

Governing Interdependencies between Biodiversity, the Socio-Economic and Land-Use: Insights from a Systematic Assessment of Regional Policies and Practices



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Introduction

From 2017-2019 scientists working in New Aquitaine, Southwest of France, carried out a scientific assessment of the role of biodiversity in the region's major socio-ecosystems [1]. As well as evaluating interdependencies between biodiversity, the regional economy and local culture, the study also assessed public action governing these interdependencies. This focus emphasized that the governance question was an important one to be discussed by decision-makers, working with social scientists and, ultimately, with stakeholders and citizens.

The report found first that public policies have been designed in a variety of ways to integrate biodiversity issues into the governance of production (food, wood, energy) or land use change [2]. However, as underlined by the FAO in a recent study on 'The State of the World's Biodiversity for Food and Agriculture' [3], we continue to lack knowledge on the extent and use of new integrated approaches, including on their regional and local effects. More specifically, we lack knowledge derived from aggregating published social science case study data in different regions compared.

To fill this gap in the case of New Aquitaine, we analyzed social science publications on public action aimed at reconciling political objectives protecting biodiversity with those governing economic activities (food, energy, wood production) and land use change (urban transformation). In total, 258 scientific references were analyzed: 178 internationals; 80 regionals [4].

Our assessment revealed two principal modes of integrated governance: i) reformist approaches (for cereal plains, viticulture, cultivated forest and oyster farming: e.g., for forest, [5] and ii) transformative approaches (alfalfa production, small scale fisheries, trout farming and socio-economic activities on river watersheds and in marine regions, e.g., forest [6]. These differences in mode mattered and it is worth analyzing their underlying conditions. Whereas for reformist approaches biodiversity questions were introduced into public policies through an adaptation of existing public policy instruments, transformative approaches were put in place through the development of new types of policy tools addressing anthropic biodiversity impacts in holistic ways, i.e., not independently from one another.

Another difference was over which actors and values were given priority. Reformist integrated governance neither jeopardized dominant governing logics, nor hierarchies of actors, and was largely premised upon an individualization of biodiversity responsibility, e.g., offering financial incentives to farmers to change their practice. Transformative integrated approaches by contrast were supported by those actors wanting to make a structural paradigm shift in governing frames, both considering the limits of sectoral approaches addressing ecosystem dynamics and acknowledging re-distributional effects of policy choices.

Examples of reformist approaches included the adaptation of agro-environmental measures in the European Union (EU) Common Agriculture Policy integrating biodiversity

considerations (cereal plains), or the gradual integration of rules on pesticide use in the setting of product standards on quality wine [7]. Examples of transformative approaches came from either 'bottom up' or 'top down' initiatives. For example, a form of 'bottom up' transformative governance was seen to emerge over time when an accumulation of ecosystem discourses, social norms, dynamic spatio-temporal policy instruments and professional techniques slowly changed the meaning of public action governing small-scale fisheries in the Bay of Biscay; similarly, actors seeking ecological continuity in urban development projects in Bordeaux have encouraged the reframing of the purpose of urban transformation around a 'quality of life' discourse [8]. Examples of 'top down' transformative governance were found in freshwater and marine ecosystems. Here, ecosystem approaches enacted in EU legislation established integrated policy frameworks in which regional and local actors were expected to work to reconcile biodiversity and socio-economic objectives via inter-sectoral governance (e.g., the EU Water Framework and Marine Strategy Framework Directives).

Our analysis not only produced results on the differences between these forms of public action, but also revealed institutional obstacles specific to each mode of integrated governance. In some cases, reformist approaches lacked intermediary institutional resources (training, exchange, evaluation) seen as essential for accompanying producers making changes considering a diversity of production practices and professional identities. Such institutional initiatives could be especially useful when set at an intermediary scale of governance (regional partnerships, professional networks) opening the door for a more collective approach to biodiversity governance. Tensions were also evident implementing transformative approaches, for example, between urban actors over how to reconcile civil engineering rationalities held in town planning departments with ecological rationalities on ecosystem services [9], or frustrations for public actors governing water quality due to a lack of data, financial or human resources for the putting in place of holistic governing approaches [10]. A particular set of challenges emerged over the participatory governing styles which were often associated with transformative approaches. Whereas research revealed a variety of such initiatives in New Aquitaine, they also showed mixed results concerning their effectiveness. In particular, the aims of participation were often uncertain and failed to generate a clear understanding of the purpose of stakeholder engagement [11].

In summary, the systematic assessment of public action revealed its very complexity, both over the effectiveness of the

different approaches identified protecting biodiversity but also over political choices to either individualize or collectivize the biodiversity 'problem'. Taken together, and in detail [4], its results underline the general need to 'take governance seriously' and not reduce this question to one of vague and unspecified 'political will'. They also reframe the debate away from polarized thinking about public action to focus instead on hierarchies of values which lie at the root of competing integrated approaches to biodiversity and its governance.

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