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# DARE WE JUMP OFF ARNSTEIN'S LADDER? SOCIAL LEARNING AS A NEW POLICY PARADIGM

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## Abstract

Participation is now a central consideration of policy discourses at EU; national and local levels, particularly in relation to environmental resources. As it becomes a social expectation so the form, meaning and purpose of participation has diversified. While Arnstein's ladder of citizen participation (Arnstein, 1969) revealed that much 'participation' does little to broker a reassignment of power, this paper argues that it is perhaps time to jump off the ladder. In doing so, we suggest that an emphasis on social learning constitutes a paradigm shift in the thinking and practices of policy-making.

Our rationale is based on findings from several research projects on social learning for water resource management in the EU and UK. These suggest conventional policy responses to environmental problems (regulation; fiscal instruments; information) are only effective where there is pre-existing agreement on the nature of the problem and its resolution. In practice, many resource management issues are best described as 'messes' (Ackoff, 1974), with high degrees of interdependency; complexity; uncertainty; and multiple stakeholding.

These characteristics challenge notions of participation because no single group can pinpoint with confidence the nature of the problem and its solution. We explore how the term social learning rather than participation more accurately embodies the new kinds of roles, relationships and sense of purpose which will be required to progress complex, messy issues. The discussion leads to the conclusion that social learning can be understood as an emerging governance mechanism to promote concerted action, thereby enabling transformation of complex natural resource management situations.

## Key Words

Arnstein's ladder; policy; complexity; natural resource management; social learning;

## 1. Introduction

Participation has become a key consideration in the discourses and practices of environmental policy-making at local through to international levels. In a European context, much attention is being paid to make sense of and implement the legal requirements to 'participate' as set out in the Aarhus Convention (UN, 1998) and, for example, the Water Framework Directive (EU, 2000).

Although the imperative for participation and stakeholder involvement has increased, the desire and capacity for critically engaging with notions and epistemologies of participation has perhaps lagged. Instead, within the policy-making arenas and research agendas, attention has focussed on developing better techniques, tools and mechanisms for participation (e.g. Harmonicop, undated; OECD, 2001).

While we regard the energetic search for improving techniques and methods and raising awareness of new skills and approaches as positive, we suggest that there is a lack of corresponding inquiry into the epistemologies which underlie how participation is being conceptualised in policy-making processes. It is the underlying epistemology which frames understandings of participation and sets the context in which decisions about processes, tools and techniques are made. This in turn affects how participation is 'practiced'. This lack means that practitioners and researchers run the risk of using tools, practices and techniques inappropriately, with undesirable consequences for policy development and policy outcomes.

Despite the plethora of tools and methods available, it is perhaps surprising to find that Arnstein's ladder of citizen engagement (Arnstein, 1969) remains, implicitly and explicitly, at the core of many approaches to participation despite being published some 40 years ago. Indeed for many practitioners it remains the 'benchmark' metaphor for describing and evaluating participatory activities.

Its enduring appeal lies in its ability to reveal, in pictorial form, the power agendas implicit in many institutionalised narratives and the differences in the forms and strategies of participation that are desired or result.

While a significant contribution to opening up a discussion on the epistemologies of participation, and in particular the *purpose* of participation, in this paper we suggest that Arnstein's ladder, with its focus on power, is insufficient for making sense of participation at a conceptual or practice level. We suggest that our understandings of participation need a new footing and it is perhaps time to jump off Arnstein's ladder.

Our rationale is that new ways to think about the nature of environmental issues require commensurate inquiries about the meaning, not just the means, of participation in policy-making processes. Our rationale stems from our work in natural resource management contexts where the issues under consideration are characterised by complexity, uncertainty and multiple stakeholding (SLIM 2004a). In these situations, we suggest there is little existing agreement on either the nature of the issue or the approach to cope with the inherent messiness. This undermines more conventional regulatory; fiscal or educative policy approaches. To progress, we suggest the roles, responsibilities and purposes of those involved have to be re-conceptualised, not along the lines of participation mediated in terms of power as suggested by Arnstein, but as a process of social learning about the nature of the issue itself and how it might be progressed.

The paper is divided into six parts. Following this Introduction, we critically review Arnstein's ladder in part two, drawing on a range of literatures from environment, policy and health. We then summarise some of the origins of social learning in part three, before characterising situations where social learning approaches might be appropriate in part four. In part five we explore social learning as a new policy paradigm for enabling concerted action. We conclude with a brief summary of some implications for policy and practice in part six.

