Tanner, T.M., Jackson, C., Seballos, F. and Clark, J. 2013. Paper. Learning to tackle climate change: Innovative approaches to knowledge sharing and co-production in highly dispersed development organisations. *Knowledge Management for Development Journal* 9(1): 9-23
http://journal.km4dev.org/

PAPER

Learning to tackle climate change: Innovative approaches to knowledge sharing and co-production in highly dispersed development organisations

Thomas M. Tanner[1]*, *Carl Jackson*[2], *Fran Seballos*[1] *and Jane Clark*[3]

[1] Institute of Development Studies (IDS), UK
[2] Westhill Knowledge Group, UK
[3] Department for International Development (DFID) - writing in a personal context
* Corresponding author: t.tanner@ids.ac.uk

Tackling climate change in the context of development requires particular attention to reflection and learning. In part this is because of the new sources of additional uncertainty and cross-sectoral complexity that it introduces, but also because of the limited experience of what works and what doesn't. This poses significant challenges for many development organisations, which tend to function on the basis of bureaucratic principles of accountability and a cycle of planning, implementation, impact and evaluation.

This paper presents findings and reflections from a climate change learning programme with the UK Department for International Development. The programme combined external facilitation with staff knowledge exchange, reflection and problem solving to co-produce knowledge on climate change and development rather than following a set of prescribed technical solutions. We argue from this experience that knowledge management for tackling climate change requires much greater use of explicitly collaborative and improvisational learning approaches, rather than conventional supply-driven knowledge platforms. While there remains space for orthodox technical responses, such learning approaches are better able to situate the climate change and development problem within the diverse range of personal, organisational and problem contexts in which it is encountered.

Keywords social learning, climate change, organisational change, knowledge sharing

Climate change and development: The knowledge management and social learning imperative

> *'Climate Change is a very new area policy area for us, it is not easy to define what the right thing to do should be…we are all still learning'.* Participant feedback, Learning Hub evaluation

Climate change is now widely acknowledged as a major development challenge, demanding a reassessment of development objectives and processes in light of adaptation to climate change impacts and development in a carbon-constrained world (UNDP 2007; World Bank 2010). The advancing understanding of climate science suggests that urgent emission reductions in greenhouse gases and a rapid transition to low-carbon patterns of development are vital if climate change impacts are to have any chance of avoiding dangerous thresholds (Anderson and Bows 2008; UNEP 2011). Meanwhile, adapting to climate change impacts is imperative as changes are already being experienced and a certain amount of change is locked into the climate system and is therefore inevitable whatever emissions reductions are achieved (Stafford Smith et al. 2011).

There is growing understanding that tackling climate change requires particular attention to knowledge management, reflection and learning (Collins and Ison 2009; Tschakert and Dietrich 2010; Tanner et al. 2012). While these processes may be important to good practice in any sector or issue, they are especially vital for climate change because of the new sources of additional uncertainty and cross-sectoral complexity that it introduces. This complexity is in part due to the ways that climate change impacts natural and social systems and also due to the ways that responses are deeply integrated in other aspects of development, including sectors such as energy, infrastructure, agriculture, security, or water management. Yet climate change is not the first complex cross-sectoral problem; there is much to learn from knowledge of tackling other issues with similar characteristics, such as HIV/Aids, gender, governance, or natural resources management (Elsey et al. 2005; Lidskog and Elander 2009; Nichols et al. 2011).

Taking a reflective and learning-based approach poses significant challenges for many development organisations, which tend to function on the basis of bureaucratic principles of accountability and a cycle of planning, implementation, impact and evaluation with limited space for reflection and adjustment during programme delivery. This is particularly apparent in the Global South where 'our existing methodological toolbox is sparsely equipped to facilitate and sustain such adaptive and anticipatory learning in the face of complex risks and uncertainties; in other words, learning about the future before impacts are apparent' (Tschakert and Dietrich 2010: 1).

There remains a tendency for organisations to treat climate change as a largely technical issue requiring new knowledge for a prescribed set of solutions, many of them technocratic and focused on the short-term (Klein et al. 2007; Fankhauser and Burton 2011). As a result, decision making often relies on a narrow and categorical knowledge to the exclusion of plural and provisional knowledges that may be vital for action on wicked problems such as those presented by climate change and development (Brown et al. 2011). As a consequence of these

knowledge gaps, there is less certainty of achieving pre-determined results than for less complex or wicked problems.

