
STAKEHOLDER ENGAGEMENT AND PUBLIC PARTICIPATION IN ENVIRONMENTAL FLOWS AND RIVER HEALTH ASSESSMENT

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Table of Contents

1.0	Introduction	3
2.0	What is Public Participation?	3
3.0	Levels of Engagement and Stakeholder Categories	4
4.0	Steps and Methods for Public Participation	6
5.0	Framework for Stakeholder Engagement	10
6.0	Concluding Remarks.....	15

1.0 Introduction

This paper examines the role of stakeholder engagement in river health monitoring and environmental flows (e-flows) assessment frameworks developed as part of the Australia China Environment Development Partnership's *River Health and Environmental Flows in China* project (ACEDP).

This paper aims to explore the different elements of a stakeholder engagement framework, while considering the steps, stakeholder categories, and possible options for public participation in river health monitoring and e-flows assessments.

It is important to note that there no single 'magic bullet' solution exists for stakeholder engagement. Each situation requires thorough design and planning specifically tailored to the objectives sought for the relevant stage of a project or program. Depending on the unique situation and context, a range of different stakeholder engagement and public participation methods may be employed.

The structure of this paper is outlined as follows: Section two provides an introduction to the rationale and role of public participation as part of a broader stakeholder engagement process. Section three outlines different levels of engagement and categories of stakeholders in river health and e-flows assessments. Section four presents steps and different methods available for undertaking stakeholder engagement and presents a public participation assessment matrix to assist method selection. Section five identifies where stakeholder engagement processes could be incorporated into river health monitoring and e-flows assessment frameworks developed under the ACEDP and outlines a stakeholder engagement decision support framework. Finally, section six offers some concluding remarks.

2.0 What is Public Participation?

The term *participation* typically refers to some aspect of local community involvement in the design, implementation and evaluation of a project or plan (Brown and Wyckoff-Baird 1992). According to Smith (1983), *public participation* encompasses a range of procedures and methods designed to consult, involve, and inform the public to allow those that would be potentially affected by a decision or policy to have input into the process. The latter are also known as *stakeholders*, which include (IFC 2007, p.10):

"...persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. Stakeholders may include locally affected communities or individuals and their formal and informal representatives, national or local government authorities, politicians, religious leaders, civil society organizations and groups with special interests, the academic community, or other businesses"

Stakeholder engagement broadly refers to a framework of policies, principles, and techniques which ensure that citizens and communities, individuals, groups, and organizations have the opportunity to be engaged in a meaningful way in the process of decision-making that will affect them, or in which they have an interest. Thus, public participation can be recognised as a practice of stakeholder engagement.

Stakeholder engagement and public participation are a means of achieving:

- Participatory democracy (e.g. community empowerment and providing the opportunity to develop knowledge for making informed choices)
- Transparency in decision-making process
- Community empowerment and support
- Reduced conflict over decisions between decision-makers and public groups, and between the groups

Public participation may involve both individual and group input. Individual views may be directly attributed from citizens who choose to express their views, while collective views may come from communities, interest groups or other organisations.

Effective public participation requires that citizens be informed and knowledgeable about the topic or issue of concern. They must also be willing and able to be involved in the process, which typically involves investing significant personal time. It also requires that government or the relevant sponsor organisation be competent in the development and implementation of public participation programs.

They must be willing and able to listen, truly seeking and valuing diverse voices, making a special effort to hear and understand those who, for various reasons, may otherwise go unheard. The process also requires that all participants demonstrate respect for each other and commitment to the process, and have the patience and discipline to work together toward shared perspectives and common outcomes.

Effective participation cannot be achieved by simply adopting a successful model from another context. Public participation should be designed and informed by key principles and be sensitive to relevant local institutions and governance arrangements. The following key principles should be considered in the implementation of a public participation or stakeholder engagement process (IFC 2007):

- Providing meaningful information in a format and language that is readily understandable and tailored to the needs of the target stakeholder group(s)
- Providing information in advance of consultation activities and decision-making
- Disseminating information in ways and locations that allow ease of access by stakeholders
- Respect for local traditions, languages, timeframes, and decision-making processes
- Two-way dialogue that gives both sides the opportunity to exchange views and information, to listen, and to have their issues heard and addressed
- Inclusiveness in representation of views, including women, vulnerable and/or minority groups
- Processes free of intimidation or coercion
- Clear mechanisms for responding to people's concerns, suggestions, and grievances
- Incorporating feedback into project or program design, and reporting back to stakeholders

While it may seem easier to simply forge ahead and make decisions on their own, there are many reasons why governments and other organisations are making increased use of direct techniques for public participation. Public participation can help to:

- Enhance effectiveness, public knowledge, understanding and awareness
 - Public participation can act be a mechanism to break down and address complex decisions by different stakeholders who can provide new information, views, needs and interests. This provides an opportunity for stakeholders to better understand the range of views on an issue. Implementation can also be improved with public consent and commitment on the process, yielding higher quality decisions, and the ability to better allocate scarce resources.
- Meet growing demand for public participation
 - A growing public desire to be involved in decisions that will affect them has influenced the need for greater openness of decision-making processes. Public participation can counter public mistrust of government and expert-led decision-making processes. A public participation process can assist to negotiate tradeoffs, seek consensus and set common priorities for all parties involved in an issue.
- Meet legal and policy requirements
 - Increasingly, international and national agreements, and federal and provincial legislation are requiring some form of public participation or community engagement in relation to policy and project implementation.

3.0 Levels of Engagement and Stakeholder Categories

There are many types and levels of stakeholder engagement. Stakeholder engagement in natural resources management has been increasingly seen as a basic human right: both as a result of the human right to a certain level of environmental quality, as well as a result of the human right to participatory democracy (Appelstrand 2002). However, levels to which stakeholders are engaged, as well as types and methods of engagement, are varied. Warburton (1997) lists about 150 different

techniques and approaches that can be applied depending on the objectives of the proponent organisation.

