German Environment Agency

30. June 2022

Funding climate-friendly soil management – key issues

Jurisdictional vs. project-based approaches[1]

1 Background

Definition: Project-based approaches focus on developing and funding individual projects aiming at mitigating climate change at a specific location with a limited geographical scale. In contrast, jurisdictional approaches are implemented at a larger scale by incentivising and monitoring mitigation efforts across a large geographical area. The government of the jurisdiction is a key actor in implementing jurisdictional approaches not only by defining the measures through which mitigation effects are to be achieved. The government is also in the position to enforce law and regulate land use. Under jurisdictional approaches, mitigation impacts are quantified relative to a baseline for an entire economy or economic sector across a political area, e.g. at the national, state or provincial level (Schwartzman et al. 2021). Under jurisdictional approaches, crediting takes place at the aggregate level (i.e. based on the net carbon stock changes of the whole jurisdiction), with baselines and MRV systems also developed and carried out at the respective level. Jurisdictional approaches may support the achievement of sectoral or jurisdictional mitigation targets.

Importance: Jurisdictional approaches could potentially provide a very large amount of emission reductions and removals. They could reduce domestic leakage risks[2] but also pose particular challenges with regard to ensuring additionality[3] and establishing baselines[4].

Relevance: Jurisdictional approaches can in principle be relevant for all types of soil carbon mitigation including removals as well as emission reductions/avoided emissions. Existing jurisdictional approaches so far focus on mitigation measures in the forestry sector while accounting for soil carbon effects of such measures. They could be applied under various funding mechanisms including subsidies or taxes but are particularly relevant to address challenges that arise in the context of offsetting mechanisms[5].

2 Key issues

Context of existing jurisdictional approaches: So far, jurisdictional approaches are exclusively employed for activities to reduce emissions from deforestation and forest degradation. Jurisdictional approaches were first developed under the Warsaw Framework for REDD+ under the UNFCCC[6] as a form of results-based payment mechanisms. They emerged as a

[1] This factsheet was also published as part of the UBA report "Funding climate-friendly soil management", available at http://www.umweltbundesamt.de/publikationen/Funding-climate-friendly-soil-management.

[2] See factsheet on leakage available at http://www.umweltbundesamt.de/publikationen/Funding-climate-friendly-soil-management.

[3] See factsheet on additionality available at http://www.umweltbundesamt.de/publikationen/Funding-climate-friendly-soil-management.

[4] See factsheet on baselines available at http://www.umweltbundesamt.de/publikationen/Funding-climate-friendly-soil-management.

[5] Under offsetting approaches, the buyer is using the certificates for mitigation outcomes as a substitute for within value chain abatement or mitigation activities in their own sphere and counts it towards their own (voluntary) climate target.

[6] REDD+ is a forest conservation framework based on payment-for-ecosystem-services schemes that creates financial incentives for conservation projects through the sale of certified emission reductions (von Essen and Lambin 2021), see https://redd.unfccc.int/.

reaction to the limited success of previous approaches to slowing deforestation and ecosystem degradation. Also, avoided deforestation was not eligible as a project type under the CDM and Parties to the UNFCCC sought to identify new means to scale up funding for mitigation action in the forestry sector. More recently, four crediting approaches operating at jurisdictional scale have emerged that allow for offsetting (ART TREES[7], VCS JNR[8], FCPF[9], California Tropical Forest Standard[10]). While three of them (VCS JNR, FCPF and California Tropical Forest Standard) focus on emission reductions from reducing deforestation and forest degradation, ART TREES also supports the implementation of forestation and forest restoration efforts.

Environmental integrity: Jurisdictional approaches are associated with similar risks that can undermine the environmental integrity of carbon crediting as project-based approaches, but can potentially address some risks better than project-based crediting:

- **Additionality:** Additionality needs to be ensured if credits are transferred from a seller to a buyer under offsetting approaches.[11] Stand-alone projects are vulnerable to the problem of 'adverse selection' where those who participate voluntarily are likely to have reduced emissions anyway. It has been argued that jurisdictional baselines and monitoring can capture any adverse selection and therefore better ensure that achieved mitigation is additional (Schwartzman et al. 2021). However, **the risk of non-additionality of a jurisdictional approach remains**, as adverse selection can also occur at jurisdictional level. It cannot be determined with sufficient certainty that the government involved would not have implemented the mitigation activities without the funding generated by the jurisdictional approach (i.e. in the baseline scenario) as the behaviour of governments may not always be rational and is hard to predict. Furthermore, factors that are beyond the control of governments can impact the mitigation action taken and the level of emissions in the jurisdiction (e.g. climate impacts, food prices) which makes it difficult to determine the development of emissions in a baseline scenario.

