

## BUILDING LEADERSHIP CAPACITY TO DRIVE SUSTAINABLE WATER PRACTICES

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### ABSTRACT

This paper examines how a range of leadership development initiatives can be used to assist the transition from traditional to more sustainable forms of water management in Australia. It also examines the role of water educators in this process. The paper seeks to build awareness of the importance of leadership capacity in driving change, highlights opportunities to build this capacity amongst several different stakeholder groups, and describes common methods. It also profiles some recent leadership development initiatives in the Australian water sector. It concludes by suggesting some practical steps educators and other practitioners in the water sector can take to continue to build this form of institutional capacity.

### INTRODUCTION

There is now widespread awareness of the need to manage Australia's water resources in a more sustainable manner (AWA & Deloitte, 2010). Pressures such as rapid population growth, climate change, severe droughts, environmental crises and inadequate governance in urban and rural areas are helping to drive more sustainable approaches. This change is occurring in the public sector (e.g. water agencies), the private sector (e.g. land developers and farmers) and the community (e.g. local action groups).

The transition from traditional ways of managing water to more sustainable ones is challenging. For example, the process of building 'water sensitive cities' in Australia represents a significant, long-term process of change that has the characteristics of a 'complex challenge' or 'wicked problem'<sup>1</sup> (see Brown *et al.*, 2009; Commonwealth of Australia, 2007; Skinner & Young, 2010). Such change has technological, political, governance, cultural and behavioural dimensions.

<sup>1</sup> Wicked problems are characterised by the following features: difficult to clearly define "the problem"; many interdependencies and are often multi-causal; attempts to address them often lead to unforeseen circumstances; unstable / dynamic; no obvious / agreed solution; socially complex; they cross jurisdictional boundaries; they require behavioural change; and a history of chronic policy failure (Commonwealth of Australia, 2007).

Leadership is central to driving change, as illustrated by Emeritus Professor John Kotter (2006), when he stated:

Producing change is about 80% leadership ... and 20% management... In most change efforts, those percentages are reversed. We continue to produce great managers; we need to develop great leaders (p. 14).

In order to drive such fundamental change in the water sector, leadership capacity is needed across a broad range of stakeholder groups, including politicians, water industry executives, emergent leaders in the public and private sector, researchers, educators, community groups and individual citizens.

This paper explores how water educators and other practitioners in the water sector can work together to build the leadership capacity of such stakeholder groups to help them drive more sustainable practices. It has the following six aims:

1. To highlight why building leadership capacity is important in this context.
2. To explore some of the opportunities for building such capacity, including opportunities for water educators.
3. To briefly discuss the methods that can be used.
4. To highlight some recent leadership development initiatives in the Australian water sector.
5. To briefly address the question: how effective are leadership development interventions?
6. To outline some steps that can be taken to accelerate progress and continue to improve outcomes in this emerging field.

The five key messages of the paper are as follows:

1. Actively building the leadership capacity of a broad range of stakeholder groups in the Australian water sector will help to drive the transition towards more sustainable ways of managing water.
2. There are many potential target audiences, developmental methods, and opportunities to apply leadership development interventions.
3. To accelerate progress in this area, water educators and other practitioners will need to recognise good opportunities for building leadership capacity, have a good understanding of the principles and methods

that can be applied, and take these opportunities when they arise.

4. In many cases such opportunities will involve adding developmental initiatives to existing programs and projects.
5. We will also need to apply 'best practice' leadership development principles to the design of interventions, evaluate their performance, and share our experiences so we continue to improve as a community of practice.

## BACKGROUND

### **Leadership and leaders**

This paper adopts a contemporary definition of leadership, drawing from Rost (1993) and Kotter (1998). Leadership is seen as a *process of influence* that occurs within the context of relationships between leaders and their collaborators / followers, and involves establishing direction (i.e. a shared vision), aligning resources, and generating motivation and providing inspiration to achieve mutual interests. From this perspective, leadership is primarily about *exercising influence* to drive change.

