to work towards and that can be used to measure progress.

Networking by design involves delegating some responsibility for policy formulation and/or implementation to the new network entity. Regional councils have their RMA accountability established through democratic processes, but it is unlikely that the networking organisations will have the same form of accountability. It therefore follows that any delegation of authority on behalf of the political agency to the network entity requires some manner of making the results of the relationship politically accountability to the wider public. This could involve:

- Contracts that are legally enforceable exchanges of promises between parties.

- Cooperative Agreements used where the policy agency retains the overarching direction of a project throughout its life, but shares implementation with another organisation.

- Charters where the policy agency retains sovereignty but grants some independent rights to another organisation.

- Partnership Agreements when resources are combined and jointly administered for a share in the results.

- A Memorandum of Understanding (MOU) that provides a document of intent describing how parties propose to work together, but without legal obligation.

- Covenants that generally reflect unilateral promises by the policy agency to work with the another organisation in an open-ended way.

Structural Design

The ***display and demonstration method*** uses displays and/or prepared sites to provide visual and positive examples of the consequences of making desired behaviour changes. These could be sign-boards showing the state and rate of improvement in resource condition. It could be a site that people can visit that has been laid out according to the desired practice and with interpretive material available. It could be by providing free samples so that people can experience in a limited way, the benefits of the desired behaviour.

The ***behaviour blocking method*** aims to put in place structures that restrict peoples' ability to engage in undesired behaviours. These could include putting in place footpaths that guide people through ecologically sensitive areas, or fences that restrict access to those same areas. The design and construction of items from forest-huts to rubbish receptacles has been shown to influence peoples' behaviour and reduce noncompliance activities.

Integrating voluntary policy methods and economic and regulatory methods

Voluntary policy methods are not always applied on their own, and they can be combined with other economic and regulatory policy methods to encourage learning and empower decision making. When they are used on their own, regulations and economic methods are usually more directive and coercive than voluntary methods. They can build distrust and resentment and feelings of disempowerment. In order to obtain the benefits of combining economic and regulatory policy methods with voluntary methods it is important that the principles of learning, adaptation and empowered decision making are consistently applied throughout the combined policy methods.

Economic Incentives and Disincentives

Compliance incentives can be used to encourage landowners to adopt the practices desired by Councils by providing financial inducements or other rewards when participants use preferred technologies or practices. These are generally highly specified, so that compliance can be readily assessed and monitoring costs minimised, e.g. erecting a fence to meet the Council's desired containment criteria. The specifications for these are quite fixed and these incentives have sometimes been described as "soft rules". Compliance incentives are most

effective at encouraging long term behaviour change when they are not quite large enough on their own to justify practice change by landowners. This happens when incentives that are just short of covering the cost of change induce people to modify their values in order to fully justify the effort and costs of making change. This can be compared to situations when the incentives are sufficient on their own to justify change,

Context specific incentives assist with implementing works and actions that are context specific and that must be tailored to each individual site's conditions, resources and personal circumstances. An example might be incentives to develop property plans outlining a number of responsibilities for the landowners, any financial incentives available and how these will be provided. The policy organisation may assist with property assessments, plan design and funding applications. The flexibility associated with these incentives requires quite a bit of planning by landowners in conjunction with policy agencies and so encourages a process of learning as well as practice change.

Cost recovery disincentives enable some of the agency's costs for policy administration (e.g. for resource consent applications), to be recouped, where the imposition of such costs can be used to advantage a more desired practice. These can be an effective signal indicating future policy preferred behaviours and so encourage behaviour change in the desired direction for policy makers.

Taxes and charges can be used to penalise undesirable behaviour (the opposite to subsidies). They are most commonly used to control negative externalities e.g. pollution. User charges can be established so that market forces determine how much of that activity takes place. Success depends upon setting charges so an acceptable level of activity occurs and so that the social benefits equal social costs. If they are out of alignment with the actual social costs incurred economic inefficiencies result. Lower charges result in too much pollution; higher charges can cause too much abatement, and high prices for consumers.

A ***tradable permit*** scheme for resource use or pollution discharges specify use rate over a set time period. Under this system, all discharge sources are required to hold permits, with each permit specifying what quantities each source is allowed to discharge. If landowners want to produce greater levels of discharge they are required to purchase more permits. This means that those people who make the greatest contribution to creating a discharge problem require more permits than those having less effect upon the same natural resources.

