
 Neil Palmer/CIAT.

POLICY BRIEF No. 55

Key factors for effective design and implementation of sustainable land use systems to reduce deforestation and enhance peacebuilding in Colombia

Sustainable Land Use Systems (SLUS) can enhance climate change mitigation and peacebuilding in Colombia. These systems promote the production of clean air and food. They can mitigate climate change and the risks of natural hazards; offer cultural values to our society; support key ecological functions such as nutrient and water cycling, filtering, and buffering; and they are central to the economic vitality and survival of farmers.

For this reason, the implementation of SLUS has to be comprehensive and integrated at multiple scales. It is key to design, develop, and implement policy instruments and programs that foster SLUS in rural Colombia. The success of such policies in Colombia might allow for out scaling and up scaling SLUS in other regions.

This Policy Brief provides scientifically sound guidance for decision makers to help integrate SLUS strategies into **policy instruments, in order to promote synergies and address trade-offs between multiple objectives related to climate change mitigation, sustainable agriculture and peacebuilding.** With it, policy makers can create an enabling

environment to overcome possible barriers to the effective implementation among SLUS practices, local needs, interests and realities.

HIGHLIGHTS



Sustainable Land Use Systems (SLUS) provide **crucial support to climate change mitigation and peacebuilding in Colombia.**



SLUS contribute to improving sustainable livelihood **opportunities for smallholder farmers and local communities.**



Promoting SLUS enables the creation of diverse and inclusive livelihoods that align the interest of farmers in **earning income with the global demand for stopping deforestation** and protecting ecosystems such as the ones in the Amazon biome.



SLUS strengthen agricultural value chains in a sustainable way that helps build stronger climate-resilient farms and communities.



SLUS examples for Colombia are **cocoa agroforestry systems and silvopastoral systems in the departments of Cesar and Caquetá.**



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What are Sustainable Land Use Systems?

SLUS are productive strategies that meet livelihood aspirations in ways that are sustainable and maintain environmental integrity.

SLUS are connected to markets and integrate land, water, and food systems for the production of goods, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental functions.

SLUS are particularly relevant for reducing deforestation, thus addressing climate change adaptation and mitigation and increasing peacebuilding in Colombia.

SLUS represent a wide range of technologies, practices, and activities in the natural-agricultural interface based on the key principles of maintaining and enhancing the productivity and protection of natural resources while being economically viable and socially acceptable. SLUS also integrate local knowledge and farmers' participation as a central element.

How to select SLUS

SLUS may come in different forms depending on the context and location. Examples for Colombia are **cocoa agroforestry systems** and **silvopastoral systems in Cesar and Caquetá**. The potential benefits provided by these SLUS are accepted and documented within the scientific community based on site-specific research (see Further reading).



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Sustainable Land Use Systems act systemically

SLUS aim to act systemically in the vicious cycles that lead to unsustainable agriculture. The dynamics of land use change, environmental degradation, and rural poverty are interconnected. As shown in Figure 1, intervening in one of the points that reinforce this problematic can change the cycles and create new realities (changing from unsustainable loops to more sustainable loops).

SLUS can be a nature-based solution for helping developing countries to achieve their commitments under the Rio Conventions (mitigate climate change, tackle desertification, preserve biodiversity), while contributing to peace. For this to happen, **SLUS** need to be connected to both business-inclusive value chains and business models that create an enabling environment for their adoption.