- **Leakage:** By accounting for all potential shifts in emissions inside the jurisdiction, jurisdictional crediting can capture any leakage occurring within the jurisdiction, reducing leakage risks relative to project-based approaches. In terms of leakage outside of the jurisdiction, **it depends on the drivers behind the leakage to what extent a jurisdictional approach can address the leakage**. If the drivers can be addressed at jurisdictional scale, such forms of leakage can be identified, quantified and addressed, e.g. through compensation; if the drivers are global, the leakage risk is likely to remain undetected.

- **Non-permanence: The risk of reversals might be reduced to some extent** when mitigation activities are designed at larger scales. Natural disturbances cause relatively less harm to activities at jurisdictional level, where it is more likely that they lead to reduced net mitigation for a certain time rather than causing complete reversals of achieved mitigation at aggregate level. On the other hand, **the reversal risk through human-induced drivers**

[7] See https://www.artredd.org/trees/.

[8] See https://verra.org/project/jurisdictional-and-nested-redd-framework/.

[9] See https://www.forestcarbonpartnership.org/.

[10] See https://ww2.arb.ca.gov/our-work/programs/california-tropical-forest-standard.

[11] See factsheet available at http://www.umweltbundesamt.de/publikationen/Funding-climate-friendly-soil-management.

might be high as the mitigation results of jurisdictional approaches are subject to political and policy changes that may affect the entire jurisdiction (Böttcher et al. 2022; Schwartzman et al. 2021).

Applicability of jurisdictional approaches to soil-related mitigation activities: For soil-related mitigation activities, the following aspects need to be considered:

- **High variability of soil types and conditions:** As the carbon stored in soils is highly variable and dependent on specific site factors, it can be challenging to estimate carbon stocks across jurisdictions. Biophysically defined agroecological zones with similar soils, climate and agricultural/land-use potential or constraints could be determined for soil-related activities in order to robustly define baselines and estimate the effects on emissions/sequestration (also referred to as stratification). Standards setting criteria for the generation and independent verification of soil-related carbon credits that are applicable across regions would need to be developed. A regional accounting system could add credibility to investment in land-based mitigation strategies (Oldfield et al. 2022).
- **Funding:** Soil-related mitigation activities at jurisdiction level may involve a larger number of actors such as small-scale farmers. A regional framework for climate-friendly soil management could therefore provide opportunities for public-private partnerships or large-scale private funding initiatives. For instance, corporations that have defined sustainability commitments could be interested to support regional initiatives in order to demonstrate that they use and supply commodities with improved sustainability (Oldfield et al. 2022).
- **MRV costs:** Due to the high variability of carbon stocks in soils, measurement at larger scales is more efficient as the variance per unit area decreases at broader spatial scales. Spreading monitoring costs over larger areas implies lower per unit MRV costs (Oldfield et al. 2022).
- **Alignment with existing policies or measures:** In the case of soil-related mitigation activity, there is a risk that its objectives contradict existing (e.g. agricultural) policies and measures. To avoid implementation challenges, alignment between existing regulation and new crediting incentives needs to be ensured. Jurisdictional approaches imply a broader scope than project-based activities and need to rely on laws, regulations, support programmes or other forms of financial incentives to induce local actors to change management practices. They might therefore involve a change of contradicting policies or measures and could potentially lead to less conflicts with existing rules.

Nested approaches: If individual projects register for crediting on an area covered by jurisdictional crediting, these projects are integrated or 'nested' within the larger jurisdictional accounting to avoid double-counting (Schwartzman et al. 2021; Pedroni et al. 2009).[12] The experience of REDD+ suggests that individual mitigation projects are often frontrunners and that national and jurisdictional programmes are generally likely to react to such projects.

[12] See factsheet available at http://www.umweltbundesamt.de/publikationen/Funding-climate-friendly-soil-management.

Table 1: Advantages and disadvantages of project-based and jurisdictional approaches for soil-related mitigation activities

	Project-based approaches	Jurisdictional approaches
Advantages	• Relatively easy to implement	• Lower risk of leakage at jurisdictional scale • Potentially lower risk of reversals through natural drivers at aggregate level • Potentially higher impact by implementing improved practices at scale • Lower average monitoring costs per ton of emission reduction or removal • Can be aligned with and support long-term mitigation strategies of the respective jurisdiction by implementing changed practices at scale • Potentially better incentives for landowners or farmers
Disadvantages	• Limited opportunities to scale up • Higher average monitoring costs • Risks related to additionality, leakage, non-permanence	• Additionality very difficult or impossible to ensure • High uncertainty in baseline level • Risk of reversals through human-induced drivers • Higher dependency on external factors such as political willingness, larger amounts of funding • More complex design, need to reconcile priorities of many stakeholders • Complex methodologies (in particular in the case of 'nesting') and measurement tools required • Greater societal consensus required • Alignment with other local and national initiatives can be complex

Sources: Own compilation, based on Oldfield et al. 2022; Schwartzman et al. 2021; von Essen and Lambin 2021; Seymour 2020.