We feel it is important to note our use of language. Arnstein's ladder is, in her conceptualisation, a ladder of citizen engagement. While recognising that some distinguish between consultation and participation as expressions of engagement, for the purposes of this summary paper we use the terms engagement and participation interchangeably to denote all forms of engagement.

## 2. Arnstein's Ladder – Conceptualising participation as power

Arnstein's ladder first appeared in her 1969 paper (Arnstein, 1969) and set out to distinguish different levels of participation in relation to levels of, or access to, power. It emerged from her work in urban planning in the USA in the 1960s. The simplicity of the ladder metaphor explains much of its appeal to a wide range of audiences: a graded movement upwards through 8 steps (rungs) from manipulation of citizens (1) through consultation (4) to citizen control (8) (see Figure 1).

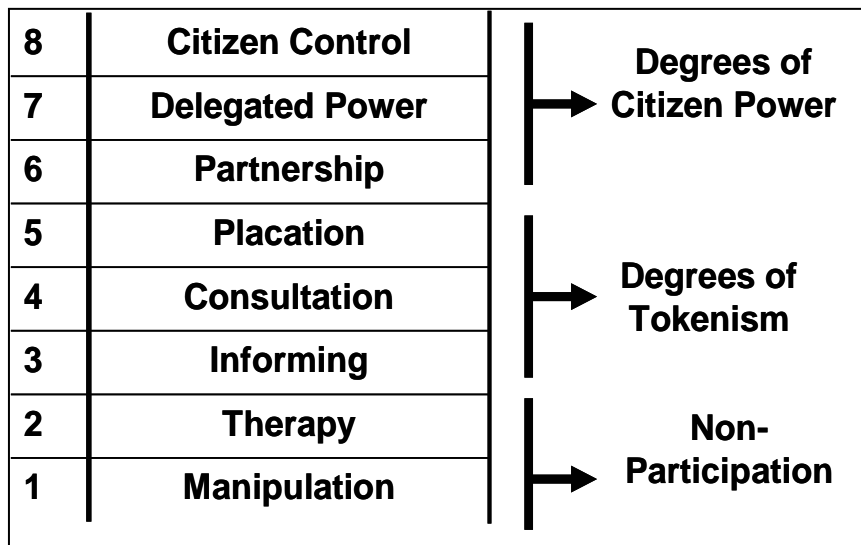


Figure 1 Arnstein's Ladder of Citizen Engagement (Arnstein, 1969)

Each group of steps corresponds to changes in degrees of citizen engagement ranging from non-involvement through tokenism to citizen power. As Arnstein herself recognised, the ladder is based on a conceptualisation that 'participation is a categorical term for power' (ibid, pp.216). The ladder depicts participation as essentially a power struggle between citizens trying to move up the ladder and controlling organisations and institutions (intentionally or otherwise) limiting their ascent to the 'top' and barring citizen's ability to claim control or power for themselves.

The metaphor of the ladder has become an enduring part of academic enquiry, policy and practice as a device to critique, design, implement and evaluate participatory processes ever since. Some 35 years later, it is still framing general discussions on practices for stakeholder engagement and evaluation (Wilcox, 1994) and more specific examples such as how police forces engage with communities (see <http://www.communityengagement.police.uk/>) and local authority responses to issues of social health (GLA, 2005). In academic circles, it surfaces in debates about stakeholder participation relating to business ethics (Cummings, 2001); development studies (Hayward et al, 2004); health planning (Longley, 2001; White, 2003); public administration (Yang, 2005; Bishop and Davis, 2002); urban development (Blanc and Beaumont, 2005) and child studies (Hart, 1992; Shier, 2001).

While still very much part of the debate over meanings and practices of participation, Arnstein's ladder itself has become the focus of more and more critical evaluation and its limitations as an organising metaphor for participation are increasingly under scrutiny.

