

Supplemental material for

“Evaluating the Impacts of a Small-Grants Program on Sustainable Development and Biodiversity Conservation in Andean Forest Landscapes”, by Selene Báez, Meagan Mazzarino, Manuel Peralvo, and Robin R. Sears, published in *Mountain Research and Development* 40(2), 2020. (See <https://bioone.org/toc/mred/40/2>)

Appendix S1. Questionnaire for grantees of the small-grants program of the Andean Forest Program

Part 1. Project’s information and type of knowledge produced

1. Title of your study:
2. Primary investigators: names, affiliations and country of residence:
3. Co-Investigators: names, affiliation, and country of residence:
4. How many persons were involved in the project, including field assistants?

	Indigenous	Local	International
Female			
Male			

5. How would you best describe the type of knowledge that your study was designed to produce?
 - a. Systems knowledge: understanding and describing how social–ecological systems work
 - b. Target knowledge: defining with local stakeholders a common vision for sustainable governance
 - c. Transformation knowledge: encapsulating the knowledge needed to shape the transition from current to envisioned practices
 6. Do you feel that your project was successful in producing or advancing knowledge in the area you selected above?

Yes / No
 7. If you answered yes to question 6, please provide one or two concrete examples that support your response
 8. If you answered no question 6, please provide a brief explanation of the barriers or challenges that prevented you from achieving that goal.
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Part 2. Engagement and public awareness

9. Did your research contribute to engagement and public awareness in one of the following ways?
 - a. Increasing scientific knowledge
 - b. Outreach
 - c. Mentoring and training
 - d. Action plans
 - e. Policy discussion, analysis

10. As part of your study did you engage with the following types people or groups? Please check all that apply and provide comments on each one.

	Checklist Items	Comments
<input type="checkbox"/>	Individuals in community	
<input type="checkbox"/>	Community groups	
<input type="checkbox"/>	Indigenous groups	
<input type="checkbox"/>	Education groups/children	
<input type="checkbox"/>	Religious groups	
<input type="checkbox"/>	NGOs	
<input type="checkbox"/>	Local artists	
<input type="checkbox"/>	Local government officials/groups	
<input type="checkbox"/>	Regional government officials/groups	
<input type="checkbox"/>	National government officials/groups	
<input type="checkbox"/>	Other	

11. Please select which of the following outputs and outcomes resulted from the study:

	Output or Outcome	Comments
<input type="checkbox"/>	Peer-reviewed publication(s)	
<input type="checkbox"/>	Publications (non-peer reviewed)	
<input type="checkbox"/>	Presentations (conference, meeting)	
<input type="checkbox"/>	Workshops/training programs (excluding student training students)	
<input type="checkbox"/>	Management plans (new or updated)	
<input type="checkbox"/>	Designation of Conservation Areas	
<input type="checkbox"/>	Policies/regulations	
<input type="checkbox"/>	Partnerships (national and international)	
<input type="checkbox"/>	Other	

12. Did your study include the training or involvement of student researchers? If so, please provide a brief description of the level of the student researchers (undergraduate or graduate) and whether the student(s) used the experience for academic credit or toward a written thesis or project.

Part 3. Biodiversity and Sustainability and connection with the Andean Research Agenda, Sustainable Development Goals, and Aichi Biodiversity Targets

13. Please look at the list of research areas below and select one that best describes the focus of your study. Mark that area with a 1. If your study included secondary foci, mark as many that apply with a 2. Write in the focal species, ecosystem or social group, where relevant.

Focus Area	Primary Focus (1)	Secondary Focus (2)	Focus
Biodiversity Conservation			
Ecosystem Services			

Forestry Management			
Forestry Restoration			
Social-Ecological Systems			
Traditional knowledge			
Climate Change			
Sustainable management/development			
Land Use/Land Cover Change			
Other			

14. Please indicate at what scale do you work?

- a. ecosystem
- b. ecological community
- c. focal species
- d. forest stand
- e. social group

In the next questions we would like to know to what extent you have designed your research to address regional and global research and development targets, and whether your research in the end helps to advance these.