As a relatively new area, there is also limited experience of results from different potential response strategies, particularly given the uncertain timescales over which positive or negative outcomes might be judged. In the context of development cooperation, where aid decisions must be made on the basis of accountability to tax-payers and aid effectiveness principles agreed with partners, dealing with the unknown is daunting. Accepting that we are less sure of whether actions proposed will be effective is therefore crucial, as is the need to consider what we mean by effective in a world where we must define the balance of objectives between poverty reduction, economic growth, adaptation to and mitigation of climate change. Therefore a continuous process of learning, reflection and adjustment is necessary to continue to deliver results in shifting contexts.

This paper draws on the experiences of the Learning Hub on Low Carbon, Climate Resilient Development ('the Learning Hub'). The programme was designed to promote knowledge sharing, learning and reflection between both UK Department for International Development (DFID) staff in country offices and in UK headquarters, and between practitioners and experts in the fields of low carbon and climate resilient development. It combined practitioner networks, knowledge management capacity, reflective learning processes and tailored research to explore opportunities for delivering poverty reduction under changing climatic shocks and stresses and in the context of opportunities for low carbon development pathways. In this way the Hub offered an opportunity to rapidly share learning from the field whilst longer term research explored options.

Supported by an internal web-based knowledge sharing platform, the Hub activities were centred on 4 thematic learning cycles. During these cycles, input papers from external experts were contextualised through sharing of DFID staff experiences and participants collaboratively identified options for tackling emerging challenges. A final interactive learning product combined learning of both problem identification and problem solving, and about the learning process itself (Tanner et al. 2012).

Understanding learning in highly distributed and networked organisations: Bounded pluralism

Initial scoping work for the Hub focused on experiences of learning in Highly Distributed / Networked Organisations (HDNOs). This revealed that what works in the international development sector is significantly different than the predominantly internal and instrumental knowledge management approaches in the business sector from which most of knowledge management theory is derived (Jackson 2010). The review of seventeen learning support initiatives suggested that HDNOs in this operational context typically utilise a small number of overlapping organisational learning methods. We describe this approach as '*bounded pluralism*', signifying the simultaneous existence of a small number of contrasting learning methods and styles. Access to such methods is unrestricted access and the composition of methods is changed over time in response to changes in demand and in the operating

environment for the HDNO. Seven lessons for supporting learning were distilled and are presented in Table 1.

Table 1: Seven Lessons for support learning in Highly Distributed / Networked Organisations

Complexity
• HDNOs operating in the international development context are fundamentally complex entities • But demand for learning support is not equally complex throughout the organisation • A multimodal response with options for people in different circumstances rather than a monolithic or catchall response is needed
Trust and Access
• The geographically distributed and dynamic nature of international development organisations means the links between individuals are loose and vulnerable to external shocks (e.g. sudden re-posting or program changes) • Supporting a greater diversity of participants in learning activities, through opening up communities of practice and other spaces, can help to dilute internal mistrust and bridge gaps • But do not to conflate open learning spaces with the public sphere. Recognise the need to transparently facilitate a range of spaces for learning with managed access (which can change over time)
Learning Journeys
• Successful learning is a journey with neither a clear destination nor a fixed group of travellers • Learning support can face tensions over resources, which can grow over time and with success rather than diminish as participation diversifies and needs evolve • To manage these tensions the learning support response should seek to become more distributed through mainstream knowledge management channels and increase levels of self-reliance by communities of practice over time
Co-Creation and Improvisation
• Learning where content is created and delivered by experts in isolation from practitioners and co-learners does not work for HDNOs. Staff and their partners need to be agents in the co-creation of content • The role of external content experts is no greater or less than that of learners and should focus on helping to frame macro topics drawing on comparative global experience • Applied improvisational approaches which offer simple rules for collaboration and the freedom to co-create knowledge and learning processes are helpful
Time for Learning
• Whilst not a unique feature of HDNOs, the very limited discretionary time available to staff is a major factor restricting learning • However, as time pressures increase and flexible working becomes the norm it can be easier set aside larger blocks of time for learning • Learning support should provide prospective participants with a strong narrative that enables them to justify and defend their investment in learning to peers, managers and family in ways that responds to these stakeholders interests (rather than just repeating the learning outcome which may well make little sense to those outside of the practice area)

Existing Learning Processes

- Even in organisations where formal learning initiatives have not been successful, individual learning will be taking place and informal / guerrilla activities may have been sustained with unexpected levels of innovation and entrepreneurship
- Those working to support organisational learning therefore need to first do no harm (neither competing with or overwhelming what exists)
- Beyond this build very flexible and responsive capacity strengthening windows into larger initiatives so that catalysts of existing learning processes can access support if they wish
- In HDNOs learning initiatives may have been started in different parts of the same organisation around the same time where multiple/parallel drivers for learning can be in play at the same time
- These initiatives are potentially mutually supportive and can offer fault tolerance in the context of complexity

