Conservation Target Setting

SVANCARA, L. et al (2005) **Policy-driven versus Evidence- based Conservation: A Review of Political Targets and Biological Needs**. BioScience, 2005 vol. 55 (11) pp. 989-995

"How much is enough?" is a question that conservationists, scientists, and policymakers have struggled with for years in conservation planning. To answer this question, and to ensure the long-term protection of biodiversity, many have sought to establish quantitative targets or goals based on the percentage of area in a country or region that is conserved. In recent years, policy-driven targets have frequently been faulted for their lack of biological foundation. In this manuscript, **we reviewed 159 articles reporting or proposing 222 conservation targets and assessed differences between policy-driven and evidence-based approaches**. Our findings suggest that the average percentages of **area recommended for evidence-based targets were nearly three times as high as those recommended in policy-driven approaches**. Implementing a minimalist, policy-driven approach to conservation could result in unanticipated decreases in species numbers and increases in the number of endangered species.

Conservation Target Setting

Desmet P. and R Cowling (2004) **Using the species–area relationship to set baseline targets for conservation**. Ecology and Society, 2004 vol. 9 (2) p. art11http://www.ecologyandsociety.org/vol9/iss2/art11/print.pdf

This paper demonstrates how the power form of the Species–Area Relationship (SAR) can be used to set conservation targets for land classes using biodiversity survey data. The log-transformation of the power model is a straight line; therefore, if one knows the average number of species recorded per survey site and can estimate the true species number present in the land class, using EstimateS software, it is possible to calculate the slope of the curve, or z-value. The z-value is the exponent in the power model and it can then be used to estimate the proportion of area required to represent a given proportion of species present in any land class. This application of the SAR is explored using phytosociological relevé data from South Africa's Succulent Karoo biome. We also provide suggestions for extrapolating the estimated z-values to other land classes within a bioregion that lack sufficient survey data, using the relationship between z-values and remotely determined landscape variables such as habitat diversity (topographic diversity) and geographic location (latitude and longitude). **The SAR predicts that for most Succulent Karoo vegetation types a conservation target of 10% of the land area would not be sufficient to conserve the majority of species.** We also demonstrate that not all land classes are equal from a plant biodiversity perspective, so **applying one target to all land classes in a region will lead to significant gaps and inefficiencies** in any reserve network based on this universal target.

