

Second Nordic International Conference on Climate Change Adaptation – Adaptation research meets adaptation decision making, Helsinki, Finland 29-31 August 2012

Dealing with ambiguity in climate change adaptation - Conceptual framework for transformative leadership in IWRM

Hans Jørgen Henriksen, Jens Christian Refsgaard, Torben Sonnenborg
and Peter van der Keur, GEUS. Elena Lopez Gunn, UCM and Marcela
Brugnach, University of Twente

Content

- Definition of the term ambiguity
- Conceptual framework for transformative leadership for dealing with ambiguity in IWRM
- Reflections about leadership in two Danish case studies
 - National WFD in Denmark – *Regular planning cycle (macro system)*
 - Horsens case - *Learning cycle for climate change adaptation (micro system)*
- Discussion and perspectives
 - IPCC SREX report and leadership literature

Definition of ambiguity

- Ambiguity refer to a distinct type of uncertainty that emerges from the simultaneous presence of valid and, sometimes conflicting ways, of framing a problem (Brugnach and Ingram, 2012).
- Under the presence of ambiguity it is not clear what the problems or solutions are.
- Therefore, leadership is required in order to organize the learning process, and as an important social capital or adaptive capacity for supporting transformative change

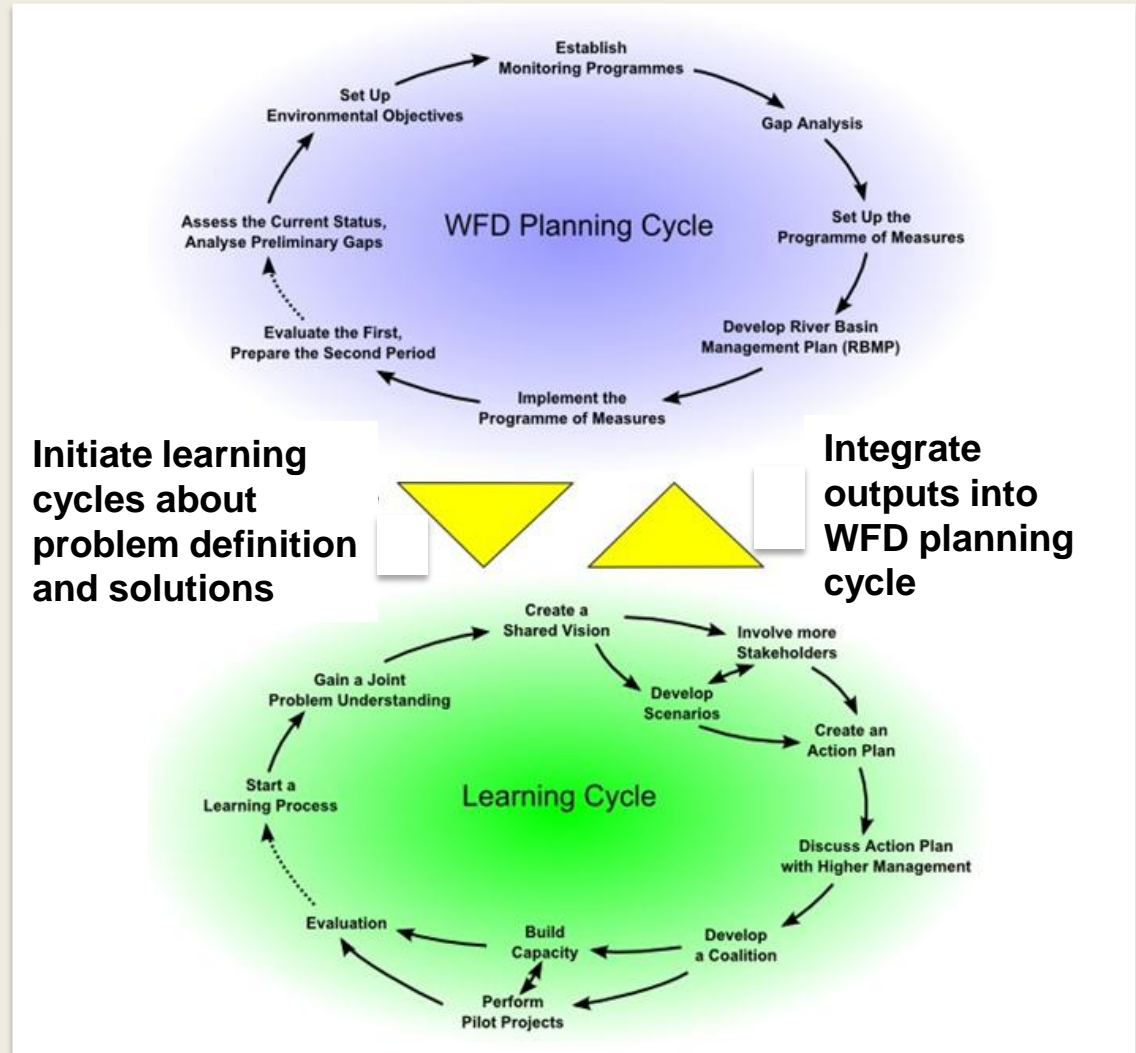
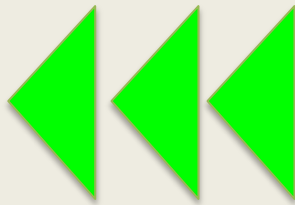
Four different levels of challenges (> required leadership modes)

