Joining-up participation in environmental planning – developing a learning resource for capacity-building

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Executive Summary

Recent environmental legislation, such as the Water Framework Directive, calls for increased stakeholder and public participation in planning and environmental management. This will require significant resources and new skills. The Sir John Egan Review identified the lack of skilled practitioners able to facilitate participatory processes as a major limiting factor to achieving the government's sustainability aims. This project developed new approaches to training project officers and practitioners in the skills of effective public participation. It built on an innovative participation process that was successfully piloted in North Manchester.

The project

This project developed new methods for developing practitioners' abilities to facilitate stakeholder engagement in planning. The Project Manager developed a capacity building programme for an integrated approach to participation, and tested it with trainee facilitators.

Results

The research highlighted several key themes for effective training in these skills:

- Create an action learning approach
- Actively encourage reflective practice
- Develop peer networks and mentoring opportunities
- Create supportive conditions for learning
- Develop learning from participants' own understandings
- Incorporate a diversity of approaches and perspectives
- Encourage a holistic view and working across scales
- Incorporate learning about systems thinking and sustainability

Meeting Environment Agency Priorities

This research and the proposed larger scale project to take it forward help to meet several of the **Environment Agency's priorities**. The participatory process developed in this project helps integrate ecological design in participatory planning. Effective capacity building would make these principles more accessible to facilitators and project officers, helping to achieve **a better quality of life**.

As this process is rolled out it will help develop **an enhanced environment for wildlife,** through improving people's understanding of their local environment. Enabling more facilitators to use the process would this make it possible to develop further work with businesses, thus contributing to **a 'greener' business world.**

'Joined-up' participation implies developing area-based plans with stakeholders, community members and different agencies responsible for the area. An integrated approach can maximise effective use of agency resources. By including ecological awareness, such joined-up participation would result in **wiser, sustainable use of natural resources**.

Next steps

The research produced specific recommendations for improving the capacity building approach, including: formal accreditation linked to professional training; a website with case studies and a peer review section; facilitation skills assessment and a mentoring programme. A proposal for testing the approach on a wider scale is outlined. This would look at work-based learning for practitioners in public sector agencies. The Project Manager has been awarded a development grant to prepare this research bid with suitable partners, for submission in 2007.

1 Introduction

> "The skills, aptitudes and attitudes necessary to industrialise the earth, however, are not necessarily the same as those that will be needed to heal the earth or to build durable economies and good communities. Resolution of the great ecological challenges of the next century will require us to reconsider the substance, process, and purpose of education at all levels" (Orr 1994, pg. 77).

Recent environmental legislation, such as the *European Union Water Framework Directive*, calls for more effective stakeholder and public participation in planning. Achieving the ambitious objectives of the Water Framework Directive will require changes in behaviour from a wide range of people, both as professionals and citizens. This adds impetus to call for more effective participation in planning, as people's motivation to change is linked to their understanding.

Two recent reviews have identified the lack of skilled practitioners able to facilitate participatory processes as a major limiting factor to sustainable development (Commission for Architecture and the Built Environment 2003; Office of the Deputy Prime Minister 2004). Addressing this lack will require a new approach to capacity building for the practitioners who are being called upon to engage stakeholders in planning and environmental management.

Capacity building is defined as "strengthening people's capacity to determine their own values and priorities, and to organize themselves to act on these" (Gensamo 2002, pg. 6). It consists of developing awareness, knowledge, skills and operational capability, so that individuals and groups can achieve their purpose. Capacity building in the area of facilitating participatory processes could help to achieve the ambitious goals of the *Water Framework Directive* and sustainable development priorities in planning.

Existing participatory processes often fail to help experts and citizens learn from each other, which can lead to disillusionment and participants becoming disengaged from the process. In addition, in many participatory methods, sustainability is seen as a 'bolt-on' at the end of the process, which inhibits developing plans for an ecologically sound future. There is an opportunity to develop new approaches to participation that deliver environmental benefits through participatory planning. This will require new skills and approaches from practitioners.

The lack of skilled practitioners able to engage the public in planning could be addressed by developing effective training in facilitation and an accessible learning resource to support facilitators in their work. This project developed and evaluated new methods for developing practitioners' skills and ability to facilitate participatory planning through action research.

1.1 The project

In this action research, a cohort of nine trainee facilitators were trained in a participatory planning methodology, called DesignWays. DesignWays brings together creative processes for engaging stakeholders in planning and ecological planning. Its colourful, hands-on toolkit focuses discussion, and makes workshops more productive and enjoyable (see

www.holocene.net for more information). In this project, the focus was on its use in stakeholder engagement and enhancing the skills of facilitators.

Joanne Tippett, referred to in this report as the Project Manager, had previously conducted PhD and postdoctoral research at the University of Manchester with Professor John Handley, testing and validating the DesignWays approach. The Project Manager worked with community members and stakeholders to develop a long-term vision for the Irk Valley in North Manchester and a former landfill site (Moston Vale). Before and after interviews with participants indicated a marked increase in their capacity to design creative solutions for sustainable development.

Influenced by the strength of enthusiasm for the community-led design for Moston Vale, the Newlands project (a partnership of the Forestry Commission and North West Development Agency - www.forestry.gov.uk/newlands) committed £1.6 million to regenerate the site. Nineteen key decision-makers in the North West region were interviewed about the findings of the research. They agreed that such a holistic participatory approach could be useful for a range of agendas, from implementing environmental policy to creating regeneration strategies. In addition, aspects of the process have been used in consultations on river basin planning strategy with regional stakeholders for the Environment Agency (Tippett 2004)and in workshops to gather stakeholder input for the Manchester Biodiversity Strategy (Tippett 2005a).

This project builds on the solid foundation of previous research. It takes it to the next stage by examining what is necessary to enable this new participatory approach to be made more widely available to practitioners. The project team developed an understanding of how to undertake effective training for DesignWays facilitators, at the same time as exploring the conditions that would enable effective capacity building in participatory planning. In addition to testing ways of developing practitioners' skills, the project explored the steps required to develop it into a transferable methodology available to a range of practitioners. These are summarised in **Section 5 Improvements and next steps.**

1.2 Aim and objectives

This project aimed to develop understanding of capacity building to support holistic participatory facilitation.

The objectives were:

1. Capacity Building – develop and evaluate approaches for building capacity and skills in this ecologically informed participatory process, so as to make it more readily available to a wide range of practitioners;

2. Pooling Knowledge – develop and test new approaches to support ongoing learning amongst participants, exploring ways to pool knowledge and experience so it can be easily shared.

2 Methodology

The objectives were approached through a pilot project in the NorthWest of England. The Project Manager worked with trainee facilitators to engage stakeholder participation in a large scale workshop. This tested an action learning approach. The key components of the methodology are outlined below. Sources of data included:

- In-depth, semi-structured 'before and after' interviews with trainee facilitators;
- Participant observation during the action learning phase of the research;
- Trainee facilitators' journals and debriefing feedback; and
- Ideas developed by participants in workshops focused on the DesignWays methodology and the training process, which were entered into a database.

2.1 Literature Review

A literature review developed the understanding of capacity building. Several research projects have assessed participatory processes and their effectiveness (e.g. Aldred and Jacobs 2000; Burton et al. 2004; Lowndes and Stoker 1998; Oels 2003; Tippett et al. 2005; Webler 1995; Webler, Kastenholz and Renn 1995). A review of literature, however, has highlighted that little empirical research has been conducted on the effectiveness of training practitioners for capacity building in the skills required to deliver the meaningful participation and integrated planning called for in recent shifts in policy, as exemplified in the *European Union Water Framework Directive*. This review will thus form the basis for a research bid to conduct a broader survey of capacity building approaches.

A set of skills and capabilities that could be used as a yardstick to evaluate the effectiveness of a capacity building programme was developed. Systems thinking concepts were used to develop methods for training and capacity building. This formed the analytical framework for the research. This set of skills and capabilities and the development of concepts for capacity building are outlined below in **Section 3: Framework for analysis**.

2.2 Action Research – Capacity building programme

The concepts for capacity building developed during the first phase of the research were formulated into a practical plan for training practitioners. Trainee facilitators were recruited from a group of people who had previously expressed an interest in the DesignWays approach. These nine individuals, from now on referred to as the 'cohort', are as follows:

Dr. Emma Griffiths	Research Associate, University of Manchester
Amy Heyes	Senior Planning Liaison Officer, Environment Agency
Fraser How	How Creative
Ann Kolodziejski	Lecturer in Environmental Studies, The University of Bolton
Eben le Roux	Commonwealth PhD scholar, University of Manchester
Paul Mahony	Creative Director, Countryscape
Jonathan Porter	Technical Director, Countryscape
Dr. Jemma Simpson	Landscape Planner, Countryscape
Angus Soutar	Executive Director, Robert Soutar Ltd.