Transferability ensures that the market can reallocate sources until the marginal costs of control are equal among all permit holders. This in turn guarantees that the responsibility for achieving the aggregate discharge target will be allocated among holders so as to ensure that the target is met with a minimum commitment of pollution control resources (Tietenberg, 1980, p 405).

An incentive for trading exists if one or more producers have different marginal costs of control and one producer can lower their costs by purchasing permits from another, and both would be better off by trading. Trading is likely to continue until the marginal costs of both are in equilibrium. The incentives created by a trading scheme encourage innovation and ensure that all producers have the flexibility to achieve the policy objective at the lowest possible cost (Parminter 2003).

Subsidies can be used to encourage the achievement of environmental standards or the uptake of specific practices. They are possibly best employed when alternative economic tools such as discharge taxes and charges are considered not to be effective in controlling a resource

management problem. Subsidies incentivise desired behaviours by internalising positive externalities, whereas taxes operate on negative externalities. Subsidies can also be used to reduce negative externalities but these are more difficult when an agency doesn't know what the base levels might have been.

Subsidies reward people who implement improvements in practices directly associated with improving resource condition. However, making changes in order to collect subsidies can become a purpose in itself for some people. This can divert peoples' attention away from any underlying natural resource problems and economic priorities. As a result they can create inefficient outcomes for policy agencies.

The problem with subsidies is setting the marginal value of the subsidy at a level which motivates a landowner to undertake the action, but no more. In Australia, auction and tendering approaches have been used to allow landowners to bid for a subsidy to undertake environmental enhancement projects and so achieve the most efficient pricing.

The difference between economics incentives and disincentives is determined by where the property rights are deemed to lie. Landowners may be deemed by society to own a property right to undertake (or not undertake) an action (Guerin 2003, p35). If that is the case and society wants to change the property right, they can:

- Formalise who has or doesn't have the property right
- Informally expand the responsibilities associated with the property right (i.e. internalise some unaccounted for costs)
- Pay the affected landowners to not exercise the full extent of their property right

Rule-based

The design of rules often reflects transactional thinking. This tends to be along the lines of:

- On this issue we will provide policy recipients with a service or benefit and in return recipients will conform or change their behaviour, leading to the issue being resolved.
- However, if the recipients of the service do not change their behaviour, then they will be detected by the policy agency, who will enforce the rules with costly consequences for the recipients.
- Either way, the issue will be resolved

The ***deterrence method*** for establishing and enforcing rules addresses situations where it is considered that some individuals are able to benefit from their non-compliant behaviour. The aim of this method is to identify and punish as many people exhibiting non-compliant behaviour as required, so that both they and others realise the costs to them and society of their offending. The threat of enforcement and the significance of the punishments available are considered to be the main determinant of this policy method's effectiveness at changing social and human behaviour. Rather than focus on punishment, research by Watson (2004) has shown that deterrence is most effective when all instances of noncompliance are detected and dealt with in a consistent manner. In that research, inadequate detection and inconsistent application of punishments has been found in road safety to reinforce and increase the level of noncompliant behaviour.

The ***social learning method*** for establishing and enforcing rules doesn't consider a noncompliant action to be isolated from an offender's physical and social context. The aim of rules in social learning are to minimise the opportunity for noncompliant behaviour and to maximise the opportunity for people to learn from their own mistakes and the mistakes of others. Based upon that, rules are designed to minimise the likely proportion of people found transgressing them. The enforcement process emphasises the social disadvantages of noncompliant behaviour for transgressors. Social learning methods provide opportunities for transgressors to experience using preferred forms of behaviour in place of the noncompliant alternatives.

A Typology of Policy Methods

In Table 1 the different categories of voluntary policy methods described above are distributed according to their dependence upon the availability of technical resources and the capability to build and strengthen collaborative relationships between the policy agency and the affected communities. Some methods, such as "networking by design", "group learning" and "communication" are highly dependent upon skills, capability and capacity being available for relationship building, understanding the factors motivating and demotivating stakeholder behaviour and conflict resolution, particularly if heterogeneous social groups are involved. Some methods, such as "structural design", "economic incentives", and "communication" require a high level of technical capability and capacity to draw upon, to ensure that the methods are designed to resolve the environmental issues effectively and efficiently.