This definition of leadership reflects the view that several leaders are usually involved with initiating and driving a process of influence (e.g. a new policy or project). This definition can also accommodate 'leaders' and 'collaborators / followers' swapping roles during the process.

From this perspective, leadership can be undertaken by emergent leaders<sup>2</sup> (e.g. water 'champions') as well as people in formal leadership roles (e.g. executives). It also challenges the outdated view that leadership development initiatives are only relevant to people in senior organisational roles (e.g. executives).

### **Rationale for building leadership capacity**

This paper suggests there are three principal reasons why leadership development activities can help to promote more sustainable water management practices. First, leadership skills are 'core skills' for those who are seeking to affect change. Typically, agents of change in the water sector have a mix of technical, management and leadership skills. As a high profile example, consider the Wentworth Group of Concerned Scientists ([www.wentworthgroup.org](http://www.wentworthgroup.org)). Several members, such as the late Professor Peter Cullen (AO), have demonstrated exemplary leadership skills such as the ability to draw on science to clearly articulate a compelling vision for sustainable water management. As a group of leaders they also

represent a good example of the coordinated form of 'distributed leadership' (see Gibb, 1954; Gronn, 2004), as they work together to influence national water policy.

The second reason is that there is compelling empirical evidence to support the case that particular types of leaders play critical roles in driving change in the water sector. For example, Brown and Clarke (2007) researched the factors that contributed to the adoption of 'water sensitive urban design' in Melbourne over several decades. They concluded that

... an important driver of Melbourne's transition [to a more water sensitive city] was the legacy of a committed and innovative group of associated champions working across multiple sectors to advance change (p. iv).

Similarly, an Australian Senate inquiry investigated the management of urban water (Commonwealth of Australia, 2002) and concluded that:

The Committee has seen that some of the most successful programs around Australia have been driven by the knowledge and commitment of one individual ... someone with the personal commitment to drive long-term change. ... leadership is a key element in these examples of best practice ... the challenge is to find ways to institutionalise the champion phenomena (p. 236).

In recent years, researchers have also examined the role of leaders from different countries who have worked with others to successfully initiate water-related policy transitions. For example, Meijerink and Huitema (2010) examined 16 international case studies and concluded that:

The various case studies provide ample evidence for the crucial role of key individuals and organisations in realising transitions (p. 4).

The third reason is that particular forms of leadership and leaders with particular attributes are needed to address wicked problems. For example, complexity leadership theorists (see Plowman *et al.*, 2007; Snowden & Boone, 2007; Uhl-Bien *et al.*, 2007) emphasise the value of 'enabling leaders' to address such problems. Enabling leaders create institutional spaces (e.g. communities of practice, pilot projects and cooperative research forums) and supportive cultures that allow numerous practitioners to come together across organisational boundaries and tackle complex problems by collaborating, exchanging information and ideas, learning and experimenting.

Enabling leadership skills include facilitating cross-boundary leadership processes, interpreting change for others, destabilising the status quo and fostering constructive task-related conflict. This form of leadership is suited to senior leaders who are comfortable with uncertainty, good at systems thinking, open to new ideas, and have a propensity

<sup>2</sup> Such leaders emerge to drive an initiative irrespective of their formal role description. As such, they can emerge anywhere in the institution of water management.

to enable rather than control change. Examples of enabling leaders in the Australian water sector include those board members and executives of water businesses who place a priority on actively fostering collaborative organisational cultures (e.g. Yarra Valley Water; see Jones *et al.*, 2006).

### Relevance to water educators

Water educators across Australia encourage behavioural change in a variety of ways, such as helping to build knowledge and skills, and facilitating social networks amongst practitioners. This paper argues that building leadership capacity within a variety of stakeholder groups is another way water educators can work to affect desirable behavioural change and advance sustainable water management practices.

