Translating research into action with ‘pyramid of knowledge’

Outputs of conservation planning research are likely to be translated into action more quickly and successfully if a transdisciplinary approach is adopted, according to a recent study. The researchers have applied a transdisciplinary framework ‘pyramid of knowledge” to aid in understanding the process of converting research into action, which may also be applicable to other academic disciplines.

Increasingly, many researchers face the challenge of ensuring their work is effectively implemented, to improve the state of the environment. But in modern societies knowledge and responsibilities are segregated between researchers, environmental managers, decision makers and stakeholders in different sectors.

In this study, a group of South African conservation planners identified steps that can be taken to ensure their research is integrated into actions and values at all levels of society. Conservation planners systematically identify spatial priority areas for conservation actions. The researchers suggest the transition to a transdisciplinary approach to conservation planning can be accomplished within a framework which recognises that knowledge is organised within a pyramid of four hierarchical layers. In this transdisciplinary framework, collaboration, connections and communication occur across and between all levels in a process of mutual learning.

The bottom empirical layer of the pyramid is composed of knowledge within empirical disciplines – the life sciences, Earth sciences, engineering sciences and social sciences. Scientists working within each of these areas tend to speak a common language and share similar views. This layer describes what exists. In moving towards a transdisciplinary approach to conservation planning, greater integration of social, economic and institutional disciplines into conservation assessments is needed at this level.

The second pragmatic layer is composed of the different sectors associated with environmental management, including: water, agriculture, forestry, minerals, tourism, industrial, urban and conservation sectors. This knowledge level describes what is possible. Strong interaction between this level and the empirical disciplines is recommended to ensure that research conducted at the empirical level is useful to managers.

The third normative layer deals with land use planning and the associated land use laws and policies. This level describes what is desired and would require that land-use planning is informed by the underlying pragmatic sectors while in turn directing how the sectors conduct their work to make it useful in the land-use planning process.

At the top purposive level of the knowledge pyramid are the values held by society which influence whether policies are implemented and laws are passed. This level describes what should be done. At this level competing priorities and values are often difficult to reconcile, for example, using land for economic growth or as conservation areas to protect biodiversity. If conservation is to become more relevant to society, it is particularly important to include national values in conservation research and projects.

One conservation programme in South Africa that has been successful in working across sectors and incorporating social values is the Working for Water initiative. Under this scheme to clear water-use intensive alien trees from the landscape, jobs have been created and training has been given to the unemployed, meeting priority socioeconomic objectives, in addition to restoring ecosystems, biodiversity and water supplies.


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