Several hierarchies of engagement types and levels have also been developed. These range from low-level of engagement ('passive participation', 'tokenism', 'manipulation'), to a mid-range where participants are involved in decision making about largely predetermined questions; to the higher-end of the scale where stakeholders undertake their own initiatives or are enabled to develop strong leadership roles (e.g. 'partnerships'; 'empowerment', 'citizen control') (Buchy and Hoverman 2000, Stalker Prokopy 2005). According to the International Association for Public Participation, public participation involves five elements in increasing order of public influence (IAP2 2007):

- **Inform** – to provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.
- **Consult** – to obtain public feedback on analysis, alternatives and/or decisions.
- **Involve** – to work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered
- **Collaborate** – to partner with the public in each aspect of the decision, including the development of alternatives and the identification of the preferred solution.
- **Empower** – to place final decision making in the hands of the public.

Having clearly defined and communicated ideas on the level of engagement desired by the proponent organisation is an important step in later evaluation and monitoring (Krick et al. 2005). Ideally, organisations would identify and map themselves somewhere along a continuum of engagement scales, and over a number of years and adaptive management cycles, aim at moving along the continuum towards improving engagement practices. However, the extent to which an organisation moves along this continuum will ultimately depend on the situation and specific context of its engagement process.

An important aspect that is critically linked to the consideration of types and levels of engagement relate to stakeholder categories. The categories of stakeholders identified for involvement in a public participation process will directly have an influence on the method of engagement. Although the specific categories of stakeholders for a given engagement process will be largely dependent on its goals and objectives, a typical generic profile of stakeholders in river health monitoring and e-flows assessments may be categorised into the following types:

- Government agencies
- Industry or sector representatives
- Research (e.g. scientific, technical specialists) or academic institutions
- Special interest groups
- Local community representatives
- Members of the general public or community at large

Regardless of the profile of stakeholder categories identified for involvement, the fundamental rationale for engaging stakeholders is creating ownership or 'buy-in' to the process and thus to its outcomes. This often is the key motivation for project or policy proponents to engage potential stakeholders as early as possible (e.g. IFC 2007). It is also important that the design of a public participation process identifies what each stakeholder category might be able to contribute to the process or how the process (or stakeholder) might generally benefit from being involved.

For example, the assessment of e-flow requirements, as well as their implementation, may benefit from engaging with a range of stakeholder categories. There will be different stakeholders that may be able to contribute to the assessment of e-flow requirements, determining community goals and values, and in identifying key ecological assets associated with specific regions. Consideration should specifically be given to:

- The objectives of the project or program and the role of stakeholder engagement in achieving these objectives. These may include eliciting stakeholder views and values to guide project planning, increasing transparency, reducing conflict over government decisions, and generally

increasing support for the river health monitoring or e-flows assessment program – and thus its likely success during implementation

- The stages during development and implementation of a program and when different stakeholders should be engaged. This may include:
 - In determining the objectives and benchmarks for a river health monitoring or e-flows assessment program
 - In the identification of key ecological assets and flow requirements
 - In the identification of social and economic values
 - In determining the acceptable levels of impact or risk associated with different river management or water allocation scenarios
 - In determining what information should be collected, and what should be reported and how
 - In deciding and implementing management responses
- Identifying the relevant types and categories of stakeholders to be engaged in the process. These may include different categories of stakeholders and how each may contribute to different program stages as outlined above.

Maintaining communication with stakeholders at key points throughout the development and implementation of a river health monitoring or e-flows program helps to provide meaningful dialogue between the public and government resource managers. Providing information in a variety of formats and on specific topics helps the public to provide input on their special interest issues.

It is important that a public participation process be tailored to suit the specific requirements of the project goals and objectives, and that participants are clear of their role and influence in the process. The method of engagement employed will also play a significant role in determining objectives and indicators of its success.

4.0 Steps and Methods for Public Participation

A stakeholder engagement or public participation process typically involves the following steps (Smith 2003).

1. Preliminary Planning and Design

- (a) situation analysis
- (b) decision process
- (c) information exchange
- (d) stakeholder identification and analysis
- (e) planning team
- (f) approvals

2. Develop the Stakeholder Engagement Plan

- (a) establish objectives
- (b) identify and address major issues
- (c) identify and involve the key stakeholders
- (d) determine public participation method
- (e) prepare to provide and receive information
- (f) develop critical path
- (g) budget, staff, resources, logistics, roles and responsibilities
- (h) prepare to give and receive feedback

3. Plan Implementation

- (a) follow the critical path
- (b) apply public participation method
- (c) provide and receive information

- (d) monitor the process

4. Feedback

- (a) report to decision-makers
- (b) report to participants
- (c) evaluate the overall process

A range of methods for undertaking public participation exists, ranging from those that elicit input in the form of opinions to those that elicit judgments and decisions from which actual policy might be derived (Rowe and Frewer 2000). The steps involved will typically follow the process outlined above. However, the time and resources involved in planning and execution of each step will vary depending on the unique situation and stakeholder context, and method of engagement.

There are a number of public participation methods which can be used to engage with stakeholders in a river health monitoring or e-flows assessment program. These may range from providing written material such as information sheets and newsletters, or undertaking face-to-face interactions such as public meetings, workshops, and advisory committees. Each situation is unique and as a result will require different public participation methods.

The following are summary descriptions that provide an overview of public participation techniques available (Hilliker and Kluz 2001). Each method has a specific purpose and when applied appropriately, can yield significant benefits to the sponsoring organisation in program or policy implementation. Note that the following does not represent an exhaustive list due to the many specific permutations and specialist techniques that may be employed and hence only represents a sample of the methods typically employed in public participation processes.