The work context of water educators also creates many opportunities to facilitate leadership development activities. For example, in relation to university-based education, water educators can link leadership development initiatives to educational products (e.g. masters programs and trans-disciplinary doctorates). In relation to industry-based capacity building, water educators can build customised leadership development programs (LDPs) for emerging water leaders, establish mentoring programs, and work with organisations to build internal LDPs that cater for different types of 'leader-managers'<sup>3</sup>. They can also modify existing activities (e.g. staff secondments, training, study tours and major projects) so they become potent leadership development interventions for staff. Other opportunities are explored later in this paper.

In the last decade, initiatives to build leadership capacity in the Australian water sector have become more common and substantial. It currently represents a growth area of water-related capacity building. To illustrate, the International WaterCentre ([www.watercentre.org](http://www.watercentre.org)) surveyed a small group (n = 9) of opinion leading executives in large Australian water agencies in 2010. The survey examined market receptivity to a new national, university-based LDP for emerging leaders who drive more integrated and sustainable forms of water management. On average, these executives thought the need for the proposed program was 'strong' to 'very strong' and likely to 'strongly' increase in the future (IWC, 2010).

Another illustration of the interest and growth in this area concerns the Peter Cullen Trust's 'Bridging Water Science and Policy' leadership program ([www.petercullentrust.com.au](http://www.petercullentrust.com.au)). In its first year in

2010, the Trust received approximately 400 applications for the program's 15 available places.

Water educators also have the potential to benefit from being involved in leadership development activities as participants. This is because leadership skills have great value to their work. Such skills include the ability to motivate and inspire others, build and communicate shared visions, work across organisational boundaries, and coach and mentor others. Recognition of this point has led to recent initiatives, such as the Advancing Sustainability Leaders program in NSW that specifically targets water educators<sup>4</sup>.

### OPPORTUNITIES TO BUILD CAPACITY

This section explores *some* of the opportunities to design and deliver leadership development activities for five target audiences in the water sector. These audiences are students, community advocates and group leaders, educators, emerging leaders (e.g. champions), and executives and politicians.

In many situations taking such opportunities will mean adding development activities to existing programs and projects. For example, some Australian water agencies have 'twinning arrangements' with cities in developing countries (see Giessemann & Roche, 2010). When the agencies' staff travel to work overseas this represents a tremendous opportunity to use this 'job assignment' as a leadership development intervention. Methods could include leadership-related training (including the creation of an 'individual leadership development plan'), mentoring and the provision of feedback on key leadership behaviours before and after the assignment.

#### Students

There is potential to include basic leadership development activities into programs that help to attract school students to a water career. An example of a student-based, environmental program in the United States of America is described by Tillet (2005). This one week, intensive, residential program is provided at no cost to students who have leadership potential and have obtained scholarships to attend. The program involves lectures, visits to research facilities, field trips, mentoring and training in some basic leadership skills (e.g. communication).

Similar programs could be used in the Australian water sector. For example, the Australian Water Association's (AWA) H<sub>2</sub>Oz Careers in Water campaign (see [www.h2oz.org.au](http://www.h2oz.org.au)) could be expanded to include such a program. Leadership

<sup>3</sup> The term 'leader-manager' reflects that practitioners usually need a combination of leadership and management skills. Leadership skills involve establishing direction, aligning resources, motivating and inspiring others. Management behaviours involve planning, organising, budgeting and problem solving (Kotter, 2006).

<sup>4</sup> The 2011 version of this State government program targets emerging sustainability leaders in both the water *and* energy sectors.

development methods that would be most appropriate to this audience include building a good general knowledge of the water sector and related issues, group mentoring, training in key skills (e.g. building teams, communicating and motivating others), and providing opportunities for reflection<sup>5</sup>.

It is acknowledged, however, that running leadership development initiatives for school students has some limitations. For example, Professor John Adair (2005) has hypothesised that there is often a 'window of opportunity' in a person's life / career for efficient leadership development. This window typically occurs when a person has enough experience to place information into a real-world context and has opportunity to practise new leadership behaviours, but has not allowed leadership behaviours or styles to become entrenched. Those who subscribe to this view focus on delivering leadership development interventions for early to mid career practitioners (e.g. team leaders). This paper broadly supports this view, but also suggests that some positive leadership development outcomes can still be achieved working with people outside of this conceptual window (e.g. senior school students).

