German Environment Agency

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Funding climate-friendly soil management – key issues

Social impacts

1 Background

Definition: Implementing mitigation projects under results-based financing mechanisms can have impacts on human rights, workers' rights, gender issues, rights of indigenous peoples, employment, corruption and economic development or intergenerational justice.[1] These impacts can involve social benefits (e.g. enhancing adaptation, improving health through better air quality) but they can also be negative (e.g. restricting subsistence use of forest resources by local populations, harming the rights of local populations).

Importance: It is crucial to ensure that mitigation activities have positive social impacts because sustainable development and climate change mitigation and adaptation are inextricably linked and can support each other. Both are key objectives for society and should be considered in any policy-making. Mitigation measures therefore need to be carefully designed in order to ensure benefits for sustainable development (Wissner and Schneider 2022). At the same time, socio-economic aspects may also act as a barrier towards implementing soil carbon mitigation activities, e.g. insecurity of tenure or the lack of financial resources. Addressing social aspects can therefore help to promote the implementation of climate-friendly soil management.

Relevance: Social impacts play an important role for all types of soil carbon mitigation activities including the enhancement of removals as well as the reduction or avoidance of emissions. They also need to be considered under all types of financing mechanisms, including transfer-based mechanisms.[2]

2 Key issues

Scope of social impacts: The sustainable development goals (SDGs), adopted as part of the UN Agenda 2030[3], provide a useful global framework for assessing the impact of mitigation projects on sustainable development (Wissner and Schneider 2022). Indirect social impacts should also be considered, e.g. enhancing biodiversity strengthens the ability of an ecosystem to provide people with services such as clean air and water and fertile soil, which in turn enhances health and well-being (Roe et al. 2021).

Approach towards assessing social impacts:

- The **specific geographical and governance context** as well as the time horizon matters for analysing impacts related to sustainable development (Nilsson et al. 2018). It is therefore

[1] Projects can also have positive or negative environmental impacts on e.g. biodiversity or water availability or pollution. The scope of this factsheet is limited to social impacts though.

[2] Transfer-based mechanism: A results-based payment (i.e. where payment depends on mitigation result achieved), where the achieved emission reductions or removals and the legal titles to them are transferred from a seller to a buyer.

[3] See https://sdgs.un.org/goals. The goals cover the reduction of poverty, hunger, inequalities, as well as enhancing health and well-being, quality education, gender equality, access to clean water and sanitation, affordable and clean energy, decent work and economic growth, industry development, innovation and infrastructure, sustainable cities and communities, responsible consumption and production, climate action, conditions for life below water and life on land, peace, justice and strong institutions as well as partnerships for the goals.

pertinent to assess social impacts for each individual project. At the same time, some project types might have similar SDG impacts that are independent of the specific geographical context. For example, integrating trees on croplands to advance agroforestry will diversify income sources for farmers, improve wellbeing and offer economic benefits if implemented in an environmentally sound way.[4] It is therefore possible to assess typical SDG impacts for well-defined project types (Wissner and Schneider 2022).

- To evaluate sustainable development impacts of mitigation projects qualitative and quantitative approaches should complement each other. For **quantitative assessments**, a baseline scenario needs to be defined which the impacts are compared against. For **qualitative assessments**, certain online tools are available.[5] It is important that the criteria applied and the process of the assessment are transparent in order to avoid biases in the assessments. Additionally, specific indicators that are particularly relevant for the context of the project should be identified that guide the assessment (e.g. related to mortality and health as a result of cleaner household air through using efficient cookstoves) (Wissner and Schneider 2022).

- Additionally, it can be assessed to what extent mitigation projects directly or indirectly contribute to improving adaptation and resilience (Schneider et al. 2022). Adaptation benefits can be used as a proxy for social impacts because a lack of adaptation or resilience will cause social damage in the light of more frequent extreme weather events, droughts and fires caused by global heating.

- Under several funding mechanisms, complementary standards that provide more rigorous requirements can be used to ensure that sustainable development impacts of projects are assessed and that social safeguards are in place. For example, for projects under the Clean Development Mechanism (CDM), the Gold Standard's requirements have often been used complementarily. Also, the Verified Carbon Standard (VCS) can be combined with the Sustainable Development Verified Impact Standard (SD VISta) or the Climate, Community and Biodiversity Standards (CCBS).

Environmental integrity: Due to the strong interlinkages between climate change mitigation and adaptation and sustainable development, it is essential to promote synergies between these two goals. At the same time, negative social impacts might imply repercussions on the ability of society to take action against climate change (Roy et al. 2018).

Challenges: Safeguards are essential to minimise potential risks, particularly in the land use sector where these risks cannot be avoided completely but need to be minimised. However, the implementation of safeguards varies greatly, ranging from simple reporting to redress mechanisms. How effectively safeguards can be implemented also depends on the legislative context and governance structure of the host country. Additionally, challenges arise from the fact that social impacts are very context-specific and hard to standardise. Also, they may pose obstacles to starting new mitigation initiatives as assessing social impacts makes the design of a project more complex (Böttcher et al. 2022).

