

Agriculture Guidance

Guidance for assessing the greenhouse gas impacts of agriculture policies

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What is the guidance and why should I use it?

1. INTRODUCTION

With the adoption of the Paris Agreement in 2015, governments around the world are increasingly focused on implementing policies and actions that achieve greenhouse gas (GHG) mitigation objectives. The agriculture, forestry and other land use (AFOLU) sector contributes to approximately one quarter of anthropogenic GHG emissions.¹ In the agriculture sector, emissions are mainly from soil, livestock and nutrient management. Cost effective mitigation options in agriculture are cropland management, grazing land management and restoration of organic soils. There is an increasing need to assess and communicate the impacts of agriculture policies to ensure they are effective in delivering GHG mitigation and helping countries meet their sectoral targets and commitments.

Purpose of the guidance

This document provides methodological guidance for assessing the GHG impacts of agriculture policies that enable or incentivise mitigation practices or technologies that reduce emissions from enteric fermentation and increase soil carbon sequestration in pasture, grazing lands and croplands.

This guidance is part of the Initiative for Climate Action Transparency (ICAT) series of guidance for assessing the impacts of policies and actions. It is intended to be used in combination with any other ICAT guidance documents that users choose to apply. The series of ICAT guidance is intended to enable users that choose to assess GHG impacts, sustainable development impacts and transformational impacts of a policy to do so in an integrated and consistent way within a single impact assessment process. Refer to the ICAT Introductory Guide for more information about the ICAT guidance documents and how to apply them in combination.

Intended Users

This guidance is intended for use by policymakers and practitioners seeking to estimate GHG mitigation impacts in the context of Nationally Determined Contribution (NDC) development and implementation, national low carbon strategies, Nationally Appropriate Mitigation Actions (NAMAs) and other mechanisms. The primary intended users are developing country governments and their partners who are

¹ IPCC 2014.

implementing and assessing agriculture policies. Throughout the guidance, the term “user” refers to the entity implementing the guidance.

The main emphasis of the guidance is on the assessment of GHG impacts. Impact assessment can also inform and improve the design and implementation of policies. Thus, the intended users include any stakeholders involved in the design and implementation of agriculture policies, strategies, NDCs or NAMAs, including research institutions, businesses and non-governmental organisations.

Scope and applicability of the guidance

This guidance provides general principles, concepts and procedures for estimating GHG impacts of agricultural policies² that mitigate GHG emissions from the following GHG source and carbon pool (which are further described in Chapter 4):

- **Enteric fermentation:** Reduce methane (CH₄) emissions in ruminant livestock through activities such as improving feeding strategies, improving herd management and breeding, or implementing silvopastoral systems.
- **Soil carbon pool:** Increase carbon sequestration in soils in pasture, grazing lands or croplands through activities such as switching to no-till or conservation tillage agriculture, agricultural residue management or agroforestry.

This guidance details a process for users to follow when conducting GHG assessment of agriculture policies. It provides guidance on defining the assessment, an approach to GHG assessment including ex-ante (forward-looking) assessments and ex-post (backward-looking) assessments, and monitoring and reporting. Throughout the document, examples and case studies [*to be developed*] are provided to illustrate how to apply the guidance.

This guidance is applicable to users that have defined the individual policy instruments and mitigation practices and/or technologies that could be implemented to reduce GHG emissions. Examples of relevant policy instruments and mitigation practices and/or technologies are further described in Chapter 3. Policies that are not well-defined or have not undergone a policy development process can be difficult to assess since the level of detail needed to estimate GHG impacts may not be available without further policy development.

The steps for estimating emission reductions and removals are based on the IPCC 2006 *Guidelines for National Greenhouse Gas Inventories*, referred to throughout this guidance as IPCC 2006 GL.³ Countries that have a GHG inventory for the agriculture sector can use data from compiling the inventory to estimate emission reductions.

² Throughout this guidance, where the word “policy” is used without “action,” it is used as shorthand to refer to both policies and actions. See Glossary for definition of “policies or actions”.

³ Available at: <http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>

The guidance is applicable to policies:

- At any level of government (national, subnational, municipal) in all countries and regions
- That are planned, adopted or implemented
- That are new policies, or extensions, modifications or eliminations of existing policies

The guidance focuses on the policies that reduce CH₄ emissions from enteric fermentation and increase carbon sequestration in the soil carbon pool, because they were identified as significant opportunities for mitigating climate change by many countries in their NDCs. Enteric fermentation contributes to over 40% of direct agriculture emissions, while the soil carbon pool is considered to be a significant carbon sink over the next 20 years (Dickie et al. 2014). It was also found that there is a need to provide guidance to assessing enteric fermentation emissions and soil carbon sequestration, especially for least developed countries, and with simplified methods. Guidance for mitigating GHG emissions from other sources (e.g., N₂O from manure deposited on pasture, range and paddock, or manure management) or carbon pools are not covered in this document. Appendix C lists the full criteria used to choose the scope of the guidance.

When to use the guidance

The guidance can be used at multiple points in time throughout a policy design and implementation process, including:

- **Before policy implementation:** To assess the expected future impacts of a policy (through ex-ante assessment)
- **During policy implementation:** To assess the achieved impacts to date, ongoing performance of key performance indicators, and expected future impacts of a policy
- **After policy implementation:** To assess what impacts have occurred as a result of a policy (through ex-post assessment)

Depending on individual objectives and when the guidance is applied, users can implement the steps related to ex-ante assessment, ex-post assessment or both. The most comprehensive approach is to apply the guidance first before implementation, regularly during policy implementation, and again after implementation.