#### **Community advocates and group leaders**

There is also potential to provide community advocates and group leaders with access to leadership development opportunities. For example, government agencies that provide water-related community groups (e.g. catchment management groups) with grants could also provide short courses that focus on strengthening key leadership skills required by these leaders. Such skills may include influencing politicians and bureaucrats, building shared visions, leading high-performance teams, leading across boundaries, interacting with the media, and motivating and inspiring their members. Methods that would be most appropriate to this audience include mentoring, skills training, 360-degree feedback (see Chappelow, 2004), using real projects as 'action learning' activities, and individual leadership development plans.

This audience would also benefit from 'feedback-intensive' LDPs (see Guthrie & King, 2004) that include a complimentary set of leadership development activities (e.g. mentoring, coaching, training and 360-degree feedback). An example of such a program is the Centre for Sustainability Leadership's Fellowship Program ([www.csl.org.au](http://www.csl.org.au)) which currently runs programs in Melbourne and Sydney. This program targets emerging sustainability leaders (not just those in the water industry) and provides some scholarships.

<sup>5</sup> Common leadership development methods are briefly described later in this paper.

#### **Educators**

Water educators in schools represent another target audience with the potential to benefit from leadership-related training. For example, the Tomorrow's Leaders for Sustainability (TLfS) program has been running since 2008 in Victoria to enable teachers to run leadership programs in their schools. These programs build knowledge and skills amongst school students to help them deliver practical projects and promote sustainability. The TLfS program has developed training materials for students and teachers, and runs workshops for teachers and forums for students.

#### **Emerging leaders**

Another target audience is emerging leaders in the water industry who drive change and are sometimes referred to as key change agents or champions<sup>6</sup>. These nascent leaders are typically in Adair's 'window of opportunity' for efficient leadership development. One strategy to assist this group is to design customised, feedback-intensive LDPs. Examples of such programs in the Australian water sector include:

- The International WaterCentre's new LDP for emerging water leaders who drive more integrated and sustainable practices (which is scheduled to begin in late 2011).
- The NSW State government's Advancing Sustainability Leaders program.
- The Peter Cullen Trust's Bridging Water Science and Policy leadership program.

Another strategy is to strengthen the leadership development elements of activities that often attract champions in the water industry. For example, adding a LDP to postgraduate degrees involving integrated water management. Another example is to ensure that study tours for emerging water leaders are carefully designed as leadership development interventions. This could be achieved by ensuring there are elements of challenge (e.g. challenging projects linked to the tour that act as 'practise fields' for leadership skills), assessment (e.g. mechanisms to provide the leaders with feedback on their leadership behaviours and outcomes) and support (e.g. mentoring arrangements to help the leaders deliver their projects).

#### **Executives and politicians**

The target audience of water industry executives and politicians (e.g. local government councillors) usually have access to in-house LDPs and/or high quality LDPs for senior organisational leaders that are routinely run across Australia by respected institutions such as the Mount Eliza Business School. It is, however, suggested that this stakeholder group would also benefit from *supplementary* short courses that examine

<sup>6</sup> Such leaders would typically include water educators.

leadership challenges, strategies, models and theories that are highly relevant to the water industry. For example, such short courses could focus on the forms of leadership and leadership skills needed to address wicked problems. They could also communicate relevant research findings to senior leaders in the water industry, such as leadership-related research reported by Jones *et al.* (2006) and Taylor (2010a).

Another opportunity to assist executive leaders to drive sustainable water management is to provide postgraduate degrees that focus on sustainability leadership. Such degrees are starting to appear internationally. For example, an MA in Leadership for Sustainability is run by the University of Lancaster in the United Kingdom. A similar course is run by the John F. Kennedy University in California (i.e. its Leadership for Sustainable Change Certificate) and the Blekinge Institute of Technology in Sweden (i.e. its Masters of Strategic Leadership Towards Sustainability).

