

LOCAL INSTITUTIONAL DEVELOPMENT AND ORGANISATIONAL CHANGE FOR ADVANCING SUSTAINABLE URBAN WATER FUTURES

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Abstract

This paper presents the local institutional and organisational development insights from a five-year ongoing interdisciplinary research project focussed on advancing the implementation of sustainable urban water management. While it is broadly acknowledged that the inertia associated with administrative systems is possibly the most significant obstacle to advancing sustainable urban water management, contemporary research still largely prioritises investigations at the technological level. This research is explicitly concerned with critically informing the design of methodologies for mobilising and overcoming the administrative inertia of traditional urban water management practice. The results of 14 in-depth case studies of local government organisations across Metropolitan Sydney primarily reveals that the political institutionalisation of environmental concern, and commitment to local leadership and organisational learning are key corporate attributes for enabling sustainable management. A typology of five organisational development phases has been proposed as both a heuristic and capacity benchmarking tool for individual practitioners, and local and state government program designers for improving the level of local implementation of sustainable urban water management activity. While this investigation has focussed on local government, these findings do provide guideposts for assessing the development needs of future capacity building programs across a range of different institutional contexts.

1. Introduction

It is now broadly accepted that there appears to be far more socio-political impediments to the wide-scale implementation of sustainable urban water management practices in contrast to the opportunities associated with innovative technical solutions. Despite significant transformation in community water values over the last 30 years along with concurrent, sometimes ground-breaking, advances in sustainable water management technologies, this has not been enough to shift the inertia of traditional water management within current administrative regimes (Brown 2004).

Implementation impediments typically highlighted include institutional fragmentation, undefined organizational responsibilities, limited political incentives and disincentives, poor organisational commitment, technological path dependency, poor community capacity to meaningfully participate and an overall lack of experiential knowledge with facilitating integrated management approaches (see for example Brown 2004, Marsalek and others 2001, Mouritz 1997 and 2000, Newman and Kenworthy 1999, Vlachos and Braga 2001). The outcome of these interrelated impediments is that urban water management is primarily technocratic and unsustainable water management approaches continue to be reinforced and implemented by current administrative systems.

This context has stirred industry interest and debate around how to improve the governance of the urban water environment. Ideas have been advocated ranging from centrally restructuring the entire urban water institutional setting through to improving the technical and relational capacities within and between existing organisations across sectors. The sustainable cities commentary acknowledges that the prospect of changing traditional institutional settings is long-term, and sometimes daunting, prospect but should be tackled in prioritised stages (Wakely 1997). The current priority for the sustainable cities movement is local government because it typically

has the weakest institutional capacity, yet is the most important sector for significantly enabling on-ground change towards sustainability (Peltenburg et al 2000, Wakely 1997, UNDP 1998). The purpose of the research has been to contribute empirical knowledge, beyond the identification of impediments, to this under-researched dimension of sustainable urban water management. The intention is to inform the design of change management strategies for overcoming local administrative inertia. This is not to suggest change has not been attempted in practice, it just has not been the subject of empirical research with the explicit agenda of advancing knowledge on how to institutionalise IUWM (Marsalek et al 2001).

2. Capacity building as an Analytical Framework

Capacity building is a concept advocated in both the practitioner and academic literature for mobilising institutional change. It spans a range of fields in different guises including public management (Grindle 1997), collaborative planning (Healey 1997), urban sustainability (Wakely 1997) and development studies (Kaplan 2000). While some commentators argue that the intangibility of the concept may make it ‘stuff of myth or magic’ (Harrow 2001, p 210), others argue that it critically exposes development needs not immediately apparent (Grindle 1997 and Kaplan 2000). While there is debate whether the object of capacity building should be to fill a ‘deficit’ or to ‘empower’ in some way, there does appear to be agreement that the design of capacity building interventions in practice are often too limited in their approach.

Capacity building efforts have been typically implemented as training and education programs based on the idea that equipping individuals with new knowledge, skills and professional competencies will therefore enable them to successfully operationalise sustainable practices (Wakely 1997, Harrow 2001). However, as observed by Wakely (1997) and Brown (2003), the organisational and broader institutional context presents as great an impediment to the sustainable management of urban places as the inability of professionals, technicians and ordinary people to operationalise sustainable development. Therefore, local government capacity for IUWM involving effective, efficient and responsive environmental governance is dependant on not only having sufficiently developed human resource capacity but also sufficient capacity within organisational and directive contexts (Grindle in Harrow 1997:5, Wakely 1997, UNDP 1998, Peltenburg et al 2000).