Critics of the ladder of participation, such as Tritter and McCallum's (2006) trenchant critique in relation to the health service in the UK, focus on several key aspects. The first is that participation is assumed to be hierarchical in nature with citizen control held up as the 'goal' of participation – an assumption that does not always align with participants' own reasons for engaging in decision-making processes. As a measure of success, not achieving full citizen control implies some automatic failure or delegitimation (Haywood et al, 2005) of the participatory process, even though those involved may be content with whatever level has been attained. In an interesting inversion of ideals, Choguill's (1996) re-working of the ladder in a development context, suggests that where there are no governmental infrastructures or support, then individuals revert to self-management as the only strategy open to them when *neglected* by the state. For Choguill, self management represents the bottom rung of the ladder (c.f. Arnstein's), but even this placing seems to fall into the same trap that meaningful participation only occurs in relation to the decisions, activities and power of state organisations or similar authority.

The second main area of critique follows from the first: that there is a linear relationship between non-participation and citizen control (however many gradations are determined in-between). As Bishop and Davis (2002) note a linear notion of participation implies that the policy problem remains constant, only the approach of the actors varying from level to level. In their analysis, this is at odds with the uniqueness of many policy problems which, they suggest, require different levels and types of participation. Even where these do not equate to citizen control, they are equally valid in the context of the nature of the policy problem being addressed.

We go further and suggest that it is in the process of participation that the nature of the policy issue is determined, thus shaping the nature of the participation process itself. The linear conceptualisation of participation does little to emphasise the importance of either the process or the existence of feedback loops (see also Tritter and McCallum, 2006 on this point).

The third area relates to what we term the roles and responsibilities of the individuals, communities and authorities involved in participation. Arnstein's ladder suggests that the roles and responsibilities change only in relation to changing levels of power (in the dynamic of citizens taking control and authorities ceding it). This overlooks the more complex set of relationships which exist in many ongoing

participatory situations where roles are less easy to define and responsibilities emerge during, and as a consequence of, the participatory process itself. In other words, individuals do not necessarily define their roles in relation to their sense of power. Instead, we argue that the roles and responsibilities of individuals are based on the construction of their interest (or stake) in the situation (SLIM 2004b). This is not appropriate to describe in terms of their hierarchical power for, as Tritter and McCallum point out:

*A linear, hierarchical model of involvement – Arnstein's ladder – fails to capture the dynamic and evolutionary nature of user involvement. Nor does it recognise the agency of users who may seek different methods of involvement in relation to different issues and at different times. Similarly, Arnstein's model does not acknowledge the fact that some users may not wish to be involved (ibid. p 165).*

These areas of concern about Arnstein's conceptualisation of citizen engagement all point towards an appreciation of participation as more complex than perhaps suggested by the metaphor of the ladder. Indeed, Tritter and McCallum, writing about involvement in health care, go on to enrich the metaphor by suggesting there are many missing rungs, a wider context of snakes and indeed multiple ladders. Ultimately, though, they reject the metaphor of the ladder in favour of the metaphor of the mosaic. They suggest:

*'A completed mosaic creates a picture that is the product of the complex and dynamic relationship between individual and groups of tiles. Tiles of different colours and shapes are essential to creating a complete picture, which without systematic integration reveals only chaos. This analogy captures interactions between individual users, their communities, voluntary organisations and the healthcare system on which successful user involvement depends. The importance of user involvement is the engagement of diverse users and health professionals as co-producers. The mosaic illustrates the relationship between horizontal and vertical accountability and enables user involvement to be mapped and monitored (ibid, p 165).*

While we would agree with much of this analysis, we suggest that the ladder metaphor offers one further and critical insight into its limitations which have hitherto been overlooked by all critics and which, we suggest, lies at the heart of participation questions. Simply put, ladders do not exist in free space. They are defined by their usefulness in relation to something else. This perhaps obvious statement nonetheless reveals two major obstacles to its usefulness as a conceptual framing for participation. First, at a conceptual level, Arnstein's notion of participation is both devoid of context and, critically, has no means of making sense of the context in which the ladder is used. Second, in situations when the nature of the issue is highly contested or undefined, Arnstein's ladder provides few insights into how participation might be progressed as a collective process between all of the stakeholders involved.

The above suggests that the underlying epistemology of participation, as understood in many policy-making arenas, is limited by its implicit and explicit association of participation with power; with consequences for the kinds of tools and techniques designed to enable participation. Our own experiences of researching natural resource management situations suggest that this epistemology is insufficient to enable progress toward concerted action among multiple stakeholders. To do so requires an alternative policy paradigm of social learning. We briefly summarise the origins of social learning before describing the

characteristics of the situations in which social learning approaches are of particular merit in policy-making processes.