The capacity building programme was led by the Project Manager. It took the form of:

- **Training in stakeholder engagement and facilitation** - This one-day session took was structured similarly to a 'train the trainer' session. The workshop required a full day to take the cohort through the training necessary to understand the basics of the DesignWays process and to train them in using its hands-on toolkit for engaging stakeholders in workshops (see **Appendix B – Outline of training day** for the outline).
- **Action learning, opportunities to apply knowledge** – The cohort and the Project Manager ran stakeholder consultation workshops for Manchester City Council at the one-day launch of the Green City Network. These workshops were entitled 'Defining the Future of the Green City Network'. One hundred and fifty stakeholders from across Manchester attended this event. The Project Manager coordinated the workshops, and the cohort members each facilitated three tables of stakeholders, running the session twice to enable all delegates the opportunity to provide input.
- **Reflection and feedback session** – Following the action learning aspect of the training, this session was held to review learning from the event. This half-day workshop was seen as an opportunity to test the need for a reflection session as part of the capacity building process. This session also allowed an opportunity to review the capacity building programme and to suggest ways of improving it.

Figure 1 members of the cohort at the initial training session

At the onset of the project the trainee facilitators were provided with background information in terms of the project aims and objectives; the stages of the research and the envisaged outputs. All of the trainee facilitators were encouraged to be part of the whole project and attend all the training and workshops.

2.3 Analysis of participants' experience

Each cohort member was **interviewed before the training process**, in order to gain insight into their initial views of stakeholder participation, sustainability, ecological design and training. These interviews were also used to gauge participants' understanding of, and prior experience with, the DesignWays approach. These interviews took place at the beginning of the project, as they needed to be completed before the training took place. The interviews were semi- structured and approximately 1 – 1.5 hours in length.

Each of the cohort group was **interviewed again at the end of the process**. These in-depth interviews examined their experiences of the training, ideas for improving capacity building in the area and shifts in their understanding of DesignWays, sustainability and stakeholder participation.

All of the interviews were recorded and transcribed so that detailed analysis of the results could be undertaken. See **Appendix C** for an outline of the questions asked in the two sets of interviews. The cohort was asked to maintain **reflective journals** of their experiences as additional data for the research.

Ideas for improving the capacity building approach were developed in two **workshops**. The first half-day workshop provided the cohort with an opportunity to discuss improvements to the toolkit and the capacity building programme. This half-day workshop used a creative brainstorming process and fed directly into making a new prototype toolkit. This prototype was tested in the action learning, in which the trainee facilitators applied their learning in a 'real-world' context. Ideas for improving the capacity building programme were further refined in a workshop with delegates at the 2006 UK Systems Society annual conference, entitled 'Effective Change - The Contributions of Systems Thinking and Practice' at Oxford University on the 11-13th September.

Figure 2 Participants at UK Systems Society Conference brainstorming ideas

Data were analysed using both Excel (for ideas from the workshops) and NVivo software for in-depth coding and cross-interview analysis of transcribed interviews and reflective journals (QSR International Pty Ltd. 2000).

3 Framework for analysis

This section outlines the framework for analysis developed in this research. The first section discusses the nature of capacity building and develops a set of key skills and capabilities that would enhance integrated capacity building. This is seen as the basis for a larger research project, evaluating capacity building. The second part describes the systems thinking framework that was developed as part of the research, and used to inform the capacity building methods that were tested in the action research phase.

3.1 Capacity building and environmental planning

Sustainability is often quoted as a goal, but it is widely agreed that it is hard to achieve this goal in practice. At the same time, there is increased pressure for more effective community and stakeholder participation in planning, but uncertainty about the best way to mobilise and utilise such participation. Reflecting a global shift in awareness of the value of community and stakeholder participation in planning, several significant changes in policy have recently been enacted. The *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* entered into force in October 2001, and now has 40 signatories (UN ECE 1998). Recent environmental legislation, such as the *European Union Water Framework Directive*, calls for more effective stakeholder and public participation in planning. Achieving the ambitious objectives of such legislation will require changes in behaviour from a wide range of people. This adds impetus to call for more effective participation in planning, as people's motivation to change is linked to their understanding (Ison, Maiteny and Carr 1997; Meppem and Gill 1998).

Two different types of stakeholders can gain value from participation: communities of place, or people who live and work in an area, and communities of interest, people who have a connection through their shared interests and concerns. Through participation these two types of community are able to learn about changes happening in their areas and in the policies that will affect them, and are able to learn from other stakeholders. If the engagement is meaningful, they gain a sense that their ideas and input make a difference, which in turn helps build the confidence to act.

Change managers, operating both at the strategic level of developing environmental policy and at the programme level, delivering policy, gain value from the participation if it performs the following functions:

- improves knowledge base for action
- participants take ownership of plans for implementation
- develops ways of bringing together different perspectives and disciplines
- encourages innovation and different ways of thinking
- integrates top-down and bottom-up planning
- develops practical steps towards sustainability

Participation in decision making and developing a shared understanding of problems and options may increase the likelihood of changing behaviour (Allen, Kilvington and Horn 2002). This relates to a shift in understanding of the process of planning, which has been termed 'planning as learning' (e.g. Therivel and Partidario 2000).

Recent policy reviews have identified a lack of skilled practitioners able to engage stakeholders in such planning as a major barrier to sustainable development in the UK. The report, *The Egan Review - Skills for Sustainable Communities* lists nearly eighty occupations that are involved in the processes of "planning, delivering and maintaining sustainable communities", and discusses an urgent need to develop the skills required to deliver sustainable communities in all of these occupations (Office of the Deputy Prime Minister 2004). In response to these reviews, nine Regional Centres for Excellence in Regeneration and a national Academy for Sustainable Communities have been launched (Academy for Sustainable Communities 2006; Barton 2006).

As discussed in Downie and Elrick (2000, pg. 251), community planning in environmental issues offers the opportunity to weave together policy objectives of "social inclusion, lifelong learning and active citizenship". Much of the development of participatory methodologies has originated in 'less industrialised regions' of the world, and this link between participation and capacity building is stressed as a key benefit of participatory planning (e.g. Roberts 2002).

Wilcox (1994, pg. 52) reminds us that effective participation requires skilled facilitation. Discussing the implementation of the *European Union Water Framework Directive*, Jones (2001) states that "river basin authorities must be prepared to devote time to careful planning and to invest meaningful financial and human resources. Such investment has the potential to be extremely cost-effective in terms of the benefits derived for WFD implementation".

A participatory planning process that encourages participants to develop plans requires the development of new skills. Skilled designers and planners will be required to develop new ideas. They will be called upon to integrate complex technical information with the meanings and concepts that emerge from participatory planning into achievable plans and strategies. These designers will need to develop skills of communication and ecological planning in addition to the more traditional skills of design, drafting, and engineering.

This research focused on the practitioners who are likely to be asked to engage stakeholders in participation, namely:

- Planning & design practitioners;
- Environmental managers;
- Community development practitioners.

In this project the research participants started with a good knowledge of sustainability issues and already had some experience running workshops. Further research is required to test capacity building concepts for people with different levels of knowledge and experience, and to explore ways that stakeholders and community members are able to build their skills and capacities.

The following is a set of key skills that practitioners need to develop to be able to facilitate participatory, integrated planning, leading towards sustainable communities. This set of skills has emerged from the literature review and the Project Manager's work as a lecturer, teaching

planning at the University of Manchester. They are based on developments in planning theory (Attfield 1991; Baum 2003; Beatley 1994; Dear 1986; Flyvberg 2003; Forester 1989; Imrie and Hall 2001; Sandercock 2003; Taylor 1998). This set of skills has also been influenced by the core competencies of facilitators as set out for the accreditation process of the International Association of Facilitators (Lieberman Baker and Fraser 2005). This set of skills could be used as a yardstick to assess the effectiveness of a full programme of capacity building for practitioners engaged in joined-up participation.