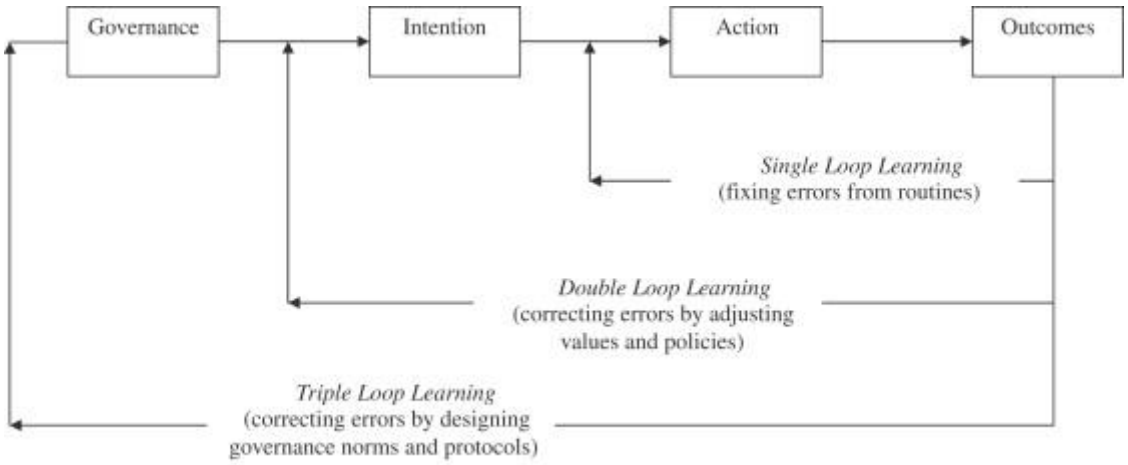
Risks from Learning

- There are risks from supporting learning including: learning in isolation with limited value for wider collaboration or coordination; learning for instrumental reasons with too little reflection or reflexivity on why or who it benefits; and learning that can't be applied again because staff roles change to quickly
- Encourage staff to take responsibility for their learning by including material about the organisational and societal dimensions of learning within interventions
- Promote positive cultures around creativity that embrace innovation through experimentation and learning through false starts

Conscious of the larger degree of uncertainty and complexity of issues and information facing organisations in the climate change and development field (Berkhout et al 2006; Boyd and Osbahr 2010) the design of the Learning Hub drew on the more process and practice orientated literatures in organisational and adult learning associated with David Kolb (1984), Paulo Freire (1973), Peter Senge (1999), and Chris Argyris (1977). In contrast to more theoretical and content focused literatures (Easterby Smith and Lyles 2003) the design sought to respond to the insights that:

- There are patterns behind our individual experiences of informal learning -through practice, reflection and sharing (Kolb's collaborative cycles of learning)- that can be amplified and sustained through support at the organisational level
- Learning is a process and learners are agents who cannot be separated from the world, which both changes and is changed by learning (Freire's critical and social adult literacies). This co-production effect can be harnessed to drive powerful organisational change.
- The creative power of learning shows the transformative potential of whole systems approaches (Senge's organisational learning). Profound changes in values and goals that will be hard to centrally control or predict makes it important for organisations to choose when and how to set in train whole system learning processes.
- Shared experiential learning that is transparent, open to challenge and reflective of personal assumptions can increase the quality and scale of change that organisations can achieve. This draws on concepts of multi-loop learning (see Figure 1), which frame learning single loop as basic problem solving, double loop learning that challenges and alters underlying values and policies, and triple loop learning that corrects errors by redesigning governance norms and protocols (Argyris 1977; Armitage et al. 2008; Harvey et al. 2012).

Figure 1: A multiple-loop learning framework for environmental and resource management (Source: Armitage et al. 2008)



Knowledge sharing practices enabled by widely available public communication and coordination technologies (e.g. Facebook, Skype, mobiles and email) have led to much more self-managed and collaborative learning within organisations, across networks and between peers. In this context the learning and knowledge management challenge for initiatives like the Learning Hub is no longer one for IT and Administration units of storing and sorting data. It is more that of human resource managers and professional development leaders needing to do no harm to autonomous, decentralised and shadow learning activity. Quoting Shaw (1997: 235), Boyd and Osbahr (2010: 631-2) define shadow networks as 'the 'messy' processes of interaction between the 'legitimate' formal and the informal systems, where most organisational development takes place'. Encouraging these diverse micro learning actions to cluster around macro organisational goals becomes the real challenge for learning organisations seeking to support international development in the context of a changing climate.