#### APPROACHES, METHODS AND PRINCIPLES

This paper argues that four key steps can be taken to build leadership capacity in the water sector to drive more sustainable practices. First, water educators and other practitioners can look for and take opportunities to provide leadership development interventions to the previously mentioned target audiences. Common methods include training, using 360-degree feedback, coaching, mentoring, fostering social networks, and action learning activities (e.g. 'challenging job assignments'). An overview of these methods is provided in Table 1. Typically, a combination of methods is used (e.g. in an LDP).

Second, water educators can apply best practice principles when designing and delivering leadership development interventions. Such principles include:

a) Leadership development interventions, such as LDPs, should clearly define their objectives, desired outcomes, view of 'leadership' and leadership development philosophy (see Ruvolo *et al.*, 2004; Shelton, 2003; Zenger and Folkman, 2003).

b) Where possible, interventions should deliver leader and leadership development (see Day, 2000). For example, an LDP could strengthen the individual attributes of a leader (e.g. self-awareness) and also strengthen their ability to drive group-based leadership processes (e.g. through advanced social networking skills).

c) Multiple methods should be used to ensure developmental experiences *collectively* have the elements of challenge, assessment, and support (see Van Velsor and McCauley, 2004). Participants should therefore be challenged to stretch

themselves as leaders, receive feedback (e.g. on their leadership behaviours) and be provided with support (e.g. from buddies, coaches and/or mentors).

d) Mechanisms should be used to ensure that participants are accountable for completing all elements of the intervention (see Shelton, 2003). This is particularly important for voluntary initiatives that require significant work by the participants (e.g. six to 12 month feedback-intensive LDPs).

e) Methods should seek to build the participants' self-awareness, as this attribute is a pre-requisite for significant development as a leader (Avolio, 2005) and strongly correlated with leadership performance in organisations (Atwater & Yammarino, 1992).

f) The content of the intervention (e.g. training modules or 360-degree feedback instruments) should be credible and relevant to the target audience. For example, the content of a LDP should be structured around a locally-validated, theoretically-grounded conceptual framework (see Avolio, 2005; Hurt & Homan, 2005).

g) The interventions should have the full support of the participants' managers (or in the case of students, their teachers and parents). Ideally, the interventions would also be aligned with initiatives in the participants' organisations (e.g. competency frameworks, strategic planning frameworks and programs to manage the organisational culture).

h) Where possible, the interventions should also help participants to build skills to *continue* to improve as leaders over the rest of their careers (see Avolio, 2005; Ruvulo *et al.*, 2004). Such skills would also enable them to help other developing leaders.

Table 1: Common Leadership Development Methods (modified from Day, 2000)

Method	Description	Development Target	Builds Human Capital / Social Capital? <sup>1</sup>	Typical Strengths <sup>2</sup>	Typical Weaknesses
<b>360-degree feedback mechanisms</b>	Multi-source ratings of leadership behaviours and/or performance, organised and presented to an individual.	Self-awareness; behavioural change.	Human capital (HC): Yes. Social capital (SC): No.	Comprehensive picture; broad participation; prompts reflection; highlight strengths and weaknesses (A).	Overwhelming amount of data; no guidance on how to change; significant time and effort; sensitive issues can be poorly communicated; tools not customised.
<b>Training</b>	Classroom-based interactive learning, communicating leadership behaviours to use in different contexts. Often structured around locally validated conceptual models of leadership.	Knowledge of behaviours / tactics; guidance on how to build individual leadership development plans.	HC: Yes. SC: Possibly.	Intensive; broad coverage; links research to practice; can be used to coordinate several leadership development activities (C, S).	Overwhelming amount of information; hard to personalise; time intensive; not customised for the participants.
<b>Coaching</b>	Practical, goal-focused form of one-on-one learning.	Self-awareness; behavioural change; career development.	HC: Yes. SC: Possibly.	Personalised; focused; intensive (C, S).	Perceived stigma (remedial); expensive.
<b>Mentoring</b>	An advice-based developmental relationship, usually with a more experienced leader. May involve one-to-one or group mentoring.	Broader understanding; advancement catalyst; communicating lessons learnt; contextual knowledge.	HC: Yes. SC: Possibly.	Strong personal bond between the mentor and mentee; relevant guidance; interactive (S).	Peer jealousy (one-to-one mentoring); overdependence; poorly structured relationship; poor mentor-mentee match.
<b>Fostering social networks</b>	Connecting to others in different functional and geographic areas.	Better problem-solving; learning who to consult for help; socialisation; social learning.	HC: Possibly. SC: Yes.	Enables cross-boundary leadership; useful for 'wicked problems'; helps to build teams; efficient way of accessing knowledge (S).	Ad hoc; unstructured.
<b>Action learning activities</b>	Project-based learning, often directed at important organisational problems.	Socialisation; teamwork; behavioural change; group-based leadership capacity.	HC: Yes. SC: Yes.	Tied to organisational imperatives (i.e. a real and important project); action-oriented (C, S).	Time intensive; leadership lessons are not always clear; over-emphasis on project outcomes.
<b>Job assignments</b> (a type of action learning activity)	Providing 'stretch' assignments in terms of one's role, function or geography.	Skills development; broader understanding of the organisation / institution.	HC: Yes. SC: Possibly.	Job relevant; accelerates learning; builds confidence, social networks and contextual knowledge (C).	Conflict between performance and development; no structure for learning.

