Common Pool Resource Principles and Development in Business Responses to Climate Change

A paper for the Workshop on the Workshop conference (WOW 4) - Cognition and Norms session

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Abstract

Organising human activities to sustain global commons resources such as the climate is a critical and pressing challenge. While global collaboration is required to address this issue, some institutions such as specific businesses, are already acting beyond immediate self interest.

Principles seen in successful local governing arrangements, that sustain common resources, may be present in business responses to climate change. However, constructive developmental theory suggests the inherent complexity institutions face, when addressing global commons issues, means such institutions must also be able to hold and reconcile significantly differing 'worldview' perspectives. Consequently, some action at the later operational stages is necessary. This need arises as businesses' engage with a wide spectrum of the community and must collaborate with others who hold markedly different values based on worldview. Climate change may also be a catalyst that enables higher stage approaches – organisations may shift to respond to the disequilibrating challenges posed by this threat.

This paper presents a preliminary analysis of a major international business and discusses evidence for higher stages of development. Common pool resource principles that may enable successful resource protection are used, along with evidence from interviews, to examine these relationships. From early results, stage development shows promise - it adds an important understanding about successful, modern day, resource protection through voluntary sustainability initiatives.

Background

> *Above all, reducing the risks of climate change requires collective action. It requires co-operation between countries, through international frameworks that support the achievement of shared goals. It requires a partnership between the public and private sector, working with civil society and with individuals. It is still possible to avoid the worst impacts of climate change; but it requires strong and urgent collective action. Delay would be costly and dangerous.*
>
> Nicholas Stern, The Stern Review (2007, pp xxvii)

This paper looks at the significance of stage growth and its relationship with common pool resource outcomes within businesses - specifically with respect to climate change - in cases where the business are seemingly acting beyond immediate self interest. It examines principles, from common pool resource research and constructive developmental theory, which may be apparent within business acting to protect a common good - the global climate.

Common Pool Resource research documents successful resource protection. The research highlights the ability of groups to self-organise and protect their own resources (Bardham and Dayton-Johnson 2002; Ostrom 1990; Pinkerton 1999). Lessons learned at a local and regional scale could have broader global significance (Dietz, Ostrom and Stern 2003; Berkes 2002; Ostrom 1990).

Common pool resource protection requires some level of collaboration between individuals and/or organisations/institutions that use the resource. Such collective action may be correlated to an individual's and/or organisation's stage of development. (Leigh 2001; Meyer 2007). These stages of development describe growth and expansion as a human develops and evolves a greater understanding of themselves and the world around them. In early development this involves a significant shift in perspective, a new stage, when children realise that their understanding of the world around is no longer adequate and develop new ways in which they makes sense of it. Such stage development often continues for adults as

we 'construct' and interpret the world and develop new and more complex stages of understanding (McCauley et al 2006).

This growth, as described by constructive development theory, is based on the work of Jean Piaget (1954 cited in McCauley et al 2006). The theory has significant contributions from many researchers including Loevinger (1976), Torbert (1974; 2004) and Cook-Greuter (2002, 2004). Constructive development theory is similar to other stage developmental theories such as spiral dynamics (Beck and Cowan 1996; Cowan 2000). For a summary and review of constructive, as well as other developmental stage theories, see McCauley et al (2006) and Wilber (2000).

The use of common pool resource principles and constructive development theory with business is in the context of a global need for collaboration. At the same time as global institutions (such as the upcoming Copenhagen conference and existing Kyoto protocol) aim to enable such collaboration, smaller scale institutions (such as business and communities) are acting voluntarily to protect common resources.

Local, regional and business-specific actions occur on climate change and, in addition, many broader actions that protect or enhance common resources are relevant. Examples where such voluntary initiatives are occurring include:

- voluntary business actions that deliver environmental and/or social benefits under specific conditions (Prakash 2000a, 2000b; Potoski and Prakash 2005; Leigh and Waddock 2006);
- local action on climate change (Bulkeley and Moser 2007); and,
- the net zero emission (carbon neutral[1]) business policies of major transnational corporations (for example Kleiner 2007).