- **Public meetings** offer an opportunity for anyone with an interest in the subject of the consultation to express concerns and gain a broader perspective of concerns in a short period of time. Sometimes it is expected that a decision will be made at a public meeting, and there will be some level of consultation occurring. In controversial situations it may be best for the public meeting to be facilitated by an independent body. Public meetings often begin with a technical overview of the situation and process, then provide opportunity for members of the public to speak from the floor regarding their concerns or to ask questions of expert panellists.
- **Workshops** involve inviting stakeholders to attend a meeting to review information, define issues, solve problems or plan reviews. Generally, workshops are expected to educate participants and solve a problem or develop a product such as an action plan. Most workshops use facilitation.
- **Citizen advisory/consultation committees** are formal group committees established by the organising body to advise project officials on specific issues. Committee members may be selected to represent a cross-section of the community or based on issues. The committee needs to have a clearly identified set of expectations from the proponent organisation. The advisory committee works directly with the public to ensure that public issues and concerns are consistently understood and considered. Creating a citizen advisory committee requires a considerable commitment; while the committee's recommendations are advisory, government cannot solicit advice and then consistently ignore it. Citizen advisory committees can be used throughout the entire process or during specific steps whenever the planning body needs advice from the public.
- **Surveys** are used to collect information, solicit opinions and build a profile of the groups and individuals involved. They provide information to the public and help focus public attention on specific issues and describe the view of a large number of citizens.
- **Focus groups** are used to collect qualitative data, with a facilitated group discussion based on predetermined questions. Typically 6 to 12 people are questioned to uncover attitudes, feelings and beliefs about an issue or issues. Focus groups may be used to identify issues for inclusion in a survey or to better understand a specific issue. Participants are often chosen to get input from a variety of viewpoints. Focus groups require a skilled moderator and vocal participants. Focus groups can be used to identify issues early in the planning process, or to provide feedback on alternative strategies, or during plan monitoring and reassessment later in the process.
- **Direct mail** is a method of awareness building through mass mailing of written materials. Direct mail works best when you have a simple message and an easily identifiable audience. It

requires little commitment by the citizens, and can reach a large number of people. Mailings can be used throughout the planning process, but will be most effective early in the project when a large number of people can be reached.

- **Newsletter / Articles in Local Media** through monthly or quarterly updates will ensure that communication is kept open between stakeholders.
- **Invitations for public submissions with comment opportunities represent** a formal way of providing feedback to a report or proposal / potential variations on a project, program or policy. Typically this form of engagement occurs in conjunction with other engagement methods such as public meetings, workshops or committees.

The specific choice of method will depend on the context and the type of stakeholders being engaged. A method which has worked well in one cultural context or with one particular set of stakeholders may be less effective elsewhere.

Participatory methods can be particularly useful when trying to build integrated solutions to complex project issues or for engaging specific sub-groups within a community (e.g. women, youth, vulnerable groups, minorities or the elderly). Participatory techniques can also be effective in situations where literacy and education levels are low, but also with educated and well-informed groups where there is controversy or complexity around issues, and a need to build consensus around possible solutions.

In situations where the engagement process is complicated or special attention to cultural appropriateness is needed to ensure informed and meaningful participation, it is advisable to seek out experienced specialists to assist in designing and facilitating the process.

Table 1 outlines an assessment matrix of typical public participation methods for guiding preliminary choices of public participation methods. As there are a variety of ways in which any one method can be applied, it is not possible to definitively state whether a particular method is the correct choice for any given situation or context. The following section outlines a brief summary of the strengths and weaknesses of the public participation methods presented in Table 1.

Public Meetings

Public meetings, which are the most widespread method for engaging the public, scores relatively low on both acceptance and process criteria. In the past, public meetings have been perceived as being quick, cheap, and simply administered means of satisfying any legal requirement for public participation (Smith 1983) and seen as giving the appearance of community involvement. However, there are many disadvantages of this method of engagement. For example, they are typically held during weekday working hours in locations that are “formidable” to the public (e.g. government buildings), which may disadvantage low-income and minority citizens and have a negative impact on the representativeness of those attending (e.g. Checkoway 1981). It has been suggested that the main aim of public meetings is to co-opt public support and to change decisions rather than to seek informed consent and expand democratic choice (e.g. Nelkin and Pollak 1979). Some evidence suggests that they have little influence on citizen behaviour or policy choices (Cole and Caputo 1984).

	Public Meetings	Workshops	Advisory Committees	Surveys	Focus Groups
Acceptance Criteria					
<i>Representativeness of participants</i>	Low	Moderate to low	Moderate to low	High	Moderate
<i>Independence of true participants</i>	Low	Moderate to High	Moderate to Low	High	High
<i>Early involvement</i>	Low to Variable	Moderate to High	Variable to high	Moderate to High	Moderate to High
<i>Influence on final policy or decision</i>	Moderate	Variable	Variable	Low to Variable	Moderate
<i>Transparency of</i>	Moderate	Moderate to	Low to	Moderate	Low

<i>process to the public</i>		High	Variable		
Process Criteria					
<i>Accessibility to resources</i>	Low to Moderate	High	Variable to High	Low	Low
<i>Task definition</i>	High	High	Moderate to High	Low	Moderate to High
<i>Cost effectiveness</i>	Low	Moderate to High	Variable	Moderate to High	Moderate to High

Table 1: Public Participation Method Assessment Matrix (Source: Adapted from Rowe and Frewer 2000, p.19)

Surveys and Focus Groups

Surveys and focus groups do reasonably well on acceptance criteria but not on process criteria. Although these methods may gain credibility with the public, the quality of the decisions that arise from their implementation may not be high, which would be of particular concern to a project proponent or sponsor. Thus, participants are generally representative of the population and independent of the sponsors, and their results and processes are generally simple and transparent. As surveys and focus groups may serve as the basis for subsequent policy formation, they may be implemented at an early stage of any decision-making process and hence score high on the criterion of early involvement. These approaches require little citizen time and fewer resources than many other procedures and are ranked relatively high on the criterion of cost-effectiveness (Rowe and Frewer 2000).

On the negative side, participants in public surveys and focus groups have no structured access to resources to enable them to make good decisions, and as such their output may reflect biases and misunderstandings that have no opportunity for resolution (i.e. they score low on the criteria of resource accessibility). None of these methods allows a dialogue between risk regulators and the public (e.g. Middendorf and Busch 1997), and they may even be said to displace active forms of public debate (e.g. Davison, Barnes, and Schibeci 1997). Although the output from surveys and focus groups tends to be more explicit, this generally fails to focus on a particular question and may have only minimal impact on policy influence. Focus groups also score low on the criterion of transparency since they tend to be conducted behind closed doors, although it is possible that the procedure might be extended so that group sessions are followed by press releases or even question-and-answer sessions, which would increase transparency of the process (Rowe and Frewer 2000).