15. In the table below, indicate first whether you considered the goals from any of these agendas in the design of your research, and then identify which specific items you considered.

TARGET	Designed study (Y/N)	Specific Items/Targets/Goals (by number)
Andean Research Agenda		
Sustainable Development Goals		
Aichi Biodiversity Targets		

16. If your answer was yes in any of the previous points, please indicate what items/targets and goals guided your research

17. Andean Research Agenda: please mark the themes your research has contributed to:

1. Patterns of tree diversity, forest structure and dynamics, and carbon stocks
2. Effects of biotic interactions on the biodiversity, structure, and functioning of forests
3. Effects of abiotic factors on responses of forest ecosystems to global change
4. Historical responses of forest ecosystems to climate fluctuations
5. Successional dynamics of forest regeneration after natural and anthropogenic disturbances
6. Contribution of structure and functioning of forests to ecosystem services
7. Implications of socioeconomic changes for patterns of resource access and use
8. Drivers of different trajectories of tree cover change
9. Past and present landscape dynamics: land-cover and land-use change, use regimes, and population growth
10. Influence of climate variables on the vulnerability of livelihoods and ecosystem services
11. Governance processes that frame the patterns of use and management of forests and other

resources

12. Non-timber forest product availability in different social– ecological contexts
13. Contributions of landscape management to the strengthening of local livelihoods
14. Factors that ensure that local livelihoods benefit from sustainable landscape management
15. Synergies and trade-offs among competing management goals and their impacts on ecosystem services
16. Effects of alternative management regimes on people's resilience to climate change and natural disasters
17. Perceptions, cultural values, identities, and knowledge of different actor categories
18. Environmental justice and equity in the definition of sustainability goals
19. Inclusive methods and research frameworks to generate actionable knowledge
20. Multistakeholder definition of restoration concepts and options
21. Elements of the promotion of locally adapted, inclusive, and equitable governance models
22. Inclusive design of compensation schemes for the goods and services provided by forest ecosystems
23. Incentives for maintenance of ecosystem services and the economic development of landscapes
24. Local knowledge and legal instruments to support institutional change for increased sustainability
25. Barriers to the participation of marginalized actors in bodies of environmental governance
26. Up- and out-scaling approaches for successful management practices from local to national and regional levels
27. Social learning processes that integrate the knowledge of different actors at multiple scales
28. Mechanisms for implementing national and regional policies in diverse local contexts
29. Diffusion of synthesis information on AFL to inform decision-making
30. Critical review of existing restoration initiatives: potentials, bottlenecks, and enabling conditions
31. Comparison of forest self-regeneration with active restoration approaches
32. Impacts of different restoration practices on livelihoods and ecosystem services
33. Definition of common criteria for the assessment of restoration practices
34. Validation of locally adapted restoration technologies
35. Tools for the restoration of connectivity between Andean forest remnant patches and the Amazon Basin

36. UN Sustainable Development Goals: please mark the themes your research has contributed to:

1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance

1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

12.2 By 2030, achieve the sustainable management and efficient use of natural resources

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

13.2 Integrate climate change measures into national policies, strategies and planning

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed

15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products

15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species

15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decisionmaking in political, economic and public life

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products

37. Aichi Biodiversity Targets: please mark the themes your research has contributed to:

1. *Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society*
 - 1.1. By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.
 - 1.2. By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
 - 1.3. By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.
 - 1.4. By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.
2. *Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use*
 - 2.1. By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

- 2.2. By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.
- 2.3. By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
- 2.4. By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.
- 2.5. By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.
- 2.6. By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.
3. *Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity*
 - 3.1. By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.
 - 3.2. By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.
 - 3.3. By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.
4. *Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services*
 - 4.1. By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.
 - 4.2. By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.
 - 4.3. By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.
5. *Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building*
 - 5.1. By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
 - 5.2. By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.
 - 5.3. By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.
 - 5.4. By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

Table S1 Projects funded by the small-grants program of the Andean Forest Program, and their geographic scope.