Within companies committed to voluntary action, key common and/or shared principles may be present. An understanding of these may enable broader outcomes.[2]

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[1] Corporate *Carbon Neutral* examples include Google (The Climate Group 2007; Hoelzle 2007), News Limited – Internationally by 2010 (Murdoch 2007), PricewaterhouseCoopers (PwC) – in 2008 (PwC 2008), and HSBC - in 2005 (HSBC 2004, 2008).

Theory

Principles from Common Pool Resources and Complexity

Our ability to organise cooperation on a scale considerably larger than predicted by theory based on unconstrained selfish rationality, or by most evolutionary mechanisms, is one of the most striking features of our species.

Peter J Richerson, Robert Boyd and Brian Paciotti in an Evolutionary Theory of Commons Management (2002, pp432)

Common Pool Resource research highlights principles that could be relevant for global and regional problems, such as climate change. Dietz et. al. (2003) summarising these (Figure 1 below) suggests that principles listed in boxes in the right hand column are particularly relevant for global issues.

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[2] Please note the research forms part of a PhD thesis and is at a preliminary stage - only limited results are available in time for the conference.
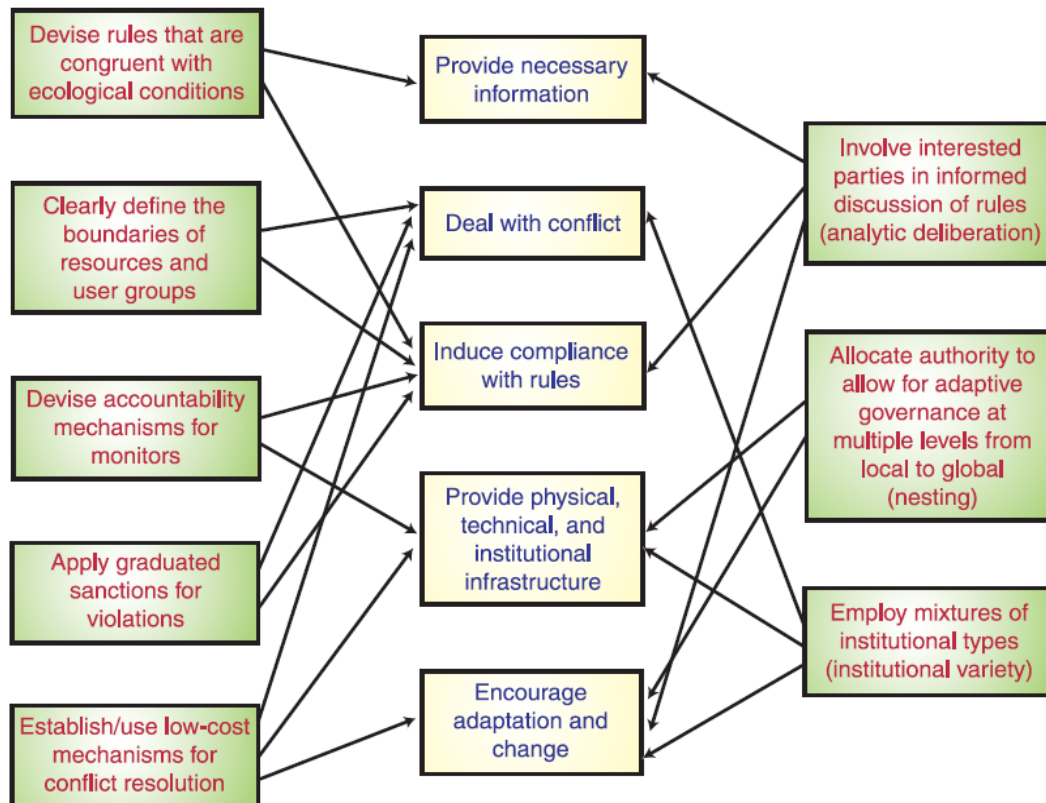
Figure 1
Principles for environmental resource governance (green boxes) and
the requirements they help meet (yellow boxes)
Source: The Struggle to Govern the Commons, Dietz et al. (2003)

This research examines if such principles, from Figure 1's right hand column, are seen within businesses acting on climate change and broader sustainability issues.