As shown in Table 1, these mutually interactive spheres of capacity have well known capacity development interventions. However the relationships within and between these spheres is the key determinant of the resulting patterns of institutional practice. Change interventions focused on impacting any single sphere in isolation are insufficient without insightful assessment of existing capacity and respective development needs within the other spheres as part of a broader agenda for continually improving current capacity.

Therefore, achievement of effective human resource development through training and education initiatives is mutually dependant on the enabling context of the organisational and institutional environments for the effective practice of newly developed understandings and skills (UNDP 1998, Peltenburg et al 2000). Strengthening the organisational context through interventions such as catchment management arrangements are typically beyond the capacity of any single organisation or network of organizations to continuously enact and therefore often depends upon directive support and incentives from state and/or national governments. However, effective

directive reform needs to be critically informed by new organisational practices and advocacy for change from both individuals and organisations.

Table 1 Dimensions of capacity building (adapted from Grindle in Harrow 1997, Wakely 1997)

Capacity Building	Description	Interventions
Human Resource development	Equipping individuals with the understanding, skills and access to information, knowledge and training that enables them to perform effectively	e.g. recruitment and training
Organisational Strengthening	Elaboration of management structures, processes and procedures, not only within organisations but also the management of relationships between the different organisations and sectors (public, private and community).	e.g. incentive systems, leadership, communications
Directive Reform¹	Making legal and regulatory changes to enable organisations, institutions and agencies at all levels and in all sectors to enhance their capacities.	e.g. policy and legal change, constitutional reform

¹ Typically termed ‘institutional reform’ however renamed here to avoid confusion with broader and/or different understandings of institutional (see Brown (2003, 2004) for an application of Scott’s (1995) ideas on institutionalism).

Therefore the capacity building concept provides an analytical framework for investigating and assessing the capacity of local government organisations pursuing sustainable urban water management practices. It is helpful for framing the investigation for exploring the qualities of the *human resource*, *organizational*, and *directive* capacity of local government organisations as related to different levels of effective IUWM implementation.

3. The Research Investigation

Reported here is a synthesis of a series of research activities investigating local administrative capacities across NSW and then more specifically Metropolitan Sydney between 1999 and 2004. The background research, involving surveys, interviews and focus groups, with over 150 local government officers and other key stakeholders responsible for urban stormwater management across the 166 Councils in NSW revealed that there were a number of impediments to pursuing more sustainable management. In particular, the analysis highlighted the potential for significant differences in implementation activities in relation to organisational dynamics (Brown and Ball 1999, Brown and Ryan 2000). Based on this local experiential evidence combined with insights from the international literature reflecting a host of implementation issues, the first formal stage of the research evolved.

The key question for stage one of the investigation was - *What factors generate capacity in local government for facilitating integrated urban water management?* This involved detailed in-depth case studies of eight local government organisations between 2001 and 2002. A representative selection of four of the most progressive and four of the least progressive local government organisations were selected for analysis (as detailed in Brown 2003). This was based on the results of an independent assessment of organisational *implementation performance* involving independent ratings from two EPA officers, two independent academics and a self-rating from each council. With respect to Metropolitan Sydney, as shown in Figure 1, of the 44 councils only

5 were rated as having a high level of performance and 21 rated as having low performance. The evaluators also concluded that the differential between the high performing and average performing Councils was more substantial than between the average and low performing councils and, in addition, there was a far more disparate range of performances across the average performing Councils.