Awareness (learning how to learn from what is happening around us)

- Observation and analysis of social processes
- Observation and analysis of ecological processes
- Spatial awareness and sense of place
- Openness to surprise and new ideas
- Ability to ask questions
- Knowledge of statutory, regulatory issues, plan making process – levers for, and barriers to, change

Critical thinking

- Uncover and explore assumptions – both your own and those of others
- Explore and be aware of differing cultural norms
- Ability to ask questions of the bigger picture – global issues and possible implications of decisions for economic vitality, social equity and ecological integrity
- Awareness of the many ways that power is enacted – formally and informally
- Ability to think through different scenarios and their potential ecological, social and economic impacts
- Developing awareness of uncertainty and risk and ways to manage these in projects and programmes

Creativity

- Use of different types of knowledge
- Asking questions at a deeper level to generate new solutions
- Cultivating different ways looking at issues
- Adopting a flexible approach to process design in response to situations as they arise
- Ability to link vision and general principles to context – the particulars of a place/situation
- Aesthetic sensibility

Facilitating and enabling

- Encouraging others to develop their skills and knowledge base
- Creating the conditions for dialogue and questioning of underlying frameworks and assumptions
- Bringing people and types of knowledge together to develop a shared understanding of problems and options
- Mapping stakeholders, with an awareness of diversity in communities and stakeholders
- Communication and facilitation skills
- Planning and managing stakeholder events and workshops
- Managing relationships between stakeholder groups and clients
- Entrepreneurial skills to develop new opportunities

Integration

- Develop shared understandings between disciplines
- Ability to encourage social learning
- Ecological design skills
- Multi-criteria decision making skills
- Ability to assess risk
- Adaptive management approach – assessment and readjustment of management in light of change and uncertainty
- Leadership and governance skills (e.g. institutional analysis)
- Ability to link planning and thinking across different levels of scale
- Ability to develop synergies and positive benefits between different areas of work and programmes

Ethical development

- Ability to reflect on your own values
- Ability to reflect on your role as a practitioner and citizen
- Being aware of possible consequences of actions
- Creating the conditions for learning cycles – being open to feedback and creating opportunities for reflection
- Humbleness and openness to admitting error
- Ability to use imagination
- Capacity for empathy, especially for others from different backgrounds to yourself
- Developing pragmatic judgment – ask yourself what you like, how you work as a human as a yardstick for judgment

3.2 Applying systems principles to develop ideas for capacity building

The report, The Law of Sustainable Development produced by the European Commission, explores the 'legal theory of sustainable development' and states: "today, no serious study and application of the principles of sustainable development is possible without the help of systems science" (Decleris 2000, pg. 8).

A conceptual model based on systems thinking principles was developed in this research in order to inform new methods for capacity building. This approach was chosen as it was considered that the new demands on practitioners would require new approaches, and the field of systems thinking could provide a useful starting point for developing these new concepts. In this emergent theoretical framework, eight major concepts of systems thinking were explored:

1. holism, nested systems of wholes;
2. networks of relationships;
3. the value of diversity;
4. self-organisation and emergence;
5. pattern in systems open to flows;
6. uncertainty and triggers of change;
7. history and context;
8. and adaptive capacity and learning.

These concepts and their relevance to capacity building are discussed in **Appendix A.**

4 Results and analysis

This results and analysis section starts by describing the capacity building methods used in the action research. These are the practical methods that were developed using the insights from systems thinking described above. The effectiveness of these methods for capacity building was explored through analysis of the interview data and reflective journals written by the participants. The second section summarises key themes that emerged from this analysis.

4.1 Methods developed for capacity building

The total training time for this process was 1.5 days, with an additional day of applied work and an additional half-day workshop planning for the large scale facilitation event and developing ideas to improve the process. Most of the cohort agreed that 1.5 days of focused training would be sufficient to develop the confidence and skills required to run a participatory workshop in a situation with which they were familiar (note that this did not include using the sustainability framework, it was focused on the process of leading stakeholders through a participatory workshop). It has to be noted that this research started with a group of trainee facilitators who had some experience of running workshops. Any capacity building programme would have to take into account the starting point of the trainees, and the desired level of skill to be attained. Dreyfus and Dreyfus (2000) have developed a model of the five stages of skills acquisition, namely:

1. Novice
2. Advanced beginner
3. Competence
4. Proficiency
5. Expertise

The analysis in this research suggests that a brief training programme, such as that developed in this project, could enable trainees to reach an advanced beginner stage as a facilitator (possibly in a day with some prior experience). With an opportunity to practice and to reflect upon the learning of that practice, a level of competence could be achieved quite quickly. A lack of opportunities to practice was cited as an important barrier to improving skills in the interviews. This finding needs to be validated with a wider group of trainees. The aim of a full capacity building and accreditation programme would be to achieve the level of expertise, where the practitioners are able to ‘critically reflect on their intuitions’ and achieve ‘holistic similarity recognition’ in different contexts(see Dreyfus and Dreyfus 2000). This level of expertise allows a flexible response to situations, whilst still maintaining an understanding of the key principles and ideas informing the approach, thus encouraging quality and integrity in the application of the approach.

4.1.1 Training in stakeholder engagement and facilitation

A one-day training session was held for the cohort of trainees on the 21st February, 2006. This was run by the Project Manager. There were four main components to this training.

The first session provided an opportunity for participants to reflect on their own understandings and experiences. At the beginning of the process, participants were engaged in an exercise to

explore their understanding of engaging stakeholders in planning. This involved using the hands-on interactive toolkit[1] in a process of engagement, so that trainees actually experiencing a hands-on workshop session as participants, using the kit to brainstorm ideas. The kit was pre-prepared with key categories about stakeholder engagement, which the trainee facilitators were asked to consider, whilst brainstorming goals for stakeholder involvement, existing assets that can help to achieve effective stakeholder involvement, and limiting factors which may inhibit it. This exercise was carried out early in the process to encourage linking of participants' current understanding to new ideas.

Figure 3 Cohort reflecting on their understanding of stakeholder engagement

This stage was followed by a more 'traditional' session in which the trainer gave a presentation, discussing the key principles of the DesignWays process, the story of its development and plans for the future.

This was followed by an interactive session, in which trainee facilitators used the hands-on toolkit to ask the question, 'What do we need to do to plan a workshop?' In this session, it was seen as important that the trainee facilitators learn from each other, and the trainer's role was to guide the knowledge building process, with occasional input. In this case, there were also people with a mixed range of skills attending the workshop, who were able to provide a diverse range of inputs. The discussion amongst the trainee facilitators and the process of struggling with the question itself was seen as important to the learning process. This was supplemented by a discussion of key points and examples of planning workshops from past experience, both of the trainer and the trainee facilitators.

The trainee facilitators were then led through a session in which they planned the stages and process of the upcoming workshop for Manchester City Council. The cohort were to facilitate

[1] A physical toolkit using branches and leaves that can be written on and attached to a felt workspace was developed to support the participatory planning process, DesignWays. This kit can be used as a stand-alone product for engaging participants in workshops outside of the context of ecological planning, such as in business planning and interactive education.

sessions at this event, which was seen as an opportunity to put their new skills into action and to begin applying them to a real-life problem.

The day was closed with a discussion of the key points that had been learned. All members of the cohort attended this training.

4.1.2 Action learning, opportunities to apply knowledge

There were two opportunities for the trainee facilitators to apply their learning in practice. The first was during a half-day workshop on sustainability frameworks, which was led by the Project Manager on the 22nd February. The workshop was held for staff members in the Training and Development Network drawn from across the University of Manchester. Participants were introduced to the sustainability framework developed by the organisation Professional Practice for Sustainable Development[2].Three members of the cohort assisted with the workshop delivery in the practical sessions.

The key opportunity for the cohort to practice their facilitation skills was running workshops for the launch of the Green City Network – Manchester on the 13th of March, 2006. The conference was an all-day event, with 150 delegates and required six assistant facilitators, with the Project Manager as the lead facilitator. The cohort acted as consultants for Manchester City Council for this facilitation service and supported the participants through the process in order to gain first hand experience of facilitation. Five officers from Manchester City Council (MCC) provided additional support to each of the facilitators. Each facilitator and MCC support person worked with three tables

Figure 4 The cohort of trainees facilitating 'Defining the Future of the Green City Network'

[2] Professional Practice for Sustainable Development has as its goal "the integration of sustainable development principles into professional training" (http://www.pp4sd.org.uk). Its management group are: The Environment Agency, The Institution of Environmental Sciences, The Natural Step and The Royal Society for the Protection of Birds.

Two briefings were held with the cohort and with Manchester City Council staff who were also assisting with the conference. In the first briefing, the cohort members developed the outline for the workshop. The briefings covered how the workshop was going to be structured; the roles of the facilitators; the key questions and themes to be addressed through the workshop.

The outcomes of the workshops included a detailed database, showing all of the ideas and linkages developed in the workshop, and a report summarising the ideas which participants identified as most important. See the Manchester Green City Network website[3] for a copy of the report from the event, including an in depth description of the facilitation process for the workshop. Six of the nine cohort members were present at this event.

Both of these events meant that the trainee facilitators were able to test their learning in a real-world context, an important component of the learning process. At these events, the trainee cohort was supported by the Project Manager, who was leading the overall facilitation, and who was available to give assistance to the trainee facilitators.