Table Source: Wilkinson, 2006; Heifetz et al. 2009

Kind of challenge (Required leadership mode)	Problem definition	Solution	Locus of work (who decides)
Technical <i>(mode I technical)</i>	Clear	Clear	Water managers
Cooperative <i>(mode II cooperative)</i>	Clear	Requires learning	Water managers and stakeholders
Collaborative <i>(mode III collaborative)</i>	Requires learning	Requires learning	Leaders and Stakeholders
Transformative/ <i>(mode IV transformative)</i>	Requires learning and scenario development	Requires learning and innovation. Ambiguity explored for opportunities	Leaders, experts and stakeholders

Conceptual framework: adaptive IWRM and transformative leadership for dealing with ambiguity

Adaptive strategies



Case 1 WFD planning cycle in Denmark

Issue	Learning Level	Strategy for dealing with ambiguity	Leadership mode
<p>Environmental goals setting in WFD</p> <p>Mainly <i>nitrate and phosphorous</i> reduction goals.</p> <p>Climate change effects not dealt with -> second WFD round</p>	<p>No learning cycles from 2008 to 2011</p> <p><i>Closed process</i> at government level</p>	<p><i>Negotiation or ignored.</i></p> <p>Uncertainty on reduction goals handled by <i>inverse precautionary principle.</i></p>	<p>Cooperative leadership at government level.</p> <p>Technical leadership at state level.</p> <p>No role for municipalities.</p>
<p>Selection of catalogue of measures</p>	<p><i>Closed process</i></p> <p>Single loop learning.</p>	<p><i>Uncertainty</i> ignored.</p> <p>Few additional measures have been added to catalogue of measures after public hearing.</p>	<p>Cooperative leadership at government level.</p> <p>Technical leadership at state level.</p> <p>Municipalities has no role in catalogue of measures, but role in selection of concrete measures.</p>

Case 2 Horsens – climate change effects on groundwater (CLIWAT)

CLIWAT Interreg IV project.

- Effects of climate change on the quantity and quality of groundwater (2008-2012)
- Sixteen partners from Germany, The Netherlands, Belgium and Denmark with National and Transnational boards

Experiences: This is important:

- Ensuring **sufficient resources**
- **Realistic expectations**
- **Leadership sufficiently strong to guide and maintain control** of the process
- **Avoiding information overload**
- **Securing representation** from a range of sectors and at more than one governance level



Horsens
municipality
Climate change
adaptation plan
2012-2032

Where ambiguity comes into IWRM

%'s refer to van der Keur et al. (2008) subjectively evaluated by authors (multiple knowledge frame uncertainties in the WFD implementation for the Rhine % out of total uncertainty)

