Contribution to GSDR 2015 – chapter 3

Wildlife, equity, profits: Socioeconomic implications of marine conservation. The Integrated Marine Protected Areas Socio-Economic Monitoring (IMPASEM) framework

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Current policy developments urge governments to protect at least 10% of per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and to integrate them into wider landscapes and seascapes (CBD, 2010). This ambitious target expressly calls for the consideration of socioeconomic effects of marine conservation on stakeholders.

There are a number of methods that can be used to assess the socioeconomic effects of conservation policies or activities: 1) Project appraisal and evaluation methods, including some mainstream methods such as cost-benefit analysis, and other less frequently used but promising methods such as social return on investment or multi-criteria analysis; 2) Bio-economic models; 3) Indicator systems, a widely used method within the ecosystem service approach; and 4) Social surveys.

Based on some of these methods, the Marine Institute of Plymouth University has developed a new methodological framework to monitor and assess the socioeconomic effects of marine protected areas (MPAs) within the PANACHE project (PANACHE, 2014): The Integrated Marine Protected Areas Socio-Economic Monitoring (IMPASEM) framework (Rodríguez-Rodríguez et al., unpublished results). It consists of a mixed methods research design with 3 phases (Fig.1): 1) Literature review, to identify potentially relevant social groups and socioeconomic variables that can be affected by the designation of MPAs or other types of marine management measures; 2) Stakeholder survey, to ascertain the perceptions on marine conservation by a range of representative marine and coastal organisations belonging to the previously identified groups, including the variables considered most relevant to those organisations for monitoring and assessing the socioeconomic effects of marine management measures; and 3) GIS-based geo-statistical analysis using a Multiple-Paired-Before-After-Control-

Impact design (MPBACI), to assess the effects of an MPA or set of MPAs on the set of variables considered most important for the stakeholders.

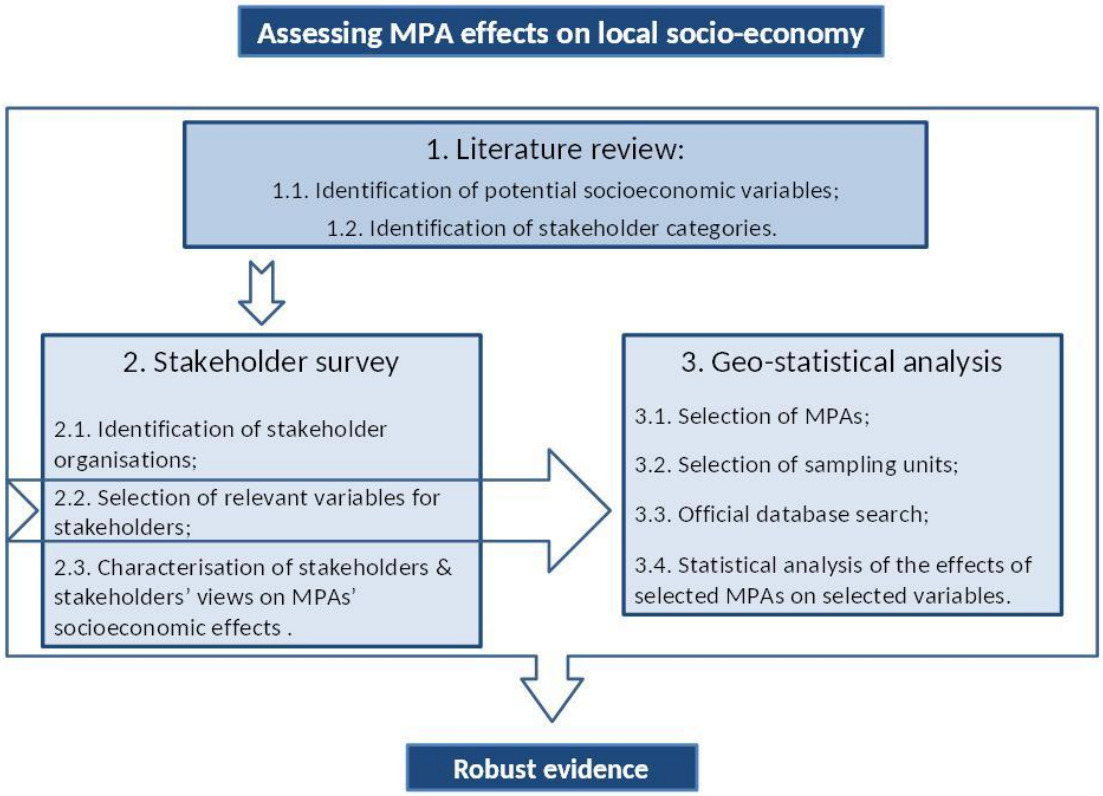

Figure 1. Outline of the IMPASEM framework.

The IMPASEM was used to assess the effects of marine conservation in France and the UK in late 2013. One survey was conducted among 90 organisations (national associations, federations, unions, ministries, etc.) from both countries that showed their perceptions on the effects of MPAs (Rodríguez-Rodríguez et al., 2015). The variables selected as most important by the responding organisations were then used to test the socioeconomic effects of 6 pilot MPAs on the French coast of the English Channel at two levels: community (municipality) level and sectorial level (fishing sector). No effects of the multiple-use MPAs selected were detected on the set of community-scale variables. Effects were detected for some fishing-related variables, although attribution of those effects to MPAs remains to be proved and are likely to be affected by low sample sizes, confounding variables (e.g. local subsidies, investments or regulations), the level of protection of selected MPAs, and their management effort (Rodríguez-Rodríguez et al. unpublished results).

The IMPASEM has the potential to work soundly and cost-effectively to assess the effects of spatial entities like MPAs in a participatory manner under few conditions, namely consistent geo-referenced and statistical data availability, and single MPA designation categories on each site. Given these restrictions, it can be applied in contexts with consistent time series of spatially-defined socioeconomic data and where new, non-overlapping MPAs or MPA networks are being designated. Overlaps with international MPA designation categories designated at different dates that may not entail specific management or regulations (e.g. UNESCO's Biosphere Reserves) could be accepted as they are unlikely to influence the ecological status or the socio-economy of the area. This should facilitate broader applicability of the framework. The characteristics of IMPASEM could make it especially useful in the terrestrial environment, where most environmental and socioeconomic statistics are normally compiled.

The IMPASEM should be tested on a higher number of randomly selected MPAs and other spatially-defined entities from diverse locations to confirm the results obtained from its pilot implementation and the broad applicability of the framework for social, economic and/or environmental sustainability assessments. The IMPASEM has the potential to overcome some of the drawbacks of other existing socioeconomic assessment methods: representation (improved by wide participation of a balanced set of umbrella organisations); objectivity (enhanced by structured questionnaires with closed-ended responses and complementary open-ended responses representing organisational stances); salience (promoted by identifying and focusing on the variables considered most important by stakeholders); cost-effectiveness (enhanced through online survey techniques and use of secondary, publicly available data); accuracy in the attribution of MPA's effects (maximised by a sound, spatial-temporal MPBACI design); and robustness (increased by triangulating the results of the three phases of the framework: Literature review, stakeholder survey and geo-statistical analysis).

References

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