Common pool resource research shows that to apply the understanding and principles drawn from the research we need to deal with considerable complexity. For example, Lebel et al. (2006) recognise this complexity occurs across different institutional stages, incomplete knowledge and regional variation. Scientific uncertainty and the connections between smaller and larger groups (cross scale linkages) add to this complexity (Berkes 2002; Wilson 2002). Motivation (Velez, Stranlund and Murphy 2009) and individual values (Stern, Dietz and Kalof 1993) also influence outcomes. As a result, a framework describing and analysing human interactions, particularly one that is applicable and related to our developing worldviews and changing society values, can enhance our understanding of common pool resource protection.

Constructive Development Theory and Organisations

Stage development models are common to sustainability literature in examining corporate action with environmentally and/or socially beneficial outcomes. Such models include Hart (1997, environmental stage development moving from pollution prevention through product stewardship to clean technology), Mirvis and Googins (2006, expanding corporate responsibilities), Zadek (2004, 5 stage organisational development). McEwen and Schmidt (2007), Beloe et al (2004), Dunphy, Griffiths and Benn (2003) and van Marrewijk (2003; van Marrewijk and Werre 2003). Van Marrewijk relates organisational levels to stages of individual values as described by Spiral Dynamics (Beck and Cowan 1996; Cowan 2000).[3] Limitations includes criticisms that stage models poorly fit company practices given the complexity of internal pressures, external influences and external institutional pressures (Schaefer and Harvey 1998).

Beyond a specific sustainability focus, organisational development, as the company evolves to handle new levels of complexity, is also described by stages. These include Greiner (1972, stage development with increasing complexity and more collaboration), Quinn and Cameron (1983, a review of nine distinct models) and Torbert (1974) - a stage model for organisational development which has been developed over the intervening decades (Fisher and Torbert 1995; Rooke and Torbert 1998; Torbert 1987, 1991, 1994; Torbert and Associates 2004). Torbert's stage model is based on individual development (as described by Erikson 1959) and validated against four case studies (Torbert 1974). The organisational stages mirror individual human development stages (Torbert and Associates 2004).[4]

Torbert's model is used in this research to analyse individual views of company sustainability and climate protection actions, as well as the overall organisation. The model explicitly includes consideration of internal motivations as well as company structure and external influences. It mirrors a human adult development model enabling people's statements about

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[3] Other stage models include the Natural Step for Business and Social Venture Network's Standards of Corporate Social Responsibility from which some of Dunphy, Griffiths and Benn's model is sourced (Dunphy, Griffiths and Benn 2003, p304) and The Next Sustainability Wave (Willard 2005). In addition, Kolk and Mauser (2002) review 50 stage models that predominantly focus on describing a company's environmental management or strategy.

[4] For a one page summary of the characteristics of individual stages and the key influences they have on sustainability see McEwen and Schmidt (2007, pp35)

an organisation to be considered within a stage context. In addition, the model has a case study and research basis behind it and it has some strong similarities with sustainability stage models. Table 1 below provides a brief summary of the Torbert stage model.