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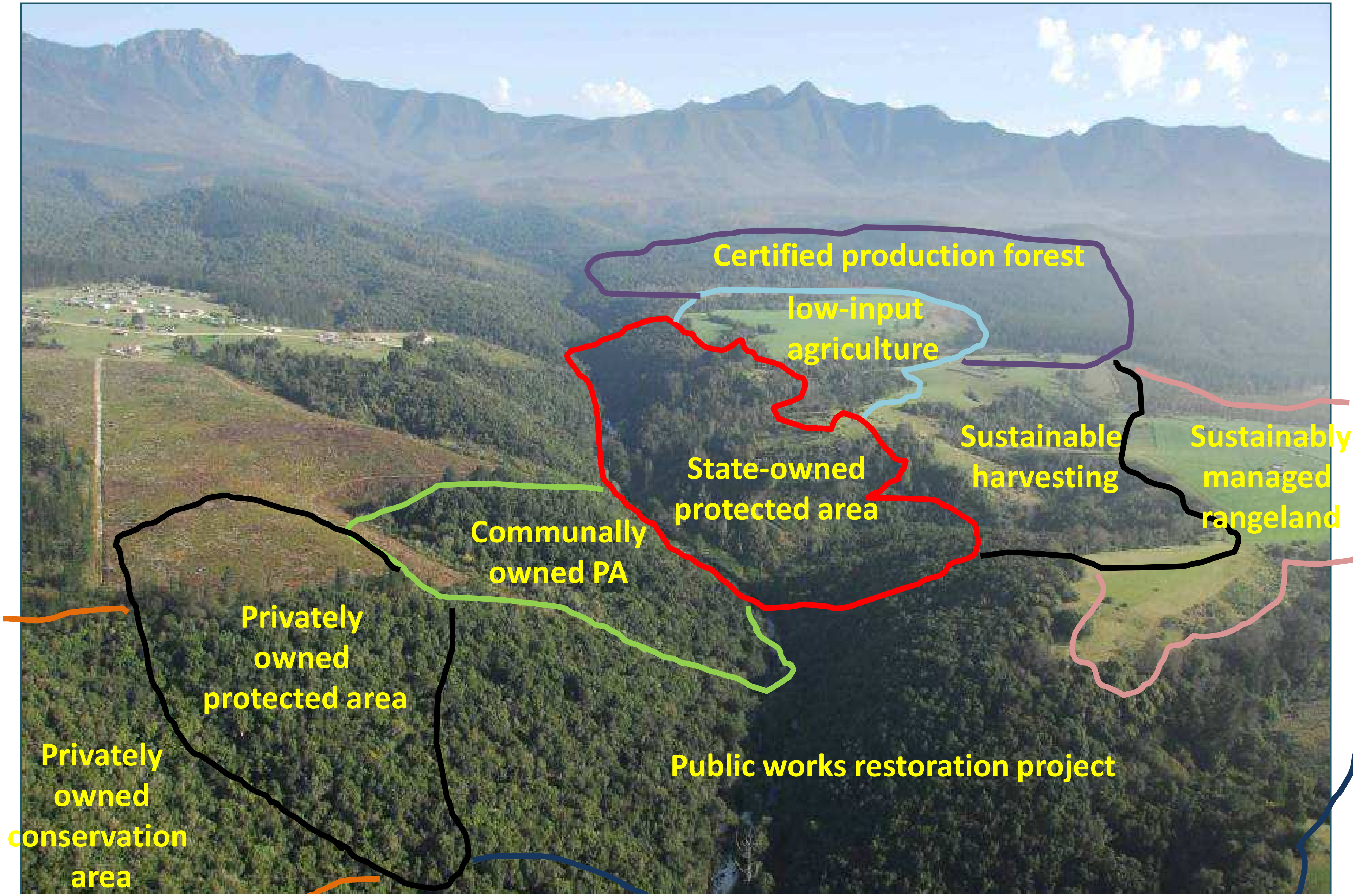
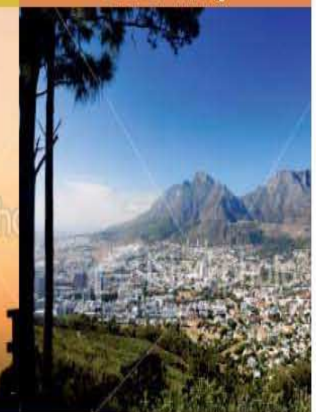
$$S' = A'^{z}.$$

$$A' = \sqrt[z]{S'} \quad \text{or} \quad \text{Log}\, A' = \text{Log}\, S'/z\,.$$