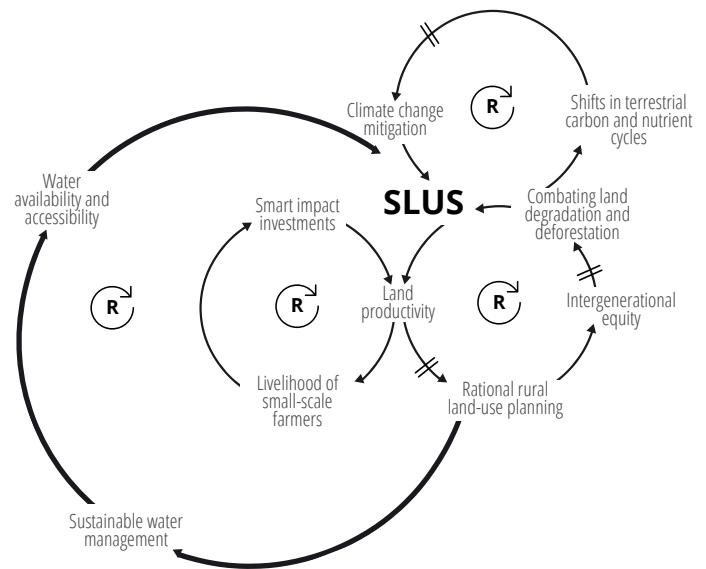


Figure 1. Transition cycles driven by SLUS.

Source: Del Río et al. (2021). Understanding systemic land use dynamics in conflict-affected territories: the cases of Cesar and Caquetá, Colombia. (manuscript submitted for publication).

The potential of Sustainable Land Use Systems (SLUS) for sustaining peace



Promoting SLUS enables the **creation of diverse and inclusive livelihoods**, which align the interest of the Colombian Government in building peace with the global demand for stopping deforestation and protecting biodiversity hotspots and ecosystems such as the ones in the Amazon biome.

Implementation of SLUS has potential impacts on peacebuilding because they affect socioeconomic inclusion (e.g. by generating alternative livelihoods and fostering community participation).

Concerning economic inclusion, when vulnerable farmers are connected to sustainable value chains, their resilience against illegal economies increases because they have better livelihoods. In the social sphere, vulnerable populations may gain entrance to governance spaces where discussions about land access and use as well as fairness and stability in prices and access to better markets along a value chain take place.

This is important because the populations affected the most by the armed conflict have also been historically excluded from the market and decision-making scenarios; however, they should and are willing to play a crucial role to protect the environment within their territories.

For granting stable food production without augmenting deforestation and at the same time contributing to peace consolidation, **it is fundamental to coordinate policies and programs among the Ministry of the Environment and Sustainable Development (MADS), Ministry of Agriculture and Rural Development (MADR), the Land Restitution Unit, National Land Agency, Territory Renewal Agency, and Rural Development Agency.**

Promoting SLUS at the policy level, for example, after land restitution or relocation of displaced persons programs, helps the government to foster a tangible set of practices that can be coordinated among multiple mandates. Agricultural extension activities associated with SLUS that promote collective action and cooperation at the farm level, for example, knowledge exchange and co-creation of public goods (e.g., youth rural schools, community infrastructure facilities), **promote a sense of belonging into a new community of practice, thus building trust among peers and social cohesion.**

Factors driving and hindering SLUS scaling-out and scaling-up

The overriding principle to make SLUS accessible for cattle ranchers and cacao farmers is that the dissemination strategy suits the target audience and fits the context. SLUS are context-specific strategies. In other words, increasing the number of people or communities that benefit from this kind of strategy involves complex dynamics and interactions among biophysical, social, economic, and institutional factors that explain how and why SLUS are replicated and spread among more producers.

Therefore, scaling SLUS successfully requires the identification of the main factors that drive and hinder their spread from the local to the landscape level and anticipation of the side effects. In this sense, the benefits of SLUS should be identified based on rigorous monitoring and impact assessments.

Scaling SLUS also requires the setting up of participatory processes among producers' associations. Associations can promote and empower farmers to intensify sustainable production. Furthermore, when the associations are supported by extension services, a knowledge network is created. A lack of attention to social organization and knowledge of farmers can lead to programs that do not meet the needs or possibilities of the target audience.

Support for farmers to adopt sustainable land-use strategies is key to achieving meaningful spread.

