



POLICY BRIEF



Photo: Yann le Polain de Waroux

Understanding policy impact amidst controversy: Lessons from forest zoning in Argentina

Evaluation of conservation policies may generate controversy and lead to diverging interpretations if interest groups do not share a common understanding of concepts, methods, and perspectives. This may have serious consequences if findings are used to orient future policies. To avoid such issues, recent research highlights some necessary steps to build a shared understanding among actors and foster a more insightful appreciation of conservation policies.

WHAT'S AT STAKE?

Reducing large-scale deforestation is a key priority in strategies to mitigate global climate change. Because environmental conservation involves several types of actors with different goals and interests, the design, implementation, and evaluation of conservation policies is often accompanied by debate and controversy. These debates can be valuable as long as participants share a common understanding of key concepts, methodological approaches, and evaluation criteria.

KEY RESULTS

Lessons for empirical scholars engaged in debates on conservation policies include:

- "Impact" must be distinguished from other measures of policy effectiveness
- Estimating policy impact requires including appropriate spatial and temporal confounders in the model.
- Enforcement does not have to be perfect to have a deterrent effect.
- A policy outcome's success or failure should be assessed based on identified standards.

If no common understanding exists, when research findings enter the public sphere, they are likely to be interpreted in unintended ways by colleagues, politicians, and the media (e.g. Brandt et al., 2016 ; Karsenty et al., 2017 ; Brandt et al., 2018). Such misinterpretation may have serious consequences, especially if findings are used to orient future policies.

A recent study conducted by researchers C. Nolte, B. Gobbi, Y. le Polain de Waroux, M. Piquer-Rodríguez, V. Butsic and E.F. Lambin illustrates such a scientific misunderstanding. In their article, published in 2017, the authors analyze the impact of decentralized land use zoning on large-scale deforestation in the Argentine Dry Chaco. In 2007, the Argentinian government passed a law (referred to as the "Forest Law") requiring that provinces categorize all remaining native forests into three zone types, each associated with a different level of protection. The authors seized the opportunity to examine if large-scale deforestation could be effectively addressed at a subnational level of governance. Their results suggest that the land-use plans adopted by provincial governments can make important contributions to reducing large-scale deforestation.

These findings generated multiple reactions in the public sphere as well as among scholars. On the one hand, local press articles that congratulated the effectiveness of the Forest Law were released.¹ On the other hand, within one year of publication of the study, three more articles appeared in the peer-reviewed literature with findings that seem to contradict the ones of Nolte et al. (2017). Other actors also criticized the analysis, as they considered the Law to be far from effective (Volante and Seghezzo, 2018).

Responding to the controversy generated by their work, Nolte and colleagues contend that these disagreements are partially the result of misunderstandings regarding the concepts and methods of analysis used in the study. In order to explain the reason for such divergent viewpoints, the authors conducted a comparative analysis of four studies all based on the same deforestation dataset, including their own. In a commentary published in 2018, Nolte et al. explain the diverging views on the impacts of provincial zoning in the Argentine Dry Chaco to be the result of empirical challenges faced by scientists, and by differences in inferential methods that make robust comparison between studies difficult to accomplish. They present and discuss six issues that should be acknowledged and understood by empirical scholars engaged in debates on the impacts of conservation policies.

RESEARCH APPROACH

The authors compare four studies, some of which have contradictory results, on the impact of conservation policies on deforestation in the Argentine Dry Chaco. These four studies are from Camba Sans et al. (2018), Ceddia and Zepharovich (2017), Nolte et al. (2017) and Volante and Seghezzo (2018). All of them based their quantitative analysis on the same deforestation dataset (Vallejos et al., 2015), but used different inferential methods, including:

- (1) BACI (before vs. after, control vs. intervention), not controlling for confounders (used by Camba Sans et al., 2018 ; Volante and Seghezzo, 2018).
- (2) Panel regression model (used by Ceddia and Zepharovich, 2017).
- (3) Quasi-experimental matching combined with difference-in-difference regression analysis (used by Nolte et al., 2017).
- (4) Compliance assessment (used by Camba Sans et al., 2018 ; Ceddia and Zepharovich, 2017 ; Volante and Seghezzo, 2018).



