



# Implementing sustainable farming for forest conservation, while improving rural livelihoods and peace-building in Colombia

Results of sustainable land use trials on Colombian livestock farms in the Amazonian and Caribbean regions.

# Stopping deforestation through sustainable livestock farming

Slowing and stopping the depletion of the Amazon rainforest is one of the top global Climate Change priorities, an aim that successive Colombian Governments have embraced.

This study explores the role that silvopastoral systems (SPS) could play in stopping deforestation and land degradation in two regions of Colombia. The project aims to contribute toward reducing land-based greenhouse gas (GHG) emissions, conserving forests, restoring degraded landscapes and improving rural livelihoods while stimulating peacebuilding in rural Colombia.

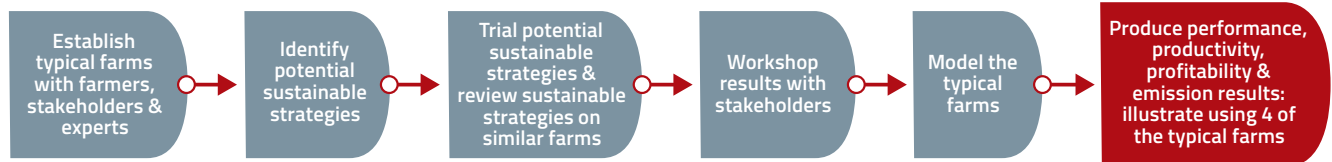
## The approach



Sustainable Land Use Strategies (SLUS), largely based on silvopastures, were trialled on Colombian livestock farms\* in the Amazonian and the Caribbean regions. SLUS practices include rotational grazing, scattered trees, living fences, natural regeneration and land release back to the forest.

The results were then used to project the physical and financial performance of four selected typical Colombian farms over 10 years, both without (Baseline) and with the adoption of SLUSs.

## The process

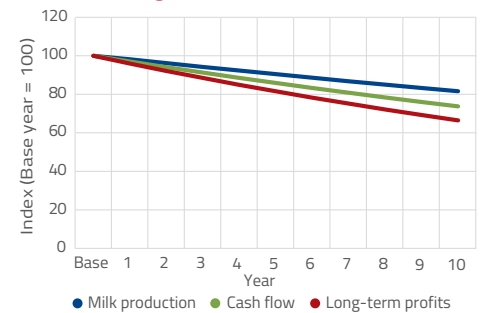


## The Baseline: business as usual



Without the adoption of SLUS, these four Colombian farms are threatened by the frequency of adverse climate events that are likely to negatively impact soil structure, feed production, animal production, farm profits, farm living standards and political stability.

Farm production and profit without investment (4 farm average)



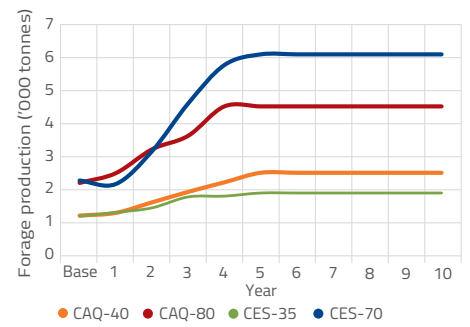
\* The four farms are identified by the region: CAQ for the Amazonian humid tropic Caquetá region and CES for the dry tropic Caribbean Cesar region. The ID number represents the number of cows on that farm. Hence, CAQ-40 is the selected farm in the Caquetá region which has 40 cows.

### Forage production



Through the adoption of these silvopastoral system strategies and good or best management practices, the four farms could raise forage production by between 110% and 170% above the baseline within 4 to 5 years. By year 10, forage production is projected to be 170% to 350% above the projected year 10 baseline.

Total farm forage production with investment



### Boosting output



This increase in feed availability, along with changes in animal performance, enable substantial growth in the production of milk on these farms. At the same time, it enables weaner calves to be retained for longer, providing more income to the farm and better animals to the beef finishing units as backgrounders – thus improving the beef value chain in the region.

**Boost in production over baseline Year 10**

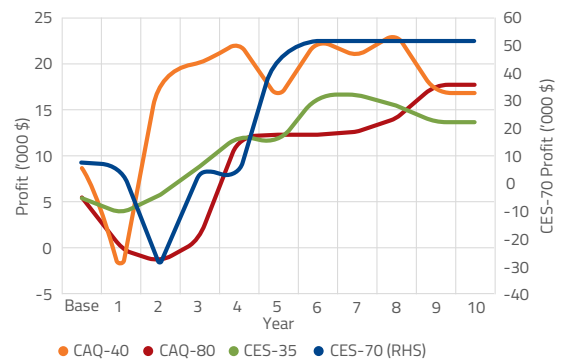


### Profitability



The potential lift in financial performance from adopting the proposed SLUSs is equally impressive, with a doubling or trebling of mid-term profits on these four farms in the first 5–6 years.