Some methods associated with social networking can be effective at influencing social behaviour when there is a strong commitment for stakeholders to work together even if access to technical resources is limited. Some structural design methods can be effective, even if stakeholder groups have weak relationships with each other as long as they respond positively to the structural intervention. If relationship building is not possible, due to a lack of resources and at the same time access to technical resources remains low, then none of the policy methods may be adequate.

One of the key points that becomes apparent looking at Table 1 is that there is no single continuum along which the different policy methods can be laid from strong to weak. Instead, it is necessary to consider the social and technical context that applies and select the appropriate best-fit combination of methods. The methods are also clearly not mutually substitutable, and employing different methods can be expected to achieve different results.

These criteria should be taken into account when including voluntary methods in policy strategies so that the methods being used are matched to the appropriate level of technical resources and relationship building capability.

The operational design of voluntary policy methods requires more information about stakeholder behaviour and motivation than when designing either economic or regulatory methods (Howlett and Ramesh 2003). This includes being able to segment the target population in ways that increases the predictability of their response to the policy intervention. It also helps if there are management tools available to assist in their learning and decision making.

Table 1. Distribution of voluntary policy categories according to their dependency upon relationship building and technical resources

		Dependency Upon Strength of Relationships		
		Low	Medium	High
Dependency Upon Technical Resources	Low			Networking by design
	Medium		Rule-based	Group learning
	High	Structural design	Economic incentives and disincentives	Communication

Segmentation

Although some people have assumed that behaviour change is a two step process from awareness to adoption it has been found to be much more complex (Prochaska and Velicer 1997). One model has behaviour change associated with 5 different stages (Figure 1).

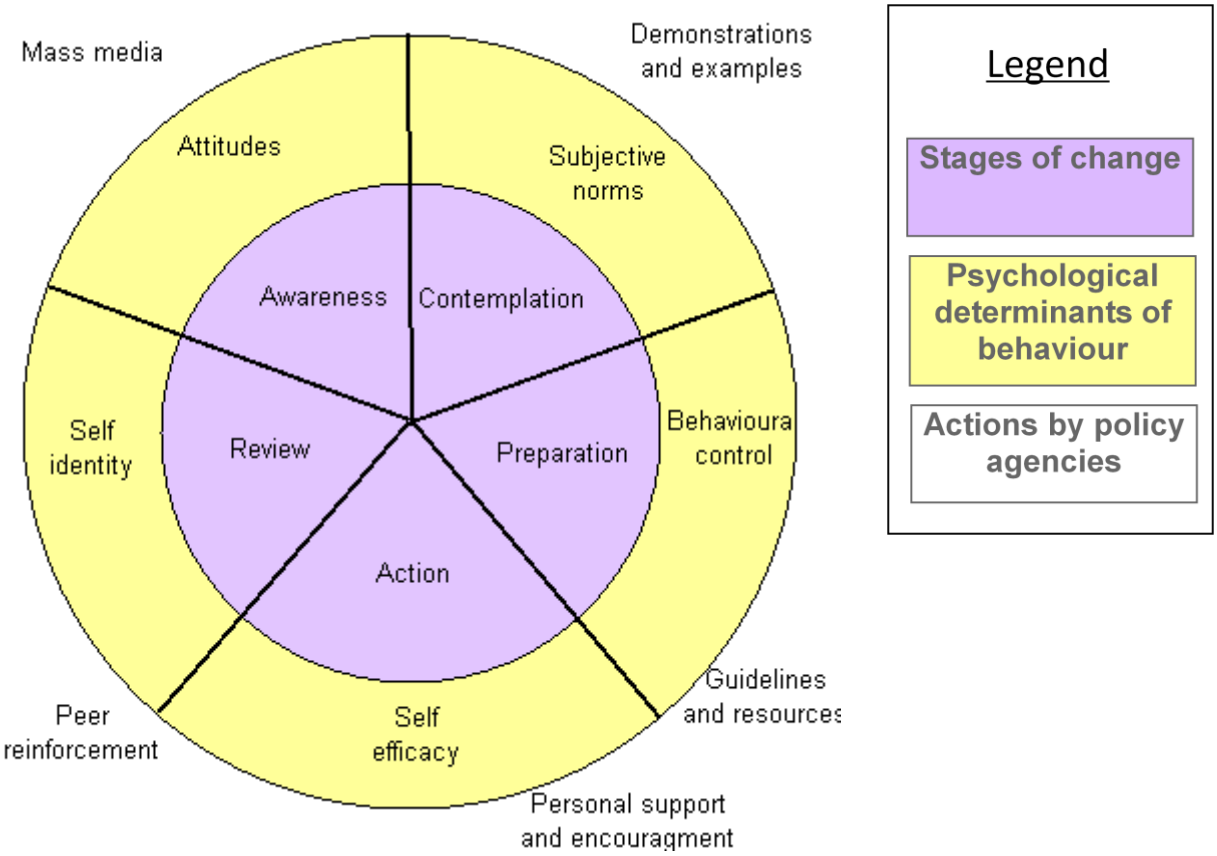
In Figure 1, stage 1 is *Awareness*. The intended participants begin this stage with no knowledge of how they may benefit from making technological or practice changes and their threshold for losing interest in proceedings is extremely low. Therefore, information being provided during this stage has to be widely and readily available at low cost, this suits the use of mass media. Publicity can be generated through industry magazines; newspapers etc and can be designed to encourage attitude changes so that participants understand the potential benefits of the new technologies and view the possible practices positively.