Synthesis projects		Basic projects	
Tree species responses of tropical Andean trees of Colombia and Peru to climate change	Colombia-Perú	Distribution of medium and large sized mammals in a natural area of integrated management, Apolobamba, La Paz, Bolivia	Bolivia
Growth rates of montane forests' tree species in response to long-term climatic variability in Yungas ecosystems of Peru and Argentina	Argentina-Perú	*Pollination and conservation of dioiceous trees of the genus <i>Ocotea</i> (Lauraceae) at the Santuario Nacional Pampa Hermosa, Peru	Peru
Synchrony of freezing events in <i>Austrocedrus chilensis</i> in the Andean Patagonia during the last centuries: evolution, incidence, and current effects of climate change	Argentina-Chile	Dynamics of lianas and epiphytes in subtropical Andean forests of the Sierra de San Javier, Tucumán, Argentina	Argentina
<i>Araucaria araucana</i> forests in a context of global environmental change: genetic characterization, growth, water use efficiency along an environmental gradient in Patagonia	Argentina	Ecological processes that determine the successional trajectories of secondary high-elevation Andean forests	Colombia
Assessing restoration practices at landscapes scales in a forest reserve in the Andean Patagonia of Argentina	Argentina	Dynamics of the agropecuarian frontier at high elevation Andean forests in the North-eastern watershed of Laguna Cocha, Colombia, between 1994-2014	Colombia
Effect of drought on the patterns of mortality and water use efficiency in <i>Nothofagus</i> forests of Argentina and Chile	Argentina-Chile	Applying a functional focus to the dynamics of Andean cloud forests in the Andes of Venezuela	Venezuela
Native <i>Polylepis</i> forests of Perú: governance, mapping and ecosystem services in the Nuñoa (Puno) watershed.	Peru	Structure, diversity and functional composition bamboo along an Andean-Amazonian gradient	Peru
Sustainable management of high Andean forests considering environmentally friendly cattle ranching and adaptation to climate change	Colombia		
Morpho-physiological responses of various species of mixed lower montane forests in Patagonia: basis for sustainable management under conditions of climate change	Argentina		

* declined

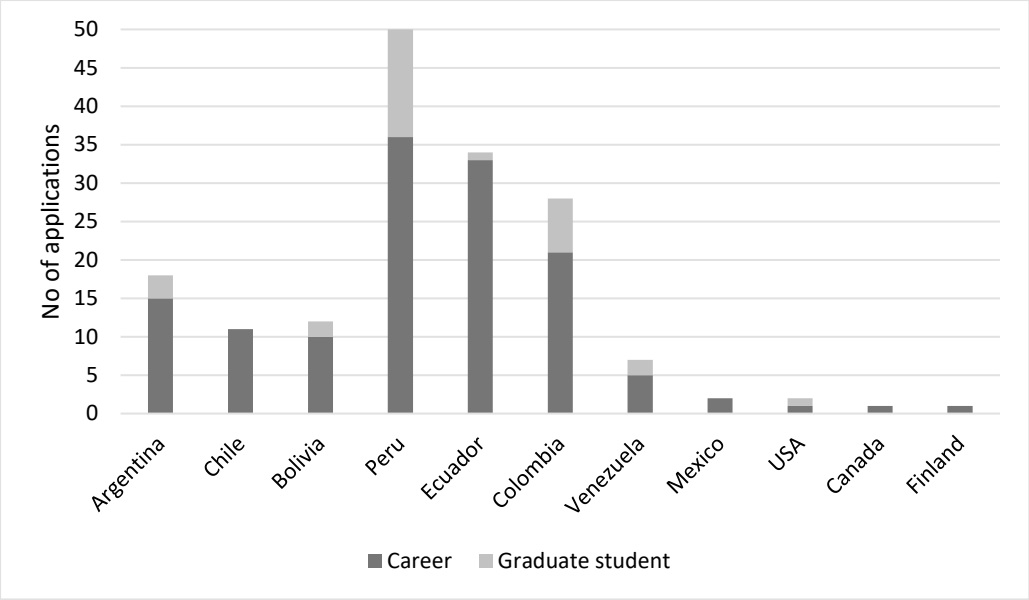


Figure S1 Country of origin and career status of the lead applicant for the reviewed proposals.