Learning from the Learning Hub experience

The institutional space and context for learning on climate change

The Learning Hub was conceived in a period where DFID headquarters was focusing on the science of climate change, the negotiations and implications for finance, and when few country offices had significant investments in climate change programmes (late 2009/ early 2010). Despite its profile in White Papers (DFID 2006, 2009), the narrative of climate change was not strong as a cross-cutting development issue and within the organisation there was not a wide appreciation of the scale of change needed for integrating climate change or the depth of understanding. Climate change was still seen as another discipline in a silo dominated by predominantly technical issues and international negotiations.

Previous work had been predominantly 'supply' driven rather than demanded by the organisation or championed by senior management; any internal action was driven by

energetic and engaged individuals who got niche activities going. Despite this some action was happening. In 2009 a new pilot was beginning in six flagship countries to implement Strategic Programme Reviews (SPR) for climate change. The SPR was designed to increase awareness of all staff on the risks and opportunities posed by climate change and to guide country level decisions to meet future challenges by prioritising focus areas for reducing vulnerability to climate change and integrating climate change adaptation and mitigation opportunities into aid portfolios.

But both external and internal conditions were changing fast. There was a new government in 2010 which influenced political priorities early in the programme; wider support and understanding for action on climate change emerged; a growth in Climate and Environment staff generated greater demand for learning. Yet many ideas linked to climate change at the time were contested and this limited the confidence of some. The expectations and the demands on both DFID as a climate change actor and the Learning Hub as an organisational learning mechanism hence changed over time, with the result that the Hub itself needed to continuously learn and reflect in order to keep up with changes in the delivery context.

At the outset the Learning Hub was designed to build on the energy of those at the forefront of action on climate change in different contexts. It was designed to facilitate knowledge exchange and provide space for reflective learning between those who were already engaged in learning-by-doing processes. The Learning Hub vision was to join up those already active in ways that fostered shared learning and 'problem-solving' approaches; to bridge the gap between external expertise and practitioner knowledge; and to capture and distil this learning for wider institutional dissemination across DFID (Tanner et al. 2012).

Learning Hub Methods

During the scoping phase, the Hub sought to map the existing learning mechanisms in DFID, formal and informal, as well as preferences for learning methods and forms of content communication. Unsurprisingly, a broad range of preferences were revealed creating a tension in demand that underscored the theoretical need to adopt a bounded pluralism and multimodal approach. Within this a clear mandate emerged for the Learning Hub to facilitate face to face knowledge exchanges and 'applied' learning processes.

The Learning Hub understood communities and networks as combined aspects of learning rather than separate as structures and sought to balance the two. Wenger et al. (2011: 9) define a community as:

> '...a learning partnership among people who find it useful to learn from and with each other about a particular domain. They use each other's experience of practice as a learning resource. And they join forces in making sense of and addressing challenges they face individually or collectively'

They contrast this with a network which represents the connections – not specifically technological – between people which are utilised as a '... resource in order to quickly solve problems, share knowledge, and make further connections' (Ibid: 9).

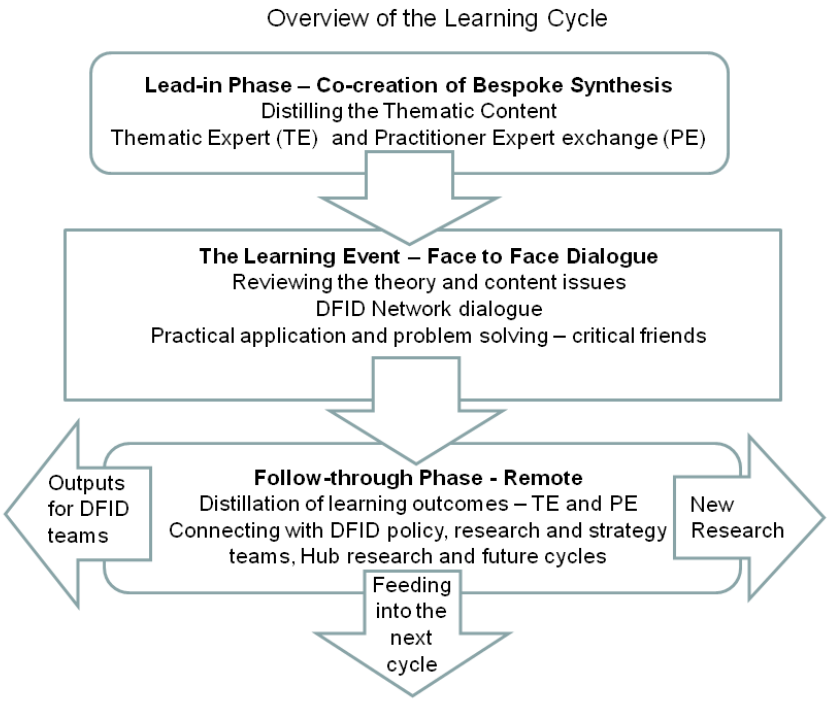
The Hub recognised that it was important to catalyse a wider network of practitioners rather than just focus on the communities involved in the face to face learning processes. An on-line space was designed to catalyse this network of people to enable resource sharing and '...act as