Mid-term profit with investment (no loans)

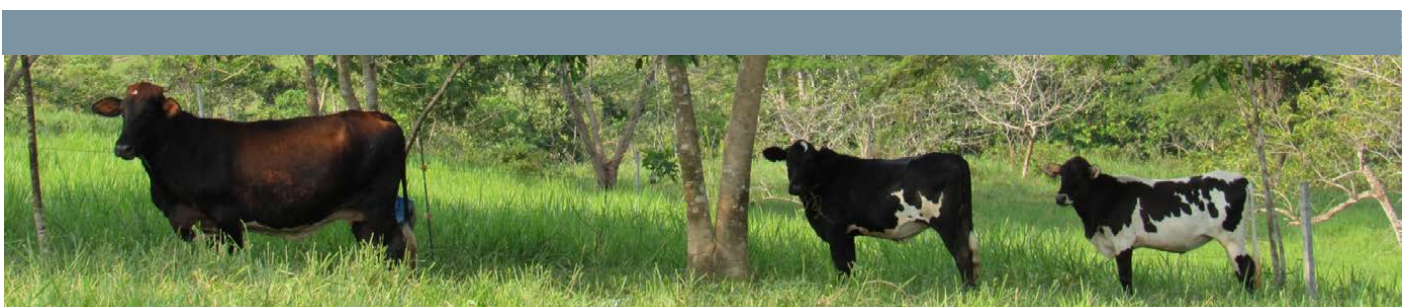


### Funding



The initial capital outlay, together with some fall in income (as cattle are retained), causes a negative cumulative cash flow in the early years.

Hence, the proposed SLUSs and the investments required cannot be financed solely by the farms’ production and their related profit and cash flow – a credit scheme is needed.

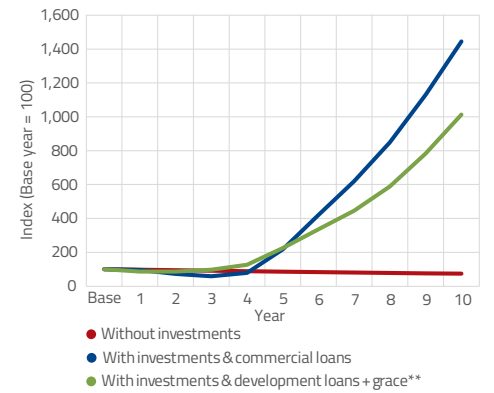


### Development credit



Funding the proposed innovations through commercial credit would not allow a producer to take out money to cover his / her family living costs and taxes. However, a realistic development credit option could be introduced to both maintain the financial stability of the farm business and allow a producer to cover his/her family living costs and taxes. Key elements of the proposed development loans include a 2-year capital grace period and an interest rate 5–7 percentage points below commercial rates. These loans would enable the initiative to achieve both the primary goals of improving rural livelihoods and achieving environmental sustainability.

Index of average cash flow across the 4 farms



\*\* Family salaries & taxes covered

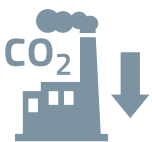
### Payback period



Payback period under development credit scheme

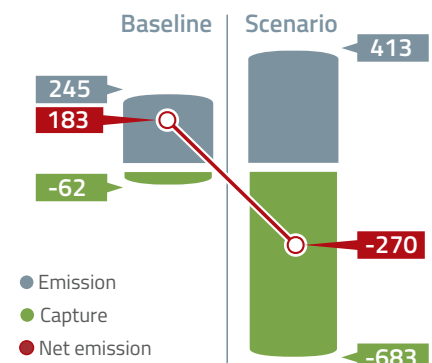


### Reduction in emissions



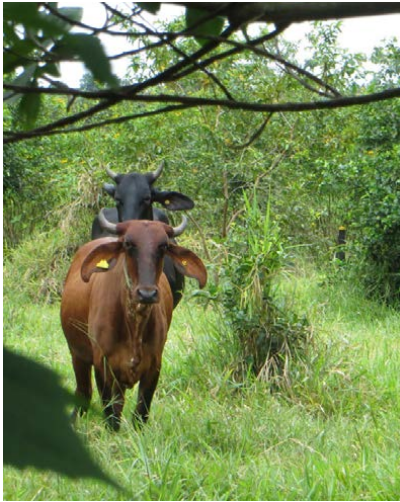
This research confirms that the adoption of the SLUS' sustainable strategies can significantly reduce net CO<sub>2</sub> emissions on Colombian livestock farms – with projected net CO<sub>2</sub> emissions falling on all four farms and three of these farms becoming carbon sinks, as CO<sub>2</sub> capture exceeds emissions.

Average emissions balance across the 4 farms CO<sub>2</sub> eq./year



## Conclusion

Sustainable Land Use Strategies can contribute substantially to reducing land-based greenhouse gas (GHG) emissions, conserving forests and restoring degraded landscapes, while also improving rural livelihoods and, hopefully, stimulating peacebuilding in rural Colombia.



**Declaration of funding**

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