Workshops and Advisory Committees

Workshops and citizen advisory committees score relatively well on both acceptance and process criteria, such as the criteria of early involvement and task definition (largely as a consequence of extended group interactions providing opportunities for defining the problems that need to be debated). Unlike surveys or focus groups discussed above, significant efforts are made to provide public participants with the appropriate resources to make good decisions, and hence they score well on the resource accessibility criterion. Given these advantages (in addition to the time constraints imposed and the limited number of participants used), these approaches might be seen as relatively cost-efficient when compared to timely and expensive approaches such as public meetings. The transparency of this approach in general is also at risk from a single, competing high-interest news event reducing media exposure of their conclusions. This, however, is an environmental variable not related to the approach per se and is liable to affect the effectiveness of most public participation methods (Rowe and Frewer 2000). Similarly, environmental variables—such as national political culture—are liable to determine how well any one exercise scores on the criterion of influence (e.g. Davison, Barnes, and Schibeci 1997). For example, in Denmark there is a link between the organisers of consensus conferences and policy-making bodies (the Danish Board of Technology and Danish parliament, respectively), which has resulted in the clear implementation of past decisions, although this link is not evident in other cultures. Lynn and Busenberg (1995) have also noted how the impact of advisory committees on policy outcomes can be seen to vary according to the intentions and expectations of the institutions being advised.

Despite generally good ratings, workshops and advisory committees nevertheless leave room for improvement in a number of areas. Although there is an attempt to gain representative public samples, the score on this criterion is only moderate, largely as a consequence of the small sample sizes employed. It has also been suggested that there may be various imbalances in the selection of participants, such as being influenced by the intentions of the sponsors, hence the relatively lower rating on the criterion of representativeness for these methods. The potential influence of the sponsors in

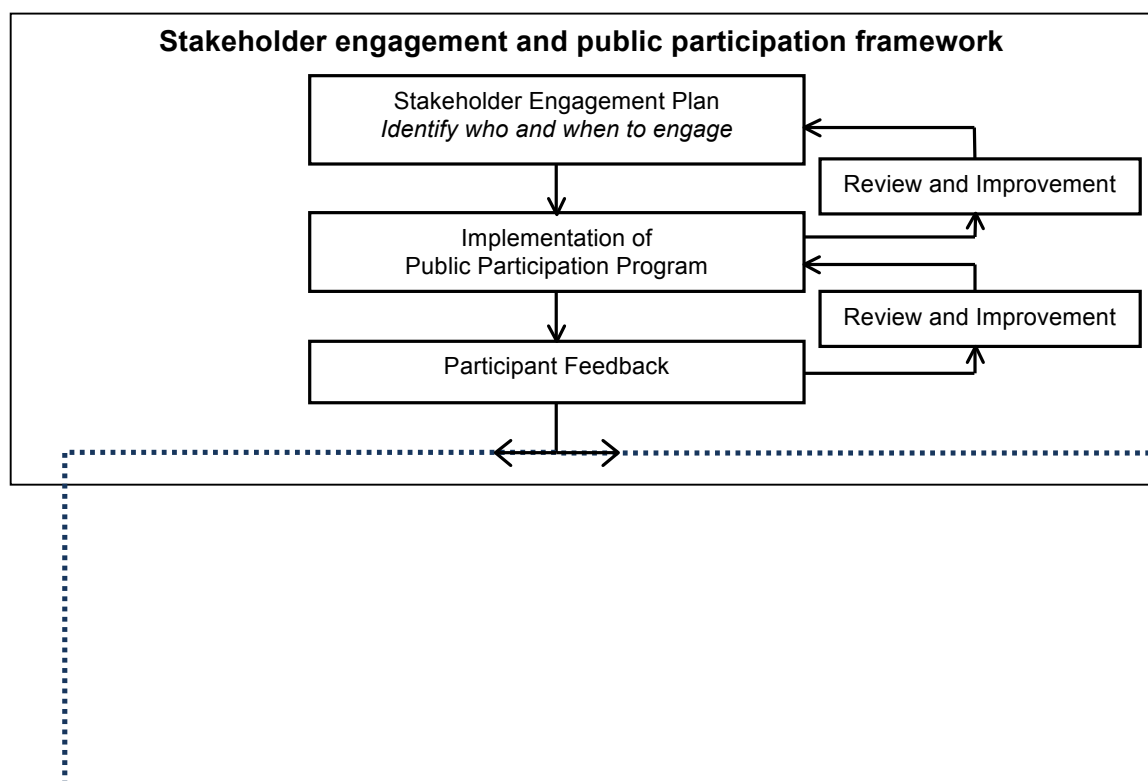
advisory committees is reflected in a relatively low rating on the criterion of independence. The group-based mechanism underlying these approaches is also a potential source of difficulty, in that group behaviour has often been shown to be suboptimal as a consequence of a number of psychological and social factors (e.g. Lenaghan, New, and Mitchell 1996), such as when vocal individuals monopolise discussions. Hence, the quality of any decision reached might be a result of group dynamics and social influence, more so than the public participation approach itself.

Providing support for both decision-making and group behaviour is an important component of a wider concern for creating an appropriate environment (with all appropriate resources) to enable members of the public to contribute effectively to complex and important policy issues. Naturally, the more complex the intervention is, the more expensive it is likely to be for the project proponent. However, the potential damage that might be caused to public support and trust – and to public health and welfare from a poorly informed decision – must also be a vital consideration.

5.0 Framework for Stakeholder Engagement

This discussion paper has highlighted the importance of considering the role of stakeholder engagement and public participation as an important element in project or program design and implementation. Specifically, it is a key component in the triple bottom line assessment advocated in the principles of Integrated River Basin Management and sustainable development. This section examines the links to the river health monitoring and e-flows assessment frameworks developed under the ACEDP and presents a decision support framework to assist policymakers in preliminary planning around possible stakeholder engagement and public participation options.