### **3. Social learning as an emerging concept**

The term social learning has arisen in response to a growing recognition that our understanding of learning has moved away from an educational emphasis, with its focus on individual learning, to one where learning occurs through some kind of collective engagement with others. Even so, social learning can have many meanings depending on which different theoretical traditions and interpretations are used in defining it.

While there is much diversity, in our work we have drawn on several strands and traditions to situate the work in SLIM. In particular, we note there is agreement on the existence of a social dimension in nearly all theories of learning, even if they are centred on an individual.

From a different angle, Bateson's three levels of learning provide insights into different ways to conceptualise learning in terms of the focus of what is being learned. He suggests first order learning corresponds to routine learning that takes context as given. Second order learning involves learning about the context of first order learning so that it is possible to compare different approaches. Third order learning takes another step outward again, in order to learn about the contexts of second order learning or, as Bateson suggests, to break the habits of level II learning (Bateson, 1972).

Some have taken this further to suggest that first order learning is about cognition and deals with *knowing*, second order learning is about meta-cognition and deals with *knowing about knowing* and third level learning is about epistemic cognition and deals with *knowing about the nature of knowledge* (Kitchener, 1983 in Bawden, 1995).

While these three levels are not specific to social learning theory, they raise some important questions regarding what may be going on in social learning processes that in the move away from routine or first order learning by questioning starting assumptions and exploring context. As such, a learning approach begins to reveal the traps in the mental models used to inform practices. Such a trap might, for example, be the framing assumption in Arnstein's ladder that participation is a category of power.

The models of second and third order learning have been mapped further by Argyris & Schon (1978) as single loop and double loop learning respectively. Social learning is implicitly in the context of double loop learning and may take the form of questioning norms, policies and objectives in interactive processes involving multiple stakeholders.

Within the environmental field, Blackmore (2007) identifies many authors attempting to develop social learning theories such as Finger and Verlaan (1995) who developed a conceptual framework for social-environmental learning, Daniels and Walker (1996) who considered collaborative learning and improving public deliberation in ecosystem-based management and Woodhill & Röling (1998) who looked into the human dimension in learning our way to more sustainable futures. Blackmore also notes that social learning theory is part of the tradition of 'adaptive management' (Hollings, 1978) and is also reflected in Wenger's social theory of learning in relation to communities of practice (Wenger 1998; Wenger et al 2002).

Drawing on these different strands, and in recognition of policy imperatives such as the EU Water Framework Directive, the SLIM project set out to explore ideas about social learning and the extent to which social learning could be used to promote concerted action among users seeking to manage water catchments in a more sustainable manner. This was done through a series of case studies in several EU countries. The detailed methods and results from the project are documented elsewhere (see SLIM 2004 final report and also forthcoming special issue of *Environmental Science and Policy* 2007).

#### **4. Characterising situations for social learning**

Water catchments, like many natural resource situations, exhibit a number of characteristics that present particular challenges to existing policy making approaches. In the SLIM project, we identified the following characteristics of interdependency; complexity; uncertainty; and controversy (SLIM, 2004a) as being of central importance.

##### *4.1 Interdependencies*

For many, one of the implicit acts of defining an issue is in drawing a boundary around that issue to distinguish it from the background 'noise', for the purpose of naming it and thus enable more focussed enquiry into its nature and resolution. The selection of the boundary reflects, in large part, how the problem is understood by the person(s) drawing the boundary and how it will be represented to others. The difficulty arises when it is not possible for any one person or group to draw the boundary with any confidence. This is particularly the case in natural resources issues because one type of human activity affects ecological processes in ways that interact with other people's uses of natural resources, both across geographic and ecosystem boundaries and time scales. Debates over the causes of climate change provide good examples of the difficulties in isolating single sets of variables principally because there are many interdependencies between air pollution, sea temperatures, global circulation, vegetation changes, rainfall patterns and so on.

##### *4.2 Complexity*

Complexity arises, to a large extent, because of interdependencies. The more interdependencies, so situations tend to be experienced as more complex, leading to difficulties or even the impossibility of describing and explaining the situation comprehensively and accurately. Complex issues are often prevalent in natural resource management since it may not be easy to comprehend the myriad relationships between, for example, topography, land management, river system functioning, ecosystem health, urban form, policies and practice when considering catchment level factors determining flood risk. This complexity extends to the problems in making sense of the effects of proposed solutions which are difficult to forecast.