an intermediary between the learning needs coming from DFID staff and the experience offered by the network' (Jackson 2010: 14). This site contained a latest research space summarising key readings, a forum space for posting 'peer support' problems which others in the network could answer, and space for feeding into the four thematic learning cycle processes.

In creating this web-space, the Learning Hub drew existing activities into a closed, safe space that was accessible to a broader audience within the organisation and to snowball the impact and sharing element of informal practices. In doing so, it attempted to cluster pre-existing shadow networks and micro learning actions to around macro organisational goals. In addition, the on-line mechanism created space for real time access to advice and support between peers. Support staff from the Institute of Development Studies (IDS) proactively documented and shared individual 'experience notes' as text and audio-visual, and shared video highlights of critical dialogue and individual reflections from the learning events.

At the heart of the Learning Hub was the face to face learning community. Each themed learning cycle was built around a central learning event that aimed to socialise the knowledge exchange and learning process through creating a safe and trusted space for practitioners to come together from across country offices with policy staff from headquarters and external content experts (see Figure 2).

Figure 2: Overview of the Learning Hub Learning Cycle



Each learning cycle began with a dialogue between the IDS facilitation team and key DFID staff to identify the critical questions and challenges within a particular theme. This was linked to emerging issues and learning from previous cycles and fed into a bespoke synthesis of thematic knowledge developed by the external (or non-DFID) content experts. Each event then started from a common basis of the framing paper and followed a process that was adapted over the cycles in response to feedback and demand.

> *'The learning process was dynamic, and participatory, with a combination of one-way transmission of theory, combined problem-solving, and dialogue'.*
> Participant feedback, Learning Hub evaluation

Two core components remained central to each learning event:

- The engagement of the content experts in the facilitation of learning who played the role of 'critical friend' by contributing '... latest analytical findings and theories and ... [helping to] counteract the path dependency that can arise when practitioners become ever more specialised in their particular domains' (Jackson 2010: 15);
- The explicit use of collaborative and improvisational learning approaches. In particular the learning Hub drew from methods of co-design (IDEO 2009; Brown 2009).

Such co-design is an approach to problem solving that promotes new choices (rather than leaping to familiar answers), supports free thinking (rather than thinking in silos) and ultimately aims to help communicate prototype solutions to get feedback for rapid innovation (i.e. learn fast, fail safely). Co-design is hands on and collaborative, encourages creativity and the integration of knowledge from diverse experience. It was found to be particularly useful for problem solving for issues in the context of climate change and development because it is a neutral method by sector or discipline when problems typically need inputs from divergent sectors and evidence bases.

One of the softer outcomes of using co-design was its playful use of physical modelling, visual diagrams and peer feedback. This built trust and confidence between diverse participants who typically brought many doubts and questions about how to move forward together on the complex and emergent challenges spanning science and policy at the heart of climate change and development. Such approaches reflect the core tenets of social learning (Collins and Ison 2009; Nilsson and Swartling 2009; Harvey et al. 2012).

> *'the creative and artistic approach helped to remove job pressure and parameters, leading to blue sky thinking'* Participant feedback, Learning Hub evaluation

The creativity at the heart of co-design led to learning behaviours of a more improvisational character. Three types of improvisational 'productions' suggested by Miner *et al.* (2001) were all seen in the Learning Hub - new behaviours (e.g. improvised processes), physical structures (e.g. mock ups or temporary fixes) and new interpretive frameworks (e.g. reframing of current relationships or past actions). By repeating, looping and amplifying these co-design processes through four learning cycles over two years the learning hub came close to achieving the kind of improvisation defined by Miner *et al.* (Ibid: 314) as 'the deliberate and substantive fusion

of the design and execution of a novel production'. Intentional improvisation is not about rushing from the design stage to implementation, but as Miner suggests involves blending approaches used in each stage within an iterative and less linear process.