Figure 1 identifies the points in the river health monitoring framework where stakeholder engagement and public participation would be recommended. These relate to the development river basin planning instruments such as in the development of Water Resource Allocation Plans and also in the application to river or stream health monitoring. These activities can be improved by incorporating stakeholder engagement and public participation to identify social and economic values associated with the health of rivers and streams. In turn, these values can be reflected in the setting of river health targets and indicators as part of a monitoring program or strategy.



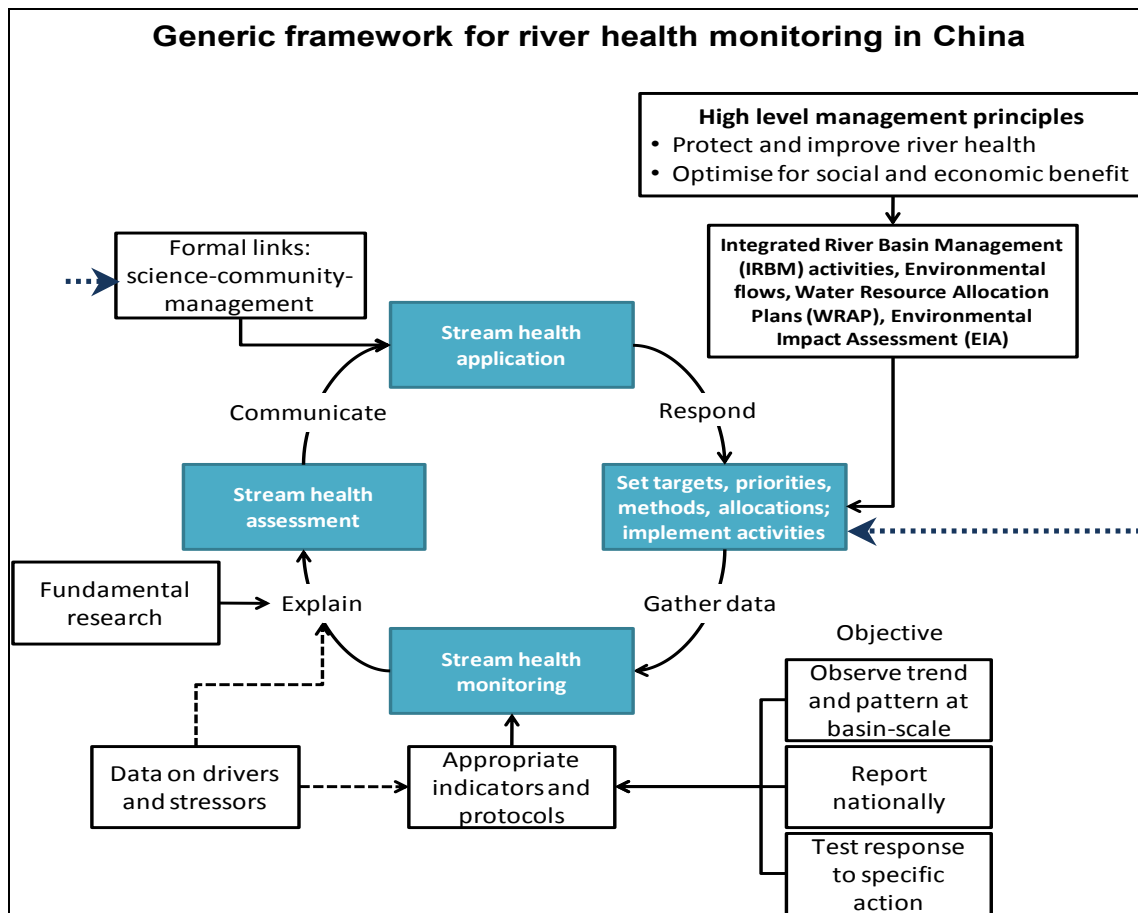


Figure 1: Stakeholder Engagement Process linkage to Generic China River Health Monitoring Framework