##### *4.3 Uncertainty*

In turn, complexity leads to considerable uncertainty among many of the actors involved in the situation on what the nature of the issue is and how it might be progressed. Uncertainty can arise from a partial or complete lack of knowledge about a range of technical and ecological processes; social values and wants; and public and policy-making imperatives to name just a few. Uncertainty is also a major factor in debates which attempt to assess future developments and impacts and is at the heart of risk assessment.



#### *4.4 Controversy*

The combination of interdependencies, complexity and uncertainty often results in multiple perceptions about the nature of the issues, their underlying causes and how they might be progressed and by whom. This often leads to controversy among the many different individuals and groups who may be involved, each making sense of the issues from a partial perspective and different value judgements.

In many respects these characteristics illuminate an earlier discourse about the nature of situations that Ackoff (1974) described as 'messes' rather than 'difficulties'; Shön (1995) as the 'real-life swamp' rather than the 'high-ground of technical rationality' and Rittel and Webber, (1973) as 'wicked' and 'tame' problems. A tame problem is one where all the parties involved can agree what the problem is ahead of the analysis and which does not change during the analysis. In contrast, a wicked problem is ill-defined. Nobody agrees about what, exactly, the problem is.

The above characteristics present particular challenges to hierarchical conceptualisations of participation because these do not recognise, accommodate or attempt to differentiate those 'tame' situations which might usefully be progressed through existing governance mechanisms from 'messy' situations where new policy approaches are required. The ability to differentiate is further limited by Arnstein's one dimensional simplification of the role of the citizen as only meaningful when power is wrested or ceded by the state. In our view this restricts understandings and practices of participation in policy-making.

### **5. Social Learning for Concerted Action – A new policy paradigm**

The limitations of existing policy approaches are particularly evident in respect to managing water catchments which have been conventionally understood as biophysical 'hard' systems rather than situations which are experienced as being characterised by complexity, uncertainty, interdependency, having multiple stakeholding and often ongoing controversy. The traditional policy paradigm tends to focus more on problems (compared to messes or issues) and address them through instrumental interventions, such as engineering works or the measurement of biophysical or ecological indicators. This is often undertaken in isolation from their social context and with limited awareness of the (systemic) nature of the situation in which the issue arises. To the extent that the sustainable management or regeneration of water catchments requires changes of behaviour of stakeholders in the catchment, use is made of strategic reasoning. Intervention typically is attempted through policies to normalise practice, market forces and education. Figure 2 illustrates this in diagrammatic form.

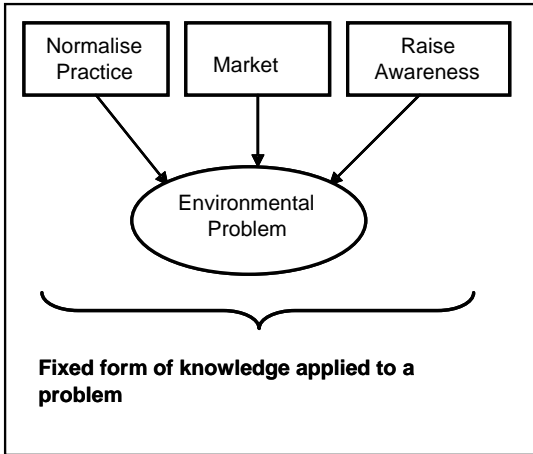


Figure 2 Traditional policy responses to objectified environmental problems (SLIM 2004a)

Because water catchments are messy situations this suggests that focussing on social learning rather than participation might enable new insights into the kinds of roles, relationships and sense of purpose which will be required to make improvements in the situation through some form of concerted action involving changes in understandings and practices that lead to accommodations between the stakeholders involved.

Where a social learning approach applies, traditional policy-making does not become irrelevant but can be encompassed within a broader understanding of how knowledge, and thus issues, are constructed and employed in policy processes. A social learning approach provides a context for a dynamic local decentralised process, and, in the case of large watersheds, for concerted parallel local processes. As such social learning becomes a complementary policy approach, but one which is significantly different in its epistemological assumptions from the existing mechanisms. The complementary role of social learning in policy process is shown in Figure 3.

