

Guidance on combining scenarios and mapping to support sustainable agricultural policy development

Summary leaflet

Purpose of this guidance

This document aims to offer guidance on how scenarios describing different plausible future contexts can be used to map potential changes in land-use, biodiversity and ecosystem services and support sustainable agricultural policy development. Future land-use, as well as the highly uncertain future context within which land-use-related policy operates, has major impacts on biodiversity and ecosystems and the goods and services they provide to people.

The guidance provides a step-by-step process on how to combine the use of scenarios and spatial mapping during policy review to strengthen policies in the face of future uncertainty. Further information on the use of scenarios with spatial mapping and other background material is included to help better understand the methods and enable users to adapt the approach to different purposes.

The approach taken in this document has been applied to policy development and revision in three national contexts in Africa and regional contexts in Latin America and East Asia.

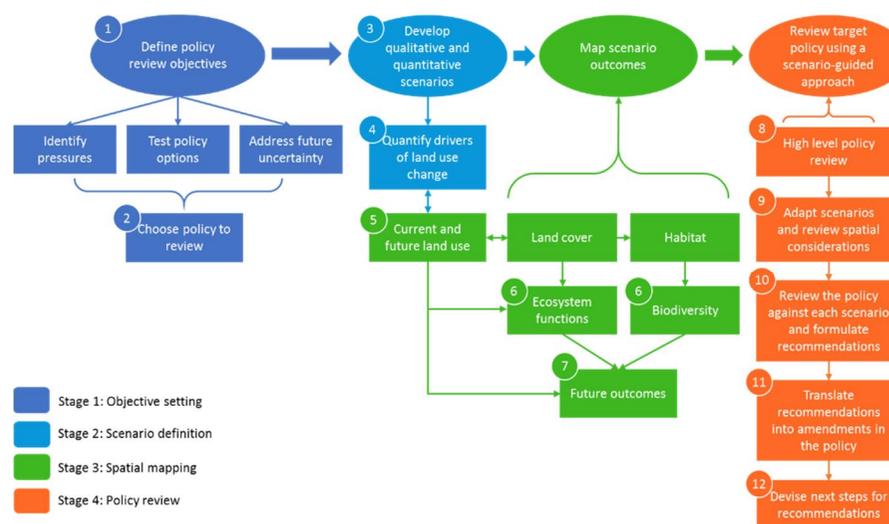
A workflow for the approach is outlined and the steps can be adapted to different policy contexts and spatial scales. The approach comprises four stages:

Stage 1. Define the objective of the policy review exercise that is to benefit from the use of future scenarios and the spatial mapping of potential impacts on biodiversity and ecosystem services

- Stage 2. Develop relevant scenarios and quantify the drivers of land-use change under each
- Stage 3. Map land-use change and its impacts on biodiversity and ecosystem services under each scenario
- Stage 4. Revise policy using a scenario-guided approach integrating the impacts of land-use change on biodiversity and ecosystem services, and considering the drivers that underlie likely future pressures and (spatial) trade-offs as well as plausible future contexts for decision-making

Overview of the approach

The main steps of the four-stage approach taken to review, or contribute to the development of policies through the lens of scenarios and spatial mapping are summarised below.



Overview of elements on using scenarios and mapping to support (land-use related) policy review that takes into account impacts on biodiversity and ecosystem services

Main steps

Stage 1	<ol style="list-style-type: none"> 1. Identify the objective(s) of the policy review 2. Select a land-use related policy or plan to focus on and identify other relevant policies, plans or decision-making mechanisms <p>The above steps should ideally take place during a multi-stakeholder workshop</p>
Stage 2	<ol style="list-style-type: none"> 3. Develop future scenarios that describe plausible development trajectories and future contexts for decision making 4. Determine and quantify the drivers that influence land-use change under the different scenarios
Stage 3	<ol style="list-style-type: none"> 5. Map current land-use and future land-use changes under each chosen scenario 6. Map current biodiversity and ecosystem services 7. Map impacts of land-use change on future biodiversity and ecosystem services
Stage 4	<p>Organise a multi-stakeholder review workshop and:</p> <ol style="list-style-type: none"> 8. Conduct a high-level review of the selected policy 9. Interpret scenarios for key elements of interest and consider spatial impacts 10. Review the policy against each scenario and the spatial impacts of land-use change on biodiversity and ecosystem services and formulate recommendations for policy improvement 11. Translate scenario-derived recommendations into suggested additions or changes to the policy document 12. Work with stakeholders to devise next steps for update of policy recommendations

Stage 1: The process starts by identifying the objective(s) of the policy review or development exercise that will benefit from the use of future scenarios and the mapping of potential impacts. This includes identifying all relevant policies, plans or other decision-making mechanisms, which could be targeted in order to achieve the objective.

Stage 2: Once a policy or plan has been selected, scenarios that describe plausible development trajectories and future socio-economic contexts in which the policy will operate are developed in a participatory setting. These scenarios are a set of qualitative storylines describing plausible future contexts, and quantified using appropriate modelling tools. The agreed set of scenarios then provide the context for, and help determine, the driving factors of future land-use which is mapped during Stage 3. The focus policy or plan will be explored in the context of these scenarios, rather than forming part of the scenario assumptions.

Stage 3: Maps of future land-use under each scenario are developed based on a set of assumptions relating to the driving factors defined by the chosen scenarios. Land-use/cover maps form the basis of habitat (for species) maps and maps of ecosystem functions (as an indicator of ecosystem services provision). Projected changes in land cover under the different scenarios can then be assessed for their potential impacts on biodiversity and ecosystem functions.

Stage 4: In the final 'policy review' stage, steps are outlined to review the selected policy or plan in a multi-stakeholder workshop setting, to identify and prioritise measures to improve the policy or plan in relation to the objective set in Stage 1.

A step-by-step guide covering each of the four stages is outlined in the guidance document. The steps can be adapted as needed to different policy review contexts.

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