> '*it was not uncommon for people to report excitement and new zest for learning and reflection because of things they had learned or shared during the learning events'.* Participant feedback, Learning Hub evaluation

Responsive and flexible approaches to learning

The Learning Hub was a mechanism that necessarily evolved over the two year programme. This was a response both to the changing internal context for climate change action in the UK government, but also to the change in awareness of both the necessity of engaging with climate change in development and as a result of interest generated by the Learning Hub process. As a result and especially towards the later cycles, mixed groups of people with different backgrounds, interests and agendas participated in the learning events and began to engage with the network.

This had two key consequences for the Hub as a vehicle or conduit to enable staff to embark on climate change learning journeys. The first reflects issues of 'trust and access'. The question of whether, when and how far to open-up the network, became a dominant debate amongst the Learning Hub leadership. Early supporters and participants had previous experience of working on livelihoods and environment issues in DFID, working with IDS and engaging in reflective learning; they trusted the process and the facilitating institution and had a common understanding of internal processes. Staff working on climate change policy grew to include many either new to DFID, such as staff from the Department for Energy and Climate Change (DECC), the Department for Environment, Food and Rural Affairs (DEFRA), the Foreign and Commonwealth Office (FCO), the private sector, academia and non-governmental organisations (NGOs) or from beyond the more established livelihoods and environment advisers network. The newcomers found it more difficult to readily embrace the Learning Hub and IDS, and they were harder to reach. Often they had their own networks (formal and informal) that were new to DFID and their experiences of policy making and working in country were different. Cross-UK government working on climate change, in part as a response to the introduction of the International Climate Fund (a joint DFID, DECC, DEFRA programme), bought in new people, new ideas and new challenges. This generated new opportunities for learning and engaging beyond the traditional DFID Cadre and generated a demand to open up the network to wider engagement with other actors increasingly seen as relevant to work on climate change.

The second consequence was the change in demand as '... early learners become experienced and hungry to push and test the boundaries of knowledge in their area of expertise, the ranks of new and inexperienced learners continued to grow anchoring demand at the novice level' (Jackson 2010). The demand for instrumental learning on climate change to meet short-term needs of staff new in post began to dominate whilst the early engagers inevitably increased their expectations. The Learning Hub was a niche process designed to support learning at the cutting edge, but the lack of other institutional learning mechanisms for climate change made it the default source of knowledge and learning across DFID.

In parallel with the Learning Hub process, DFID became more strategic and more organised around recognising climate change as a cross-cutting development issue. Towards the end of the programme, more senior staff became aware of the need for supporting knowledge and learning and the Hub began to get broader traction internally at higher levels of management, although increasing internal pressures in other operational areas continued to squeeze staff time for learning. This senior traction seemed to suggest potential for a shift from double to triple loop learning that not only challenged values and policies but also altered the behavioural norms and governance contexts in which climate change is tackled in development organisations (Armitage et al. 2008; Harvey et al. 2012).

Whilst there was growing senior management level interest, the Hub became most relevant to those in country offices tasked with delivering the Strategic Programme Review (SPR) process. With the pilots completed in the first year of the Hub, SPRs became part of the business plan which required every country office to complete one by 2013. Whilst this could be interpreted as an instrumental problem-solving concern ('single loop learning'), feedback suggested that the Learning Hub mechanism also provided a space for knowledge exchange and for building individual networks through the learning community. The wider sharing of knowledge as an output of the learning process and through the network provided country office staff with a safe space to get support and enhance their own learning.

A key by-product from the Hub has been to stimulate work to secure senior management support and to deepen the understanding of senior management teams. Other initiatives have been designed to broaden ownership and action around climate change response, some emerged and linked to the Learning Hub process, others have evolved since. These include:

- Requirement to conduct Strategic Programme Reviews in all DFID country offices, and all business units at headquarters
- Establishment of a dedicated 'climate smart team' to help shape and link organisational initiatives
- A voluntary Senior Champions network
- Continuing wider engagement of non-climate advisers in networks
- The development of 'Future Fit' initiative led by the DFID management board and designed to help construct a compelling vision for DFID on climate change and resource scarcity. Future Fit links senior managers with progressive private sector organisations to share learning on risk, opportunity, organisational capability and setting goals and strategy. This in turn aims to generate the institutional space to support and stimulate grassroots learning across the organisation.

Conclusions: Learning to learn on climate change and development?

The empirical example outlined in this paper reinforces the importance of social learning approaches to tackling climate change, especially in highly dispersed and networked organisations. Although the original approach, targeting those at the forefront of the climate change and development nexus, underestimated the scale of the task, the Learning Hub demonstrated many principles which should be expanded on, particularly the bounded

pluralism and mixed methods approach that included face to face meetings supported by on line material and discussion, time to explore and supportive facilitation. The Hub approaches reveals the value of learning networks and learning communities when the issues involved are complex, innovation and collaboration are needed across disciplines, and there is frustration with conventional approaches and a sense of urgency to catalyze change.