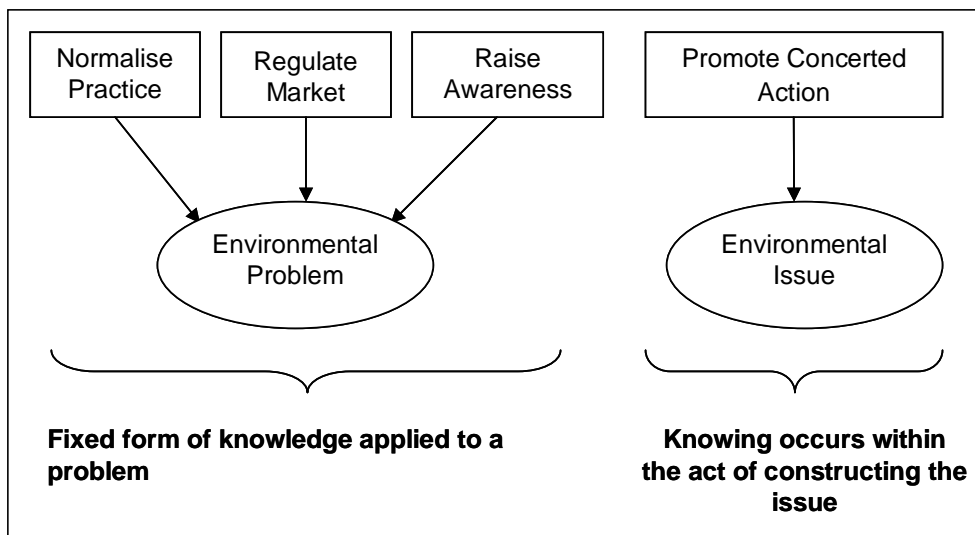


Figure 3 Alternative epistemological basis from which social learning for promoting concerted action can be developed as a purposeful policy choice (SLIM 2004a)

In Figure 3 'social learning' rests on a different set of epistemological assumptions – that is knowing occurs with the act, the process, of constructing an issue and seeking improvements. In contrast, the traditional policy instruments are built on an epistemological foundation of fixed forms of knowledge. These two different foundations do not preclude their complementary use but to do so requires awareness of the differences and of the implications for practice.

## **6. Concluding comments: implications for practice**

The results from SLIM suggest a 'social learning' approach for managing catchments is based on the idea that sustainable and regenerated water catchments are an emergent property of social processes. In other words, what are considered as desirable water catchment properties arise out of interaction and constructing the issues (sharing problem definitions and monitoring, negotiation, conflict resolution, learning, agreement, confronting power asymmetries, creating and maintaining public goods, concertation of action) among multiple, interdependent, stakeholders (SLIM, 2004b).

While the 'social' in social learning refers to the collective process that can take place through interactions among multiple interdependent stakeholders who are given proper facilitation, institutional support and a conducive policy environment, the findings of the SLIM project suggest that social learning can be understood as one or all of the following:

1. The **convergence** of goals, criteria and knowledge leading to more accurate mutual expectations and the building of relational capital. If social learning is at work, then convergence and relational capital generate agreement on concerted action for integrated catchment management and the sustainable use of water. Social learning may thus result in sustainable resource use.
2. The **process of co-creation** of knowledge, which provides insight into the causes of, and the means required to transform, a situation. Social learning is thus an integral part of the make-up of concerted action.
3. The **change of behaviours and actions** resulting from understanding something through action ('knowing') and leading to concerted action. Social learning is thus an emergent property of the process to transform a situation. (SLIM 2004a).

The implications for policy making processes is that attention should be directed to several key systemic variables which shape the extent to which changed understanding and changed practices are enabled. The variables are: an appreciation of context; ecological constraints or conditions; institutional and organisational framings and practices; stakeholders and stakeholding; and appropriate facilitation. How a messy situation is understood and progressed with regard to these key variables is likely to determine the extent to which social learning can enable concerted action to emerge from changes in understandings and practices.

Based on research findings from the SLIM project, we see this shift in perspective having implications for practice in three important ways. First, stakeholders are considered intelligent, responsible agents who are willing to act in the collective interest, when enabled to learn through building their stakeholding in an issue, and when they are assisted to create the institutional conditions in which they can rely on reciprocal arrangements. The learning here is orientated towards helping stakeholders see the water catchment (in its social and biophysical dimensions) as

one system or common pool resource in which they are interdependent with others. Secondly, practices for managing catchments are needed which develop capacity for communication, social learning and concerted action among the stakeholders. Third, the communicative, as opposed to instrumental, reasoning embedded within notions of social learning draws upon a different policy theory from the customary bio-physical and economic models. This suggests that practitioners require the ability to discriminate between substantially different conceptions of policy instruments, as for example that depicted in Figure 4.