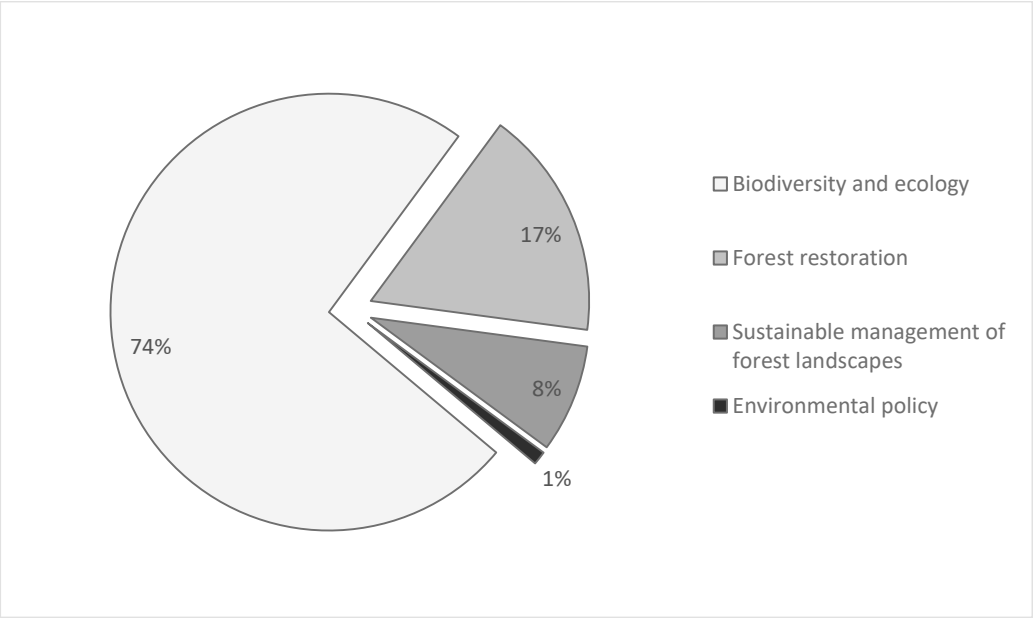


Figure S2 Percent of the reviewed proposals by main thematic category as defined by the Andean Forest Program’s fellowship program.

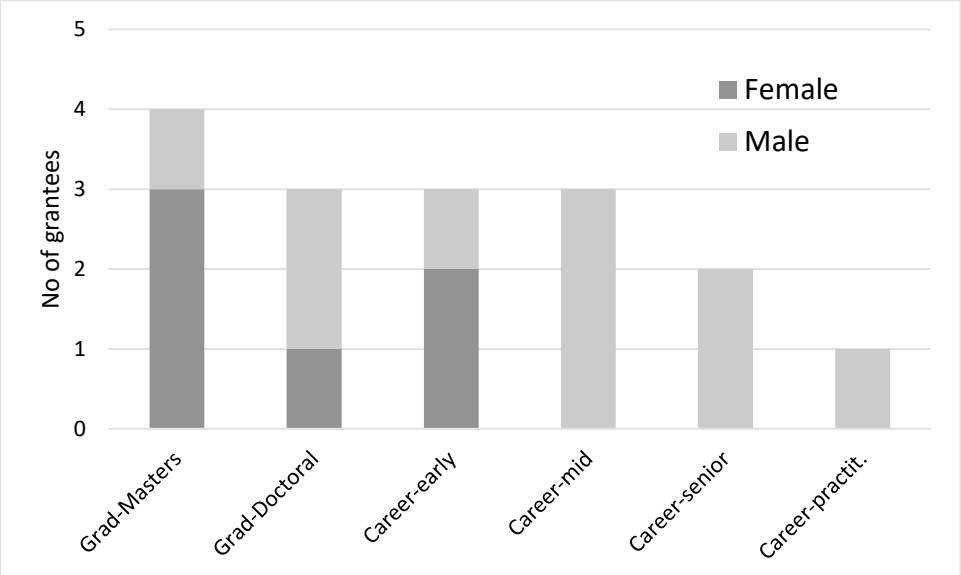


Figure S3 For awarded projects, career level by gender.

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