> '*Face-to-face learning had been a great experience for us all on a professional and personal basis'*. Participant feedback, Learning Hub evaluation

To some extent, organic evolution and adaptation of the learning approach was only natural given the dynamic nature of networks and the difficulty of predetermining their trajectory and outcomes. Such evolution can frustrate attempts to meet all the learning demands of the network's actors as it expands and changes. The Learning Hub programme demonstrated the importance of energetic and engaged individuals who are willing and able to mobilise and motivate others to expand the network. Such learning leaders are crucial in the context of growing pressure on workloads through a rising budget and enhanced bureaucratic procedures to analyse impacts of aid spending. As Pearson (2010: 118) notes: 'Even the most dedicated practitioners convinced of the importance of learning find it difficult to make space for learning practices in the face of routine organisational business'.

Fostering the organisational culture and leadership that recognises the need for reflective learning and practice will be vital to the climate change and development challenge. Doing so will require institutional space and time for learning, and a set of complementary, multi-modal learning mechanisms that cope with different ways of learning and people's different learning journeys. The level of external facilitation by learning and climate experts provided by the Hub programme provided a launch-pad for further developing the internal mechanisms. One key challenge is whether the momentum and structures for collaborative learning can be maintained without this external catalyst. The experience presented here demonstrated that, while grassroots learning leaders are important, such mechanisms require senior leadership and strategic thinking. The absence of these mechanisms at the onset of the Learning Hub left it somewhat detached from broader organisational learning processes and unable to anchor itself to a coherent strategic response to climate change, which limited the scope of the programme.

Nevertheless, three critical approaches that were particularly well regarded in the evaluation of the programme are being carried forward by DFID into new initiatives:

- Clarity of language, simplicity of message within a complex field is essential
- Starting where various stakeholders are themselves and building on this with the help of experts
- Use of conversational and improvisational workshop techniques which allow people to explore what climate change means in their own context

> *'We have a new model of professional development based on the HUB programme, it is up to us to build on its successes and take action for further improvement*'.
> Participant feedback, Learning Hub evaluation.

About the authors

Tom Tanner is a Research Fellow at the Institute of Development Studies (IDS), where he specialises in building resilience to climate change through integrating adaptation into development policy and practice.
Email: t.tanner@ids.ac.uk

Carl Jackson is an Independent knowledge sharing, learning and change practitioner with extensive experience of learning in climate change, livelihoods and development contexts.
Email: carl.jackson@wkg.uk.net

Fran Seballos is a Research Officer at the Institute of Development Studies (IDS) specialising in community development and natural resource/environmental management, climate change and disasters, and learning and partnerships.
Email: f.seballos@ids.ac.uk

Jane Clark is a Senior Climate Change and Livelihoods Adviser at the Department for International Development, presently working on developing a programme of work which ensures DFID and DFID Aid is 'Climate Smart'. She writes here in a personal capacity.
Email: j-clark@dfid.gov.uk

References

Anderson, K. and Bows, A. (2008) 'Reframing the climate change challenge in light of post-2000 emission trends', *Phil. Trans. R. Soc. A*, 366: 3863–3882.

Argyris, C, (1977) 'Double Loop Learning in Organisations' *Harvard Business Review, September-October: 115-25.*

Armitage, D., Marschke, M. & Plummer, R., 2008. Adaptive co-management and the paradox of learning. *Global Environmental Change*, 18(1): 86–98.

Berkhout, F., Hertin, J. and Gan, D.G. (2006) 'Learning to Adapt: Organisational Adaptation to Climate Change Impacts', *Climatic Change*, 78: 135–156.

Boyd, E. and Osbahr, H. (2010) 'Responses to climate change: exploring organisational learning across internationally networked organisations for development', *Environmental Education Research,* 16(5-6): 629-643.

Brown, T. (2009) *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*, New York: Harper Business.

Brown, V.A., John A. Harris, J.A. and Russell, J.Y. (eds.) (2011) *Tackling Wicked Problems through the Transdisciplinary Imagination*, London: Earthscan.

Collins, K. and Ison, R. (2009) 'Jumping off Arnstein's ladder: Social learning as a new policy paradigm for climate change adaptation, *Environmental Policy and Governance*, 19(6): 358–373.

DFID (2006) *Eliminating World Poverty: making governance work for the poor*. White Paper on International Development. UK Department for International Development, HMSO: London.

DFID (2009) Eliminating World Poverty: Building Our Common Future. White Paper on International Development. UK Department for International Development. HMSO: London.