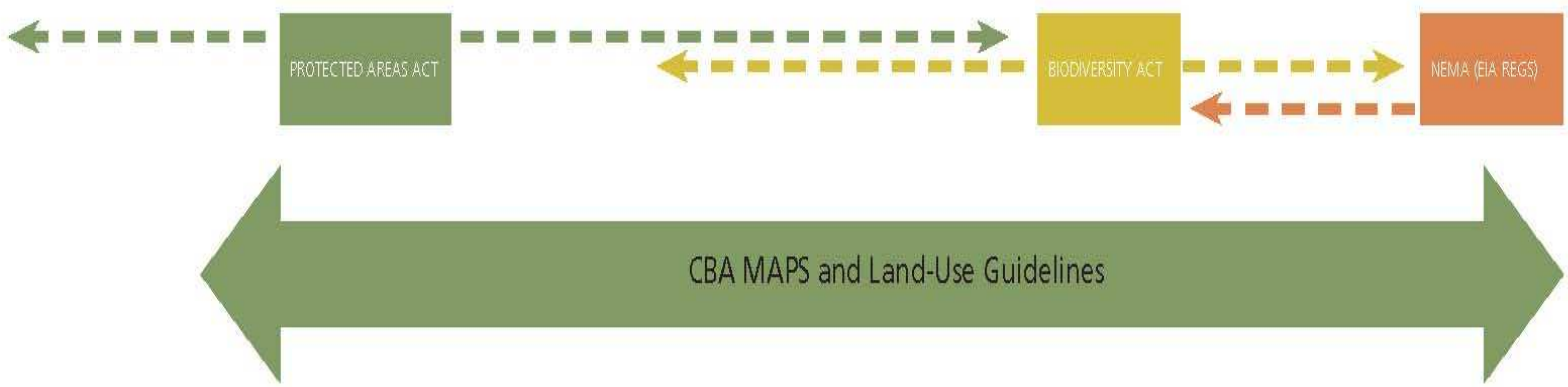
$$z = (y_2 - y_1)/(x_2 - x_1)\,.$$

Landscape approach - mosaic of land uses



TYPE OF LANDSCAPE	PROTECTED LANDSCAPES		PRODUCTION LANDSCAPES		DEVELOPED LANDSCAPES
Type of land	State-owned and managed Protected areas (mostly natural/wild land) e.g. National Park	Mostly natural land of high biodiversity importance privately or communally owned and managed through partnerships e.g. Private Nature Reserve	Largely natural land with elements of biodiversity importance and low-impact production areas e.g. grazing	Land largely modified for intensive production e.g. commercial crops	Lightly to heavily modified landscapes with fragments of important biodiversity
Strategy for conserving biodiversity	Formal protected areas		Biodiversity Stewardship Best-practice production		Land-Use Planning and Decision Making
			 		
Our main biodiversity management tools	Proclaimed protected areas Protected Area management plans Protected Area Expansion Strategy	Biodiversity Stewardship Agreements (Statutory) Management plans	Biodiversity Stewardship agreements (contract law and informal) Management plans Industry best-practice production guidelines	Best-practice production guidelines and resource for well managed farms	Biodiversity Sector Plans CBAs incorporated into spatial development frameworks Ecosystem guidelines for environmental assessment

Key legislation



Conservation Target Setting

- “the best way to predict a more uncertain future is to have the inventiveness and reflexivity to create it . . . visioning is about thinking in the future tense, appreciating that in a period of rapid and profound change it is less viable to deduce from the experienced present than to trace back from an imagined future”

- this scenario- approach is often theoretically located within the concept of ‘backcasting’, where desirable futures are defined and described and subsequently worked ‘‘backwards through time to identify retrospectively the various elements needed to bring that future about’’

Conservation Target Setting

Bailey, R. et al (2012) **Exploring a city's potential low carbon futures using Delphi methods: some preliminary findings.** Journal of Environmental Planning and Management. Journal of Environmental Planning and Management, 2012 pp. 1-25.
URL: http://dx.doi.org/10.1080/09640568.2011.635192

This paper describes a Delphi methodology to generate a number of broadly consensual low carbon scenarios for 2050. This approach to "creating" the future, rather than predicting, is useful when dealing with profound and uncertain change over a long period of time and is therefore suited to carbon management. The methodology is described, and the first stage of the consultation process is discussed with reference to its application in the UK city region of Bristol. Findings from the first round have resulted in the identification of seven working scenarios and patterns in the responses of individuals from different backgrounds, suggesting that strong world-views and agendas are present within groups. Subsequent rounds of a questionnaire and a backcasting workshop will refine these working scenarios and identify pathways to achieve them.