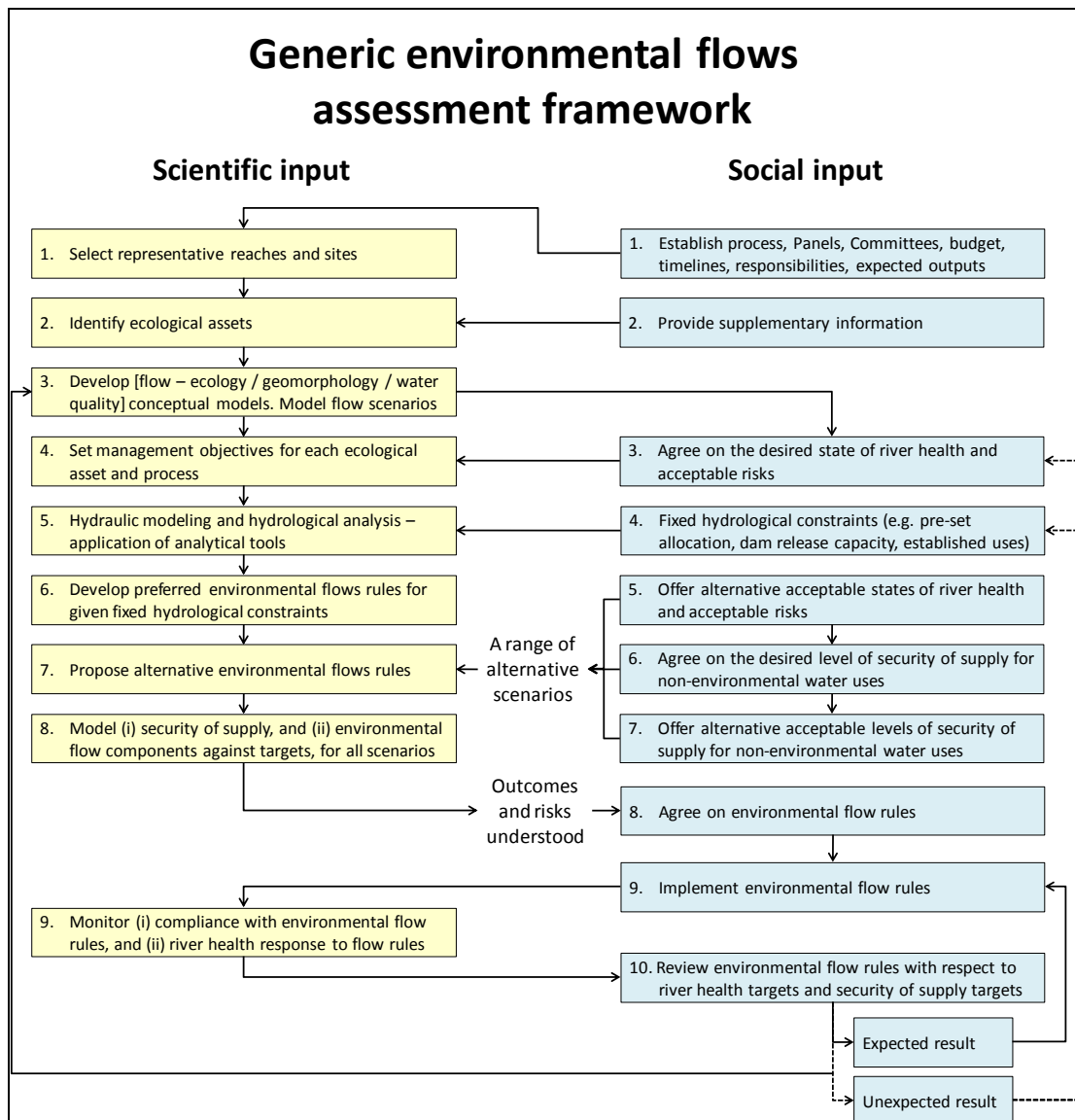


Figure 2: Generic Environmental Flows Assessment Framework

The stakeholder engagement decision support framework comprises a series of seven questions which systematically layers a range of issues that are important considerations in government natural resources management¹ (NRM) policy decision-making. In particular, the questions closely relate to issues surrounding the degree of stakeholder participation, support, and engagement over policies and decisions such as those related to river health and e-flows assessment of interest here. This in turn has implications for cost effectiveness and stakeholder support, especially in relation to program implementation.

The decision support framework guides policymakers through a range of closed-ended “yes” or “no” questions. The questions are designed to guide policymakers along different paths yielding potential recommendations for choice of stakeholder engagement instrument. The path to each subsequent question is contingent on the nature of the response to previous questions. Seven questions yield a total of eight possible options reflecting different portfolios of possible engagement methods.

¹ Natural resources management also comprises the realm of water resources management, which includes river health monitoring and e-flows assessments.

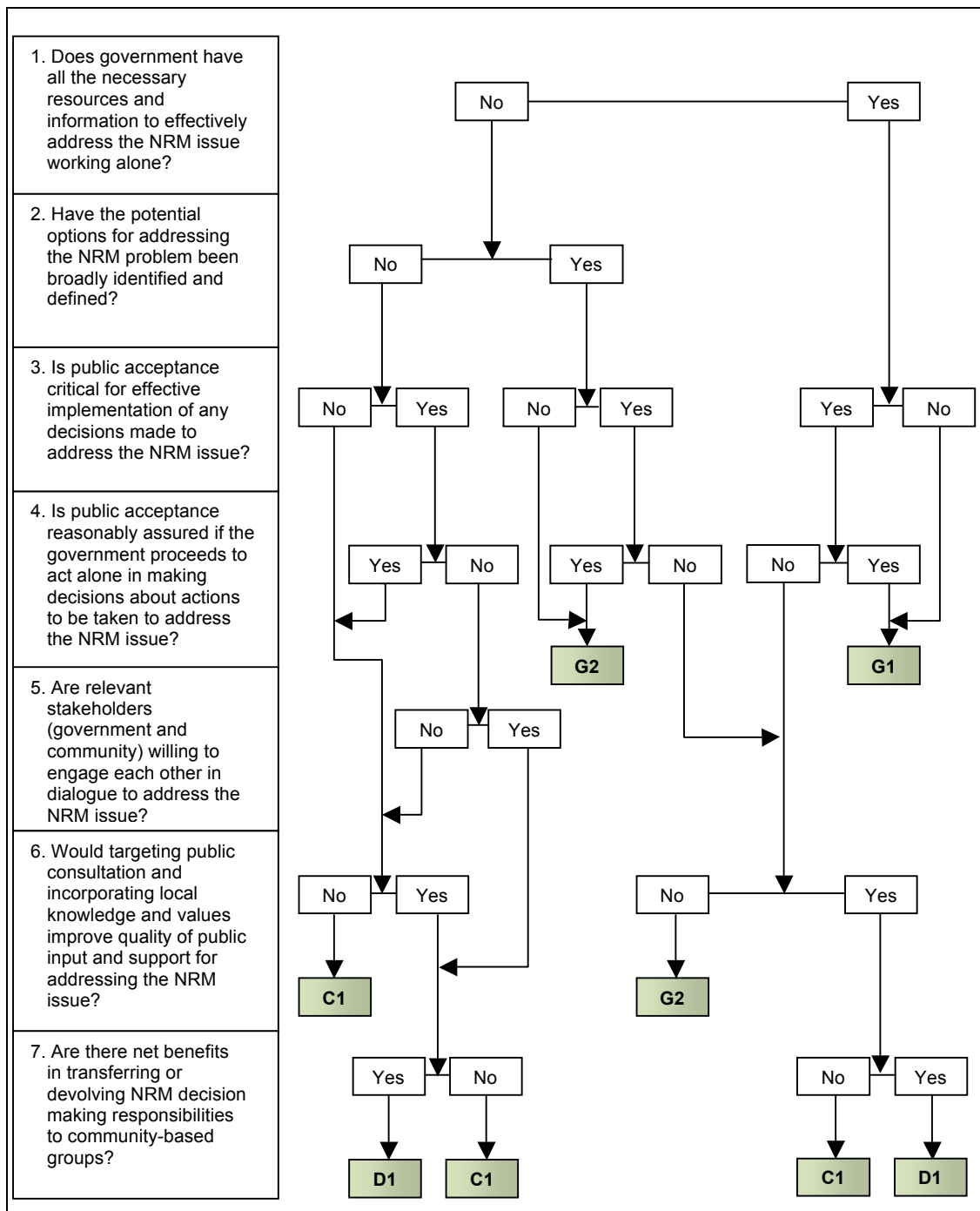


Figure 3: Stakeholder Engagement Decision Support Framework (Source: Adapted from Yee 2009)

The first question relates to whether the government agency or program proponent is capable of addressing the problem working in isolation without undertaking any consultation process. Governments typically do not possess all the necessary information and resources to be in a position to definitively resolve NRM problems in isolation and would generally seek to undertake some form of consultation or fact-finding process to assess how to address an NRM issue. However, there may be specific situations or institutional settings where government agencies may determine that consultation is not necessary.