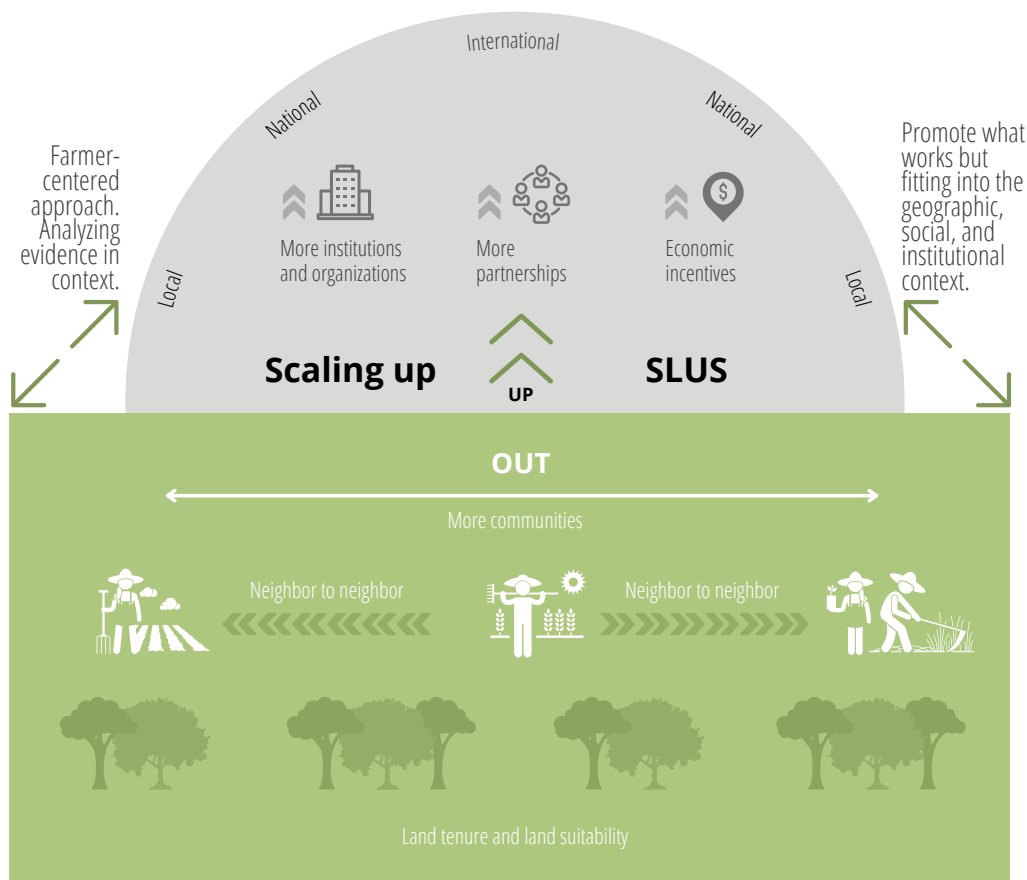
Farmers and other value chain stakeholders need to join forces in effective alliances where SLUS are promoted and supported.

Hence the importance of premium markets, stable local markets, certification schemes, and price stability for promoting SLUS.

Additionally, given that SLUS are context-specific strategies, dissemination and replication of these agricultural innovations require identifying the main factors for scaling out locally. For example, water management is contrasting for agroforestry system strategies. In Cesar, it is necessary to manage the dry season with an irrigation plan; whereas, in Caquetá, it is necessary to manage the high humidity and flood risk.

Finally, to ensure a systemic impact, SLUS depend on the characteristics of the production system to be scaled. It is clear that there is still a chance to promote more hectares for cacao and, therefore, it is possible to increase both area and yield.





Key elements for disseminating SLUS and steps for implementation



Strategic partnerships

SLUS interventions should promote the establishment of strategic partnerships among implementing organizations, private companies, local governments, and farmer-based organizations in order to complement their resources, knowledge, experience, and skills, as well as to strengthen the local institutions that could support SLUS in the long term.