Key recommendations

The guidance includes *key recommendations* that represent recommended steps to follow when assessing and reporting impacts. These recommendations are intended to assist users in producing credible impact assessments that are high quality and are based on the principles of relevance, completeness, consistency, transparency and accuracy.

Key recommendations are indicated in subsequent chapters by the phrase “It is a *key recommendation* to....” All key recommendations are also compiled in a checklist at the beginning of each chapter.

Users that want to follow a more flexible approach can choose to use the guidance without adhering to the key recommendations. The ICAT *Introductory Guide* provides further description of how and why key recommendations are used within the ICAT guidance documents, as well as more information about

following either the “flexible approach” or the “key recommendations” approach when using the guidance. Refer to the *Introductory Guide* before deciding on which approach to follow.

Relationship to other guidance and resources

This guidance uses and builds on existing resources mentioned throughout the document. This includes the IPCC 2006 GL, Volume 4, Agriculture, Forestry and Other Land Use.⁴

The guidance builds upon the Greenhouse Gas Protocol *Policy and Action Standard* (which provides guidance on estimating the greenhouse gas impacts of policies and actions and discussion on many of the accounting concepts in this document such as baseline and policy scenarios), to provide a detailed method for agriculture policies.⁵ As such, this guidance adapts the structure and some of the tables, figures and text from the *Policy and Action Standard* where relevant. Figures and tables adapted from the *Policy and Action Standard* are cited, but for readability not all text taken directly or adapted from the standard is cited.

A full list of references is provided at the end of this document.

Process for developing the guidance

This guidance has been developed through an inclusive, multi-stakeholder process convened by the Initiative for Climate Action Transparency. The development is led by the Greenhouse Gas Management Institute (technical lead) and Verra (co-lead), which serves as the Secretariat and guide the development process. The first draft was developed by drafting teams, consisting of a subset of a broader Technical Working Group (TWG) and the Secretariat. The TWG consists of experts and stakeholders from a range of countries identified through a public call for expressions of interest. The TWG contributed to the development of the technical content for the guidance through participation in regular meetings and written comments. A Review Group provided written feedback on the first draft of the guidance.

This version of guidance will be applied with ICAT participating countries and other interested countries to ensure that it can be practically implemented, gather feedback for its improvement and provide case studies.

ICAT's Advisory Committee provides strategic advice to the initiative. More information about the guidance development process, including governance of the initiative and the participating countries, is available on the ICAT website.

All contributors are listed in the “Contributors” section.

⁴ Available at: <http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html>

⁵ WRI 2014. Available at: <http://www.ghgprotocol.org/policy-and-action-standard>

2. OBJECTIVES OF ESTIMATING GHG IMPACTS

This chapter provides an overview of objectives users may have in assessing the GHG impacts of agriculture policies. Determining the assessment objectives is an important first step, since decisions made in later chapters should be guided by the stated objectives.

Checklist of key recommendations

- Determine the objectives of the assessment at the beginning of the impact assessment process

Assessing the GHG impacts of policies is a key step towards identifying opportunities and gaps in effective GHG mitigation strategies. Impact assessment supports evidence-based decision making by enabling policymakers and stakeholders to understand the relationship between policies and expected or achieved GHG impacts. It is a *key recommendation* to determine the objectives of the assessment at the beginning of the impact assessment process.

Examples of objectives for assessing the GHG impacts of a policy are listed below. The ICAT *Sustainable Development Guidance* can be used to assess the broader sustainable development impacts of agriculture policies and users should refer to that guidance for objectives for assessing such impacts.

Objectives of assessing impacts before policy implementation

- **Inform policy selection** by comparing policy options based on their expected future impacts
- **Improve policy design and implementation** by understanding the impacts of different design and implementation choices
- **Inform goal setting** by assessing the potential contribution of policy options to national goals, such as NDCs and NAMAs
- **Report** on the multiple expected future impacts of policies, domestically and/or internationally
- **Access financing** for policies under consideration by demonstrating expected future results

Objectives of assessing impacts during or after policy implementation

- **Assess policy effectiveness** by determining whether policies are delivering the intended results
- **Improve policy implementation** by determining whether policies are being implemented as planned
- **Inform future policy design** and decide whether to continue current actions, enhance current actions or implement additional actions
- **Learn from experience** and share best practices about the impacts of policies
- **Track progress toward national goals** such as NDCs and SDGs and understand the contribution of policies toward achieving them
- **Report** domestically or internationally, including under the Paris Agreement's enhanced transparency framework, on the impacts of policies achieved to date
- **Meet funder requirements** to report on impacts of policies, if relevant

Users should also identify the intended audience of the assessment report. Possible audiences include policymakers, the general public, NGOs, companies, funders, financial institutions, analysts, research institutions, or other stakeholders affected by or who can influence the policy. For more information on identifying stakeholders, refer to the ICAT *Stakeholder Participation Guidance* (Chapter 5).

Subsequent chapters provide flexibility to enable users to choose how best to assess the impacts of policies in the context of their objectives, including which impacts to include in the GHG assessment boundary and which methods and data sources to use. The appropriate level of accuracy and completeness is likely to vary by objective. Users should assess the impacts of their policies with a sufficient level of accuracy and completeness to meet the stated objectives of the assessment.