Question 2 aims to elicit if options for addressing the NRM issue have already been identified. How policymakers and resource managers answer this question will have implications for whether additional information needs to be collected through a desktop or broader public consultation process. This in turn will have implications for the type of engagement method employed.

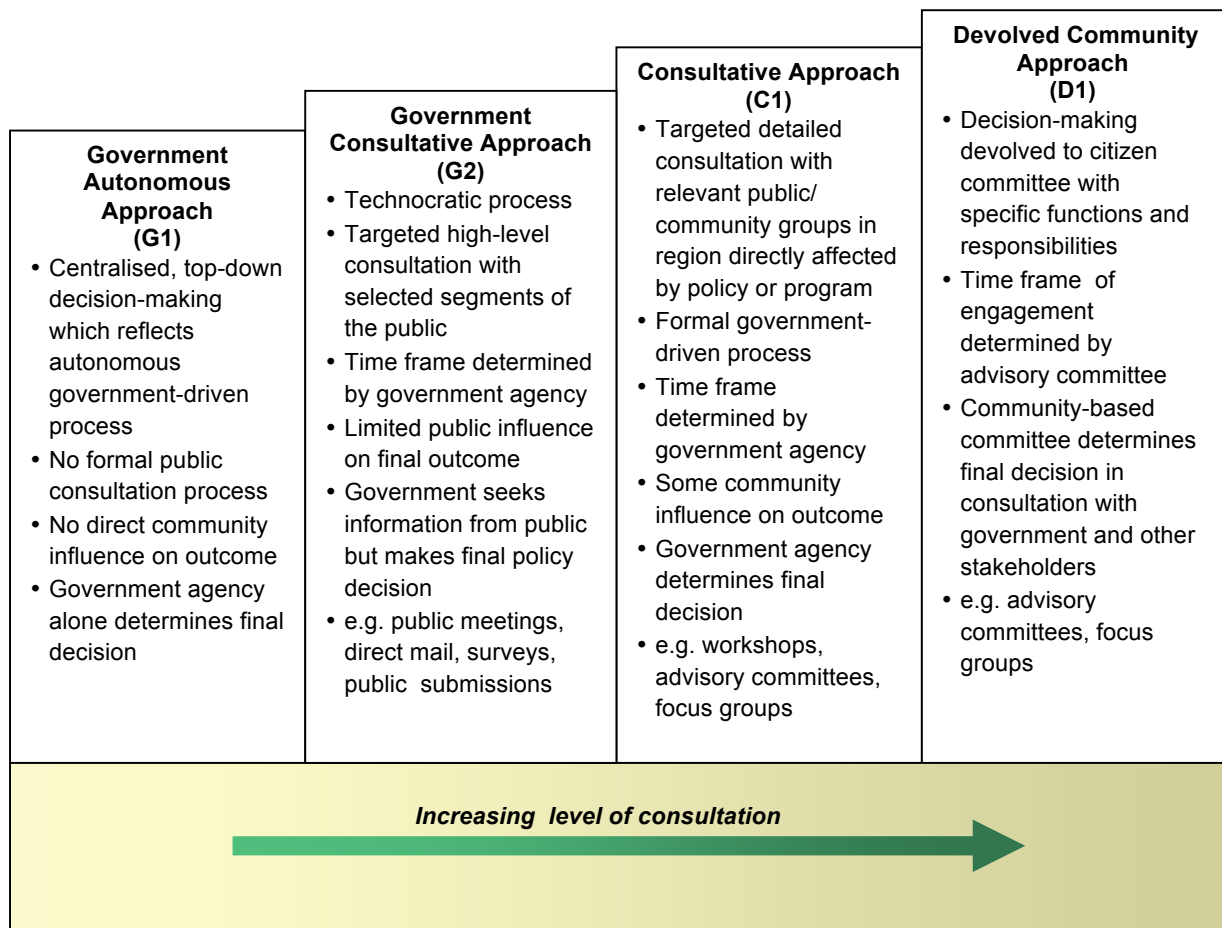


Figure 4: Stakeholder engagement profile (Source: Adapted from Yee 2009)

Question 3 is concerned with determining whether public acceptance is critical for effective implementation of decisions to address the NRM issue. Given that decisions to address NRM problems may depend to some degree on the voluntary direct or indirect support and participation of community stakeholders, public acceptance of decisions will likely have a strong influence on the ability to effectively achieve the NRM objectives.

In Question 4, policymakers must determine whether public acceptance can be assured if the government independently proceeds to make decisions about actions to be taken to address the NRM issue. This will determine whether or not a more consultative approach is recommended which offers more opportunities to engage with relevant stakeholders – for example, improving the level of trust and cooperation with relevant community stakeholders to ensure a common understanding towards achieving desired NRM objectives.

Question 5 seeks to determine whether key stakeholders (e.g. government agency/proponent and community members) are willing to engage each other in dialogue to address the NRM issue. It is important to assess this in relation to a region's social capital and to acknowledge that the level of conflict present between government and the relevant public over the NRM issue may also change over time.

Question 6 relates to whether a targeted public consultation process, which seeks to identify and consider local knowledge and community values in relation to the NRM issue, improves the quality of public input and support for addressing the problem. This is of particular importance if key knowledge gaps exist that may require further information in order to assess how to address the NRM issue. Under these circumstances, improving the quality of public input through a targeted consultation process can assist in brokering valuable local knowledge to address the NRM problem.