Stage 2 is *Contemplation*. Participants with positive attitudes towards a new practice or technology are likely to be more interested in making an effort to find out about them. They are likely to be interested in attending demonstration opportunities and field days to observe examples of the technologies and practices, and consider how they might apply to people and situations like their own. At these events, having respected leaders and experts in the

community, provide support and encouragement for change is going to be an important motivator (Parminter 2002).

Stage 3 is *Preparation*. During this stage participants go from having a general commitment towards making changes to now making plans and commitments and setting timetables. Participants will use this stage as an opportunity to consider the resources that they have available and what they might need in addition, in order to make successful changes. Guidelines, check-sheets and other references can assist participants cover all eventualities including any new skills that may be required. Attending learning circles or discussion groups during this stage can assist participants draw upon the knowledge of their peers in making their review.

Figure 1. Segmentation based upon 5 stages of change



After: Prochaska and Velicer 1997 and Parminter 2009.

Stage 4 is *Action*. Putting changes into place often results in unintended as well as expected consequences. Participants need the energy and confidence to persevere and adapt their management systems, until the changes are working for them in the best possible way. This may require linking participants to external examples and mentors as part of the policy intervention, in order that they can provide the necessary encouragement and increased confidence.

Stage 5 is *Review*. Management systems are never static and change is a constant. As changes are put in place, participants need to feel that each change is contributing to realising their goals and adding to them having a more fulfilled life. If other participants start to look to them to assist in making changes, it reinforces their feelings of being successful change-makers. To assist participants through this stage, policy makers can strengthen participants networks with their peers, and strengthen their sense of self-identity with their changes.

Each stage of change from 1-5, can be associated with different psychological drivers of behaviour, including: attitudes, subjective norms, behavioural control, self efficacy and self identity. When these are accounted for in the policy methods being used, the results of the policy interventions can be more predictable (Parminter 2009[b]).

Originally, the stages of change model was put forward as a stepped model for change that required participants to move through stages 1-5 (Prochaska and Velicer 1997). However, when a policy intervention is introduced, policy makers will find that people will appear to jump to a number of the stages immediately and then move between them in a nonlinear fashion. This therefore means that policy strategies need to include policy methods that apply to each stage as a different segment of the target population.

All of these components for particular segments: industry magazines, newspaper articles, demonstration events, field days, discussion groups, networking and mentors, can be effective in an integrated policy strategy for human and social change when they are combined in a deliberate and targeted way.

Learning Tools

The Learning Style Inventory of David Kolb (1984) provides a description of how individuals express their personality through learning and problem solving in particular ways. According to Kolb (ibid), everyone has learning stage preferences, but every problem requires learning in all the stages in order to find optimal resolutions. Policy interventions that provide learning and decision support aids can assist people through all the processes of change, customisation and adaptation.

The Learning Style Inventory describes learning personalities that are divergers, assimilators, accommodators, and convergers.

People with *divergent* learning styles perform best in situations using their imaginative ability to generate a large number of alternative ideas and implications. They are often described as being "people persons" because they are interested in learning through social interaction.

People with divergent learning styles can find it hard to make and follow formal plans. Software and mentors that can assist them to convert their intuitive ideas to concrete plans can assist people with a divergent learning style manage significant changes in their lives.

People with *assimilation* learning styles excel at putting new information together with their existing experience and knowledge, to provide integrated understanding and explanations. People with these learning styles may not be particularly social, but rather they may be more concerned with abstract ideas. To these people, it is more important that the theories they work with are logically sound and precise rather than that they should be practical.