3 Examples

As an example of a **jurisdictional approach** in the forestry sector, Verra released rules and requirements for 'Jurisdictional REDD+ programmes and Nested approaches' in 2017 (**JNR**), as an alternative to the project-based Verified Carbon Standard (VCS).[13] The JNR covers reduced emissions from deforestation and forest degradation; jurisdictional initiatives may also include improved forest management, afforestation, reforestation and revegetation. Jurisdictional

[13] See https://verra.org/project/jurisdictional-and-nested-redd-framework/ and https://verra.org/wp-content/uploads/2018/03/JNR_Requirements_v3.4.pdf.

initiatives can include carbon stored in soils (including peat) next to aboveground and belowground biomass, litter, dead wood and wood projects. Initiatives must include all pools that are expected to potentially decline below a de minimis exception level of 10% (e.g. they must include peatlands if present in the area). Jurisdictional approaches are applied at a national or subnational level. The smallest allowed scale is two levels below the national level. The programme offers three ways to set up a jurisdictional initiative: 1) setting a jurisdictional baseline while crediting takes place in individual standalone projects within the jurisdictional area without monitoring at jurisdictional scale; 2) setting a jurisdictional baseline and direct crediting of nested projects with monitoring occurring both at project and jurisdictional scale; 3) baseline, monitoring and crediting all occur at the jurisdictional level.

A number of existing programmes implement soil carbon mitigation activities at **project level**, including for example IndigoAg[14], Label Bas Carbone[15]; ACR's methodology for avoided conversion of grasslands and shrublands to crop production[16] or Gold Standard's soil organic carbon framework methodology[17].

4 Relevance for the EU

Payments under the **EU's common agricultural policy (CAP)**[18] follow the logic of a **project-based approach** (i.e. at the farm scale). Under 'Pillar I' of the CAP, farmers receive direct payments which are reduced if they do not adhere to environmentally-friendly farming practices, defined as standards of 'good agricultural and environmental conditions' (GAEC). Several of these standards directly contribute to climate mitigation including, for instance, maintaining soil carbon stocks. Additionally, under the 2023-2027 CAP[19], payments are granted to farmers for implementing climate- and environmentally-friendly practices under a new instrument called 'eco-schemes'. Such practices include, among others, organic farming, agroforestry, or changes in crop rotation including legumes. However, the impacts of implementing these practices are not measured. Funding under the CAP is therefore not results-based, but **action-based**.

Additional **EU project-based funding** for soil carbon mitigation is channelled through the EU's LIFE programme[20], the Cohesion Fund[21], the Just Transition Fund[22] as well as the European Regional Development Fund[23]. In the future, funding for soil carbon mitigation through the CAP, other sources of public funding by Member States as well as funding through private crediting schemes could operate in a complementary fashion. An example could be the use of hybrid schemes where a basic payment is provided for employing climate-friendly management practices (as currently implemented under the CAP) and additional results-based payments if climate benefits can be demonstrated. To reduce monitoring costs such demonstration could be at jurisdictional level, e.g. by a regional pool that is monitored. Under the CAP, as well as under

[14] See https://www.indigoag.com/carbon/science/advancement?hsLang=en-us.

[15] See https://www.ecologie.gouv.fr/label-bas-carbone.

[16] See https://americancarbonregistry.org/carbon-accounting/standards-methodologies/methodology-for-avoided-conversion-of-grasslands-and-shrublands-to-crop-production.

[17] See https://globalgoals.goldstandard.org/standards/402_V1.0_LUF_AGR_FM_Soil-Organic-Carbon-Framework-Methodolgy.pdf.

[18] See https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en.

[19] See https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/new-cap-2023-27_en.

[20] See https://ec.europa.eu/growth/industry/strategy/hydrogen/funding-guide/eu-programmes-funds/life-programme_en and https://www.st1.com/st1-life as an example.

[21] See https://ec.europa.eu/regional_policy/en/funding/cohesion-fund/.

[22] See https://ec.europa.eu/regional_policy/de/funding/jtf/.

[23] See https://ec.europa.eu/regional_policy/en/funding/erdf/.

state aid regulations, double funding must be avoided in cases where different sources of funding are used in the EU (EC 2021).

Jurisdictional approaches have not been implemented in the EU for soil carbon yet.

5 Addressing challenges

Not applicable as jurisdictional approaches are a form of solution approach for various risks related to project-based crediting as outlined above.

6 Relevant literature

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