FIGHTING MARINE DEBRIS AND PLASTIC POLLUTION WITH A MULTI-CRITERIA DECISION ANALYSIS (MCDA)

Microplastics are everywhere. Now that we know just how harmful plastic pollution is to our biodiversity, food chains and human health, finding a solution has never been so important. This is where tools come in to create change by supporting change in policy and human behavior. The MCDA (Multi-Criteria Decision Analysis) is a policy tool that is able to address the seriousness and urgency of the issue with an outcome that benefits all.

Benefits of MCDA:
- MCDA is useful for policy and decision-making, contributing to deliberative democracy.
- Informing Master & Action plans to create long-term strategies based on different scenarios, across disciplines.
- Empowering and strengthening cross-sectoral relationships.
- Can be implemented at macro and micro-levels in virtually any context where a problem can be defined, and existing solutions can be identified and criteria can be determined (Dragzetić et al., 2020).
- Can increase adoption of already existing solutions in new sectors and/or countries.

What is a MCDA?
MCDA is an effective knowledge synthesis method to support decision-making, by systematically exploring the pros and cons of different alternatives while incorporating (cross-sector) stakeholder feedback (Beinat & Nijkamp, 1998; Geneletti & Ferretti, 2015; Linkov & Moberg, 2012).

The simplified process: MCDA Steps

1. Identifying the problem, stakeholders involved, and desired outcome
2. Defining criteria and subcriteria
3. Desktop research (for scoring)
4. Scoring the certification schemes
5. Engaging and interviewing stakeholders
6. Distributing MCDAs to stakeholders (for weighting)
7. Gathering MCDAs and compiling data
8. Analyzing data (radar diagrams & stacked graphs) and drawing conclusions
9. Recommending actions and selection of schemes
10. Putting recommendations into action

Case Study: Sustainable tourism certification in SIDS

Background
Small Island Developing State with tourism as main economic pillar. Facing increased climate change impacts.

Goal
Identifying how sustainable tourism certification can support the needs of businesses and SMEs in the tourism sector while contributing to climate change adaptation.

Question
Which sustainable tourism certification program best supports the needs of tourism businesses and tackles environmental issues specific to SIDS?

Why it’s a great solution:
The MCDA is capable of supporting development and the implementation of already existing (plastic pollution) solutions while addressing local context and needs. In the case study above, the SIDS was enabled to go forward with the implementation of the sustainable tourism certification that scored the highest. The MCDA provided the confidence that the scheme best addressed the local stakeholders’ needs and the critical issue of climate change adaptation.

Benefits of MCDA:
- Policy-making
  - MCDA is useful for policy and decision-making, contributing to deliberative democracy.
  - Informing Master & Action plans to create long-term strategies based on different scenarios, across disciplines.
- Inclusivity
  - Due to its participatory features, an MCDA facilitates the inclusion of different groups in society in decision-making.
- Flexibility
  - Capable of comparing conflicting criteria and offering flexibility in making trade-offs between competing objectives across industry and country contexts with existing solutions.
- Scaleability
  - Can be implemented at macro and micro-levels in virtually any context where a problem can be defined, and existing solutions can be identified and criteria can be determined (Dragzetić et al., 2020).

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