People with assimilation learning styles can be assisted by having guidelines to help them to convert their ideas into practical results.

People with *converger* learning styles will tend to focus upon specific problems and systematically resolve them based upon their background evidence. They usually have well organised knowledge and logical reasoning and are willing to take some risks to get things done. Convergers tend to be unemotional, preferring to deal with things rather than people.

People with converger learning styles can focus so much upon the tasks at hand that they lose sight of the bigger picture. Their learning benefits from tools able to provide continual evaluation and feedback so that their efforts remain linked to the desired outcomes.

People with *accommodator* learning styles like to be doing things and involving themselves in implementing plans and trying out new ideas. They are prepared to take some risks and solve problems through trial and error, relying upon other people's information rather than their own analytical ability. People with an accommodator learning style tend be sensitive towards other people and aware of their own feelings.

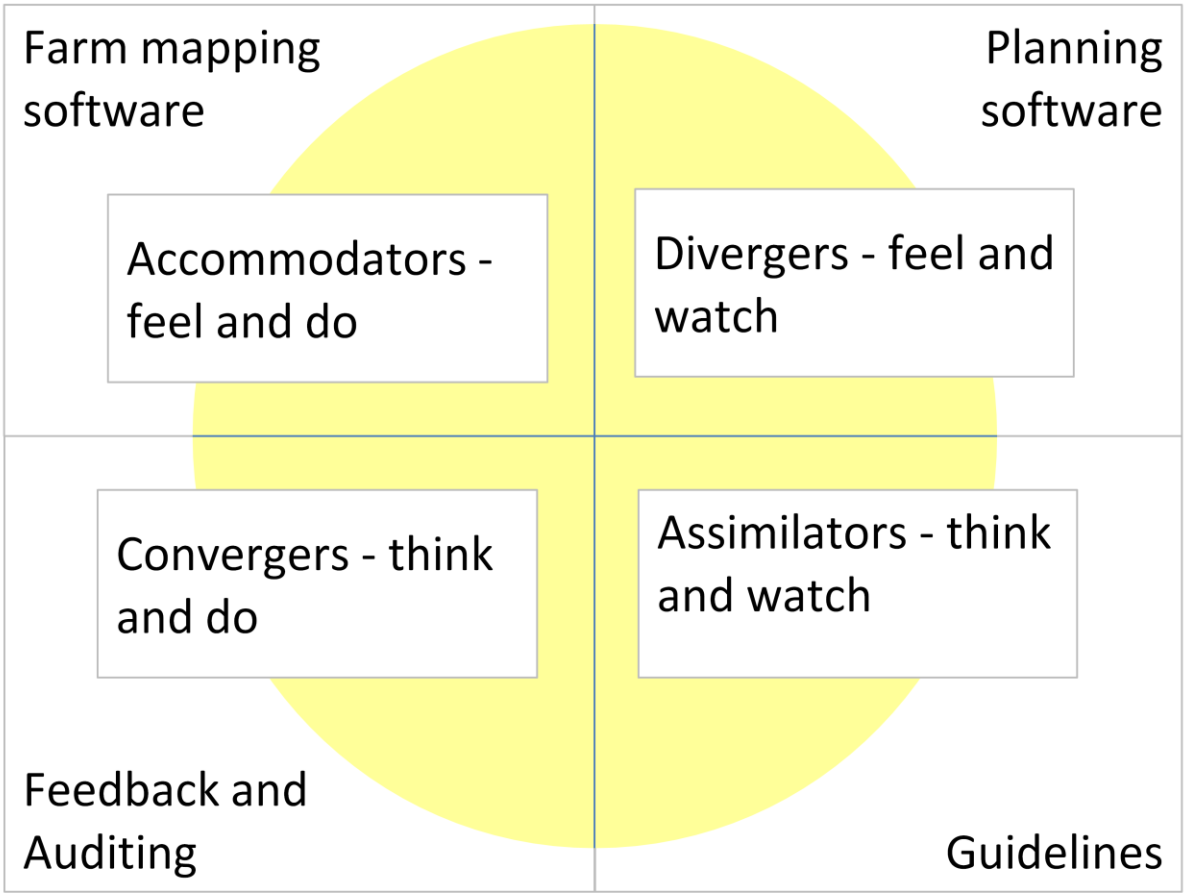
People with accommodator learning styles can be assisted by check lists or decision support software. They tend not to be interested in wading through a lot of background information, and prefer to get straight to practical results.