**Notes:**

1. In this context 'human capital' refers to the ability of an *individual* leader to drive processes of influence (e.g. their leadership skills). 'Social capital' refers to the ability of a *group* of leaders to work together to drive such processes.
2. 'A' = assessment function; 'C' = challenge function; 'S' = support function (see Van Velsor & McCauley, 2004).

i) The design of interventions should reflect the '70:20:10 rule' of leadership development (Lombardo & Eichinger, 2000). This suggests that approximately 70% of development is derived from practical experience, 20% from feedback, and 10% from structured training.

j) Strategies to recruit participants should recognise that some people will have more developmental potential than others (see Adair, 2005; Avolio, 2007). For example, research indicates that participants who are likely to benefit most from typical LDPs for organisational leaders would usually have attributes such as a strong commitment to learning, deliberative practice and personal development, as well as learning agility<sup>7</sup> (Kouzes & Posner, 2010). They would also have a strong desire to lead, a high need for achievement, strategic thinking ability, pragmatism, a high general mental ability, confidence and be self-motivated (Avolio, 2007; Doh, 2002).

The third step is to ensure that high standards of quality are maintained throughout the design, delivery and evaluation phases. This is because some leadership development interventions can do more harm than good if managed poorly (e.g. providing developing leaders with feedback from their colleagues in an insensitive and unprofessional manner). Strategies to achieve this include undertaking peer reviews (e.g. of an intervention's design), ensuring that an adequate budget is available before proceeding, and using appropriately skilled practitioners to deliver each element of the intervention (e.g. trained coaches).

The final step is to invest in the evaluation of leadership development initiatives and share the results with other practitioners in the water sector. This will help to maximise the return on investment (ROI) from future initiatives. Whilst there are many ways to evaluate such initiatives, those that measure the extent of behavioural change (using objective measures and/or anonymous peer ratings) and estimate the ROI are particularly valuable (see Taylor, 2010b). In the author's experience, rigorous evaluations of leadership-related initiatives in the water sector that communicate the design of the initiative, involve a peer-review process, and are publicly reported are rare. This represents a significant opportunity for improvement as such initiatives become more common.

## RECENT INITIATIVES

In recent years there has been a growth in leadership-related activities in the Australian water sector. For example, the AWA has run a series of

workshops around Australia on leadership skills for sustainability change agents (2009-11).

Customised LDPs for water industry practitioners have also been run by the NSW State government (i.e. the Advancing Leaders Program in 2009 and the Advancing Sustainability Leaders program in 2011), Monash University (see Taylor, 2010a & b) and the Peter Cullen Trust (see [www.petercullentrust.com.au](http://www.petercullentrust.com.au)).