[4] Link to factsheet on silvoarable agroforestry, available at www.umweltbundesamt.de/publikationen/Role-of-soils-in-climate-change-mitigation.

[5] E.g. SDG Climate Action Nexus Tool, SDG Synergies Tool, SDG Interaction Map or UNDP Climate Action Impact Tool.

3 Examples

Agroforestry aims at incorporating trees into croplands and thereby promoting soil carbon sinks by sequestering carbon in soils as well as by trees in aboveground biomass. It can improve food security, production of commercial products and energy production (e.g. timber) (Smith et al. 2012), thereby diversifying income sources for farmers, improving well-being and offering economic benefits (Bene et al. 1977; Smith et al. 2014).[6]

Shifting from farms focused on crop or livestock production to **mixed crop-livestock systems** can lead to the accumulation of carbon in soils through applying livestock manure as fertiliser and including forage legumes and perennial grasses in crop rotations. Such practices can support economic resilience for farmers by providing more stable and diversified sources of income. As a result, farmers reduce their exposure to major changes in prices. Shifting to mixed crop-livestock systems can also have positive effects on employment by better utilising labour throughout the year and creating new jobs. At the same time, the need for more or more skilled labour might also be a negative socio-economic impact of shifting to mixed farms by causing higher costs for farmers (Ryschawy et al. 2012; Garrett et al. 2017; Schut et al. 2021).[7]

The use of **nitrification inhibitors** aims to increase the nitrogen available to plants which in turn leads to increased carbon stored in soils. Nitrification inhibitors reduce the nitrification process in soils resulting from the use of fertiliser or animal urine and thereby diminish the risk of human nitrate consumption. Nitrate consumption can lead to human health risks through drinking contaminated water or consuming vegetables with a high nitrate level ultimately leading to various kinds of human cancer, neural tube defects, diabetes and blue baby syndrome (Ahmed et al. 2017). However, the use of nitrification inhibitors can have a number of negative effects on soils and ecosystems and the effects on soil carbon sequestration are still uncertain.

Measures to enhance soil fertility and health such as the use of cover crops, enhanced crop rotations including legumes, mulching or applying manure or compost to soils enhance the productivity of soils. As a result, they will have positive effects on food supply and food security (Roe et al. 2021).

4 Relevance for the EU

In 2002, the European Commission introduced an internal system of integrated impact assessments under which the environmental, economic and social consequences of its major policy proposals must be assessed (European Parliament 2015). This includes proposals on mitigating climate change. In line with this thinking, the EU Green Deal explicitly aims to meet environmental objectives alongside economic and social goals, for example.

Social impacts are also addressed by the EU Taxonomy released in 2020.[8] It translates the EU's climate and environmental objectives into criteria for specific economic activities for investment purposes. For an activity to be aligned with the Taxonomy, four conditions need to be met, including the requirement to comply with minimum social safeguards (Articles 3 and 18).

Various programmes are operating in the EU voluntary carbon market and implement soil-related mitigation projects that apply different approaches to avoiding negative social impacts.

[6] See factsheet on agroforestry, available at www.umweltbundesamt.de/publikationen/Role-of-soils-in-climate-change-mitigation.

[7] See factsheet on mixed crop-livestock systems, available at www.umweltbundesamt.de/publikationen/Role-of-soils-in-climate-change-mitigation.

[8] See https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en.

5 Addressing challenges

To avoid and minimise potential negative impacts of mitigation projects realised under results-based financing mechanisms, funding mechanisms often have requirements in place to avoid or manage negative social (and environmental) impacts. This includes the application of safeguards in the development and implementation of projects as a 'do-no-harm approach', such as (see Wissner and Schneider 2022):

- Conducting stakeholder consultations to ensure that affected stakeholders are identified and can voice their concerns which can then be addressed in the implementation of projects;
- Establishing grievance mechanisms to enable stakeholders to raise concerns and demand fair treatment;
- Establishing specific safeguard requirements that must be adhered in the implementation of projects in order to avoid any potential negative impacts;
- Monitoring negative impacts on an ongoing basis;
- Ensuring due diligence of the ability of project implementers to implement and respect safeguards;
- Validating and verifying the assessment of social impacts by independent third parties.

In addition to safeguards, many carbon crediting programmes and standards have provisions in place for assessing the sustainable development impacts of projects. This can be done by comparing impacts to an established baseline to determine the net effect of the project, implementing qualitative and quantitative assessments according to transparent methodologies, requiring projects to monitor sustainable development impacts and ensuring third-party validation of such impacts (Wissner and Schneider 2022).

The Gold Standard provides an example of a carbon crediting programme with robust safeguards in place for avoiding negative social impacts as well as a detailed guidance on assessing positive sustainable development impacts (Wissner and Schneider 2022).[9]

6 Relevant literature

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