Stage (Equivalent individual stage name in brackets)	Description of key features of organisation operating at this stage
1. **Conception** (Impulsive)	Dreams, visions, informal conversations about creating something new to fill need not now adequately addressed; interplay among multiple founders; working models, prototypes, related projects or business plans developed. Critical issues: timeliness and mythic proportions of vision
2. **Investments** (Opportunist)	'Champions' commit to creating organization; early relationship-building among future stakeholders; peer networks and parent institutions make spiritual, structural, financial commitments to nurture; critical issues -- authenticity and reliability of commitments; financial investment appropriately subordinated to structural and spiritual investments.
3. **Incorporation** (Diplomat)	Products or services produced; recognizable physical setting, tasks and roles delineated; goals and operating staff chosen; critical issues -- display of persistence in the face of threat, maintaining or recreating consistency between original dream and actual organizational arrangements.
4. **Experiments** (Expert)	Alternative administrative, production, selection, reward, financial, marketing and political strategies practiced, tested in operation and reformed in rapid succession; critical issues -- truly experimenting, taking disciplined stabs in the dark, rather than merely trying one or two preconceived alternatives; finding a viable, lasting combination of strategy and structure for the following stage.
5. **Systematic Productivity** (Achiever)	Attention is legitimately focused only on the systematic procedures for accomplishing the pre-defined task; standards, structures, and roles are taken for granted as given; marketability or political viability of the product or service, as measured in quantifiable terms, the overriding criterion of success. Critical issue: whether organisation remembers earlier analogical concerns about congruity from mission through outcomes during this emphasis on deductive, pyramidal systems.
6. **Social Network** (Individualist)	Strategic or mission focused alliances among portfolio of organizations, with strong value on maintaining distinctive traditions, craft-orientations, and relative financial autonomy. Critical issue: will organization regress or progress in economically adverse conditions?
7. **Collaborative Inquiry** (Strategist)	Explicit shared reflection about the corporate dream/mission; open interpersonal relations with disclosure, support, and confrontation of apparent value differences; systematic personal and corporate performance appraisal on multiple indices; creative resolution of paradoxes-inquiry/productivity, freedom/control, quantity/quality; interactive development of unique, self-amending structures appropriate for this particular organization at this particular historical moment. Critical issue: will organization sustain collaborative inquiry as it grows through hiring, merger, or strategic alliances or will it revert to conventional *Systematic Productivity*?
8. **Foundational Community of Inquiry** (Alchemist)	Structure fails, spirit sustains wider community – Appreciation of opposites; constant cycle of research and feedback covering visioning, strategising and performing; If timely, transformational action is undertaken.

Table 1 Organizational Development Stages
Adapted from Action Inquiry, Bill Torbert and Associates (2004)

Reviews of the Torbert organisation model find that while the research base is modest it correlates with other descriptions such as Senge (1990) in describing how an organisation can transform to a new level of understanding and capacity (Lichtenstein 1997; McCauley et al. 2008). Torbert's stage development model has been practically applied across a wide variety of organisations (Rooke and Torbert 1998; Torbert 1987, 1994).

A strong correlation between an organisations' stage and the extent to which it acts beyond immediate financial interests is seen in the (limited) research to date (Leigh 2002; Torbert and Associates 2004). Leigh (2001) shows that increasing organisational development levels and improved social responsibility (using a measure that includes but is not limited to the company's climate change activities) are correlated.[5]

Methods

Two in depth case studies will form the core of this research. To analyse the relationship between a business's sustainability actions, the extent to which common pool resource protection principles (as described by Dietz, Ostrom and Stern 2003) and, organisational stage development (as described by Torbert and Associates 2004) are related, data is sourced primarily from semi structured interviews and company published materials. The case study is chosen as it is suitable for combining different methods and data sources in a manner that enhances the overall validity of the research (Yin 2003; Yandle 2001 pp88).

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[5] Leigh correlates a company's stage of development, as measured by a three level constructive developmental model (i.e. a model that groups several of Torbert's stages within one level and then the next set of stages as level 2 etc.), against corporate environmental social and governance ratings as assessed by the *KLD* database (see http://www.kld.com/research/ratings_indicators.html)

The case studies are designed using the five major components (Yin 2003, pp 21–28) as follows:

1. The overarching study questions are:

    a. Why do some organisations engage in collaborative behaviour to forward global sustainability solutions, while others do not?

    b. Are there preconditions for collaborative behaviour that addresses climate change at an organisational level and, if so, what are they?

    c. Are there trigger(s) for actually translating a capacity for such collaborative behaviour into action and, if so, what are they?