An understanding of the variety of learning styles that people have, can assist policy makers prepare and accumulate a range of policy tools to assist people through processes of change and adaptation.

Figure 2 illustrates the range of learning styles described above and the policy tools that go with them. For example in the top right quadrant is shown the divergers learning style with its emphasis upon feeling and watching and a learning tool (planning software) that would complement their strengths. That is not to say that divergers would be particularly interested in using a planning tool, but that if they did, it could be of great assistance to their decisions. The challenge for policy makers is to assist divergers build upon their existing strengths in learning and decision making, to make use of such tools. This could be by introducing the tools in community events or some other social activities that divergers tend to enjoy.

A similar situation applies with the other learning styles and policy tools.

Figure 2. Policy tools for encouraging learning and adaptation and the learning styles that they augment



Advantages and Disadvantages of Policy Methods

Rules and regulations have been described as an easy way of excluding undesirable behaviours or practices. They do not require much information about people's decision making context or motivational influences before they are developed and so they do not require much organising to introduce them. This means that if time is critical and a policy intervention urgent they are usually very efficient (Howlett and Ramesh 2003, p104). However, in the long run, rules are often inefficient because they distort voluntary or private sector initiatives that could have been used to help address the same policy issues. For example, rules might be developed for environmental practices on farms that could otherwise have been part of an industry run environmental management system (EMS).

Rules may end up being inflexible and inhibiting innovation and technological progress, because they have "locked in" existing roles and practices. The costs of introducing rules and regulations can be high if gathering information, investigating cases and bringing prosecutions becomes complex (Howlett and Ramesh 2003, p105).

Economic policy methods are considered generally more acceptable to people, because they don't make some behaviours "wrong", as rules do, but they are generally more costly. They can be constructed to encourage people to move beyond the bare minimum that they might need to comply with a standard or specification, and instead to keep continually improving

through innovation. Generally economic methods have low administrative burden because the whole practice change process is managed (and the cost met) by the participants themselves (Howlett and Ramesh 2003, p112).

Economic policy methods have the disadvantage that they require reasonably precise and accurate financial information, before they are introduced, in order to establish the most appropriate levels and charges. They may distort and so introduce inefficiencies into the market. Economic methods can end up with high administrative costs, if they require a lot of monitoring or market structures, eg for instance to promote trading in natural resource allocations (Howlett and Ramesh 2003, p113).

Voluntary policy methods like those that have been described here are able to be precisely targeted to meet the needs of a range of people and their contexts. This can be particularly important if the policy solutions are complex, uncertain or are very variable across commonly experienced situations. They are flexible, easy to establish and can become self-sustaining in the long run. Voluntary policy methods are also consistent with ideas of liberal democracy and its ideals of individual responsibility, respectful debate and personal empowerment (Howlett and Ramesh 2003, p115). However, voluntary policy methods do not have any obligation upon participants to respond in expected ways, and they can take time and on-going development after they have been introduced, before they are fully effective (ibid).

As described in this paper, voluntary policy methods require considerable understanding about targeted participants, how their behaviour can be influenced and their learning and decision making processes. Obtaining this information may need considerable effort and investment on its own. If the information is available and incorporated in the design of policy interventions they can be used effectively with minimal rules or support from economic methods. If the information required is lacking or time is critical then it may be more efficient to combine voluntary policy methods with rules and/or economic methods.

Conclusions

A range of voluntary policy methods are available to policy makers but they have not been brought together before in a way that policy makers can easily select between them. Voluntary policy tools are complex and derived from a number of academic disciplines and practices. To make it easier for policy makers to select the most appropriate mix of methods three dimensions of selection have been explored in this paper.

1. Organisation resources and capability
2. Participant segmentation
3. Learning tools

A typology of voluntary methods has been developed that compares their requirements for technical resources and relationship building capability. The typology can be used as the basis for assessing the strengths, resources and political interest available within a policy organisation (and its partners) to address particular policy issues.

Some local authorities have expressed frustration at the apparent ineffectiveness of their voluntary policy strategies. Other local authorities have threatened groups that seem to be struggling to comply with voluntarily policy directives, that “if they don't, they will soon be forced to do so through rules”. Maybe the difficulties that some policy agencies experience is a reflection of the quality not the intrinsic inadequacies of voluntary policies, but rather the

To achieve the desired policy outcomes, voluntary methods depend more than rules or economic methods upon participant segmentation as a way of selecting the best mix of methods to use. The stages of change method of segmentation can ensure that there are voluntary policy methods in place so that all participants are going to be supported through the appropriate stage of change.