4.1.3 Reflection and feedback session

Following these opportunities to apply new skills, the cohort attended a feedback session to review learning and to further develop their skills. This was held on April 20th, 2006. This session was seen as important to help build skills of critical thinking and reflective practice, allowing participant the space and time to reflect on their learning and ways they could improve their skills. It was also seen as an important way to develop the network of peers that could offer ongoing support and advice in the learning process. This feedback session also used the hands-on DesignWays toolkit to facilitate discussion amongst participants, thus using the tools and processes that facilitators were learning how to use in the training process. Eight of the cohort attended this event.

Figure 5 Feedback session following the application of skills learned in a 'real-world' context

[3] http://www.manchestergreencity.co.uk/site/index.php?option=content&task=view&id=201&Itemid=192

4.2 Analysis of participants' experience

This section details analysis of the experience of the trainee facilitators.

In-depth interviews were conducted with each member of the cohort, both before and after the capacity building process. The interview questions explored participants' understanding of stakeholder engagement and sustainability, and shifts in this understanding as a result of the training. They were used to gather information about the cohort's experience of the training and how they learned new skills. They explored ways of improving the capacity building programme, issues which were further developed in two workshops, one with the cohort and one with delegates at the 2006 UK Systems Society Conference. The Project Manager maintained a journal of notes from the training and participant observation during the action learning phase, and the reflective journal from members of the cohorts added to the sources of data for analysis. The following section discussed the key themes to emerge in this analysis.

4.2.1 Create an action learning approach

One of the key findings to arise from the research was the importance of an action learning approach to capacity building. In the training itself, it was seen as important that the processes that were being taught were actually used in the workshop, so that trainees were able to experience them as participants (there was a suggestion that it might be helpful to demonstrate a few different methods and encourage a discussion about the different methods). The trainees were asked to help in planning the upcoming workshop (the action learning part of the programme) and to think of the potential difficulties and solutions to these, during the training session. This active approach to exploring the issues concerned in facilitation was seen as very important in the learning process. The fact that the training used interactive techniques and encouraged dialogue was seen as key. Several of the participants mentioned that they learned the most from interacting with the other participants. Within the training it was seen as important to keep a balance between action orientation and some more informational sessions (more focused on 'transfer' of knowledge), which provided the participants with key information and principles to help them understand the process.

The fact that the cohort had an opportunity to be actively involved in a 'real-world' project to apply their skills and develop their confidence was seen as a valuable part of the learning. If it was not possible to arrange the training around a 'real-world' project, it was seen that a role-play that allowed participants to actually facilitate a workshop that they had planned earlier in the day, by taking turns to be facilitators or participants, would be helpful. The workshops could also be used as an opportunity to plan something that the trainees (or some of the trainees) were about to do in their work, even if the event itself is not part of the capacity building programme for all of the trainees.

The need for more opportunities to practice was emphasised by all of the trainees. Ways this could be achieved include: being invited to help at events, having opportunities for some paid work as assistant facilitators while being trained, or having opportunities to practice their skills in the workplace. Several of the cohort mentioned that they would appreciate opportunities to observe events being facilitated.

4.2.2 • Actively encourage reflective practice

The importance of building in time for reflection on understanding and learning was emphasised by the participants, as was the role of an experienced trainer in being able to draw such reflection out of the group process.

The need for facilitators and planners to maintain a critical stance, and to hone the skills of asking difficult questions, was discussed in the interviews. This was related to the need for periods of reflection, as being one way of developing this critical faculty. Periods of reflection can also inculcate a sense of humbleness and openness to learning more, which is invaluable in developing skills of facilitation and integration of ideas across disciplines and projects.

It was suggested that it would be helpful in an accreditation process to make a reflective journal a requirement for accreditation, as this would act as an incentive for trainees to take the time to reflect on their learning, a process which is all too often pushed aside by more immediately pressing matters.

4.2.3 Develop peer networks and mentoring opportunities

Several of the participants mentioned that they learned the most from discussing their ideas with the other participants. Being able to explore their learning with people who had different experiences of applying the process was seen as very valuable, especially in terms of thinking through how they would be able to apply the approach in their own contexts. Encouraging the development of networks of peers, with discussion of learning and issues that arise in the application of the process was seen as essential for the trainees' ongoing learning. If this was done in a way that encouraged critical reflection and peer review, it was felt that this would help maintain the quality of the process whilst also encouraging innovation and growth of ideas.

A discussion group was seen as a key way to promote further learning. Whilst opportunities to meet were emphasised as important, access to a discussion group online was also seen as a valuable support. It was seen that a peer support groups should consciously include opportunities to be discuss trainees' experiences of applying the skills they have learned, and to receive feedback on their experiences and possible ways to improve them.

It was seen as particularly helpful to have a few more experienced people available for support during the capacity building process, in particular during the action learning phase, where trainees are applying their skills in a 'real-world' situation. This led to the idea of cascading learning, where once there is a group of people with some training in an organisation, they can act as mentors to new trainees, assisting them in their early workshops, in a way that builds their own skills, whilst providing support and mentoring to people who are learning new approaches. Several of the cohort discussed the need for mentoring as they started to apply the ideas in their work, they felt that having access to a more experienced person's advice and support would help them build confidence and help them develop their capacity to use the ideas learned in different ways.

4.2.4 Create supportive conditions for learning

The need to develop a comfortable environment for learning was emphasised. Whilst the need to create challenging circumstances to stretch the trainees was acknowledged, and was seen as

helpful, it was also seen as important that people were allowed to progress through the learning at their own pace, with 'scaffolding' in place to support them in testing and acquiring new skills. The need to allow trainees sufficient time to reflect on their learning and ask questions was emphasised. Proceeding in small steps, so that trainees were able to start with thinking of working with small groups as a facilitator, and then proceed in stages to the more complex area of overall programme design, was seen as helpful in creating the conditions for optimal learning.

Developing a more participatory and integrated approach to planning will require new skills and working in a climate of uncertainty. This will require a greater tolerance of experimenting and making mistakes than has often been allowed in a managerial system driven by targets. The trainers' attitude and ability to admit to her/his own mistakes and difficulties with applying the process helps create a climate in which trainees feel comfortable to explore new ways of working. The fact that the trainer was able to discuss her own difficulties with applying the principles during the training was seen as helpful in creating an atmosphere open to critical reflection.

The interactive processes of the training were seen as important in creating the conditions for trainees to learn from each other within the workshop, which in turn will encourage further learning within a peer network. The training approach itself used tools and processes that encouraged the use of 'multiple intelligences', allowing participants to think of the same ideas in different ways, e.g. using verbal, visual, spatial ways of exploring the ideas(Gardner 2003; Gardner and Hatch 1989). This was seen as key to encouraging learning, as it allowed people with different ways of learning to come at the information in varied ways.

Having a well-structured day, with clear aims and a sense of direction in the training, was seen as important to facilitate learning (it was suggested that the training would have been enhanced with clearer aims and a slightly more structured approach). At the same time participants valued the fact that there was some flexibility in the schedule and training approach to respond to different circumstances and learning opportunities as they arose.

Providing a good lunch was considered an important factor in creating a good atmosphere for training, along with sufficient time for breaks between the sessions.

4.2.5 Develop learning from participants' own understandings

The fact that the training started with an exercise to draw out what participants already know was seen as helpful in building confidence as well as providing hooks on which to hang the new learning. At the same time, this provided an opportunity to explore the different understandings of stakeholder participation within the group, which led to better understanding and communication. The value of developing a common language was mentioned in the interviews, and this can only be achieved by allowing for time to explore different meanings and participants' ways of viewing the world, so that they can be related to this emerging common language.

Trainers and mentors are also participants in this process. The fact that the trainer told of her own experiences with learning and using the process was seen as helpful in terms of helping the trainees to engage with the material. It also made them feel more comfortable exploring their own understandings of the material and discussing difficulties and concerns. Telling the story of the development of the process was seen as helpful for participants to understand its context, and to gain a better sense of its possible evolution.

4.2.6 Incorporate a diversity of approaches and perspectives

Having trainees with a diversity of backgrounds was seen as a positive way to encourage learning, as participants could learn from each other and the different perspectives raised. Even if the training was being carried out with participants drawn from just one organisation, it was seen as helpful to endeavour to include people from different departments, and to try to include a few people from outside the organisation (it was suggested that these could be other trainees who have some experience, using this as an opportunity to practice facilitation).

Participatory planning will require work in a variety of settings, with many different types of organisations. It will require ability to adapt to the context and the emergent dynamics of a complex situation. The trainees felt it was important to demonstrate a diversity of approaches and to show how the principles of the process could be adapted in different contexts, to help facilitators learn how to manage such complexity.

