

Note: This is Online Appendix 1 of McLoughlin, C.A., Riddell, E.S., Petersen, R.M. & Venter, J., 2021, 'Adaptive and transformative learning in environmental water management: Implementing the Crocodile River's Ecological Reserve in Kruger National Park, South Africa', *Koedoe* 63(1), a1663. <https://doi.org/10.4102/koedoe.v63i1.1663>

Appendix 1

Precondition criteria for social learning (Mostert et al. 2007):

1. Stakeholders have a purpose and know why they became involved in this forum.
2. There exists adequate legal authority within the forum, and arrangements for stakeholder interaction with the type, number and quality of the meetings held appropriate.
3. There has been adequate inclusivity of stakeholders in the process, with representation from required sectors, and the number of stakeholders at meetings has allowed for valuable group discussions.
4. The facilitation of the forum is neutral – that is without bias, there is trust and differences of opinion are allowed to be overcome.
5. There are ongoing feedbacks occurring, with joint planning and a concrete plan, and ground rules have been set up.
6. There is ownership within the stakeholder group, because different perspectives and problem perceptions are allowed with good communication strategies in place.
7. There are demands (e.g., time and money) made on stakeholders to participate in the forum, however stakeholders can say how they want to be involved, and remain highly committed, even without direct support (e.g., money).

Community-of-practice criteria (Pahl-Wostl et al. 2008; Iaquinto et al. 2011):

1. Stakeholders have been brought together in a purposeful manner, with shared roles and practices amongst themselves.
2. There is mutual engagement between the various stakeholders, and this is ongoing.
3. Stakeholders want to evaluate, reflect and learn – by establishment of a shared set of resources, such as lessons learned, rules of thumb, vocabulary, and/or standards, and are accumulating their own types of knowledge. There is also accountability to the processes.
4. Stakeholders in this forum have a distinct identity that is different from the individuals that make up the group.
5. Stakeholders are generally aware of their limitations in this forum, and are always willing to improve what they are doing.
6. Stakeholders accept the coordinator/facilitator and this person is well networked throughout the system.
7. There has been a high level of management support acquired by the forum.
8. There is good communication between different stakeholders and sectors, using social networks that were already in place, and stakeholders accept one another, and would do so for any new members joining the forum.

Key capacity criteria for social learning (Pahl-Wostl and Hare 2004; Pahl-Wostl et al. 2007; Cundill et al. 2011):

1. Stakeholders are aware of their differences in perspectives associated with setting tasks within this forum.
2. Problems are identified together in this forum, with collective means to overcome these.
3. Stakeholders know that they are interdependent in the tasks that they perform as part of this forum.
4. Stakeholders in the forum are learning how to work together, in order to tackle problems that arise.
5. Stakeholders have a good understanding of the high level of uncertainty inherent in the management of the river system, and complexity within the system being managed.
6. The decision-making process in this forum is open and fair, and stakeholders recognise each other's way of thinking within this.
7. Interactions between stakeholders of this forum are mostly informal.
8. Within this forum, there is good communication by all involved, and all stakeholders are informed about what is happening with the environmental flow process, and everyone's views/opinions are listened to.
9. Stakeholders are engaged in collective decision making, e.g., development of new management strategies, introduction of formal/informal rules, associated with learning about implementing environmental flow management processes.
10. Stakeholders in the forum jointly identify/agree on problems and objectives associated with management of the system.
11. Stakeholders are willing to exchange ideas, and are open to new ways of doing things, because Ecological Reserve implementation is a learning process.
12. There is value in sharing information between stakeholders within the forum, and there is respect for each other and a willingness to listen to one another's point of view.

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