Photo: Yann le Polain de Waroux

For each study, Nolte et al. (2018) report the inferential method and results interpretation in terms of policy effect. They attempt to reconcile the studies' diverging views on the impacts of provincial zoning in the Argentine Dry Chaco by associating differences in interpretation with differences in methods and normative positions. Finally, Nolte et al. identify and discuss several lessons for empirical scholars engaged in debates on impacts of conservation policies. Even though the discussion is applied to the case of land use policies, many of these lessons are applicable across policy domains.

KEY FINDINGS

The authors identify several areas where a shared understanding of concepts, methods, and perspectives could foster a more insightful appreciation of research findings on the impact of conservation policies.

Distinguishing "impact" from other measures of policy effectiveness.

Impact evaluation measures the causal effect of interventions on outcomes. It requires using a rigorous impact assessment method, based on counterfactual outcomes that must be inferred. Other methods should not be used as a substitute, but as complementary. For instance compliance, used in three of the studies, is rarely a good proxy for measuring impact. Instead, compliance provides further insights on how to address conservation challenges.

Estimating policy impact requires including appropriate spatial and temporal confounders in the model.

When the outcome is influenced by factors other than the policy, which co-vary across space and time, an inferential method allowing to control for these factors must be utilized to isolate the effect of the policy on the outcome. Otherwise, the estimation is likely to capture the effect of other causal mechanisms, that are correlated with both the policy and the outcome, and bias the importance of the policy direct impact on the outcome.

Enforcement does not have to be perfect to have a deterrent effect.

A conservation policy can reduce deforestation even though illegal deforestation persists. Enforcement assessment should thus not be used as a measure of impact.

Attributing impacts to specific actors is challenging.

Deducing the specific causal influence of any actor from an observation of adopted policies and impacts is challenging and goes beyond the scope of typical impact assessment. Impact assessment research therefore generally cannot make strong claims in this respect. In-depth research into the political ecology of decision making may provide clarifications and insights (e.g. Seghezze et al., 2011).

A policy outcome's success or failure should be assessed based on identified standards.

Assessing whether or not a conservation policy is successful depends on the observer's reference of what constitutes a success.

For instance, while Nolte et al. (2017) refrained from setting such standards, their results may have been judged as a proof of success by certain officials as reported in the local press, and as a failure by other groups of actors. Such misinterpretations are difficult to avoid but could be restrained by a clear statement of standards.

Caution should be exercised when generalizing findings beyond a given study area.

Impact analyses are typically based on assumptions that make them context-specific. Therefore, findings should not be generalized without carefully testing the empirical relevance of these assumptions in other areas.

POLICY INSIGHTS

These findings suggest that when examining results from an impact analysis of conservation policies, decision-makers and practitioners should consider the following:

The demonstration of an impact should not be used as a proof of policy enforcement nor compliance, and vice versa.

Analyzing the impact of a policy consists of measuring the difference between an actual outcome, and a counterfactual outcome that would have been obtained should the policy not had been implemented. It is thus neither a proof of enforcement nor of compliance. For instance, a conservation policy can reduce deforestation even as illegal deforestation persists. Conversely, a policy could be enforced, but have no impact on the outcome.

An impact analysis should not be used to determine whether a policy is a success or a failure.

Determining whether or not a policy is a success is subjective as it depends on the standard against which outcomes are compared. Judgments are thus likely to differ among groups of actors as they all have their own interests and goals. To avoid drawing unnecessary criticism and generating confusion, scientists involved in policy impact analysis should either refrain from setting standards and focus on objective, measurable outcomes, or identify their standards upfront.

Not all methods are equal.

Policy-makers should take results with caution, and keep in mind that all methods have their domain of validity. When in doubt, they can reach out to the authors to clarify.

¹See for instance: <http://www.quepasasalta.com.ar/nota/noticia-172068/> and <https://www.cuartopodersalta.com.ar/se-disciplina-a-las-cachetadas/>

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