In addition, research and consulting groups have been active in this space. For example, the International WaterCentre ([www.watercentre.org](http://www.watercentre.org)) is currently building a world's best practice LDP for emerging leaders in Australia who promote more integrated and sustainable forms of water management. The centre aims to link this program to a graduate certificate qualification through its four partner universities.

In-house LDPs focusing on basic organisational leadership skills have also become more common in Australian water agencies. Such programs are often run to help build a constructive organisational culture (see Jones *et al.*, 2006; Taylor, 2010a).

## POTENTIAL EFFECTIVENESS

It is widely accepted that leadership can be taught and learnt (Avolio, 2005; Zimmerman-Oster & Burkhardt, 1999), although some people have greater potential to excel at leadership than others (see Adair, 2005; Doh, 2002). Analyses of the strengths and weaknesses of various leadership development methods have been conducted by Day (2000) and McCauley and Van Velsor (2004), and will not be repeated here.

Guthrie and King (2004) suggested that feedback-intensive LDPs represent the best *combination* of methods. Such programs are typically six to 12 months long, delivered over several sessions, use multiple lenses to view different dimensions of leadership, and use 360-degree feedback tools to identify leadership strengths and weaknesses. They create a supportive learning environment that usually involves interaction amongst participants, the opportunity to practise leadership skills, teaching and coaching.

A six-month feedback-intensive LDP for emerging project-level leaders<sup>8</sup> who champion sustainable water management in Australian water agencies was evaluated by Taylor (2010a & 2010b). This research provides an *indication* of the impact of such programs. Positive outcomes included improved participant knowledge (compared to a control group), desired behavioural change (as assessed by their peers), and increased motivation

<sup>7</sup> The ability to reflect on one's behaviours and then engage in modified behaviours as a result of the reflection process.

<sup>8</sup> Typically at the team leader level in water agencies.

to take on challenging leadership roles as a result of the program. A conservative estimate of the program's ROI after one year was 190%. In other words, for a typical participant, the cost of the program (including the participant's time) should have been repaid almost three times after only one year.

Feedback from participants was also strongly positive. For example, the following quotes from participants relate to the overall impact and value of the program from their perspective:

Excellent course! Well researched, well presented and a must for aspiring leaders in the sustainable urban water management field.

Best training and most helpful course I've been to.

The program has given me the skills, knowledge and confidence to become an effective leader in SUWM [sustainable urban water management].

This program was unique in that its content (e.g. training modules and 360-degree feedback instrument) was tailored for the target audience. This was done by undertaking context-sensitive research to identify the many factors that assisted these leaders (see Taylor, 2010a), such as key leadership skills and tactics.

## CONCLUSION

This paper has argued that building leadership capacity in the Australian water sector is one strategy to help drive the transition from traditional forms of water management to more integrated and sustainable ones. It has also suggested that students, community advocates and group leaders, water educators, emerging leaders, and executives and politicians all have the potential to benefit from customised leadership development activities. In addition, the paper has highlighted some of the opportunities that can be taken, as well as some of the methods and best practice principles that can be applied.

Awareness of the need to build leadership capacity in the Australian water sector is rising, leading to a number of recent initiatives. These range from short course training programs to customised feedback-intensive LDPs. To date, however, such initiatives have only engaged a relatively small number of people from the large and diverse water sector. This paper posits that the number and reach of leadership development initiatives needs to increase in order to significantly build this dimension of the sector's capacity.

To do this, water educators have an important role to play in identifying and taking opportunities to deliver appropriate developmental initiatives. In most cases, this will involve adding initiatives to existing programs and courses. Such initiatives may

involve focused training, mentoring, coaching, multi-source feedback or action learning activities.

To build momentum in this area requires leadership from Australian water educators, executives in lead agencies and industry associations. The strong growth of water-related leadership initiatives in recent years indicates that this leadership is present and is having a positive effect. It is hoped that in the second decade of this century, leaders across the water sector increasingly subscribe to a shared vision that building leadership capacity is one of the steps that must be taken along the journey towards sustainable water management.

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