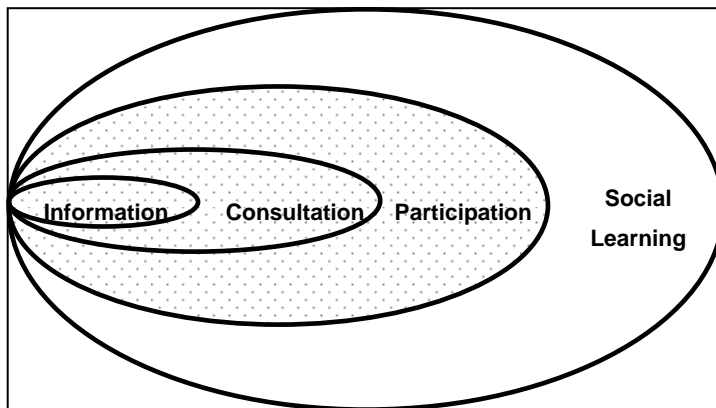


Figure 4 A conceptual framing of social learning in which information, consultation, and participation may be necessary, but not sufficient to improve complex situations.

Figure 4 shows that just as there is a significant boundary between information provision and consultation, so a similar paradigmatic (epistemic) boundary exists between participation and social learning. The epistemologies differ within each ovoid and these differences are also reflected in the practices needed for each. From our perspective, the dotted area maps onto 'tame' problems where there is reasonable understanding and proposals for their resolution are generally agreed upon. In these situations, existing policy approaches such as regulation are valid components of policy-making.

The unshaded area represents those situations where there is considerable complexity and uncertainty in situations as well as multiple stakeholders (SLIM 2004c).

It is also worth noting that in Figure 4, all of the ovoids have a common origin. This is significant because it conveys the idea that there is not necessarily any progression or systematic hierarchy as in Arnstein's linear model from information provision through to social learning, although each ovoid may encompass some aspects of the other i.e. they can be systemically related. Social learning approaches are chosen on the basis of the characteristics of the situation and may occur at the outset of policy-making, rather than as a 'last resort' or 'end point' of policy-making.

This difference is part of the rationale and also the appeal of using social learning as an organising principle for policy-making in complex and uncertain situations. In our view, this is because the epistemologies of social learning approaches are consistent with, and in many cases emerge from, an appreciation of the characteristics of many natural resource issues that are encountered. The epistemologies are grounded in the assertion that knowing occurs with the act, or

the process, of 'constructing' an issue and seeking improvements, whereas traditional policy instruments are built on an epistemological foundation of fixed forms of knowledge. These two different foundations, the technocratic 'supply push' and more emergent 'demand pull', do not preclude their complementary use but to do so requires awareness of the differences and of the implications for practice (as policy-makers; as stakeholders; as researchers) whether in policy development or water management.

## References

- Ackoff, R.L., 1974. *Redesigning the Future*. Wiley, New York.
- Arnstein, S., 1969. A ladder of citizen participation. *Jrnl of the American Institute of Planners*, 35:216–24.
- Argyris, C., & Schön, D., 1978. *Organizational learning: A theory of action perspective*. Addison Wesley, Reading, Mass: .
- Bateson, G., 1972. The logical categories of learning and communication in *Steps to An ecology of mind*. Ballantine Books, New York, pp279-308.
- Bawden, R. J., 1995. *Systemic Development: A Learning Approach to Change*. Occasional Paper #1. Centre for Systemic Development, University of Western Sydney (Hawkesbury).
- Bishop, P. & Davis, G., 2002. Mapping public participation in policy choices. *Australian Jrnl of Public Administration*, 61(1): 14-29.
- Blackmore, C., 2005. Learning to appreciate learning systems for environmental decision making – a 'work-in-progress' perspective. *Systems Research and Behavioral Science*, 22:329-341.
- Blackmore, C., 2007. What kinds of knowledge, knowing and learning are required for addressing resource dilemmas? A theoretical review. *Environmental Science and Policy*, forthcoming.
- Blanc. M. & Beaumont, J., 2005. Local democracy within European urban development programmes. *Tijdschrift voor Economische en Sociale Geografie*, 96(4):409–420.
- Choguill, M. B. G. 1996. A ladder of community participation for underdeveloped countries. *Habitat International*, 20(3) 431-444.
- Cummings, J. F., 2001. Engaging stakeholders in corporate accountability programmes: A cross-sectoral analysis of UK and transnational experience. *Business Ethics: A European Review*, 10, January, pp 45-52.
- Daniels, S. and Walker, G., 1996. Collaborative learning: improving public deliberation in ecosystem-based management. *Environmental Impact Assessment Review* 16:71-102.
- EU, 2000. *European Water Framework Directive 2000/60/EC*. European Union, Brussels.
- Finger, M. & Verlaan, P., 1995. Learning our way out: a conceptual framework for social-environmental learning. *World Development*, 23:505-513.
- GLA, 2005. *Lessons learned: Some approaches, tools and good practice for improving drug user involvement*. Greater London Authority, London.