2. The study focus assumes that we have to collaborate – that is there is no choice but to act collaboratively to address climate change. With this explicit need for collaboration, climate change may interact with organisations and, the organisations may help drive collaborative solutions to climate change. That is the circumstances organisations face today (climate change) may drive them to collaborate, and/or climate change may provide the opportunity through which a pre-existing capacity for collaboration is expressed. Consequently:

    d. Is it the case that climate change concerns are transforming organisations and catalysing a shift to more sustainable business practices? And,

    e. When principles associated with successful common pool resource protection are more prevalent within organisations, do they exhibit a more advanced level of sustainability? And/or,

    f. Is action to protect common pool resources more evident when the organisation (the whole group or discrete business units) is acting at a higher stage of development?

3. The logic linking case study data to these questions is described in the

Background and *Theory* sections above.

4. The unit of analysis for this research is a whole business with sub units within it being the internal business units. For example, in this paper I discuss some early results from one such business – a multinational insurance company. This business sells insurance through a wide range of different brand names depending on the type of insurance and the geographic location. These business units form the sub units of this case study research. A second case study of another business is planned.

The semi structured Interviews are based on a questionnaire and answers and themes that emerge during the interviews are followed up. The interviews will be supplemented with content analysis from other data sources, such as company reports and publications (Krippendorff 2004), and objective measurement – an Ecological Footprint (Robert et al. 2002; Wackernagel et al. 1999).

5. The findings are being interpreted by coding and analysing the responses for:

   a. the strength and presence of common pool resource protection principles; and,

   b. evidence of individuals and organisations being aware of and/or acting from an identifiable stage of development; and,

   c. the reported or perceived impact these actions and principles have had on the ability of the business to create more sustainable products, services, and/or impact similar change in its supply chain businesses or, more broadly with its customers, stakeholders and government.

In considering how to determine an organisations stage of development and/or an individual's views of the organisations sustainability (and what this reveals about the business' level of development) there are several relevant studies. McCauley et al (2006) reviewing Leigh (2002), and Rooke & Torbert, (1998) determines that observers can reliably categorize organizations as operating at one a level of development. Greenwald (1992) and McEwen (2007) also code individual and organisational responses according

to a stage revealed from interviews. The number of studies to draw on however is small (McCauley 2006). This research extends this work and validating the data will be an area of some focus.

Initial Results and Analysis

There is evidence that the Dietz et al principles are reflected in the manner in which the multinational insurance company approaches sustainability. The company is generally regarded as a leader in addressing climate change and is now trying to further implement its sustainability initiatives to produce greater impacts - change not just within its direct activities but also throughout its supply chain and in the behaviour of its customers.

Some points that correlate with the Dietz et al principles revealed from the interviews and company publications/statements include:

Principle 1.   Involve interested parties in informed discussion of the rules

The company has devolved responsibility for implementing sustainability activities. Responsibility for determining the extent and manner in which rules (outcomes set by the corporate head office) are implemented is at a business unit level. The:

> *…business units CEOs have the ability to tailor the implementation, so they have to adhere to the framework which says, and somebody said this at the Practice Meeting the other day, they said, How much freedom and flexibility do we have to go down a different path and I said well, if you said to me you were going to eliminate the environment piece ... you've gone too far. .... You have to fit [it] you have to have breadth across all five of these areas, but ... you tell me ... [the extent and focus].*

And

> *…around carbon neutrality, ... there's been an internal debate around okay, well if we actually didn't reduce our footprint any more, how much will it cost us to buy offsets because we have committed to it and we know we have to*

be carbon neutral ... and the estimates are not huge. It's one to two million dollars, you know, and for some people it's like fine, just buy it. ... We are pushing back and saying no, no, no, for us that's the last course of action.