Peoples' personalities are associated with differing learning styles, each with their own strengths and weaknesses. Policy tools can be developed to assist in the implementation of voluntary policy methods by encouraging learning and supporting decision making, no-matter what peoples' initial learning preferences may be.

By taking into account organisational strengths, participant segmentation and learning needs, it is possible for policy makers to develop effective policy strategies using voluntary policy methods as their main approach to achieving the social and human behaviour changes needed to address some of the country's most pressing natural resource issues..

References

Bobrow, D. B. and Dryzek, J. S. (1987). Policy analysis by design. Pittsburgh, University of Pittsburgh Press.

Coutts, J. and Roberts, K. (2003). Extension models and best practice in extension. Proceedings of the National Forum for Australasian Pacific Extension Network. Online at http://couttsjr.com.au/assets/Uploads/Papers/apen2003couttsja.pdf, accessed March 2010.

Donovan, R. and Henley, N. (2003). Social marketing: principles and practice, Melbourne, IP Communications Pty Ltd.

Fisher, D. (2010). Australian Environmental Law (2nd edition). Thomson Reuters Australia.

Guerin, K. (2003). Property rights and environmental policy: a New Zealand perspective. Treasury Working Paper 03/02. New Zealand Treasury, Wellington, New Zealand.

Howlett, M. and Ramesh, M. (2003). Studying public policy: policy cycles and policy subsystems (2nd edition). Oxford University Press, Canada.

Kirschen, E., Benard, J., Besters, H., Blackaby, F., Ackstein, O., Faaland, J., Hartog, F., Morissens, L. and Tosco, E. (1964). Economic policy in our time, volume 1, general theory. Amsterdam, North-Holland Publishing Company.

Kolb, D.A. (1984). Experiential Learning: Experience as the source of learning and development. Englewood Cliggs, Prentice Hall.

New Zealand Government (1991). Resource Management Act No 69, Wellington, New Zealand.

Parminter, T.G. (2002). A framework for policy agencies to design and evaluate communication strategies to achieve behavioural change. New Zealand Agricultural and Resource Economics Society Conference. Lincoln College Discussion Paper No.149, p206-210.

Parminter, T.G. (2003). Policy strategies for natural resource management. MAF Technical Paper 03/01. http://www.maf.govt.nz/mafnet/rural-nz/sustainable-resource-use/resource-

management/policy-strategies-natural-resource-management/index.htm accessed August 2007.

Parminter, T.G. (2009[a]). Research report: improved policy interventions for encouraging the voluntary use by landowners of practices protecting and enhancing biodiversity. Foundation for Research, Science and Technology. http://myfrst.frst.govt.nz/Public/ResearchReports/Reports07/Report.cfm?Report=1 (2005) http://myfrst.frst.govt.nz/Public/ResearchReports/reports09/Report.cfm?Report=1 (2009), accessed September 2010.

Parminter, T.G. (2009[b]). : Natural resource policy management in New Zealand: three studies based upon the Theory of Planned Behaviour. VDM verlag, Saarbruchen, Germany.

Prochaska, J.O. and Velicer, W.F. (1997). The transtheoretical model of health behaviour change. American Journal of Health Promotion, 12, 11-12

Sterner, T. (2003). Policy instruments for environmental and natural resource management. Resources for the Future, Washington.

Watson, B. (2004) The psychosocial characteristics and on-road behaviour of unlicensed drivers. A thesis submitted as fulfilment for the Degree of Doctor of Philosophy, Queensland University of Technology, Centre for Accident Research and Road Safety – Queensland (CARRS-Q), School of Psychology & Counselling, Brisbane, Australia.

Acknowledgements

In preparing this paper, the author has been grateful for the support and encouragement of staff at Greater Wellington, especially Tim Porteous and Nicola Shorten. This paper also draws upon material that was included in a similar study commissioned by the Ministry of Agriculture and Forestry. The contribution of Peter Ettema as co-author of that study is particularly acknowledged.

The author is an employee (part time) of Greater Wellington and an occasional consultant to MAF, however no part of this paper is intended to convey that either organisation agrees with any or all of its content and any mistakes or errors that it may contain, remain the author's own.