4.2.7 Encourage a holistic view and working across scales

This approach strives for integration, so that ideas and plans developed by participants achieve multiple benefits. This can be achieved partly through encouraging trainees to think of whole systems in every aspect of the training – e.g. asking ‘who are the stakeholders?’, ‘what larger systems are they part of?’, ‘what are the underlying goals and dynamics of these systems?’. Learning is strengthened if the trainer makes this process of thinking of wholes explicit in the discussion. Part of the role of the trainer is to set up exercises that lead learners through a process of thinking of connections, then drawing this out to bring that knowledge to the conscious foreground in the discussion after the exercises. This helps trainees to apply a more holistic approach to planning workshops, so that they learn how to help others think more holistically in their own facilitation work.

Linking planning and action across different levels of scale is essential for integration and effective delivery of change. If possible, it is helpful to include people who are working at different levels of scale in the training process. This encourages discussion about the general applicability of the principles and processes, and what similarities and differences there are in working at different levels of scale. In this training programme, the cohort was drawn from people with experience working at the local level of scale, in community parks, to the strategic level of river catchments.

To support this learning, case studies and examples should be developed for projects from the local to the regional scale. The trainees discussed the value of seeing how the process was applied at different levels of scale, aiding their learning of how to apply the process in their own work.

4.2.8 Incorporate learning about systems thinking and sustainability

There are two major (and inter-related) streams of thought that have influenced the development of this work, systems thinking and sustainability (see Tippett 2005b).

It was seen as important that information about the principles behind the approach were discussed and explored in the context of the applied work. Several participants said they thought that the session in which the key principles underlying the methodology were

introduced was essential to their learning. It was suggested by several of the participants that this area could be expanded, and developed into a module on the systems thinking framework of the approach.

In the full participatory process, stakeholders learn about principles of sustainability and apply them to their ideas and projects. Thus, it is important that facilitators of this process learn the principles of sustainability and ways to help others apply them. Several of the participants did undertake a limited amount of training in this areas during project, but not all of the cohort were exposed to this aspect of the training.

Whilst gaining a grounding in this area entails at least a further day of training, it was felt by all of the participants to be an essential component of the process. There was a strong sense from the cohort that the stakeholder engagement training should include opportunities to learn the process of applying sustainability principles to the ideas being developed. At the least it was considered important to make it clear in training that there are more levels and aspects to be considered in a full integrated process, if a short training programme looking only at the process of running participatory workshops was being held. This aspect of the training would need to be further developed.

4.3 Summary

Compared to other training the participants had experienced, this approach was seen as enjoyable, practical, engaging, empowering and open-ended, in the sense that it helped participants to open up new areas of inquiry and ways of applying what they had learned. The action learning approach, with opportunities to reflect on learning, was seen as key to learning new skills.

The key themes to emerge from this analysis can be summarised:

- Create an action learning approach
- Actively encourage reflective practice
- Develop peer networks and mentoring opportunities
- Create supportive conditions for learning
- Develop learning from participants' own understandings
- Incorporate a diversity of approaches and perspectives
- Encourage a holistic view and working across scales
- Incorporate learning about systems thinking and sustainability

Suggestions to improve the capacity building were also derived from this analysis. These are discussed in the next section.

5 Improvements and next steps

Recommendations and next steps are discussed in two sections. In the first, the specific recommendations for improving the capacity building approach that emerged from this research are discussed. These represent key areas of learning from this research project.

The second section develops a proposal for testing the approach on a wider scale, in particular testing its application in work-based learning for practitioners engaged in participatory activities in public sector agencies.

5.1 Areas for development in the capacity building approach

This section discusses several key areas for improvement in the capacity building approach as it was tested in this research. These emerged in the interviews and workshops held with the cohort. They cover suggestions for modification of the content of the training through to ideas for a full-scale accreditation process.

Several of the members of the cohort mentioned that the aims of the whole programme as well as aims of each component could be elaborated more clearly. A related area for improvement was in clarifying the components of the DesignWays process and the way that a full training programme would develop capacity in each of these areas. DesignWays has six key attributes:

1. creative involvement of stakeholders;
2. common design language (applicable across contexts and levels of scale);
3. sustainability guidelines;
4. practical ecological design process;
5. experiential learning approach;
6. and a systems thinking framework.

In this research, the capacity building was focused on the first component,' creative involvement of stakeholders', with some teaching of the systems thinking framework. Several of the participants felt that a guide to the components and routes to training would help in their understanding of the way the components fitted together.

It was felt that a similar training process to that held for 'creative involvement of stakeholders' should be developed for each of the components, with the second component, 'guiding framework of sustainability' seen as an essential complement to the training received in this project.

A process leading to formal accreditation, with enhanced professional status, was seen as a valuable step forward for many of the trainees, especially if it could be linked to external professional bodies and continuing professional development. One possible route is to see if training in DesignWays could be linked to professional accreditation in other professional bodies, so that it provided a route into professional accreditation. This could allow trainees to focus on the social and facilitation skills or the more environmental aspects of the process, so that they were able to gain an integrated approach from the DesignWays training, whilst also using it as a route to accreditation in, for instance, the International Association of Facilitators (http://www.iaf-world.org) or attainting Chartered Environmentalist Status through SocEnv (http://www.socenv.org.uk).

A skills assessment for the trainees was seen as a potentially useful addition, especially if the training was to lead to an ongoing programme of capacity development. This would complement the early exercise that aimed to draw out participants' current understanding and perspectives.

Asking for some form of reflective journal as part of the accreditation process was seen as a useful way of encouraging the reflective learning style of the training to be carried into the ongoing development of skills.

Several participants mentioned the need for a clearer ways of introducing the early exercises in the training. This would be helped by handouts that lay out the process of the exercise in simple steps. The addition of more handouts and a manual were commonly discussed as important next steps for supporting trainees. Having these handouts available on line as well as in hard copy during the training was seen as a valuable support to ongoing learning.

It was suggested that a role-play module would be helpful in the initial training, even if there is to be a 'real-world' action component. This might need to be expanded if there is no action learning phase in which trainees apply their ideas in a 'real-world' situation outside of the official training context built into the process. Several of the trainees suggested that this should include some way of simulating unexpected problems and common difficulties in the process, as it was the challenge of dealing with the unexpected that many of the participants found most valuable in developing their learning during the workshop. Part of the role of the trainer is to help people feel comfortable with that unpredictability and learn to manage it productively. Several different role-play options could be developed for different training contexts. These could be worked out in such a way as to simulate common problems. It was also suggested that a role-play in which trainees actually acted as a facilitator on the initial training day would be helpful in building their skills and confidence before they are asked to apply their ideas in a 'real-world' context.

A 'crib' sheet of common problems and possible ways of overcoming them was suggested as a useful aid for facilitators.

In addition it was suggested that a simple introduction to systems thinking would have been helpful to make sure that all the participants had a common understanding of this underlying framework for the process. This could be developed as a training module, which may also have applications in stakeholder participation workshops.

Several trainees mentioned the need for worked out case studies, which show the way the case studies have applied the principles of the process as well as some of the practical issues, such as thinking of timing of the various sections, in practice. It was suggested that a case study section on a website could be supported by a peer review section, where facilitators could comment on the case studies, thus improving learning about the case studies and their own understanding of the process.

Developing a structure to provide experienced mentors to trainees was highlighted as an important element of future capacity building. This would mean that trainees would have some access to support in planning workshops and events, someone to run their ideas by for feedback. In the early days of applying the skills, it was seen as important to have experienced help on hand at events (perhaps in background to offer support), to help build confidence in skills whilst having a fall back position to ask for help.

Appendix D summarises the evolving dissemination strategy which would provide the context for the capacity building approach described above.

5.2 Further research - evaluating the wider applicability and potential impact of the capacity building approach

A further research programme would evaluate the applicability and potential impact of the capacity building approach developed in this research in different contexts. In particular, it could evaluate how to apply the learning from this project in work-based training in agencies, such as the Environment Agency and Local Authorities. This would help them to better meet their increased requirement to engage public and stakeholder participation in planning and environmental management. The research programme would explore effective implementation in these agencies, and evaluate the implementation of the capacity building programme, both in the immediate term and long term.

This would require an initial pilot project to test the improvements suggested from the results of this research into the capacity building approach. The pilot should develop tools for capacity building in the sustainability and ecological planning components, to complement this research into skills for engaging stakeholders in participatory workshops.

It would feed into developing the materials necessary for a wider roll-out of the capacity building programme, namely:

- A training manual and handouts, with supporting DVD for trainers
- Interactive web portal for showcasing best practice and case studies
- A clear curriculum, with well designed steps and instructions for trainers
- Accreditation process, including peer review and action learning
- A process for quality feedback, peer review and constructive critique of the programme
- Web based planning tool for programme design and delivery
- Prototype toolkits for use in the broader training programme

This research would include working with potential participants and trainers to enhance the usability and accessibility of the toolkit, as well as working with decision makers to develop appropriate delivery structures for integrated planning. The aim is to deliver a viable design process that can be integrated into the local and regional planning process.