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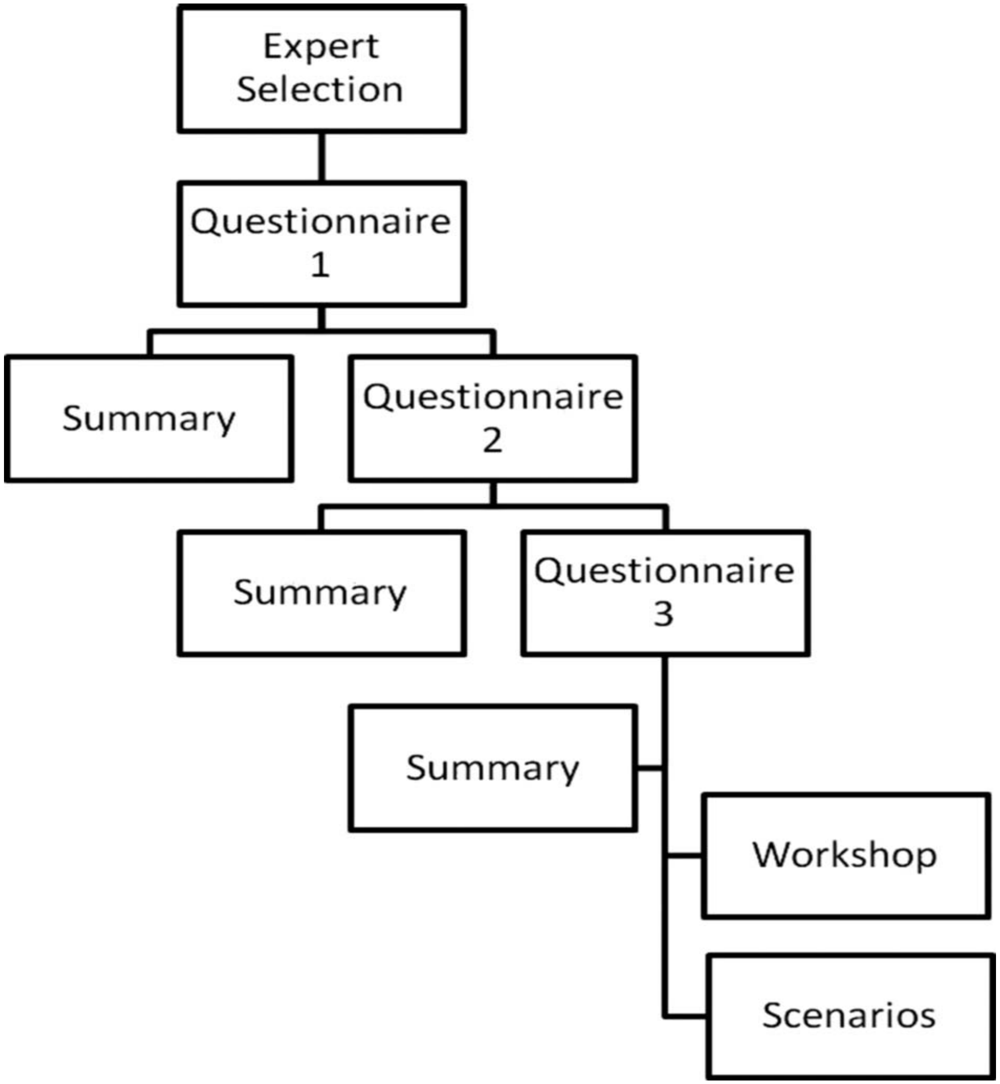
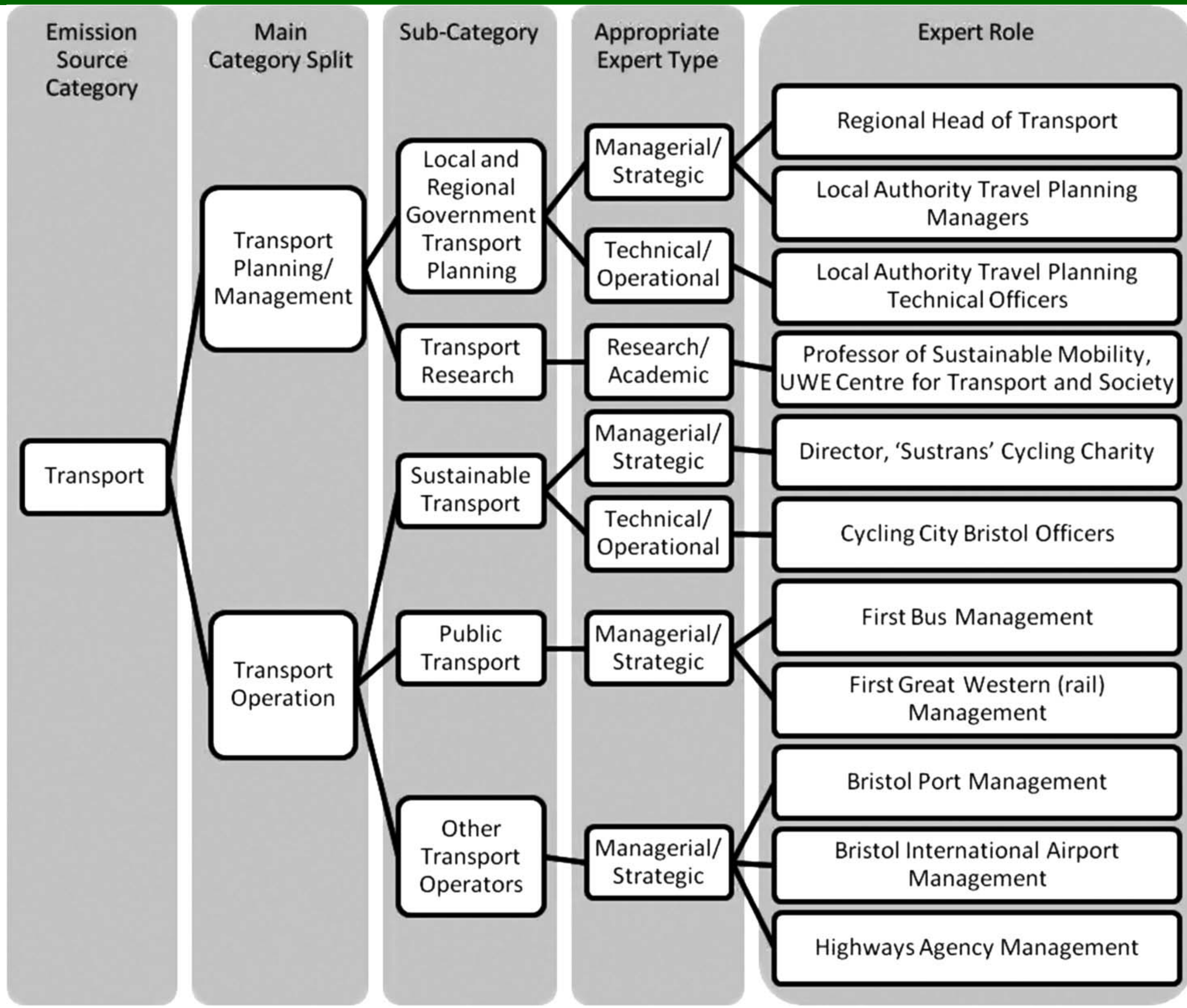
The Delphi method