Easterby Smith, M. and M. Lyles (eds) (2003) *The Blackwell Handbook of Organizational Learning and Knowledge Management*. Oxford: Blackwell Publishing.

Elsey, H., Tolhurst, R. and Theobald, S. (2005) 'Mainstreaming HIV/AIDS in development sectors: have we learnt the lessons from gender mainstreaming?' *AIDS Care,* 17(8): 988-998

Freire, P. (1973) *Education for Critical Consciousness,* Cambridge, MA: Center for the Study of Development and Social Change.

Harvey, B., Ensor, J., Carlile, L., Garside, B., Patterson, Z. and Naess, L.O. (2012) *Climate change communication and social learning–Review and strategy development for CCAFS.* CCAFS Working Paper No. 2, Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

IDEO (2011) Human Centred Design Toolkit. New York: IDEO. Downloaded on 3 May 2013 from: www.ideo.com/work/human-centered-design-toolkit/

Jackson, C. (2010), Learning in highly distributed organisations, Westhill Knowledge Group Downloaded on 3 May 2013 from: www.wkg.uk.net/Shared_Resources/Learning_Highly_Distributed_Organisations_4Jan11.pdf

Fankhauser, S. and Burton, I. (2011) 'Spending adaptation money wisely', *Climate Policy,* 11: 1037–1049.

Klein, R.T.J, Eriksen,S.E.H., Næss,L.O., Hammill, A., Tanner T.M., Robledo, C. and O'Brien, K.L (2007) *Portfolio screening to support the mainstreaming of adaptation to climate change into development assistance*. Climatic Change, 84:1 p23-44.

Kolb, D. (1984) *Experiential Learning: Experience as the source of learning and development*, Englewood Cliffs, NJ: Prentice-Hall.

Lidskog, R. and Elander, I. (2009) 'Addressing climate change democratically. Multi-level governance, transnational networks and governmental structures', *Sustainable Development,* 18(1) pp32–41

Nichols, J.D., M.D. Koneff, P.J. Heglund, M.G. Knutson, M.E. Seamans, J.E. Lyons, J.M. Morton, M.T. Jones, G.S. Boomer, and Williams, B.K. (2011) 'Climate change, uncertainty, and natural resource management' *The Journal of Wildlife Management,* 75(1): pp 6–18.

Nilsson, A.E. and Swartling, A.G. (2009) *Social Learning about Climate Adaptation: Global and Local Perspectives.* Stockholm Environment Institute Working Paper. Stockholm: SEI.

Miner, A.S., Bassoff, P. and Moorman, C. (2001) Organizational Improvisation and Learning: A field Study, *Administrative Science Quarterly,* 46(2): 304-337.

Pahl-Wostl, C., Tabara, C., Bouwen, D., Craps, R., Dewulf, M., Mostert, A., Ridder, D., Taillieu, T. (2008) 'The importance of social learning and culture for sustainable water management', *Ecological Economics* 64.3: 484–495.

Pearson, J. (2010) 'Pushing at a half-open door', *IDS Bulletin*, 41(3): 118–127.

Ranger, N. and Garbett-Shiels, S-L. (2011) *How can decision-makers in developing countries incorporate uncertainty about future climate risks into existing planning and policymaking processes?* Policy paper in collaboration with the World Resources Report. London: Grantham Research Institute on Climate Change and the Environment.

Senge, P. (1999) *The Dance of Change: The challenges of sustaining momentum in learning organizations*, New York: Doubleday.

Stafford Smith, M., Horrocks, L., Harvey, A. and Hamilton, C. (2011) 'Rethinking adaptation for a 4°C world', *Phil. Trans. R. Soc. A*, 369: 196-216.

Tanner, T., Lockwood, M. and Seballos, F. (2012) *Learning to Tackle Climate Change*. Institute of Development Studies, Brighton.

Tschakert, P., and K. A. Dietrich. 2010. Anticipatory learning for climate change adaptation and resilience. *Ecology and Society* 15(2): 11.

UNDP (2007) *Human Development Report 2007/2008 Fighting Climate Change: Human Solidarity in a Divided World*, New York: United Nations Development Programme

UNEP 2011. *Bridging the Emissions Gap*. New York: United Nations Environment Programme (UNEP).

Wenger, E., Trayner, B. and de Laat, M. (2011) *Promoting and assessing value creation in communities and networks: a conceptual framework.* Heerlen, Netherlands: Ruud de Moor Centrum, Open Universiteit.

World Bank (2010) *World Development Report 2010: Development and Climate Change*. Washington, D.C.: World Bank.