Principle 2.   Allocate authority to allow for adaptive governance at multiple levels for local to global

For example the company, while maintaining a core set of business wide sustainability measurements and goals, has devolved responsibility:

Our mandate in the corporate office is not .. [effectively] to mandate anything. We have to find ways to influence them [the individual business units] and try to draw them in and get them to agree to do things ...

And:

…the interesting thing is there is always, there is always more of a wave of support for these things bottom up. A lot of time they get stifled top down from senior ... but yes, when you actually get through senior management the bottom up sort of ... say great idea - want to be part of it!

While this approach is at an early stage it shows promise. It appears to be creating the conditions under which sustainability initiatives may prosper when previously (with a centralised structure carrying most of the responsibility for sustainability) the organisation may not have been as effective as it could be:

…because ... sustainability had become a corporate office driven initiative, not a business driven initiative, so it was disconnected and although they [corporate] had examples and case studies, it wasn't ... [delivering] deep [enough results] ...

I think it's the right direction for us to go in on [and] challenges [us] again [to not] lose the momentum that we've built on the environmental side

Principle 3.   Employ mixtures of institutional types

The business is using a mixture of centrally mandated outcomes along with incentives and devolved implementation as well as cross-organisational groups to help catalyse change and share learnings:

> *…the objective would be to have a community that you know, not only shares knowledge and ... leadership ... the Community of Practice pulls us all back in terms of people ... focussed on that topic and driving that agenda ... it also broadens... mindsets by being able to share knowledge across the business because everyone's focused on different areas at any one point in time.*

In addition to mirroring principles from Dietz, the quotes and examples above also demonstrate some good correlations with the organisational stages that Torbert describes (see Table 1 on page 8 for an outline of these stages). The overall predominant stage of operation, as described by those working in the company appears to be Systematic Productivity (stage 5) with those people focusing on sustainability looking to create activity and engagement with systems and institutional types that resemble Social Networks (stage 6) with elements of Collaborative Inquiry (stage 7).

In addition, from the examples above, the Dietz principles themselves also correlate with higher stages of development. For example *Allocate authority to allow for adaptive governance at multiple levels for local to global* is a characteristic more likely to be modelled in an organisation operating from a Social Network stage.

I would caution that this stage analysis is very preliminary. As a comparison, McEwan and Schmidt (2007) detail three separate individual responses from companies at differing stages (using a five stage model):

> A. *"I am trying to activate a group of volunteers. The senior team is intrigued by sustainability and has given me time and space to try this stuff. I have won their support, but I don't have a budget. I'm spending a lot of my time justifying what I wish I could dictate—let's do it. I'm going to operations and marketing and saying,*

'What do you think?' I have to rob Peter to pay Paul. They are very generous with dollars in the community and have done some great things."

B. *"Our processes were already highly efficient, well tracked, and very well managed. Sustainability did not create these things because they were already in place. All we did was find a way to measure them on a grand scale and use it in the sustainability report. Risk management plays a big role, and brand management is key. We win a lot of awards."*

C. *"Our leaders understand the contribution it makes to the company in terms of enhancing reputation and managing risks to reputation. You can't just do corporate responsibility. What you have to do is build responsibility into every aspect of the way you do business, so it's built in, not bolted on. It can range from how we license our vaccines if we have pandemic flu, to the use of nanotechnology, to driver safety in the field forces."*

The responses, A to C, are characteristic of increasing degrees of sustainability within McEwan and Schmidt's stage model. With only these available details and without the context in which these statements where made they are difficult to classify under Torbert's organisational scheme. However, the quotes do indicate progressively greater stage development. They potentially move from A – Incorporation/Experiments (stage 3/4) through, B - Systematic Productivity (5), to C - Systematic Productivity with elements of Social Network (5-6).