- Harmonicop, undated. Learning Together to Manage Together – Improving participation in water management. HarmoniCop, Osnabruck, Germany, 99pp.
- Hart, R. A., 1992. Children's Participation: From Tokenism to Citizenship. UNICEF, Florence.
- Hayward, C. Simpson, L. & Wood, L., 2004. Still left out in the cold: problematising participatory research and development. *Sociologica Ruralis*, 44(1):95-108
- Hollings, C. S., 1978. Adaptive Environmental Assessment and Management. John Wiley, London.
- Kitchener, K.S., 1983. Cognition, metacognition and epistemic cognition: A three level model of cognitive processing. *Human Development*, 26:222-232.
- Longley, M. 2001. Incommensurate paradigms? Bridging the divide between technocrats and the lay public in health care planning: recent experience from Wales. *Int. Jnl. Of Consumer Studies*, 25(3):255-264.
- OECD, 2001. Citizens as Partners - OECD handbook on information, consultation and public participation in policy-making. OECD, Paris, 108 pp.
- Perry, W.G., 1981. Cognitive and ethical growth: the making of meaning, in A.Chickering (ed.) *The Modern American College*. Jossey-Bass, San Fransisco.
- Rittel, H.W.J. and Webber, M.M., 1973. Dilemmas in a general theory of planning. *Policy Science*, 4: 155-69.
- Shier, H., 2001. Pathways to participation: Openings, opportunities and obligations. A new model for enhancing childrens participation in decision-making. *Children & Society*, 15:107-117.
- Shön, D.A., 1995 The new scholarship requires a new epistemology. *Change*, November/December 27-34.
- SLIM, 2004a. SLIM Framework: Social Learning as a Policy Approach for Sustainable Use of Water, (available at <http://slim.open.ac.uk>). 41 pp.
- SLIM, 2004b. The SLIM (Social learning for the integrated management and sustainable use of water at catchment scale) Final Report, SLIM, UK (accessed at <http://slim.open.ac.uk>). 89 pp
- SLIM, 2004c. Stakeholders and Stakeholding in Integrated Catchment Management and Sustainable Use of Water. SLIM Policy Brief No.2. SLIM, UK (accessed at <http://slim.open.ac.uk>). 4 pp
- Tritter, J. Q. & McCallum, A., 2006. The snakes and ladders of user involvement: moving beyond Arnstein. *Health Policy*, 76:156-168.
- United Nations, 1998. Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental matters, United Nations, Aarhus.

- Wenger, E., 1998. *Communities of practice - Learning, Meaning and Identity*. Cambridge University Press: Cambridge.
- Wenger, E., McDermott, R. & Snyder, W.M., 2002. *Cultivating Communities of Practice*. Harvard Business School Press: Boston, Massachusetts.
- White, L., 2003. The role of systems research and operational research in community involvement: A case study of a health action zone. *Systems Research and Behavioral Science*, 20:133-145.
- Wilcox, D., 1994. *The Guide to Effective Participation*. Partnership Books, London.
- Woodhill, J. & Roling, N., 1998. The second wing of the eagle: the human dimension in learning our way to more sustainable futures. In Roling, N.G. and Wagemakers, M.A.E. (eds) *Facilitating sustainable agriculture. Participatory learning and adaptive management in times of environmental uncertainty*. Cambridge University Press, Cambridge.
- Yang, K., 2005. Public administrators' trust in citizens: A missing link in citizen involvement efforts. *Public Administration Review*, 65(3):273-285.