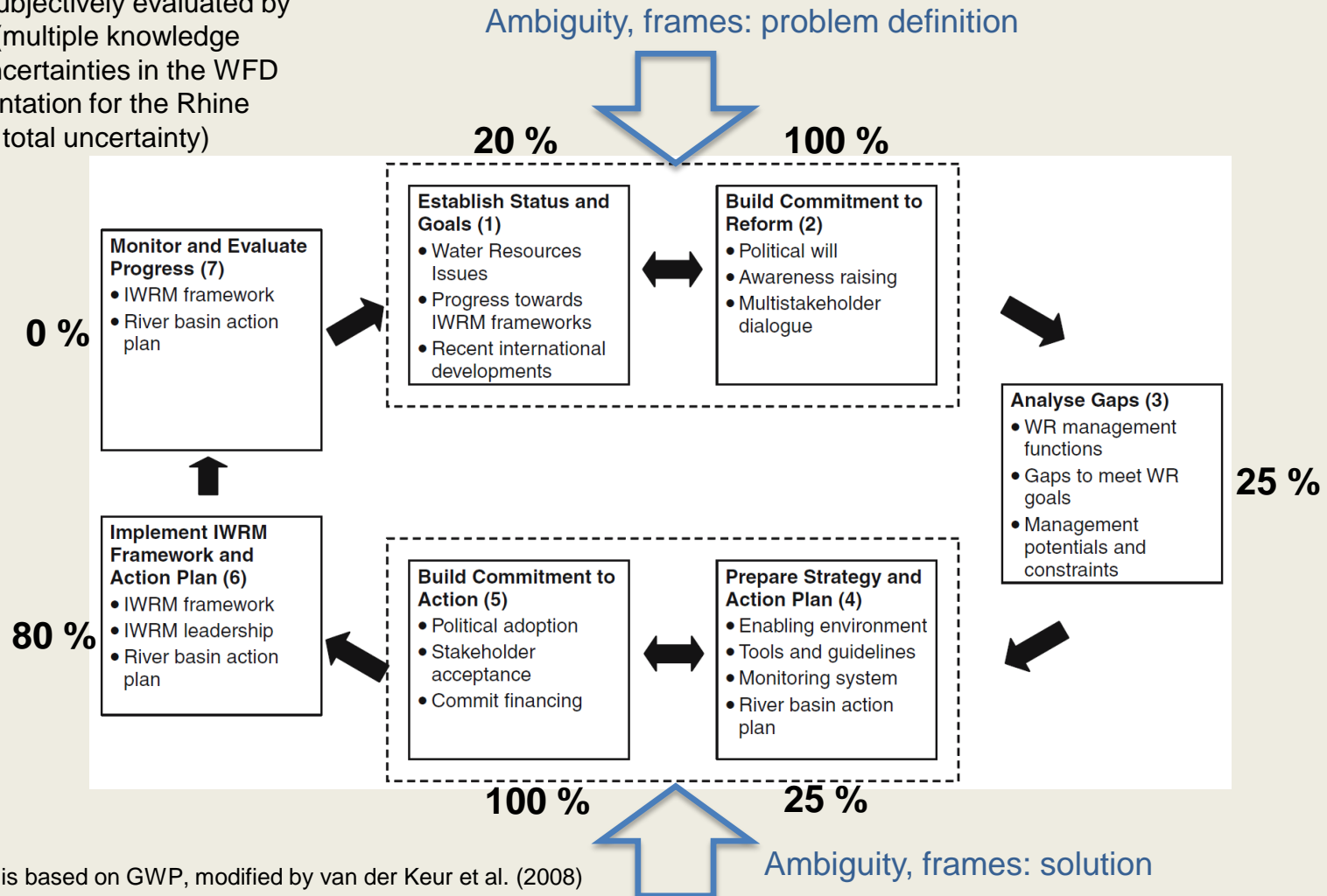


Figure is based on GWP, modified by van der Keur et al. (2008)

Discussion

IPCC SREX REPORT (2012)

- Leadership can be critical, particularly in **initiating processes and sustaining** them over time.
- Leadership can be a driver of change, providing direction and motivating other to follow. **Identifying the drivers of hazard and vulnerability in ways that empower all stakeholders is key** (done best where local and scientific knowledge is combined in the generation of risk maps or risk management plans).
- **Need for better co-ordination and accountability within governance hierarchies and across sectors**

LEADERSHIP THEORY (Visholm, 2011)

- Shift from role to person oriented leadership, with active involvement of actors ideas, engagement and meaning:
 - Means actually, that **there is a need for more leadership** and not less than before
 - **It is not more control that is needed**, instead there is a need for containment (open about feelings, fantasies, doubt, lack of knowledge, uncertainties etc.)
 - **Welcome** actors knowledge, ideas, creativity without being overwhelmed, is also important for transformative leaders
 - Important to **avoid groupthink**, provide room for "reality checks"
 - **Respect differences** in focus, knowledge, frames and understanding (switch between differentiation and integration)

Conclusions

- **Water governance (WFD implementation) is an inherently political and messy process.** Dealing with climate change adaptation bring complexity and a need for leadership directed toward the future.
- **IWRM leadership** is about how decision makers, institutions and stakeholders are able to adapt to new conditions. We need to better cope with uncertainty and ambiguity both in the WFD planning cycle and in learning cycles.
- **Considering ambiguity** as a different nature of uncertainty is needed. Here transformative leadership mode can stimulate planning and learning processes in more creative and out-of-the-box oriented direction