Some quotes from the multinational insurance company also indicate how its sustainability initiatives are being positioned and argued, both from a Systematic Productivity perspective (example A below) to (B) Social Network organisation and (C) Social Network with elements of Collaborative Inquiry.

A. *I think we are spending a lot more time on the business case for sustainability, which shows that everything we do, while it may have a short term cost, you know, it's taking us down a longer terms path that will benefit the company over time*

B. I think on balance the feedback we have gotten with the refined strategy [devolved responsibility for implementation] is very positive ... I think the challenge is realising obviously that our audience is varied and broad. Our stakeholders are varied and broad. We all know that and we have to communicate differently with different people and find the hot button for that audience.

C. New Zealand is heavily into a recession and so, of all of the businesses in the portfolio, they are probably hurting the most in terms of their external economic climate. So for them, they've kicked off an initiative around the financial sustainability and what that means for them and where they need to focus and they were sharing... the path they're going down with the rest of the group... because they're... leading the way on the thinking there ... they're doing everything to maintain the environmental side but also trying to... pick up on one [area of sustainability] that resonates particularly with them right now. [example given in the context of independent regional, not centrally, initiated action]

Conclusions and Questions

"The theoretical challenge facing scholars today is developing an appropriate family of assumptions to make about the Intrinsic values individuals place on actions and outcomes – particularly outcomes obtained by others."

Elinor Ostrom in Understanding Institutional Diversity

(Ostrom 2005 pp119 and also see Meyer 2007)

The early indications from this work show that Dietz's principles and Torbert's stage model can be applied to how individuals in an organisation view its sustainability actions and efforts. The interviews analysed to date suggest that individuals in the organisation see a need for action at higher stage levels (although not expressing it specifically in stage terms) in order to generate collaborative work that results in more sustainable outcomes. The work

also suggests that these individuals see sustainability as being more effective when it directly addresses the value set (or worldview) of others within the organisation.

How an individual focus and how sustainability goals appeal to others in the organisation with different values is still being analysed. The individual stage development levels (Table 1) relate to an individual's worldviews and values. Part of catalysing action (in the case study company) has seen an appeal and communications targeted for specific stages. For example *achievers* may typically focus on a financial outcome. An example, in which the company was trying to get a business unit to participate in Earth Hour,[6] had the head corporate office highlighting that: *this is an important initiative ... and here's why it's important for our employees, for our customers;* but the key catalyst that drove outcomes and engagement was financial: *if you turn off this many branches and this many lights you will save X-thousand dollars... it's not a huge amount;* But: *what would you say now? There's no downside!*

This engagement, a message tailored to the stage that these specific individuals appeared to be aligned with, delivered more than just participation in Earth Hour. It has resulted in broader group wide change: *now the building managers have all realised – hey, if we can actually coordinate turning off all of these branches and multiple sites ... why don't we do it every weekend, and not just one hour? ... So they are now thinking beyond just the initiative into new business practices.*

Taken together these individual and collective stage development perspectives suggest that the model advances our understanding of how and why collective action may occur. Constructive development theory offers a way of understanding complexity and how values and principles interact to enable voluntary common pool resource protection.

The results from this study are only preliminary. Significant work remains to broaden the data and include more analysis. This will further demonstrate, or determine if there is, a

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[6] An annual climate change awareness activity – business and households switch off their lights for an hour see: http://www.earthhour.org

strong correlation between organisational stage development and effective common pool resource protection.

Similarly, Dietz et al's principles (right hand column Figure 1 on page 6) appear to be evident and associated with action that people in the studied organisation think will deliver successful sustainability outcomes. This linkage also needs to be examined further when significantly more data is analysed. In addition, from the results to date, it also appears that these principles are more evident at higher stages of development.

Finally, the subjective nature of sustainability and, what defines success, means that an objective measurement of potential outcomes would also be valuable. It is intended to discuss these outcomes, from an environmental perspective, using the Ecological Footprint as such an objective measure. This assessment helps provide an external perspective on the internal views about sustainability success.

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