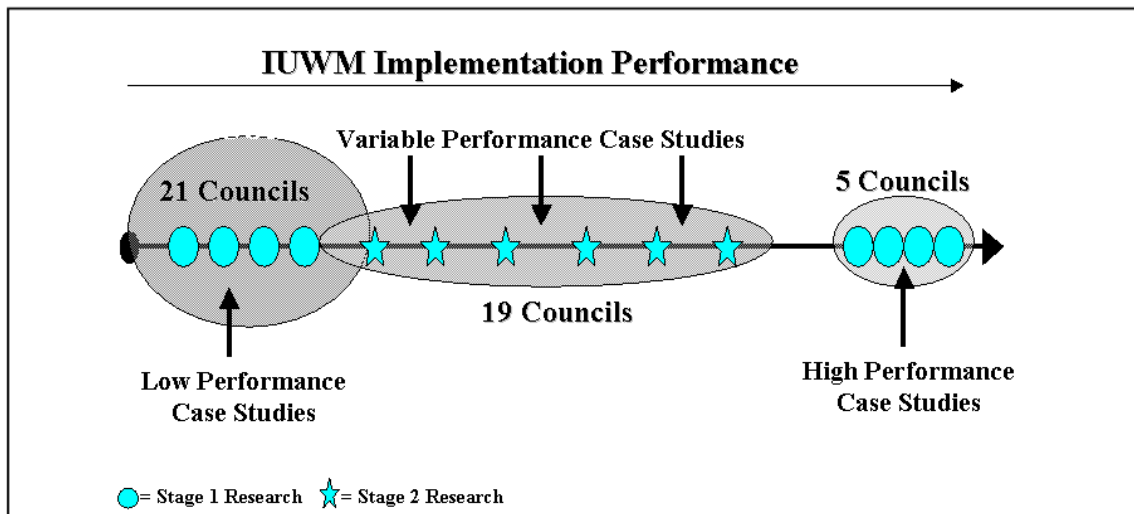


Figure 1 Location of Stage 1 and Stage 2 Organisational Case Studies

The second stage of the research, as also shown in Figure 1, involved conducting an additional six organisational case studies, during 2003 and 2004, with varying levels of implementation performance within the average performing group. These cases were far more difficult to select and required substantial field research involving numerous interviews with industry leaders to develop a reliable understanding of the variability between Councils. The key research question explored was- *What are the important developmental characteristics of local government organisations for improving IUWM implementation performance?* It was anticipated that once these characteristics were reliably determined then institutional development and change management strategies could be rigorously developed, trialled and empirically tested. It was also hoped that a typology of the varying local administrative contexts would provide a useful heuristic tool for individual professionals, and local and state government capacity builders to enable strategic links between organisational change and advancing IUWM practices.

4. Data Collection

Each of the organisational case studies involved detailed social and organisational case study research techniques. The protocol for data collection was based on the findings of the pilot case study providing feedback on document content analysis, respondent selection and interview processes. A case-base data collection plan was developed for systematically collecting multiple sources of evidence for each case study to seek both converging and contradictory evidence within and between each sphere of capacity tested. The data collection included written questionnaires, in-depth interviews, semi-structured interviews, group interviews and document

content analysis. A case study database was established for each case containing all interview transcripts, documentation, notes and observations made throughout the research. After the draft case study reports were reviewed by selected case study participants the final reports were then finalised for maintaining the ‘chain of evidence’ for each of the databases to ensure reliability and potential for additional independent assessment. Table 2 provides an overview of the design of the data collection protocol for each individual case study.

Table 2 Research Design Versus Data Collection for each Individual Case Study

Sources of Evidence	WATER OFFICER	INTRA-ORGANISATIONAL	INTER-ORGANISATIONAL
Water Officer(s)	written surveys in-depth interviews	written surveys in-depth interviews	written surveys in-depth interviews
Other Officers	semi-structured group interviews	written surveys semi-structured group interviews	written surveys semi-structured group interviews
Elected Officials	open interviews	open interviews	open interviews
Council Organisational Information	Documentation -organisational management plans -IUSM plan(s)	Documentation -organisational management plans -drainage policies -environmental management policies -IUSM plan(s) -LEPs and DCPs -Council’s website	Documentation -organisational management plans -environmental management policies -IUSM plan(s) -Catchment Management Plan -Council’s website
External Consultant(s)	semi-structured interviews	semi-structured interviews	semi-structured interviews
EPA, Sydney Water, RTA & other State Officers	semi-structured interviews	semi-structured interviews	semi-structured interviews
Catchment Management & Community Representative(s)	semi-structured interviews	semi-structured interviews	semi-structured interviews

At the end of stage 1 and stage 2 of the research a number of large-scale and rigorous stakeholder (including representatives of regional organisations of Councils, key environmental NGO’s and a number of state agency officers) validation activities were undertaken to test and ensure both internal and external validity of the qualitative data.

5. Organisational Capacities and Development Phases

Upon completion of the 14 organisational case studies, (representing over 25% of Councils located within Metropolitan Sydney) it was possible to infer transitional stages in the development of organisational dynamics with respect to IUWM implementation. While transitions between stages within an individual organisation was not empirically observed, because the research was not longitudinal by design, the common and distinguishing variables between the cases provides strong evidence of adaptation between different levels of practice from traditional urban water management towards integrated management.

Therefore, when critically contrasting the results of each of the 14 studies five organisational development phases emerged. It was clear that these five stages had common and distinguishable levels of IUWM action, political capital, expertise and organisational structure as well as identifiable organisational cultures. As depicted in Figure 2, the stage 1 research findings revealed that the low performing organizations were operating in a *project* context, whereas the high performing organisations were operating in an *integrated* context. The outcomes of the stage 2 research revealed three further development phases starting with the *outsider*, followed by a *growth* phase and then *insider* developmental phase. Key characteristics of each phase are discussed below.