The focus of question 7 is on the potential improvement in the quality of NRM outcomes achieved if the local community directly impacted provided input to NRM decisions. This is one of the key questions in the decision support framework as it concerns the quality of policy or program outcomes which represents the key objective of all engagement approaches. Policymakers need to consider the trade-

offs between participation and buy-in on the one hand, and efficiency and lack of support on the other. Careful assessment of whether the additional costs of more detailed consultation may outweigh any additional benefits needs to be undertaken.

6.0 Concluding Remarks

Integrated approaches to water resource management of river basins require a full commitment from all levels of stakeholders. Understanding the characteristics of the river basin such as the physical, economic, social, as well as institutional and governance arrangements that apply is of critical importance.

Integrated River Basin Management founded on a participatory approach requires a commitment by government resource managers and planners to provide public participation opportunities that promote the facilitation of achieving desired water allocation and environmental outcomes rather than a process viewed as an unnecessary complication. Public participation programs need to be designed that addresses specific needs of a project or program. A range of methods, ranging from public meetings, focus groups, and surveys can help facilitate communications and elicit the type of input necessary to assist in making optimal decisions around river health or e-flows assessment.

It is difficult to categorically declare that any one method is the best. The most appropriate techniques for public participation are likely to be hybrids of more traditional methods (Smith et al. 1997). A potentially effective approach to participation may be to complement one mechanism with another (Fiorino 1990) – such as using a survey to clarify the bases of disagreement on issues prior to a series of public meetings or using a series of citizens' advisory committees to add balance and depth to what policymakers might learn in public meetings.

While one method may be appropriate in a certain situation, another method may be more apt under different circumstances. In this respect, Table 1 is limited as it does not identify the contextual or environmental factors that will contingently affect effectiveness but instead represents a broad analysis in which evaluations are made and caveats are expressed. The decision support framework presented offers a complementary tool to assist in preliminary planning around the choice of public participation methods. However, it is important to note that the choice of stakeholder engagement method(s) and when to apply it in the implementation of a project or program needs to be specifically tailored to the unique context and situation.

7.0 References

- Appelstrand, M. 2002. 'Participation and societal values: the challenge for lawmakers and policy practitioners'. *Forest Policy and Economics*. Vol. 4, pp. 281–290.
- Brown, M., Wyckoff-Baird, B. 1992. 'Designing integrated conservation and development projects'. Biodiversity Support Program, Washington D.C.
- Buchy, M., and Hoverman, S. 2000. 'Understanding public participation in forest planning: a review'. *Forest Policy and Economics*. Vol.1, pp.15–25.
- Checkoway, B. 1981. 'The politics of public hearings'. *Journal of Applied Behavioral Science*. Vol.17 (4), pp.566-82.
- Cole, R.L., and Caputo, D.A. 1984. 'The public hearing as an effective citizen participation mechanism: A case study of the General Revenue Sharing Program'. *American Political Science Review*. Vol. 78, pp.404-16.
- Davison, A., Barnes, I., and Schibeci, R. 1997. 'Problematic publics: A critical review of surveys of public attitudes to biotechnology'. *Science, Technology, & Human Values*. Vol. 22 (3), pp.317-48.
- Fiorino, D. J. 1990. 'Citizen participation and environmental risk: A survey of institutional mechanisms'. *Science, Technology, & Human Values*. Vol.15 (2), pp. 226-43.
- Gippel, C. 2010. 'Environmental Flow Assessment Framework and Methods, Including Environmental Asset Identification and Water Re-allocation'. ACEDP - River Health and Environmental Flow in China Technical Report No.2. International WaterCentre, Brisbane.
- Hilliker, M. and Kluz, M. 2001. *Developing a Public Participation Plan. Originally adapted from materials developed by the UW-Extension Citizen Participation Team*. Citizen Participation and Smart Growth Inservice, March 2001.
- IFC (International Finance Corporation). 2007. *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets*. IFC, World Bank Group, Washington D.C.
- International Association for Public Participation (IAP2). 2007. 'Spectrum of Public Participation'. Available online: [<http://www.iap2.org>].
- Krick, T., Forstater, M., Monaghan, P., and Sillanpää, M. 2005. *The stakeholder engagement manual volume 2: The practitioners handbook on stakeholder engagement*. The United Nations Environment Programme, and Stakeholder Research Associates, October 2005.
- Lenaghan, J., New, B., and Mitchell, E. 1996. Setting priorities: Is there a role for citizens juries? *British Medical Journal*. Vol. 312 (7046), pp.1591-93.
- Lynn, F. M., and Busenberg, G.J. 1995. 'Citizen advisory committees and environmental-policy: What we know, what's left to discover'. *Risk Analysis*. Vol.15 (2), pp.147-62.
- Middendorf, G., and L. Busch. 1997. 'Inquiry for the public good: Democratic participation in agricultural research'. *Agriculture and Human Values*. Vol. 14, pp.45-57.
- Nelkin, D., and M. Pollak. 1979. 'Public participation in technological decisions: Reality or grand illusion?' *Technology Review*. Vol. 9, pp.55-64.
- Rowe, G. and Frewer, L.J. 2000. 'Public Participation Methods: A Framework for Evaluation'. *Science, Technology, & Human Values*. Vol. 25(1-Winter), pp.3-29.
- Smith, B.L. 2003. 'Public Policy and Public Participation Engaging Citizens and Community in the Development of Public Policy'. Population and Public Health Branch, Health Canada.
- Smith, L.G., Nell, C.Y. and Prystupa, M.V. 1997. 'The converging dynamics of interest representation in resources management'. *Environmental Management*. Vol. 21 (2), pp.139-46.
- Smith, L.G. 1983. *Impact assessment and sustainable resource management*. Longman, Harlow, UK.

Stalker Prokoby, L. 2005. 'The relationship between participation and project outcomes: Evidence from rural water supply projects in India'. *World Development*. Vol. 33(11), pp.1801–1819.

Warburton, D. 1997. *Participatory action in the countryside. A literature review*. Countryside Commission. Cheltenham, UK, 61 pp.

Yee, A.S. 2009. 'Neo-Renaissance? An Economic Analysis of Australian Regional Natural Resource Governance'. Unpublished PhD Thesis. Centre for Environmental Management, Central Queensland University.