Supporting farmers

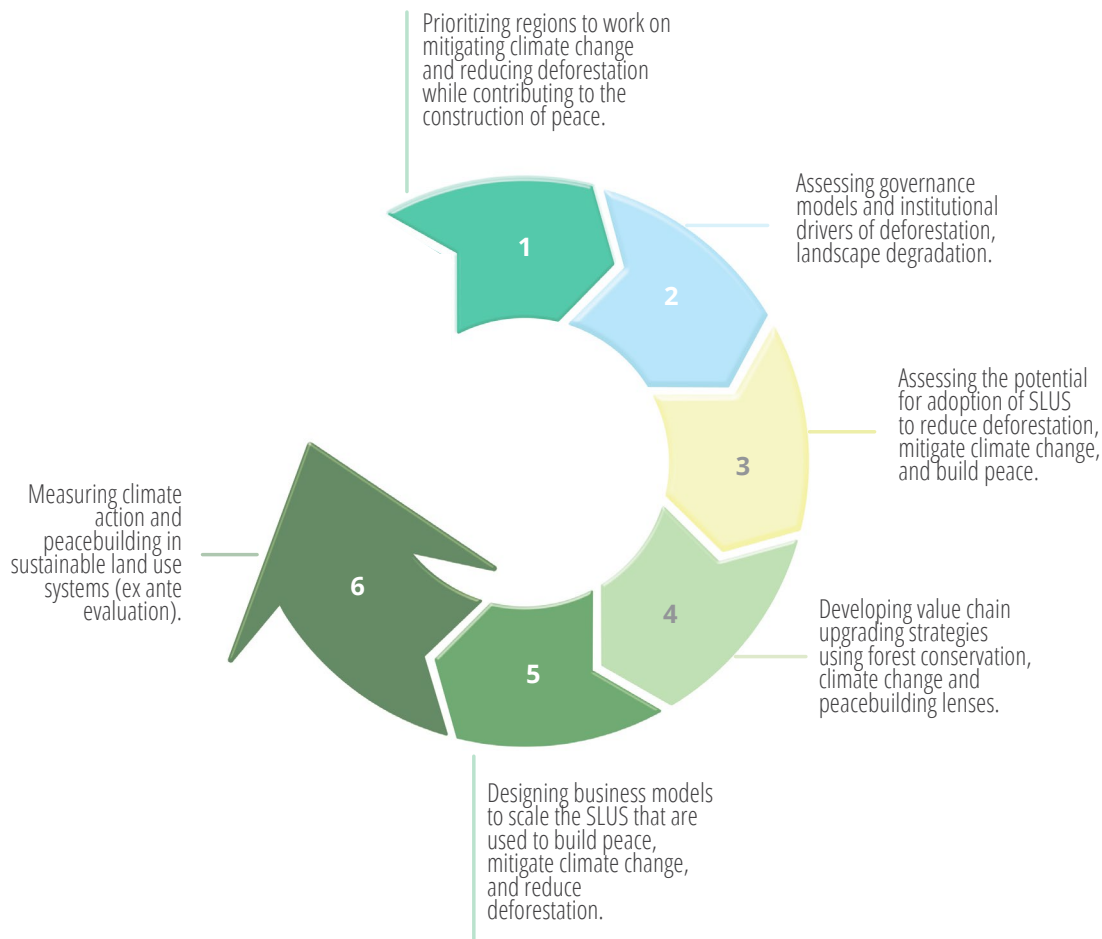
SLUS interventions should consider supporting farmers with their implementation while promoting low-cost SLUS arrangements based on local farmer-centered research as a way to find compatible and synergetic relationships among the different elements of these systems (e.g., crops, livestock, trees, biodiversity). Extension services in which farmers are actively involved and integrated with extension workers and agricultural researchers are key when scaling SLUS.



Economic conditions

SLUS promotion should consider economic conditions at the local, regional, and national levels to generate more favorable market conditions, either by guaranteeing more favorable prices for SLUS products in national markets or by strengthening local value chains that add value to these products.

Six steps for SLUS development



Governance and policy recommendations

Local and environmental governance is crucial for contending with the complex problems of land-use systems and socio-ecological conflicts that bedevil progress toward sustainable development. To increase inclusive and effective decision-making processes, instruments to improve local and environmental governance in Colombia suggest promoting constant inter-sectoral dialogues and synergies between formal (e.g., government at all scales, private sector, indigenous communities) and informal institutions (e.g., civil society, etc.) that are built upon existing reliable community-based platforms (e.g., Local Municipal Rural Development Councils (CMDR) and Community Action Boards (CAB)).