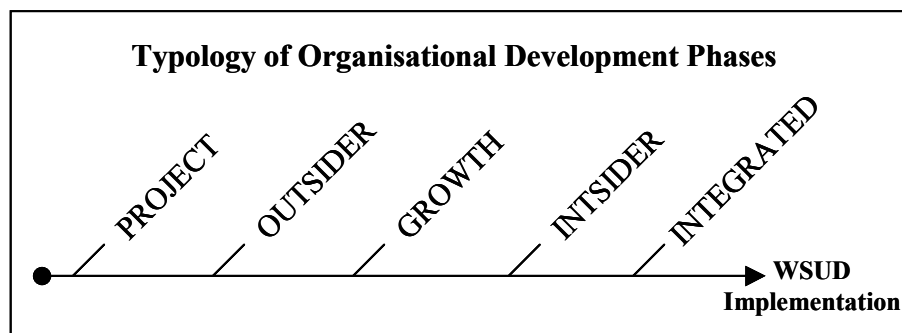


Figure 2: Continuum of Organisational Development Phases

It is important to note that while the results of the different phases observed in organisational dynamics has been simply represented as a model of linear progression, there is no evidence to suggest that organisations could not move both up and down the continuum as well as jumping and/or straddling phases based on changing circumstances. It is also possible that these phases are more discontinuous than represented. In absence of comparative detailed research from alternative institutional contexts for verification or otherwise, this organisational development relationship remains a tentative hypothesis. Nonetheless, this does not detract from its intent of enabling critical reflection, discussion and the design of organisational development and change management strategies given the limited available evidence in this field.

Project Phase

The results of the low performing case studies clearly revealed that IUWM was not a priority for the organisation and that any activity undertaken by the organisation was only driven by a need to achieve a minimal level of regulatory compliance with State Government obligations. In this instance, the regulatory direction from the State, as administered through the NSW EPA between 1999 and 2003, for the preparation and implementation of stormwater management plans was responded to with minimum attention. Internally the work was allocated typically to a junior engineer and then contracted to an external consultant to meet the organisation's regulatory obligations. There was no effective engagement of other stakeholders or the community. Since preparation of the plans, those organisations have not met their stated implementation intentions. Overall the IUWM was treated as an unnecessary *project* that has minimal relationship with the core business of the organization.

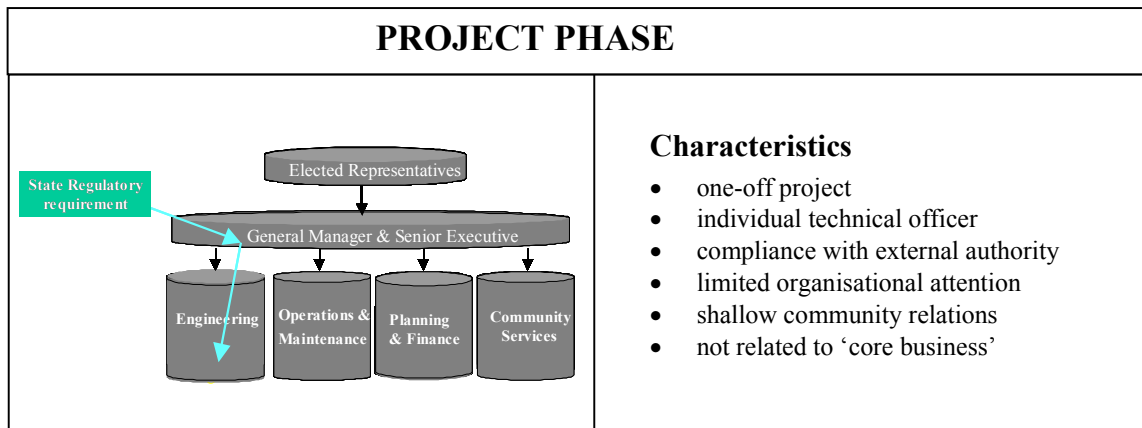


Figure 3 Low Performing Organisations: the project phase

Outsider Phase

The outsider organisational development phase can be described as an individual or small group of officers having some form of ‘environmental’ label (either a very small new department or team within an established department) that are struggling to attract limited organisational resources for IUWM activities. There was evidence of conflict around perceived roles and responsibilities with other sections of the organisation, in particular with the sections responsible for public infrastructure and development approvals. This *outsider* group focused on writing innovative grant applications and finding means to work with state agencies and other funding bodies for meeting broader obligations and principles for more sustainable urban water management activities. As part of this advocacy, of particular note, is this group’s dedication to building external stakeholder relationships through outreach strategies with regulatory authorities and community groups. The implicit objective of this work is to build external political capital in an attempt to realise internal organisational legitimacy and influence to advocate for more resources to support sustainable management practices.