This research would thus provide practical benefits for the agencies involved in testing and developing the capacity building programme, in the form of employees better equipped to meet the challenges of developing new plans and approaches with wide stakeholder input, as well as in the form of a growing body of knowledge about the issues concerned in such participation.

The research would include a comprehensive review of existing best practice and would develop ways to integrate the capacity programme with existing activities and Continuing Professional Development (e.g. CIWEM, RTPI, IEMA) and professional accreditation programmes (e.g. International Association of Facilitators, Chartered Environmental Status) where applicable. It would contribute to knowledge in the emerging field of participatory, ecological planning, in particular the under-researched area of capacity building for practitioners in meeting the challenges of sustainable development.

The Project Manager has been awarded a development grant from the School of Environment and Development to prepare a major research bid to take this forward. The bid will be developed with appropriate research partners to test the new approaches developed on a wider scale, for submission in 2007.

6 Conclusion

This research has developed a new approach to capacity building for practitioners tasked with engaging stakeholders in planning and environmental management. The objectives of the research were:

1. **Capacity Building** - develop and evaluate approaches for building capacity and skills in this ecologically informed participatory process, to make it more readily available to a wide range of practitioners;

2. **Pooling Knowledge** – develop and test new approaches to support ongoing learning amongst participants and ways of pooling knowledge and experience so it can be easily shared.

The first objective was met through a literature search and developing a framework of systems thinking principles, which was used to develop new methods for capacity building. These methods were then tested in action research, with a cohort of trainee facilitators. This testing pointed to the potential value of the approach for a wider application. Several suggestions for improvement were made.

The second objective was met through workshops with the cohort of trainee facilitators and participants at the 2006 UK Systems Society Conference. The ideas for sharing best practice and pooling knowledge in order to develop an ongoing learning resource have been developed into a draft delivery strategy for the DesignWays approach (See **Appendix D**).

This research was exploratory in nature. As a pilot study with a small number of participants, its findings need to be developed and tested further to evaluate their wider applicability. Suggestions for further research and for dissemination of the approach are detailed in this report.

The main outputs of the project were:

- Summary of findings from analysis
- Peer-reviewed conference paper, presented to the 50th Annual Meeting of the International Society for the Systems Sciences, Complexity, Democracy and Sustainability at Sonoma State University, Rohnert Park, California, USA and published in the proceedings (Tippett and Griffiths 2006)
- Framework for evaluating further training – this will be used as the basis for a major research bid
- Outline of next steps in taking the capacity building approach forward

In addition, the theoretical framework developed in this work will form the basis of a chapter on capacity building for integrated flood risk management, in the state of the art review for the European Science Foundation's COST Action C22, Urban Flood Management. This review will inform a major bid to Framework Programme 7 entitled *'Flood Resilient Planning & Building: towards a Europe-wide applicability of integrated solutions'*.

6.1 Meeting the Environment Agency's Priorities

This research and the proposed larger scale project to take it forward help to meet several of the **Environment Agency's priorities**. The main Environment Agency priority that this proposal advances is: **a better quality of life**. Ecological design is a process in which societal forms of production, housing and infrastructure are integrated into the landscape with minimal environmental impacts. The participatory process developed in this project helps integrate the principles of ecological design in participatory planning. Effective capacity building would make these principles more easily accessible for facilitators and project officers.

As this process is rolled out it will help develop **an enhanced environment for wildlife**. Researchers have claimed that conservation of biodiversity has little chance of success unless there is a real cultural concern for nature. Envisioning workshops, such as DesignWays, which encourage stakeholders and community members to develop connections with their local area, may enable citizens to discover the value of natural systems and to contribute to the development of more integrated, ecologically sound solutions for their project plans.

The DesignWays process has been successfully applied in workshops with businesses, including HMG Paints, Milliken Industrials and Mondavi Vineyards. Enabling more facilitators to use the process would this make it possible to develop further work with businesses, developing more sustainable production processes. In the long run, this project would thus contribute to **a 'greener' business world.**

'Joined-up' participation implies developing area-based plans with stakeholders and community members, such that community members are asked what is important for their area in an integrated way, and different agencies responsible for the area provide input into the planning process. An integrated approach can maximise effectiveness of the process and use of agency resources. The DesignWays approach could facilitate such joined-up participation, at the same time as encouraging participants to consider the long-term environmental impacts of their plans. By including ecological awareness, such joined-up participation could result in **wiser, sustainable use of natural resources**.

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Appendix A – Applying systems principles to develop ideas for capacity building

The development of this conceptual model formed the basis of the new methods for capacity building tested in this research. The development of this conceptual model and its application to capacity building builds on several areas of related work:

- recent applications of complexity theory principles to **learning and innovation** in organisations (in particular from Kimball, Silber and Weinstein 2005; Senge et al. 2005; in particular from Van der Walt 2006; Webb, Lettice and Lemon 2006).
- the teaching of ecological principles in **design education** (Johnson and Hill 2002; Karr 2002; Pulliam 2002),
- Capra's (1996; 2002) development of living systems thinking in relationship to **eco-literacy**,
- the Santiag**o school of cognition** (Maturana 1992; Maturana and Bunnell 1999a, 1999b; Maturana and Varela 1987)
- and the related cognitive work looking at the **metaphorical basis of** thought of Lakoff and Johnson (1980; 1999).

The key concepts used to develop the methods for capacity building in this research are discussed below. For a more detailed development of this framework, see the paper entitled 'Applying Systems to Capacity-Building in Participatory, Ecologically Informed Planning', which was used to develop these concepts during the research (Tippett and Griffiths 2006).

Holism, nested systems of wholes

A central tenet of systems thinking is that 'the whole is greater than the sum of its parts'. This has emerged from a realisation of the limitations of reductionism. This approach has produced much valuable knowledge, but comes across serious limitations in terms of understanding the properties of complex systems. To help meet this challenge of integration, practitioners need to learn to enable participants to explore and experience connections between different areas of knowledge. This requires new approaches that make connections visible. Facilitators need to learn to consider the projects they are working on as parts of larger systems, and to think of ways to encourage participants to do the same.

Over the last three decades there has been an increased awareness that local actions have regional and global effects, and in turn local environmental issues can be affected by regional and global environmental change. Many environmental problems have only become apparent over time, due to delays between cause and discernible effect. This lag is further complicated by the fact that global climate change, pollutants and ecological problems cross boundaries of scale, such that effects from a source of pollution or a human activity may be manifested at a different level of scale than its cause (Gibson, Ostrom and Ahn 2000). Such awareness points to the need to develop capacity in practitioners to link analysis and action across levels of scale.

An attempt to find principles applicable at multiple levels of scale has been central to the development of systems thinking. This endeavour aims to reduce the duplication of effort and to promote improved communication between people working in different fields (e.g. Checkland 1991; Maiteny and Ison 2000).

Capacity building processes that actively seek opportunities to bring together actors working at different levels of scale would promote the skills of linking planning across scales. This would be enhanced by developing communication and training materials that show similarities of principles and ideas across levels of scale, and which enable participants to think of differences and similarities between the levels. In this endeavour, exploring global principles of sustainability can offer a means of linking an embodied awareness of understanding and global similarities of geo-biological resource flows, which can foster understanding, as the Earth is a common factor between all participants in a planning process. Governance structures could encourage communication between actors working at different levels of scale.

Networks of relationships

Castells (1996) writes of the 'rise of the network society'. This rise is influenced by the impact of the internet on communication, and the increased role of partnership working in many aspects of public life (e.g. Carley and Christie 2000). Principles for developing 'communities of practice' (Wegner, McDermott and Snyder 2002) may help in this endeavour. Developing an awareness of connections amongst practitioners is encouraged by bringing together people from different backgrounds and encouraging them to learn from each other. This will be encouraged through developing incentives for such learning and support mechanism to encourage it, for instance through mentoring relationships, and the development of networks of learners who are able to support each other in developing new skills and areas of knowledge.

Value of diversity

Participatory planning will require work in a variety of settings and contexts. A wide range of techniques to encourage people to interact have been pioneered, including new types of events and support frameworks. Appropriate methods for capacity building for both practitioners and participants will vary according to the nature of the work, size and type of the project and the stage in the process.

In addition to the practical considerations of needing to adapt training and support for capacity building to each situation, the process of training needs to take into account the fact that people have a range of ways of learning, and that effective training will tap into and use a variety of means of promoting this learning. The originator of the theory of 'multiple intelligences', Gardner (2000. pg. 4), suggests, "humans possess a range of capacities and potentials". Gardner (2001) writes that using multiple intelligences in learning means that lessons are "much more likely to remain with us, embedded in our neural networks, and to be usable in flexible and innovative ways". This insight has profound implications for capacity building, emphasising the need to develop new skills in ways that tap into these intelligences. In addition, capacity building processes can encourage participants to become more aware of their own strengths and weaknesses in learning styles, and to think how this affects their approach to facilitating the involvement of others.

