Science for Environment Policy

QUICKScan: a quick, participatory method for exploring environmental policy problems

Policymakers often have to make decisions under great complexity, uncertainty and time pressure. A new study presents a support tool for the first stage of policymaking: identifying and exploring alternatives to solve problems. The software tool, called QUICKScan, increases the speed of this process and combines the input of many stakeholders in participatory workshops. It has been applied 70 times in 20 different countries, for a wide range of environmental policy issues.

In times of global change, including a changing climate, depleting natural resources and biodiversity loss, environmental policymakers are facing huge challenges. Policymakers are being asked to understand these complex issues, predict future problems and protect nature while also allowing economic and social development.

The first stage in this policymaking process is identifying problems – what they are, how severe their impacts are, who they affect and whether there is a need for policy intervention. This requires collecting scientific knowledge and is described as impact assessment. Evidence-based impact assessment allows policymakers to maximise benefits and mitigate unwanted consequences and is becoming increasingly important in decision-making. However, current impact assessment methods are expensive and time consuming; often, by the time evidence has been provided, the policy context has changed.

This study describes a method that reduces the time needed for this exploratory phase. It is also participatory, thus helping policymakers to negotiate conflicting views and interests, resulting in a joint understanding of the most important problems for policy. The assessment tool, developed with EU funding[1], is called QUICKScan.

This new tool uses a combination of human and computational analysis. Designed to be used by groups, it captures the knowledge of stakeholders in a software tool, which visualises results in interactive maps, summary charts and trade-off diagrams. Through an iterative process, different policy options can be trialled and new knowledge included.

The main focus of QUICKScan is a workshop, involving participants (e.g. policymakers, other decision-makers, interest groups and experts), a facilitator to guide the group and an operator who captures knowledge, converts it into modelling terms, and makes calculations resulting in maps and summary graphs.

The full process consists of:

1) Scoping
Identifying the question under focus with the client, such as 'What solutions can green infrastructure offer to respond to climate change risks in urban areas?' or 'What management options can increase agricultural production?'

2) Preparation
Participants are chosen (e.g. decision-makers, interest groups, experts) and evidence and spatial data are gathered.

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3) Workshop
Workshops begin with structured discussions around the issue at stake and the evidence surrounding it (e.g. what is the current state of green infrastructure in a city). Key indicators to show the impacts of the policy alternatives are selected and calculated based on participant knowledge. The computer tool then produces indicator maps, summary charts and trade-off diagrams, which are evaluated by participants. Multiple iterations of knowledge modelling take place during a workshop. The results of each iteration feed into the discussion among stakeholders and policymakers, creating input for the next iteration.

4) Reporting
Documenting results and observations is important for further progress.

The tool's usability has been demonstrated through a large number of applications and in a range of policy contexts. Since 2010, it has been applied to 70 workshops in 20 different countries for issues ranging from environmental planning and ecosystem service assessment to crop production and land restoration.

As an example, the researchers describe the case of timber production in France. Under the EU Biodiversity Strategy to 2020, Target 2, Action 5, Member States, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory to strengthen the knowledge base to decide on what ecosystems to restore with priority and where. Using QUICKScan, France prepared a first set of ecosystem services maps of timber production, which launched the mapping process at national level. During a three-hour session, policymakers, ecosystem services experts and geographic information system (GIS) data experts came together to discuss how to map estimates of timber production in the country, with the assistance of a QUICKScan modeller.

They developed four possible solutions, including mapping timber production based on growing stock and including data on tree species (as this can affect the amount of timber that is extractable). Government officials said they gained a deeper understanding through the process than through usual written or spoken methods.

The methodology can be used in a range of circumstances to collaboratively develop an understanding of a problem. Overall, the researchers describe three major benefits:

1) Reduced lead time for problem scoping
The tool rapidly produces a joint understanding of a problem. Although the process requires time for data preparation and discussions before the workshop, the software is potentially quicker than a policy officer contracting out extensive research or expert group consultations.

2) Improving understanding between stakeholders
The tool enables knowledge integration, learning and shared understanding by encouraging participants to listen to each other and co-develop ideas, as it has been assessed by a sociologist attending the workshops.

3) Better comprehension of scientific knowledge and data
Usually data is presented to policymakers in reports and publications. This software gives participants a more active understanding of policy issues, by visualising their impacts, or the trade-offs between policy options.

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