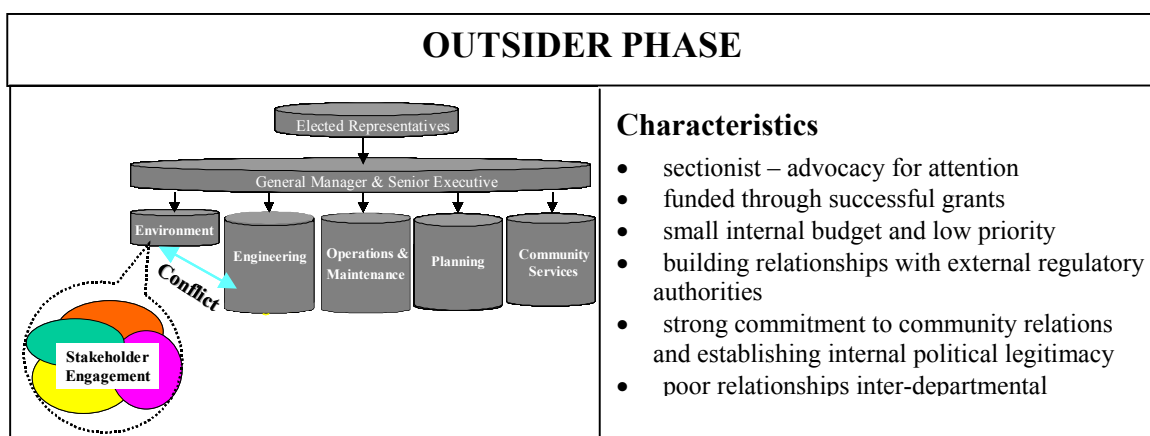


Figure 4 Variable Performing Organisations: the outsider phase

Growth Phase

The growth organisational development phase reflects the environmental (and sometimes sustainability agenda) gaining *growing* prominence as reflected in the increased staff size, budget and corporate reporting within the organisation in contrast to the *project* and *insider* phases. Like the insider phase, this could be a separate environmental department or a larger group within an established department, however this team of people have been successful in winning project based external grants and support. The team has also been successful in gaining organisational attention through highlighting future economic and reputational risks to the organisation for inaction around environmental issues and perceived concerns. There is now an established extended stakeholder network with increasing expectations of their potential to influence and/or inform environmental decision-making. While there appears to have been significant growth in the environment agenda, particularly water, there is still significant tension and confusion over roles and responsibilities between departments and groups within the organisation resulting in inconsistent and ad-hoc projects.