Self-organisation and emergence

A major concept of systems thinking is that of self-organisation, in which the interaction of different elements can create emergent properties, which cannot be predicted from the sum of the parts of the system. As the concept of self-organisation has been explored with more sophisticated mathematical modelling, new understandings of "the creation of novel structures and modes of behaviour in the process of development, learning, and evolution" have been developed (Capra 1996, pg. 85).

The trend of applying systems thinking to organisational management was seen in early work of Beer (1980; 1995) and de Geus (2002) and popularised in books such as The Fifth

Discipline (Senge 1990) and the work of Wegner (2002). The concept of self-organisation plays an important role in this work, and management is seen as an arrangement so that people can self-manage, and create learning organisations through their dynamic interactions.

In terms of capacity building, trainers and programme managers need to recognise that the way that different people will learn will be inherently different, and that learning will emerge from the interactions of actors in a dynamic situation. This implies a need to allow learners to tailor a programme of training to their own needs, to allow for flexibility as different opportunities arise in the process. It implies providing opportunities for trainees to manage their own learning process, and to integrate this with their developing awareness of their skills and roles as practitioners (e.g. Banathy 2003).

Pattern in systems open to flows

Physical forms are like ripples created from dynamic change, chimeras which may be relatively stable, but which are derived from the maintenance of self-organisation in a state far from equilibrium. Patterns are configurations of relationships, which are expressed as repetition and similarities in space (form) and time (development).

The concept of process and pattern implies the form of the training and communication tools used to encourage capacity building can have an effect on its effectiveness. For example, graphic, interactive toolkits which encourage participants to explore and make visible connections between ideas, in a process of learning that allows patterns to emerge and be made visible, can help deepen learning of principles.

A recent increase in interest in open source forms of knowledge creation may have profound impacts on the way we organise and share knowledge (e.g. Behlendorf 1999; Keats 2003; Peizer 2003; Weber 2004). Open source intellectual property allows people to use ideas without locking them up as proprietary intellectual property. This makes ideas easily accessible and can encourage many people's creativity to be harnessed in ongoing development. As open source models are extended to domains outside software development, there are many questions as to how best to develop structures that maintain consistency and encourage sharing of improvements and innovation.

Uncertainty and triggers of change

Systems which are open to a flow of energy, information and materials self organise in unpredictable ways, dependent on the interaction of the parts, and on the context in which this interaction takes place (Kay et al. 1999).

Ackoff (2003) stresses the need to be able to make mistakes, or to admit that unexpected consequences have arisen from actions, and to learn from them. Changes in planning process will require practitioners to be willing to admit to mistakes and to discuss potential learning in new areas, which is not always a comfortable process. Change needs to be supported from directors and key people in the higher ranks of organisations, helping to create a culture in which admission of mistakes is seen as not only acceptable, but a necessary part of learning. An attitude of 'zero tolerance of failure' needs to be replaced with zero tolerance of rigid attitudes.

This understanding leads to a realisation that capacity building to enable facilitators to deal with complex situations cannot in and of itself be rigidly regimented. Learning through action, in which unusual situations arise, allows participants to learn to respond to an evolving complex system. This points to the need for action learning with periods of reflection.

History and context

In addition to a recognition that the interactions in complex systems can give rise to new and emergent properties in a process of self-organisation, studies into evolving systems have shown the importance of the starting points and context of the system on the overall evolution of the system. The metaphor of the machine has influenced planning for some time. The underlying metaphor of design in a process of planning for sustainability can be that of a living ecosystem. This metaphorical understanding is based in patterns and similarities in the processes of evolution and development of complex organisms. Each ecosystem develops in relationship to the context of the place, and is both affected by, and affects, its surroundings. Life is not simply an accident on inert rock. Living organisms are engaged in a dynamic interplay of matter and energy, a sun-driven dance that connects soil, water and atmosphere. There is a tendency towards a self-organising state, embodying resilience, but one which is adapted to the particular circumstances of the place.

Any process of capacity building will involve working with people who have their own history and context of knowledge and worldview. These diverse starting points need to be taken into account in capacity building, respecting the experiences of the learners, whilst encouraging reflection on how people's experiences and prior learning affect their ability to develop new skills and capacities. Starting with processes to elicit people's understandings, and allowing opportunities for participants to discuss their own experiences and stories, is important in providing a learning environment in which people are able to connect new learning to their own context. Through sharing stories of their own learning process and development, trainers can help ground abstract principles in real examples. Trainers are thus demonstrating in their own behaviour the processes of change and reflection that are essential for developing new skills.

In this endeavour, Kolb's (1973; 1984) insight into the value of learning cycles is important. In any capacity building programme, it is important to allow for hands on experience, reflection, conceptualisation and further active experimentation in a cycle of learning. It is also important to allow time towards the beginning of the process for participants' to reflect on what they already know and ways in which their prior experience might influence their learning.

In addition to skill, effective deployment of participatory planning requires careful consideration of how to tailor the planning process to the particular context. This implies both attention to the needs and interest of the participants, and an understanding of the reasoning behind the process, so that it can be adapted without losing its essence. This may need to be done 'on the fly' during workshops, requiring a degree of flexibility on behalf of the facilitator. Training should encourage an awareness of the underlying principles behind participatory tools, preferably in a context of practice, so that facilitators are offered support as they learn to use it in different contexts, and learn when and how it is appropriate to adapt the tools and approaches to meet the different contexts they are experiencing, and the emerging interactions of stakeholders. Such learning is enhanced though developing the skills of reflection.

Adaptive capacity and learning

If the aim is to design in a way more consistent with living systems, it is worth asking, 'What is life?', as did the Chilean biologists Maturana and Varela (1992). They found that the answer was inextricably interwoven with the question 'What is cognition?'. The process of knowing and self-reproducing in the world is inherent in the act of living (Maturana and Varela 1987). This insight led to the development of the theory of autopoiesis, which explores the relationship between the process of interacting with the environment and the development of living organisms.

Learning from living systems can be related to the process of rethinking the nature of development. Living systems are organisationally closed. Changes in the environment can trigger changes in the organism, but cannot determine the changes. The organism cannot be separated from the environment with which it interacts, it is in a real sense embedded in a "circular pattern of interaction through which it is defined" (Morgan 1997, pg. 254). It is not possible to 'regenerate' an area through applying a formula or imposing a development plan. It is only possible to create the conditions in which regeneration might flourish. Equally, it is not possible to teach practitioners the skills necessary to encourage such regeneration, it is only possible to create the conditions in which they may experience and learn them for themselves. In this way they are more likely to gain in their own adaptive capacity, and ability to respond to new situations, whilst maintaining a firm grasp of the important underlying principles that inform the participatory approach.

Conclusion

In planning theory there has been an emerging discussion of the need for practitioners involved in shaping communities and spaces to explicitly explore their value systems, and develop their awareness of their role as ethical actors. The erosion of certainty and a sense of confidence in universally accepted values heralded by post-modern theory has highlighted the fact that there is no such thing as value-free action. Instead there is a need to consciously explore values and to be aware of the underlying assumptions that colour our perception of the world and decisions we make, based on those perceptions.

A possible new role for planning is emerging, one that includes actively developing a vision for a desirable future, which is commonly understood and shared, with broad and ambitious goals. This is a significant shift from seeing the planner as a neutral technician, who applies technical skills to solving practical problems.

Cultivating an ethical awareness, and tying it to the skills of sustainable planning, in which conditions are created for meaningful dialogue and possible long-term implications of our actions are explored and debated, requires a new set of skills and capacities in practitioners. In this research a conceptual framework for exploring ways of developing these capacities has been developed. This uses living systems thinking principles as a starting point for developing new approaches. This conceptual framework was refined and tested in action research, training facilitators in a participatory approach to ecological planning in the North West of England. The project was entitled 'Joining-up participation in environmental planning – developing a learning resource for capacity-building' and was supported by the Environment Agency with match funding from Manchester City Council.

Appendix B - Outline of training day

Joining-up participation in environmental planning – developing a learning resource for capacity-building

A research project sponsored by the Environment Agency NorthWest and Manchester City Council

Facilitator Training – Creative Involvement of Stakeholders

University of Manchester February 21st 2006

Aims of the Day:

- to enable trainee facilitators to learn how to use the toolkit;
- to develop an understanding of potential uses and circumstances for using the toolkit;
- to develop skills in planning and running a stakeholder engagement workshop;
- to provide an opportunity to make new connections and develop new ideas;
- to increase understanding about stakeholder engagement and issues and concerns that may arise during workshops.