- is ‘‘a type of brainstorming used for scenario building’’.
- Originated in the 1950s from the RAND Corporation and ‘‘established itself as one of the standard techniques to accumulate, to pool, and to appraise expert opinions’’.
- Delphi studies seek to obtain an expert panel estimation of probable futures on a topic that has many interpretations and is relatively unknown in scientific terms.
- An **iterative**, **remote**, consultative process, using a group of ‘experts’, where subsequent rounds of consultation are conducted in light of the group’s answers to the first, with the aim of achieving convergence on a consensus.

The Delphi technique



Conservation Target Setting



The Delphi expert selection process used to identify experts for the 'transport' category.

Conservation Target Setting

Wood, L. (2012**) Global Marine Protection Targets: How S.M.A.R.T are They?**.
Environmental Management, 2011 vol. 47 (4) pp. 525-535
http://www.springerlink.com/index/10.1007/s00267-011-9668-6

Three targets adopted in the past ten years were assessed using the SMART (Specific, Measurable, Achievable, Realistic, and Timebound) framework. This assessment showed that the targets appear to have evolved to have become 'SMARTer' over time, particularly more Specific.

Three broad issues emerged

(i) that SMART target formulation, implementation, monitoring, and revision, is critically underpinned by relevant data and information;
(ii) that perceived irrelevance of global targets may be at least partly due to a mismatch between the scale at which the targets were intended to operate, and the scale at which they have been assessed; and
(iii) the primary role of global-scale targets may indeed be psychological rather than ecological.