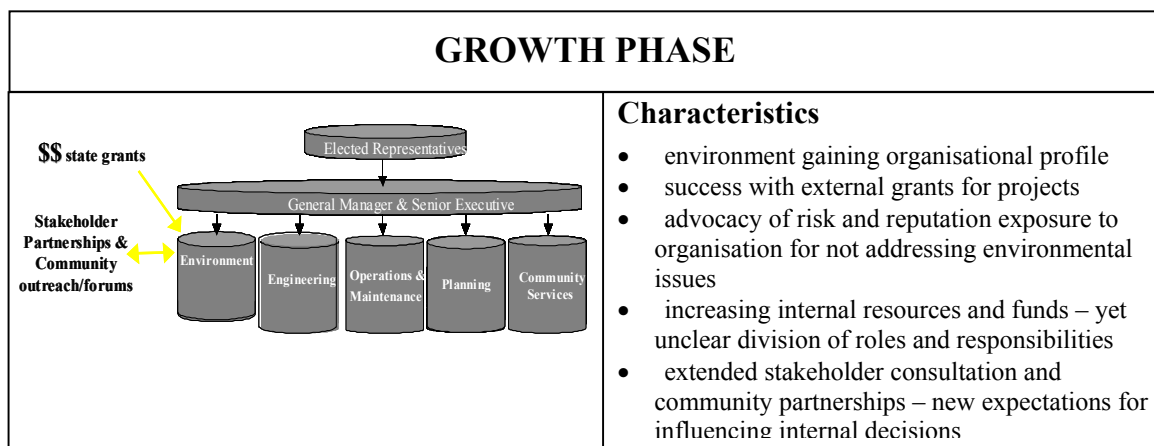


Figure 5 Variable Performing Organisations: the growth phase

Insider Phase

The insider organisational phase represents yet another significant shift in organisational dynamics. These organisations appeared to have good knowledge of their water systems and water environment and increasing competency with implementing end-of-pipe pollution control techniques and education initiatives. Of particular note is the observation of a high profile organisational champion(s) for sustainable urban water management typically playing a networking and knowledge broking role across and within organisational departments. This results in a number of project collaborations between engineering, planning and the environment departments– yet limited collaboration in other areas. Part of the catalyst for these new projects is related to the relationships that the champion develops with key research institutions and larger scale environmental NGO’s. The attention and interest of other departmental managers are captured through the perception of conducting ‘cutting edge’ projects. This therefore attracts management and senior executive attention and soon becomes part of the organisational leadership strategy and consequently increasing external and internal resources to this area. Of particular distinction is that other departmental areas are starting to perceive a legitimate organisational role for the expertise of the environment area – and therefore becoming an *insider*.

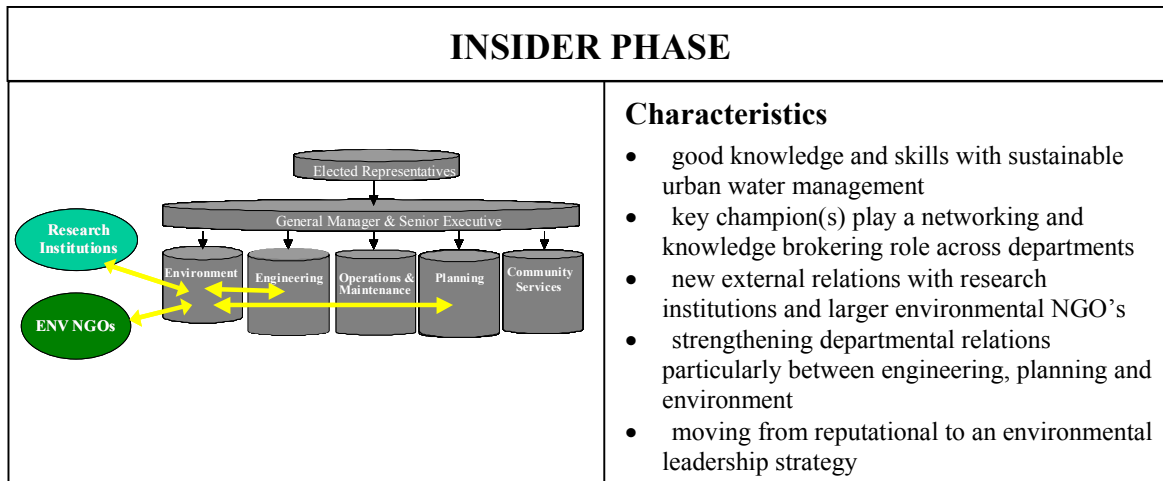


Figure 6 Variable Performing Organisations:

Integrated Phase

The high performing organisations demonstrated the highest degree of integrating sustainability principles and practices in various forms across the organisation. The high value placed on community governance and participation was observed from senior to the junior levels of the organisation. There are dedicated corporate policies and resources dedicated to the environment (typically an additional environmental levy) as well as an active inter-departmental committed to sustainable water management activities. The value of organisational learning and research is high as well as reinforcing the reality and outside perception that the organisation is a leader in its field. Of particular note is the poor opinion these organisations have of state agencies. In particular, these organisations feel constrained by contemporary state policies and programs with concerns of having innovation stifled by outsiders. The public articulation of this view is highly tempered to ensure ongoing success with attracting additional external resources.