	Workshop Outline
10:00	Coffee and registration
10.15	Introduction to the day and the people
10.30	Interactive Workshop: How do trainees understand the 'creative involvement of stakeholders'?
11.15	BREAK
11.30	Presentation: Systems thinking background and key principles
12.30	LUNCH
13.15	Presentation: What is DesignWays and how does it work? Introduction to the process, history and plans for the future Interactive Workshop: What do we need to do to plan a workshop? Discussion of key points & examples of planning workshops from past experience
14.30	BREAK
14.45	Interactive workshop: Planning the workshop for Manchester Green City Network Launch
15.45	Discussion – What else do we need to know?
16:15	Summary of issues raised and next steps
16:30	CLOSE

Appendix C – Interview guides

Joining up participation in environmental planning
'Before' Interview

These questions were asked to all cohort members before the capacity building programme.

DesignWays

1. What is your understanding of DesignWays?
2. What is your understanding of the ways that DesignWays can be used?
3. What do think are the strengths of DesignWays?
4. What do you think are the weaknesses of DesignWays?
5. With your understanding of DesignWays, at the moment, how do you feel that you could use it?
6. What do you see as the future of DesignWays?

Sustainable Development / Ecological Design

7. How do you understand sustainable development?
8. What experience do you have of working / planning for sustainability?
9. What tools have you used to plan for sustainability?
10. What successes or difficulties have you had with these tools?
11. What is your experience of Ecological Design and what does it mean to you?
12. What do you think are the barriers to ecological design / planning for sustainability?

Stakeholder participation

13. What is your understanding of stakeholder participation?
14. What methods do you know of?
15. How have you found out about them?
16. What have been your experiences of using stakeholder participation? How did you feel about them?

Training

17. What are your experiences of being trained in general?
18. Have you ever been trained to do facilitation?
19. What are your experiences of being in a workshop as a participant? Likes / Dislikes
20. Have you had any experiences of running a workshop? Successes / difficulties
21. What ideas do you have for making training work better?

Joining up participation in environmental planning
'After' Interview

These questions were asked of all the cohort members after the capacity building process.

DesignWays

1. Has your understanding of DesignWays changed through this training process? How?
2. What is your understanding of the ways that DesignWays can be used?
3. What do think are the strengths of DesignWays?
4. What do you think are the weaknesses of DesignWays?
5. With your understanding of DesignWays, at the moment, how do you feel that you could use it?

Sustainable Development / Ecological Design

6. Has your understanding of sustainable development and ecological design changed through this training process? How?

Stakeholder Participation

8. Has your understanding of stakeholder participation changed through this training process? How?

Your experience of this training

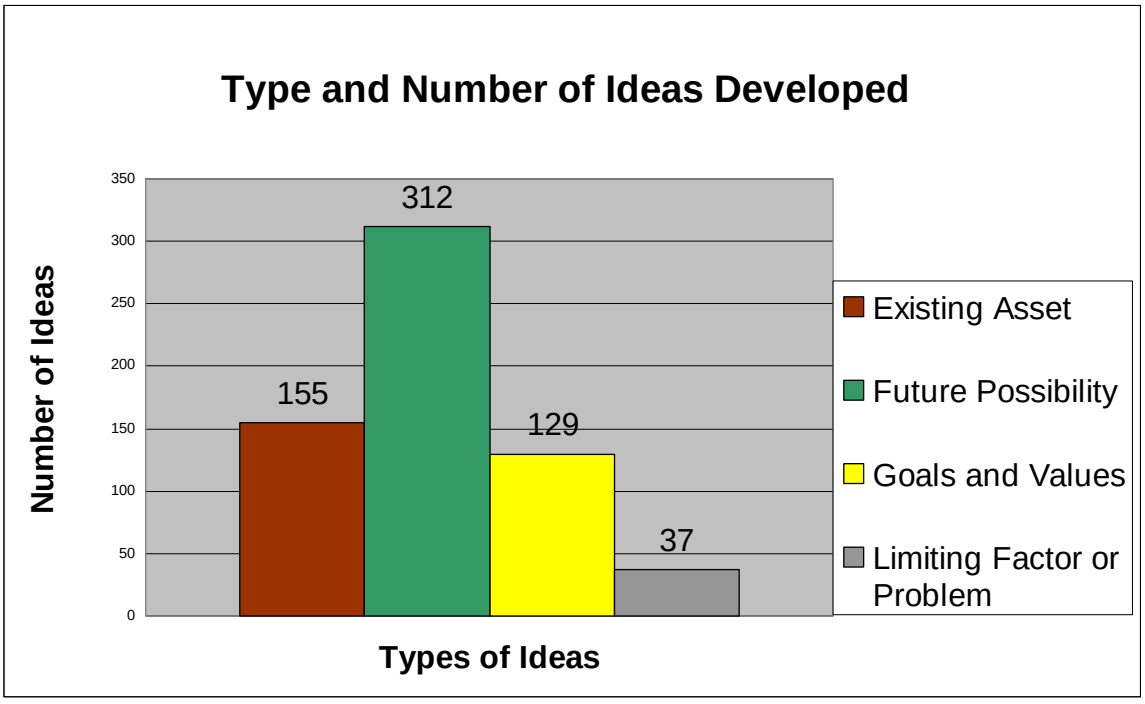
9. What do you feel you have learned from this training experience?
10. How have you experienced the training sessions for DesignWays?
11. What has been most helpful to you in learning how to facilitate?
12. What are the main barriers you think would prevent you from enhancing your skills and capacity in facilitation?
13. How can these be overcome?
14. How has this compared to other training you have experienced?
15. How would you feel other people could best learn how to use the hands-on toolkit for running workshops?
16. How would you feel other people could best learn how to use the DesignWays methodology?
17. How do you think you would best be supported in your ongoing learning as you used the toolkit?
18. How did you find the balance of knowledge transfer type of training and action learning?
19. What would it take for you to feel comfortable facilitating a DesignWays workshop on your own? At three levels: as a 'table facilitator', working with a lead facilitator,, running a whole day, and planning programmes.
20. What materials, tools and processes would support you as a facilitator? What would be their characteristics?
21. Would a peer network be helpful? What would be the most important characteristics of a peer network?
22. What innovations would you suggest for capacity building in this area?
23. What do you think is the minimum amount of training required to make use of the kit?
24. Is there any thing else you would like to add?

Appendix D – Roll-out and dissemination strategy for the DesignWays approach

The vision for the roll-out of the DesignWays process aims at the rejuvenation of democracy, though enhancing the skills of civic engagement and ecological planning. International networks of excellence will develop innovative solutions to environmental and social problems. In the future DesignWays will provide a valuable standard operating procedure for participatory planning. Many individuals in different geographical areas, North and South, will be trained in the skills of meaningful, participatory planning and ecological design at different levels of scale. It will be applied in a wide range of contexts, including: urban regeneration, rural development, community capacity building, environmental management and industrial ecology. Capacity building will be developed through partnerships with existing delivery organisations, such that DesignWays provides added-value to their activities and programmes. Partnerships and exchanges between countries will allow for exchange of knowledge and development assistance to poorer regions of the world.

The detailed development of the delivery strategy incorporates ideas gathered in workshops during this research. It aims to include the views and goals of its stakeholders in both inception and regular reviews and improvements. A database of ideas for developing the process has been developed from inputs from participants to date, including the cohort of trainees in this research project. This database shows not only a wealth of existing assets to assist in the roll-out strategy, but many creative ideas for its future growth.

Figure 6 Type and number of ideas gathered from stakeholders to inform future development of DesignWays



The aims of the roll-out strategy are:

- to see the design process used far and wide;
- to develop an open learning resource;
- to encourage continual improvement of the process;
- to encourage effective use and maintain a credible reputation for DesignWays;
- to contribute to the debate around sustainable development;
- to enhance professional practice in sustainable planning.

A strategy and organisational structure to meet these aims is under development. It is seen as a transferable approach. There is potential for significant international impact, operating as a network in partnership with existing delivery organisations. The components are seen as:

- **Network of facilitators** – in existing organisations using the process
- **Accredited training programmes** – leading to quality assurance and different routes to build capacity
- **Open source methodology** – enabling innovation and improvement
- **Hands-on toolkit made widely available to practitioners** – tools to support facilitators in their work
- **Social enterprise** - developing toolkits to provide long term income stream to support development
- **Interactive web site** – a site for showcasing best practice, encouraging critical debate and developing new ideas
- **Stewardship trust** – a body to maintain the open sources standards and to incorporate feedback into new developments

This delivery strategy is under development. A full summary can be found at http://www.holocene.net/designways/strategy.htm, where updates will be posted.

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