Acceptance and trust on SLUS can create a **dialogue space where local and environmental governance helps prevent and resolve socio-ecological conflicts through integrated approaches of political (law enforcement), economic (practices for sustainable land use systems), and social perspectives (role of rural extension and farmers' education programs).**

Finally, to generate an inclusive and effective decision-making process, it is also important to embrace capacity building in conflict transformation and negotiation skills to actively promote peacebuilding in the implementation of SLUS.



What can policy makers do now to support SLUS?

REGIONALLY

- Embrace development models based on sustainability and play the role of mediator between large private firms and vulnerable populations in accessing natural resources such as land and water, as well as market coordination with social inclusion.
- Coordinate governmental and nongovernmental efforts for joint SLUS implementation and institutional learning.
- Create or strengthen regional platforms where environmental, forestry, and agricultural actors are connected to support SLUS synergies.
- Foster producers' organizations and engagement to leverage projects adapted to the context.

NATIONALLY

- Coordinate policies and programs between MADS, MADR, Land Restitution Unit, and Territory Renewal Agency.
- Coordinate national policies with local bottom-up initiatives, for example, the dialogue spaces around land access and zero deforestation supply chains with sustainable production activities instead of having solely a militarized approach.
- Increase coordination between main governmental institutions that influence environmental, forestry, and agricultural performance to avoid a responsibility gap for SLUS implementation.
- Provide financial, social, and political support for the creation of income streams through more sustainable strategies.
- Foster effective markets for the sustainability efforts of farmers.

INTERNATIONALLY

- Facilitate coordination and dialogue among different governmental agencies, civil society, the private sector, and vulnerable populations.
- Generate a committee from local actors to ensure accountability and facilitate coordination.
- Leverage broader and more context-specific international cooperation to promote sustainable systems for smallholder farmers.
- Promote the alignment of interests and priorities regarding sustainability beyond national stakeholders.

Further reading

- Calle Z; Murgueitio E; Chará J; Molina CH; Zuluaga AF; Calle A. (2013). A Strategy for Scaling-Up Intensive Silvopastoral Systems in Colombia. *Journal of Sustainable Forestry* 32 (7): 677–93.
- Castro-Nunez A; Charry A; Castro-Llanos F; Sylvester J; Bax V. (2020). Reducing deforestation through value chain interventions in countries emerging from conflict: The case of the Colombian cocoa sector. *Applied Geography* 123.
- Castro-Nunez A; Mertz O; Quintero M. (2016). Propensity of farmers to conserve forest within REDD+ projects in areas affected by armed-conflict. *Forest Policy and Economics*, 66: 22–30.
- Chará J; Reyes E; Peri P; Otte J; Arce E; Schneider F. (2019). *Silvopastoral Systems and Their Contribution to Improved Resource Use and Sustainable Development Goals: Evidence from Latin America*. FAO, CIPAV and Agri Benchmark, Cali, 60 pp. <https://bit.ly/3zsqmzl>
- Eufemia L; Bonatti M; Castro-Nunez A; Lana M; Morales H; Sieber S. (2019). Colombia's inadequate environmental goals. *Science* (New York, NY), 364(6439): 444.
- Eufemia L; Bonatti M; Lana MA. (2018). Colombia's rural development must honour peace agreement. *Nature*, 560(7716): 29.
- Graser M; Bonatti M; Eufemia L; Morales H; Lana M; Löhr K; Sieber S. (2020). Peacebuilding in Rural Colombia—A Collective Perception of the Integrated Rural Reform (IRR) in the Department of Caquetá (Amazon). *Land* 2020, 9: 36.
- Morales-Muñoz H; Löhr K; Bonatti M; Eufemia L; Sieber S. (2021). Assessing impacts of environmental peacebuilding in Caquetá, Colombia: a multistakeholder perspective. *International Affairs*, 97(1): 179–199.
- Sylvester J; Valencia J; Verchot L; Chirinda N; Romero M; Quintero A; Castro-Nunez A. (2020). A rapid approach for informing the prioritization of degraded agricultural lands for ecological recovery: A case study for Colombia. *Journal for Nature Conservation* 58.
- Villarino E; Da Silva M; Lopez-Lavalle L; Castro-Nunez A. (2020). “Rambo root” to the rescue: How a simple, low-cost solution can lead to multiple sustainable development gains. *Conservation Science and Practice* 320.

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