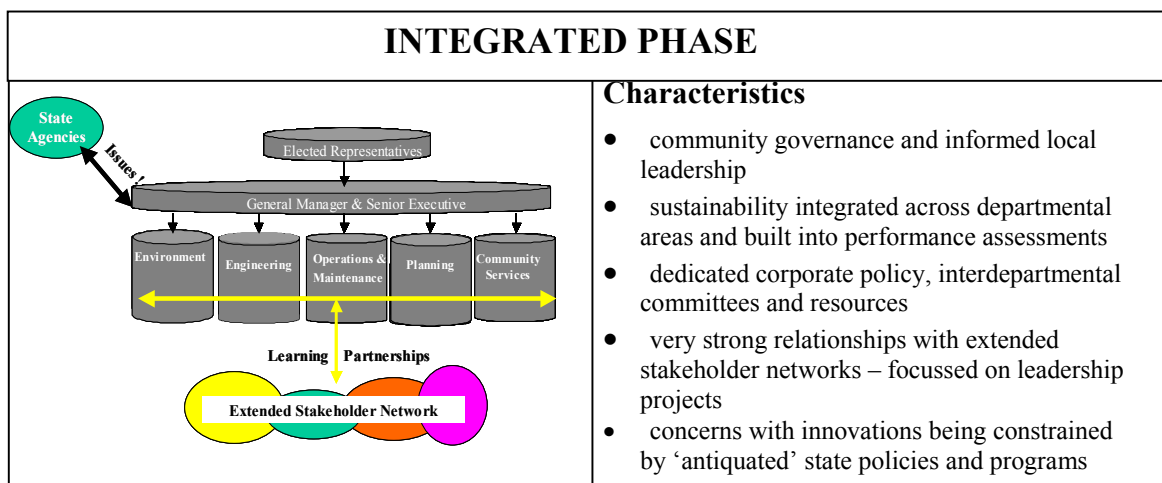


Figure 7 High Performing Organisations: the integrated phase

6. Human Resource and Organisational Capacities

The case studies of differing levels of organisational implementation performance revealed the changing human resource and organisational capacities, with particular distinctions between the *project* and *integrated* phases. More broadly observed across the cases was the increasing internal political priority of the environment where it was almost non-existent in the *project* phase, largely driven by reputational need in the *growth* phase and inherent to organisational leadership in the *integrated* phase. It was also clear that external resource opportunities through state grants have been used by the more entrepreneurial organizations for attracting internal attention and resources.

With respect to the individual Council officers there appeared increasing experience and competence in environmental planning, facilitation, negotiating, networking and organisational relationship building. However, technical competence with the design and management of urban water management technology did not prove to be an essential ingredient, particularly where this specialised technical skill could be harnessed as an important input from elsewhere within the inter-organisational context. The level of individual professional frustration associated with organisational activities also demonstrably decreased in the higher end of the organisational development continuum. Also observed was the increasing level of organisational power held by the individual officers. The higher end of the continuum tended to have officers in more senior roles and influence over more organisational resources. This therefore impacts on the officer's potential to attract high levels of organisational support in terms of time and dedicated resources.

It was evident from the research that the intra-organisational operating context was the key factor for determining the level of success with implementing IUWM. The increasing level of political and organisational commitment to environmental management more broadly was a strong indicator of performance. This needs political commitment from within the organisation as expressed through departmental management systems, a committed interdepartmental policy community and appropriate dedicated organisational resources. Integral to this commitment is the breadth, quality and priority placed on relationships established for an extended stakeholder network interested in the management of environmental resources. The maintenance and development of this inter-organisational action appears instrumental for mobilising attention and political power for facilitating IUWM.

7. Institutional Capacity Building for Advancing Sustainable Urban Water Futures

As also argued by Vlachos and Braga (2001), there is limited evidence on how to realise the operationalisation of integrated urban water management because of the lack of detailed specification, methodological clarity, and understanding of its operation in practice. Therefore, the need for formulating the development of capacity building methodologies for informing IUWM practice and program interventions is clearly evident, even though this has been neglected both within Australia and internationally generally (Bellamy et al. 1999).

The organisational development insights from the case studies lead to important considerations, as well as raising further questions, for developing local institutional capacity for IUWM. Given that over 20 councils were rated as operating in the 'project' phase and a substantial portion of the average performing councils operating in the 'outsider' and possibly 'growth' phase, it seems reasonable to conclude, as depicted in Figure 8, that capacity development pathways that lead to

transformative organisational change are needed if IUWM is to be realised within the foreseeable future. While incremental change appears to be the current pathway it is likely that institutional inertia will retard timely organisational development for meeting the increasing social, ecological and economic priorities of communities.

Given the theoretical and practical insights of the capacity building concept, current industry attempts at addressing institutional inertia such as professional training initiatives and single focussed regulatory interventions are likely to result in incremental and sometimes quite unstable changes. This is because they involve developing capacity in one sphere (ie human resource capacity) without good linkages and mobilisation of capacity in the other spheres. They are also more mechanistic by design rather than encompass the more intangible, yet critically important, issue of sensitising organisational values towards sustainably managing the urban water environment. Therefore incremental approaches may impact on the organisational systems (ie requiring the preparation of a plan document), whereas a transformative approach would seek to change both the structural and cultural basis of the administrative system in relation to ongoing and sustainable management of the water environment.

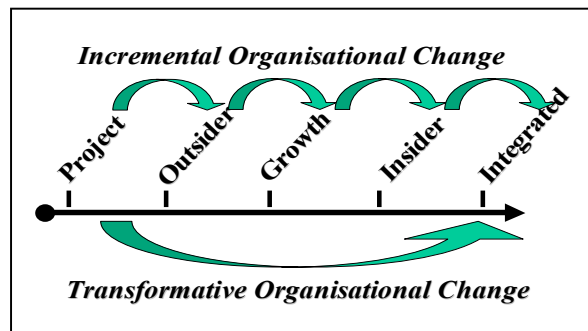


Figure 8 Incremental Versus Transformative Capacity Development Pathways

Given human resource, organisational and directive capacity spheres are mutually interdependent, it is advocated here that there needs to be an underpinning philosophy of learning from informed and well tested capacity building strategies as a long-term policy concept for enabling the institutionalisation of IUWM at the local level. As evidenced by the low performing cases, single regulatory directions that rely on traditional views of the vertical power of the state for mobilising change are now based on unfounded assumptions of the capacity of state agencies to direct change, and therefore unlikely in isolation to enable transformative and sustainable change. Therefore based on the research insights, this philosophy should be based on mobilising horizontal power that facilitates organisational and cross-sectoral interaction in pursuit of enabling governance of the urban water environment

While the interactive human resource, organisational and directive capacity development themes should not be considered in isolation, it is proposed here that they can be conceptualised individually to inform a coherent institutional capacity development policy. While different urban water contexts have variable institutional frameworks, peculiarities and capacity building needs it is important that a holistic assessment of the existing capacity for IUWM within the local management dynamic be conducted to systematically inform the design of capacity development programs. To assist with this assessment, the capacity factors identified in this research as

necessary for facilitating an IUWM approach provide a useful benchmark for determining to what degree capacities are currently developed and/or underdeveloped. Table 3, provides a formative benchmark for broadly assessing the local management capacity for IUWM irrespective of local context. This table could be used for broad capacity deficit analysis for streamlining and prioritising, often scarce, resources available to policy activity and specific capacity strategy development and implementation.

Table 3 Summary of the Formative Local Capacity Development Methods

Institutional Capacity Process	Summary of Formative Capacity Development Methods
Directive Reform	<ul style="list-style-type: none"> ▪ incentives and disincentives for enabling intra and inter organisational interaction ▪ regulation of organisational capacity rather than production of plan documents ▪ mobilization of local political and community support information and measurement systems for benchmarking and reporting on organisational capacity
Organisational Strengthening	<p><i>Intra-Organisational Development</i></p> <ul style="list-style-type: none"> ▪ corporate policy for sustainability ▪ inter-departmental policy community ▪ dedicated waterway management resources ▪ experience and competence with urban water management <p><i>Inter-Organisational Development</i></p> <ul style="list-style-type: none"> ▪ active cross-sectoral catchment stakeholder network ▪ experienced in inter-agency collaboration and negotiation ▪ valuing community participation and input
Human Resource Development	<p><i>Skill Development</i></p> <ul style="list-style-type: none"> ▪ environmental planning ▪ group facilitation and negotiation ▪ relationship building and networking ▪ facilitating change management <p><i>Basic Knowledge Development</i></p> <ul style="list-style-type: none"> ▪ environmental resource management ▪ sustainable development ▪ urban water environment

When considering directive development it is important that the principle of organisational and cross-sectoral interaction underpins all forms of regulatory, economic and educative policies. It is also important that a local organisational capacity analysis is conducted and targeted at understanding what potential incentives and disincentives would be most effective in enabling IUWM. These assumptions need to be explicit throughout all policy processes and tested and validated as part of an adaptive policy cycle.

8. Conclusion

The level of implementation of IUWM practice associated with local government administration has been identified as highly variable across Metropolitan Sydney. Five key phases of organisational development including the project, outsider, growth, insider and integrated were revealed throughout the case study research and provide reliable insight into the design of capacity building methodologies. In each the capacity development spheres key factors important for mobilising change include:

1. Directive reform comprised of incentives and disincentives for intra and inter-organisational interaction, regulation of organisational capacity, cultivation of local political and community support, and monitoring systems on the organisational capacity for IUWM.
2. Organisational strengthening involving intra-organisational development with a corporate policy for sustainability, an inter-departmental policy community, dedicated waterway management resources, and experience and competence with urban water management. Inter-organisational development, involving active cross-sectoral catchment stakeholder networks, experienced inter-agency collaboration and negotiation, while valuing community participation and input.
3. Human resource development consisting of skill development in environmental planning, group facilitation and negotiation, relationship building and networking, and facilitating change management. Basic knowledge development is also required in environmental resource management, sustainable development, and urban water environments.

While this investigation has focussed on the local management dynamic these findings do provide guideposts for assessing the methodological development needs for designing future capacity building across a range of different organizations and institutional contexts.

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